Traffic Impact Assessment Final Report February 2025

### CONTENTS

<u>CHA</u>	APTER	PAGE
1.0	INTRODUCTION Background Structure of the Report	1
2.0	THE EXISTING SITUATION The Subject Site Existing Road Network Traffic Survey Operational Performance of the Surveyed Junctions Traffic Generation of the Surveyed Data Centres Pedestrian Generation Rates for Surveyed Data Centres Public Transport Facilities Utilisation of Existing Bus Stops	2
3.0	THE PROPOSED DATA CENTRE Development Schedule Provision of Internal Transport Facilities Vehicle Lift Analysis Swept Path Analysis	7
4.0	TRAFFIC IMPACT Design Year Traffic Forecasting 2032 Traffic Flows 2032 Junction Operational Performance 2032 Link Capacity Assessment Impact on Utilisation of 5 Surveyed Bus Stops	9
5.0	PEDESTRIAN ASSESSMENT Location of Surveyed Footpaths Estimation of Future Pedestrian Flows 2032 Pedestrian Flows Level-of-Service	13
6.0	CONCLUSION	16

### CONTENTS (CONT'D)

FIGURES

Appendix 1 – Calculation

Appendix 2 – Bus Stops Utilisation

Appendix 3 – Draft PBTO

Appendix 4 – Car Lift Analysis

Appendix 5 – Swept Path Analysis

### TABLES

### NUMBER

- 2.1 Existing junction operational performance
- 2.2 Details of the surveyed data centres
- 2.3 Trip rates of the surveyed data centres
- 2.4 Pedestrian trip rates of the surveyed data centres
- 2.5 Franchised bus and GMB services operating close to the Subject Site
- 2.6 The location of surveyed bus stops
- 2.7 The existing utilisation of the public transport services at the 5 surveyed stops
- 3.1 Internal transport facilities of the Proposed Data Centre
- 4.1 2021-based TPEDM data produced for Kwai Tsing District
- 4.2 Hong Kong Population Projections 2022 2046
- 4.3 AADT of the station in the vicinity of the Subject Site
- 4.4 Comparison of traffic generation between Approved A/KC/496 and the Proposed Data Centre
- 4.5 2032 Junction operational performance
- 4.6 2032 Link capacity assessment
- 4.7 Comparison of pedestrian generation between Approved A/KC/496 and the Proposed Data Centre
- 4.8 The utilisation of the public transport services for the case with the Proposed Data Centre

## TABLES (CONT'D)

- 5.1 Description of pedestrian facility LOS
- 5.2 Effective width of the surveyed footpaths
- 5.3 2032 LOS without and with the Proposed Data Centre

### FIGURES

### NUMBER

- 1.1 Location of Subject Site
- 2.1 Location of surveyed junctions
- 2.2 Layout of junction of Wing Kei Road / Wing Kin Road
- 2.3 Layout of junction of Kwai Hei Street / Wing Kei Road
- 2.4 Layout of junction of Kwai Hei Street / Wing Chong Street
- 2.5 Layout of junction of Kwai Hei Street / Wing Kin Road
- 2.6 Layout of junction of Wing Kei Road / Kwai Fuk Road
- 2.7 Layout of junction of Shing Yiu Street / Wing Kei Road
- 2.8 Layout of junction of Kwai Fuk Road / Kwai Hei Street
- 2.9 Layout of junction of Kwai Hei Street / Tsuen Wan Road
- 2.10 Existing peak hour traffic flows
- 2.11 The public transport services provided in the vicinity of the Subject Site
- 2.12 Location of the surveyed public transport stops
- 3.1 G/F layout plan
- 3.2 B1/F layout plan
- 4.1 Ingress / egress route for traffic generated by the Proposed Data Centre
- 4.2 Year 2032 peak hour traffic flows without the Proposed Data Centre
- 4.3 Year 2032 peak hour traffic flows with the Proposed Data Centre

### FIGURES (CONT'D)

### NUMBER

- 5.1 Location of surveyed footpaths
- 5.2 Existing peak 15-minute two-way pedestrian flows
- 5.3 Year 2032 pedestrian flows without the Proposed Data Centre
- 5.4 Year 2032 pedestrian flows with the Proposed Data Centre

# 1.0 INTRODUCTION

### Background

- 1.1 The Subject Site is located at 7 11 Wing Kin Road in Kwai Chung. Figure 1.1 shows the location of the Subject Site.
- 1.2 On 28 July 2023, the Town Planning Board ("TPB") approved the application for the Industrial Use at 7 11 Wing Kin Road (TPB ref.: A/KC/496) (the "Approved A/KC/496"). The owner has the intention to redevelop the Subject Site into Information Technology and Telecommunication Industries (Data Centre) with the total GFA of 10,991.880m<sup>2</sup> (the "Proposed Data Centre").
- 1.3 Against this background, CKM Asia Limited, a traffic and transportation planning consultancy firm, was commissioned by the owner to conduct a traffic impact assessment in support of the Proposed Data Centre. This report describes the traffic study undertaken.

Structure of the Report

1.4 The report is structured as follows:

Chapter One	-	Gives the background of the project;
Chapter Two	-	Describes the existing situation;
Chapter Three	-	Explains the Proposed Industrial Development and presents the internal transport facilities provided;
Chapter Four	-	Describes the traffic impact analysis;
Chapter Five	-	Describes the pedestrian impact analysis; and
Chapter Six	-	Gives the overall conclusion.

# 2.0 THE EXISTING SITUATION

### The Subject Site

2.1 The Subject Site fronts onto Wing Kin Road to the east and Wing Chong Street to the west. It is bounded by other industrial developments, including the Global Trade Centre to the north and the Hou Feng Industrial Building to the south. The existing building has 2 run-in/outs and these are located at Wing Kin Road and Wing Chong Street. This building is vacant when this Traffic Impact Assessment is being prepared.

### Existing Road Network

- 2.2 Wing Kin Road is a local distributor. It is of single carriageway standard and is 1-way northbound from Kwai Hei Street to Wing Kei Road.
- 2.3 Wing Chong Street is a local distributor. It is of a single carriageway standard and is 1-way southbound from Wing Kin Road to Kwai Hei Street.
- 2.4 Wing Kei Road is a local distributor. It is of single carriageway standard with 2 lanes road connecting between Wing Kin Road and Kwai Hei Street.

### Traffic Survey

- 2.5 To reflect the latest traffic condition, manual classified count was re-conducted on Friday, 29 November 2024 during the AM and PM peak periods. The locations of the surveyed junctions are presented in Figure 2.1 and their layouts are shown in Figures 2.2 to 2.9.
- 2.6 The surveyed junctions include the following:
  - J1: Priority Junction of Wing Kei Road / Wing Kin Road;
  - J2: Priority Junction of Kwai Hei Street / Wing Kei Road;
  - J3: Priority Junction of Kwai Hei Street / Wing Chong Street;
  - J4: Priority Junction of Kwai Hei Street / Wing Kin Road;
  - J5: Signalised Junction of Wing Kei Road / Kwai Fuk Road;
  - J6: Priority Junction of Shing Yiu Street / Wing Kei Road;
  - J7: Signalised Junction of Kwai Fuk Road / Kwai Hei Street; and
  - J8: Priority Junction of Kwai Hei Street / Tsuen Wan Road
- 2.7 The counts were classified by vehicle type to enable traffic flows in passenger car units ("pcu") to be calculated. From the survey, the AM and PM peak hours were found to be between 0800 0900 and 1700 1800 hours respectively, and the existing AM and PM peak hour traffic flows are presented in Figure 2.10.

### Operational Performance of the Surveyed Junctions

2.8 The existing operational performance of the surveyed junctions is calculated based on the observed traffic counts and the analysis is undertaken using the methods outlined in Volume 2 of Transport Planning and Design Manual ("TPDM"). The existing operational performance of the junctions are summarised in Table 2.1 and the detailed calculations are found in Appendix 1.

#### TABLE 2.1EXISTING JUNCTION OPERATIONAL PERFORMANCE

Ref.	Junction	Type of Junction	Parameter <sup>(1)</sup>	AM Peak Hour	PM Peak Hour
J1	Wing Kei Road / Wing Kin Road	Priority	RFC	0.341	0.460
J2	Kwai Hei Street / Wing Kei Road	Priority	RFC	0.392	0.227
J3	Kwai Hei Street / Wing Chong Street	Priority	RFC	0.075	0.143
J4	Kwai Hei Street / Wing Kin Road	Priority	RFC	0.120	0.215
J5	Wing Kei Road / Kwai Fuk Road	Signalised	RC	86%	112%
J6	Shing Yiu Street / Wing Kei Road	Priority	RFC	0.281	0.107
J7	Kwai Fuk Road / Kwai Hei Street	Signalised	RC	70%	97%
J8	Kwai Hei Street / Tsuen Wan Road	Priority	RFC	0.257	0.232
Matea		of Flows to Come	. 14		

Notes: <sup>(1)</sup> RC – reserve capacity RFC – Ratio of Flow to Capacity

### Traffic Generation of the Surveyed Data Centres

2.9 The TPDM does not have trip generation information for data centre, and to estimate the traffic generation of the Proposed Data Centre, trip generation surveys were conducted during the weekday AM and PM peak periods at 3 data centres. Details of the surveyed data centres and the derived trip rates are presented in Tables 2.2 and 2.3.

### TABLE 2.2DETAILS OF THE SURVEYED DATA CENTRES

Ref.	Data Centre	Address	Approximate GFA (m²)
1	iTech Tower	28 Pak Tin Par Street, Tsuen Wan	18,300
2	NTT Com Tai Po Data Centre	2 Dai Hei Street, Tai Po Industrial	19,700
		Estate, Tai Po	
3	HKG3 Kwai Chung Data Center	43 Container Port Road, Kwai Chung	25,300

### TABLE 2.3 TRIP RATES OF THE SURVEYED DATA CENTRES

Ref.	Data Centre	AM Peak Hour		PM Peak Hour	
		IN	OUT	IN	OUT
Traffic	Generation (pcu/hr)				
1	iTech Tower	2	2	2	2
2	NTT Com Tai Po Data Centre	9	6	7	13
3	HKG3 Kwai Chung Data Center	10 3		4	9
Trip Rates (pcu/hour/100m <sup>2</sup> )					
1	iTech Tower	0.0109	0.0109	0.0109	0.0109
2	NTT Com Tai Po Data Centre	0.0457	0.0305	0.0355	0.0660
3	HKG3 Kwai Chung Data Center	0.0395	0.0119	0.0158	0.0356
	Adopted (maximum rates) =	0.0457	0.0305	0.0355	0.0660

### Pedestrian Generation Rates for Surveyed Data Centres

2.10 The TPDM does not have pedestrian generation information for data centre, and to estimate the pedestrian generation of the Proposed Data Centre, pedestrian generation surveys were conducted during the weekday AM and PM peak periods at the 3 data centres listed in Table 2.2. The derived pedestrian trip rates from the surveys are presented in Table 2.4.

#### PEDESTRIAN TRIP RATES OF THE SURVEYED DATA CENTRES TABLE 2.4

Ref.	RCHE	AM Peak Hour		PM Peak Hour	
		IN	OUT	IN	OUT
Pede	strian Generation (pedestrian/15 min)				
1	iTech Tower	12	2	3	12
2	NTT Com Tai Po Data Centre	13	2	3	13
3	3 HKG3 Kwai Chung Data Center		1	3	14
Pede	strian Trip Rates (pedestrian/15 min/100m <sup>2</sup> )				
1	iTech Tower	0.0656	0.0109	0.0164	0.0656
2	NTT Com Tai Po Data Centre	0.0660	0.0102	0.0152	0.0660
3	3 HKG3 Kwai Chung Data Center		0.0040	0.0119	0.0555
	Adopted (maximum rates) =	0.0660	0.0109	0.0164	0.0660

#### **Public Transport Facilities**

The Subject Site is located close to public transport services. Details of the 2.11 franchised bus and green minibus ("GMB") routes operating in the vicinity of the Subject Site are presented in Figure 2.11 and Table 2.5.

#### FRANCHISED BUS AND GMB SERVICES OPERATING CLOSE TO TABLE 2.5 THE SUBJECT SITE

Route	Routing	Frequency (minutes)
KMB 32H	Cheung Shan – Lai Chi Kok	30 – 60
KMB 34	Kwai Shing (Central) – Tsuen Wan (Bayview Garden)	12 – 25
KMB 38	Kwai Shing (East) – Ping Tin	6 – 25
KMB 43D	Tsing Yi (Cheung Wang Estate) – Kwai Shing	AM Peak <sup>(1)</sup>
KMB 73P	Tai Mei Tuk – Tsuen Wan (Nina Tower)	AM, PM Peak <sup>(1)</sup>
GMB 87	Tsuen Wan (Ham Tin Street) – Kwai Shing (Shing Fong Street)	8 – 10
GMB 87K	Kwai Fong Station – Hoi Kwai Road Public Transport	6 – 10
	Interchange	
GMB 89B	Kwai Shing North (Kwai Hau Street) – Hoi Kwai Road Public	10 – 12
	Transport Interchange	
GMB 91	Tsuen Wan (Ham Tin Street) – Lai Kong Street	5 – 13
GMB 93	Tsuen Wan (Ham Tin Street) – Wah Yuen Chuen	6 – 15
GMB 93A	Wonderland Villas – Tsuen Wan (Ham Tin Street)	15 – 25
GMB 94	Shek Wai Kok – Kwai Shing	8 – 15
GMB 94A	Lei Muk Shue Estate Public Transport Interchange – Kwai Shing	10 – 15 <sup>(1)</sup>
GMB 98	Tsuen Wan (Ho Pui Street) – High Prosperity Terrance	10
	(Circular)	
GMB 404M	Kwai Fong Station – Riviera Gardens (Circular)	10 - 12
GMB 406	Shek Lei – Kwai Shing (Circular)	AM, PM Peak <sup>(1)</sup>
GMB 407	Cheung Wang Estate – Princess Margaret Hospital	4 - 10
Note: NWFB	– New World First Bus CTB – City Bus GM	B – Green Minibus

<sup>(1)</sup> Mondays – Fridays only

<sup>(2)</sup> Sunday and Public Holiday

Utilisation of Existing Bus Stops

Utilisation surveys were conducted during the weekday AM and PM peak 2.12 periods at 5 bus stops. Details of the bus stops are presented in Table 2.6 and their locations are found in Figure 2.12.

#### TABLE 2.6 THE LOCATION OF SURVEYED BUS STOPS

No.	Location	Walking Distance	Route
1	Wing Kei Road Southbound	100m (1 minute's walk)	GMB: 404M
2	Kwai Fuk Road Westbound	600m (8 minutes' walk)	KMB: 73P GMB: 87, 87K, 91, 93, 93A, 98, 404M, 406, 407
3	Kwai Fuk Road Eastbound	650m (9 minutes' walk)	KMB: 73P GMB: 87, 87K, 91,93, 93A, 98, 404M, 406, 407
4	Kwai Shing Swimming Pool Eastbound	600m (10 minutes' walk)	KMB: 32H, 34, 43D GMB: 87, 87K, 89B, 406, 407, 94, 94A
5	Kwai Shing Swimming Pool Westbound	600m (10 minutes' walk)	KMB: 32H, 38 GMB: 87, 87K, 89B, 407, 94, 94A

Note: KMB – Kowloon Motor Bus GMB – Green Minibus

2.13 The existing utilisation of the public transport services at 5 surveyed bus stops are summarised in Table 2.7 and the detailed calculations are found in Appendix 2.

# TABLE 2.7THE EXISTING UTILISATION OF THE PUBLIC TRANSPORT<br/>SERVICES AT THE 5 SURVEYED STOPS

No.	Location	Occupancy of Public Transport Service		
		AM Peak	PM Peak	
1	Wing Kei Road Southbound	67.1%	77.3%	
2	Kwai Fuk Road Northbound	67.1%	77.0%	
3	Kwai Fuk Road Southbound	65.6%	80.1%	
4	Kwai Shing Swimming Pool Eastbound	50.5%	38.0%	
5	Kwai Shing Swimming Pool Westbound	45.0%	51.2%	

### 3.0 THE PROPOSED DATA CENTRE

#### Development Schedule

3.1 The Proposed Data Centre has total GFA of 10,991.880m<sup>2</sup>, and run-in/out is provided at Wing Kin Road, which is at the same location as the Approved A/KC/496.

### Provision of Internal Transport Facilities

3.2 The internal transport facilities for the Proposed Data Centre are provided in accordance to the provision rates found in the draft Provisional Basic Terms Offer ("draft PBTO") and these are presented in Table 3.1. The draft PBTO is found in Appendix 3.

# TABLE 3.1INTERNAL TRANSPORT FACILITIES OF THE PROPOSED DATA<br/>CENTRE

Draft PBTO	Proposed Provision (Data Centre GFA 10,991.880m <sup>2</sup> )
Car Parking Space	11 nos comprising of
one space for every 1,000 square metres or part thereof the gross floor area of the building or buildings erected or to be erected on the lot or part or parts of the building or buildings for the purpose of data centre	(i) 10 nos. @ 5m (L) x 2.5m (W) x 2.4m, (ii) 1 no. @ 5m (L) x 3.5m (W) x 2.4m (H) for persons with disabilities = requirement of Draft PBTO, OK
<u>Calculation:</u> 10,991.880 / 1,000 = 10.99, say <u>11 nos.</u>	
Motorcycle Parking Space	
Clause 22(c)(i)(l) 10% of the total number of the Data Centre	<u>2 nos.</u> @ 2.4m (L) x 1m (W) x 2.4m (H)
Calculation:	<u>= requirement of Draft PBTO, OK</u>
$11 \times 10\% = 1.10$ , say <u>2.10S.</u>	

TABLE 3.1 PROPOSED INTERNAL TRANS	PORT FACILITIES (CONT'D)
Draft PBTO	Proposed Provision (Data Centre GFA 10,991.880m <sup>2</sup> )
Goods Vehicle Loading / Unloading Bay	
Clause 22(e)(i)(I) one space for every 3,400 square metres or part thereof of the gross floor area of the building or buildings erected or to be erected on the lot or part or parts of the building or buildings for the purpose of data centre	<u>4 nos.</u> comprising of: (i) 1 no. HGV @ 11m (L) x 3.5m (W) x 4.7m (H) & (ii) 3 nos. LGV@ 7m (L) x 3.5m (W) x 3.6m (H)
$\frac{\text{Calculation:}}{10,991.880 / 3,400} = 3.23, \text{ say } \frac{4 \text{ nos.}}{10.991.880}$	<u>= requirement of Draft PBTO, OK</u>
<u>Clause 22(e)(ii)(l)(A)</u> the first 65% of the total number of spaces shall each measure 3.5 metres in width and 7.0 metres in length with a minimum headroom of 3.6 metres provided that if the number of spaces so calculated is a decimal number, the C for T may at his absolute discretion round up or down the number to a whole number; and	
Clause 22(e)(ii)(l)(B) the remaining number of spaces shall each measure 3.5 metres in width and 11.0 metres in length with a minimum headroom of 4.7 metres.	
$\frac{\text{Calculation:}}{\text{LGV} = 4 \times 65\%} = 2.6, \text{ say } \frac{3 \text{ nos.}}{1 \text{ nos.}}$ $\text{HGV} = 4 - 3 = \frac{1 \text{ no.}}{1 \text{ no.}}$	
<u>Clause 22(e)(iii)(l)</u> the first 60% of the spaces of the respective dimensions as provided under sub-clauses (e)(ii)(l)(A) and (e)(ii)(l)(B) of this Special Condition (as may be varied under Special Condition No. (23) hereof) shall be used for the loading and unloading of goods vehiclesand the remaining number of spaces shall be used for parking of goods vehicles.	
$\frac{\text{Calculation:}}{3 \text{ nos. LGV}}$ $\frac{1}{L/UL} = 3 \times 60\% = 1.8, \text{ say 2 nos.}$ $\frac{1 \text{ no. HGV}}{1/UL} = 1 \times 60\% = 0.6, \text{ say 1 no.}$ $\frac{1 \text{ parking}}{1} = 0$	

- 3.3 Table 3.1 shows that the internal transport facilities provided comply with the requirement of draft PBTO.
- 3.4 The carpark layout plans for G/F and B1/F are shown in Figures 3.1 3.2.

### Vehicle Lift Analysis

3.5 A light goods vehicle lift is provided to access B1/F from G/F. A vehicle lift analysis was conducted to check on the operation of the vehicle lift system, and it was found that the vehicle lift system is acceptable and can serve the Proposed Data Centre. The vehicle lift analysis is attached in Appendix 4.

### Swept Path Analysis

3.6 The CAD-based swept path analysis program, Autodesk Vehicle Tracking, was used to check the ease of vehicle manoeuvring. Vehicles are found to have no manoeuvring problems and all vehicles could enter and leave the spaces with ease. The swept path analysis drawings for critical movements are found in Appendix 5.

# 4.0 TRAFFIC IMPACT

Design Year

4.1 The Proposed Data Centre is expected to be completed by 2029, and the design year adopted for the capacity analysis is 2032, i.e. 3 years after the completion of the Proposed Data Centre.

Traffic Forecasting

- 4.2 The 2032 traffic flows used for the junction analysis are produced with reference to the following:
  - (i) 2031 traffic flows derived with reference to Base District Traffic Model ("BDTM");
  - (ii) estimated traffic growth from 2031 to 2032 based on the higher of the (a) 2021 based Territorial Population and Employment Data Matrix ("TPEDM") data produced by Planning Department ("PlanD") for Kwai Tsing District, (b) Hong Kong Population Projections 2022 2046 published by Census and Statistics Department ("C&SD"), or (c) historic Annual Average Daily Traffic Growth ("AADT") produced by TD; and
  - (iii) traffic generated by the Proposed Data Centre.

### Estimated Traffic Growth Rate from 2031 to 2032

4.3 The (a) 2021 – based TPEDM data for Kwai Tsing District, and the (b) Hong Kong Population Projections 2022 – 2046, and (c) historic AADT are summarised in Tables 4.1 – 4.3 respectively.

### TABLE 4.12021-BASED TPEDM DATA FOR KWAI TSING DISTRICT

Item	TPEDM Estimation / Projection			Annual Growth Rate		
	2021	2026	2031	2021	2026	2021
				to 2026	to 2031	to 2031
Population	495,800	488,750	483,050	-0.20%	-0.23%	-0.22%
Employment	226,350	223,400	227,800	-0.19%	0.39%	0.05%

### TABLE 4.2HONG KONG POPULATION PROJECTIONS 2022 – 2046

Whole Territo	ry Population	Annual Growth Rate
Year 2031	Year 2032	2031 to 2032
7,820,200	7,862,100	+0.54%

### TABLE 4.3 AADT OF THE STATION IN THE VICINITY OF THE SUBJECT SITE

Station	5224	6022	6645
Road	Kwai Fuk Road	Kwai Fuk Road	Wing Kei Road
From	Shing Fuk Street	Shing Fuk Street	Wing Kin Road
То	Texaco Road	Hing Fong Road	Kwai Hei Street
2014	15,660	25,720	3,830
2015	15,960	26,200	3,690
2016	16,400	26,930	3,990
2017	16,700	24,700	3,800
2018	12,760	24,160	2,690
2019	15,370	24,070	3,180
2020	15,220	23,840	3,790
2021	15,800	24,760	3,600
2022	15,640	29,760	3,560
2023	15,680	26,420	3,600

Average Annual Growth	-0.01%	-0.30%	-0.69%

4.4 Table 4.1 shows that the highest annual growth rate for population is -0.20% and for employment is +0.39%. Table 4.2 shows that the annual growth rate from 2031 to 2032 is +0.54%. Table 4.3 shows that in the historic AADT of the stations between 2014 and 2023 in the vicinity has highest growth rate of only - 0.30% per annum. To be conservative, the growth rate of +1% per annum is adopted to estimate the traffic growth from 2031 to 2032.

### Traffic Generated by the Proposed Data Centre

4.5 Traffic generation associated with the Proposed Data Centre is calculated based on results presented in Table 2.3, and the calculation is presented in Table 4.4. The comparison of traffic generation between Approved A/KC/496 and the Proposed Data Centre is presented in Table 4.4.

# TABLE 4.4COMPARISONOFTRAFFICGENERATIONBETWEENAPPROVED A/KC/496 AND THE PROPOSED DATA CENTRE

Item	AM Peak Hour			PM Peak Hour			
	In	Out	2-way	In	Out	2-way	
Trip Generation Rates (pcu/hour/100m <sup>2</sup> GFA) in Table 2.3							
Data Centre	0.0457	0.0305	NA	0.0355	0.0660	NA	
Traffic Generation of Proposed Data Centre (pcu/hour)							
The Proposed Data Centre: 10,991.880m <sup>2</sup> [a]	<u>6</u>	<u>4</u>	<u>10</u>	<u>4</u>	<u>8</u>	<u>12</u>	
Approved A/KC/496 [b]	<u>19</u>	13	32	14	<u>19</u>	33	
Difference [a] – [b]	-13	-9	-22	-10	-11	-21	

- 4.6 Table 4.4 shows that compared with the Approved A/KC/496, the Proposed Data Centre generates 22 and 21 pcu (2-way) less during the AM and PM peak hours. It can be concluded from traffic generation aspect that compared with the Approved A/KC/496, the Proposed Data Centre is better-off scheme.
- 4.7 The ingress / egress route for traffic generated by the Proposed Data Centre is shown in Figure 4.1.

2032 Traffic Flows

4.8 Year 2032 traffic flows for the following cases are derived:

2032without the Proposed Data Centre [A]	<ul> <li>= (i) 2031 traffic flows derived with reference to BDTM</li> <li>+ (ii) estimated total growth from 2031 to 2032</li> </ul>
2032 with the Proposed	= [A] + (iii) Traffic generated by the Proposed Data
Data Centre [B]	Centre (Table 4.4)

4.9 The 2032 peak hour traffic flows for the cases without and with the Proposed Data Centre, are shown in Figures 4.2 - 4.3, respectively.

2032 Junction Operational Performance

4.10 Year 2032 capacity analysis for the cases without and with the Proposed Data Centre are summarised in Table 4.5 and detailed calculations are found in the Appendix 1.

Junction	Type of Junction / Parameter <sup>(1)</sup>	Without the Proposed Data Centre		With the Proposed Data Centre	
		AM	PM	AM	PM
		Peak	Peak	Peak	Peak
Wing Kei Road / Wing Kin Road	Priority / RFC	0.363	0.497	0.367	0.505
Kwai Hei Street / Wing Kei Road	Priority / RFC	0.426	0.246	0.433	0.254
Kwai Hei Street / Wing Chong Street	Priority / RFC	0.084	0.157	0.084	0.157
Kwai Hei Street / Wing Kin Road	Priority / RFC	0.132	0.231	0.136	0.234
Wing Kei Road / Kwai Fuk Road	Signalised / RC	66%	97%	66%	97%
Shing Yiu Street / Wing Kei Road	Priority / RFC	0.305	0.119	0.305	0.119
Kwai Fuk Road / Kwai Hei Street	Signalised / RC	57%	83%	57%	82%
Kwai Hei Street / Tsuen Wan Road	Priority / RFC	0.285	0.250	0.285	0.251
	Junction Wing Kei Road / Wing Kin Road Kwai Hei Street / Wing Kei Road Kwai Hei Street / Wing Chong Street Kwai Hei Street / Wing Kin Road Wing Kei Road / Kwai Fuk Road Shing Yiu Street / Wing Kei Road Kwai Fuk Road / Kwai Hei Street Kwai Hei Street / Tsuen Wan Road	Junction Type of Junction / Parameter <sup>(1)</sup> Wing Kei Road / Wing Kin Road Priority / RFC Kwai Hei Street / Wing Kei Road Priority / RFC Kwai Hei Street / Wing Chong Street Priority / RFC Kwai Hei Street / Wing Kin Road Priority / RFC Wing Kei Road / Kwai Fuk Road Signalised / RC Shing Yiu Street / Wing Kei Road Priority / RFC Kwai Fuk Road / Kwai Hei Street Signalised / RC Kwai Hei Street / Tsuen Wan Road Priority / RFC	Junction Type of Junction / Parameter <sup>(1)</sup> (Propose Parameter <sup>(1)</sup> ) Wing Kei Road / Wing Kin Road Priority / RFC 0.363 Kwai Hei Street / Wing Kei Road Priority / RFC 0.426 Kwai Hei Street / Wing Chong Street Priority / RFC 0.426 Kwai Hei Street / Wing Kin Road Priority / RFC 0.132 Wing Kei Road / Kwai Fuk Road Signalised / RC 66% Shing Yiu Street / Wing Kei Road Priority / RFC 0.305 Kwai Fuk Road / Kwai Hei Street Signalised / RC 57% Kwai Hei Street / Tsuen Wan Road Priority / RFC 0.285	Junction Junction / Junction / Parameter <sup>(1)</sup> Without the Proposed Data Centre AM PM Peak Peak Wing Kei Road / Wing Kin Road Priority / RFC 0.363 0.497 Kwai Hei Street / Wing Kei Road Priority / RFC 0.426 0.246 Kwai Hei Street / Wing Kin Road Priority / RFC 0.426 0.246 Kwai Hei Street / Wing Kin Road Priority / RFC 0.426 0.246 Kwai Hei Street / Wing Kin Road Priority / RFC 0.132 0.231 Wing Kei Road / Kwai Fuk Road Signalised / RC 66% 97% Shing Yiu Street / Wing Kei Road Priority / RFC 0.305 0.119 Kwai Fuk Road / Kwai Hei Street Signalised / RC 57% 83% Kwai Hei Street / Tsuen Wan Road Priority / RFC 0.285 0.250	Junction Junction / Junction / Parameter <sup>(1)</sup> Without the With Proposed Data Propose Centre Cer AM PM AM Peak Pe

2032 JUNCTION OPERATIONAL PERFORMANCE TABLE 4.5

Notes: <sup>(1)</sup> RC – reserve capacity RFC – Ratio of Flow to Capacity

4.11 Table 4.5 shows that the junctions operate with capacities during the AM and PM peak hours for the cases without and with the Proposed Data Centre.

2032 Link Capacity Assessment

2032 link capacity of Wing Kei Road, Wing Kin Road and Kwai Hei Street are 4.12 assessed and the results are shown in Table 4.6.

Ref	Links	Design Flow	Scenario Traffic Flow V/C Ratio (Without / With (veh/hr)		Traffic Flow (veh/hr)		Ratio
		(veh/hr)	Proposed	AM	PM	AM	PM
			Development)	Peak	Peak	Peak	Peak
L1	Wing Kei Road	800	Without	334	203	0.418	0.254
			With	335	203	0.419	0.254
L2	Wing Kin Road	400	Without	217	280	0.543	0.700
			With	221	281	0.553	0.703
L3	Kwai Hei Street	800	Without	409	338	0.511	0.423
			With	413	341	0.516	0.426

TABLE 4.6 2032 LINK CAPACITY ASSESSMENT

4.13 Table 4.6 shows that the traffic generation associated with the Proposed Data Centre has negligible traffic impact to the road link analysed.

Impact on Utilisation of 5 Surveyed Bus Stops

The number of passengers associated with the Proposed Data Centre using 4.14 public transport is calculated based on the pedestrian generation of the Proposed Data Centre. The comparison of pedestrian generation between Approved A/KC/496 and the Proposed Data Centre is presented in Table 4.7.

# TABLE 4.7COMPARISONOFPEDESTRAINGENERATIONBETWEENAPPROVED A/KC/496 AND THE PROPOSED DATA CENTRE

Item	AN	1 Peak Ho	ur	PN	/I Peak Ho	ur
	In	Out	2-way	In	Out	2-way
Pedestrian Generation Rates (ped/15 n	nin/100m²	) in Table	2.4			
Data Centre	0.0660	0.0109	NA	0.0164	0.0660	NA
Pedestrian Generation of Proposed Da The Proposed Data Centre:	ita Centre <u>8</u>	(ped/15 n <u>2</u>	nin) <u>10</u>	<u>2</u>	<u>8</u>	<u>10</u>
Pedestrian Generation of Proposed Data Centre (ped/1 hour)						
The Proposed Data Centre: 10,991.880m <sup>2</sup> [a]	<u>32</u>	<u>8</u>	<u>40</u>	<u>8</u>	<u>32</u>	<u>40</u>
Approved A/KC/496 [b]	40	12	52	12	36	48
Difference [a] – [b]	-8	-4	-12	-4	-4	-8

- 4.15 Table 4.7 shows that compared with the Approved A/KC/496, the Proposed Data Centre generates 12 and 8 pedestrians (2-way) less during the AM and PM peak hours. It can be concluded from traffic generation aspect that compared with the Approved A/KC/496, the Proposed Data Centre is better-off scheme.
- 4.16 To be conservative, it is assumed that all pedestrians generated by the Proposed Data Centre use public transport services and the public transport utilisation analysis is presented in Table 4.8.

# TABLE 4.8THE UTILISATION OF THE PUBLIC TRANSPORT SERVICES FOR<br/>THE CASE WITH THE PROPOSED DATA CENTRE

No.	Location	Occupancy of Public Transport Service			
		AM Peak	PM Peak		
1	Wing Kei Road Southbound	70.6%	82.9%		
2	Kwai Fuk Road Northbound	67.4%	77.4%		
3	Kwai Fuk Road Southbound	66.0%	80.5%		
4	Kwai Shing Swimming Pool Eastbound	51.0%	38.5%		
5	Kwai Shing Swimming Pool Westbound	45.7%	51.9%		

4.17 Table 4.9 shows that the public transport service have capacity to accommodate the passenger demand generated by the Proposed Data Centre.

## 5.0 PEDESTRIAN ASSESSMENT

### Location of Surveyed Footpaths

5.1 The pedestrian assessment is undertaken for footpaths likely used by the occupants and visitors to the Proposed Data Centre. The location of the surveyed footpaths is shown in Figure 5.1.

### Estimation of Future Pedestrian Flows

- 5.2 The year 2032 pedestrian flow is estimated based on the following:
  - (i) Existing pedestrian flows;
  - (ii) Estimated annual pedestrian growth rates from 2024 to 2032; and
  - (iii) Pedestrian generated by the Proposed Data Centre in Table 4.7.

### Existing Pedestrian Flows

5.3 To quantify the existing pedestrian flows using the footpaths presented in Figure 5.1, pedestrian counts were conducted during the AM and PM peak periods on Friday, 29 November 2024. The existing peak 15-minute two-way pedestrian flows, which are obtained from the pedestrian counts, are presented in Figure 5.2.

### Estimated Annual Pedestrian Growth Rates from 2024 to 2032

5.4 The 2032 reference pedestrian flow is estimated based on the 2024 observed pedestrian flows and the annual pedestrian growth rate from 2024 to 2032. The pedestrian growth rate from 2024 to 2033 is assumed to be +1% annum which is taken from Paragraph 4.4.

### 2032 Pedestrian Flows

5.5 The 2032 pedestrian flows without and with the Proposed Data Centre are derived using the following method:

2032 without the Proposed Data Centre [A]	=	(i) existing pedestrian flows + (ii) estimated annual pedestrian growth rates from 2023 to 2032
2032 with the Proposed Data Centre [B]	=	[A] + (iii) pedestrian generated by the Proposed Data Centre (Table 4.7)

5.6 The 2032 pedestrian flows without and with the Proposed Data Centre are presented in Figures 5.3 and 5.4.

### Level-of-Service

5.7 The level-of-service (LOS) of a pedestrian facility is dependent on its width and the number of pedestrians using the facility. Description of the LOS is obtained from the TPDM, and is given in Table 5.1.

TABLE 5.1         DESCRIPTION OF PEDESTRIAN FACILITY LOS						
LOS	Maximum Pedestrian Flow Rate - ped/min/m	Description				
A	< =16	Pedestrians basically move in desired paths without altering their movements in response to other pedestrians. Walking speeds are freely selected and conflicts between pedestrians are unlikely.				
В	> 16 - 23	Sufficient space is provided for pedestrians to freely select walking speeds, to bypass other pedestrians and to avoid crossing conflicts with others. At this level, pedestrians begin to be aware of other pedestrians and to respond to their presence in the selection of walking paths.				
С	> 23 – 33	Sufficient space is available to select normal walking speeds and to bypass other pedestrians primarily in unidirectional streams. Where reverse directions or crossing movements exist, minor conflicts will occur, and speed and volume will be somewhat lower.				
D	> 33 - 49	Freedom to select individual walking speed and bypass other pedestrians is restricted. Where crossing or reverse-flow movements exist, the probability of conflict is high and its avoidance requires frequent changes in speed and position. The LOS provides reasonably fluid flow; however considerable friction and interaction between pedestrians is likely to occur.				
E	> 49 - 75	Virtually, all pedestrians would have their normal walking speed restricted. At the lower range of this LOS, forward movement is possible only by shuffling. Space is insufficient to pass over slower pedestrians. Cross- or reverse-flow movements are possible only with extreme difficulties. Design volumes approach the limit of walkway capacity with resulting stoppages and interruptions to flow.				
F	> 75	Walking speeds are severely restricted. Forward progress is made only by "shuffling". There is frequent and unavoidable contact with other pedestrians. Cross- and reverse-flow movements are virtually impossible. Flow is sporadic and unstable. Space is more characteristic of queued pedestrians than of moving pedestrian streams.				

Source: Transport Planning & Design Manual Volume 6, Transport Department

5.8 The effective width of the surveyed footpaths is presented in Table 5.2.

### TABLE 5.2EFFECTIVE WIDTH OF THE SURVEYED FOOTPATHS

Ref.	Location	Footpath Width (m)	Effective Width (m)	
1	Wing Kin Road between Wing Kei Road and	2.6	1.6	
	Kwai Hei Street			
2	Wing Kei Road between Wing Kin Road and	Eastern footpath	3.7	2.7
	Kwai Hei Street			
3	Kwai Hei Street between Wing King Road	Northern footpath	2.3	1.3
	and Wing Kei Road			

5.9 The 2032 weekday LOS at the surveyed footpaths for the cases without and with the Proposed Data Centre is presented in Table 5.3.

TABLE 5.3 2032 LOS WITHOUT AND WITH THE PROPOSED DATA CENTRE

	1		1						
Ref.	Location		Peak Period	Year 2032 without the Proposed Data Centre Ped / Ped / LOS		Year 2032 with the Proposed Data Centre Ped / Ped / LOS			
				15 min	min/m		15 min	min/m	
1	Wing Kin Road between Wing	Western footpath	AM	19	0.8	A	29	1.2	A
	Kei Road and Kwai Hei Street		PM	45	1.9	A	55	2.3	A
2	Wing Kei Road between Wing	Eastern footpath	AM	16	0.4	A	21	0.5	A
	Kin Road and Kwai Hei Street		PM	15	0.4	A	20	0.5	A
3	Kwai Hei Street between Wing	Northern footpath	AM	17	0.9	A	22	1.1	A
	King Road and Wing Kei Road		PM	22	1.1	A	27	1.4	A

5.10 Table 5.3 shows that all surveyed footpaths achieve LOS A, which concludes that the Proposed Data Centre will have no adverse impact to the footpaths in the vicinity.

### 6.0 CONCLUSION

- 6.1 The Subject Site is located at 7 11 Wing Kin Road in Kwai Chung. The existing building is vacant when this Traffic Impact Assessment is being prepared.
- 6.2 On 28 July 2023, the TPB approved the application for the Industrial Use at 7 11 Wing Kin Road (TPB ref.: A/KC/496). The owner now intends to redevelop the Subject Site into a Data Centre with a total GFA of 10,991.880m<sup>2</sup>.
- 6.3 Manual classified counts were conducted at the key junctions located in the vicinity of the Proposed Data Centre in order to establish the peak hour traffic flows. Currently, the key junctions operate with capacities during the AM and PM peak hours.
- 6.4 The internal transport facilities provided for the Proposed Data Centre comply with the requirement of draft PBTO. A light goods vehicle lift is provided to access B1/F from G/F. All vehicles could enter and leave the Proposed Data Centre and their respective space / bay with ease.
- 6.5 The run-in/out is provided at Wing Kin Road, which is at the same location as the Approved A/KC/496.
- 6.6 The Proposed Data Centre is expected to be completed by 2029, and the junction capacity analysis and link capacity analysis are undertaken for year 2032. For the design year 2032, the junctions and road links analysed are expected to operate with capacities during the peak hours for the case without and with the Proposed Data Centre.
- 6.7 The public transport services at the 5 surveyed bus stops have capacity to accommodate the passenger demand generated by the Proposed Data Centre.
- 6.8 The pedestrian assessment conducted found that the surveyed footpaths would operate with LOS A in 2032 for the cases without and with the Proposed Data Centre.
- 6.9 It is concluded that the Proposed Data Centre will result in <u>no</u> adverse traffic impact to the surrounding road network and the footpaths in the vicinity. From traffic engineering grounds, the Proposed Data Centre is acceptable.

# Figures









2.9 RevA.dwg  $\sim$ N. 01/Flg ထ္ထ 6 9

9.8	合和 <sup>建村中</sup> Hopewell Logistics Centre	MILC. Hou Fen	g Industrial D	OWT	+ 7.3
L		CHONG ST			CUL
		REET	LO		
		水肥丧	H		FP
<u>)</u>		n Kin Li	CUL		
luð		GW WAIHEISTREL			
		CUL			
Project Title	PROPOSED INFORMATION TECHNOLOGY DEVELOPMENT AT 7 - 11 WIN	AND TELECOMMUNICATION INDUSTRIES G KIN ROAD, KWAI CHUNG, NEW TERRI	(DATA CENTRE) FORIES J738	4 2.4 Revision	CKM Asia Limited
Figure Title LAYO	UT OF JUNCTION OF KWA	AI HEI STREET / WING	CHONG STREET	Designed         by         Drawn         by         Checked         by           C         Y         N         C         M         K         C           Scale         in         A4         Date         1         :         500         13         FEB         202	<ul> <li>Traffic and Transportation Planning Consultants</li> <li>21st Floor, Methodist House, 36 Hennessy Road,</li> <li>Wan Chai, Hong Kong</li> <li>Tel: (852) 2520 5990 Fax: (852) 2528 6343</li> <li>Email: mail@ckmasia.com.hk</li> </ul>

THE SUBJECT	MING Kin Industr	al Bullio	JIL N
	IN ROAD	接稿工業大 <sup>版</sup> Wan Industrial Building	
厚豐工業大庫 Industrial Building	57 H	KWAIHEISTREET KWAIHEISTREET H ⊕TTSQUECHP?	83 + Cemetery 连姆
Hou Feng "	+ 7.3	CUL	Mortuary 殮房 NTW/KT/KwaHei -02
Project Title PROPOSED INFORMATION TECHNOLOGY AND	TELECOMMUNICATION INDUSTRIES (DATA CENTRE)	Figure No. Revision	
DEVELOPMENT AT 7 – 11 WING KIN Figure Title LAYOUT OF JUNCTION OF KWA	ROAD, KWAI CHUNG, NEW TERRITORIES	J7384 2.5 A Designed by Drawn by Checked by C Y Y N C M K C Scale in A4 1 : 500 Date 13 FEB 2025	Traffic and Transportation Planning Consultants 21st Floor, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong Tel : (852) 2520 5990 Fax : (852) 2528 6343 Email : mail@ckmasia.com.hk





		Jt. N
True Horizon		
		、 、、、、 、、、 、、、 Lai King 荔景 Container Ter 貨櫃碼頭
		Kwai Chung (N) 葵涌 (北) NTW/KT/Kwa
B <sup>-1</sup> <sup>O</sup> rod <sup>ill</sup> B <sup>-1</sup> <sup>O</sup> rod <sup>0</sup> B <sup>-</sup>		L + 6.0
Project Title PROPOSED INFORMATION TECHNOLOGY AND TELECOMMUNICATION INDUSTRIES (DATA CENTRE) DEVELOPMENT AT 7 – 11 WING KIN ROAD, KWAI CHUNG, NEW TERRITORIES J738	Figure No. 34 2.8 A Desired by Deserve by Otherlad by	CKM Asia Limited
LAYOUT OF JUNCTION OF KWAI FUK ROAD / KWAI HEI STREET	C Y Y         N C M         K C           Scale in A4         Date           1 : 500         13 FEB 2025	21st Floor, Methodist House, 36 Hennessy Road, Wan Chai, Hong Kong Tel : (852) 2520 5990 Fax : (852) 2528 6343 Email : mail@ckmasia.com.hk





\JOB\J7350-J7399\J7384\2025 01\Fig 2 10 RevA.dwg














\JOB\J7350-J7399\J7384\2025 01\Fig 4.3 RevA.dwg









Appendix 1 – Calculation

Junction:	Wing Kei R	Road / W	/ing Kin R	oad					
Design Year:	2024		Job Num	ber:	J7384	Da	te:	21 J	anuary 2025
Scenario:	Existing Co	ondition							P. 1
		-							
Wing Kei	Road (Arm	n C)					Wing	Kei Road	(Arm A)
<u>109</u>	169 _		<b>→</b>						
							т	244	150
			<b>←</b> ¬	*		•	— L	244	109
	N	orth		ſ					
			54	174			ſ	AM	PM
			23	247			L	1	
		•	Wing K	in Road (A	Arm B)				
The predictive equa	ations of ca	apacity o	of moveme	ent are:					
Q-BA = D[627 +	14W-CR - `	Y(0.364	q-AC + 0.	144q-AB +	- 0.229q-	CA + 0.52q-	CB)]		
Q-BC = E[745 - Y]	/(0.364q-A	C + 0.14	4q-AB)]						
Q-CB = F[745 - 0]	.364Y(q-A(	C + q-AE	3)]	_					
The geometric para	ameters rep	oresente	ed by D, E	, ⊢ are:	0)174 0		4 5 0 1		
D = [1 + 0.09]	4(W-BA - 3)	.65)][1 +	0.0009(\	/-rBA - 120	0)][1 + 0. 0)]	0006(V-IBA ·	- 150)]		
E = [1 + 0.09] E = [1 + 0.09]	4(W-BC - 3	+ [][(50.		/-IBC - 12 / rCB - 12	0)] 0)]				
F = [1 + 0.09]	4(W-UD - 3 03/5\//	- I][(co.	- 0.0009(1	/-106 - 12	0)]				
where $T = T - 0.5$	- the desid	n flow (	of movem	ont AR of	c				
W = main	r road widt	h now t			6				
W-CR = 0	central rese	rve widt	h						
w-BA, etc	= lane wid	th to ve	hicle						
v-rBA, etc	c = visibility	to the r	iaht for wa	aitina vehio	cles in st	ream BA. etc			
v-IBA, etc	= visibility	to the le	eft for wait	ing vehicle	es in stre	am BA, etc			
	-			C C					
Geometry :		Inp	out	Inp	ut	Input		Calcu	lated
		W	10.50	V-rBA	25	w-BA	4.70	D	0.9354
	N N	W-CR		V-IBA	35	w-BC	4.70	E	1.0196
				V-rBC	40	w-CB		F	0.5860
				V-rCB				Y	0.6378
Analysis :	/l		DM		0				DM
Traffic Flows, p	cu/nr	AIM 160	PIVI 100		Cap	acity, pcu/nr		AIVI 510	PIM 527
q-CA		169	109					202	537 722
q-∪¤ a_^₽		0	0					102	122
q-AD a_AC		244	150					403 576	5/0
η-RΔ α-RΔ		∠44 17⊿	247					540	J <del>4</del> 3
g-BA α-BC		54	23						
q DO f		0 237	0.085						
·		0.201	0.000						
		Ratio-of	-flow to C	apacity	AM	PM			
			B-A		0.341	0.460			
			B-C		0.077	0.032			
			C-B		0.000	0.000			
1									

lunction:	Wing Kei	Road / W	ling Kin R	oad		-				
Design Year	2032			her.	1738	4	Da	te.	21	anuary 2025
Scenario:	Without P	roposed	Redevelo	pment	0700	<u> </u>			210	P 2
Coonano	Thateat	lopoodu		pinoin						
Wing Kei	i Road (Ar	m C)						Wing I	Kei Road	(Arm A)
118	182		<b>→</b>					0		<u> </u>
							•	— Т	262	172
			∢ך	~				-		
		North						_		
		▶ [	59	183					AM	<u>PM</u>
			<u>25</u>	<u>265</u>						
			Wing K	in Road	(Arm I	B)				
The predictive equ	ations of c	capacity o	of moveme	ent are:						
Q-BA = D[627 + 0.000]	14W-CR -	• Y(0.3640	q-AC + 0.	144q-AE	3 + 0.2	29q-	CA + 0.52q	CB)]		
Q-BC = E[745 - 7]	Y(U.364q-A	4C + 0.14	4q-AB)]							
Q - CB = F[745 - 0]	J.364 Y (Q- <i>F</i>	4C + q-AE	5)] 	<b>F</b> a						
The geometric particle $D = \begin{bmatrix} 1 \\ 0 \end{bmatrix} = \begin{bmatrix}$		epresente		, F are: / rDA 1	120/1[4			150)]		
D = [1 + 0.05]	94(W-DA - )	3.03)][1 + 2.65)][1 +		/-IDA - I / rBC /	120)][1 120)]	+ 0.0	0000(V-IDA	- 150)]		
E = [1 + 0.05] E = [1 + 0.05]	04(w-CB -	3.05)][1 + 3.65)][1 +	. 0.0009(\	/-100 - /-rCB - 1	120)] 120)]					
where $Y - 1 - 0$	0345\M	3.03)][1 +	0.0003(1	-100 -	120)]					
g-AB etc	t = the dest	ian flow c	of movem	ent AR	etc					
W = mai	or road wid	dth		ont AD,	010					
W-CR =	central res	serve widt	h							
w-BA, etc	c = lane wi	idth to vel	nicle							
v-rBA. et	c = visibilit	v to the ri	aht for wa	aitina ve	hicles	in str	eam BA. et	с		
v-IBA, etc	c = visibilit	y to the le	eft for wait	ing vehi	icles in	stre	am BA, etc			
				U						
Geometry :		Inp	ut	Ir	nput		Input		Calcu	lated
		W	10.50	V-rBA		25	w-BA	4.70	D	0.9354
		W-CR		V-IBA		35	w-BC	4.70	Е	1.0196
				V-rBC		40	w-CB		F	0.5860
				V-rCB					Y	0.6378
Analysis :										
Traffic Flows, p	ocu/hr	AM	PM			Cap	acity, pcu/h	r	AM	PM
q-CA		182	118			(	Q-BA		505	533
q-CB		0	0			(	Q-BC		698	719
q-AB		0	0			(	Q-CB		401	413
q-AC		262	172			(	Q-BAC		541	545
q-BA		183	265							
q-BC		59	25							
Т		0.244	0.086							
		Datia of	flow to C	anacity.	Λ.	Л	DM			
		Rail0-01		apacity		262 VI				
			B-C		0.	085	0.497			
			С-В		0.	000	0.000			
			55		0.	550	0.000			

Junction.	Wing Kei	Road / W	ina Kin R	oad					
Design Year	2032			her .	7384	Da	te <sup>.</sup>	21.1	anuary 2025
Scenario:	With Pror	osed Red	levelopm	ent	1001	Du		210	P 3
Wing Kei	i Road (Ar	m C)					Wing k	kei Road	(Arm A)
118	182						Ŭ		<u> </u>
			r -						
							<u> </u>	264	173
			<b>4</b> ⊣	*			<u>ا</u>		
		North		[					
		<b>、</b> [	61	185			Г	AM	PM
			<u>29</u>	<u>269</u>					
			Wing K	in Road (A	rm B)	-			
The predictive equ	ations of c	capacity of	fmoveme	ent are:					
Q-BA = D[627 +	14W-CR -	· Y(0.364q	I-AC + 0.	144q-AB +	0.229q-	CA + 0.52q-	CB)]		
Q-BC = E[745 - 1]	Y(0.364q-A	AC + 0.14	4q-AB)]						
Q-CB = F[745 - 0]	).364Y(q-A	AC + q-AB	)]						
The geometric par	ameters re	epresente	d by D, E	, F are:					
D = [1 + 0.09]	94(w-BA - 3	3.65)][1 +	0.0009(\	/-rBA - 120	0)][1 + 0.0	0006(V-IBA ·	- 150)]		
E = [1 + 0.09]	94(w-BC -	3.65)][1 +	0.0009(\	/-rBC - 12	D)]				
F = [1 + 0.09]	94(w-CB -	3.65)][1 +	0.0009(\	/-rCB - 12	D)]				
where $Y = 1 - 0$ .	.0345W								
q-AB, etc	c = the des	ign flow o	f movem	ent AB, etc	0				
W = majo	or road wid	lth							
W-CR =	central res	erve width	า						
w-BA, etc	c = lane wi	dth to veh	icle						
v-rBA, et	c = visibilit	y to the rig	ght for wa	aiting vehic	cles in str	eam BA, etc	;		
v-IBA, etc	c = visibilit	y to the le	ft for wait	ing vehicle	es in stre	am BA, etc			
								<b>.</b> .	
Geometry :		Inp	ut	Inpu	ut	Input		Calcu	lated
		W	10.50	V-rBA	25	w-BA	4.70	D	0.9354
		W-CR		V-IBA	35	w-BC	4.70	E	1.0196
				V-rBC	40	w-CB		F	0.5860
				V-rCB				Y	0.6378
Analysis :					-				
Traffic Flows, p	ocu/hr	AM	PM		Сар	acity, pcu/hr	•	AM	PM
q-CA		182	118			Q-BA		504	533
q-CB		0	0			Q-BC		697	719
q-AB		0	0			Q-CB		401	413
q-AC		264	173			Q-BAC		541	547
q-BA		185	269						
q-BC		61	29						
f		0.248	0.097						
		Ratio-of-	flow to C	apacity	AM	PM			
		E	3-A		0.367	0.505			
		E	B-C		0.088	0.040			
		(	)-В		0.000	0.000			

Junction:	Kwai Hei	Street / V	Ving Kei F	₹oad						
Design Year:	2024		Job Numł	ber:	J7384	Da	te:	21 J	anuary 2025	
Scenario:	Existing C	Condition							P. 4	
	-						., .,	- · · • • ·	 () ) )	
Kwai He	i Street (A	rm C)					Kwai ⊦	lei Street	(Arm A)	
<u>//</u>	127		<b>→</b>							
<u>100</u>	90		<u> </u>				T	111	101	
			<b>4</b>			•	-	80	<u>121</u> 19	
				ſ		↓ ┌─		00	<u>13</u>	
			160			,	Г	AM	PM	
		¥	82	62			L	,	<u> </u>	
		North	Wing K	ei Road (	(Arm B)					
			0							
The predictive eq	uations of	capacity of	of moveme	ent are:						
Q-BA = D[627 +	- 14W-CR	- Y(0.364	q-AC + 0.	144q-AB	+ 0.229q-	CA + 0.52q-	CB)]			
Q-BC = E[745 -	Y(0.364q-	AC + 0.14	14q-AB)]							
Q-CB = F[745 -	0.364Y(q-	AC + q-Al	B)]							
The geometric pa	rameters r	epresente	ed by D, E	, F are:						
D = [1 + 0.0]	94(w-BA -	3.65)][1 +	- 0.0009(\	/-rBA - 12	20)][1 + 0.0	0006(V-IBA	- 150)]			
E = [1 + 0.0]	94(w-BC -	3.65)][1 +	+ 0.0009(\	/-rBC - 12	20)]					
F = [1 + 0.0]	94(w-CB -	3.65)][1 +	+ 0.0009(\	/-rCB - 12	20)]					
where $Y = 1 - C$	).0345W									
q-AB, et	c = the des	sign flow of	of movem	ent AB, e	etc					
W = maj	jor road wi	dth								
W-CR =	central res	serve wid	th							
w-BA, et	tc = lane w	idth to ve	hicle							
v-rBA, e	tc = visibili	ty to the r	ight for wa	aiting veh	icles in str	eam BA, etc	>			
v-IBA, et	tc = visibilit	ty to the le	eft for wait	ing vehic	les in stre	am BA, etc				
O a a madan ( )		Inv	- · .1	le.	4	loout		Colou	ا - ۱ - ۱	
Geometry :		Int W	)UT	۱۳۴ ۲۰۱۰ ۱۳۴	JUT	Input	4 70	Calcu	lated	
			10.00		20	W-BA	4.70		0.9645	
					30		4.70		1.0394	
					00 140	M-CR	4.70		1.1185	
Analysis :				V-ICD	140			T	0.0000	
Analysis .	nou/hr	^ N/	DM		Can	coity pou/b		^ N/		
name riows,	pcu/m	Alvi 127	F IVI 77		Cap	αοιιγ, ρου/π Ο.ΒΛ		AIVI 524	F IVI 531	
4-0A a-CB		، ے ا ۵۸	100		, (			730	7/2	
q-0B q-AB		80	100		, (	J-DU 0.08		782	796	
4-AB a-AC		111	יט 121		Ň	9-00 0 0 0 0		643	634	
q-AC q-BA		02	62		`	J-DAU		045	034	
ч-bл a-BC		160	82							
q-bC f		0.635	02							
I I		0.035	0.005							
		Ratio-of	f-flow to C	anacity	ΔΜ	рм				
		ιταιίο-οι	-ΠΟW 10 Ο	apacity	0 176	0 117				
			B-C		0.170	0.110				
			D-0 ∩_R		0.115	0.110				
			C-D R-AC		0.392	0.120 0.227 (for	r share	d lane B/	A BC)	
			Dire		0.001	0.22. (	0110.0		(, 20)	

Design Year: 2032 Job Number: J7384 Date: 21 January 2025 Scenario: Without Proposed Redevelopment $P_{-5}$ Kwai Hei Street (Am C) Kwai Hei Street (Am C) Kwai Hei Street (Am A) $\overline{P_{-5}}$ 	Junction		Kwai Hei	Street / V	√ina Kei F	≷oad								
Scenario: Without Proposed Redevelopment $P_{1}$ $P_{1}$ $F_{2}$ $P_{2}$ $F_{3}$ $F_{4}$ $F_{$	Design Y	Year:	2032	Chock, I	Job Num	ber:	J73	84	Da	ate:	21 J	lanuarv 2025		
Kwai Hei Street (Arm C)Kwai Hei Street (Arm A) $\overline{103}$ $\overline{103}$ $\overline{103}$ $\overline{102}$ $\overline{172}$ $\overline{100}$ $\overline{172}$ $\overline{100}$ $\overline{187}$ $\overline{120}$ MorthWing Kei Road (Arm B)The predictive equations of capacity of movement are: CCBA = D[627 + 14W-CR - Y(0.364q-AC + 0.144q-AB + 0.229q-CA + 0.52q-CB)] Q-CB = E[745 - 0.364Y(q-AC + 0.144q-AB + 0.229q-CA + 0.52q-CB)] Q-CB = F[745 - 0.364Y(q-AC + 0.144q-AB)] The geometric parameters represented by D, E, F are: D = [1 + 0.094(w-CB - 3.65)][1 + 0.0009(V-RB - 120)] F = [1 + 0.094(w-CB - 3.65)][1 + 0.0009(V-RC - 120)] F = [1 + 0.034W q-AB, etc = the design flow of movement AB, etc W = major road width W-CR = contral reserve width w-BA, etc = lane width to vehicle v-IBA, etc = visibility to the left for waiting vehicles in stream BA, etc V-IBA = 00 w-BA = 4.70 D = 0.9645 V-IBA = 00 w-BA = 4.70 E = 1.0394 V-IBC = 60 w-CB = 4.70 E = 1.0394 V-RC = 0.042B = 0.0345 V-RC = 0.0248 = 0.0246 = 0.02	Scenaric	):	Without I	Proposed	Redevelo	pment				-		P. 5		
Kwai Hei Street (Arm C)Kwai Hei Street (Arm C)Kwai Hei Street (Arm C)Kwai Hei Street (Arm C)Image: Street (Arm C						·								
$\begin{array}{c c c c c c c c c c c c c c c c c c c $		Kwai Hei	i Street (A	.rm C)						Kwai H	lei Street	: (Arm A)		
$\begin{array}{c c c c c c c c c c c c c c c c c c c $		84	137		<b>→</b>									
$\begin{array}{c c c c c c c c c c c c c c c c c c c $		<u>108</u>	96	L	<u> </u>					т	<u> </u>	100		
$\begin{array}{c c c c c c c c c c c c c c c c c c c $									←	—	118	<u>132</u>		
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$					•	*					87	20		
$\begin{array}{c c c c c c c c c c c c c c c c c c c $					170	100	٦		•	г	^ N /I			
VorthViewViewViewViewQ-BA = D[627 + 14W-CR - Y(0.364q-AC + 0.144q-AB + 0.229q-CA + 0.52q-CB)]Q-BA = D[627 + 14W-CR - Y(0.364q-AC + 0.144q-AB]Q-CB = F[745 - V(0.364q-AC + 0.144q-AB)]Q-CB = [1 + 0.094(w-CB - 3.65)][1 + 0.0009(V-rBA - 120)]F = [1 + 0.094(w-CB - 3.65)][1 + 0.0009(V-rBC - 120)]F = [1 + 0.094(w-CB - 3.65)][1 + 0.0009(V-rBA - 120)]Were Y = 1 - 0.0345Wq-AB, etc = the design flow of movement AB, etcW major road widthW-CR = Central reserve widthW-PA, etc = visibility to the right for waiting vehicles in stream BA, etcV-RB 40V-RB 40V-RB 40V-RB 40V-RB 60W-BA 4.70D 0.9645V-RB 30W 10.00V-RB 40V-RB 40V-RB 60W-BA 4.70D 0.9645V-RC 100V-RB 60W-BA 4.70Q-CA 137 <td co<="" td=""><td></td><td></td><td></td><td></td><td>80</td><td>66</td><td>- </td><td></td><td></td><td>L</td><td>Alvi</td><td></td><td></td></td>	<td></td> <td></td> <td></td> <td></td> <td>80</td> <td>66</td> <td>- </td> <td></td> <td></td> <td>L</td> <td>Alvi</td> <td></td> <td></td>					80	66	-			L	Alvi		
The predictive equations of capacity of movement are: Q-BA = D[627 + 14W-CR - Y(0.364q-AC + 0.144q-AB + 0.229q-CA + 0.52q-CB)] Q-CC = E[745 - 0.364Y(q-AC + q-AB)] The geometric parameters represented by D, E, F are: D = [1 + 0.094(w-BA - 3.85)][1 + 0.0009(V-rBA - 120)][1 + 0.0006(V-IBA - 150)] E = [1 + 0.094(w-BC - 3.65)][1 + 0.0009(V-rBC - 120)] F = [1 + 0.094(w-BC - 3.65)][1 + 0.0009(V-rCB - 120)] where Y = 1 - 0.0345W q-AB, etc = the design flow of movement AB, etc W = major road width W-CR = central reserve width w-BA, etc = lane width to vehicle v-rBA, etc = visibility to the right for waiting vehicles in stream BA, etc V-IBA, etc = visibility to the left for waiting vehicles in stream BA, etc W 10.00 V-rBA 60 w-BA 4.70 D 0.9645 W-CR V-IBA 30 w-BC 4.70 E 1.0394 V-rBC 60 w-CB 4.70 F 1.1185 V-rCB 140 Y 0.6550 Analysis : Traffic Flows, pcu/hr AM PM Q-CA 137 84 Q-BA 518 525 Q-CB 96 108 Q-BC 737 740 Q-AB 87 20 Q-CB 779 793 Q-AC 118 132 Q-BAC 638 630 Q-BA 100 66 Q-BC 172 89 f 0.632 0.574 Ratio-of-flow to Capacity AM PM B-A 0.193 0.126 B-C 0.234 0.120 C-B 0.123 0.136 B-AC 0.426 0.246 (for shared lane BA, BC)				North	Wing K	ei Road	_ I (Arm	R)	I					
$ \begin{array}{llllllllllllllllllllllllllllllllllll$				North	wing is	CI INOUG	(7111	U)						
$ \begin{array}{llllllllllllllllllllllllllllllllllll$	The prec	lictive eau	lations of	capacity c	of movem	ent are:								
$ \begin{array}{llllllllllllllllllllllllllllllllllll$	Q-BA =	D[627 +	14W-CR	- Y(0.364	q-AC + 0.	144q-AE	B + 0.	229q-	CA + 0.52q	-CB)]				
$ \begin{array}{c} \text{Q-CB} = \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ $	Q-BC =	E[745 -	Y(0.364q-	AC + 0.14	I4q-AB)]	•		•	· ·					
The geometric parameters represented by D, E, F are: D = [1 + 0.094(w-BA - 3.65)][1 + 0.0009(V-rBC - 120)] F = [1 + 0.094(w-BC - 3.65)][1 + 0.0009(V-rBC - 120)] F = [1 + 0.094(w-BC - 3.65)][1 + 0.0009(V-rCB - 120)] where Y = 1 - 0.0345W q-AB, etc = the design flow of movement AB, etc W = major road width W-CR = central reserve width w-BA, etc = lane width to vehicle v-rBA, etc = visibility to the right for waiting vehicles in stream BA, etc v-rBA, etc = visibility to the left for waiting vehicles in stream BA, etc v-rBA, etc = visibility to the left for waiting vehicles in stream BA, etc W-CR V-IBA 60 w-BA 4.70 D 0.9645 W-CR V-IBA 30 w-BC 4.70 E 1.0394 V-RC 0.470 E 1.0394 V-RC 0.0426 60 w-CB 4.70 F 1.1185 V-rCB 140 Y 0.6550 Analysis : Traffic Flows, pcu/hr AM PM Capacity, pcu/hr AM PM q-CA 137 84 Q-BA 518 525 q-CB 96 108 Q-BC 737 740 q-AB 87 20 Q-CB 779 793 q-AC 118 132 Q-BAC 638 630 q-BC 172 89 f 0.632 0.574 Ratio-of-flow to Capacity AM PM B-A 0.193 0.126 B-C 0.234 0.120 C-B 0.123 0.136 B-AC 0.426 0.246 (for shared lane BA, BC)	Q-CB =	F[745 -	0.364Y(q-	AC + q-AE	3)]									
$ \begin{array}{llllllllllllllllllllllllllllllllllll$	The geor	metric par	rameters r	epresente	ed by D, E	, F are:								
$ \begin{array}{llllllllllllllllllllllllllllllllllll$	D =	[1 + 0.09	94(w-BA -	3.65)][1 +	• 0.0009(\	/-rBA - 1	120)][′	1 + 0.0	0006(V-IBA	- 150)]				
$ \begin{array}{llllllllllllllllllllllllllllllllllll$	E =	[1 + 0.09	94(w-BC -	3.65)][1 +	- 0.0009(\	/-rBC - ′	120)]							
where $Y = 1 - 0.0345W$ q-AB, etc = the design flow of movement AB, etc W = major road width W-CR = central reserve width w-BA, etc = lane width to vehicle v-rBA, etc = visibility to the left for waiting vehicles in stream BA, etc v-IBA, etc = visibility to the left for waiting vehicles in stream BA, etc Geometry : Input Input Input Calculated W 10.00 V-rBA 60 w-BA 4.70 D 0.9645 W-CR V-IBA 30 w-BC 4.70 E 1.0394 V-rBC 60 w-CB 4.70 F 1.1185 V-rCB 140 Y 0.6550 Analysis : Traffic Flows, pcu/hr AM PM q-CA 137 84 Q-BA 518 525 q-CB 96 108 Q-BC 737 740 q-AB 87 20 Q-CB 779 793 q-AC 118 132 Q-BAC 638 630 q-BA 100 66 q-BC 172 89 f 0.632 0.574 Ratio-of-flow to Capacity AM PM B-A 0.193 0.126 B-C 0.234 0.120 C-B 0.123 0.136 B-AC 0.426 0.246 (for shared lane BA, BC)	_ F =	[1 + 0.09	94(w-CB -	3.65)][1 +	- 0.0009(\	/-rCB - ′	120)]							
q-AB, etc = the design flow of movement AB, etc W = major road width W-CR = central reserve width w-BA, etc = lane width to vehicle v-rBA, etc = visibility to the right for waiting vehicles in stream BA, etc v-IBA, etc = visibility to the left for waiting vehicles in stream BA, etc W 10.00 V-rBA 60 w-BA 4.70 D 0.9645 W-CR V-IBA 30 w-BC 4.70 E 1.0394 V-rBC 60 w-CB 4.70 F 1.1185 V-rCB 140 Y 0.6550 Analysis : Traffic Flows, pcu/hr AM PM q-CA 137 84 Q-BA 518 525 q-CB 96 108 Q-BC 737 740 q-AB 87 20 Q-CB 779 793 q-AC 118 132 Q-BAC 638 630 q-BA 100 66 q-BC 172 89 f 0.632 0.574 Ratio-of-flow to Capacity AM PM B-A 0.193 0.126 B-C 0.234 0.120 C-B 0.123 0.136 B-AC 0.426 0.246 (for shared lane BA, BC)	where	Y = 1 - 0	.0345W											
W = major road width         W-CR = central reserve width         w-BA, etc = lane width to vehicle         v-rBA, etc = visibility to the right for waiting vehicles in stream BA, etc         v-IBA, etc = visibility to the left for waiting vehicles in stream BA, etc         Geometry :       Input       Input       Input       Calculated         W       10.00       V-rBA       60       w-BA       4.70       D       0.9645         W-CR       V-IBA       30       w-BC       4.70       E       1.0394         W-CR       V-IBA       30       w-BC       4.70       E       1.0394         W-CR       V-IBA       30       w-BC       4.70       F       1.1185         W-CR       V-IBA       30       w-BC       4.70       F       1.1185         V-RD       60       w-B       4.70       F       1.1185         V-rCB       140       Y       0.6550         Analysis :       Traffic Flows, pcu/hr       AM       PM       Q-BA       518       525         q-CA       137       84       Q-BC       737       740       Q-AB       638       630         q-BA       100       66       Q-BA		q-AB, etc	c = the de	sign flow o	of movem	ent AB,	etc							
W-CR = central reserve width         w-BA, etc = lane width to vehicle         v-rBA, etc = visibility to the right for waiting vehicles in stream BA, etc         v-IBA, etc = visibility to the left for waiting vehicles in stream BA, etc         Geometry :       Input       Input       Input       Calculated         W       10.00       V-rBA       60       w-BA       4.70       D       0.9645         W-CR       V-IBA       30       w-BC       4.70       E       1.0394         W-CR       V-IBA       30       w-BC       4.70       F       1.1185         W-CR       V-IBC       60       w-BA       518       525         Analysis :       Traffic Flows, pcu/hr       AM       PM       Q-BA       518       525         q-CB       96       108       Q-BC       737       740       Q-AB       638       630         q-AC       118       132       Q-BAC <td></td> <td>W = maj</td> <td>or road wi</td> <td>dth</td> <td>u.</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>		W = maj	or road wi	dth	u.									
W-BA, etc = lane width to Venicle         v-rBA, etc = visibility to the right for waiting vehicles in stream BA, etc         V-IBA, etc = visibility to the left for waiting vehicles in stream BA, etc         Geometry :       Input       Input       Input       Calculated         W       10.00       V-rBA       60       w-BA       4.70       D       0.9645         W-CR       V-IBA       30       w-BC       4.70       E       1.0394         V-RC       60       w-CB       4.70       F       1.1185         V-RD       60       w-CB       4.70       F       1.1185         V-RD       140       Y       0.6550       Analysis       F       1.00         Traffic Flows, pcu/hr       AM       PM       Capacity, pcu/hr       AM       PM         q-CB       96       108       Q-BA       518       525         q-CB       118       132       Q-BA       638       630			central re	Serve wiat	in Historia									
V-IBA, etc = visibility to the left for waiting vehicles in stream BA, etc         Geometry :       Input       Input       Input       Input       Calculated         W       10.00       V-rBA       60       w-BA       4.70       D       0.9645         W-CR       V-IBA       30       w-BC       4.70       E       1.0394         V-rBC       60       w-CB       4.70       F       1.1185         V-rCB       140       Y       0.6550         Analysis :       Traffic Flows, pcu/hr       AM       PM       Capacity, pcu/hr       AM       PM         q-CB       96       108       Q-BA       518       525         q-AC       118       132       Q-BA       638       630         q-BC		W-BA, et	C = lane w	/ICIN to ver		- 11:20 10	hioloc	- in ctu		~				
Geometry :       Input       Input       Input       Input       Input       Calculated         W       10.00       V-rBA       60       w-BA       4.70       D       0.9645         W-CR       V-IBA       30       w-BC       4.70       E       1.0394         V-RC       V-IBA       30       w-BC       4.70       F       1.1185         V-rBC       60       w-CB       4.70       F       1.1185         V-rBC       60       w-CB       4.70       F       1.1185         V-rBC       60       w-CB       4.70       F       1.1185         V-rCB       140       Y       0.6550         Analysis :       Traffic Flows, pcu/hr       AM       PM       Capacity, pcu/hr       AM       PM         q-CA       137       84       Q-BA       518       525         q-CB       96       108       Q-BC       737       740         q-AB       87       20       Q-CB       779       793         q-AC       118       132       Q-BAC       638       630         q-BA       100       66          B-A			C = visibili	ty to the le	Ignt ior wai	alting ve	inicies	; IN Su S stro	eam DA, etc	С				
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		V-IDA, EU		ty to the le	an ior wan	ing vern	ICIES I	nsue	am DA, eic					
W       10.00       V-rBA       60       w-BA       4.70       D       0.9645         W-CR       V-IBA       30       w-BC       4.70       E       1.0394         V-rBC       60       w-BA       4.70       F       1.1185         V-rBC       60       w-CB       4.70       F       1.1185         V-rBC       140       Y       0.6550         Analysis :       Traffic Flows, pcu/hr       AM       PM       Capacity, pcu/hr       AM       PM         q-CA       137       84       Q-BA       518       525         q-CB       96       108       Q-BC       737       740         q-AB       87       20       Q-CB       779       793         q-AC       118       132       Q-BAC       638       630         q-BA       100       66       638       630       638       630         q-BC       172       89       1       0.632       0.574       F       A       0.193       0.126         B-A       0.193       0.126       B-A       0.123       0.136       E       A       0.426       0.246 (for shared lane BA, BC)	Geometr	rv ·		Inc	nut	Ir	nnut		Input		Calcu	llated		
W-CR       V-IBA       30       w-BC       4.70       E       1.0394         W-CR       V-IBA       30       w-BC       4.70       F       1.1185         W-CR       V-IBA       60       w-CB       4.70       F       1.1185         V-rBC       60       w-CB       4.70       F       1.1185         V-rCB       140       Y       0.6550         Analysis :       Traffic Flows, pcu/hr       AM       PM       Capacity, pcu/hr       AM       PM         q-CA       137       84       Q-BA       518       525         q-CB       96       108       Q-BC       737       740         q-AB       87       20       Q-CB       779       793         q-AC       118       132       Q-BAC       638       630         q-BA       100       66       632       0.574       F       1.21         Ratio-of-flow to Capacity       AM       PM       B-A       0.193       0.126       B-C       0.234       0.120       C-B       0.234       0.120       C-B       0.246       (for shared lane BA, BC)       E	Coome	у.		W	10.00	V-rBA	iput	60	w-BA	4.70	D	0.9645		
V-rBC       60       w-CB       4.70       F       1.1185         V-rBC       140       Y       0.6550         Analysis :       Traffic Flows, pcu/hr       AM       PM       Capacity, pcu/hr       AM       PM         q-CA       137       84       Q-BA       518       525         q-CB       96       108       Q-BC       737       740         q-AB       87       20       Q-CB       779       793         q-AC       118       132       Q-BAC       638       630         q-BA       100       66       638       630       638       630         q-BC       172       89       7       0.193       0.126       8-A       0.193       0.126         B-A       0.193       0.126       B-C       0.234       0.120       C-B       0.123       0.136         B-AC       0.426       0.246 (for shared lane BA, BC)       AC       0.426       0.246 (for shared lane BA, BC)				W-CR		V-IBA		30	w-BC	4.70	Ē	1.0394		
V-rCB       140       Y       0.6550         Analysis :       Traffic Flows, pcu/hr       AM       PM       Capacity, pcu/hr       AM       PM         q-CA       137       84       Q-BA       518       525         q-CB       96       108       Q-BC       737       740         q-AB       87       20       Q-CB       779       793         q-AC       118       132       Q-BAC       638       630         q-BA       100       66       638       630       638       630         q-BC       172       89       6       0.632       0.574       0.193       0.126         B-A       0.193       0.126       B-C       0.234       0.120       C-B       0.136         B-AC       0.426       0.246 (for shared lane BA, BC)       B-AC       0.426       0.246 (for shared lane BA, BC)				•• •••		V-rBC		60	w-CB	4.70	F	1.1185		
Analysis :       Traffic Flows, pcu/hr       AM       PM       Capacity, pcu/hr       AM       PM         q-CA       137       84       Q-BA       518       525         q-CB       96       108       Q-BC       737       740         q-AB       87       20       Q-CB       779       793         q-AC       118       132       Q-BAC       638       630         q-BA       100       66       4-BC       172       89       6       638       630         f       0.632       0.574       0.574       AM       PM       B-A       0.193       0.126       B-C       0.234       0.120       C-B       0.123       0.136       B-AC       0.426       0.246 (for shared lane BA, BC)       D <td></td> <td></td> <td></td> <td></td> <td></td> <td>V-rCB</td> <td></td> <td>140</td> <td>1. 02</td> <td></td> <td>Ŷ</td> <td>0.6550</td> <td></td>						V-rCB		140	1. 02		Ŷ	0.6550		
Traffic Flows, pcu/hr         AM         PM         Capacity, pcu/hr         AM         PM           q-CA         137         84         Q-BA         518         525           q-CB         96         108         Q-BC         737         740           q-AB         87         20         Q-CB         779         793           q-AC         118         132         Q-BAC         638         630           q-BA         100         66         4         638         630           q-BC         172         89         5         638         630           f         0.632         0.574         5         5         5           Ratio-of-flow to Capacity         AM         PM         5         5           B-A         0.193         0.126         5         5         5           B-C         0.234         0.120         5         5         5           C-B         0.123         0.136         5         5         5           B-AC         0.426         0.246 (for shared lane BA, BC)         5         5	Analysis	:												
q-CA       137       84       Q-BA       518       525         q-CB       96       108       Q-BC       737       740         q-AB       87       20       Q-CB       779       793         q-AC       118       132       Q-BAC       638       630         q-BA       100       66       4-BC       172       89       6       638       630         f       0.632       0.574       518       525       525       525       525         Ratio-of-flow to Capacity       AM       PM       500       500       500       500       500         B-A       0.193       0.126       500	Traffi	ic Flows, p	pcu/hr	AM	PM			Сар	acity, pcu/h	r	AM	PM		
q-CB       96       108       Q-BC       737       740         q-AB       87       20       Q-CB       779       793         q-AC       118       132       Q-BAC       638       630         q-BA       100       66       638       630         q-BC       172       89       638       630         f       0.632       0.574       0.574       740         Ratio-of-flow to Capacity       AM       PM       PM         B-A       0.193       0.126       56         B-C       0.234       0.120       67-8         C-B       0.123       0.136       56         B-AC       0.426       0.246 (for shared lane BA, BC)		q-CA		137	84			(	Q-BA		518	525		
q-AB       87       20       Q-CB       779       793         q-AC       118       132       Q-BAC       638       630         q-BA       100       66       4       638       630         q-BC       172       89       6       8       630         f       0.632       0.574       0.574       6       8         Ratio-of-flow to Capacity       AM       PM       8       8       8       8         B-A       0.193       0.126       8       8       8       8       8       8       8       8       120       120       136       136       8       8       8       136       8       8       8       8       8       8       8       8       8       8       8       136		q-CB		96	108			(	Q-BC		737	740		
q-AC       118       132       Q-BAC       638       630         q-BA       100       66       638       630       638       630         q-BC       172       89       6       89       6       638       630         f       0.632       0.574       6       8       6		q-AB		87	20			(	Q-CB		779	793		
q-BA       100       66         q-BC       172       89         f       0.632       0.574         Ratio-of-flow to Capacity       AM       PM         B-A       0.193       0.126         B-C       0.234       0.120         C-B       0.123       0.136         B-AC       0.426       0.246 (for shared lane BA, BC)		q-AC		118	132			(	Q-BAC		638	630		
q-BC       172       89         f       0.632       0.574         Ratio-of-flow to Capacity       AM       PM         B-A       0.193       0.126         B-C       0.234       0.120         C-B       0.123       0.136         B-AC       0.426       0.246 (for shared lane BA, BC)		q-BA		100	66									
f 0.632 0.574 Ratio-of-flow to Capacity AM PM B-A 0.193 0.126 B-C 0.234 0.120 C-B 0.123 0.136 B-AC 0.426 (for shared lane BA, BC)		q-BC		172	89									
Ratio-of-flow to Capacity       AM       PM         B-A       0.193       0.126         B-C       0.234       0.120         C-B       0.123       0.136         B-AC       0.426       0.246 (for shared lane BA, BC)		f		0.632	0.574									
Ratio-of-flow to Capacity       AM       PM         B-A       0.193       0.126         B-C       0.234       0.120         C-B       0.123       0.136         B-AC       0.426       0.246 (for shared lane BA, BC)														
B-A       0.193       0.126         B-C       0.234       0.120         C-B       0.123       0.136         B-AC       0.426       0.246 (for shared lane BA, BC)				Ratio-of	-flow to C	apacity	A	M	PM					
B-C       0.234       0.120         C-B       0.123       0.136         B-AC       0.426       0.246 (for shared lane BA, BC)					B-A		U	.193	0.126					
C-B 0.123 0.136 B-AC 0.426 0.246 (for shared lane BA, BC)					B-C		0	.234	0.120					
B-AC 0.426 0.246 (for shared lane BA, BC)					C-B		0	.123	0.136					
					B-AC		0	.420	0.246 (10	or snare	a lane BA	ч, вс)		

Junction:	Kwai Hei	i Street / W	ing Kei F	Road						
Design Year:	2032		Job Numl	oer:	J7384	Da	ite:	21 .	January 20	25
Scenario:	With Pro	posed Rec	levelopm	ent			-		P. 6	;
Kwai He	ei Street (A	vrm C)					Kwai I	Hei Street	t (Arm A)	
<u>84</u>	137		<b>→</b>							
<u>108</u>	96	L	<u> </u>							
						•	—	119	<u>133</u>	
		/	•	The second se				87	<u>20</u>	
			175	101	1	•	r	A N 4	DM	
			1/5	101			L	AIVI	PIVI	
		North	<u>92</u> Wing K	oi Road (	(Arm B)					
		NOTUT	wing K	ei Ruau (	АШ Б)					
The predictive eq Q-BA = D[627 + Q-BC = E[745 - Q-CB = F[745 - The geometric pa D = $[1 + 0.0$ E = $[1 + 0.0$ F = $[1 + 0.0$ where Y = 1 - C q-AB, et W = ma W-CR = w-BA, et v-rBA, et	uations of - 14W-CR Y(0.364q) 0.364Y(q) rameters of 94(w-BA - 1) 94(w-BA - 1) 94(w-BC - 1) 94(w-CB - 1) 94(w-CB - 1) 94(w-CB - 1) 94(w-CB - 1) 94(w-CB - 1) 1000000000000000000000000000000000000	capacity of - $Y(0.364c)$ - $AC + 0.14c$ - $AC + q-ABc$ representer - $3.65)][1 + content - 3.65)][1 + content - 3.65)[1 + content - content - 3.65)[1 + content - co$	f movem -AC + 0. 4q-AB)] b)] d by D, E 0.0009(\ 0.0009(\ 0.0009(\ 0.0009(\ f movem h h h h h h ft for wait	ent are: 144q-AB /-rBA - 12 /-rBC - 12 /-rCB - 12 /-rCB - 12 ent AB, e aiting vehic	+ 0.229q- 20)][1 + 0.0 20)] 20)] etc iicles in stre	CA + 0.52q- 0006(V-IBA ream BA, etc am BA, etc	•СВ)] - 150)] с			
Geometry :		Inp	ut	Int	out	Input		Calcu	lated	
ý		w	10.00	V-rBA	60	w-BA	4.70	D	0.9645	
		W-CR		V-IBA	30	w-BC	4.70	Е	1.0394	
				V-rBC	60	w-CB	4.70	F	1.1185	
				V-rCB	140			Y	0.6550	
Analysis :										
Traffic Flows,	pcu/hr	AM	PM		Cap	acity, pcu/h	r	AM	PM	
q-CA		137	84			Q-BA		518	525	
q-CB		96	108			Q-BC		736	739	
q-AB		87	20			Q-CB		778	792	
q-AC		119	133			Q-BAC		638	630	
q-BA		101	68							
q-BC		175	92							
f		0.634	0.575							
		Ratio-of- I	flow to C 3-A 3-C	apacity	AM 0.195 0.238	PM 0.130 0.124 0.126				
			3-0 R-0C		0.123	0.130 0.254 (fo	r chara	d lana P/		
			<u>-</u> 70		0.455	0.204 (10	i silait		η, ΔΟ)	

lunction:	Kwai Hai S	Street / V	Ving Chor	a Street					
Design Year	2024				7384	Da	te.	21	anuary 2025
Scenario:	Existing C	ondition		<u> </u>	/ 00+	Du		210	P 7
Coonano.	Exioting O	onanion							
Kwai Hei	Street (Arr	n C)					Kwai H	ei Street	(Arm A)
158	209		_						(
100	200		_						
							T	271	203
			<b>4</b> -1	×			L	27.	200
		/		ſ					
			40	8			Г	AM	PM
		1	74	19				7	<u></u>
	Ν	Jorth	Wina Cho	ong Street (	(Arm B)	I			
			ing one		(*)				
The predictive equ	uations of c	apacity o	of moveme	ent are:					
Q-BA = D[627 +	14W-CR -	Y(0.364	a-AC + 0.	144a-AB +	0.229a-	CA + 0.52a-	CB)1		
Q-BC = E[745 - 3]	Y(0.364a-A	C + 0.14	44a-AB)1		004	oq	0=/]		
Q-CB = F[745 - (	0.364Y(q-A	C + a-Al	B)]						
The geometric par	ameters re	presente	ed by D. E	F are:					
D = [1 + 0.09]	94(w-BA - 3	3.65)][1 -	+ 0.0009(\	/-rBA - 120	)][1 + 0.0	0006(V-IBA	- 150)]		
E = [1 + 0.09]	94(w-BC - 3	3.65)][1 -	+ 0.0009(\	/-rBC - 120	))]				
F = [1 + 0.09]	94(w-CB - 3	3.65)][1 -	+ 0.0009(\	/-rCB - 120	))]				
where $Y = 1 - 0$	.0345W								
a-AB. etc	c = the desi	an flow (	of movem	ent AB. etc					
W = maio	or road wid	th		,					
W-CR =	central rese	erve wid	th						
w-BA, etc	c = lane wic	dth to ve	hicle						
v-rBA, et	c = visibility	/ to the r	ight for wa	aitina vehic	les in str	ream BA, etc	0		
v-IBA etc	c = visibility	to the le	eft for wait	ina vehicle	s in stre	am BA_etc			
,						,			
Geometry :		Inc	out	Inpu	t	Input		Calcu	lated
ý		w	10.00	V-rBA	20	w-BA	4.70	D	0.9218
		W-CR		V-IBA	20	w-BC	4.70	E	0.9998
				V-rBC	20	w-CB		F	0.5860
				V-rCB	20	W 02		Y	0.6550
Analysis ·				VIOD				•	0.0000
Traffic Flows r	ocu/hr	АМ	PM		Can	acity neu/h	r	АМ	PM
a-CA	500/11	209	158		Cup	O-BA		490	512
q-CB		200	0					680	696
q-0B g-AB		0	0			Q-D0 0-CB		300	408
4-AD		271	202					630	400
q-AC		2/1	203			Q-DAC		039	049
q-ва а вС		40	19						
q-вС		40	0 700						
T		0.833	0.796						
		Detie of							
		Ratio-of	r-flow to C	apacity	AM	PM			
			B-A		0.016	0.037			
			B-C		0.059	0.106			
			C-B		0.000	0.000			50)
			R-AC		0.075	0.143 (fo	r snared	i iane BA	, вС)

Junction:	Kwai Hei	Street / W	/ing Chor	ng Street					
Design Year:	2032	0	lob Num	ner:	.17384	Da	te:	21 J	anuary 2025
Scenario:	Without F	Proposed I	Redevelo	oment	0,00.				P. 8
				<u>P</u>					
Kwai He	i Street (A	rm C)					Kwai He	ei Street	(Arm A)
<u>172</u>	223		<b>→</b>						
							— L	290	<u>221</u>
		,	•ๅ	~					
		/	1	1	I		-		
		/	43	10			L	AM	<u>PM</u>
		► L	<u>81</u> Ming Chr	<u>20</u>	+ (Arm B)	I			
		NOTUL	/ving one	ny Suee	t (Ann Bj				
The predictive equ	uations of (	capacity o	fmovem	ent are:					
Q-BA = D[627 +	- 14W-CR	- Y(0.364c	1-AC + 0.	144q-AB	+ 0.229a-	CA + 0.52a-	CB)]		
Q-BC = E[745 -	Y(0.364q-	AC + 0.14	4a-AB)]				<b>~</b> =/1		
Q-CB = F[745 -	0.364Y(q-/	AC + q-AE	3)]						
The geometric par	rameters re	epresente	d by D, E	, F are:					
D = [1 + 0.09]	94(w-BA -	3.65)][1 +	0.0009(\	/-rBA - 12	20)][1 + 0.0	0006(V-IBA -	- 150)]		
E = [1 + 0.09]	94(w-BC -	3.65)][1 +	0.0009(\	/-rBC - 12	20)]				
F = [1 + 0.09]	94(w-CB -	3.65)][1 +	0.0009(\	/-rCB - 12	20)]				
where $Y = 1 - 0$	.0345W		-						
q-AB, etc	c = the des	sign flow o	of movem	ent AB, e	tc				
VV = maj	or road wi	dth widt	L						
		Serve wiuu	n Siala						
w-DA, et v-rBA of	C = lane w to - visibili	ty to the ri	ncie abt for wa	niting veh	icles in str	room RA atc			
v-IBA et	c = visibilit	ty to the le	off for wait	ting vehic	loe in stre	ean BA etc	,		
v-10A, Ct			It ior wan	ing verne		ani DA, etc			
Geometry :		Inp	ut	Ing	out	Input		Calcul	lated
••••••		w	10.00	V-rBA	20	w-BA	4.70	D	0.9218
		W-CR	-	V-IBA	20	w-BC	4.70	Е	0.9998
				V-rBC	20	w-CB		F	0.5860
				V-rCB				Y	0.6550
Analysis :									
Traffic Flows,	pcu/hr	AM	PM		Сар	acity, pcu/hr		AM	PM
q-CA		223	172		(	Q-BA		483	506
q-CB		0	0		(	Q-BC		676	692
q-AB		0	0		(	Q-CB		396	406
q-AC		290	221		(	Q-BAC		629	645
q-BA		10	20						
d-RC		43	81						
t		0.811	0.802						
		Datio of	" to C		~ • • •				
		Ratio-oi-		apacity					
		1	5-A R_C		0.021	0.040			
			⊃-0 ∩_R		0.004	0.117			
		Ì	R-AC		0.000	0.000 0.157 (foi	r shared	I lane BA	RC)
		-	2710		0.001	0.107 (10)	onaroa		., 20)

lunction:	Kwai Hai	Stroot / W	ing Chor	a Stroot					
Docion Vear	2022	Sucer / w	Ing Chon	ly Sileer	1720/		+	21	201001 2025
Design real.	2032	J Second Rod		ont J	1/304	Dai	te.	2 I J	
Scenano.		JOSEU REU	evelopin	eni					Г. Э
Kwai Hei	i Street (Ar	rm C)					Kwai He	ei Street	(Arm A)
172	223						10000		(/ / .)
						•	T	294	225
			<b>4</b> -]	*			<u>ا</u> ــــ		
		/		ſ					
			43	10			Г	AM	PM
		F I	<u>81</u>	20			<b></b>	<u> </u>	
	ļ	North V	Ving Chc	ong Street	(Arm B)	•			
			-	-					
The predictive equ	uations of c	capacity of	i moveme	ent are:					
Q-BA = D[627 +	14W-CR -	- Y(0.364q	-AC + 0.	144q-AB +	- 0.229q-	CA + 0.52q-	CB)]		
Q-BC = E[745 - 7]	Y(0.364q-A	AC + 0.144	4q-AB)]						
Q-CB = F[745 -	0.364Y(q-A	AC + q-AB	)]						
The geometric par	rameters re	epresented	d by D, E	, F are:					
D = [1 + 0.09]	94(w-BA - 3	3.65)][1 +	0.0009(\	/-rBA - 120	)][1 + 0.0	0006(V-IBA -	- 150)]		
E = [1 + 0.09]	94(w-BC -	3.65)][1 +	0.0009(\	/-rBC - 120	0)]				
F = [1 + 0.09]	94(w-CB -	3.65)][1 +	0.0009(\	/-rCB - 12	0)]				
where Y = 1 - 0	.0345W								
q-AB, etc	c = the des	sign flow o	f movem	ent AB, etc	С				
W = maj	or road wid	dth							
W-CR =	central res	serve width	ı						
w-BA, et	c = lane wi	idth to veh	icle						
v-rBA, et	c = visibilit	ty to the rig	ght for wa	aiting vehic	cles in str	ream BA, etc	;		
v-IBA, et	c = visibilit	y to the lef	it for wait	ting vehicle	es in stre	am BA, etc			
		l						0	
Geometry :		Inpu	ut ta aa	Inpu	ut	Input		Calcu	lated
		W	10.00	V-rBA	20	w-BA	4.70	D -	0.9218
		W-CR		V-IBA	20	w-BC	4.70	E -	0.9998
				V-rBC	20	w-CB		F	0.5860
				V-rCB				Y	0.6550
Analysis :					0				
I rattic Flows, p	ocu/hr	AM	PM		Cap	acity, pcu/nr	2	AM	PM
q-CA		223	1/2			Q-BA		483	505
q-CB		0	0			Q-BC		675	691
q-AB		0	0			Q-CB		395	405
q-AC		294	225			Q-BAC		628	644
q-BA		10	20						
q-BC		43	81						
f		0.811	0.802						
		Ratio-ot-	flow to C	apacity	AM	PM			
		E	3-A		0.021	0.040			
		E	3-C		0.064	0.117			
		(	)-В		0.000	0.000			
		E	3-AC		0.084	0.157 (for	r shared	lane BA	л, BC)

Junction	:	Kwai He	i Street / V	/ina Kin F	Road						
Design \	Year:	2024		Job Numl	per:	J7384	Da	te:	21 J	anuary 2025	
Scenario	D:	Existing	Condition		•			-		P. 10	
		Ŭ									
	Kwai He	i Street (A	Arm C)					Kwai H	lei Street	(Arm A)	
	<u>158</u>	209		<b>→</b>							
	<u>168</u>	93	1	~							
							•	— L	128	<u>82</u>	
									183	<u>195</u>	
							*	r	<u> </u>		
								L	AM	<u>PM</u>	
			<b>▶</b>			A D)					
			North	wing K	in Road (	Arm B)					
The prec Q-BA = Q-BC = Q-CB = The geo D = E = F = where	dictive equ D[627 + 1] = D[627 + 1] = D[6	uations of 14W-CR Y( $0.364q$ 0.364Y(q) rameters 94(w-BA 94(w-BA 94(w-CB 0.0345W c = the de or road w central re c = lane v tc = visibil c = visibil	capacity of - Y(0.3644 -AC + 0.14 -AC + q-AE represente - 3.65)][1 + - 3.65)][1 + - 3.65)][1 + - 3.65)][1 + esign flow of idth eserve width vidth to vel ity to the ri- ity to the left	of moveme q-AC + 0. (4q-AB)] (3)] (0.0009(\))))))))))))))))))))))))))))))))))	ent are: 144q-AB /-rBA - 12 /-rBC - 12 /-rCB - 12 ent AB, e aiting vehic	+ 0.229q- 20)][1 + 0.0 20)] 20)] tc icles in stre les in stre	CA + 0.52q- 0006(V-IBA eam BA, etc am BA, etc	CB)] - 150)]			
Geometr	rv ·		Inc	ut	Inr	out	Input		Calcu	lated	
Coomou	y.		W	10.40	V-rBA		w-BA		D	0.5332	
			W-CR		V-IBA		w-BC		E	0.5860	
					V-rBC		w-CB	4.70	F	1.1481	
					V-rCB	170			Y	0.6412	
Analysis	:										
Traffi	ic Flows,	pcu/hr	AM	PM		Cap	acity, pcu/hi		AM	PM	
	q-CA		209	158		(	Q-BA		276	272	
	q-CB		93	168		(	Q-BC		409	415	
	q-AB		183	195		(	Q-CB		772	781	
	q-AC		128	82		(	Q-BAC		276	272	
	q-BA		0	0							
	q-BC		0	0							
	f		0.000	0.000							
			Ratio-of	-flow to C B-A B-C	apacity	AM 0.000 0.000	PM 0.000 0.000				
				С-В		0.120	0.215				

Junction:		Kwai Hei	Street / W	ina Kin F	Road						
Design Ye	ear:	2032	0.000.7.11	lob Numl	per:	J7384	Da	te:	21 J	anuary 202	25
Scenario:		Without I	Proposed F	Redevelo	pment		20	-		P. 1	1
	Kwai Hei	i Street (A	rm C)					Kwai H	lei Street	(Arm A)	
l l	172	223		<b>→</b>						<u> </u>	
	179	101		-							
							+	— T	139	90	
							ı———	— F	194	<u>212</u>	
-			/				+	_			
									AM	PM	
			▶								
			North	Wing K	in Road	(Arm B)					
The predi	ctive equ	uations of	capacity of	fmoveme	ent are:						
Q-BA =	D[627 +	14W-CR	- Y(0.364c	I-AC + 0.	144q-AE	3 + 0.229q-	CA + 0.52q-	CB)]			
Q-BC =	E[745 -	Y(0.364q-	AC + 0.14	4q-AB)]							
Q-CB =	F[745 -	0.364Y(q-	AC + q-AB	[)]	_						
The geom	netric pai	rameters r	epresente	d by D, E	, Fare:			4 5 0 1			
D =	[1 + 0.09]	94(w-BA -	3.65)][1 +	0.0009(\	/-rBA - 1 / - DO	[20)][1 + 0.	0006(V-IBA	- 150)]			
	[1 + 0.0]	94(W-BC -	3.65)][1 +	0.0009(\	/-rBC - ^	120)]					
F =	1 + 0.0	94(W-CB -	3.65)][1 +	0.0009(\	/-rCB - '	120)]					
where	$\mathbf{r} = \mathbf{I} - \mathbf{U}$	.034577	aian flaw a	fmaxam	ant AD	oto					
	q-AD, eli W — moi	c = che de or road wi	SIGH HOW O	movern	ent AD,	elc					
,	₩_CP –	control ro	uun eerve widtl	h							
			idth to yeh	i viclo							
	w-DA, et v-rR∆ et	c – visihili	ity to the rid	not for wa	aitina ve	hicles in st	ream BA etc				
	v-IRA et	c – visibili	ty to the le	ft for wait	ina vehi	icles in stre	am BA etc	,			
	v 10/1, ct			it for wan	ing veni						
Geometry	<i>i</i> :		Inp	ut	Ir	tuan	Input		Calcu	lated	
			W	10.40	V-rBA	-F	w-BA		D	0.5332	
			W-CR		V-IBA		w-BC		Е	0.5860	
					V-rBC		w-CB	4.70	F	1.1481	
					V-rCB	170	-	-	Y	0.6412	
Analysis :											
Traffic	Flows, I	ocu/hr	AM	PM		Cap	acity, pcu/hr		AM	PM	
	q-CA		223	172		•	Q-BA		272	267	
	q-CB		101	179			Q-BC		407	413	
	q-AB		194	212			Q-CB		766	774	
	q-AC		139	90			Q-BAC		272	267	
	q-BA		0	0							
	q-BC		0	0							
1	f		0.000	0.000							
			Ratio-of-	flow to C	apacity	AM	PM				
			E	3-A		0.000	0.000				
			E	3-C		0.000	0.000				
			(	)-В		0.132	0.231				
1											

Junction:	Kwai Hei	Street / W	ina Kin F	Road						
Design Year:	2032		lob Numl	ber:	J7384	Da	te:	21 J	anuary 2025	
Scenario:	With Pro	posed Red	evelopm	ent			_		P. 12	
		•								
Kwai He	ei Street (A	.rm C)					Kwai H	lei Street	(Arm A)	
<u>172</u>	223		<b>→</b>							
<u>181</u>	104		<b>`</b>							
						•	— L	140	<u>92</u>	
		,						197	<u>214</u>	
						*	г	A.N.4	DM	
								AM	PM	
		▶	Minak	in Dood (	Armo D)					
		North	wing K	in Road (/	Arm B)					
The predictive ec Q-BA = $D[627 + C]$ Q-BC = $E[745 + C]$ Q-CB = $F[745 + C]$ The geometric particular D = $[1 + 0.0]$ E = $[1 + 0.0]$ F = $[1 + 0.0]$ F = $[1 + 0.0]$ Where $Y = 1 - C$ Q-AB, e W = marking W-CR = W-BA, e V-IBA, e	quations of + $14W$ -CR - $Y(0.364q$ - - $0.364Y(q$ - arameters r 094(w-BA - 094(w-CB - 094(w-CB - 0.0345W tc = the des ajor road wi = central re- etc = lane w etc = visibili	capacity of - Y(0.364q AC + 0.144 AC + q-AB represented 3.65)][1 + 3.65)][1 + 3.65)][1 + 3.65)][1 + sign flow or dth serve width vidth to veh ity to the rig ty to the left	f movem (-AC + 0. 4q-AB)] )] d by D, E 0.0009(\ 0.0009(\ 0.0009(\ 0.0009(\ f movem f movem h icle ght for wait	ent are: 144q-AB , F are: /-rBA - 12 /-rCB - 12 /-rCB - 12 ent AB, et aiting vehicl	+ 0.229q-( 0)][1 + 0.0 20)] 20)] 20 cc cles in str es in strea	CA + 0.52q- 0006(V-IBA - eam BA, etc am BA, etc	CB)] - 150)]			
Goomotry		Inni	.+	Inn	+	loout		Colou	latad	
Geometry .		w	10.40	۱۱۱۲ V-rB۵	ui	w-BA		D	0 5332	
		W-CR	10.40	V-IBA		w-BC		E	0.5860	
				V-rBC		w-CB	4.70	F	1.1481	
				V-rCB	170			Ŷ	0.6412	
Analysis :										
Traffic Flows,	pcu/hr	AM	PM		Cap	acity, pcu/hr		AM	PM	
q-CA		223	172		(	Q-BA		271	267	
q-CB		104	181		(	Q-BC		407	412	
q-AB		197	214		(	Q-CB		765	773	
q-AC		140	92		(	Q-BAC		271	267	
q-BA		0	0							
q-BC		0	0							
f		0.000	0.000							
		Ratio-of- E E	flow to C 3-A 3-C C-B	apacity	AM 0.000 0.000 0.136	PM 0.000 0.000 0.234				

Junction:	Wing Kei	i Road / Kwai F	uk Roa	d										-	Job Nu	mber:	J7384
Scenario:	Existing (	Condition														Page	13
Design Year:	2024	Designe	ed By:					Checke	ed By:					Date:	21 ა	lanuary	2025
								-					-				
	Approach		Phase	Stage	Width (m)	Radius (m)	% Up-hill	Turning %	Sat. Flow	AM Peak Flow	y value	Critical y	Turning %	Sat. Flow	PM Peak Flow	y value	Critical y
							Gradient		(pcu/hr)	(pcu/hr)				(pcu/hr)	(pcu/hr)		
Kwai Fuk Road	SB	LT+SA	A1	1	3.10	16.0		88	1778	187	0.105		93	1771	158	0.089	0.089
		SA	A2	1	3.10				2065	217	0.105	0.105		2065	184	0.089	
		SA+RT	A3	1	3.10	17.0		14	2040	215	0.105		0	2065	183	0.089	
		RT	A4	1	3.10	20.0		100	1921	202	0.105		100	1921	146	0.076	
Wing Kei Road	EB	LT	B1	2	3.20	20.0		100	1800	183	0.102		100	1800	141	0.078	
		LT+SA+RT	B2	2	3.20	26.0		92	1970	200	0.102	0.102	76	1988	156	0.078	0.078
		RT	B3	2	3.20	23.0		100	1948	198	0.102		100	1948	136	0.070	
Kwai Fuk Road	NB	LT	C1	3	3.90	20.0		100	1865	214	0.115		100	1865	101	0.054	
		SA	C2	3	3.20				2075	255	0.123	0.123		2075	273	0.132	0.132
		SA+RT	C3	3	3.20	24.0		39	2026	248	0.122		34	2032	267	0.131	
Wing Kei Road	WB	LT+SA	D1	4	3.60	15.0		49	1883	95	0.050		33	1912	49	0.026	
		SA+RT	D2	4	3,60	16.0		100	1934	119	0.062	0.062	100	1934	87	0.045	0,045
				-													
pedestrian phas	se		P1	2,3,4		min c	rossing	time =	5	sec	GM +	12	sec F	GM =	17	sec	
			P2	1,2,4		min c	rossing	time =	5	sec	GM +	8	sec F	GM =	13	sec	
			P3	1,3,4		min c	rossing	time =	5	sec	GM +	9	sec F	GM =	14	sec	
			P4	1		min c	rossing	time =	5	sec	GM +	8	sec F	GM =	13	sec	
			P5	3		min c	rossing	time =	5	sec	GM +	8	sec F	GM =	13	sec	
			P6	2,3		min c	rossing	time =	5	sec	GM +	8	sec F	GM =	13	sec	
AM Traffic Flow (pcu/hr)			N	PM Traffic I	low (pcu/hr)				N	C 1010	. 400/04/ 2	05) 0	2000 - 40	0/14/ 0.05)	Note:		
362		1	Â	259					$\uparrow$	S= 1340	1 + 1 5 f/r)	Su = (S	- 2000+10	1 + 1.5 f/r			
17	232 🗲	→ 165		Ť	. 20	146		142		0		0	200)7 (				
		<b>♦</b> 424	I		→ 30		* 383		I		AM	Peak	РМ	Peak			
202				136			000	07			1+2+3+4		1+2+3+4				
407		119			110			8/ 1		Sum y	0.391		0.344				
40 <i>/</i>		25			1		15	←		L (s)	19		19				
214	96	70		101		• 92		34		C (s)	100		100				
1		10			I			01		practical y	0.729		0.729				
										R.C. (%)	86%		112%				
1	A4 A3 A2 A	2				3				4							
<- <u>₽4</u>		B1	<b>`</b>		*			4 - P1	*			4 - P1	*				
P3 .	┥┭╁┞┠	B2	*			P3				P3		, •	L n2				
•		•`*	PE			, t	DE			•		, è	D1				
× ++		*	<b>≼≯</b>			*.	ין <mark>ו</mark> וֹי	+	•	,*	<b>←</b> ►						
≰′ P2		<b>*</b> ´	H2					P5		*	P2						
<u> </u>		I					C1 C2 C3			I				I			
AM G =		I/G = 6	G =		I/G =	6	G =		I/G =	5	G =		I/G =	6	G =		
G =		I/G =	G =		I/G =		G =		I/G =		G =		I/G =		G =		
PM G =		I/G = 6	G =		I/G =	6	G =		I/G =	5	G =		I/G =	6	G =		
G =		I/G =	G =		I/G =		G =		I/G =		G =		I/G =		G =		

Junction:	Wing Kei	i Road / Kwai F	Fuk Roa	d											Job Nu	mber:	J7384
Scenario:	Without F	Proposed Rede	evelopm	nent												Page	14
Design Year:	2032	Designe	ed By:					Checke	d By:					Date:	21 .	lanuary	2025
	Approach		Phase	Stage	Width (m)	Radius (m)	% Up-hill	Turning %	Sat. Flow	AM Peak Flow	y value	Critical y	Turning %	Sat. Flow	PM Peak Flow	y value	Critical y
							Gradient		(pcu/hr)	(pcu/hr)				(pcu/hr)	(pcu/hr)		
Kwai Fuk Road	ISB	LT+SA	A1	1	3.10	16.0		87	1780	225	0.126		67	1811	173	0.096	0.096
		SA	A2	1	3.10				2065	262	0.127	0.127		2065	197	0.095	
		SA+RT	A3	1	3.10	17.0		31	2010	255	0.127		9	2049	196	0.096	
		RT	A4	1	3.10	20.0		100	1921	243	0.126		100	1921	158	0.082	
Wing Kei Road	EB	LT	B1	2	3.20	20.0		100	1800	193	0.107		100	1800	151	0.084	
		LT+SA+RT	B2	2	3.20	26.0		84	1979	212	0.107		77	1987	167	0.084	0.084
		RT	B3	2	3.20	23.0		100	1948	218	0.112	0.112	100	1948	148	0.076	
Kwai Fuk Road	I NB	LT	C1	3	3.90	20.0		100	1865	231	0.124		100	1865	109	0.058	
		SA	C2	3	3.20				2075	274	0.132	0.132		2075	293	0.141	0.141
		SA+RT	C3	3	3.20	24.0		40	2024	268	0.132		24	2044	288	0.141	
Wing Kei Road	WB	LT+SA	D1	4	3.60	15.0		74	1839	103	0.056		69	1848	53	0.029	
		SA+RT	D2	4	3.60	16.0		100	1934	129	0.067	0.067	100	1934	94	0.049	0.049
pedestrian pha	se		P1	2.3.4		min c	rossina	time =	5	sec	GM +	12	sec F	GM =	17	sec	
			P2	124		min c	rossing	time =	5	sec	GM +	8	sec F	GM =	13	sec	
			P3	134		min c	rossing	time =	5	Sec	GM +	9	sec F	GM =	14	sec	
			P4	1,0,1		min c	rossing	time =	5	Sec	GM +	8	sec F	GM =	13	sec	
			D5	3		min c	rossing	time –	5	500	2M +	8	500 F	GM -	13	600	
			P6	23		min c	rossing	timo –	5	500	2M +	Q	500 F	GM -	13	500	
			10	2,0		mino	lossing		5	300		0	3001		10	300	
AM Traffic Flow (pcu/hr	)		N	PM Traffic I	-low (pcu/hr)				N	S = 1940	+100(W-3.	25) S =	2080+10	D(W-3.25)	Note:		
387			Î	276					Î	S <sub>M</sub> = S / (	1 + 1.5 f/r)	S™ = (S	- 230) / (1	+ 1.5 f/r)			
→ 18	249 🕇	→ 178			→ 42	158	$\leftrightarrow$	153			AM	Peak	PM	Peak			
÷		558	•	ŧ			413		•		1+2+3+4		1+2+3+4				
218		129		148				94		Sum y	0.438		0.370				
438		28			482		16	⊷—		L (s)	19		19				
231	→ 104	ţ		109		▶ 99		Ŧ		C (s)	100		100				
		75						37		practical y	0.729		0.729				
										R.C. (%)	66%		97%				
1		2				3				4							
Р4	A4 A3 A2 A	1		P1		5		P1		-		P1					
P3	┛┥╿┝		[ ≁	<b>4</b>	*	P3		<b>.</b>	*	P3		<b>*</b>	*				
*		B3 +	ļ			10 ¥				•		L ↓					
		1	P6			t.		4.									
▶ P2		****	₽2					P5	•	****	₽2						
L							C1 C2 C3										
AM G =		I/G = 6	G =		I/G =	6	G =		I/G =	5	G =		I/G =	6	G =		
G =		I/G =	G =		I/G =		G =		I/G =		G =		I/G =		G =		
PM G =		I/G = 6	G =		I/G =	6	G =		I/G =	5	G =		I/G =	6	G =		
G =		I/G =	G =		I/G =		G =		I/G =		G =		I/G =		G =		
L																	

Junction:	Wing Kei	Road / Kwai F	Fuk Roa	d										-	Job Nu	mber:	J7384
Scenario:	With Prop	osed Redeve	lopmen	t												Page	15
Design Year:	2032	Designe	ed By:					Checke	d By:					Date:	21 ა	January 2	2025
	Approach		Phase	Stage	Width (m)	Radius (m)	% Up-hill	Turning %	Sat. Flow	AM Peak Flow	y value	Critical y	Turning %	Sat. Flow	PM Peak Flow	y value	Critical y
Kusi Fuli Dee		17.04		4	0.40	40.0	Gradient	00	(pcu/hr)	(pcu/hr)	0.407		<u></u>	(pcu/hr)	(pcu/hr)	0.000	0.000
KWAI FUK ROA	1 5B	LI+SA	AT	1	3.10	16.0		80	1781	226	0.127	0.407	68	1810	173	0.096	0.096
		SA	A2	1	3.10	17.0			2065	262	0.127	0.127		2065	197	0.095	
		SA+RI	A3	1	3.10	20.0		100	2007	255	0.127		100	2045	196	0.096	
		K I	A4	-	3.10	20.0		100	1921	244	0.127		100	1921	159	0.065	
Wine Kei Dee		1.7	DA	0	0.00	00.0		400	4000	404	0.400		400	4000	450	0.005	
wing Kei Road	JEB		BI	2	3.20	20.0		100	1800	194	0.108		70	1800	153	0.085	0.005
		LI+SA+RI	B2 B2	2	3.20	26.0		400	1978	213	0.108	0 1 1 2	100	1986	149	0.085	0.085
		RI	В3	2	3.20	23.0		100	1948	218	0.112	0.112	100	1948	148	0.076	
			- ·	-													
Kwai Fuk Roa	d NB	LI	C1	3	3.90	20.0		100	1865	231	0.124		100	1865	109	0.058	
		SA	C2	3	3.20				2075	274	0.132	0.132		2075	293	0.141	0.141
		SA+RT	C3	3	3.20	24.0		40	2024	268	0.132		24	2044	288	0.141	
Wing Kei Road	dWB	LT+SA	D1	4	3.60	15.0		74	1839	103	0.056		69	1848	53	0.029	
		SA+RT	D2	4	3.60	16.0		100	1934	129	0.067	0.067	100	1934	94	0.049	0.049
pedestrian pha	ise		P1	2,3,4		min c	rossing	time =	5	sec	GM +	12	sec F	GM =	17	sec	
			P2	1,2,4		min c	rossing	time =	5	sec	GM +	8	sec F	GM =	13	sec	
			P3	1,3,4		min c	rossing	time =	5	sec	GM +	9	sec F	GM =	14	sec	
			P4	1		min c	rossing	time =	5	sec	GM +	8	sec F	GM =	13	sec	
			P5	3		min c	rossing	time =	5	sec	GM +	8	sec F	GM =	13	sec	
			P6	2,3		min c	rossing	time =	5	sec	GM +	8	sec F	GM =	13	sec	
AM Traffic Flow (pcu/h	r)		N	PM Traffic I	-low (pcu/hr)				N	0 1010		05) 0	0000.40	0/14/ 0 05)	Note:		
389		1	^ ∧	280			1		Ϋ́.	S = 1940	+100(VV-3.	25) S=	2080+10	U(VV-3.25)			
1 40	251 🗲	178		1 1	40	159		153		5 <i>u</i> = 57 (	1 + 1.3 1/1)	0u = (0	- 230)7 (	1 + 1.3 1/1)			
	,	<b>↓</b> 558	I		→ 42		<b>+</b> 413				AM	Peak	PM	Peak			
218	·	100		148			-110				1+2+3+4		1+2+3+4				
439	2	129			482		40	94		Sum y	0.438		0.371				
	, <b></b>	28				• ••	16			L (s)	19		19				
231	- 104	75		109		- 99		37		C (s)	100		100				
					I					practical y	0.729		0.729				
										R.C. (%)	66%		97%				
1	A4 A3 A2 A1	2				3				4							
		B1	t	4. P1	*	*		4. P1	*	*		4 - P1	•				
P3 <b>↓</b>	<b>↓</b> ↓↓↓	B2 + B3	→ 1			P3				P3		<u>ن</u> ه	D2				
		<u> </u>	P6			1	P6					▲,	D1				
++ P2			<b>∢&gt;</b> P2			•	ΊŤŀ	◆ P5	•		<b>∢&gt;</b> P2						
		<b>*</b>	-				C1 C2 C3	. 5		<b>*</b>	-						
AM G-		I/G = 6	G -		I/G	6	G -		I/G	5	G -		I/G	6	G -		
G -		I/G =	G -		/G =	-	G -		./G =	-	G =		./G =	-	G -		
PM G-		I/G = 6	G -		/G -	6	G-		/G =	5	G =		/G =	6	G-		
			0 = C		"G =	-	0 = C		"G =	-	0 I		"G =	-	- -		
G =		ı/G =	G =		I/G =		G =		I/G =		G =		I/G =		G =		

Junction		Shina Yi	u Street / \	Wina Kei	Road						
Design \	Year:	2024	u 0110017	Job Num	ber:	J7384	Da	ite:	21 J	anuarv 20	25
Scenario	D:	Existing	Condition					-		P. 1	16
	Wing Ke	i Road (A	.rm C)					Wing I	Kei Road	(Arm A)	
	<u>216</u>	362		<b>→</b>							
	<u>46</u>	109	L	~							
							•		428	<u>387</u>	
			/	▲ ]	~				13	<u>22</u>	
				152		1	*	г	0.N.4	DM	
				100	0	-		L	Alvi	FIVI	
			▶ North	Shina Y	<u>15</u>	(Arm B)	I				
			North	Oning 1		(/ (111 B)					
The prec	dictive equi	lations of	canacity of	of movem	ent are:						
Q-BA =	D[627 +	14W-CR	- Y(0.364	a-AC + 0.	144a-AB	+ 0.229a-	CA + 0.52a	CB)1			
Q-BC =	E[745 -	Y(0.364a	-AC + 0.14	14a-AB)1				/1			
Q-CB =	F[745 -	0.364Y(q	-AC + q-Al	3)] 							
The geo	- metric pai	rameters	represente	ed by D, E	, F are:						
D =	[1 + 0.09	94(w-BA -	3.65)][1 +	- 0.0009(\	/-rBA - 1	20)][1 + 0.0	0006(V-IBA	- 150)]			
E =	[1 + 0.0	94(w-BC ·	- 3.65)][1 +	+ 0.0009(\	/-rBC - 1	20)]					
F =	[1 + 0.0	94(w-CB ·	- 3.65)][1 +	+ 0.0009(\	/-rCB - 1	20)]					
where	Y = 1 - 0	.0345W									
	q-AB, etc	c = the de	sign flow o	of movem	ent AB, e	etc					
	W = maj	or road w	idth								
	W-CR =	central re	serve wid	th 							
	w-BA, et	c = lane v	vidth to ve	hicle				_			
	V-rBA, et	C = VISIDII	ity to the r	ight for wa	alting ver	NCIES IN ST	eam BA, et	C			
	v-ida, el	C = VISIDII	ity to the le	en for wan	ing venic	lies in stre	am bA, etc				
Geometr	rv ·		Inr	t	In	out	Input		Calcu	lated	
Come	y.		W	17 20	V-rBA	35	w-RA	2 90	D	0 8043	
			W-CR	1.60	V-IBA	45	w-BC	2.90	E	0.8584	
			n on	1.00	V-rBC	35	w-CB	4.00	F	1.0143	
					V-rCB	100			Ŷ	0.4066	
Analysis	:										
Traffi	ic Flows, I	ocu/hr	AM	PM		Cap	acity, pcu/h	r	AM	PM	
	q-CA		362	216			Q-BA		425	451	
	q-CB		109	46			Q-BC		584	589	
	q-AB		13	22			Q-CB		689	694	
	q-AC		428	387			Q-BAC		574	552	
	q-BA		8	13							
	q-BC		153	46							
	f		0.950	0.780							
			Ratio-of	-flow to C	apacity	AM	PM				
				B-A		0.019	0.029				
				B-C		0.262	0.078				
				C-B		0.158	0.066				
				B-AC		0.281	0.107 (fo	r share	d lane BA	A, BC)	
I											

Junction:		Shina Yi	u Street / V	Wina Kei	Road							
Design Ye	ear:	2032	u 0110017	Job Num	per:	J73	384	D	ate:	21 J	anuarv 202	25
Scenario:		Without	- Proposed	Redevelo	pment						P. 17	7
			•		•							
	Kwai He	i Street (A	(rm C						Kwai H	Hei Street	(Arm A)	
	<u>233</u>	390										
	<u>50</u>	118	L	<b></b>								
								•		457	<u>415</u>	
-			, ,	_ ◀┐	7					14	<u>25</u>	
				100		-		*	г		DM	
				166	8	_			L	AM	<u>PM</u>	
			<b>▶</b>	<u>51</u> Shing V	<u>14</u>	+ ( ^ ~~						
			North	Shing r	lu Stree	t (An	п В)					
The predi Q-BA = Q-BC = Q-CB = The geom D = E = F = where	ctive equ D[ $627 + E[745 - F[745 - F[745 - G]]$ netric pan [ $1 + 0.09$ [ $1 + 0.09$ [ $1 + 0.09$ [ $1 + 0.09$ [ $1 + 0.09$ W = $1 - 0$ q-AB, eto W = maj W-CR = w-BA, eto v-rBA, eto v-rBA, eto	uations of 14W-CR Y( $0.364q$ 0.364Y(q rameters 94(w-BA - 94(w-BC - 94(w-CB - 94(w-	capacity of - Y(0.364 -AC + 0.14 -AC + q-Al represente - 3.65)][1 + - 3.65)][1 - - 3.65)][1 - esign flow of idth eserve wid width to ve ity to the left 	of moveme q-AC + 0. 14q-AB)] B)] ed by D, E + 0.0009(\ + 0.0009(\ + 0.0009(\ + 0.0009(\ of movem th hicle ight for wait	ent are: 144q-Af 144q-Af /-rBA - /-rBC - /-rCB - ent AB, ent AB, aiting ve	B + 0 120)] 120)] 120)] etc ehicle icles	.229q- [1 + 0.0 s in str in stre	CA + 0.520 0006(V-IBA ream BA, etc am BA, etc	₁-CB)] \ - 150)] tc			
Geometry	<i>,</i> •		Inr	Nut	l,	oput		Innu	t	Calcu	batel	
Geometry	/ ·		W	17 20	V-rBA	iput	35	w-BA	290	D	0 8043	
			W-CR	1.60	V-IBA		45	w-BC	2.90	Ē	0.8584	
			-		V-rBC		35	w-CB	4.00	F	1.0143	
					V-rCB		100			Y	0.4066	
Analysis :	:											
Traffic	Flows, p	ocu/hr	AM	PM			Cap	acity, pcu/	٦r	AM	PM	
	q-CA		390	233				Q-BA		418	446	
	q-CB		118	50				Q-BC		581	586	
	q-AB		14	25				Q-CB		685	690	
	q-AC		457	415				Q-BAC		571	548	
	q-BA		8	14								
	q-BC		166	51								
1	f		0.954	0.785								
			Ratio-ol	flow to C B-A B-C	apacity		AM 0.019 0.286	PM 0.031 0.087				
				U-B		(	U.172	0.073	or oher-	d loce D		
				B-AC		(	0.305	0.119 (f	or snare	a lane BA	а, вс)	

Junction.	Shina Yii	ı Street / V	Vina Kei	Road					
Design Year:	2032		Job Num	per:	17384	Da	te:	21 J	anuary 2025
Scenario:	With Pro	posed Red	levelopm	ent		20			P. 18
Kwai He	i Street (A	rm C)					Kwai H	ei Street	(Arm A)
<u>234</u>	392		<b>→</b>						
<u>50</u>	118		<u>``</u>					<u>-</u>	
						←	— L	459	<u>419</u>
		,	•┐	~				14	<u>25</u>
						+	-		
			166	8				AM	PM
		▶ L	<u>51</u> Shing V	14 iu Stroot (	Arm D)	I			
		NORT	Shing t	iu Street (	АШ Б)				
The predictive equ Q-BA = $D[627 + Q-BC = E[745 - Q-CB = F[745 - The geometric paD = [1 + 0.0]F = [1 + 0.0]F = [1 + 0.0]Where Y = 1 - 0q-AB$ , et W = maj W-CR = w-BA, et v-rBA, et	uations of - 14W-CR Y(0.364q-0.364Y(q- rameters r 94(w-BA - 94(w-BC - 94(w-CB - 0.0345W c = the des jor road wi central res tc = lane w tc = visibility c = visibility	capacity of - Y(0.364c AC + 0.14 AC + q-AB represente 3.65)][1 + 3.65)][1 + 3.65)][1 + sign flow o dth serve width vidth to veh ity to the rig	f moveme [-AC + 0. 4q-AB)] b)] d by D, E 0.0009(\ 0.0009(\ 0.0009(\ f movem h sicle ght for wait	ent are: 144q-AB - /-rBA - 12 /-rBC - 12 /-rCB - 12 ent AB, et	+ 0.229q- 0)][1 + 0.0 0)] 0)] c cles in str	CA + 0.52q- 0006(V-IBA	CB)] - 150)]		
V 10/1, 01			it for wan	ing verner	00 11 000				
Geometry :		Inp	ut	Inp	ut	Input		Calcu	lated
		W	17.20	V-rBA	35	w-BA	2.90	D	0.8043
		W-CR	1.60	V-IBA	45	w-BC	2.90	E	0.8584
				V-rBC	35	w-CB	4.00	F	1.0143
Analysia				V-ICB	100			Y	0.4066
Troffic Flows	ncu/hr	A N A	DM		Can	acity neu/b		A N /	DM
nanic Flows,	pcu/m	202	ΓIVI 23/I		Cap	ασιτy, ρου/π Ω-ΒΔ		AIVI /18	71VI 775
q-CR		118	20 <del>4</del> 50					580	585
q-CB		1/	25					695	680
q-АБ а АС		14	20					000 570	009 549
q-AC		459	419			Q-BAC		570	548
d-RM		8 400	14						
d-RC		166	51						
T T		0.954	0.785						
		Ratio-of- E	flow to C 3-A 3-C	apacity	AM 0.019 0.286	PM 0.031 0.087			
		(	С-В		0.172	0.073			
		E	B-AC		0.305	0.119 (fo	r sharec	l lane BA	, ВС)

Junction:	Kwai Fuk Roa	d / Kwai ł	Hei Stre	et										-	Job Nu	mber:	J7384
Scenario:	Existing Condi	ition														Page	19
Design Year:	2024	Designe	ed By:					Checke	ed By:					Date:	21 J	anuary	2025
	Approach		Phase	Stage	Width (m)	Radius (m)	% Up-hill	Turning %	Sat. Flow	AM Peak Flow	y value	Critical y	Turning %	Sat. Flow	PM Peak Flow	y value	Critical y
(	Opposed Turni Nearside						Gradient		(pcu/hr)	(pcu/hr)				(pcu/hr)	(pcu/hr)		
Kwai Fuk Roa	d SB	SA	A1	2,3	3.30				1945	362	0.186			1945	315	0.162	
		SA	A2	2,3	3.30				2085	389	0.187			2085	337	0.162	
Kwai Hei Stree	et EB	LT+RT	B1	1	3.20	15.0		100	1759	274	0.156	0.156	100	1759	247	0.140	0.140
Kwai Fuk Roa	d NB	LT	C1	1,2	3.50	18.0		100	1943	271	0.139		100	1943	229	0.118	
		SA	C2	2	3.50				2105	473	0.225	0.225		2105	408	0.194	0.194
		SA	C3	2	3.50				2105	473	0.225			2105	407	0.193	
									_			_					
pedestrian pha	ase		P1	3		min ci	rossing	time =	5	sec	GM +		sec F	GM =	12	sec	
			P2	2,3		min ci	rossing	time =	5	sec	GM +	4	sec F	·GM =	9	sec	
			P3	3		min c	rossing	time =	5	sec	GM +	10	sec F	GM =	15	sec	
			P4	1		min c	rossing	time =	5	sec	GM +	7	sec F	GM =	12	sec	
AM Traffic Flow (pcu/r	nr)		N	PM Traffic	Flow (pcu/hr	)			N	S = 1940	+ 100 (\\/	3 258 = 2	080 + 100	(M-3 25)	Note:		
	1		$\hat{\uparrow}$						$\dot{\uparrow}$	$S_{M} = S / ($	1 + 1.5 f/r)	S <sub>M</sub> = (S	; - 230) / ( <sup>,</sup>	1 + 1.5  f/r			
			/						/			(-					
59	751	1			36		• 652		1		AM	Peak	PM	Peak			
				_	1						1+2	1+2,3	0.004	1+2,3			
	0.40				ļ		0.45			Sum y	0.380	0.342	0.334	0.302			
215	946				211		815			L (s)	34	11	32	11			
	271 -					229	•			C (s)	120	120	120	120			
	I						I			practical y	0.645	0.818	0.660	0.818			
										R.C. (%)	70%	139%	97%	170%			
1		2			A2 A1	3			A2 A1								
	P4							₽3									
в1	<b>←&gt;</b>		P2				P2										
ר• ↓ 1			- <b>T</b>	<u>†</u> †	•		* *		•								
							P1										
c	1		C1	C2 C3			*										
		-				L				L							
AM G =	: I/G =	= 7	G =		I/G =	3	G =	24	I/G =	2	G =		I/G =		G =		
G =	: I/G =	- 7	G =		I/G =		G =		I/G =	6	G =		I/G =		G =		
PM G=	: I/G =	- 7	G =		I/G =	3	G =	22	I/G =	2	G =		I/G =		G =		
G =	: I/G =	= 7	G =		I/G =		G =		I/G =	6	G =		I/G =		G =		

Junction:	Kwai Fuk Road	d / Kwai H	Hei Stre	et											Job Nu	mber:	J7384
Scenario:	Without Propo	sed Rede	evelopm	nent												Page	20
Design Year:	2032	Designe	ed By:					Checke	ed By:					Date:	21 J	anuary	2025
r				1						AM Peak					PM Peak		
	Approach Opposed Turni Nearside		Phase	Stage	Width (m)	Radius (m)	% Up-hill Gradient	Turning %	Sat. Flow (pcu/hr)	Flow (pcu/hr)	y value	Critical y	Turning %	Sat. Flow (pcu/hr)	Flow (pcu/hr)	y value	Critical y
Kwai Fuk Roa	d SB	SA	A1	2.3	3.30				1945	439	0.226			1945	339	0.174	
		SA	A2	2.3	3.30				2085	471	0.226			2085	363	0.174	
				,=													
Kwai Hei Stree	et EB	I T+RT	B1	1	3 20	15.0		100	1759	295	0 168	0 168	100	1759	268	0 152	0 152
					0.20						000	0.100				002	002
Kwai Euk Roa	d NB	ΙT	C1	12	3 50	18.0		100	1943	291	0 150		100	1943	247	0 127	
		SA	C2	2	3 50	10.0		100	2105	512	0.243	0 243	100	2105	440	0.209	0 209
		SA	02	2	3 50				2105	512	0.240	0.240		2105	440	0.200	0.200
			00	2	0.00				2105	012	0.240			2100	0	0.203	
																<u> </u>	
																<u> </u>	
																<u> </u>	
								-									
																<u> </u>	
pedestrian pha	ase		P1	3		min c	rossing	time =	5	sec	GM +	7	sec F	GM =	12	sec	
			P2	2,3		min c	rossing	time =	5	sec	GM +	4	sec F	GM =	9	sec	
			P3	3		min c	rossing	time =	5	sec	GM +	10	sec F	GM =	15	sec	
			P4	1		min c	rossing	time =	5	sec	GM +	7	sec F	GM =	12	sec	
																<u> </u>	
																<u> </u>	
																<u> </u>	
AM Traffic Flow (pcu/h	nr)		N	PM Traffic	Flow (pcu/hr	)			N	S = 1940	+ 100 (W.	3 258 = 2	080 + 100	(W-3 25)	Note:		
	1		$\hat{\uparrow}$						Ť	$S_M = S / ($	1 + 1.5 f/r)	S <sub>M</sub> = (S	5 - 230) / (*	(++ 1.5 f/r)			
			/						/			Deek	DM	Deek			
64	910	I			40		702				1+2	1+2 3	1+2	1+2 3			
				_						0	0.411	0 304	0.361	0 3 2 7			
231	1024				228		880			Sum y	3/	11	32	11			
201	201				220	247				L (S)	120	120	120	120			
	2913					247				C (s)	0.645	0.010	0.660	0.010			
	I						I			practical y	0.045 57%	109%	0.000	150%			
		1-				-				R.C. (%)	5170	10070	0370	130 /0			
1		2			A2 A1	3		<b>←→</b>	A2 A1								
	< <u>P4</u>		<b>≜</b>				<b>≜</b>	P3									
в1			P2		↓ ↓		₽2 ↓		† †								
+ -				Î Î			Ī										
							P1										
С	1		C1	C2 C3			•										
AM G =	= I/G =	7	G =		I/G =	3	G =	24	I/G =	2	G =		I/G =		G =		
G =	= I/G =	7	G =		I/G =		G =		I/G =	6	G =		I/G =		G =		
PM G =	= I/G =	7	G =		I/G =	3	G =	22	I/G =	2	G =		I/G =		G =		
G =	= I/G =	7	G =		I/G =		G =		I/G =	6	G =		I/G =		G =		

												Job Nu	mber:	J7384
Scenario: With Proposed Redeve	lopment				Ohaalaa	d Due					Data	04	Page	21
Design Year: 2032 Designe	ed By:			_	Checke	ed By:					Date:	21 J	anuary	2025
							AM Peak					PM Peak		
Approach Opposed Turni Nearside	Phase	Stage Widt	n (m) Radius (	n) % Up-hill Gradient	Turning %	Sat. Flow (pcu/hr)	Flow (pcu/hr)	y value	Critical y	Turning %	Sat. Flow (pcu/hr)	Flow (pcu/hr)	y value	Critical y
Kwai Fuk Road SB SA	A1	2,3 3.	30			1945	439	0.226			1945	339	0.174	
SA	A2	2,3 3.	30			2085	471	0.226			2085	363	0.174	
Kwai Hei Street EB LT+RT	B1	1 3.	20 15.0		100	1759	296	0.168	0.168	100	1759	270	0.153	0.153
Kwai Fuk Road NB LT	C1	1,2 3.	50 18.0		100	1943	294	0.151		100	1943	249	0.128	
SA	C2	2 3.	50			2105	512	0.243	0.243		2105	440	0.209	0.209
SA	C3	2 3.	50			2105	512	0.243			2105	440	0.209	
		0			4	-						40		
pedestrian phase	P1	3	min	crossing	time =	5	sec			Sec F		12	sec	
	P2	2,3	min	crossing	time =	5	sec	GM +	4	sec F	GM =	9	sec	
	P3	3	<u></u>	crossing	time =	5	sec	GM +	10	sec F	GM =	15	sec	
	P4	1	min	crossing	time =	5	sec	GM +	1	sec F	GM =	12	sec	
AM Traffic Flow (pcu/hr)	N PI	M Traffic Flow (	cu/hr)			N	S = 1940	+ 100 (W-	-3.25\$ = 2	080 + 100	(W-3.25)	Note:		
	1					1	S <sub>M</sub> = S / (	1 + 1.5 f/r)	S <sup>™</sup> = (S	5 - 230) / ( <sup>-</sup>	1 + 1.5 f/r)			
↓ ,	/			Ļ		/		AM	Peak	PM	Peak	1		
64 910		4	0	702				1+2	1+2,3	1+2	1+2,3			
							Sum v	0.412	0.394	0.363	0.328			
232 1024		2	, 30	880			L (s)	34	11	32	11			
294			24	94			C (s)	120	120	120	120			
				•			practical v	0.645	0.818	0 660	0.818			
							RC (%)	57%	107%	82%	149%			
1 2			3					-			-			
·		A2 /	1		<b>←</b> ≯	A2 A1								
▲ - <sup>P4</sup> / <sub>-</sub>	<b>≜</b>			<b>≜</b>	P3									
B1		<b>↓</b>	+	₽2 ↓		† †								
+	Ī	Ī												
				P1 ↓										
L1	C1 C	2 63												
AM G = I/G = 7	G =		/G = 3	G =	24	I/G =	2	G =		I/G =		G =		
G = 1/G = 7	G =		/G =	G =		I/G =	6	G =		I/G =		G =		
PM G = I/G = 7	G =		/G = 3	G =	22	I/G =	2	G =		I/G =		G =		
0 - 1/0 - 7	G -		IG -	G -		1/G -	6	c -		I/G =		G=		

Design Year: 2024 Job Number: J7384 Date: 21 January 2025 Scenario: Existing Condition F. 27384 Date: 21 January 2025 Kwai Hei Street (Arm C) Kwai Hei Street (Arm A) 4 $387$ $327387$ $327387$ $3274$ $M$ $PMThe predictive equations of capacity of movement are:0.BA = D[627 + 14W-CR - Y(0.364q-AC + 0.144q-AB + 0.229q-CA + 0.52q-CB)]Q-BC = E[745 - V(0.364q-AC + 0.144q-AB]]Q-BC = F[745 - V(0.364q-AC + 0.144q-AB]]Q-BC = F[745 - 0.364Y(q-AC + q-AB)]The geometric parameters represented by D, E, F are:D = [1 + 0.094(w-BC - 3.65)][1 + 0.0009(V-rBA - 120)][1 + 0.0006(V-IBA - 150)]E = [1 + 0.094(w-BC - 3.65)][1 + 0.0009(V-rBC - 120)]Where Y = 1 - 0.0345Wq-AB, etc = the design flow of movement AB, etcw-IBA, etc = visibility to the inplit or waiting vehicles in stream BA, etc w-IBA, etc = visibility to the left for waiting vehicles in stream BA, etc w-IBA, etc = visibility to the left for waiting vehicles in stream BA, etc w-IBA, etc = visibility to the left for waiting vehicles in stream BA, etc w-IBA, etc = visibility to the left for waiting vehicles in stream BA, etc W-CR 0.00 V-IBA 0 w-BC 4.70 E 1.0196V-rBC 40 w-CB 0.00 D 0.5332W-CR 0.00 V-IBA 0 w-BC 4.70 E 1.0196V-rCB 0 V-rBC 40 w-BC 4.70 E 1.0196V-rCB 0 0 V-BA 288 295Q-CB 0 0 0 Q-BA 288 295Q-CB 0 0 0 Q-BA 288 295Q-CB 0 0 0 Q-BA 288 295Q-CB 387 327 Q-BAC 670 684$
Scenario:Existing ConditionP. 22Kwai Hei Street (Arm C)Kwai Hei Street (Arm C)Kwai Hei Street (Arm A) $387 327$ $387 327$ $387 327$ $387 327$ Morth 172 $172$ AM PM $387 327$ $387 327$ $387 327$ $am PM$ $a$
Kwai Hei Street (Arm C)Kwai Hei Street (Arm A)Kwai Hei Street (Arm A) $387$ $327$ $387$ $327$ $387$ $327$ $387$ $327$ $4$ MPM $4$ M $172$ $120.94$ $120.94$ $120.94$ $120.94$ $120.94$ $120.94$ $120.94$ $120.94$ $120.94$ $120.94$ $120.94$ $120.94$ $120.94$ $120.94$ $120.94$ $120.94$ $1$
Kwai Hei Street (Arm C)Kwai Hei Street (Arm A)Kwai Hei Street (Arm C)Kwai Hei Street (Arm A) $387 327$ $387 327$ $387 327$ $387 327$ $387 327$ $387 327$ $387 327$ $387 327$ $add (Arm B)$ The predictive equations of capacity of movement are:Q-BA = D[627 + 14W-CR - Y(0.364q-AC + 0.144q-AB + 0.229q-CA + 0.52q-CB)]Q-BA = D[627 + 14W-CR - Y(0.364q-AC + 0.144q-AB + 0.229q-CA + 0.52q-CB)]Q-BA = D[627 + 14W-CR - Y(0.364q-AC + 0.144q-AB]Q-BA = D[627 + 14W-CR - Y(0.364q-AC + 0.144q-AB]Q-BA = D[627 + 14W-CR - Y(0.364q-AC + 0.144q-AB]Q-BA = 0.024 CMQ-BA = 0.529q-CA + 0.52q-CB)]Q-BA = 0.029q-CA + 0.52q-CB)]Q-BA = 0.0364WQ-BA = 0.0006(V-IBA - 150)]E [1 + 0.094(w-BC - 3.65)][1 + 0.0009(V-rBC - 120)]F = [1 + 0.094(w-BC - 3.65)][1 + 0.0009(V-rB - 120)]F = [1 + 0.094(w-BC - 3.65)][1 + 0.0009(V-rB - 120)]W = major colspan="2">Morth movement AB, etcW = major colspan="2">Morth movement AB, etcW = major colspan="2">Colspan="2">Colspan="2">CalculatedW = major colspan="2">Morth movement AB, etcW = major colspan="2">Morth movement AB, etcW = major colspan="2">Morth movember<
$\begin{array}{c c c c c c c c c c c c c c c c c c c $
$\begin{array}{c c c c c c c c c c c c c c c c c c c $
$\begin{array}{c c c c c c c c c c c c c c c c c c c $
$\label{eq:response} \begin{array}{ c c c c c } \hline & & & & & & & & & & & & & & & & & & $
$\begin{array}{c c c c c c c c c c c c c c c c c c c $
$\begin{array}{c c c c c c c c c c c c c c c c c c c $
$\begin{array}{c c c c c c c c c c c c c c c c c c c $
North Tsuen Wan Road (Arm B)The predictive equations of capacity of movement are:Q-BA = D[627 + 14W-CR - Y(0.364q-AC + 0.144q-AB + 0.229q-CA + 0.52q-CB)]Q-BC = E[745 - Y(0.364q-AC + 0.144q-AB)]Q-CB = F[745 - 0.364Y(q-AC + q-AB)]The geometric parameters represented by D, E, F are:D = [1 + 0.094(w-BA - 3.65)][1 + 0.0009(V-rBA - 120)][1 + 0.0006(V-IBA - 150)]E = [1 + 0.094(w-BA - 3.65)][1 + 0.0009(V-rBC - 120)]F = [1 + 0.094(w-CB - 3.65)][1 + 0.0009(V-rBC - 120)]WereY = 1 - 0.0345Wq-AB, etc = the design flow of movement AB, etcW = major road widthW-CR = central reserve widthw-BA, etc = lane width to vehiclev-rBA, etc = visibility to the right for waiting vehicles in stream BA, etcv-IBA, etc = visibility to the left for waiting vehicles in stream BA, etcW11.00V-RC0.00V-IBC0V-CR0.00V-IBC0V-RC0V-RC0V-RC0V-RC0V-RC0V-RC0V-RC0V-RC0V-RC0V-RC0V-RC0V-RC0V-RC0V-RC0V-RC0V-RC0V-RC0V-RC <t< td=""></t<>
The predictive equations of capacity of movement are: Q-BA = D[627 + 14W-CR - Y(0.364q-AC + 0.144q-AB + 0.229q-CA + 0.52q-CB)] Q-BC = E[745 - Y(0.364q-AC + 0.144q-AB)] Q-CB = F[745 - 0.364Y(q-AC + q-AB)] The geometric parameters represented by D, E, F are: D = [1 + 0.094(w-BA - 3.65)][1 + 0.0009(V-rBA - 120)][1 + 0.0006(V-IBA - 150)] E = [1 + 0.094(w-BC - 3.65)][1 + 0.0009(V-rBC - 120)] F = [1 + 0.094(w-CB - 3.65)][1 + 0.0009(V-rCB - 120)] where Y = 1 - 0.0345W q-AB, etc = the design flow of movement AB, etc W = major road width W-CR = central reserve width w-BA, etc = lane width to vehicle v-rBA, etc = visibility to the right for waiting vehicles in stream BA, etc v-IBA, etc = visibility to the left for waiting vehicles in stream BA, etc Geometry : Input Input Input Calculated W 11.00 V-rBA 0 w-BA 0.00 D 0.5332 W-CR 0.00 V-IBA 0 w-BC 4.70 E 1.0196 V-rCB 0 V-rBC 40 w-CB 0.00 F 0.5860 V-rCB 0 V-rCB 0 V 0.6205 Analysis : Traffic Flows, pcu/hr AM PM Capacity, pcu/hr AM PM q-CA 0 0 0 Q-BA 288 295 q-CB 0 0 Q-BC 670 684
The predictive equations of capacity or movement are: Q-BA = D[627 + 14W-CR - Y(0.364q-AC + 0.144q-AB) + 0.229q-CA + 0.52q-CB)] Q-CB = F[745 - 0.364Y(q-AC + q-AB)] The geometric parameters represented by D, E, F are: D = [1 + 0.094(w-BC - 3.65)][1 + 0.0009(V-rBA - 120)][1 + 0.0006(V-IBA - 150)] E = [1 + 0.094(w-CB - 3.65)][1 + 0.0009(V-rCB - 120)] F = [1 + 0.094(w-CB - 3.65)][1 + 0.0009(V-rCB - 120)] where Y = 1 - 0.0345W q-AB, etc = the design flow of movement AB, etc W = major road width W-CR = central reserve width w-BA, etc = lane width to vehicle v-rBA, etc = visibility to the right for waiting vehicles in stream BA, etc v-IBA, etc = visibility to the right for waiting vehicles in stream BA, etc W = 11.00 V-rBA 0 w-BA 0.00 D 0.5332 W-CR 0.00 V-IBA 0 w-BC 4.70 E 1.0196 V-rBC 40 w-CB 0.00 F 0.5860 V-rCB 0 Y 0.6205 Analysis : Traffic Flows, pcu/hr AM PM Capacity, pcu/hr AM PM q-CA 0 0 Q-BA 288 295 q-CB 0 0 Q-CB 385 393 q-AC 387 327 Q-BAC 670 684
$ \begin{array}{llllllllllllllllllllllllllllllllllll$
The geometric parameters represented by D, E, F are: D = [1 + 0.094(w-BC - 3.65)][1 + 0.0009(V-rBA - 120)][1 + 0.0006(V-IBA - 150)] $E = [1 + 0.094(w-CB - 3.65)][1 + 0.0009(V-rCB - 120)]$ $F = [1 + 0.094(w-CB - 3.65)][1 + 0.0009(V-rCB - 120)]$ where Y = 1 - 0.0345W q-AB, etc = the design flow of movement AB, etc W = major road width W-CR = central reserve width w-BA, etc = lane width to vehicle v-rBA, etc = visibility to the right for waiting vehicles in stream BA, etc v-IBA, etc = visibility to the left for waiting vehicles in stream BA, etc Geometry : Input Input Input Calculated W 11.00 V-rBA 0 w-BA 0.00 D 0.5332 W-CR 0.00 V-IBA 0 w-BC 4.70 E 1.0196 V-rBC 40 w-CB 0.00 F 0.5860 V-rCB 0 Y 0.6205 Analysis : Traffic Flows, pcu/hr AM PM Capacity, pcu/hr AM PM q-CA 0 0 Q-BA 288 295 q-CB 0 0 Q-CB 385 393 q-AC 387 327 Q-BAC 670 684
$ \begin{array}{c} \text{The geometry parameters represented by D, L, Faile.} \\ \textbf{D} = [1 + 0.094(w-BA - 3.65)][1 + 0.0009(V-rBA - 120)][1 + 0.0006(V-IBA - 150)] \\ \textbf{E} = [1 + 0.094(w-CB - 3.65)][1 + 0.0009(V-rCB - 120)] \\ \textbf{Where}  Y = 1 - 0.0345W \\ \textbf{q}-AB, etc = the design flow of movement AB, etc \\ W = major road width \\ W-CR = central reserve width \\ w-BA, etc = lane width to vehicle \\ v-rBA, etc = visibility to the right for waiting vehicles in stream BA, etc \\ v-IBA, etc = visibility to the left for waiting vehicles in stream BA, etc \\ v-IBA, etc = visibility to the left for waiting vehicles in stream BA, etc \\ W  11.00  V-rBA \qquad 0  w-BA  0.00  D  0.5332 \\ W-CR  0.00  V-IBA  0  w-BC  4.70  E  1.0196 \\ V-rBC  40  w-CB  0.00  F  0.5860 \\ V-rCB  0  V - rCB  0  Y  0.6205 \\ \end{array} $
E = [1 + 0.094(w-BC - 3.65)][1 + 0.0009(V-BC - 120)] $F = [1 + 0.094(w-BC - 3.65)][1 + 0.0009(V-rBC - 120)]$ where Y = 1 - 0.0345W q-AB, etc = the design flow of movement AB, etc W = major road width W-CR = central reserve width w-BA, etc = lane width to vehicle v-rBA, etc = visibility to the right for waiting vehicles in stream BA, etc V-IBA, etc = visibility to the left for waiting vehicles in stream BA, etc Geometry : Input Input Input Calculated W 11.00 V-rBA 0 w-BA 0.00 D 0.5332 W-CR 0.00 V-IBA 0 w-BC 4.70 E 1.0196 V-rBC 40 w-CB 0.00 F 0.5860 V-rCB 0 Y 0.6205 Analysis : Traffic Flows, pcu/hr AM PM Capacity, pcu/hr AM PM q-CA 0 0 Q-BA 288 295 q-CB 0 0 Q-BC 670 684 q-AB 0 0 Q-CB 385 393 q-AC 387 327 Q-BAC 670 684
F = [1 + 0.054(w-CB - 3.65)][1 + 0.0009(V-rCB - 120)] where $Y = 1 - 0.0345W$ $q-AB, etc = the design flow of movement AB, etc$ $W = major road width$ $W-CR = central reserve width$ $w-BA, etc = lane width to vehicle$ $v-rBA, etc = visibility to the right for waiting vehicles in stream BA, etc$ $V-IBA, etc = visibility to the left for waiting vehicles in stream BA, etc$ Geometry : $Input$ $V-R$ $0.00$ $V-rBA$ $0.00$ $V - BA$ $0.00$ $V - BC$ $0.00$ $V - BC$ $0.00$ $V - BC$ $V - CB$ $0.00$ $V - CB$ $0.00$ $V - CB$ $0$ $0$ $0$ $0$ $0$ $0$ $0$ $0$ $0$ $0$
where $Y = 1 - 0.0345W$ q-AB, etc = the design flow of movement AB, etc W = major road width W-CR = central reserve width w-BA, etc = visibility to the right for waiting vehicles in stream BA, etc v-IBA, etc = visibility to the left for waiting vehicles in stream BA, etc Geometry : Input Input Input Calculated W = 11.00 V-rBA 0 w-BA 0.00 D 0.5332 W-CR 0.00 V-IBA 0 w-BC 4.70 E 1.0196 V-rBC 40 w-CB 0.00 F 0.5860 V-rCB 0 Y 0.6205 Analysis : Traffic Flows, pcu/hr AM PM Capacity, pcu/hr AM PM q-CA 0 0 Q-BA 288 295 q-CB 0 0 Q-BC 670 684 q-AB 0 0 Q-CB 385 393 q-AC 387 327 Q-BAC 670 684
q-AB, etc = the design flow of movement AB, etcW = major road widthW-CR = central reserve widthw-BA, etc = lane width to vehiclev-rBA, etc = visibility to the right for waiting vehicles in stream BA, etcv-IBA, etc = visibility to the left for waiting vehicles in stream BA, etcGeometry :InputInputInputV11.00V-rBA0w-CR0.00V-rBC40w-CR0.00V-rBC40w-CR0.00V-rBC0V-rCB0Y-rCBY00.6205Analysis :Traffic Flows, pcu/hrAMPMCapacity, pcu/hrq-CA00Q-BA288295q-CB00Q-BC670684q-AB00Q-BA387327Q-BAC670
W = major road width W-CR = central reserve width w-BA, etc = lane width to vehicle v-rBA, etc = visibility to the right for waiting vehicles in stream BA, etc v-IBA, etc = visibility to the left for waiting vehicles in stream BA, etc Geometry : Input Input Input Calculated W 11.00 V-rBA 0 w-BA 0.00 D 0.5332 W-CR 0.00 V-IBA 0 w-BC 4.70 E 1.0196 V-rBC 40 w-CB 0.00 F 0.5860 V-rCB 0 Y 0.6205 Analysis : Traffic Flows, pcu/hr AM PM Q-CA 0 0 Q-BA 288 295 Q-CB 0 0 Q-BA 288 295 Q-CB 0 0 Q-BC 670 684 Q-AB 0 0 Q-CB 385 393 Q-AC 387 327 Q-BAC 670 684
W-CR = central reserve width w-BA, etc = lane width to vehicle v-rBA, etc = visibility to the right for waiting vehicles in stream BA, etcGeometry :InputInputInputCalculatedW11.00V-rBA0w-BA0.00D0.5332W-CR0.00V-IBA0w-BC4.70E1.0196V-rBC40w-CB0.00F0.5860V-rBC40w-CB0.00F0.5860V-rBC40w-CB0.00F0.5860V-rBC40w-CB0.00F0.5860V-rCB0Y0.62050.00F0.5860Analysis :Traffic Flows, pcu/hrAMPMCapacity, pcu/hrAMPMq-CA00Q-BA288295295q-CB00Q-BC670684q-AB00Q-CB385393q-AC387327Q-BAC670684
w-BA, etc = lane width to vehicle v-rBA, etc = visibility to the right for waiting vehicles in stream BA, etc v-IBA, etc = visibility to the left for waiting vehicles in stream BA, etc Geometry : Input Input Input Calculated W 11.00 V-rBA 0 w-BA 0.00 D 0.5332 W-CR 0.00 V-IBA 0 w-BC 4.70 E 1.0196 V-rBC 40 w-CB 0.00 F 0.5860 V-rCB 0 Y 0.6205 Analysis : Traffic Flows, pcu/hr AM PM Capacity, pcu/hr AM PM q-CA 0 0 Q-BA 288 295 q-CB 0 0 Q-BC 670 684 q-AB 0 0 Q-CB 385 393 q-AC 387 327 Q-BAC 670 684
v-rBA, etc = visibility to the right for waiting vehicles in stream BA, etc v-IBA, etc = visibility to the left for waiting vehicles in stream BA, etc Geometry : Input Input Input Calculated W 11.00 V-rBA 0 w-BA 0.00 D 0.5332 W-CR 0.00 V-IBA 0 w-BC 4.70 E 1.0196 V-rBC 40 w-CB 0.00 F 0.5860 V-rCB 0 Y 0.6205 Analysis : Traffic Flows, pcu/hr AM PM q-CA 0 0 Q-BA 288 295 q-CB 0 0 Q-BC 670 684 q-AB 0 0 Q-CB 385 393 q-AC 387 327 Q-BAC 670 684
v-IBA, etc = visibility to the left for waiting vehicles in stream BA, etc         Geometry :       Input       Input       Input       Input       Calculated         W       11.00       V-rBA       0       w-BA       0.00       D       0.5332         W-CR       0.00       V-rBA       0       w-BC       4.70       E       1.0196         W-CR       0.00       V-IBA       0       w-BC       4.70       E       1.0196         V-rBC       40       w-CB       0.00       F       0.5860       V       v.rCB       0       Y       0.6205         Analysis :       Traffic Flows, pcu/hr       AM       PM       Capacity, pcu/hr       AM       PM         q-CA       0       0       Q-BA       288       295         q-CB       0       0       Q-BC       670       684         q-AB       0       0       Q-CB       385       393         q-AC       387       327       Q-BAC       670       684
Geometry :       Input       Input       Input       Input       Calculated         W       11.00       V-rBA       0       w-BA       0.00       D       0.5332         W-CR       0.00       V-IBA       0       w-BC       4.70       E       1.0196         V-CR       0.00       V-IBA       0       w-CB       0.00       F       0.5860         V-rBC       40       w-CB       0.00       F       0.5860         V-rCB       0       Y       0.6205         Analysis :       Traffic Flows, pcu/hr       AM       PM       Capacity, pcu/hr       AM       PM         q-CA       0       0       Q-BA       288       295         q-CB       0       0       Q-BC       670       684         q-AB       0       0       Q-CB       385       393         q-AC       387       327       Q-BAC       670       684
Geometry :       Input       Input       Input       Input       Calculated         W       11.00       V-rBA       0       w-BA       0.00       D       0.5332         W-CR       0.00       V-IBA       0       w-BC       4.70       E       1.0196         V-CR       0.00       V-IBA       0       w-CB       0.00       F       0.5860         V-rBC       40       w-CB       0.00       F       0.5860         V-rCB       0       V-rCB       0       Y       0.6205         Analysis :       Traffic Flows, pcu/hr       AM       PM       Capacity, pcu/hr       AM       PM         q-CA       0       0       Q-BA       288       295         q-CB       0       0       Q-BC       670       684         q-AB       0       0       Q-CB       385       393         q-AC       387       327       Q-BAC       670       684
W       11.00       V-rBA       0       w-BA       0.00       D       0.5332         W-CR       0.00       V-IBA       0       w-BC       4.70       E       1.0196         V-rBC       40       w-CB       0.00       F       0.5860         V-rBC       0       W-CB       0.00       F       0.5860         V-rCB       0       Y       0.6205         Analysis :       Traffic Flows, pcu/hr       AM       PM       Capacity, pcu/hr       AM       PM         q-CA       0       0       Q-BA       288       295         q-CB       0       0       Q-BC       670       684         q-AB       0       0       Q-CB       385       393         q-AC       387       327       Q-BAC       670       684
W-CR       0.00       V-IBA       0       w-BC       4.70       E       1.0196         V-rBC       40       w-CB       0.00       F       0.5860         V-rCB       0       Y       0.6205         Analysis :       Traffic Flows, pcu/hr       AM       PM       Capacity, pcu/hr       AM       PM         q-CA       0       0       Q-BA       288       295         q-CB       0       0       Q-BC       670       684         q-AB       0       0       Q-BAC       385       393         q-AC       387       327       Q-BAC       670       684
V-rBC         40 w-CB         0.00         F         0.5860           V-rCB         0         Y         0.6205           Analysis :         Traffic Flows, pcu/hr         AM         PM         Capacity, pcu/hr         AM         PM           q-CA         0         0         Q-BA         288         295           q-CB         0         0         Q-BC         670         684           q-AB         0         0         Q-BAC         385         393           q-AC         387         327         Q-BAC         670         684
V-rCB         0         Y         0.6205           Analysis :         Traffic Flows, pcu/hr         AM         PM         Capacity, pcu/hr         AM         PM           q-CA         0         0         Q-BA         288         295           q-CB         0         0         Q-BC         670         684           q-AB         0         0         Q-CB         385         393           q-AC         387         327         Q-BAC         670         684
Analysis :         Traffic Flows, pcu/hr         AM         PM         Capacity, pcu/hr         AM         PM           q-CA         0         0         Q-BA         288         295           q-CB         0         0         Q-BC         670         684           q-AB         0         0         Q-CB         385         393           q-AC         387         327         Q-BAC         670         684
I rattic Flows, pcu/hr         AM         PM         Capacity, pcu/hr         AM         PM           q-CA         0         0         Q-BA         288         295           q-CB         0         0         Q-BC         670         684           q-AB         0         0         Q-CB         385         393           q-AC         387         327         Q-BAC         670         684
q-CA     U     U     Q-BA     288     295       q-CB     0     0     Q-BC     670     684       q-AB     0     0     Q-CB     385     393       q-AC     387     327     Q-BAC     670     684
q-CB         U         U         Q-BC         670         684           q-AB         0         0         Q-CB         385         393           q-AC         387         327         Q-BAC         670         684
q-AB 0 0 Q-CB 385 393 q-AC 387 327 Q-BAC 670 684
9-AC 387 327 Q-BAC 670 684
a BC 172 150
4-00 172 109 f 1000 1000
Ratio-of-flow to Capacity AM PM
B-A 0.000 0.000
B-C 0.257 0.232
C-B 0.000 0.000

Junction:	Kwai Hei Street / ]	Tsuen Wai	n Road					
Design Year:	2032	Job Num	per:	17384	Da	ate:	21 J	anuary 2025
Scenario:	Without Proposed	Redevelo	pment			-		P. 23
Kwai He	i Street (Arm C)					Kwai H	lei Street	(Arm A)
	× ,							<u> </u>
					←	— Г	420	351
		<b>←</b> ┐				L	•	
	×							
	$\backslash$	189				Γ	AM	PM
	$\mathbf{X}$	<u>170</u>				-		
	North	Tsuen W	an Road (	(Arm B)	•			
The predictive equ	uations of capacity	of moveme	ent are:					
Q-BA = D[627 +	14W-CR - Y(0.364	lq-AC + 0.	144q-AB +	+ 0.229q-	CA + 0.52c	I-CB)]		
Q-BC = E[745 -	Y(0.364q-AC + 0.1-	44q-AB)]						
Q-CB = F[745 -	0.364Y(q-AC + q-A	B)]						
The geometric par	rameters represent	ed by D, E	, F are:					
D = [1 + 0.02]	94(w-BA - 3.65)][1 ·	+ 0.0009(\	/-rBA - 12	0)][1 + 0.	0006(V-IBA	150)]		
E = [1 + 0.09]	94(w-BC - 3.65)][1	+ 0.0009(\	/-rBC - 12	0)]				
F = [1 + 0.02]	94(w-CB - 3.65)][1	+ 0.0009(\	/-rCB - 12	0)]				
where Y = 1 - 0	.0345W							
q-AB, etc	c = the design flow	of movem	ent AB, et	С				
W = maj	or road width							
W-CR =	central reserve wid	th						
w-BA, et	c = lane width to ve	ehicle						
v-rBA, et	tc = visibility to the i	right for wa	aiting vehio	cles in str	eam BA, e	C		
v-IBA, et	c = visibility to the I	eft for wait	ing vehicle	es in stre	am BA, etc			
0		4		.1			0-1	
Geometry :	in			ut		0.00	Calcu	
		11.00	V-IDA	0	W-BA	0.00		0.5332
	W-CR	0.00	V-IBA	0	W-BC	4.70	E	1.0196
				40	M-CR	0.00	F	0.5860
Analyzia			V-ICB	0			ř	0.6205
Troffic Flower	oou/br AM			Con	acity nou/	r	A N 4	DM
	ροα/πι ΑΙνι			Сар	acity, pcu/r ∩ в∧	11	AIVI 201	TIVI 202
	0	0					204 662	292 670
	0	0					201	300
	U 400	U 254					30 I 662	590 670
	420	ں دد م			Q-DAU		003	0/9
	U 100	U 170						
ч-вс f	109	1 000						
'	1.000	1.000						
	Ratio o	f_flow to C	anacity	ΔΝ/	PM			
	nau0-0	R_Δ	αρασιιγ					
		B-C		0.000	0.000			
		C-B		0.200	0.200			
		0-0		0.000	0.000			

Junction	Kwai Hei Street / 1	suen Wai	n Road					
Design Year	2032	Job Num	per .	17384	D	ate:	21.J	anuary 2025
Scenario <sup>.</sup>	With Proposed Re	developm	ent		2.	_		P 24
Kwai Hei	Street (Arm C)					Kwai ⊦	lei Street	(Arm A)
								<u> </u>
					←	— Г	423	353
		• _				-		
	ĸ							
	$\mathbf{X}$	189					AM	<u>PM</u>
	$\mathbf{X}$	<u>170</u>						
	North	Tsuen W	an Road	(Arm B)				
The predictive equ	ations of capacity	of moveme	ent are:					
Q-BA = D[627 +	14W-CR - Y(0.364	q-AC + 0.	144q-AB ·	+ 0.229q-	•CA + 0.52q	-CB)]		
Q-BC = E[745 -	Y(0.364q-AC + 0.1	44q-AB)]						
Q-CB = $F[745 - 1]$	0.364Y(q-AC + q-A	B)]	_					
The geometric par	ameters represent	ed by D, E	, F are:	0.11.4	0000 <i>4 / -</i>			
D = [1 + 0.09]	94(w-BA - 3.65)][1 ·	+ 0.0009(\ 	/-rBA - 12	(0)][1 + 0.	0006(V-IBA	150)]		
E = [1 + 0.09]	94(w-BC - 3.65)][1	+ 0.0009(\	/-rBC - 12	20)]				
F = [1 + 0.05]	94(W-CB - 3.65)][1	+ 0.0009(\	/-rCB - 12	20)]				
where $Y = 1 - 0$	.U343VV	ofmovom	ant AD at					
q-AB, etc	c = the design flow	of movem	ent AB, et	C				
W CP -	on road width	th						
W-CR -	central reserve wid	li) biolo						
w-bA, et	c – lane width to ve	nicie ight for w	aiting yohi	oloo in cti		~		
v-IBA, et	c – visibility to the l	aft for wait	ing vehicl	oe in etro	am BA etc	.0		
			ing vernor	63 11 30 6				
Geometry ·	In	tut	Inp	ut	Input		Calcu	lated
Coomoury :	W	11 00	V-rBA	0	w-BA	0.00	D	0 5332
	W-CR	0.00	V-IBA	0	w-BC	4.70	E	1.0196
		0.00	V-rBC	40	w-CB	0.00	F	0.5860
			V-rCB	0			Ŷ	0.6205
Analvsis :				Ū			•	0.0200
Traffic Flows.	ocu/hr AM	РМ		Cap	acity, pcu/h	r	AM	РМ
a-CA	0	0		1-	Q-BA	-	283	292
q-CB	0	0			Q-BC		662	678
q-AB	0	0			Q-CB		381	390
q-AC	423	353			Q-BAC		662	678
q-BA	0	0						
q-BC	189	170						
f	1.000	1.000						
	Ratio-o	f-flow to C	apacity	AM	PM			
		B-A	-	0.000	0.000			
		B-C		0.285	0.251			
		C-B		0.000	0.000			

Appendix 2 – Bus Stop Utilisation
The results of utilisation survey conducted at the 5 bus stops during AM and PM peak on Friday, 28 April 2023, are presented in **Tables A1 – A5**. The 5 bus stops are:

- STOP 1 Wing Kei Road Southbound
- STOP 2 Kwai Fuk Road Westbound
- STOP 3 Kwai Fuk Road Eastbound
- STOP 4 Kwai Shing Swimming Pool Eastbound
- STOP 5 Kwai Shing Swimming Pool Westbound

# TABLE A1RESULTSOFTHEUTILIZATIONSURVEYOFPUBLICTRANSPORTSERVICES AT STOP 1 - WING KEI ROAD SOUTHBOUND

Route <sup>(1)</sup>	No. of Vehicle	No. of Passenger on Vehicle <sup>(2)</sup> [a]	Capacity [b]	Vacant [b] - [a]	Occupancy [a] / [b]		
	AM Peak						
GMB 404M	16	194	289	95	67.1%		
PM Peak							
GMB 404M	10	140	181	41	77.3%		

Note: <sup>(1)</sup> GMB – Green Minibus

<sup>(2)</sup> Passenger was counted at the moment before the bus arrived

## TABLE A2RESULTSOFTHEUTILIZATIONSURVEYOFPUBLICTRANSPORTSERVICES AT STOP 2 - KWAI FUK ROADWESTBOUND

Route <sup>(1)</sup>	No. of Vehicle	No. of Passenger on Vehicle <sup>(2)</sup> [a]	Capacity [b]	Vacant [b] – [a]	Occupancy [a] / [b]
		AM Peak			
KMB 73P	2	77	272	195	28.3%
GMB 87	7	107	121	14	88.4%
GMB 87K	13	210	226	16	92.9%
GMB 91	8	93	146	53	63.7%
GMB 93	4	49	64	15	76.6%
GMB 93A	4	50	67	17	74.6%
GMB 98	10	129	181	52	71.3%
GMB 404M	16	219	289	70	75.8%
GMB 407	6	51	102	51	50.0%
Total	70	985	1468	483	67.1%
		PM Peak			
GMB 87	11	137	188	51	72.9%
GMB 87K	12	179	216	37	82.9%
GMB 91	5	65	83	18	78.3%
GMB 93	4	47	64	17	73.4%
GMB 93A	3	45	51	6	88.2%
GMB 98	10	149	184	35	81.0%
GMB 404M	10	126	181	55	69.6%
GMB 407	10	129	172	43	75.0%
Total	65	877	1139	262	77.0%

Note: (1)

KMB – Kowloon Motor BusGMB – Green Minibus

Passenger was counted at the moment before the bus arrived

## TABLE A3RESULTSOFTHEUTILIZATIONSURVEYOFPUBLICTRANSPORTSERVICES AT STOP 3 - KWAI FUK ROAD EASTBOUND

Route <sup>(1)</sup>	No. of Vehicle	No. of Passenger on Vehicle <sup>(2)</sup> [a]	Capacity [b]	Vacant [b] - [a]	Occupancy [a] / [b]
		AM Peak			
GMB 87	7	93	121	28	76.9%
GMB 87K	14	171	251	80	68.1%
GMB 91	8	99	143	44	69.2%
GMB 93	4	33	67	34	49.3%
GMB 93A	4	40	67	27	59.7%
GMB 98	15	117	267	150	43.8%
GMB 404M	13	160	238	78	67.2%
GMB 406	2	25	32	7	78.1%
GMB 407	18	243	309	66	78.6%
Total	85	981	1495	514	65.6%
		<u>PM Peak</u>			
KMB 73P	1	17	136	119	12.5%
GMB 87	10	157	172	15	91.3%
GMB 87K	13	206	232	26	88.8%
GMB 91	6	97	108	11	89.8%
GMB 93	4	47	64	17	73.4%
GMB 93A	3	45	51	6	88.2%
GMB 98	14	248	254	6	97.6%
GMB 404M	10	171	178	7	96.1%
GMB 407	8	79	137	58	57.7%
Total	69	1067	1332	265	80.1%

Note: (1) KMB – Kowloon Motor Bus GMB – Green Minibus

<sup>(2)</sup> Passenger was counted at the moment before the bus arrived

## TABLE A4RESULTSOFTHEUTILIZATIONSURVEYOFPUBLICTRANSPORTSERVICES AT STOP 4 - KWAISHINGSWIMMINGPOOLEASTBOUND

Route <sup>(1)</sup>	No. of Vehicle	No. of Passenger on Vehicle <sup>(2)</sup> [a]	Capacity [b]	Vacant [b] - [a]	Occupancy [a] / [b]
		AM Peak			
KMB 32H	2	51	152	101	33.6%
KMB 34	7	303	952	649	31.8%
GMB 87	7	93	121	28	76.9%
GMB 87K	14	161	251	90	64.1%
GMB 89B	4	57	64	7	89.1%
GMB 406	2	25	32	7	78.1%
GMB 407	18	248	309	61	80.3%
GMB 94	8	59	131	72	45.0%
GMB 94A	4	51	64	13	79.7%
Total	66	1048	2076	1028	50.5%
		<u>PM Peak</u>			
KMB 32H	1	15	76	61	19.7%
KMB 34	8	263	1088	825	31.9%
GMB 87	10	121	172	51	70.3%
GMB 87K	13	201	232	31	86.6%
GMB 89B	3	6	48	42	12.5%
GMB 407	8	95	137	42	69.3%
GMB 94	8	13	128	115	10.2%
Total	51	714	1881	1167	38.0%

Note: (1) KMB – Kowloon Motor Bus GMB – Green Minibus (2) Passenger was counted at the moment before the bus arrived

# TABLE A5RESULTSOFTHEUTILIZATIONSURVEYOFPUBLICTRANSPORTSERVICES AT STOP 5 - KWAI SHING SWIMMING POOLWESTBOUND

Route <sup>(1)</sup>	No. of Vehicle	No. of Passenger on Vehicle <sup>(2)</sup> [a]	Capacity [b]	Vacant [b] - [a]	Occupancy [a] / [b]
		AM Peak			
KMB 38	7	314	934	620	33.6%
GMB 87	7	92	121	29	76.0%
GMB 87K	13	146	226	80	64.6%
GMB 89B	3	34	48	14	70.8%
GMB 407	6	59	102	43	57.8%
GMB 94	7	50	112	62	44.6%
Total	43	695	1543	848	45.0%
		<u>PM Peak</u>			
KMB 32H	1	38	76	38	50.0%
KMB 38	5	243	685	442	35.5%
GMB 87	11	122	188	66	64.9%
GMB 87K	12	166	216	50	76.9%
GMB 89B	3	6	48	42	12.5%
GMB 407	10	115	172	57	66.9%
GMB 94	8	85	128	43	66.4%
GMB 94A	1	38	76	38	50.0%
Total	50	775	1513	738	51.2%

Note: <sup>(1)</sup> KMB – Kowloon Motor Bus GMB – Green Minibus <sup>(2)</sup> Passenger was counted at the moment before the bus arrived

The existing utilisation of the public transport services at the 5 stops is summarised in **Table A6**.

# TABLE A6THE EXISTING UTILISATION OF THE PUBLIC TRANSPORT SERVICES at<br/>the 5 surveyed stops

No.	Location	Осси	pancy
		AM Peak	PM Peak
1	Wing Kei Road Southbound	67.1%	77.3%
2	Kwai Fuk Road Northbound	67.1%	77.0%
3	Kwai Fuk Road Southbound	65.6%	80.1%
4	Kwai Shing Swimming Pool Eastbound	50.5%	38.0%
5	Kwai Shing Swimming Pool Westbound	45.0%	51.2%

The pedestrians generated by the Proposed Data Centre is estimated using the pedestrian generation rates in Table 5.2 of the Traffic Impact Assessment Report and is presented in **Table A7**.

#### TABLE A7PEDESTRIAN GNERATION OF PROPOSED DATA CENTRE

Item	AM Peak			PM Peak		
	In	Out	2-way	In	Out	2-way
Proposed Data Centre	Pedestrian C	Pedestrian Generation Rates, ped / 15min / 100m <sup>2</sup>				
(10,991.880m <sup>2</sup> GFA)	0.0660	0.0109	NA	0.0164	0.0660	NA
	Pedestrian C	Generation, pe	ed / hour			
	32	8	40	8	32	40

To be conservative, it is assumed that all pedestrians generated use public transport services and the analysis is presented in **Table A8**.

# TABLE A8THE UTILISATION OF THE PUBLIC TRANSPORT SERVICES FOR THE<br/>CASE WITH THE PROPOSED DATA CENTRE

No.	Location	Occupancy		
		AM Peak	PM Peak	
1	Wing Kei Road Southbound	70.6%	82.9%	
2	Kwai Fuk Road Northbound	67.4%	77.4%	
3	Kwai Fuk Road Southbound	66.0%	80.5%	
4	Kwai Shing Swimming Pool Eastbound	51.0%	38.5%	
5	Kwai Shing Swimming Pool Westbound	45.7%	51.9%	

**Table A8** shows that the public transport service have capacity to accommodate the passenger demand generated by the Proposed Data Centre.

Appendix 3 – Draft PBTO Restriction on partitioning

(21)Except for the surrender and carving out of the Pink Hatched Blue Area in accordance with Special Condition No. (9)(f)(i) hereof, the Grantee shall not, without the prior written consent of the Director, partition (whether by way of assignment or other disposal or by any other means) the lot or any part thereof or any section which has been partitioned with the prior written consent of the Director under this Special Condition.

Parking requirements

(22) (a) (i)

Data Centre Parking Spaces

**Industrial Parking** Spaces

Spaces shall be provided within the lot to the satisfaction of the Commissioner for Transport (hereinafter referred to as "the C for T") for the parking of motor vehicles licensed under the Road Traffic Ordinance, any regulations made thereunder and any amending legislation (hereinafter referred to as "the Road Traffic Ordinance") at the following rates-

(I) one space for every 1,000 square metres or part thereof of the gross floor area of the building or buildings erected or to be erected on the lot or part or parts of the building or buildings for the purpose of data centre (the spaces to be provided under this sub-clause (a)(i)(I) (as may be varied under Special Condition No. (23) hereof) are hereinafter referred to as "the Data Centre Parking Spaces"); and

(II) one space for every 1,000 square metres or part thereof of the gross floor area of the building or buildings erected or to be erected on the lot or part or parts of the building or buildings for purposes permitted under Special Condition No. (11) hereof excluding data centre (the spaces to be provided under this sub-clause (a)(i)(II) (as may be varied under Special Condition No. (23) hereof) are hereinafter referred to as "the Industrial Parking Spaces").

(ii) For the purpose of calculating the number of the Data Centre Parking Spaces and the Industrial Parking Spaces to be provided under sub-clauses (a)(i)(I) and (a)(i)(II) of this Special Condition, any floor area to be used for parking, loading and unloading purposes shall be excluded. For the purposes of these Conditions, "motor vehicle" shall be as defined in the Road Traffic Ordinance.

(iii) The Data Centre Parking Spaces and the Industrial Parking Spaces shall not be used for any purpose other than for the parking of motor vehicles licensed under the Road Traffic Ordinance and in particular the said

spaces shall not be used for the storage, display or exhibiting of motor vehicles for sale or otherwise or for the provision of motor vehicle cleaning and beauty services.

Parking Spaces for **Disabled** Persons

Out of the Data Centre Parking Spaces and the Industrial Parking Spaces, the Grantee shall reserve and designate such number of spaces for the parking of motor vehicles by disabled persons (which spaces to be so reserved and designated are hereinafter referred to as "the Parking Spaces for Disabled Persons") as the Building Authority may require or approve. For the purpose of these Conditions, "disabled persons" shall be as defined in the Road Traffic Ordinance.

The Parking Spaces for Disabled Persons shall not be (ii) used for any purpose other than for the parking of motor vehicles licensed under the Road Traffic Ordinance by disabled persons and in particular the said spaces shall not be used for the storage, display or exhibiting of motor vehicles for sale or otherwise or for the provision of motor vehicle cleaning and beauty services.

> Spaces shall be provided within the lot to the satisfaction of the C for T for the parking of motor cycles licensed under the Road Traffic Ordinance at at the following rates-

> 10% of the total number of the Data Centre (I) Parking Spaces (the spaces to be provided under this sub-clause (c)(i)(I) (as may be varied under Special Condition No. (23) hereof) are hereinafter referred to as "the Data Centre Motor Cycle Parking Spaces"); and

> 10% of the total number of the Industrial Parking (II) Spaces (the spaces to be provided under this subclause (c)(i)(II) (as may be varied under Special Condition No. (23) hereof) are hereinafter referred to as "the Industrial Motor Cycle Parking Spaces").

If the number of the Data Centre Motor Cycle Parking Spaces or the Industrial Motor Cycle Parking Spaces to be provided under sub-clauses (c)(i)(I) and (c)(i)(II) of this Special Condition is a decimal number, the same shall be rounded up to the next whole number. For the purposes of these Conditions, "motor cycle" shall be as defined in the Road Traffic Ordinance.

(i)

(c)

(b) = (i)

Motor Cycle Parking Spaces

Data Centre Motor Cycle Parking Spaces

Industrial Motor Cycle Parking Spaces

(ii)

(d) (i)

(e) (i)

(ii)

The Data Centre Motor Cycle Parking Spaces and the Industrial Motor Cycle Parking Spaces shall not be used for any purpose other than for the parking of motor cycles licensed under the Road Traffic Ordinance and in particular the said spaces shall not be used for the storage, display or exhibiting of motor vehicles for sale or otherwise or for the provision of motor vehicle cleaning and beauty services.

Except for the Parking Spaces for Disabled Persons, each of the Data Centre Parking Spaces and the Industrial Parking Spaces shall measure 2.5 metres in width and 5.0 metres in length with a minimum headroom of 2.4 metres.

 (ii) The dimensions of each of the Parking Spaces for Disabled Persons shall be as the Building Authority may require or approve.

(iii) Each of the Data Centre Motor Cycle Parking Spaces and the Industrial Motor Cycle Parking Spaces shall measure 1.0 metre in width and 2.4 metres in length with a minimum headroom of 2.4 metres.

Spaces shall be provided within the lot to the satisfaction of the C for T for the parking, loading and unloading of goods vehicles (excluding goods vehicles with trailer with their prime movers attached) licensed under the Road Traffic Ordinance at the following rates-

(I) one space for every 3,400 square metres or part thereof of the gross floor area of the building or buildings erected or to be erected on the lot or part or parts of the building or buildings for the purpose of data centre; and

 (II) one space for every 700 square metres or part thereof of the gross floor area of the building or buildings erected or to be erected on the lot or part or parts of the building or buildings for purposes permitted under Special Condition No.
(11) hereof excluding data centre.

For the purposes of these Conditions, "goods vehicles" shall be as defined in the Road Traffic Ordinance.

(I) Out of the total number of spaces provided under sub-clause (e)(i)(I) of this Special Condition (as

Dimensions of parking spaces

Spaces for goods vehicles (excluding goods vehicles with trailers with their prime movers attached) may be varied under Special Condition No. (23) hereof),

- (A) the first 65% of the total number of spaces shall each measure 3.5 metres in width and 7.0 metres in length with a minimum headroom of 3.6 metres provided that if the number of spaces so calculated is a decimal number, the C for T may at his absolute discretion round up or down the number to a whole number; and
- (B) the remaining number of spaces shall each measure 3.5 metres in width and 11.0 metres in length with a minimum headroom of 4.7 metres.
- (II) Out of the total number of spaces provided under sub-clause (e)(i)(II) of this Special Condition (as may be varied under Special Condition No. (23) hereof),
  - (A) the first 65% of the total number of spaces shall each measure 3.5 metres in width and 7.0 metres in length with a minimum headroom of 3.6 metres provided that if the number of spaces so calculated is a decimal number, the C for T may at his absolute discretion round up or down the number to a whole number; and
  - (B) the remaining number of spaces shall each measure 3.5 metres in width and 11.0 metres in length with a minimum headroom of 4.7 metres.

The first 60% of the spaces of the respective dimensions as provided under sub-clauses (e)(ii)(I)(A) and (e)(ii)(I)(B) of this Special Condition (as may be varied under Special Condition No. (23) hereof) shall be used for the loading and unloading of goods vehicles (excluding goods vehicles with trailers with their prime movers attached) (the loading and unloading spaces to be provided under this subclause (e)(iii)(I) (as may be varied under Special Condition No. (23) hereof) are hereinafter referred as "the Data Centre Goods Vehicle Loading and Unloading Spaces") provided that if the number of spaces so calculated is a decimal

(iii) (I)

(e)(iii)(I) (as may be varied under Special Condition No. (23) hereof) are hereinafter referred as "the Data Centre Goods Vehicle

(II)

The first 50% of the spaces of the respective dimensions as provided under sub-clauses (e)(ii)(II)(A) and (e)(ii)(II)(B) of this Special Condition (as may be varied under Special Condition No. (23) hereof) shall be used for the loading and unloading of goods vehicles (excluding goods vehicles with trailers with their prime movers attached) (the loading and unloading spaces to be provided under this subclause (e)(iii)(II) (as may be varied under Special Condition No. (23) hereof) are hereinafter referred as "the Industrial Goods Vehicle Loading and Unloading Spaces") provided that if the number of spaces so calculated is a decimal number, the C for T may at his absolute discretion round up or down the number to a whole number and the remaining number of spaces shall be used for the parking of goods vehicles (excluding goods vehicles with trailers with their prime movers attached) (the parking spaces to be provided under this sub-clause (e)(iii)(II) (as may be varied under Special Condition No. (23) hereof) are hereinafter referred as "the Industrial Goods Vehicle Parking Spaces").

) The Data Centre Goods Vehicle Loading and Unloading Spaces and the Industrial Goods Vehicle Loading and Unloading Spaces shall abut a goods handling platform or area which shall be provided and laid out in such a manner that goods loaded or unloaded from or to such platform or area may be transported to all parts of the building or buildings erected or to be erected on the lot vertically and horizontally. The design and layout of the goods handling platform or area giving such access to the building or buildings erected or to be erected on the lot shall comply with the Code of Practice issued by the

(iv)

Parking Spaces").

Building Authority on provision of means of escape in case of fire and any related requirements which are or may at any time be made by the Building Authority under the Buildings Ordinance.

- For the purpose of calculating the number of spaces to (v)be provided under sub-clauses (e)(i)(I) and (e)(i)(II) of this Special Condition (as may be respectively varied under Special Condition No. (23) hereof), any floor area to be used for parking, loading and unloading purposes shall be excluded.
- The Data Centre Goods Vehicle Parking Spaces and the (vi) Industrial Goods Vehicle Parking Spaces shall not be used for any purpose other than for the parking of goods vehicles (excluding containers on trailers with their prime movers attached) licensed under the Road Traffic Ordinance and in particular the said spaces shall not be used for the storage, display or exhibiting of motor vehicles for sale or otherwise or for the provision of motor vehicle cleaning and beauty services.
- (vii) The Data Centre Goods Vehicle Loading and Unloading Spaces shall not be used for any purpose other than for the loading and unloading of goods vehicles (excluding goods vehicles with trailers with their prime movers attached) licensed under the Road Traffic Ordinance in connection with the building or buildings or part or parts of the building or buildings erected or to be erected on the lot for the purpose of data centre.
- (viii) The Industrial Goods Vehicle Loading and Unloading Spaces shall not be used for any purpose other than for the loading and unloading of goods vehicles (excluding goods vehicles with trailers with their prime movers attached) licensed under the Road Traffic Ordinance in connection with the building or buildings or part or parts of the building or buildings erected or to be erected on the lot for purposes permitted under Special Condition No. (11) hereof excluding data centre.

The spaces provided for vehicle manoeuvring and the parking, (f) loading and unloading of vehicles shall be laid out in such manner that on entering and leaving the lot, no reversing movement of vehicles including containers on trailers with their prime movers attached from or onto the road or roads abutting the lot will be necessary.

Flexibility in parking, loading and unloading provisions

Notwithstanding Special Conditions Nos. (22)(a)(i), (22)(c)(i), (23)(22)(d)(i), (22)(d)(iii) (22)(e)(i), (22)(e)(ii) and (22)(e)(iii) hereof, the

Grantee may increase or reduce the respective numbers and dimensions of spaces required to be provided under the said sub-clauses to such other numbers and dimensions as may be approved in writing by the C for T, and such increase or reduction shall also be subject to the prior written approval of the Director, who may, at his sole and absolute discretion, give his approval subject to such terms and conditions as he sees fit, including the payment by the Grantee of any premium and administrative fee as shall be determined by the Director.

Access for inspection

(24) (a) The Grantee shall at all times throughout the term hereby agreed to be granted permit the Government, the C for T, their officers, contractors, agents, workmen and any other persons authorized by any of them, with or without tools, equipment, plant, machinery or motor vehicles free of charge to have the right of free and unrestricted ingress, egress and regress to, from and through the lot and the Green Area (while the Grantee is in possession of the same) or any part of any of them and any building erected or to be erected thereon for the purposes of inspecting, checking or ascertaining that there is no breach of or failure to comply with Special Conditions Nos. (22) and (23) hereof by the Grantee.

(b) The Government shall have no responsibility or liability for any loss, damage, nuisance or disturbance whatsoever and howsoever caused to or suffered by the Grantee or any other person arising whether directly or indirectly out of, in connection with or incidental to the exercise or non-exercise by the Government, the C for T, their officers, contractors, agents, workmen or any other persons authorized by any of them of the rights conferred under sub-clause (a) of this Special Condition, and no claim whatsoever shall be made against the Government by the Grantee in respect of any such loss, damage, nuisance or disturbance.

(c) The Grantee shall indemnify and keep indemnified the Government from and against all liabilities, claims, losses, damages, expenses, charges, costs, demands, actions and proceedings whatsoever and howsoever arising whether directly or indirectly out of, in connection with or incidental to the exercise or non-exercise by the Government, the C for T, their officers, contractors, agents, workmen or any other persons authorized by any of them of the rights conferred under sub-clause (a) of this Special Condition.

Parking, loading and unloading spaces etc. excluded from gross floor area calculation

(25) (a) For the purpose of calculating the total gross floor area stipulated in Special Condition No. (16)(c) hereof,

- (i) there shall not be taken into account
  - (I) the Data Centre Parking Spaces, the Industrial Parking Spaces, the Data Centre Motor Cycle Parking Spaces, the Industrial Motor Cycle Parking Spaces, the Data Centre Goods Vehicle

Parking Spaces and the Industrial Goods Vehicle Parking Spaces (hereinafter collectively referred to as "the Spaces"), if they are provided below the ground level;

(II) the Data Centre Goods Vehicle Loading and Unloading Spaces and the Industrial Goods Vehicle Loading and Unloading Spaces, if they are provided at or below the ground level; and

(III) the Spaces, provided in any one (but not more than one) floor at or above the ground level of any building erected or to be erected on the lot if there are at least two floors below the ground level of such building, which in the opinion of the Building Authority fully utilize the lot (as to which the opinion of the Building Authority shall be conclusive), and are provided for the purpose of parking, loading and unloading of motor vehicles, and the Spaces, for that reason, have been excluded by the Building Authority from calculation of gross floor area under the Buildings Ordinance; and

other than the spaces referred to in sub-clause (a)(i)(III) of this Special Condition, if the Spaces are provided at or above the ground level or the Data Centre Goods Vehicle Loading and Unloading Spaces and the Industrial Goods Vehicle Loading and Unloading Spaces are provided above the ground level, 50% of such spaces together with 50% of the other areas including but not limited to lift lobbies, landings, pedestrian access routes, manoeuvring and circulation areas and plant rooms serving such spaces shall be taken into account for the calculation of the total gross floor area stipulated in Special Condition No. (16)(c) hereof as to which the decision of the Director shall be final and binding on the Grantee.

(b) Notwithstanding sub-clause (a)(ii) of this Special Condition, the Director at his sole discretion may subject to the payment by the Grantee of any premium and administrative fee as shall be determined by the Director exclude any spaces and other areas referred to in subclause (a)(ii) of this Special Condition from the calculation of total gross floor area stipulated in Special Condition No. (16)(c) hereof as to which the decision of the Director shall be final and binding on the Grantee.

(c) For the purpose of this Special Condition, the decision of the Director as to what constitutes the ground level or whether any space is at, above or below the ground level shall be final and binding on the

(ii)

36 -

Appendix 4 – Car Lift Analysis

#### Vehicle Lift Analysis

**Job Title** Proposed Information Technology and Telecommunication Industries (Data Centre) Development at 7 – 11 Wing Kin Road, Kwai Chung, New Territories

Ground floor to typical car park floor (m)		4.50
Average Speed (m/s)		0.50
Travel time (s)		9.00
Activity		<u>Time (s)</u>
Car lift travels from ground floor to typical car park floor		9
Lift door opens		5
Car exits lift in foward gear on typical car park floor		5
Car enters lift in reverse gear on typical car park floor		15
Door closes		5
Car lift travels from typical car park floor to ground floor		9
Lift door opens		5
Car exits lift in forward gear on ground floor		5
Car enters lift in reverse gear on ground floor		15
Door closes		5
	<u>Total</u>	78
Number of lift servers, <b>k</b>		1
Number of waiting space(s)		1
Cycle time $\omega$ (s)		78
Arrival rate $\lambda$ (veh / hr)		4
Service rate $\mu$ of one lift server (veh / hr)		46

	<u>F</u>	Probability of	<u> </u>	Probability o	<u>f P</u>	robability of
<u>Number</u>	_	Exact N Cars	<u>N</u>	Cars or Les	<u>s Mo</u>	<u>re Than N Cars</u>
<u>of Cars N</u>	<u>in t</u>	the Lift Syste	<u>m in t</u>	he Lift Syst	<u>em in t</u>	<u>he Lift System</u>
0		91.33%		91.33%		8.67%
1		7.92%		99.25%		0.75%
2		0.69%		99.93%		0.07%
3		0.06%		99.99%		0.01%
4		0.01%		100.00%		0.00%
5		0.00%		100.00%		0.00%
6		0.00%		100.00%		0.00%
7		0.00%		100.00%		0.00%

#### <u>Conclusion</u>

The probability of 1 car arriving when 1 car lift and 1 waiting space being occupied is 0.07%. The provision of 1 waiting space is sufficient.

Formulae:		[A]	[B]	
Floor	Level (m)	Distance	No. of parking	; [A] * [B]
		from G/F	spaces	
8/F		0		0
7/F		0		0
6/F		0		0
5/F		0		0
4/F		0		0
3/F		0		0
2/F		0		0
1/F		0		0
G/F	0.00	0		0
B1	-4.50	4.5	15	5 67.5
B2		0.0		0
B3		0		0
B4		0		0
B5		0		0
B6		0		0
B7		0		0
B8		0		0
			total parking	typical floor
			spaces	distance
			15	5 4.5

Note:

**k** is the number of lift servers.

 $\lambda$  is the arrival rate in vehicles per hour.

 $\mu$  is the service rate of a lift server in vehicles per hour.

Ν

 $1/N!^{*}(\lambda/\mu)^{\Lambda}$  summation from N=0 to N=k-1

1 1

1

1

1 1

1 1 1

1

1

0	1	
1	0	
2	0	
3	0	
4	0	
5	0	
6	0	
7	0	
8	0	
9	0	
10	0	

The assessment is based on the mutli-server queuing (M/M/N) theory, and the equations applied are listed below : Probability of having exactly zero cars in the lift system:  $P(0) = \frac{1}{\left[\sum_{N=0}^{k-1} \frac{1}{N!} \left(\frac{\lambda}{\mu}\right)^{N}\right] + \frac{1}{k!} \left(\frac{\lambda}{\mu}\right)^{k} \frac{k\mu}{k\mu - \lambda}}{k\mu - \lambda}}$ Probability of having exactly N cars in the lift system: For N < k:  $P(N) = \frac{1}{N!} \left(\frac{\lambda}{\mu}\right)^{N} P(0)$ For N ≥ k:  $P(N) = \frac{1}{k! k^{N-k}} \left(\frac{\lambda}{\mu}\right)^{N} P(0)$ k --number of lift servers  $\lambda$  --arrival rate  $\mu$  --service rate

Appendix 5 – Swept Path Analysis















