

Appendix D Traffic Impact Assessment

27/11/2024

Reference number CHK50748310

SECTION 16 APPLICATION FOR PROPOSED FLAT, SHOP AND SERVICES AND EATING PLACE WITH MINOR RELAXATION OF PLOT RATIO AND BUILDING HEIGHT RESTRICTIONS IN "RESIDENTIAL (GROUP E)" ZONE AT NO. 4 TUNG YUEN STREET, YAU TONG, KOWLOON



TRAFFIC IMPACT ASSESSMENT REPORT





IDENTIFICATION TABLE		
Client/Project owner	China Resources Land (Overseas) Limited	
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1. INTRODUCTION

1.1 Background

- 1.1.1 The application site is located at No. 4 Tung Yuen Street, as indicated in **Drawing 1.1**. It is currently zoned "Residential (Group E)" ("R(E)") under the latest approved Cha Kwo Ling, Yau Tong, Lei Yue Mun Outline Zoning Plan (OZP) no. S/K15/27.
- 1.1.2 The application site is currently occupied by an industrial building, and is planned to be redeveloped into a residential-based development with shop & services, and eating place as No. 4 Tung Yuen Street Redevelopment.

1.2 Study Objective

- 1.2.1 The main objective of this study is to investigate the anticipated traffic impact of proposed No.4 Tung Yuen Street Redevelopment to the adjacent local road network, by performing the following tasks:
 - review the current traffic condition in the vicinity;
 - study the traffic related matters of the proposed MLP;
 - produce traffic forecasts on the adjacent local road network;
 - assess the traffic impact of this development scheme to the adjacent local road network and suggest mitigation measures, if applicable.

1.3 Report Structure

- 1.3.1 Following this introductory chapter, there are five further chapters.
 - Chapter 2 Traffic Context, review the current traffic condition in the vicinity;
 - Chapter 3 The Redevelopment, introduces the proposed No. 4 Tung Yuen Street Redevelopment scheme, planning parameters, internal transport facilities and etc.;
 - Chapter 4 Traffic Forecasts, describes the traffic forecasting methodology and presents the results;
 - Chapter 5 Traffic Impact Assessment, presents the assessment findings and suggests mitigation measures, if applicable; and,
 - Chapter 6 Summary and Conclusion, summarises the study findings and presents the conclusion accordingly.

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2. TRAFFIC CONTEXT

2.1 Existing Road Network

- 2.1.1 The application site is located at No. 4 Tung Yuen Street. The application site situates at the northwestern fringe of YTIA and is accessible from Tung Yuen Street. The site location is indicated in **Drawing 1.1**. The vehicular access routes of the application site are through Tung Yuen Street, Ko Fai Road, Cha Kwo Ling Road, Yau Tong Road, and Ko Chiu Road.
- 2.1.2 Cha Kwo Ling Road, a single 4-lane district distributor, is the main transport corridors of Yau Tong area to provide external linkage to Eastern Harbour Crossing (EHC), Tseung Kwan O Lam Tin Tunnel (TKO-LTT), Kwun Tong Bypass and Kwun Tong Road.
- 2.1.3 Yau Tong Road and Ko Chiu Road are both local distributors, linking up Lei Yue Mun Road and Cha Kwo Ling Road on the North and South respectively.
- 2.1.4 Tung Yuen Street and Ko Fai Road are both single 2-lane local distributors, connecting the application site to Yan Yue Wai and Cha Kwo Ling Road.

2.2 Public Transport Services

- 2.2.1 MTR Yau Tong Station is the nearest MTR station to the application site. It is located on the north-east of the application site across Cha Kwo Ling Road, and can be reached within 10 minutes of walk. Yau Tong MTR Station is the interchange station of Kwun Tong Line and Tseung Kwan O Line leading to Island Line.
- 2.2.2 There are two public transport interchanges (PTI) located at The Domain Mall and Yau Tong Estate Phase 3, near Ko Chiu Road, in the vicinity of the application site. There is one franchised bus route 14X and one Green Minibus (GMB) route 24, operating along Tung Yuen Street.
- 2.2.3 The nearby public transport services are indicated in **Drawing 2.1**, whilst their service details are summarised in **Appendix A**.

2.3 Junction Operational Performance

2.3.1 A total of eight key local junctions have been identified for assessment purpose in this study. The identified key local junctions, as listed in **Table 2.1**, are indicated in **Drawing 2.2**.

Ref. ⁽¹⁾	Junction	Control Method	Drawing No.
А	Cha Kwo Ling Road / Lam Tin Interchange	Roundabout	2.3
В	Cha Kwo Ling Road / Yau Tong Road	Signal	2.4
С	Cha Kwo Ling Road / Ko Fai Road	Priority	2.5
D	Cha Kwo Ling Road / Ko Chiu Road	Signal	2.6
E	Lei Yue Mun Road / Ko Chiu Road	Roundabout	2.7
F	Lei Yue Mun Road / Yau Tong Road	Signal	2.8
G	Kai Tin Road / Lei Yue Mun Road	Roundabout	2.9
Н	Wai Yip Street / Wai Fat Road	Signal	2.10
Remarks:			

Table 2.1 Identified Key Local Junctions

⁽¹⁾ Refer to **Drawing 2.2**.

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- 2.3.2 In order to establish the current peak hour traffic condition in the area, traffic surveys in the form of manual classified count were conducted at the identified key local junctions during the morning and evening peak hours of a typical weekday.
- 2.3.3 The traffic surveys were arranged and conducted during morning peak hours between 07:30 09:30 and the evening peak hours between 17:00 19:00 on a typical weekday in early-September 2024. The survey results reveal that the weekday morning and evening peak hour occur during 08:15 09:15 and 17:00 18:00 respectively. The observed peak hour traffic flows are summarised in **Drawing 2.11**.
- 2.3.4 Junction capacity assessments have been conducted to evaluate the current operational performance of the identified key local junctions. The assessments would be validated with the site observations, such as queue length, by applying appropriate site factors and adjustments accordingly in order to reflect the actual site conditions. The assessment results are summarised in **Table 2.2**. The junction calculation sheets are attached in **Appendix B**.

Rof ⁽¹⁾	Junction	RC/RFC ⁽²⁾		
Kel. V		AM Peak	PM Peak	
А	Cha Kwo Ling Road / Lam Tin Interchange	0.60	0.53	
В	Cha Kwo Ling Road / Yau Tong Road	64%	62%	
С	Cha Kwo Ling Road / Ko Fai Road	0.56	0.63	
D	Cha Kwo Ling Road / Ko Chiu Road	63%	91%	
E	Lei Yue Mun Road / Ko Chiu Road	0.34	0.30	
F	Lei Yue Mun Road / Yau Tong Road	>100%	>100%	
G	Kai Tin Road / Lei Yue Mun Road	0.87	0.91	
Н	Wai Yip Street / Wai Fat Road	<0%	3%	

 Table 2.2
 Current Junction Operational Performance

Remarks:

(1) Refer to **Drawing 2.2**.

(2) The operational performance of a signal junction is represented in Reserve Capacity (RC), which is defined as overloaded while the RC is less than 0%, The operational performance of a priority/roundabout is represented in Ratio to Flow Capacity (RFC), which is defined as overloaded if RFC over 1.00.

2.3.5 The assessment results indicate that except for J/O Wai Yip Street / Wai Fat Road (H), the other identified key local junctions are operating within capacity during the weekday peak hour periods.

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3. THE REDEVELOPMENT

3.1 Development Parameter

- 3.1.1 For the purpose of Section 16 planning application, No. 4 Tung Yuen Street is this TIA study area.
- 3.1.2 Currently, there is a 7-storey industrial building on the site, and the subject site has been rezoned as R(E). The current proposed development comprises a residential tower with clubhouse, shop and services, and eating place. The proposed main development parameters of the No. 4 Tung Yuen Street Redevelopment are summarised in **Table 3.1** and the master layout plan is shown in **Drawing 3.1**.

Table 3.1Proposed Development Parameters

	Proposed MLP			
Site Area (m ²)	Site Area (m²) Approx. 2,419 m²			
Total Plot Ratio		Not more than 6.9		
Total GFA (m ²) Not more than 16,691.1 m ²		Not more than 16,691.1 m ²		
Key Development Para	meters			
Residential	no. of units 342			
Commercial – retail	GFA (m ²)	2,177.1		

3.1.3 The No. 4 Tung Yuen Street Redevelopment would be completed in year 2032.

3.2 Internal Traffic Arrangement

Vehicular Access

- 3.2.1 Under the proposed MLP, there is one vehicular access of subject site and is located on Tung Yuen Street. The location of the vehicular accesses of No. 4 Tung Yuen Street Redevelopment under the proposed MLP are indicated in **Drawing 3.1**.
- 3.2.2 Vehicular Access to the Proposed Scheme is provided at Tung Yuen Street, which is a major road connecting to Ko Fai Road at its western end and to Shung Shun Street at its eastern end. The traffic going to/from Hong Kong Island would pass through Ko Fai Road priority junction / Cha Kwo Ling Road / Yau Tong Road / EHC or Ko Fai Road priority junction / Cha Kwo Ling Road / Yau Tong Road / EHC or Ko Fai Road priority junction / Cha Kwo Ling Road / Yau Tong Road / EHC or Ko Fai Road priority junction / Cha Kwo Ling Road / Lam Tin Interchange. For the traffic going to/from Tseung Kwan O, which would pass through Ko Fai Road priority junction / Cha Kwo Ling Road / Lam Tin Interchange or Ko Fai Road priority junction / Cha Kwo Ling Road / Lam Tin Interchange or Ko Fai Road priority junction / Cha Kwo Ling Road / Yau Tong Road / Lei Yue Mun Road. And the traffic can also pass through the Wai Yip street to Kwun Tong Action Area to/from Kwun Tong. The traffic ingress and egress routings of the site are illustrated in **Drawing Nos. 3.2 to 3.3**.

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Internal Driveway

3.2.3 The vehicular accesses and the internal transport facilities are linked up by internal driveway. Car parking spaces are located at the two basement floors and the loading/unloading spaces are located at ground floor.

3.3 Internal Transport Facility

- 3.3.1 Provisions of internal transport facilities, including parking spaces, loading/unloading bays and etc., for No. 4 Tung Yuen Street Redevelopment are proposed in accordance with the relevant requirements stipulated in the latest Hong Kong Planning Standard Guideline (HKPSG).
- 3.3.2 The proposed provisions have taken into consideration the factors of building function, residential flat mix and locality of No. 4 Tung Yuen Street Redevelopment. **Table 3.2** summarises the requirement and proposed provisions of internal transport facility of subject site.

Component	HKPSG Requirements ⁽¹⁾		Parameters	Provision Range	Proposed Provision								
Residential – 342 units						-							
Private Car Parking Space	GPS ⁽²⁾	R1 ⁽³⁾	R2 ⁽⁴⁾	R3 ⁽⁵⁾									
Flat Size (FS) ≤ 40m ²		0.5			139 units	9-16	9						
$40m^2 < FS \\ \leq 70m^2$	1 snace	1.2		R3=1,wn en 2.00< PR <	158 units	25-43	25						
$70m^2 < FS \le 100m^2$	per 4-7	2.4	1.0	5.00; R3=0.90,	43 units	14-24	14						
100m ² < FS ≤ 130m ²	units	4.1 5.5	4.1	\$ 4.1		4.1 5.5				when 5.00< PR	0 units	0	0
130m ² < FS ≤ 160m ²							≤ 8.00	0 units	0	0			
FS >160m ²		7.0				7.0		2 units	2-3	2			
	Sub-total		342 units	50-86	50								
Visitor Parking Space	5 spaces per block			1 block	5	5							
					Sub-total	55-91	55						
Motorcycle Parking Space	1 space per 100-150 units			342 units	3-4	3							
Loading/Unload ing Bay	1 bay per block			1 block	1	1 (HGV)							
Commercial – retail – 2,177.1m ²													
Private Car Parking Space	1 space per 150-300m ² GFA			2,177.1m²	8-15	8							
Motorcycle Parking Space	5%-10%	oftotal	car parki	ng spaces	8-15 spaces	1-2	1						

 Table 3.2
 Proposed Internal Transport Facility

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Component	HKPSG Requir	Parameters	Provision Range	Proposed Provision		
Loading/Unload ing Bay	1 bay per 800-1	2,177.1m²	2-3	2 (1 for HGV and 1 for LGV)		
Total :						
	Car Pa	rking Space			63	
Reserved Space for Disabilities	TPDM Volume 6, Chapter 8.5:Total No. of CarRequiredParking Space inSpace forLotDisabilities1-50151-1502151-2503251-3504351-4505Above 4506		55-91 spaces	2	2 (Included in the above 63 spaces)	
Motorcycle Parking Space						
Loading/Unloading Bay						

Remarks:

- (1) Provision requirements are based on the latest HKPSG Chapter 8, Section 7, unless specified otherwise.
- (2) GPS refers as Global Parking Standard.
- (3) R1 is the Demand Adjustment Ratio, subject to the corresponding unit size.
- (4) R2 is the Accessibility Adjustment Ratio, subject to the location of application site. Ratio of 1 is applied in this case, as the application site is not within the 500m-radius catchment of the nearest rail station.
- (5) R3 is the Domestic Plot Ratio.
- 3.3.3 **Table 3.2** suggests that the No. 4 Tung Yuen Street Redevelopment would provide 63 car parking spaces, in which 2 parking spaces would be reserved for disabilities. Besides, 4 motorcycle parking spaces and 3 loading/unloading bays (2 loading/unloading bays for HGVs and 1 loading/unloading bay for LGV) would be provided as ancillary transport facilities.

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4. TRAFFIC FORECASTS

4.1 Forecasting Assumptions and Methodology

<u>Design Year</u>

4.1.1 The tentative full occupation year of No. 4 Tung Yuen Street Redevelopment is year 2032. The design year of 2035, three years after full occupation, is therefore adopted in this study for forecasting and assessment purposes.

Future Road Network

- 4.1.2 Review of the Hong Kong Government planning documents reveals the one planned strategic highway structure in East Kowloon Trunk Road T2 in Kai Tak, which would affect the traffic circulation of Yau Tong area.
- 4.1.3 Trunk Road T2 is a dual two-lane trunk road of approximately 3 km long connecting Central Kowloon Route (CKR) leading to Western Harbour Crossing (WHC) on the West, and TKO-LTT leading to the Cross Bay Link on the East. Trunk Road T2 runs along South East Kowloon connecting CKR at its west and TKO-LTT at its east.
- 4.1.4 The major function of Trunk Road T2 is to relieve the internal traffic loading of East Kowloon. Trunk Road T2, together with CKR and TKO-LTT will form the Route 6 alignment in the strategic road network, providing an east-west express link across Kowloon to relief the existing heavily utilised road network in the Central and East Kowloon areas. Together with CKR, the tentative commissioning year of Trunk Road T2 is 2026.
- 4.1.5 The latest future planned Trunk Road T2 alignment is shown in **Drawing 4.1**.

<u>Traffic Growth Rate</u>

4.1.6 To estimate the year 2035 reference traffic flows in the local road network, an appropriate growth factor was identified for the area. The derivation of the growth rate is determined with reference to population data, historical growth trends and area planning data, which are summarised below.

Population Data (From The Census and Statistics Department (C&SD)

4.1.7 According to the Census and Statistics Department (C&SD), the Hong Kong resident population will increase to 8.19 million in 2046, and the average growth rate from years 2024 to 2046 is +0.38%. The Hong Kong Resident Population between Year 2024 and Year 2046 are summarised in Table 4.1.

Table 4.1	Hong Kong Resident Population between Year 2024 and Year 2046
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Year	Hong Kong Resident Population				
2024	7,526,800				
2030	7,777,100				
2032	7,862,100				
2035	7,987,900				
2040	8,137,300				

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Year	Hong Kong Resident Population		
2045	8,190,700		
2046	8,190,400		
Annual Growth Rate (p.a.) – 2046/2024	+0.38%		

Historical Growth Trends

4.1.8 Reference has also been made to the historic records extracted in the latest Annual Traffic Census (ATC) published by Transport Department, the Average Annual Daily Traffic (AADT) of the nearby count station between Year 2018 and Year 2022 have been taken into account to establish the historical growth trend, the findings are summarised in **Table 4.2** and location of total 6 count stations are indicated in **Drawing 4.2**.

Table 4.2	AADT of nearby	ATC Traffic Counts between Years	5 2018 to 2022
1 able 4.2	AADT OF Hearb	ATC Harne Counts between reals	5 ZUIO LU ZUZ

Road	Stn	Annual Average Daily Traffic (AADT)				Growth Rate (p.a.)	
	NO.	2018	2019	2020	2021	2022	2022/ 2018
Lei Yue Mun Rd (Ko Chiu Rd - Kai Tin Rd)	4651	1,170	1,270	1,260	1,500	1,500	+7.05%
Shung Shun Street & Yan Wing Street (Ko Chiu Road - Sam Ka Tsuen Ferry Pier)	3883	11,320*	11,400*	10,670*	11,900	11,000	-0.71%
Ko Chiu Road (Cha Kwo Ling Road - Lei Yue Mun Road)	4084	12,080	12,170*	11,390*	11,880*	13,120	+2.15%
Ko Chiu Road (Lei Yue Mun Road - Lei Yue Mun Road)	4621	8,050	8,390	8,690	9,390	8,590	+1.68%
Lei Yue Mun Road (Ko Chiu Road - Ko Chiu Road)	4031	20,710	20,860*	19,530*	20,360*	20,290	-0.51%
Yau Tong Road (Lei Yue Mun Road - Cha Kwo Ling Road)	4653	6,560	6,830	7,010	8,170	7,440	+3.35%
Total		59,890	60,920	58,550	63,200	61,940	+0.86%

Note: (*) Estimated by Growth Factor.

4.1.9 As suggested in **Table 4.2** above, the average annual growth rate of the AADT of the nearby count stations from Year 2018 to 2022 is +0.86% per annum.

Planning Data (From Working Group on Population Distribution Projections (WGPD)

4.1.10 Based on the projections of population distribution from Working Group on Population Distribution Projections (WGPD), the population from 2019 to 2029 for Kwun Tong District has been projected. The average annual growth rate from years 2024 to 2029 is illustrated in Table 4.3.

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Year	Population
2019	693,900
2020	692,400
2021	701,700
2022	703,800
2023	703,800
2024	706,800
2025	712,200
2026	723,800
2027	719,900
2028	716,600
2029	721,200
Growth Rate (p.a.) – 2029/2023	+0.41%

Table 4.3Projected Population of Kwun Tong District, 2019-2029

4.1.11 In order to ensure the robust forecast scenario, the annual growth rate of +0.86% per annum derived from AADT of the nearby count stations from Year 2018 to 2022 is adopted, to produce the year 2035 traffic forecasts from the 2024 observed traffic flows.

Nearby Planned Developments

- 4.1.12 Large portion of Yau Tong industrial area is currently zoned into "CDA", "R(E)" and "C" uses in the latest Outline Zoning Plan (OZP) and a number of residential developments are being committed in the recent years. The substantial change of land use would have significant impact to the current local traffic pattern in the future year.
- 4.1.13 The planned and committed developments in Yau Tong area, as listed in **Table 4.4**, which would have traffic contribution to the road network in the vicinity, have been considered in the traffic forecast for the year 2035. The peak hour traffic trips of each developments are also summarised in **Table 4.4**.

			Peak He	our Traffi	ic Trip (pcu/hr)
Ref.	Development	Туре	AM	Peak	PM	Peak
			Gen	Att	Gen	Att
1.	5 and 8 Tung Yuen Street, and adjoining Government Land ("CDA(1) Zone")	 Private Residential: 903 units ⁽¹⁾ 	37	12	14	24
2.	Yau Tong Inland Lot s 4B and 9, Yau Tong Marine Lot 57 and adjoining Government Land, Tung Yuen Street ("CDA(3) Zone")	 Private Residential: 1,393 units ⁽¹⁾ Retail: 172m² GFA ⁽²⁾ 	57	19	21	38
3.	Yau Tong Inland Lot 44 and adjoining Government Land, Junction of Shung Shun Street	- Private Residential: 657 units ⁽¹⁾	79	54	48	61

 Table 4.4
 Estimated Trip Generations of Nearby Planned Developments

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			Peak Hour Traffic Trip (p		cu/hr)	
Ref.	Development	Development Type		Peak	PM Peak	
			Gen	Att	Gen	Att
	and Yan Yue Wai ("CDA(5) Zone")	- Retail: 7,900m ² GFA				
4.	Lei Yue Mun Estate Phase 4	 Public Housing: 2000 units ⁽³⁾ GIC ⁽³⁾ 	96	75	57	70
5.	New Kowloon Inland Lot No. 6593 at Ko Chiu Road	 Private: 500 units ⁽⁴⁾ Retail: 5,520m² GFA ⁽⁴⁾ 	47	34	31	37
6.	New Kowloon Inland Lot No. 6602 at Ko Chiu Road (Yau Tong Ventilation Building Redevelopment)	 Private Residential: 500 units ⁽⁴⁾ 	35	21	14	18
7.	Public Housing Development at Pik Wan Road	 Public Housing: 3,208 units ⁽⁴⁾ Retail: 5,300m² GFA ⁽⁴⁾ GIC ⁽⁴⁾ 	226	163	126	161
8.	28 Sze Shan Street	 Private Residential: 92 units ⁽¹⁾ Retail: 2,061m² GFA ⁽¹⁾ 	24	15	15	20
9.	Ex-Cha Kwo Ling Kaolin Mine Site	 Public Housing: 2,250 units ⁽⁵⁾ Private Housing: 836 units ⁽²⁾ Primary School: 30 class ⁽⁶⁾ 	146	99	84	105
10.	Various Lots and Adjoining Government Land at Yau Tong Bay, Yau Tong, Kowloon	 Private Residential: 7,078 units ⁽¹⁾ Retail: 8,290m² GFA ⁽¹⁾ Hotel: 733 ⁽¹⁾ Kindergarten and GIC 	445	261	246	353
11.	Yau Tong Industrial Building Block 4	 Private Residential: 676 units ⁽⁴⁾ Day Care Centre for the Elderly ⁽⁴⁾ 	33	14	15	23
12.	Olympic Godown	 Private Residential 483 units ⁽¹⁾ 	20	6	7	13
13.	Gloria Weaving & Knitting Factory	 Transitional Housing 166 units ⁽⁴⁾ 	7	5	3	4
14.	Public Housing Development at Cha Kwo Ling Village	 Public Housing: 4,500 units⁽¹⁾ Retail: 29,097.05 m² GFA⁽⁴⁾ 	97	90	140	166
15.	Proposed Commercial Development at Yau Tong	- Retail: 2,560m ² GFA ⁽¹⁾	86	123	82	65

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			Peak Ho	our Traffic Trip (pcu/hr)			
Ref.	Development	Туре	AM	AM Peak PM P			
				Att	Gen	Att	
	Marine Lots 73 and 74 in Yau Tong Bay	 Office: 48,040 m² GFA⁽¹⁾ 					
16.	Kwun Tong Action Area	 Retail: 17,000m² GFA⁽⁴⁾ Office: 62,600 m² GFA⁽⁴⁾ 	145	194	150	133	
17.	18 Tung Yuen Street	 Private Residential: 224 units ⁽¹⁾ 	35	41	13	19	
18.	Canaryside	 Private Residential 210 units ⁽¹⁾ 	15	8	6	7	

Remarks:

(1) As extracted from the latest approved planning application.

- (2) As extracted from the Sale Brochure.
- (3) As extracted from the Planning Brief of Lei Yue Mun Estate Phase 4 published by Hong Kong Housing Authority
- (4) As extracted from newspaper articles / online information
- (5) As extracted from Public Housing Development at Ex-Cha Kwo Ling Kaolin Mine Site
- (6) As extracted from the Land Supply Initiatives, Paper No. 03/2017 from Task Force on Land Supply, Development Bureau and Planning Review on Development of Ex-Cha Kwo Ling Kaolin Mine Site Final Report (Quotation Ref.: PLNQ21/2011)

4.2 Forecasting Scenarios

4.2.1 The derived peak hour traffic trips of the subject site would be assigned onto the local road network in accordance with the observed traffic circulation pattern and the future planned road network described in **Section 4.1**. The distributions of the peak hour development traffic trips are shown in **Drawing 4.3**.

The Redevelopment Traffic Trips

4.2.2 The development peak hour traffic trips of the No. 4 Tung Yuen Street are estimated in accordance with the appropriate trip rates extracted from the latest T.P.D.M. Volume 1 Chapter 3 published by Transport Department with respect to the development parameters summarised in **Table 3.1**. The adopted trip rates and the estimated development traffic trips are summarised in **Table 4.5**.

Table 4.5	Estimated No. 4 Tung Yuen Street Redevelopment Traffic Trips
1 abie 4.5	Liniated No. 4 rung ruen street Kedevelopment frame rups

	Peak Hour Traffic Trip (pcu/hr)			
	AM	Peak	PM	Peak
	Generation	Attraction	Generation	Attraction
Subject Site				
Residential				
Average unit size (m ²)		43	m ²	
Trip rates (pcu/hr/flat) (1)	0.0718	0.0425	0.0286	0.037
No. of units	342			
Trips (pcu/hr)	25	15	10	13

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	LOT RATIO AND BUILDING HEIGHT RESTRICTIONS IN		esigned opt Checked upp Scale to Date opt marrie Drawing No. 4.2 Rev.	
1.0,0	PROPOSED FLAT, SHOP AND SERVICES, AND			
Rev.	Description Checked Dat	Rev	Nev. Description Checked Date Rev. Description Checked	ecked Date
-	· · ·	<u>·</u>	· · · · · · ·	
	25(20) AM(PM) PEAK TRAFFIC FLOW IN PCU/HR			
	LEGEND :			

CHK50748310/TIA/F43.CDR/LLH/100CT24



	Peak Hour Traffic Trip (pcu/hr)			
	AM	Peak	PMI	Peak
	Generation	Attraction	Generation	Attraction
Commercial – retail				
Trip rates (pcu/100m ² /hr) ⁽²⁾	0.2296	0.2434	0.3100	0.3563
GFA (m ²)		2,177	7.1m²	
Trips (pcu/hr)	5	6	7	8
Total	30	21	17	21

Remarks:

(1) Mean values of residential trip rates for the unit size of 60m² are adopted as the average unit size of the proposed scheme is around 47.2m².

(2) Mean values of trip rates are adopted.

(3) Nominal traffic trips are adopted.

- 4.2.3 A two-way traffic trip generated by No. 4 Tung Yuen Street Redevelopment in 2035 will be 51 pcu/hr and 38 pcu/hr in the AM and PM peak respectively.
- 4.2.4 Currently, the industrial building on the site generate a two-way vehicles traffic trip of 8 pcu/hr and 9 pcu/hr during the AM and PM peak respectively. The current (2024) and future (2035) traffic trip of this site are summarised in **Table 4.6**.

Table 4.6	Trip Generations of Current Land-use and Proposed Future Land-use
-----------	---

	Peak Hour Traffic Trip (pcu/hr)				
	AM Peak		PM Peak		
	Generation	Attraction	Generation	Attraction	
Observed 2024	6	2	5	4	
Forecasts 2035	30	21	17	21	
Net Difference (Forecasts - Observed)	+24	+19	+12	+17	

- 4.2.5 The result in **Table 4.6** reveals that the net difference is rather small in both peak hours. The proposed development will have little impact on the traffic of the vicinity in the peak hours.
- 4.2.6 The annual traffic growth rate and the nearby planned developments as discussed in Section4.1 would be considered to produce the year 2035 background traffic flows during the typical weekday morning and evening peak hours of the local road network.

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- 4.2.7 The traffic trips of No. 4 Tung Yuen Street Redevelopment would be superimposed onto the background traffic flows to produce the anticipated year 2035 peak hour traffic flows for reference and design scenarios.
- 4.2.8 Based on an annual growth rate of +0.86% p.a. from 2023 to 2035, and the traffic generation of committed and potential developments is shown in **Table 4.4**. The reference traffic flows and design traffic flows in year 2035 as shown in **Drawing 4.4** and **Drawing 4.5** respectively.

2035 Reference Flows = 2024 Observed Traffic Flows + 2023-2035 background traffic growth + Committed Development Traffic

2035 Design Flows = 2024 Observed Traffic Flows + 2023-2035 background traffic growth -2024 Application Site Traffic Flows + Proposed Development Traffic Flows

Section 16 Application for Proposed Flat, Shop and Services and Eating Place with Minor Relaxation of Plot Ratio and Building Height Restrictions in "Residential (Group E)" Zone at No. 4 Tung Yuen Street, Yau Tong, Kowloon	CHK50748310	
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5. TRAFFIC IMPACT ASSESSMENT

5.1 Junction Operational Performance

- 5.1.1 The identified 8 key local junctions would be assessed in accordance with the anticipated year 2035 traffic flows for both reference and design scenarios in order to investigate the traffic impact of the proposed scheme with respect to the scenario without the subject development.
- 5.1.2 The junction assessments are based on the existing layouts and arrangements of the respective junctions, except J/O Cha Kwo Ling Road / Yau Tong Road (B), J/O Cha Kwo Ling Road / Ko Fai Road (C), J/O Lei Yue Mun Road / Yau Tong Road (F), and J/O Wai Yip Street / Wai Fat Road (H).
- 5.1.3 For the J/O Cha Kwo Ling Road / Yau Tong Road (B), an additional traffic lane from Yau Tong Road to Cha Kwo Ling Road has been suggested under the previously approved Section 16 application of the Yau Tong Bay Comprehensive Development, providing a left and right turn traffic lane for vehicles to Cha Kwo Ling Road. The indicative suggested junction layout is shown in **Drawing 5.1**.
- 5.1.4 The J/O Cha Kwo Ling Road / Ko Fai Road (C) has been planned to be converted into a signalised junction under the previously approved Section 16 application of the Yau Tong Bay Comprehensive Development, the indicative planned junction layout is shown in **Drawing 5.2**.
- 5.1.5 An additional traffic lane from Lei Yue Mun Road Northbound to Slip Road to EHC at J/O Lei Yue Mun Road / Yau Tong Road (F) has been planned, as shown in **Drawing 5.3**.
- 5.1.6 According to the Kwun Tong District Council Discussion Papers No. 9/2021 Infrastructure works for developments at Kwun Tong Action Area, the right-turn traffic lanes on Wai Yip Street Northbound and Southbound at J/O Wai Yip Street / Wai Fat Road (H) will be cancelled. The planned junction layout is shown in **Drawing 5.4**.
- 5.1.7 The assessment results are summarised in **Table 5.1**. The junction calculation sheets are attached in **Appendix B**.

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		RC/RFC ⁽⁶⁾					
(1)	Junction	Refe	rence	Design			
		AM Peak	PM Peak	AM Peak	PM Peak		
А	Cha Kwo Ling Road / Lam Tin Interchange	0.83	0.60	0.83	0.61		
В	Cha Kwo Ling Road / Yau Tong Road ⁽²⁾	22%	34%	20%	33%		
С	Cha Kwo Ling Road / Ko Fai Road ⁽³⁾	81%	85%	76%	80%		
D	Cha Kwo Ling Road / Ko Chiu Road	39%	50%	38%	49%		
Е	Lei Yue Mun Road / Ko Chiu Road	0.35	0.36	0.35	0.37		
F	Lei Yue Mun Road / Yau Tong Road ⁽⁴⁾	68%	71%	67%	71%		
G	Kai Tin Road / Lei Yue Mun Road	0.94	0.71	0.94	0.71		
Н	Wai Yip Street / Wai Fat Road ⁽⁵⁾	88%	69%	87%	69%		

Table 5.1	Junction O	perational	Performance	in `	Year	2035
	Junetion Of	scrutionar	i ci ioi illanec		- cui	2000

Remarks:

(1) Refer to **Drawing 2.2**;

(2) Junction Layout as shown in **Drawing 5.1**;

(3) Junction Layout as shown in **Drawing 5.2**;

(4) Junction Layout as shown in **Drawing 5.3;**

(5) Junction Layout as shown in **Drawing 5.4;**

(6) The operational performance of a signal junction is represented in Reserve Capacity (RC), which is defined as overloaded while the RC is less than 0%, The operational performance of a priority/roundabout is represented in Ratio to Flow Capacity (RFC), which is defined as overloaded if RFC over 1.00.

5.1.8 The results in **Table 5.1** indicate that the identified key junctions would operate within capacities with the Proposed Development in Year 2035, the operational performance of all key junctions would be similar for the reference and design scenarios in year 2035. Therefore, it is anticipated that the Proposed Development would not induce significant traffic impact to the surrounding road network.

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6. CONCLUSION

6.1 Summary

- 6.1.1 The application site is currently zoned Residential (Group E)" ("R(E)") under the latest approved Cha Kwo Ling, Yau Tong, Lei Yue Mun Outline Zoning Plan (OZP) no. S/K15/27. The application site was intended to be re-developed into a residential-based development with shop and services, and eating place. The applicant's intention to propose more residential units and commercial services for the community.
- 6.1.2 Currently, the subject site is occupied by a 7-storey industrial building, which will be redeveloped into one residential block with 342 residential units, and a 2,177.1m² commercial area.
- 6.1.3 Provisions of internal ancillary transport facilities, including parking spaces, loading/unloading bays and etc., for the No. 4 Tung Yuen Street Redevelopment are proposed in accordance with the relevant requirements stipulated in the latest Hong Kong Planning Standard Guideline (HKPSG). The proposed provisions have taken into consideration the factors of building function, residential flat mix and locality of No. 4 Tung Yuen Street Redevelopment.
- 6.1.4 In order to review the traffic impact of the new developments on the vicinity, traffic surveys have been conducted to establish the current peak hour traffic condition in the vicinity.
- 6.1.5 The proposed Redevelopment would be completed in year 2032. The design year of 2035, three years after full occupation, is therefore adopted in this study for forecasting and assessment purposes. This study have considered the future strategic transport link Trunk Road T2, future local developments and the latest Government planning assumptions.
- 6.1.6 Assessment results revealed that the traffic condition would be more or less the same in both Reference and Design scenarios in Year 2035. The traffic impact due to the Proposed Redevelopment is considered insignificant and could be accommodated by the surrounding road network.

6.2 Conclusion

6.2.1 In view of the above, the proposed Redevelopment under this Section 16 application is considered acceptable in traffic term.

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Appendix A

Public Transport Details and Servicing Schedules

Section 16 Application for Proposed Flat, Shop and Services and Eating Place with Minor Relaxation of Plot Ratio and Building Height Restrictions in "Residential (Group E)" Zone at No. 4 Tung Yuen Street, Yau Tong, Kowloon Traffic Impact Assessment Report 27/11/2024 Page 17



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Route No.	Frequency (min)		
Franchised B	lus		
6P	Lei Yue Mun Estate	Cheung Sha Wan (So Uk Estate)	3 scheduled service
14	Lei Yue Mun Estate	China Ferry Terminal	15
14D	Yau Tong	Choi Hung	5 scheduled service
14H	Yau Tong	(CIRCULAR) Shun Lee	60
14X	Yau Tong (Shung Tak Wai)	(CIRCULAR) Tsim Sha Tsui	15
33	Yau Tong	Tsuen Wan West Station	20
33B	Yau Tong	Tsuen Wan West Station	25
62P	Tuen Mun Central	Lei Yue Mun Estate	8
62X	Lei Yue Mun Estate	Siu Hong Station (South)	8
88X	Ping Tin	(CIRCULAR) Fo Tan Chun Yeung Estate	20
214	Yau Tong	Cheung Sha Wan (Kom Tsun Street)	12
215P	Lam Tin (Kwong Tin Estate)	Kowloon Station	1 scheduled service
216M	Lam Tin Station	(CIRCULAR) Yau Tong Station	15
259D	Lei Yue Mun Estate	Tuen Mun (Lung Mun Oasis)	7
603	Ping Tin	Central Ferry Piers	2 scheduled services
603A	Ping Tin	Central Market	15
603S	Ping Tin	Central (Guilman St)	3 scheduled service
613	On Tai (West) (Wo Tai House)	Shau Kei Wan Bus Terminal	15
A26	Yau Tong	Airport	30
A26P	Yau Tong	Airport	2 scheduled service
E22P	Yau Tong	AsiaWorld-Expo	3 scheduled service
E22X	Yau Tong	AsiaWorld-Expo	3 scheduled service
X42C	Yau Tong	Tsing Yi (Cheung Hang Estate)	1
N26	Yau Tong	Tung Chung Station	3 scheduled service
N214	Yau Tong	Mei Foo	2 scheduled service
N216	Yau Tong	Hung Hom Station	20
GMB			
23C	Laguna City	(CIRCULAR) Yau Tong Station	10
24	Lam Tin (Ping Tin PTI)	(CIRCULAR) Sam Ka Tsuen FerryPier	6
24M	Yau Tong PTI	Hing Tin (Pik Wan Road)	2
76B	Yau Tong PTI	United Christian Hospital	20
87	Lei Yue Mun Estate PTI	Kowloon Bay	20
90A	Hong Kong Children's Hospital	Yau Tong (Yau Lai Estate)	10

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Appendix B

Signal Calculation Sheets

Section 16 Application for Proposed Flat, Shop and Services and Eating Place with Minor Relaxation of Plot Ratio and Building Height Restrictions in "Residential (Group E)" Zone at No. 4 Tung Yuen Street, Yau Tong, Kowloon	CHK50748310	
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Job Title:	No. 4 Tung Yuen Street	ГIA						
Junction:	Cha Kwo Ling Road / Lar	n Tin Interchange (A)					Designed by:	SWY
Scheme:	2024 Observed Flow AN	l Peak					Checked by:	JPP
Design Year:	2024		Job No.: CHK5074	48310			Date: OCT, 20	24
Arm A	Lam Tin Interchange (SB)						
Arm B	Cha Kwo Ling Rd (WB)							
Arm C	Cha Kwo Ling Rd (EB)							
Arm D								
Arm E								
	574 1 456 3						Cha Kwo Ling Ro Arm B t 178	(WB)
	Arm C Cha Kwo Ling Rd (EB)		ENTRY ARM	A	В	C		
INPUT PARAM	ETERS							
V E L R D A Q Q Q C P OUTPUT PARA S K X2 M F T d Fc Q e	Approach Half Width (m) Entry Width (m) Effective Length of Flare Entry Radius (m) Inscribed Circle Diamete Entry Angle (degree) Entry Flow (pcu/hour) Circulating Flow Across I Peak Hour Factor METERS = 1.6 (E - V) / L = 1 - 0.00347 (A-30) - 0.1 = V + ((E-V) / (1+2S)) = EXP ((D-60) / 10) = 303 * X2 = 1 + (0.5 / (1+M)) = 0.21*Td (1 + 0.2*X2) = K (F - Fc*Qc*P)) (m) r (m) Entry (pcu/hour) Sharpness of flare 978 (1/R - 0.05)		8.20 10.50 3.75 30.00 20.00 1,557 515 1.0 0.98 1.05 8.98 0.45 2720 1.34 0.79 2431	8.10 8.60 1.40 26.00 52.00 1.00 246 1.408 1.0 0.57 1.08 8.33 0.45 2525 1.34 0.75 1583	9.10 11.20 6.20 35.00 18.00 1,081 374 1.0 0.54 1.06 10.11 0.45 3063 1.34 0.85 2915		
Qp	= Q*P			1557	246	1081		
DFC	= Qp / Qe	Design Flow / Capacity	0.64	0.64	0.16	0.37		



nctor: Cha We Ling Road View The Here hange (A) Designed Toy: X PAP A Designed Toy: X PA	Job Title:	No. 4 Tung Yuen Street TIA							
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Program 2024 [Job No.: CH450/48310 Table OCT, 2024 mn Aura Tinterchange (3)	Scheme:	2024 Observed Flow PM Peak						Checked by:	JPP
mA Lum Tin Interchange (B) m6 C-16 Kees ling Rd (H3) 0	Design Year:	2024		Job No.: CHK507	48310			Date: OCT, 20	24
m a Ga Koo Ling Rd (KB) m C Ga Koo Ling Rd (KB) m C Ga Koo Ling Rd (KB) m C Ga Koo Ling Rd (KB) S S S S S S S S S S S S S S S S S S S	Arm A	Lam Tin Interchange (SB)							
m C Charlow ling Rd (KB) m E Arm A Linn The Interchange (B) 1 3 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Arm B	Cha Kwo Ling Rd (WB)							
min Arm A. Liam The Interchange (51) 13 773 206 13 773 206 14 15 773 206 15 773 206 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 15 16 10 10 10 10 16 110 10 10 10 17 16 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10	Arm C	Cha Kwo Ling Rd (EB)							
Arm A Lam The Interchange (S) 13 1 13 1 13 1 13 1 13 1 13 1 13 1 14 1 15 1 15 1 15 1 15 1 15 1 15 1 16 1 17 10 18 10 19 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10 10	Arm D								
15 72 26 1				Arm A	Lam Tin Intercha	ange (SB)			
Image: Constraint of the second sec		531 <u></u>		Arm A		ange (SB) 206		Cha Kwo Ling Rd Arm B	(WB)
PUT PARAMETERS A B C Approach Half Width (m) Entry Width (m) Entry Midth (m) Effective Length of Flare (m) Inscribed Circle Diameter (m) Entry Angle (degree) Entry Angle (d		Arm C Cha Kwo Ling Rd (EB)						∞ 60	
Approach Half Wildth (m) Entry With (m) Entry Radius (m) Entry Radius (m) Entry Radius (m) Entry Angle (degree) Entry Angle (degree) Entry Angle (degree) Entry Angle (degree) Entry Flow (pcu/hour) c Circulating flow Accoss Entry (pcu/hour) c Circulating flow Accoss Entry (pcu/hour) t Circulating flow Accoss Entry (pcu/hour) Entry Flow Accoss Entry (pcu/hour) Entry Flow Accoss Entry (pcu/hour) t Circulating flow Accoss Entry (pcu/hour) t Circulating flow Accoss Entry (pcu/hour) Entry Flow Accoss Entry F	INPUT PARAM	ETERS		ENTRY ARM	A	В	С		
Entry Angle (degree) 20.00 10.00 18.00 Entry Flow (pcu/hour) 1.09 260 957 c Circulating Flow Across Entry (pcu/hour) 441 949 316 Peak Hour Factor 1.0 1.0 1.0 1.0 UTPUT PARAMETERS = 1.6 (E - V) / L Sharpness of flare 0.98 0.57 0.54 = 1.6 (E - V) / L Sharpness of flare 0.98 0.57 0.54 = 1.0 (0347 (Jk-30) - 0.378 (L/R - 0.05) 1.05 1.08 1.06 2 = V + ((E-V) / (1 + 2S)) 1.05 1.08 1.06 = 303 * X2 2720 2525 3063 1.11 = 303 * X2 720 2525 3063 1.13 = 1 + (0.5 / (1+M)) 1.34 1.34 1.34 1.34 := 0.21*7 (2 # 0.2*N2) 0.75 0.85 266 957 p = QP / Qe Design Flow / Capacity 0.44 0.13 0.32 Total Entry Flows 2,311	V E L R D	Approach Half Width (m) Entry Width (m) Effective Length of Flare (m) Entry Radius (m) Inscribed Circle Diameter (m)			8.20 10.50 3.75 30.00 52.00	8.10 8.60 1.40 26.00 52.00	9.10 11.20 6.20 35.00 52.00		
Entry Flow (pcu/hour) 1,094 260 957 c Circulating Flow Across Entry (pcu/hour) 441 949 316 Peak Hour Factor 1.0 1.0 1.0 1.0 UTPUT PARAMETERS 1.0 1.0 1.0 1.0 = 1.6 (E - V) / L Sharpness of flare 0.98 0.57 0.54 = 1 - 0.0347 (A-30) - 0.978 (1/R - 0.05) 1.05 1.08 1.06 2 = V + ((E-V) / (1+2S)) 8.98 8.33 10.11 1 = EXP (10-60) (10) 0.45 0.45 0.45 = 303 * X2 2720 22525 3063 3 = 1 + (0.5 / (1+M)) 1.34 1.34 1.34 : = 0.21*Td (1 + 0.2*X2) 0.79 0.75 0.85 e = K (F - FC_0C*P) 2492 1956 2968 p = Q*P 1094 260 957	A	Entry Angle (degree)			20.00	10.00	18.00		
C Circulating Flow Actoss Entry (EU) (1001) 441 9-9-9 3.10 Peak Hour Factor 1.0 1.0 1.0 1.0 uTPUT PARAMETERS 0.98 0.57 0.54 = 1.6 (E - V) / L Sharpness of flare 0.98 0.57 0.54 = 1.0 (0347 (A:30) - 0.578 (1/R - 0.05) 1.05 1.08 1.06 2 = V + ((E-V) / (1+25)) 8.98 8.33 10.11 = 830 * X2 2720 2525 3063 = 3 03 * X2 2720 2525 3063 = 1 + (0.5 / (1+M)) 1.34 1.34 1.34 : = 0.21*Td (1 + 0.2*X2) 0.79 0.75 0.85 e = K (F - Fe*CQ=P) 2492 1956 2968 p = QP / Qe Design Flow / Capacity 0.44 0.43 0.32	Q	Entry Flow (pcu/hour)	au (haur)		1,094	260	957		
Tech Hold Techo 1.0 1.0 1.0 1.0 UTPUT PARAMETERS = 1.6 (E - V) / L Sharpness of flare 0.98 0.57 0.54 = 1.0 (0.50) / (1+25)) 1.05 1.05 1.08 1.06 2 = V + ((E-V) / (1+25)) 8.98 8.33 10.11 i = EXP ((0-60) / (10) 0.45 0.45 0.45 = 303 * X2 2720 2525 3063 i = 1 + (0.5 / (1+M)) 1.34 1.34 1.34 :: = 0.21*rd (1 + 0.2*X2) 0.79 0.75 0.85 e = K (F - Fe*Qc*P) 2492 1956 2568 p = Q*P Design Flow / Capacity 0.44 0.13 0.32 FC = Qp / Qe Design Flow / Capacity 0.44 0.13 0.32	QC D	Circulating Flow Across Entry () Reak Hour Factor	cu/nour)		441	949	1.0		
$= 1.6 \ (E - V) / L Sharpness of flare = 0.98 0.57 0.54 = 1 - 0.00347 \ (A-30) - 0.978 \ (1/R - 0.05) = 0.98 8.33 10.11 = 0.00347 \ (1-25) 1.08 1.06 8.98 8.33 10.11 = 0.045 0.45 0.45 0.45 = 0.45 0.45 = 0.45 0.45 = 0.45 0.45 = 0.45 0.45 = 0.45 0.45 = 0.45 0.45 = 0.45 0.45 = 0.21^{+7} \ (1 + 0.2^{+} X2) = 0.79 0.75 0.85 = 0.21^{+7} \ (1 + 0.2^{+} X2) = 0.79 0.75 0.85 = 0.26 \ p = 0.9^{+} = 0.9^{+} = 0.9^{+} = 0.99 \ (D = 0.98 \ P = 0.99 \ (D = 0.99 \ P = 0.99 \ P = 0.99 \ (D = 0.99 \ P = 0.99 \ P = 0.99 \ (D = 0.99 \ P = 0.99 \ P = 0.99 \ (D = 0.99 \ P = 0.99 \ P = 0.99 \ (D = 0.99 \ P = 0.99 \ P = 0.99 \ P = 0.99 \ (D = 0.99 \ P = 0.99 \ P = 0.99 \ P = 0.99 \ (D = 0.99 \ P $	OUTPUT PARA	METERS			1.0	1.0	1.0		
= 303 *X2 2720 2525 3063 id = 1 + (0.5 / (1+M)) 1.34 1.34 1.34 : = 0.21*Td (1+ 0.2*X2) 0.75 0.85 e = K (F - Fc*Qc*P) 2492 1956 2968 p = Qp / Qe Design Flow / Capacity 0.44 0.44 0.13 0.32 Total Entry Flows 2,311	S K X2 M	= 1.6 (E - V) / L Sharp = 1 - 0.00347 (A-30) - 0.978 (1/ = V + ((E-V) / (1+2S)) = EXP ((D-60) /10)	ness of flare R - 0.05)		0.98 1.05 8.98 0.45	0.57 1.08 8.33 0.45	0.54 1.06 10.11 0.45		
d = 1 + (0.5 / (1+M)) c = 0.21*Td (1 + 0.2*X2) e = K (F - Fc*Qc*P) p = Q*P FC = Qp / Qe Design Flow / Capacity 0.44 0.44 0.13 0.32 FC = Qp / Qe Design Flows 2,311	F	= 303 * X2			2720	2525	3063		
c: = u.Z1*10 (1 + 0.2*X2) 0.79 0.75 0.85 e = K (F - Fc*Qc*P) 2492 1956 2968 p = Q*P 260 957 957 FC = Qp / Qe Design Flow / Capacity 0.44 0.44 0.13 0.32 — Total Entry Flows 2,311	Td	= 1 + (0.5 / (1+M))			1.34	1.34	1.34		
e = A (r - rc · uc · vc · vc · r/) 2492 1956 2968 p = Q*P 1094 260 957 FC = Qp / Qe Design Flow / Capacity 0.44 0.13 0.32 Total Entry Flows 2,311	FC	= 0.21*Td (1 + 0.2*X2)			0.79	0.75	0.85		
FC = Qp / Qe Design Flow / Capacity 0.44 0.44 0.13 0.32 Total Entry Flows 2,311	Qe On	= n (F - FC"QC"P) = 0*P			2492 1094	260	2968		
FC = Qp / Qe Design Flow / Capacity 0.44 0.13 0.32 Image: Capacity Flow / Capacit	~				1034	200	557		
Total Entry Flows 2,311	DFC	= Qp / Qe Desig	n Flow / Capacity	0.44	0.44	0.13	0.32		
		Total	Entry Flows	2,311					
	All 461		D M 1/-1 + 41 -	Sec 4 5 2					



Job Title:	No. 4 Tung Yuen Street	ΓIA						
Junction:	Cha Kwo Ling Road / Lar	n Tin Interchange (A)					Designed by:	SWY
Scheme:	2035 Reference Flow AM	/I Peak					Checked by:	JPP
Design Year:	2035		Job No.: CHK5074	48310			Date: OCT, 20	24
Arm A	Lam Tin Interchange (SB)						
Arm B	Cha Kwo Ling Rd (NB)							
Arm C	Cha Kwo Ling Rd (SB)							
Arm D								
Arm E								
	270 630						Cha Kwo Ling Rc Arm B t 10 t 670 € 55	I (NB)
	Arm C Cha Kwo Ling Rd (SB)		ENTRY ARM	A	В	С		
INPUT PARAM	IETERS						1	
V E L D A Q Q Q C P OUTPUT PARA S K X2 M F Td F C Q e Q P	Approach Half Width (m Entry Width (m) Effective Length of Flare Entry Radius (m) Inscribed Circle Diamete Entry Angle (degree) Entry Flow (pcu/hour) Circulating Flow Across I Peak Hour Factor METERS = 1.6 (E - V) / L = 1 - 0.00347 (A-30) - 0.1 = V + ((E-V) / (1+2S)) = XP ((D-60) / 10) = 303 * X2 = 1 + (0.5 / (1+M)) = 0.21*Td (1 + 0.2*X2) = K (F - Fc*Qc*P) = Q*P) (m) r (m) Entry (pcu/hour) Sharpness of flare 978 (1/R - 0.05)		8.20 10.50 3.75 30.00 52.00 20.00 1,890 695 1.0 0.98 1.05 8.98 0.45 2720 1.34 0.79 2282 1890	8.10 8.60 1.40 26.00 52.00 10.00 745 1,650 1.0 0.57 1.08 8.33 0.45 2525 1.34 0.75 1386 745	9.10 11.20 6.20 35.00 52.00 18.00 955 885 1.0 0.54 1.06 10.11 0.45 3063 1.34 0.85 2452 955		
DFC	= Qp / Qe	Design Flow / Capacity	0.83	0.83	0.54	0.39		
		rotai entry Flows	3,590					



Job Title:	No. / Tung Vuen Street	τιλ						
Junction:	Cha Kwo Ling Road / Lar	n Tin Interchange (A)					Designed by:	SWY
Scheme:	2035 Reference Flow PM	A Peak					Checked by:	IPP
Design Year	2035		Job No.: CHK5074	18310			Date: OCT. 20	24
Δrm Δ	Lam Tin Interchange (SB)					Dute: 001,20	
Arm B	Cha Kwo Ling Rd (NB)	1						
Arm C	Cha Kwo Ling Rd (NB)							
Arm D								
Arm E								
	225 545 55			125 990	300		Cha Kwo Ling Rd Arm B T 15 505 55	I (NB)
	Arm C Cha Kwo Ling Rd (SB)		ENTRY ARM	A	В	с	- 05	
INPUT PARAM	METERS							
V E L R D Q Q Q C P OUTPUT PAR S K X2 M F Td FC Q Q Q	Approach Half Width (m Entry Width (m) Effective Length of Flare Entry Radius (m) Inscribed Circle Diamete Entry Angle (degree) Entry Flow (pcu/hour) Circulating Flow Across I Peak Hour Factor AMETERS = 1.6 (E - V) / L = 1 - 0.00347 (A-30) - 0.1 = V + ([E-V) / (1+2S)) = EXP ((D-60) / 10) = 303 * X2 = 1 + (0.5 / (1+M)) = 0.21*Td (1 + 0.2*X2) = K (F - Fc*Qc*P) = 0.99	n) er (m) Entry (pcu/hour) Sharpness of flare 978 (1/R - 0.05)		8.20 10.50 3.75 30.00 52.00 20.00 1,415 625 1.0 0.98 1.05 8.98 0.45 2720 1.34 0.79 2340 1415	8.10 8.60 1.40 26.00 52.00 10.00 585 1,180 1.0 1.0 0.57 1.08 8.33 0.45 2525 1.34 0.75 1768 595	9.10 11.20 6.20 35.00 52.00 18.00 835 645 1.0 0.54 1.06 10.11 0.45 3063 1.34 0.85 2669 825		
Qр	= Q*P			1415	585	835		
	- uµ / ue	Total Entry Flows	2,835	0.00	0.33	0.31		
All the above	e formulas are in accordanc	e to T.P.D.M. Vol.2 Chp.4	Sec 4.5.9					



Job Title:	No. 4 Tung Yuen Street	ΤΙΑ						
Junction:	Cha Kwo Ling Road / Lar	n Tin Interchange (A)					Designed by:	SWY
Scheme:	2035 Design Flow AM P	eak					Checked by:	JPP
Design Year:	2035		Job No.: CHK5074	48310			Date: OCT, 20	24
Arm A	Lam Tin Interchange (SB)	-					
Arm B	Cha Kwo Ling Rd (NB)							
Arm C	Cha Kwo Ling Rd (SB)							
Arm D								
Arm E								
	270 635						Cha Kwo Ling Rc Arm B [★] 10 [★] 680	(NB)
	Arm C Cha Kwo Ling Rd (SB)		ENTRY ARM	A	В	C		[
INPUT PARAM	ETERS							
V E L R D A Q Q Q C P OUTPUT PARA S K X2 M F F Td FC Qe Qp	Approach Half Width (m Entry Width (m) Effective Length of Flare Entry Radius (m) Inscribed Circle Diamete Entry Angle (degree) Entry Flow (pcu/hour) Circulating Flow Across Peak Hour Factor METERS = 1.6 (E - V) / L = 1 - 0.00347 (A-30) - 0. = V + ((E-V) / (1+2S)) = EXP ((D-60) /10) = 303 * X2 = 1 + (0.5 / (1+M)) = 0.21*Td (1 + 0.2*X2) = K (F - Fc*Qc*P) = Q*P) r (m) Entry (pcu/hour) Sharpness of flare 978 (1/R - 0.05)		8.20 10.50 3.75 30.00 52.00 20.00 1.895 700 1.0	$\begin{array}{c} 8.10\\ 8.60\\ 1.40\\ 26.00\\ 52.00\\ 10.00\\ 755\\ 1.650\\ 1.0\\ \end{array}$	9.10 11.20 6.20 35.00 52.00 18.00 960 895 1.0 0.54 1.06 10.11 0.45 3063 1.34 0.85 2443 960		
DFC	= Qp / Qe	Design Flow / Capacity	0.83	0.83	0.54	0.39		
		rotai entry Hows	3,610					



Job Title:	No. 4 Tung Yuen Street T	1A						
Junction:	Cha Kwo Ling Road / Larr	Tin Interchange (A)					Designed by:	SWY
Scheme:	2035 Design Flow PM Pe	ak					Checked by:	JPP
Design Year:	2035		Job No.: CHK5074	8310			Date: OCT, 20	24
Arm A	Lam Tin Interchange (SB)							
Arm B	Cha Kwo Ling Rd (NB)							
Arm C	Cha Kwo Ling Rd (SB)							
Arm D								
Arm E				om Tir Int	ango (CD)			
	225 550 65				T.		Cha Kwo Ling Rd Arm B t 15 510 65	(NB)
	Arm C Cha Kwo Ling Rd (SB)		ENTRY ARM	Δ	в	L C	1	
INPUT PARAM	ETERS			А	В			
V	Approach Half Width (m Entry Width (m))		8.20 10.50	8.10 8.60	9.10 11.20		
L	Effective Length of Flare	(m)		3.75	1.40	6.20		
R	Entry Radius (m)			30.00	26.00	35.00		
D	Inscribed Circle Diameter	r (m)		52.00	52.00	52.00		
А	Entry Angle (degree)			20.00	10.00	18.00		
Q	Entry Flow (pcu/hour)			1,420	590	840		
Qc	Circulating Flow Across E	ntry (pcu/hour)		630	1,180	650		
P OLITPLIT PARA	Peak Hour Factor			1.0	1.0	1.0		
CONTONIAN								
S	= 1.6 (E - V) / L	Sharpness of flare		0.98	0.57	0.54		
К	= 1 - 0.00347 (A-30) - 0.9	78 (1/R - 0.05)		1.05	1.08	1.06		
X2	= V + ((E-V) / (1+2S))			8.98	8.33	10.11		
M	= EXP ((D-60)/10)			0.45	0.45	0.45		
F	= 303 * X2			2720	2525	3063		
Td	= 1 + (0.5 / (1+M))			1.34	1.34	1.34		
Fc	= 0.21*Td (1 + 0.2*X2)			0.79	0.75	0.85		
Qe	$= K (F - Fc^*Qc^*P)$			2336	1768	2665		
Qp	= Q*P			1420	590	840		
DFC	= Qp / Qe	Design Flow / Capacit	y 0.61	0.61	0.33	0.32		
		Total Entry Flows	2,850					
All the above	formulas are in accordanc	e to T.P.D.M. Vol.2 Ch	p.4 Sec 4.5.9					

TRAFFIC SIGN	IALS	CALC	ULA	TION							Job No	.: <u>CHK50748</u>	3310		MVA HO		
Junction: Cha ł	Kwo Ling	Road / Y	'au Tong	g Road											Design Year:	2024	
Description: 2024	Observe	d Flows									Designed	By: <u>CCT</u>			Checked By:	JPP	
	ents				Radi	ius (m)	t (%)	Pro. Tu	rning (%)	Revised Flow (Saturation pcu/hr)		AM Peak			PM Peak	
Approach	Moveme	Phase	Stage	Width (m)	Left	Right	Gradien	AM Peak	PM Peak	AM Peak	PM Peak	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Cha Kwo Ling Road (EB)	† †	B B	1 1	3.300 3.300					1	1945 2085	1945 2085	249 266	0.128 0.128		228 244	0.117 0.117	1
Yau Tong Road (SB)	ا م	D D	3 3	4.500 4.000	17	13				1900 1930	1900 1930	90 137	0.047 0.071		144 162	0.076 0.084	
Che Kwe Line Deed	+	•	1.0	2 800						1005	1005	650	0.007	0.227	640	0 222	0.333
(WB)	¦ ≁	C	1,2	3.800		13				1840	1995	118	0.327 0.064	0.327	103	0.322	0.322
Pedestrian Crossing		Ер	1,2,4	MIN GR	EEN + F	LASH =	5	÷	10	-	15						
		Fp Gp Hp	2,4 4 3,4	MIN GR MIN GR MIN GR	EEN + F EEN + F EEN + F	LASH = LASH = LASH =	5 5 5	+ + +	9 9 5	= = =	14 14 10			·			
Notes:				Flow: (ocu/hr)			λ			[▲] N	Group	A,D,Gp	B,C,D,Gp	Group	A,D,Gp	B,C,D,Gp
							137(162)		90(144))		У	0.192	0.327	У	0.173	0.322
										118(103)	A.	L (sec)	34	40	L (sec)	30	36
				-		515(472)	1			652(642)		C (sec)	100	100	C (sec)	90	90
												y pract.	0.594	0.540	y pract.	0.600	0.540
												R.C. (%)	210%	65%	R.C. (%)	246%	68%
1.	s	Ep <÷	>	2.		c	Ер <÷ Fp	> 3. ∧ ∵ ∵			D	4 . Gp <	Ep > <	-> Fp ↓	5.		
	•	A				•	A	=			Hp ↓			Hp			
I/G= 2			I/G=	5				I/G= 6		10	I/G	= 14	14	I/G=			
			1	-				,	I		Dat 02 (e: Oct 2024		Junct Cha K	ion: (wo Ling Road)	/ Yau Tong F	B Road

TRAFFIC SIGN	IALS	CALC	CULA	TION							Job No.	: <u>CHK5074</u>	<u>8310</u>		MVA HO		
Junction: Cha ł	Kwo Ling	Road / Y	'au Tong	g Road				_							Design Year:	2035	
Description: 2035	Reference	ce Flows	(Improve	ement sch	eme)			_			Designed	By: <u>CCT</u>			Checked By:	JPP	
	nts				Rad	ius (m)	(%)	Pro. Tu	rning (%)	Revised Flow	Saturation (pcu/hr)		AM Peak			PM Peak	
Approach	Moveme	Phase	Stage	Width (m)	Left	Right	Gradient	AM Peak	PM Peak	AM Peak	PM Peak	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Cha Kwo Ling Road (EB)	† †	B	3 3	3.300 3.300						1945 2085	1945 2085	408 437	0.210 0.210	0.210	396 424	0.204 0.203	0.203
Yau Tong Road (SB)	•] •]• [*	D D D	2 2 2	3.300 3.300 3.300	17 20	16 13		20% / 80%	o 42% / 58%	1785 1915 1870	1785 1920 1870	173 186 181	0.097 0.097 0.097	0.097	186 199 195	0.104 0.104 0.104	0.104
Cha Kwo Ling Road (WB)	↑ †►	A A	1 1	3.800 3.000		13		36%	34%	1995 1840	1995 1845	700 645	0.351 0.351	0.351	580 535	0.291 0.290	0.291
Pedestrian Crossing		Ер Бр Нр	1,3 1 3 2,3	MIN GR MIN GR MIN GR	EEN + F EEN + F EEN + F	LASH = LASH = LASH = LASH =	5 5 5 5	+ + + +	10 9 9 5	= = =	15 14 14 10						
Notes:				Flow: (ocu/nr)			\wedge			[↑]	Group	A,D,Gp	A,D,B	Group	A,D,Gp	A,D,B
							330(310		 210(270) 	235(180))	L (sec)	34	13	y L (sec)	0.395 34	13
						845(820)			1110(935)		C (sec)	120	120	C (sec)	120	120
												y pract.	0.645	0.803	y pract.	0.645	0.803
												R.C. (%)	44%	22%	R.C. (%)	63%	34%
Stage / Phase Diagram	S			2.				3.				4.			5.		
		Er ≪	> ^ 			4) ★	Gp <	Ep → <	>						
	•	A	′ ₩ 				Hp	* *	<u> </u>		Hp : 						
I/G= 5 I/G= 5			I/G=	6 6				I/G= 5			I/G= I/G=			I/G=			
											Date 02 C	e: Dct 2024		Junct Cha k	tion: (wo Ling Road	/ Yau Tong F	B Road

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TRAFFIC SIGN	IALS	CALC	CULA	TION							Job No.	: <u>CHK5074</u>	8310		MVA HO		
Junction: Cha ł	Kwo Ling	Road / Y	au Tong	Road				_							Design Year:	2035	
Description: 2035	Design F	-lows (Im	proveme	nt scheme	e)			_			Designed	By: <u>CCT</u>			Checked By:	JPP	<u> </u>
	nts				Rad	ius (m)	(%)	Pro. Tu	rning (%)	Revised Flow	Saturation (pcu/hr)		AM Peak			PM Peak	
Approach	Moveme	Phase	Stage	Width (m)	Left	Right	Gradient	AM Peak	PM Peak	AM Peak	PM Peak	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Cha Kwo Ling Road (EB)	† †	B	3 3	3.300 3.300						1945 2085	1945 2085	413 442	0.212 0.212	0.212	398 427	0.205 0.205	0.205
Yau Tong Road (SB)	•] •]• [*	D D D	2 2 2	3.300 3.300 3.300	17 20	16 13		21% / 79%	o 44% / 56%	1785 1915 1870	1785 1920 1870	175 187 183	0.098 0.098 0.098	0.098	187 202 196	0.105 0.105 0.105	0.105
Cha Kwo Ling Road (WB)	↑ †►	A A	1 1	3.800 3.000		13		37%	34%	1995 1835	1995 1845	713 657	0.357 0.358	0.357	587 543	0.294 0.294	0.294
Pedestrian Crossing		Ер Fр Gp Hp	1,3 1 3 2,3	MIN GR MIN GR MIN GR	EEN + F EEN + F EEN + F EEN + F	CLASH = CLASH = CLASH = CLASH =	5 5 5 5	+ + + +	10 9 9 5	= = =	15 14 14 10			T			Γ
Notes:				FIOW: (ocu/nr)			\wedge			₽ ^N	Group	A,D,Gp	A,D,B	Group	A,D,Gp	A,D,B
							330(310		 215(275) 	245(185)	1	L (sec)	34	13	y L (sec)	34	13
						855(825)			1125(945)		C (sec)	120	120	C (sec)	120	120
												y pract.	0.645	0.803	y pract.	0.645	0.803
												R.C. (%)	42%	20%	R.C. (%)	62%	33%
Stage / Phase Diagram	S			2.				3.				4.			5.		
		E¢ <	> > ^			4		> >	Gp <i><</i>	Ep → <	->						
	•	Fr A	> ↓ ↓				Hţ	∧ ⊳¦ ∀	В		∧ Hp						
I/G= 5			I/G=	6				I/G= 5			I/G=			I/G=			
			1/0-	<u> </u>				1//0= 0			Date 02 C	e: Oct 2024		Junct Cha k	tion: Kwo Ling Road	/ Yau Tong F	B

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Simplified Priority Junction Capacity Calculation



Junction: Cha Kwo Ling Road / Ko Fa Scheme: 2024 Observed Flows	Road (C)			Desi Che	gned by: SWY cked by: JPP
Design Year: 2024		Job No.: CHK50748310		Date	e: Oct-24
Arm A: Cha Kwo Ling Road (NB)					
Arm C: Cha Kwo Ling Road (SB)					
Arm C AM	PM				
Cha Kwo Ling 273	233	\longrightarrow	_		
RODO (SB) <u>302</u>	272]		
			V		
			AM	PM	Arm A
			48	56	(NB)
			↓		
		¬			
AM	PM				
425	404	1			
		• • • • • • • • •			
		Arm B Ko Fai Road			
GEOMETRY					
Maior Road Width (m)	W	12.30	Lane widths (m)	w(b-a)	0.00
Central Reserve Width (m)	Wcr	0.00		w(b-c)	3.80
Blockage of major road right turn Combined stream on minor arm	A\N5 A\N5	N Y		w(c-b)	2.87
	.,				
Visibility Distances (m)	Vr(b-a)	18	Calculated	D	0.57
	VI(b-a)	31	Parameters	E	0.948
	Vr(b-c)	48		F	0.848
		20		•	0.070
ANALYSIS			/	AM PEAK	PM PEAK
TRAFFIC FLOWS (pcu/hr)	q(c-a)			273.35	233.4
	q(c-b)			301.95	291.7
	q(a-b) a(a-c)			48.1 331.8	56.1 341.5
	q(b-a)			0	0
	q(b-c) f			425.25	404.1
CAPACITIES (pcu/hr)	Q(b-ac)			636.831	634.3
	Q(c-b)			564 556	561.4
				0011000	00111
				0.50	~ ~~
KrC S	c-b b-ac			0.53 0.67	0.52 0.64
RFC				0.67	0.64
Where VI and Vr are visibility distance	s to the left or rig	ht of the respective streams			
D = (1+0.094(w(b-a)-3.65))(1+0.0009(v))	r(b-a)-120))(1+0.0	0006(VI(b-a)-150))			
E = (1+0.094(wc-b)-3.65))(1+0.0009(V F = (1+0.094(wc-b)-3.65))(1+0.0009(Vr))	(c-c)-120)) (c-b)-120))				
Y = 1-0.0345W					
	- 11				
f = proportion of minor traffic turning I $\Omega(b_{-}\alpha_{c}) = \Omega(b_{-}\alpha)^{*}\Omega(b_{-}\alpha_{c})^{*}(1) f^{*}\Omega(b_{-}\alpha_{c})^{*}$	en +f*Q(b-a) Car	acity of combined streams			

All the above formulas are in accordance to T.P.D.M. Volume 2 Chapter 4 Appendix 1

	IALS	CALC	ULA	TION							Job No.	: <u>CHK5074</u>	<u>8310</u>		MVA HO		
Junction: Cha I	Kwo Ling	Road / K	Ko Fai Ro	oad				_							Design Year:	2035	
Description: 2035	Reference	ce Flows						-			Designed	By: <u>CCT</u>			Checked By:	JPP	
	Its				Radi	ius (m)	(%)	Pro. Tu	rning (%)	Revised Flow	Saturation		AM Peak			PM Peak	
Approach	Movemer	Phase	Stage	Width (m)	Left	Right	Gradient	AM Peak	PM Peak	AM Peak	PM Peak	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Cha Kwo Ling Road (SB)	† 	A A	1 1	3.300 3.300		15				1945 1895	1945 1895	425 490	0.219 0.259	0.259	385 505	0.198 0.266	0.266
Cha Kwo Ling Road (NB)	≁† ↑	B B	2 2	3.300 3.300	15			22%	27%	1905 2085	1895 2085	293 322	0.154 0.154	0.154	262 288	0.138 0.138	0.138
Ko Fai Road (EB)	•]	С	1,3	4.000	12.5					1800	1800	695	0.386		575	0.319	
Pedestrian Crossing		Ep Fp Gp Hp	2,3 2 3 1,3	min gr Min gr Min gr Min gr	EEN + F EEN + F EEN + F EEN + F	LASH = LASH = LASH = LASH =	5 5 5 5	+ + +	5 5 6	= = =	10 10 10 11			•			٠
Notes:				Flow: (p	ocu/hr)						4 N	Crown	0.5-	4.0.0-	Crown	0.5-	4.0.0-
											+™	v	0.386	0.412	Group	0.319	0.405
					60F/F7F	`	490(505)	425(385)				L (sec)	19	17	L (sec)	19	17
					095(575)		550(480)				C (sec)	100	100	C (sec)	100	100
							65(70)					y pract.	0.729	0.747	y pract.	0.729	0.747
												R.C. (%)	89%	81%	R.C. (%)	128%	85%
Stage / Phase Diagram	s													-			
1. С Нр	>	A		2. Fp	<> ↓	в	< Ep	->	C Gp) > < Hp	> Ep	4.			5.		
I/G= 2			I/G=	5				I/G= 2		10	I/G=			I/G=			
I/G= 2			I/G= :	5				I/G= 2	<u> </u>	10	1/G= Date 02 0	e: Dct 2024		I/G= Junct Cha k	l tion: (wo Ling Road	/ Ko Fai Roa	G

TRAFFIC SIGN	IALS	CALC	ULA	TION							Job No.	: <u>CHK50748</u>	3310		MVA HO	NG KONG	
Junction: Cha ł	Kwo Ling	Road / K	o Fai Ro	ad				-							Design Year:	2035	
Description: 2035	Design F	lows									Designed	By: <u>CCT</u>			Checked By:	JPP	
	ţ				Radiu	us (m)	(%	Pro. Tu	ning (%)	Revised	Saturation		AM Peak			PM Peak	
Approach	Movemen	Phase	Stage	Width (m)	Left	Right	Gradient (AM Peak	PM Peak	AM Peak	PM Peak	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Cha Kwo Ling Road (SB)	† ⁺	AA	1 1	3.300 3.300		15				1945 1895	1945 1895	425 510	0.219 0.269	0.269	385 520	0.198 0.274	0.274
Cha Kwo Ling Road (NB)	- ↑	B B	2 2	3.300 3.300	15			24%	28%	1900 2085	1890 2085	296 324	0.156 0.155	0.156	264 291	0.140 0.140	0.140
Ko Fai Road (EB)	٩	С	1,3	4.000	12.5			I		1800	1800	720	0.400		590	0.328	
Pedestrian Crossing		Ep Fp Gp Hp	2,3 2 3 1,3	min gri Min gri Min gri Min gri	EEN + FL EEN + FL EEN + FL EEN + FL	_ASH = _ASH = _ASH = _ASH =	5 5 5 5	+ + +	5 5 6	= = =	10 10 10 11						
Notes:				Flow: (p	ocu/hr)			/			 N	Group	C,Fp	A,B,Gp	Group	C,Fp	A,B,Gp
					720(590)		510(520) 70(75)	425(385)			1	y L (sec) C (sec) y pract. R.C. (%)	0.400 19 100 0.729 82%	0.425 17 100 0.747 76%	y L (sec) C (sec) y pract. R.C. (%)	0.328 19 100 0.729 122%	0.414 17 100 0.747 80%
Stage / Phase Diagram	s			1													
1. c		A		2. Fp	<>	в	< Ep	.>	C Gp	, > < Нр	> Ep	4.			5.		
I/G= 2 I/G= 2			I/G= 5	5				I/G= 2		10 10	/G= /G=			I/G=			
											Date 02 O	: oct 2024		Junct Cha K	i on: wo Ling Road	/ Ko Fai Roa	d O

TRAFFIC SIGN	IALS	CALC	ULA	TION							Job No.	: <u>CHK50748</u>	<u>8310</u>		MVA HO		S LIMITED
Junction: Cha I	Kwo Ling	Road / K	o Chiu F	Road				_							Design Year	: _ 2024	
Description: 2024	Observe	d Flows						_			Designed	By: <u>CCT</u>			Checked By:	JPP	
					Padi	ue (m)	_	Bro. Tu	rning (%)	Revised	Saturation		AM Poak			PM Posk	
	ements						ient (%			Flow	(pcu/hr)		AWIFEAK	1		rwreak	1
Approach	Move	Phase	Stage	Width (m)	Left	Right	Grad	AM Peak	PM Peak	AM Peak	PM Peak	Flow (pcu/hr)	y Value	Critical	y Flow (pcu/hr)	y Value	Critical y
Cha Kwo Ling Road (NB)	` *	A A	1 1	3.300 3.300		15				1945 1895	1945 1895	269 276	0.138 0.146	0.146	264 297	0.136 0.157	0.157
Cha Kwo Ling Road	1	С	2	3.000	15.5		4.7			1565	1565	136	0.087	0.087	128	0.082	0.082
(SB)		С	2	3.600			4.7			1780	1780	60	0.034		65	0.037	
Ko Chiu Rood	*⊤*	D	2	2 500	10	16		60% / 21%	750/ / 250/	1725	1720	102	0.050		106	0.061	0.061
(WB)	, ⊢	B	3	3.500 3.800	10	16		69%/31%	0 75% / 25%	1735	1900	102	0.059	0.059	106	0.061	0.061
Pedestrian Crossing		Dp	4	MIN GR	EEN + F	LASH =	8	+	7	=	15						
		Ep Fp	4	MIN GR MIN GR	EEN + F	LASH = LASH =	8 10	+ +	8	=	15 18			*			*
Notes:				Flow: (p	ocu/hr)							Oreven			Crown	1000	4.0.0.5
								\wedge	-		Ŧ	v	0.291	A,C,B,F	• Group	0.300	а,с,в,гр 0.300
								60(65)	136(128)	144(143)	*	L (sec)	36	40	L (sec)	36	40
								269(264)			>	C (sec)	120	120	C (sec)	120	120
									▶ 276(297)	70(79)	↓	y pract.	0.630	0.600	y pract.	0.630	0.600
												R.C. (%)	116%	106%	R.C. (%)	110%	100%
Stage / Phase Diagram	s			2				3				4			5		
				-			С						Fp ≮>		0.		
						Ļ	*		↑	<.				Ŷ			
									_	\geq				¥			
A (*	В			<i>←</i> ····>	Ep			
													Dp				
U(C= 2)			1/0	7								10	40				
I/G= 2			I/G=	7				I/G= 6			I/G= I/G=	10	18	I/G	- =		
											02 0	oct 2024		Cha	a Kwo Ling Road	/ Ko Chiu Ro	bad U

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TRAFFIC SIGN	ALS	CALC	ULA	TION							Job No.:	: <u>CHK50748</u>	3310		MVA HO	NG KONG	
Junction: Cha k	Kwo Ling	Road / K	o Chiu F	Road				_							Design Year:	2035	
Description: 2035	Referenc	e Flows						_			Designed I	By: <u>CCT</u>			Checked By:	JPP	
					Radi	us (m)		Pro. Tu	rning (%)	Revised	Saturation		AM Peak			PM Peak	
	ements						lient (%		g (,0 ,	Flow	pcu/hr)						
Approach	Move	Phase	Stage	Width (m)	Left	Right	Grad	AM Peak	PM Peak	AM Peak	PM Peak	Flow (pcu/hr)	y Value	Critical	/ Flow (pcu/hr)	y Value	Critical y
Cha Kwo Ling Road (NB)	↑ *	A A	1 1	3.300 3.300		15				1945 1895	1945 1895	440 445	0.226 0.235	0.235	370 400	0.190 0.211	0.211
Cha Kwo Ling Road	¶ •	С	2	3.000	15.5		4.7			1565	1565	180	0.115	0.115	170	0.109	0.109
(SB)		С	2	3.600			4.7			1780	1780	160	0.090		175	0.098	
	◆ ₁ >		•	0.500	10	40		000/ / 400/	700/ / 000/	4745	4700		0.004		100	0.000	0.000
(WB)	I I [►]	B	3	3.500 3.800	10	16 12		60% / 40%	0 72% / 28%	1745 1900	1730 1900	141 154	0.081	0.081	138 152	0.080	0.080
Pedestrian Crossing		Dp Ep Fp	4 4 4	MIN GR MIN GR MIN GR	EEN + FI EEN + FI EEN + FI	LASH = LASH = LASH =	8 8 10	+ + +	7 7 8	= = =	15 15 18	Crew					•
Notes.				1 1000. (p	cu/iii)						Ŧ	Group	A,C,B,Dp	A,C,B,Fp	Group	A,C,B,Dp	A,C,B,Fp
								160(175)	180(170)	210(190)	•	L (sec)	36	40	L (sec)	36	40
								440(370)			>	C (sec)	120	120	C (sec)	120	120
								410(0/0)	↓ 445(400)	85(100)	¥	y pract.	0.630	0.600	y pract.	0.630	0.600
												R.C. (%)	46%	39%	R.C. (%)	58%	50%
Stage / Phase Diagrams	S			2				3				4			5		
				2.			C →	3.	* ↓	В			Fp ←> ←> Dp	^ ¥ Ep			
I/G= 2			I/G=	7				I/G= 6			I/G=	10	18	I/G	=		
1/0-2			∏/G=	<i>ı</i>				I/G= 0	I		Date 02 O	ct 2024	10	Jun Cha	- ı ction: Kwo Ling Road	/ Ko Chiu Ro	D

TRAFFIC SIGN	IALS	CALC	ULA	TION							Job No.:	: <u>CHK50748</u>	<u>3310</u>		MVA HO		
Junction: Cha k	Kwo Ling	Road / K	to Chiu I	Road				_							Design Year:	2035	
Description: 2035	Design F	lows						_			Designed I	By: <u>CCT</u>			Checked By:	JPP	
					Badi	uc (m)		Bro. Tu	rning (%)	Revised	Saturation		AM Book			PM Pook	
	ments				Raul		ent (%	Pro. Tu		Flow	(pcu/hr)					PWPeak	
Approach	Move	Phase	Stage	Width (m)	Left	Right	Gradi	AM Peak	PM Peak	AM Peak	PM Peak	Flow (pcu/hr)	y Value	Critical	y Flow (pcu/hr)	y Value	Critical y
Cha Kwo Ling Road (NB)	ר ר	A	1 1	3.300 3.300		15				1945 1895	1945 1895	440 450	0.226 0.237	0.237	370 405	0.190 0.214	0.214
Cha Kwo Ling Road	¶ •	С	2	3.000	15.5		4.7			1565	1565	180	0.115	0.115	170	0.109	0.109
(SB)		С	2	3.600			4.7			1780	1780	160	0.090		175	0.098	
Ko Chiu Bood	€	P	2	2 500	10	16		E09/ / 419/	710/ / 200/	1745	1725	144	0.092		141	0.091	0.091
(WB)	, ►	B	3	3.800	10	12		59%/41%	071%729%	1900	1900	144	0.083	0.082	141	0.081	0.061
Pedestrian Crossing		Dp Ep Fp	4 4 4	min gr Min gr Min gr	EEN + F EEN + F EEN + F	LASH = LASH = LASH =	8 8 10	+ + +	7 7 8	-	15 15 18						·
Notes:				Flow: (p	ocu/hr)			l			► N	Group	A,C,B,Dp	A,C,B,F	Group	A,C,B,Dp	A,C,B,Fp
									180(170)		+	у	0.435	0.435	j y	0.404	0.404
								160(175)	100(110)	215(195)	•	L (sec)	36	40	L (sec)	36	40
								440(370)			\geq	C (sec)	120	120	C (sec)	120	120
									↓ 450(405)	85(100)	*	y pract.	0.630	0.600	y pract.	0.630	0.600
								ſ				R.C. (%)	45%	38%	R.C. (%)	56%	49%
Stage / Phase Diagrams	5			2.		1		3.				4.			5.		
A							℃ ≯		* \$	В			Fp <> Cp	∧ ↓ Ep			
I/G= 2 I/G= 2			I/G= I/G=	7				I/G= 6			I/G=	10	18 18	I/G	=		
								1			Date 02 O	: ct 2024		Jun Cha	iction: Kwo Ling Road	/ Ko Chiu Ro	ad



Job Title:	No. 4 Tung Yuen Street	TIA						
Junction:	Lei Yue Mun Road / Ko	Chiu Road (E)					Designed by:	SWY
Scheme:	2024 Observed Flow AN	1 Peak					Checked by:	JPP
Design Year:	2024		Job No.: CHK5074	48310			Date: OCT, 2	024
Arm A	Lei Yue Mun Rd (SB)							
Arm B	Ko Chiu Rd (WB)							
Arm C	Ko Chiu Rd (EB)							
Arm D								
Arm E								
	327 136 63						► 5 ► 185 ► 174	Ko Chiu Rd (WB Arm B
	Arm C Ko Chiu Rd (EB)		ENTRY ARM	A	В	С		-
INPUT PARAM	ETERS							
V E L R D A Q Q C P OUTPUT PARA	Approach Half Width (n Entry Width (m) Effective Length of Flarc Entry Radius (m) Inscribed Circle Diamete Entry Angle (degree) Entry Flow (pcu/hour) Circulating Flow Across Peak Hour Factor METERS	n) e (m) er (m) Entry (pcu/hour)		7.43 9.60 9.70 40.00 38.70 38.00 514 203 1.0	6.50 8.50 4.62 19.00 38.70 65.00 364 469 1.0	6.70 9.76 10.48 49.50 38.70 40.00 526 292 1.0		
S	= 1.6 (E - V) / L = 1 0.00247 (A 20) 0	Sharpness of flare		0.36	0.69	0.47		
K V2	= 1 - 0.00347 (A-30) - 0.	978 (1/R - 0.05)		1.00	0.88	0.99		
A2 M	= V + ((E-V)/(1+23)) = EVP((D-60)/10)			0.09	7.54	0.20		
F	= 303 * X2			2634	2224	2509		
Td	$= 363^{\circ}$ X2 = 1 + (0.5 / (1+M))			1.45	1.45	1.45		
Fc	= 0.21*Td (1 + 0.2*X2)			0.83	0.75	0.81	1	1
Qe	= K (F - Fc*Qc*P)			2457	1640	2261	1	1
Qp	= Q*P			514	364	526		
DFC	= Qp / Qe	Design Flow / Capacity	0.23	0.21	0.22	0.23		
All the above	formulas are in accordan	e to T.P.D.M. Vol.2 Chp.4	Sec 4.5.9					







Job Title:	No. 4 Tung Yuen Street 1	ΓIA						
Junction:	Lei Yue Mun Road / Ko C	Chiu Road (E)					Designed by:	SWY
Scheme:	2035 Reference Flow AN	1 Peak		19310			Checked by:	JPP
Arm A	Lei Yue Mun Rd (SR)		100 NO CHK5074	+0310		J24		
Arm B	Ko Chiu Rd (WB)							
Arm C	Ko Chiu Rd (EB)							
Arm D								
Arm E			A	Lai Vua Mura Dalu	(60)			
	480 205 70						► 5 ★ 265 ★ 245	Ko Chiu Rd (WB) Arm B
	Arm C Ko Chiu Rd (EB)		ENTRY ARM	A	В	С]	1
INPUT PARAM	ETERS							
V E L D A Q Qc P	Approach Half Width (m Entry Width (m) Effective Length of Flare Entry Radius (m) Inscribed Circle Diamete Entry Angle (degree) Entry Flow (pcu/hour) Circulating Flow Across & Peak Hour Factor) (m) r (m) Entry (pcu/hour)		7.43 9.60 9.70 40.00 38.70 38.00 680 280 1.0	6.50 8.50 4.62 19.00 38.70 65.00 515 590 1.0	6.70 9.76 10.48 49.50 38.70 40.00 755 385 1.0		
OUTPUT PARA	METERS							
S K X2 M F Td Fc Qe Qp	= 1.6 (E - V) / L = 1 - 0.00347 (A-30) - 0.5 = V + ((E-V) / (1+25)) = EXP ((D-60) / 10) = 303 * X2 = 1 + (0.5 / (1+M)) = 0.21*Td (1 + 0.2*X2) = K (F - Fc*Qc*P) = Q*P	Sharpness of flare 978 (1/R - 0.05)		0.36 1.00 8.69 0.12 2634 1.45 0.83 2394 680	0.69 0.88 7.34 0.12 2224 1.45 0.75 1560 515	0.47 0.99 8.28 0.12 2509 1.45 0.81 2186 755		
DFC	= Qp / Qe	Design Flow / Capacity	0.35	0.28	0.33	0.35		



No. 4 Tung Yuen Stree	et TIA						
Lei Yue Mun Road / K	o Chiu Road (E)					Designed by:	SWY
2035 Reference Flow	PM Peak		19210			Checked by:	JPP
2033		100 NO.: CHK5074	+0310				024
Lei Yue Mun Rd (SB)							
Ko Chiu Rd (FB)							
440 180 170						★ 5 ★ 215 ★ 200	Ko Chiu Rd (WB Arm B
Arm C Ko Chiu Rd (EB)		ENTRY ARM	A	В	C	1	1
IETERS					-		
Approach Half Width Entry Width (m) Effective Length of Fla Entry Radius (m) Inscribed Circle Diamu Entry Angle (degree) Entry Flow (pcu/hour) Circulating Flow Acro: Peak Hour Factor AMETERS = 1.6 (E - V) / L = 1 - 0.00347 (A-30) - = V + ((E-V) / (1+2S)) = EXP ((D-60) /10) = 303 * X2 = 1 + (0.5 / (1+M))	(m) are (m) ass Entry (pcu/hour) Sharpness of flare 0.978 (1/R - 0.05)		7.43 9.60 9.70 40.00 38.70 38.00 735 355 1.0 0.36 1.00 8.69 0.12 2634 1.45	6.50 8.50 4.62 19.00 38.70 65.00 420 715 1.0 0.69 0.88 7.34 0.12 2224 1.45	6.70 9.76 10.48 49.50 38.70 40.00 790 400 1.0 0.47 0.99 8.28 0.12 2509 1.45		
= 0.21*Td (1 + 0.2*X2 = K (F - Fc*Qc*P))		0.83 2331	0.75 1478	0.81 2174		
= Uh			/35	420	790		
= Qp / Qe	Design Flow / Capacity	0.36	0.32	0.28	0.36		
	No. 4 Tung Yuen Street Lei Yue Mun Road / K 2035 Reference Flow 2035 Lei Yue Mun Rd (SB) Ko Chiu Rd (WB) Ko Chiu Rd (EB) Arm C Ko Chiu Rd (EB) METERS Approach Half Width Entry Width (m) Effective Length of Fla Entry Radius (m) Inscribed Circle Diame Entry Angle (degree) Entry Flow (pcu/hour) Circulating Flow Acros Peak Hour Factor AMETERS = 1.6 (E - V) / L = 1 - 0.00347 (A-30) - = V + ((E-V) / (1+2S)) = EXP ((D-60) / 10) = 303 * X2 = 1 + (0.5 / (1+M)) = 0.21*Td (1 + 0.2*X2 = C (P = QP / Qe	No. 4 Tung Yuen Street TIA Lei Yue Mun Road / Ko Chiu Road (E) 2035 Lei Yue Mun Rd (SB) Ko Chiu Rd (WB) Ko Chiu Rd (EB) Arm C Ko Chiu Rd (EB) TETERS Approach Half Width (m) Entry Width (m) Entry Radius (m) Inscribed Circle Diameter (m) Entry Angle (degree) Entry Angle (degree) Entry Flow (pcu/hour) Circulating Flow Across Entry (pcu/hour) Peak Hour Factor AMETERS = 1.6 (E - V) / L Sharpness of flare = 1 - 0.00347 (A-30) - 0.978 (1/R - 0.05) = V + ((E-V) / (1+2S)) = EXP ((D-60) / 10) = 0.33 * X2 = 1.6 (S - (1+N/)) = 0.21*Td (1 + 0.2*X2) = K (F - FC*QC*P) = Q*P = Qp / Qe Design Flow / Capacity Total Entry Flows	No. 4 Tung Yuen Street TIA Lei Yue Mun Road / Ko Chiu Road (E) 2035 Reference Flow PM Peak 2035 Lei Yue Mun Rd (SB) Ko Chiu Rd (WB) Ko Chiu Rd (WB) Ko Chiu Rd (WB) Arm A 440 180 170 To 170 Arm C Ko Chiu Rd (EB) ENTRY ARM HETERS Approach Half Width (m) Entry Radius (m) Inscribed Circle Diameter (m) Entry Flow (pcu/hour) Circulating Flow Across Entry (pcu/hour) Peak Hour Factor MMETERS = 1.6 (E - V) / L Sharpness of flare = 1 - 0.00347 (A-30) - 0.978 (1/R - 0.05) = V + ((E-V) / (1 - 52)) = EXP ((0-60) / 10) = 303 * X2 = 1 + (0.5 / (1+M)) = 0.21* fd (1 + 0.2*X2) = K (F - Fc*Qc*P) = Q*P = QP / Qe Design Flow / Capacity 0.36 Total Entry Flows 1,945	No. 4 Tung Yuen Street TIA 2035 Reference Flow PM Peak 2035 Reference Flow PM Peak 2035 Lei Yue Mun Rd (SB) Ko Chiu Rd (WB) Ko Chiu Rd (WB) Ko Chiu Rd (EB) Arm A Lei Yue Mun Rd (SB) Ko Chiu Rd (WB) Ko Chiu Rd (EB) Arm C Ko Chiu Rd (EB) Ketters Approach Half Width (m) Fitty Radius (m) Inscribed Circle Diameter (m) Entry Flow (circle Diameter (m	No. 4 Tung Yuen Street TIA Lei Yue Mun Rd (SB) 2035 Job No.: CHK50748310 Lei Yue Mun Rd (SB) Ko Chu Rd (WB) Ko Chu Rd (WB) Ko Chu Rd (WB) Ko Chu Rd (EB) Arm A Lei Yue Mun Rd (SB) Ko Chu Rd (WB) Ko Chu Rd (EB) Arm C Ko Chu Rd (EB) Arm C For Chu Rd (EB) ENTRY ARM A Baproach Half Width (m) Entry Angle (degree) Entry Angle (degree)	No. 4 Tung Yuen Street TA Lei Yue Mun Rad / Ko Chiu Rodi (£) 2035 job No.: CHK50748330 Lei Yue Mun Rd (58) Ko Chiu Rd (VP) Ko Chiu Rd (VP) Arm A Lei Yue Mun Rd (58) Arm A Lei Yue Mun Rd (58) Arm A Lei Yue Mun Rd (58) Arm C Ko Chiu Rd (FB) Arm C Ko Chiu Rd (EB) Arm C Ko Chiu Rd (EB) ENTRY ARM A B C Arm C Ko Chiu Rd (EB) ETERS ENTRY ARM Aproach Half Width (m) 7.43 Entry Width (m) 9.60 Effective Length of Fiare (m) 9.70 Entry Angle (Gegree) 38.70 38.70 Inscribed Circle Diameter (m) 33.70 38.70 38.70 Inscribed Circle Diameter (m) 1.0 1.0 1.0 Entry Angle (Gegree) 36.0 6.50 0.47 = 1.6 (E - V) / L Sharpness of flare 0.36 0.69 0.47 = 1.0 (0327 (A:30	No. 4 Ting Yuen Street TK Designed by: Designed by: 2035 Lab Yue Man Bad (Sb) Checked by: Determed by: 2035 Lab Yue Man Bad (Sb) Checked by: Determed by: 100 Chiu Rd (MB) Ko Chiu Rd (FB) ENTRY ABM File State 440



Job Title:	No. 4 Tung Yuen Street 1	ΊA						
Junction:	Lei Yue Mun Road / Ko C	hiu Road (E)					Designed by:	SWY
Scheme:	2035 Design Flow AM Pe	ak					Checked by:	JPP
Design Year:	2035		Job No.: CHK5074	18310			Date: OCT, 20)24
Arm A	Lei Yue Mun Rd (SB)							
Arm B	Ko Chiu Rd (WB)							
Arm C	Ko Chiu Rd (EB)							
Arm D								
Arm E								
	480 210 70			► 5 ► 265 ► 250	Ko Chiu Rd (WB) Arm B			
	Arm C Ko Chiu Rd (EB)		ENTRY ARM	A	В	C		1
INPUT PARAM	ETERS		Т					
V E L D A Q Qc P	Approach Half Width (m Entry Width (m) Effective Length of Flare Entry Radius (m) Inscribed Circle Diamete Entry Angle (degree) Entry Flow (pcu/hour) Circulating Flow Across fo Peak Hour Factor) (m) r (m) Entry (pcu/hour)		7.43 9.60 9.70 40.00 38.70 38.00 680 285 1.0	6.50 8.50 4.62 19.00 38.70 65.00 520 590 1.0	6.70 9.76 10.48 49.50 38.70 40.00 760 385 1.0		
OUTPUT PARA	METERS							
S K X2 M F Td Ce Qp	= 1.6 (E - V) / L = 1 - 0.00347 (A-30) - 0.5 = V + ((E-V) / (1+2S)) = EXP ((D-60) /10) = 303 * X2 = 1 + (0.5 / (1+M)) = 0.21*Td (1 + 0.2*X2) = K (F - Fc*Qc*P) = Q*P	Sharpness of flare 178 (1/R - 0.05)		0.36 1.00 8.69 0.12 2634 1.45 0.83 2389 680	0.69 0.88 7.34 0.12 2224 1.45 0.75 1560 520	0.47 0.99 8.28 0.12 2509 1.45 0.81 2186 760		
DFC	= Qp / Qe	Design Flow / Capacity	0.35	0.28	0.33	0.35		



Job Title:	No. 4 Tung Yuen Street 1	TA biu Road (E)					Designed by:	SW/Y
Scheme:	2035 Design Flow PM Pe	ak					Checked by:	JPP
Design Year:	2035		Job No.: CHK5074	8310			Date: OCT, 2	024
Arm A	Lei Yue Mun Rd (SB)							
Arm B	Ko Chiu Rd (WB)							
Arm C	Ko Chiu Rd (EB)							
Arm D Arm F								
	440 185		Arm A	ei Yue Mun Rd 180 365 +	(SB) 190 L			Ko Chiu Rd (Wi Arm B
	Arm C Ko Chiu Rd (EB)						× 213 205	
INPUT PARAM	ETERS		ENTRY ARM	A	В	C		+
V E L D A Q Q Q C P OUTPUT PARA S K X2 M F Td F C Q Q D	Approach Half Width (m) Entry Width (m) Effective Length of Flare Entry Radius (m) Inscribed Circle Diamete Entry Flow (pcu/hour) Circulating Flow Across F Peak Hour Factor METERS = 1.6 (E - V) / L = 1 - 0.00347 (A-30) - 0.5 = V + ((E-V) / (1+25)) = KVP ((D-60) / 10) = 303 * X2 = 1 + (0.5 / (1+M)) = 0.21*Td (1 + 0.2*X2) = K (F - Fc*Qc*P) = Q*P) r (m) intry (pcu/hour) Sharpness of flare 78 (1/R - 0.05)		7.43 9.60 9.70 40.00 38.70 38.00 735 360 1.0 0.36 1.00 8.69 0.12 2634 1.45 0.83 2327 735	6.50 8.50 4.62 19.00 38.70 65.00 425 715 1.0 0.69 0.88 7.34 0.12 2224 1.45 0.75 1478 425	6.70 9.76 10.48 49.50 38.70 40.00 795 400 1.0 1.0 0.47 0.99 8.28 0.12 2509 1.45 0.81 2174 795		
	4.				125			
		Total Entry Flows	1,955					

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50748310

MVA HONG KONG LIMITED

	-		-														
Junction: Lei Y	'ue Mun R	oad / Yau	u Tong F	Road				-							Design Year:	2024	
Description: 2024								Designed E	Ву: <u>ССТ</u>			Checked By:	JPP				
	ents				Rad	us (m)	ıt (%)	Pro. Tu	rning (%)	Revised Flow (Saturation pcu/hr)	AM Peak			PM Peak		
Approach	Movem	Phase	Stage	Width (m)	Left	Right	Gradier	AM Peak	PM Peak	AM Peak	PM Peak	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Yau Tong Road (EB)	ं ¶ ¶	C C	2,3 2,3	4.200 4.100	25 25					1920 2040	1920 2040	153 163	0.080 0.080		112 119	0.058 0.058	
	l ↓	D	3	4.600		11.5				1960	1960	27	0.014	0.014	55	0.028	0.028
	+		100	2 2 2 2						1015	40.45	550	0.000		750	0.000	
(SB)	r i	В	2	3.600		13.2				1945	1945	117	0.286		151	0.085	
	ľ	В	2	3.750		8.5				1810	1810	120	0.066	0.066	153	0.085	0.085
Lei Yue Mun Road	-1	А	1	3.850	10			12%	19%	1965	1945	329	0.167	0.167	319	0.164	
(NB)	Ť	A	1	3.900						2145	2145	359	0.167		352	0.164	0.164
Pedestrian Crossing		Ep Ep	3 12	MIN GRI	EEN + F FN + F	LASH =	8 5	+ +	8 5	=	16 10						
		Gp	1	MIN GRI	EEN + F	LASH =	10	+	10	=	20						
Notes:				Flow: (p	cu/hr)						*						
				, u	,						ΧN	Group	A,C	A,B,D	Group	A,C	A,B,D
							237(304)	556(756)				y y	0.247	0.240	y	0.222	0.277
					316(231)		. ,				L (SeC)	10	12	L (SeC)	10	12
							10/60	648(611)				C (sec)	130	130	C (sec)	110	110
					27(55)	40(00)					y pract.	0.831	0.817	y pract.	0.818	0.802
								Ŋ				R.C. (%)	236%	230%	R.C. (%)	268%	190%
Stage / Phase Diagram	IS																
1.				2.				3.			ц	4.			5.		
	Gp				с				c		н						
	-					/			-								
	_	*			_ 1	/	*			, +							
	⊢p ▲				⊦p \⁄	/ ^E	•		U .	\mathbf{i}							
•	\leq				•	~			Ep ¦	♦							
	A								Ý								
I/G= 5	I		1/G= 5	<u> </u>				1/G= 5			1/G-	I		1/G=	L		
I/G= 5			I/G= 5	5				I/G= 5			I/G=			1/G=			
											Date 02 O	: ct 2024	_	Juncti Lei Yu	on: e Mun Road /	Yau Tong Ro	ad (F)

TRAFFIC SIGNALS CALCULATION

Job No.: CHK50748310

MVA HONG KONG LIMITED

				-															
Junction: _	Lei Y	<u>ue Mun R</u>	load / Ya	u Tong F	Road											Design Year:	2035		
Descriptior	n: <u>2035</u>	Referenc	e Flows									Designed E	Ву: <u>ССТ</u>			Checked By: JPP			
		ents				Rad	us (m)	ıt (%)	Pro. Tu	rning (%)	Revised Flow (Saturation pcu/hr)	AM Peak			PM Peak			
Арг	oroach	Movem	Phase	Stage	Width (m)	Left	Right	Gradie	AM Peak	PM Peak	AM Peak	PM Peak	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y	
Yau To	ong Road EB)	ं ¶ ¶	C C	2,3 2,3	4.200 4.100	25 25					1920 2040	1920 2040	262 278	0.136 0.136		199 211	0.104 0.103		
		L ↓	D	3	4.600		11.5				1960	1960	110	0.056	0.056	140	0.071	0.071	
Lei Yue	Mun Road	t	н	123	3 300						1945	1945	785	0 404		1010	0 519		
(SB)	ļ,	В	2	3.600		13.2				1775	1775	260	0.146	0.440	287	0.162	0.400	
		1	В	2	3.750		8.5				1810	1810	265	0.146	0.146	293	0.162	0.162	
Lei Yue	Mun Road NB)	*† †	A A	1 1	3.850 3.900	10			23%	24%	1935 2145	1930 2145	548 607	0.283 0.283	0.283	452 503	0.234 0.234	0.234	
	,																		
Pedestrian	Crossing		En	3	MIN GRE	=EN + E		8	+	8	_	16							
Fedesillari	Crossing		Fp	1,2	MIN GRE	EEN + F	LASH =	5	+	5	=	10							
			Gp	1	MIN GRE	EEN + F	LASH =	10	+	10	=	20							
Notes:					Flow: (p	cu/hr)						₹N	Group	A,C	A,B,D	Group	A,C	A,B,D	
								525(580)					У	0.419	0.486	У	0.338	0.468	
						540(410)		785(1010)				L (sec)	10	12	L (sec)	10	12	
						\leq			1030 <u>(</u> 845)				C (sec)	130	130	C (sec)	110	110	
						110(140	`	125(110)					y pract.	0.831	0.817	y pract.	0.818	0.802	
							, ,		N				R.C. (%)	98%	68%	R.C. (%)	142%	71%	
Stage / Ph	ase Diagram	IS			1				<u> </u>				,		1	.,		I	
1.					2.				3.				4.			5.			
	Ŷ		Ιн				•	Н		,		н							
		Gp				C	<pre>/</pre>			c									
	∳		Ļ			Ŵ	/	Ļ			Ļ								
		Fp				Fp 🚽	/ F	3		D	<u> </u>								
	v	. ↑				· v	/			٨	/								
		\searrow				•				Ep	•								
		A								Ý									
I/G= 5				1/G= F					1/G= 5			I/G-	l		1/G=	L			
I/G= 5				I/G= 5	, ;				I/G= 5			I/G=			1/G=				
												Date	: ct 2024		Juncti Lei Yu	on: e Mun Road /	Yau Tong Ro	F	
TRAFFIC SIGNALS CALCULATION

Job No.: CHK50748310

MVA HONG KONG LIMITED

Junction: Lei Y	u Tong F	Road											Design Year:	2035			
Description: 2035	Design F	lows									Designed E	Ву: <u>ССТ</u>			Checked By:	JPP	
	ents				Radi	us (m)	ıt (%)	Pro. Tu	rning (%)	Revised Flow (Saturation pcu/hr)		AM Peak			PM Peak	
Approach	Movem	Phase	Stage	Width (m)	Left	Right	Gradien	AM Peak	PM Peak	AM Peak	PM Peak	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Yau Tong Road	• •	C	2,3	4.200	25 25					1920	1920 2040	267 283	0.139		201 214	0.105	
	r <mark>+</mark>	D	3	4.600	20	11.5				1960	1960	110	0.056	0.056	140	0.071	0.071
Lei Yue Mun Road	t	н	123	3 300						1945	1945	785	0 404		1010	0.519	
(SB)	ļ,	В	2	3.600		13.2				1775	1775	265	0.149		290	0.163	
	1	В	2	3.750		8.5				1810	1810	270	0.149	0.149	295	0.163	0.163
Lei Vue Mur Deed	-+	٨	1	2.950	10			220/	240/	1025	1020	549	0.000	0.000	450	0.024	
(NB)	1	A	1	3.850 3.900	10			23%	24%	2145	2145	548 607	0.283	0.283	452 503	0.234 0.234	0.234
Pedestrian Crossing		Ep Fp Gp	3 1,2 1	MIN GRI MIN GRI MIN GRI	EEN + F EEN + F EEN + F	LASH = LASH = LASH =	8 5 10	+ + +	8 5 10	= =	16 10 20	Group			Group		
											⊁ ∾	Gloup	0.422	0.499	Group	0.220	0.460
							535(585)	785(1010)				y	10	12	y	10	12
					550(415)								120	120		110	110
					V		125(110)	1030(845)				v proof	0.921	0.917	v proof	0.010	0.902
					110(140)								0.031	67%		0.010	710/
Stage / Phase Diagram	IS							Ĭ				R.U. (%)	5170	07.70	R.C. (%)	1+170	1170
1.				2.				3.				4.			5.		
	Gp Fp	↓ ^H			C	B	↓ H		C D Ep		Н						
I/G= 5			I/G= 5	;				I/G= 5			I/G=			I/G=			
			1.00	· I				1.0 0			Date: 02 Oc	: ct 2024		Juncti Lei Yu	on: e Mun Road /	Yau Tong Ro	ad F



Job Title:	No. 4 Tung Yuen Street	ΓIA						
Junction:	Kai Tin Road / Lei Yue M	un Road (G)					Designed by:	CCT
Scheme:	2024 Observed Flow AM	Peak	_				Checked by:	JPP
Design Year:	2024		Job No.: CHK5074	8310			Date: OCT, 20	24
Arm A	Lei Yue Mun Road (SB)							
Arm B	Kai Tin Road (WB)							
Arm D	Lei Yue Mun Road (NB)	(ND)						
Arm F	Easerri Harbour Crossing							
	Arm A Lei Yue	Mun Road (SB)			Arm B Kai Tin I	Road (WB)		
	596	832 6			17 153	137		
	•	k L		- I	▲ ▼	4		
			\mathbf{V}					
			X					
			\sim				Lei Yue	Mun Road (NB)
							Arm C	
	105						▶ 8	
	83						± 106	
	95						▲ 645	
	Arm D							
	Easern Harbour Crossing	; (NB)						
			ENTRY ARM	A	В	С	D	
INPUT PARAIN	IETERS							
v	Approach Half Width (m)		6.30	6.10	6.80	6.70	
E	Entry Width (m)	,		7.20	6.90	10.50	9.40	
L	Effective Length of Flare	(m)		5.18	3.70	8.70	8.80	
R	Entry Radius (m)			61.00	30.00	20.00	40.00	
D	Inscribed Circle Diamete	r (m)		80.00	80.00	80.00	80.00	
А	Entry Angle (degree)			28.00	33.00	46.00	31.00	
Q	Entry Flow (pcu/hour)			1,434	307	759	283	
QC	Circulating Flow Across I	ntry (pcu/nour)		309	1,531	766	1,525	
P	Peak Hour Factor			1.0	1.0	1.0	1.0	
OUTPUT PARA	AMETERS							
S	= 1.6 (E - V) / L	Sharpness of flare		0.28	0.35	0.68	0.49	
к	= 1 - 0.00347 (A-30) - 0.9	978 (1/R - 0.05)		1.04	1.01	0.94	1.02	
X2	= V + ((E-V) / (1+2S))			6.88	6.57	8.37	8.06	
M	= EXP ((D-60) /10)			7.39	7.39	7.39	7.39	
r Td	= 303 T X2 = 1 + (0 5 / (1+M))			2084	1992	2535	2443	
Fc	= 1 + (0.3 / (1+10)) = 0.21*Td (1 + 0.2*Y2)			1.00	0.52	1.00	0.58	
Qe	= K (F - Fc*Qc*P)			1997	1210	1964	1589	
Qp	= Q*P			1434	307	759	283	
•								
DFC	= Qp / Qe	Design Flow / Capacity	0.72	0.72	0.25	0.39	0.18	
		Total Entry Flows	2,782					
							1	
All the above	formulas are in accordanc	e to T.P.D.M. Vol.2 Chp.	4 Sec 4.5.9					



Job Title:	No. 4 Tung Yuen Street 1	IA						
Junction:	Kai Tin Road / Lei Yue M	un Road (G)					Designed by:	ССТ
Scheme:	2024 Observed Flow PM	Peak					Checked by:	JPP
Design Year:	2024		Job No.: CHK5074	18310			Date: OCT, 20	24
Arm A	Lei Yue Mun Road (SB)							
Arm B	Kai Tin Road (WB)							
Arm C	Lei Yue Mun Road (NB)	(
Arm D	Easern Harbour Crossing	(NB)						
	Arm A Lei Yue 416 A	Mun Road (SB) 611 6		\downarrow	Arm B Kai Tin I 22 237 A T	Road (WB) 76 L		
								Mun Road (NP)
							Arm C	
	154 75 225 Arm D Easern Harbour Crossing	(NB)					▶ 0 ▶ 50 ▶ 718	
				^	P	C	D	
	ETEDS		ENTRY ARIVI	A	в	L	U	
V E L R D A Q Q C P OUTPUT PARA S K X2 M F C Q Q Q D F C Q P	Approach Half Width (m) Effective Length of Flare Entry Width (m) Effective Length of Flare Entry Radius (m) Inscribed Circle Diamete Entry Angle (degree) Entry Flow (pcu/hour) Circulating Flow Across F Peak Hour Factor METERS = 1.6 (E - V) / L = 1 - 0.00347 (A-30) - 0.5 = V + ((E-V) / (1+2S)) = EXP ((D-60) / 10) = 303 * X2 = 1 + (0.5 / (1+M)) = 0.21*Td (1 + 0.2*X2) = K (F - Fc*Qc*P) = Q*P) r (m) :ntry (pcu/hour) Sharpness of flare 778 (1/R - 0.05)	0.53	6.30 7.20 5.18 61.00 80.00 28.00 1,034 372 1.0 0.28 1.04 6.88 7.39 2084 1.06 0.53 1963 1034	6.10 6.90 3.70 30.00 80.00 33.00 335 1,252 1.0 0.35 1.01 6.57 7.39 1992 1.06 0.52 1355 335	6.80 10.50 8.70 20.00 80.00 46.00 768 675 1.0 0.68 0.94 8.37 7.39 2535 1.06 0.59 2015 768	6.70 9.40 8.80 40.00 80.00 31.00 454 1,443 1.0 0.49 1.02 8.06 7.39 2443 1.06 0.58 1638 454	
DFC	= Qp / Qe	Design Flow / Capacity	0.53	0.53	0.25	0.38	0.28	



Job Title:	No. 4 Tung Yuen Street 1	ĨĂ						
Junction:	Kai Tin Road / Lei Yue M	un Road (G)					Designed by:	ССТ
Scheme:	2035 Reference Flow AM	1 Peak					Checked by:	JPP
Design Year:	2035		Job No.: CHK507	48310			Date: OCT, 20	24
Arm A	Lei Yue Mun Road (SB)							
Arm B	Kai Tin Road (WB)							
Arm C	Lei Yue Mun Road (NB)							
Arm D	Easern Harbour Crossing	; (NB)						
Arm E	Arm A Loi Vuo	Mun Bood (CD)			Arm D. Kai Tin	Dead (M/D)		
	ATTER LETTLE	1000 5			20 170	150		
	▲					4		
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			1					
)			
			1					
			\mathbf{X}	/				
			\sim	\nearrow			Lei Yue	Mun Road (NB)
							Arm C	
	115						10	
	90						1 15	
	320						× 945	
	Arm D Easern Harbour Crossing	(NB)						
	Lasern narbour crossing							
			ENTRY ARM	А	В	С	D	
INPUT PARAM	ETERS							
v	Approach Half Width (m)		6.30	6.10	6.80	6.70	
E	Entry Width (m)			7.20	6.90	10.50	9.40	
L	Effective Length of Flare	(m)		5.18	3.70	8.70	8.80	
R	Entry Radius (m)			61.00	30.00	20.00	40.00	
D	Inscribed Circle Diamete	r (m)		80.00	80.00	80.00	80.00	
A	Entry Angle (degree)			28.00	33.00	46.00	31.00	
ų oc	Circulating Flow Across	ntry (new/hour)		1,750	340	1,070	525	
P	Peak Hour Factor	ini y (pcu/nour)		10	1.0	1.0	1,913	
				1.0	1.0	110	110	
OUTPUT PARA	METERS							
s	= 1.6 (E - V) / L	Sharpness of flare		0.28	0.35	0.68	0.49	
к	= 1 - 0.00347 (A-30) - 0.9	978 (1/R - 0.05)		1.04	1.01	0.94	1.02	
X2	= V + ((E-V) / (1+2S))			6.88	6.57	8.37	8.06	
M	= EXP ((D-60) /10)			7.39	7.39	7.39	7.39	
F Td	= 303 + X2			2084	1992	2535	2443	
FC	- + + (U.3 / (1+IVI)) = 0.21*Td (1 + 0.2*V2)			1.00	1.06	1.06	1.06	
0e	$= 0.21$ in $(1 \pm 0.2 \cdot A2)$ = K (F - Fc*Oc*P)			1862	928	1920	1358	
Qp	= Q*P			1750	340	1070	525	
1	,							
DFC	= Qp / Qe	Design Flow / Capacity	0.94	0.94	0.37	0.56	0.39	
		Total Entry Flows	3,685					
							1	
							1	
All the above	formulas are in accordanc	ata T.B.D.M. Val 2 Chn A	Sec 4 E A					



Job Title:	No. 4 Tung Yuen Street	ĨA						
Junction:	Kai Tin Road / Lei Yue M	un Road (G)					Designed by:	ССТ
Scheme:	2035 Reference Flow PM	1 Peak					Checked by:	JPP
Design Year:	2035		Job No.: CHK5074	48310			Date: OCT, 20	24
Arm A	Lei Yue Mun Road (SB)							
Arm B	Kai Tin Road (WB)							
Arm C	Lei Yue Mun Road (NB)							
Arm D	Easern Harbour Crossing	; (NB)						
Arm E		NA D ((CD)			• • • • • • •	2 1 (11/2)		
	Arm A Lei Yue	Mun Road (SB)			Arm B Kai lin I	Road (WB)		
	455	835 5			25 260	85		
	Ł	* -			▲ ■	*		
		N						
				\neg				
				· · · · · · · · · · · · · · · · · · ·				
			Y					
			1					
			$\boldsymbol{\lambda}$					
			\sim				Lei Yue	Mun Road (NB)
							Arm C	
	170							
	80						U ♠ 55	
	460						K 935	
	Arm D							
	Easern Harbour Crossing	(NB)						
			ENTRY ARM	А	В	C	D	
INPUT PARAM	ETERS							
v	Approach Half Width (m)		6.30	6.10	6.80	6.70	
E	Entry Width (m)			7.20	6.90	10.50	9.40	
L	Effective Length of Flare	(m)		5.18	3.70	8.70	8.80	
R	Entry Radius (m)			61.00	30.00	20.00	40.00	
D	Inscribed Circle Diamete	r (m)		80.00	80.00	80.00	80.00	
A	Entry Angle (degree)			28.00	33.00	46.00	31.00	
Q Oc	Circulating Flow Across	ntry (neu/hour)		1,295	370	990	/10	
P	Peak Hour Factor	intry (pcu/nour)		1.0	1,730	1.0	1.0	
ľ				1.0	1.0	1.0	1.0	
OUTPUT PARA	METERS							
s	= 1.6 (E - V) / L	Sharpness of flare		0.28	0.35	0.68	0.49	
к	= 1 - 0.00347 (A-30) - 0.9	978 (1/R - 0.05)		1.04	1.01	0.94	1.02	
X2	= V + ((E-V) / (1+2S))			6.88	6.57	8.37	8.06	
М	= EXP ((D-60) /10)			7.39	7.39	7.39	7.39	
F	= 303 * X2			2084	1992	2535	2443	
Td	= 1 + (0.5 / (1+M))			1.06	1.06	1.06	1.06	
FC	= 0.21*Td (1 + 0.2*X2)			0.53	0.52	0.59	0.58	
Qe Qe	= K (F - Fc*Qc*P)			1826	1097	1979	1467	
μp	= Q*P			1295	370	990	/10	
DEC	= On / Oe	Design Flow / Capacity	0.71	0.71	0.34	0.50	0.48	
		Total Entry Flows	3,365	0.71	0.34	0.50	0.40	
			5,555					
	formulas are in accordance	a to T.B.D.M. Vol.2 Chn	1 Sec 1 5 9					



Job Title:	No. 4 Tung Yuen Street	ΤΙΑ						
Junction:	Kai Tin Road / Lei Yue M	un Road (G)					Designed by:	ССТ
Scheme:	2035 Design Flow AM Pe	eak					Checked by:	JPP
Design Year:	2035		Job No.: CHK507	48310			Date: OCT, 20	24
Arm A	Lei Yue Mun Road (SB)							
Arm B	Kai Tin Road (WB)							
Arm C	Lei Yue Mun Road (NB)	(
Arm D	Easern Harbour Crossing	g (NB)						
Anne	Arm A Lei Yue	Mun Boad (SB)			Arm B Kai Tin I	Road (W/B)		
	655	1095 5			20 170	150		
	▲	L L		1	* V	L.		
	_				_			
			\checkmark	· · · · · · · · · · · · · · · · · · ·				
			1					
			\mathbf{X}					
		/	\sim	\sim			Lei Yue	Mun Road (NB)
							Arm C	
							<u>_</u>	
	115						10	
	90						L 115	
	325						K 945	
	Arm D Easern Harbour Crossing							
	Laserii Harbour Crossing							
			ENTRY ARM	А	В	С	D	
INPUT PARAM	ETERS							
v	Approach Half Width (m	ı)		6.30	6.10	6.80	6.70	
E	Entry Width (m)			7.20	6.90	10.50	9.40	
L	Effective Length of Flare	(m)		5.18	3.70	8.70	8.80	
R	Entry Radius (m)			61.00	30.00	20.00	40.00	
D	Inscribed Circle Diamete	er (m)		80.00	80.00	80.00	80.00	
A	Entry Angle (degree)			28.00	33.00	46.00	31.00	
Q Oc	Circulating Flow Across	Entry (new/hour)		1,755	340	1,070	530	
P	Peak Hour Factor			1.0	2,085	1.0	1,913	
				210	1.0	110	110	
OUTPUT PARA	METERS							
s	= 1.6 (E - V) / L	Sharpness of flare		0.28	0.35	0.68	0.49	
к	= 1 - 0.00347 (A-30) - 0.9	978 (1/R - 0.05)		1.04	1.01	0.94	1.02	
X2	= V + ((E-V) / (1+2S))			6.88	6.57	8.37	8.06	
M	= EXP ((D-60)/10)			7.39	7.39	7.39	7.39	
r Td	= 303 - X2 = 1 + (0 E / (1 + NA))			2084	1992	2535	2443	
Ec	- 1 + (U.3 / (1+IVI)) - 0 21*Td (1 + 0 2*V2)			1.00	1.06	1.06	1.06	
0e	$= 0.21 \text{ (I + 0.2 \text{ A2)}}$ = K (F - Fc*Oc*P)			1859	923	1920	1358	
Qp	= Q*P			1755	340	1070	530	
1								
DFC	= Qp / Qe	Design Flow / Capacity	0.94	0.94	0.37	0.56	0.39	
		Total Entry Flows	3,695					
							1	
All the above	formulas are in accordan	a to T.B.D.M. Vol 2 Chn 4	Sec 4 E O					



Job Title:	No. 4 Tung Vuen Street T	10						
Junction:	Kai Tin Road / Lei Yue M	un Road (G)					Designed by:	CCT
Scheme:	2035 Design Flow PM Pe	ak					Checked by:	IPP
Design Year:	2035		Job No.: CHK5074	8310			Date: OCT. 20	24
Arm A	Lei Vue Mun Road (SB)						001,20	
Arm B	Kai Tin Road (W/B)							
Arm C	Lei Yue Mun Road (NB)							
Arm D	Easern Harbour Crossing	(NB)						
Arm F	Eusern narbour crossing							
	Arm A Lei Yue 455 ▲	Mun Road (SB) 840 5 1 L -			Arm B Kai Tin 25 260 ▲ ◀	Road (WB) 85 L		
	170 170 80 465 465 Arm D Easern Harbour Crossing	(NB)				<u> </u>	Lei Yue Arm C • 0 • 55 • 935	Mun Road (NB)
				٨	P	C		
	ETEDC		ENTRYARIV	A	В	L L	U	
INFOT FARAIN	ETERS							
v	Approach Half Width (m)		6.30	6.10	6.80	6.70	
E	Entry Width (m)			7.20	6.90	10.50	9.40	
-	Effective Length of Flare	(m)		5.18	3 70	8 70	8 80	
	Enective Length of Hare	(11)		5.10	3.70	30.00	0.00	
ĸ	Entry Radius (m)			61.00	30.00	20.00	40.00	
D	Inscribed Circle Diamete	r (m)		80.00	80.00	80.00	80.00	
A	Entry Angle (degree)			28.00	33.00	46.00	31.00	
Q	Entry Flow (pcu/hour)			1,300	370	990	715	
Qc	Circulating Flow Across E	ntry (pcu/hour)		625	1,760	740	1,730	
P	Peak Hour Factor			1.0	1.0	1.0	1.0	
OUTPUT PARA	METERS							
c		Charanass of flare		0.28	0.25	0.69	0.40	
5	= 1.6 (E - V) / L	Sharphess of flare		0.28	0.35	0.68	0.49	
к	= 1 - 0.00347 (A-30) - 0.9	978 (1/R - 0.05)		1.04	1.01	0.94	1.02	
X2	= V + ((E-V) / (1+2S))			6.88	6.57	8.37	8.06	
M	= EXP ((D-60) /10)			7.39	7.39	7.39	7.39	
F	= 303 * X2			2084	1992	2535	2443	
Тd	= 1 + (0.5 / (1+M))			1.06	1.06	1.06	1.06	
Fc	= 0.21*Td (1 + 0.2*X2)			0.53	0.52	0.59	0.58	
Qe	= K (F - Fc*Qc*P)			1824	1092	1979	1467	
Qp	= Q*P			1300	370	990	715	
	0. / 0					0	0.12	
DFC	= Qp / Qe	Design Flow / Capacity	0.71	0.71	0.34	0.50	0.49	
		Total Entry Flows	3,375					
							1	
							1	
							1	
						·	·	
All the above	tormulas are in accordanc	e to T.P.D.M. Vol.2 Chp	o.4 Sec 4.5.9					

TRAFFIC SIGN				Job No.: <u>CHK50748310</u> MVA HONG KONG LIMIT													
Junction: Wai	rip Street	/ Wai Fa	at Road /	Kwun Ton	ig Bypas	is		Design Year:2024									
Description: 2024	Observed	Flows									Designed I	By: <u>CCT</u>			Checked By:	JPP	
	Its				Radi	us (m)	(%)	Pro. Tu	rning (%)	Revised Flow (Saturation		AM Peak			PM Peak	
Approach	Movemer	Phase	Stage	Width (m)	Left	Right	Gradient	AM Peak	PM Peak	AM Peak	PM Peak	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Wai Yip Street (SB)		A A A	1 1 1	3.500 3.500 3.600	11	20		8%	14%	1945 2105 1965	1930 2105 1965	159 172 120	0.082 0.082 0.061		132 143 249	0.068 0.068 0.127	
Wai Yip Street (NB)	*] ↑ *	F C C C	1,2,3 3 3 3	3.900 3.900 3.500 3.650	28	18.6 15		51%	80%	1905 2145 2020 1925	1905 2145 1975 1925	1298 218 205 196	0.681 0.102 0.101 0.102	0.681	1020 213 196 191	0.535 0.099 0.099 0.099	0.535
Kwun Tong Bypass (EB)	+∱ *]	B B	2 2	3.650 4.100		27 23		35%	39%	2080 1815	2075 1815	218 191	0.105 0.105		152 133	0.073 0.073	
Wai Fat Road (WB)	† † *	D D D E	4 4 4 4	3.650 3.650 3.000 9.550		25 19 6				1980 2000 1905 1085	1980 2000 1905 1085	209 198 188 141	0.106 0.099 0.099 0.130	0.130	337 179 170 212	0.170 0.090 0.089 0.195	0.195
Pedestrian Crossing		Gp Hp Jp Kp Lp	2 1,3,4 2,3 4 1,2,3 4 4	min gre Min gre Min gre Min gre Min gre Min gre	EEN + FI EEN + FI EEN + FI EEN + FI EEN + FI EEN + FI EEN + FI	LASH = LASH = LASH = LASH = LASH = LASH =	13 5 51 7 5 5	+ + + + + +	12 9 10 10 13 10 5		25 14 15 21 20 15 10						
Notes:				Flow: (p	267(192)	142(93)	120(249) 1298(1020	318(257) 319(252)	► 13(18) ►300(348)	386(349) 209(337) ◀	141(212)	Group y L (sec) C (sec) y pract. R.C. (%)	A.B.C.D 0.387 17 140 0.791 104%	F.E 0.811 20 140 0.771 -5%	Group y L (sec) C (sec) y pract. R.C. (%)	A.B.C.D 0.411 17 140 0.791 92%	F.E 0.731 20 140 0.771 6%
Stage / Phase Diagram	s																
1.	Hp	A	^↓ Кр	2.	Gp B Ip F	<	>	, Кр	Hp + 	c	► Кр	4. Hp Mp <i>L</i>	7 <	LPA V E D Jp	5.		
I/G= 5 I/G= 5			I/G=					I/G=			I/G=	17		I/G=			
											Date 02 O	: ct 2024		Juncti Wai Yi	on: p Street / Wai	Fat Road / K	wun Tong By

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TRAFFIC SIGNALS CALCULATION									Job No.: <u>CHK50748310</u> MVA HONG KONG L								
Junction: Wai Y	ip Streel	:/WaiFa	at Road /	Kwun Tor	ng Bypas	s		Design Year: 2035									
Description: 2035	Referenc	e Flows						_			Designed I	By: <u>CCT</u>			Checked By:	JPP	
	ents				Radi	us (m)	t (%)	Pro. Tu	rning (%)	Revised Flow (Saturation (pcu/hr)		AM Peak			PM Peak	
Approach	Moveme	Phase	Stage	Width (m)	Left	Right	Gradien	AM Peak	PM Peak	AM Peak	PM Peak	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Wai Yip Street (SB)		A A A	1 1 1	3.500 3.500 3.500	11			29%	45%	1890 2105 2105	1850 2105 2105	157 174 174	0.083 0.083 0.083	0.083	168 191 191	0.091 0.091 0.091	0.091
Wai Yip Street (NB)	† †	C C	1	3.500 3.500						1965 2105	1965 2105	362 388	0.184 0.184		345 370	0.176 0.176	
Kwun Tong Bypass (EB)	4 *1	B B	2 2	3.650 4.100		27 23		48%	56%	2065 1815	2055 1815	298 262	0.144 0.144	0.144	228 202	0.111 0.111	0.111
Wai Fat Road (WB)	₹ 1	D D E	3 3 3 3	3.650 3.650 3.000 9.550		25 19 6				1980 2000 1905 1085	1980 2000 1905 1085	265 218 207 200	0.134 0.109 0.109 0.184	0.109	395 197 188 265	0.199 0.099 0.099 0.244	0.199
Pedestrian Crossing		Gp Hp Jp Kp Lp	2 1,3 2 3 1,2 3	Min gr Min gr Min gr Min gr Min gr Min gr	EEN + FI EEN + FI EEN + FI EEN + FI EEN + FI EEN + FI	LASH = LASH = LASH = LASH = LASH = LASH =	9 5 6 9 7 5	+ + + +	6 7 12 7 9 4		15 12 18 16 16 9						
Notes:				Flow: (p	405(330)	155(100)		460(475) 750(715)	▶ 45(75)	425(385) 265(395)	200(265)	Group y L (sec) C (sec) y pract. R.C. (%)	Lp.C.B 0.329 25 140 0.739 125%	с.в.р 0.438 12 140 0.823 88%	Group y L (sec) C (sec) y pract. R.C. (%)	A,B,D 0.402 13 140 0.816 103%	с.в.р 0.486 12 140 0.823 69%
Stage / Phase Diagrams	5																
1. Hp ↑ ↓ ↓	c	A	^↓Кр	2.	Gp B Ip↓	<u> </u>		З. Кр	Hp	D	Lp K	4.			5.		
I/G= 5			I/G=	5				I/G= 5			I/G=			I/G=			
/G=5			I/G= !	<u> c</u>				I/G= 5	1		1/G= Date 02 O	 : oct 2024		I/G= Juncti Wai Yi	i on: ip Street / Wai	Fat Road / K	H wun Tong By

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TRAFFIC SIGNALS CALCULATION									Job No.: <u>CHK50748310</u> MVA HONG KONG L								
Junction: Wai Y	'ip Stree	: / Wai Fa	at Road /	Kwun Tor	ng Bypas	s		Design Year: 2035									
Description: 2035	Design F	lows						_			Designed I	By: <u>CCT</u>			Checked By:	JPP	
	ents				Radi	us (m)	t (%)	Pro. Tu	rning (%)	Revised Flow (Saturation (pcu/hr)		AM Peak			PM Peak	
Approach	Moveme	Phase	Stage	Width (m)	Left	Right	Gradien	AM Peak	PM Peak	AM Peak	PM Peak	Flow (pcu/hr)	y Value	Critical y	Flow (pcu/hr)	y Value	Critical y
Wai Yip Street (SB)	- 1 ↑ ↑	A A A	1 1 1	3.500 3.500 3.500	11			29%	45%	1890 2105 2105	1850 2105 2105	153 171 171	0.081 0.081 0.081	0.081	168 191 191	0.091 0.091 0.091	0.091
Wai Yip Street (NB)	† †	C C	1	3.500 3.500						1965 2105	1965 2105	362 388	0.184 0.184		345 370	0.176 0.176	
Kwun Tong Bypass (EB)	+∱ *]	B	2 2	3.650 4.100		27 23		49%	57%	2065 1815	2055 1815	301 264	0.146 0.145	0.146	231 204	0.112 0.112	0.112
Wai Fat Road (WB)	× + +	D D E	3 3 3 3	3.650 3.650 3.000 9.550		25 19 6				1980 2000 1905 1085	1980 2000 1905 1085	265 218 207 200	0.134 0.109 0.109 0.184	0.109	395 197 188 265	0.199 0.099 0.099 0.244	0.199
Pedestrian Crossing		Gp Hp Jp Kp Lp	2 1,3 2 3 1,2 3	min gr Min gr Min gr Min gr Min gr Min gr	EEN + FI EEN + FI EEN + FI EEN + FI EEN + FI EEN + FI	_ASH = _ASH = _ASH = _ASH = _ASH = _ASH =	9 5 6 9 7 5	+ + + +	6 7 12 7 9 4		15 12 18 16 16 9						
Notes:				Flow: (r	410(335)	155(100)		450(475)	▶ 45(75)	425(385) 265(395) ◀	200(265)	Group y L (sec) C (sec) y pract. R.C. (%)	Lp.C.B 0.330 25 140 0.739 124%	C.B.D 0.439 12 140 0.823 87%	Group y L (sec) C (sec) y pract. B.C. (%)	A,B,D 0.403 13 140 0.816 103%	с.в.р 0.487 12 140 0.823 69%
Stage / Phase Diagrams	\$											(11)					
1. Hp ↑ ↓ ↓	c	A	<≻ Кр	2.	Gp Β Ιp↓	<u> </u>		З. Кр	Hp	D	Lp K	4.			5.		
I/G= 5			I/G=	5				I/G= 5			I/G=			I/G=			
1/G= 0			I/G= (<u> c</u>				I/G= 5	I		02 O	I ct 2024		Juncti Wai Yi	i on: ip Street / Wai	Fat Road / K	H wun Tong By

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