Appendix 2

TRAFFIC IMPACT ASSESSMENT

Section 16 Planning Application for Amendment to the Operation Hours of Temporary Tai Po Bus Maintenance Centre for a Period of 7 Years at the Junction of Dai Fuk Street and Dai Wah Street, Area 33, Tai Po, New Territories

Traffic Impact Assessment Report

July 2025

This report has been prepared in accordance with the terms and conditions of appointment for this project. RL Consultancy Limited cannot accept any responsibility for any use of or reliance on the contents of this report by any third party.

Address:
Room 1701, 17/F Tung Chun Commercial Centre,
438-444 Shanghai Street, Mongkok, Kowloon

RL CONSULTANCY LTD.

Tel: 9304 7083
Email: robin.li@rl-con.com

1.0 INTRODUCTION 1

1.1 Background 1

1.2 Scope of Study 1

2.0 SITE CONTEXT 2

2.1 Location 2

2.2 Existing and Future Site Operation 2

2.3 Access Arrangement 2

3.0 TRAFFIC FORECASTING 3

3.1 Existing Traffic Conditions 3

3.2 Background Traffic Forecast 4

3.3 Site Trip Generation 4

4.0 TRAFFIC IMPACT ASSESSMENT 6

4.1 Road Network 6

4.2 Junction Capacity Assessment 6

5.0 SUMMARY AND CONCLUSIONS 7

ANNEX

Annex A Junction Capacity Assessments

FIGURES

Figure 2.1 Site Location Plan
Figure 3.1 Key Junctions

TABLES

Table 3.1 Surveyed Junctions
Table 3.2 AADT from 2019 to 2023
Table 3.3 TPBMC Traffic Log from 2 to 7 June 2025
Table 3.4 Future Site Traffic Generation - Sunday
Table 4.1 Intersection Capacities in 2025 and 2032 - Weekday
Table 4.2 Intersection Capacities in 2025 and 2032 - Sunday

1.0 INTRODUCTION

1.1 Background

1.1.1 The existing MTR Tai Po Bus Maintenance Centre (TPBMC) is located at the junction of Dai Fuk Street and Dai Wah Street, Area 33, Tai Po, New Territories (hereinafter referred to as the Site). The TPBMC not only provides the daily servicing and maintenance to MTR buses, it also supports and backsup the Transit Service Area's service bus maintenance as a contingency measure. The existing TPBMC has been in operation since July 2015 when it was relocated from its former site in Fo Tan to make way for public rental housing. The current site of the TPBMC was selected in 2012 in collaboration with various Government Departments and consultation with Tai Po District Council.

1.1.2 On 8 December 2017, a Section 16 (S16) Planning Application (TPB Ref No. A/TP/637) for TPBMC was approved by the Town Planning Board (TPB) for a period of 7 years (the Approved Application). The Approved Application was valid until 8.12.2024 with a Planning Condition (a) which states that "*no operation between 7:00 a.m. and 11:00 p.m. on Sundays, as proposed by the applicant, is allowed on the site during the planning approval period*" and was subsequently renewed under Planning Application No. A/TP/695 for a further 7 years on 16 August 2024 (the Approved Renewal Application). Both Applications were approved to operate 24 hours daily from Mondays to Saturdays, with no operation between 7am and 11 pm on Sundays. The MTR now intends to extend the TPBMC operating hours to 24 hours daily (i.e. Monday to Sunday) to enable additional bus maintenance services and enhance operational efficiency.

1.1.3 Transport Department was preliminary consulted and commented on 19 May 2025 that: "Considering the proposed operation period extends to include 7 am to 11 pm on Sundays, the applicant shall submit a traffic impact assessment in order to demonstrate the traffic impact due to the proposal amendment is acceptable."

1.1.4 In June 2025, RL Consultancy Limited were commissioned to conduct a Traffic Impact Assessment (TIA) in support of this S16 submission to enable the continued operation of the existing MTR TPBMC and address TD's comment.

1.2 Scope of Study

1.2.1 The scope of study includes the following:

- Review relevant past documents.
- Survey existing traffic conditions in the study area.
- Project future traffic demands for the critical period.
- Appraise the effect of the Site on the adjacent road network.
- Prepare this TIA Report for submission to the TPB.

2.0 SITE CONTEXT

2.1 Location

2.1.1 With an area of about 4,180m^2, the Site is located at the southwest of the Dai Fuk Street/Dai Wah Street/Dai Hung Street Roundabout in Area 33, Tai Po. It is situated to the immediate west of the Tai Po Industrial Estate as shown on **Figure 2.1**.

2.1.2 The Site is well connected to the external road network including the strategic roads of Yuen Shin Road, Ting Kok Road and Tolo Highway for easy access to all other parts of the Territory. The bus routes for the TPBMC are Dai Fuk Street, Yuen Shin Road and Ting Kok Road.

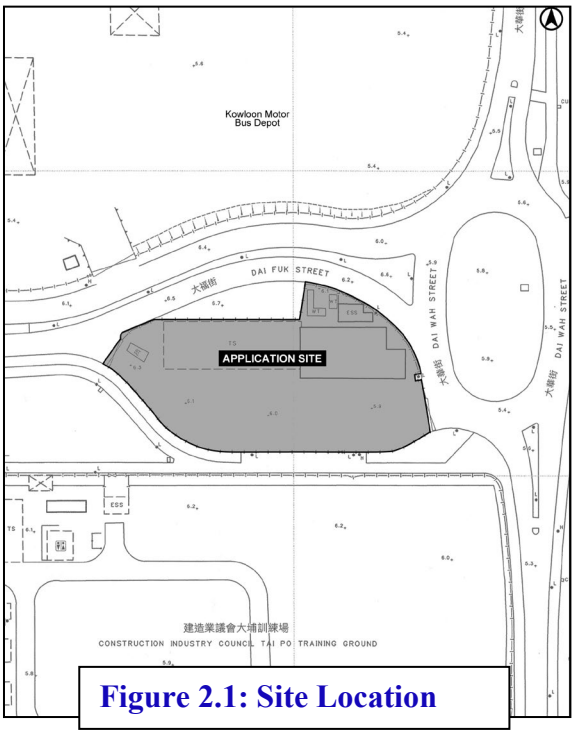


Figure 2.1: Site Location

2.2 Existing and Future Site Operation

2.2.1 Based on information from the MTR, the work nature of the TPBMC primarily involves preventive maintenance, corrective maintenance, incident bus repairs, component overhauls and bus annual overhauls (Certificate of Roadworthiness).

2.2.2 It must be emphasised that the TPBMC is NOT a bus depot and parking of buses are not permitted except those to be maintained as per the Short Term Tenancy (STT) condition.

2.2.3 Apart from extending the operating hours to include 7 am to 11 pm on Sundays, there is no change to the approved use and development parameters under this S16 Application. Hence, the existing TPBMC operation and vehicle trip generation are expected remain the same.

2.2.4 According to the MTR, future traffic generation for the Site will remain unchanged for Mondays to Saturdays, and proposed future Sundays will have the same number of buses as existing Saturdays.

2.3 Access Arrangement

2.3.1 Vehicles presently enter the Site from the Dai Fuk Street/Dai Wah Street/Dai Hung Street Roundabout and exit to Dai Fuk Street westbound. The departing Site vehicles will then disperse onto the surrounding areas after reaching the signalled crossroad of Ting Kok Road/Yuen Shin Road/Dai Fuk Street. This arrangement will remain unchanged in the future.

3.0 TRAFFIC FORECASTING

3.1 Existing Traffic Conditions

3.1.1 The Site is well connected to the external road network including the strategic roads of Yuen Shin Road, Ting Kok Road and Tolo Highway for easy access to all other parts of the Territory. The roads used by the TPBMC traffic are Dai Fuk Street, Yuen Shin Road and Ting Kok Road.

3.1.2 To establish the existing traffic conditions and pattern quantitatively and to provide data for traffic forecasting, comprehensive traffic surveys were carried out on Friday, 6 June 2025 and Sunday, 8 June 2025 at the key junctions given in **Table 3.1** and **Figure 3.1**.

Table 3.1 Surveyed Junctions

Location		Junction Type
A	Ting Kok Road/Yuen Shin Road/Dai Fuk Street	Signalled Crossroad
B	Yuen Shin Road/Dai Fat Street	Signalled T-junction
C	Dai Fuk Street/Dai Wah Street/Dai Hung Street	Roundabout
D	Dai Fuk Street/Site Egress	Priority T-junction

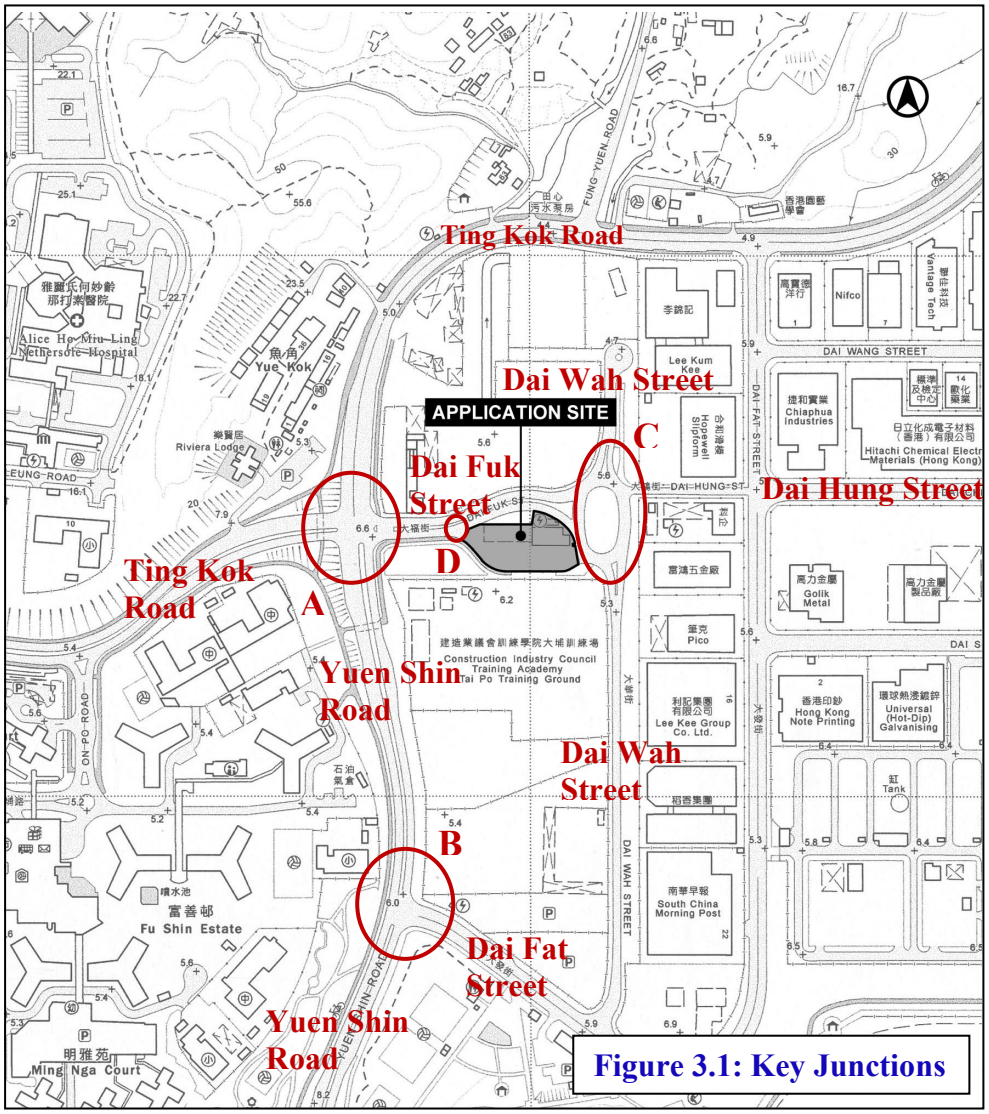


Figure 3.1: Key Junctions

3.2 Background Traffic Forecast

3.2.1 This application is to extend the TPBMC operating hours to 24 hours daily (i .e. Monday to Sunday) to enable additional bus maintenance services and enhance operational efficiency for a further 7 years from 2025. In this context, the design horizon year of 2032 has been adopted for assessment of traffic impact.

3.2.2 Background traffic flows for the future design year of 2032 were forecasted by applying an annual growth factor to the peak hour surveyed traffic flows from June 2025. Information from TD's Annual Traffic Census (ATC) reports was used to calculate the growth factor.

3.2.3 **Table 3.2** shows the Annual Average Daily Traffic (AADT) figures from 2019 to 2023.

Table 3.2 AADT from 2019 to 2023

Road Name	From	To	Station No.	AADT				
				2019	2020	2021	2022	2023
Ting Kok Road	Nam Wan Rd	Dai Kwai St	5006	30,840	29,430	32,240	30,440	29,190
Kwong Fuk Road	Nam Wan Rd	Wan Tau St	5009	19,720	18,230	19,010	17,830	17,840
Tolo Highway	North of Ma Liu Shui INT	Yuen Shin Rd INT	5013	151,780	147,640	156,330	147,630	156,010
Nam Wan Rd	Tai Po Tai Wo Rd	Ting Kok Road	5421	29,070	25,980	27,240*	26,040*	27,670*
Tat Wan Rd	Nam Wan Rd	Ma Wo Rd	5666	11,440*	10,700	11,210	10,870*	11,120*
Dai Kwai St	Ting Kok Road	Dai Chong St	6619	4,450	4,100	4,460	3,780	4,240

Note: Traffic flows are shown in vehicles/day.

3.2.4 Linear regression analysis was applied to the AADT volumes for each of the count stations to obtain an annual growth factor for the study area. The average annual growth rate, weighted by traffic volume, for the study area was calculated to be -0.1%. To account for possible potential adjacent future developments, traffic flow fluctuations, uncertainties in land use and transport infrastructure changes, a conservative +7% total growth was applied to the observed 2025 traffic demands to yield the 2032 background traffic forecasts.

3.3 Site Trip Generation

3.3.1 MTR buses will be maintained, repaired, refuelled, cleaned and serviced at the TPBMC. It is NOT a bus depot and parking of buses are not permitted except those to be maintained. Given this work nature, the highest Site traffic generation is low even at the background traffic AM and PM peak hours. According to the MTR, future traffic generation for the Site will remain unchanged for Mondays to Saturdays, and proposed future Sundays will have the same number of buses as existing Saturdays.

3.3.2 To quantify the TPBMC traffic generation and attraction, MTR's log of all the vehicles travelling into and out of TPBMC from 2 to 7 June 2025 was examined. To cover the traffic peak hours, data from 6 am to midnight have been extracted and are presented in **Table 3.3**.

Table 3.3 TPBMC Traffic Log from 2 to 7 June 2025

Time	Mon, 2 Jun 2025		Tue, 3 Jun 2025		Wed, 4 Jun 2025		Thu, 5 Jun 2025		Fri, 6 Jun 2025		Sat, 7 Jun 2025	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
06 - 07	1	6	1	5	1	5	1	4	1	5	1	2
07 - 08	0	0	0	0	0	0	1	1	0	0	0	0
08 - 09	2	0	1	2	2	1	1	1	2	1	0	1
09 - 10	0	0	2	0	1	0	0	0	0	0	1	1
10 - 11	2	2	5	1	0	1	1	0	1	1	1	1
11 - 12	1	0	0	0	1	0	0	0	3	2	0	0
12 - 13	0	1	1	1	0	0	1	1	0	1	1	1
13 - 14	1	1	0	0	0	0	1	0	0	0	0	0
14 - 15	1	0	0	0	0	0	1	1	1	1	0	0
15 - 16	1	2	0	0	0	0	0	0	0	0	0	0
16 - 17	0	0	0	0	0	0	0	0	0	0	0	0
17 - 18	0	0	1	0	0	0	0	0	0	0	0	0
18 - 19	2	0	0	0	0	0	1	0	0	0	1	0
19 - 20	3	4	3	3	4	3	0	0	3	2	2	1
20 - 21	6	5	3	2	4	3	3	1	5	5	0	0
21 - 22	6	5	5	4	7	6	3	2	6	5	6	6
22 - 23	10	9	12	11	12	12	3	3	14	12	***14***	***11***
23 - 00	7	9	8	9	9	9	2	3	7	8	9	11

Note: Traffic flows, mainly buses, are in vehicles.

3.3.3 Since the TPBMC is presently in operation except on Sundays, our weekday surveys will already have included its traffic generation. MTR advised that future Sundays will have the same number of buses as existing Saturdays. The highest Saturday hourly flow occurs between 2200 and 2300 hours which is outside the background traffic peaks. For a conservative assessment, however, this highest recorded Saturday hourly flows are adopted as the future Sunday Site traffic generation traversing at the background AM and PM peak hours. The estimated future Sunday Site traffic generation is summarised in **Table 3.4**.

Table 3.4 Future Site Traffic Generation - Sunday

TPBMC	**AM**		**PM**	
	Gen	**Att**	**Gen**	**Att**
Observed Saturday Peak Trip Generation (buses/hr)	*11*	*14*	*11*	*14*
Adopted Future Sunday Site Traffic (pcus/hr)	**22**	**28**	**22**	**28**

Note: pcus – passenger car units.

3.3.4 It can be seen from **Table 3.4** that the TPBMC will only produce a total 2-way traffic demand of 25 buses/hr (50 pcus/hr) in the peak hours even with a conservative estimate. Therefore, this proposal would have insignificant impact on traffic conditions when distributed to the surrounding road network. For a comprehensive assessment, however, traffic impact of the future TPBMC scheme has been assessed and the results are presented in Section 4.

4.0 TRAFFIC IMPACT ASSESSMENT

4.1 Road Network

4.1.1 Even with a conservative estimate, the TPBMC will only produce a total 2-way traffic demand of 50 pcus/hr in the Sunday AM and PM peak hours. With this small amount of additional Site traffic distributed onto various parts of the road network, the impact is very slight. After reviewing the study area road network, it was decided that the site generated traffic would have negligible effect on road link capacity.

4.2 Junction Capacity Assessment

4.2.1 Capacity analyses were carried out for the junctions that would be affected by the Site, the results are presented in **Table 4.1** for weekday and **Table 4.2** for Sunday. Detailed calculations, carried out in accordance with TD's Transport Planning and Design Manual, and traffic flows are attached in **Annex A**.

Table 4.1 Intersection Capacities in 2025 and 2032 - Weekday

Location		Peak	2025	2032
			With TPBMC[(2)]	With TPBMC
A	Ting Kok Rd/Yuen Shin Rd/ Dai Fuk St Signalled Crossroad	AM PM	67% 84%	56% 72%
B	Yuen Shin Rd/Dai Fat St Signalled T-junction	AM PM	34% 77%	25% 65%
C	Dai Fuk St/Dai Wah St/ Dai Hung St Roundabout	AM PM	0.26 0.24	0.28 0.26
D	Dai Fuk St/TPBMC Egress Priority T-junction	AM PM	< 0.01 < 0.01	< 0.01 < 0.01

Notes: 1. Capacity figures show the reserve capacity of the signalled junction, ratio of flow to capacity of the critical approach of the priority junction or roundabout.
2. TPBMC already exists in year 2025 Weekday.

Table 4.2 Intersection Capacities in 2025 and 2032 - Sunday

Location		Peak	2025	2032	
			Without TPBMC	Without TPBMC	With TPBMC
A	Ting Kok Rd/Yuen Shin Rd/ Dai Fuk St Signalled Crossroad	AM PM	130% 71%	114% 60%	107% 54%
B	Yuen Shin Rd/Dai Fat St Signalled T-junction	AM PM	120% 57%	106% 47%	98% 43%
C	Dai Fuk St/Dai Wah St/ Dai Hung St Roundabout	AM PM	0.13 0.10	0.14 0.10	0.14 0.11
D	Dai Fuk St/TPBMC Egress Priority T-junction	AM PM	- -	- -	0.03 0.03

Note: Capacity figures show the reserve capacity of the signalled junction, ratio of flow to capacity of the critical approach of the priority junction or roundabout.

4.2.2 It can be seen from **Table 4.1** and **Table 4.2** that the junction capacities, including the Site generated traffic, will operate satisfactorily in both the AM and PM peaks.

5.0 SUMMARY AND CONCLUSIONS

5.1 The purpose of this TIA is to support a S16 planning application to the TPB to extend the TPBMC operating hours to 24 hours daily (i.e. Monday to Sunday) to enable additional bus maintenance services and enhance operational efficiency.

5.2 The work nature of TPBMC primarily involves preventive maintenance, corrective maintenance, incident bus repair, component overhaul and bus annual overhaul. The TPBMC is NOT a bus depot and parking of buses are not permitted except those to be maintained. Given this work nature, the highest Site traffic generation is low even at the background traffic AM and PM peak hours. According to the MTR, future traffic generation for the Site will remain unchanged for Mondays to Saturdays, and proposed future Sundays will have the same number of buses as existing Saturdays.

5.3 This TIA has examined the existing traffic operations of the TPBMC, including MTR's log of all the vehicles travelling into and out of TPBMC. Conservatively adopting the highest recorded TPBMC Saturday flows as the future Sunday Site traffic generation, it will only produce a maximum 2-way traffic demand of 25 buses/hr (50 pcus/hr) in the future Sunday AM and PM peak hours.

5.4 Junction capacities of all the intersections that may be affected by the proposed development have been assessed. Even with a conservative traffic forecasting methodology, the small amount of Site generated traffic was found to have negligible effect on link and junction capacities which were all found to operate satisfactorily by year 2032 weekday and Sunday peaks.

5.5 To enable additional bus maintenance services and enhance operational efficiency, extension of the existing TPBMC operation is justified in view of a lack of alternative sites, its land use compatibility and suitability for TPBMC, and a practical location for serving the community need for Tai Po residents.

5.6 This study has demonstrated that the existing transport operation is practicable and the proposed operation of the TPBMC would not cause adverse traffic impact on the nearby road network. Therefore it is feasible from a traffic engineering point of view to extend the TPBMC operating hours to 24 hours daily (i.e. Monday to Sunday) for a further 7 years.

5.7 The nature of the work undertaken by the TPBMC primarily involves preventive maintenance, corrective maintenance, incident bus repairs, component overhauls and annual bus overhauls (Certificate of Roadworthiness). Extending TPBMC's operating hours would enable the provision of additional maintenance services, thereby enhancing operational efficiency and ultimately resulting in improved services for the public.

Annex A

Junction Capacity Assessments

TRAFFIC SIGNAL CALCULATION

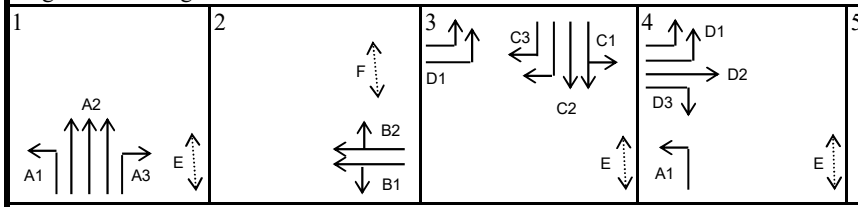
RL CONSULTANCY LTD.

Junction: Ting Kok Road/Yuen Shin Road/Dai Fuk Street
Description: With TPBMC (Existing) Date: June 2025
Design Year: 2025 Weekday File:

Designed by: AL
Checked by: RL

	Approach	Phase	Stage	Width (m)	Radius (m)	No. of Lanes	Site Factor	AM Peak Hour Sat Flow (pcu/hr)	AM Peak Hour Design Flow (pcu/hr)	AM Peak Hour y value	AM Peak Hour Critical Y	PM Peak Hour Sat Flow (pcu/hr)	PM Peak Hour Design Flow (pcu/hr)	PM Peak Hour y value	PM Peak Hour Critical Y
1	Yuen Shin Road NB lt	A1	4,1	3.50	12.0	1		1747	220	0.126		1747	200	0.115	
2	Yuen Shin Road NB sa	A2	1	10.50		3		6315	390	0.062	0.062	6315	490	0.078	0.078
3	Yuen Shin Road NB rt	A3	1	3.50	15.0	1		1914	10	0.005		1914	10	0.005	
4	Dai Fuk Street WB lt+sa	B1	2	3.70	13.0	1		1903	161	0.085	0.085	1892	141	0.075	0.075
5	Dai Fuk Street WB sa+rt	B2	2	3.70	15.0	1		2113	179	0.085		2125	159	0.075	
6	Ting Kok Road SB lt+sa	C1	3	3.70	12.0	1		1977	309	0.156		1975	236	0.120	
7	Ting Kok Road SB sa	C2	3	3.70		1		2125	331	0.156		2125	254	0.120	
8	Ting Kok Road SB rt	C3	3	7.30	14.0	2		3830	670	0.175	0.175	3830	500	0.131	0.131
9	Ting Kok Road EB lt	D1	3,4	7.30	12.0	2		3644	930	0.255		3644	710	0.195	
10	Ting Kok Road EB sa	D2	4	3.70		1		2125	140	0.066		2125	70	0.033	
11	Ting Kok Road EB rt	D3	4	3.70	14.0	1		1919	200	0.104	0.104	1919	200	0.104	0.104
12	Pedestrians	E	3,4,1	GM=5, FGM=7											
13	Pedestrians	F	2	GM=5, FGM=7											
14															
15															

Stage / Phase Diagrams



		Stages 1+2+3+4 Critical			Stages 1+2+3+4 Critical
Total Y		0.426	Total Y		0.387
L (sec)		21	L (sec)		21
C (sec)		100	C (sec)		100
Y max		0.790	Y max		0.790
R.C. (%)		67%	R.C. (%)		84%

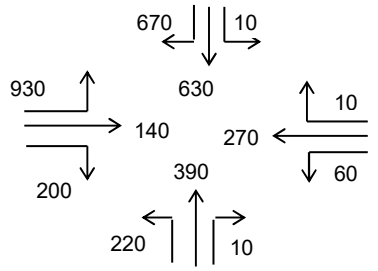
A)Unopposed streams in individual lanes
S1 = (S0 - 140n) / (1 + 1.5 f/r)

B)Opposed streams in individual lanes
S1 = (S0 - 230 - 140n) / (1 + 1.5 f/r)

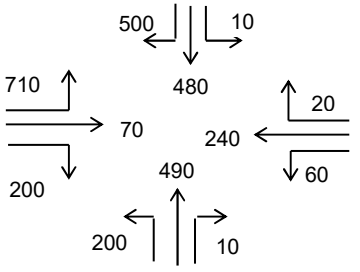
where:
S0 = 2080 - 42gG + 100 (w - 3.25)
g =1 for uphill, 0 otherwise
G = gradient
w = lane width in m
n =1 for n/s lane, 0 otherwise
f = proportion of turning traffic
r = radius of turn

Note: *=manually assigned flow

AM Traffic Flow (pcu's/hr)



PM Traffic Flow (pcu's/hr)



TRAFFIC SIGNAL CALCULATION

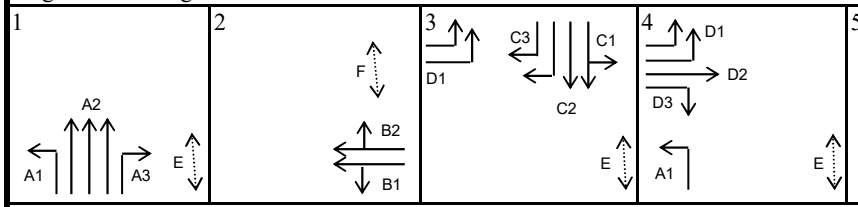
RL CONSULTANCY LTD.

Junction: Ting Kok Road/Yuen Shin Road/Dai Fuk Street
Description: With TPBMC (Existing) Date: June 2025
Design Year: 2032 Weekday File:

Designed by: AL
Checked by: RL

	Approach	Phase	Stage	Width (m)	Radius (m)	No. of Lanes	Site Factor	AM Peak Hour Sat Flow (pcu/hr)	AM Peak Hour Design Flow (pcu/hr)	AM Peak Hour y value	AM Peak Hour Critical Y	PM Peak Hour Sat Flow (pcu/hr)	PM Peak Hour Design Flow (pcu/hr)	PM Peak Hour y value	PM Peak Hour Critical Y
1	Yuen Shin Road NB lt	A1	4,1	3.50	12.0	1		1747	235	0.135		1747	214	0.123	
2	Yuen Shin Road NB sa	A2	1	10.50		3		6315	417	0.066	0.066	6315	524	0.083	0.083
3	Yuen Shin Road NB rt	A3	1	3.50	15.0	1		1914	11	0.006		1914	11	0.006	
4	Dai Fuk Street WB lt+sa	B1	2	3.70	13.0	1		1904	173	0.091	0.091	1892	151	0.080	0.080
5	Dai Fuk Street WB sa+rt	B2	2	3.70	15.0	1		2113	191	0.090		2125	170	0.080	
6	Ting Kok Road SB lt+sa	C1	3	3.70	12.0	1		1977	330	0.167		1975	252	0.128	
7	Ting Kok Road SB sa	C2	3	3.70		1		2125	355	0.167		2125	272	0.128	
8	Ting Kok Road SB rt	C3	3	7.30	14.0	2		3830	717	0.187	0.187	3830	535	0.140	0.140
9	Ting Kok Road EB lt	D1	3,4	7.30	12.0	2		3644	995	0.273		3644	760	0.208	
10	Ting Kok Road EB sa	D2	4	3.70		1		2125	150	0.070		2125	75	0.035	
11	Ting Kok Road EB rt	D3	4	3.70	14.0	1		1919	214	0.111	0.111	1919	214	0.111	0.111
12	Pedestrians	E	3,4,1	GM=5, FGM=7											
13	Pedestrians	F	2	GM=5, FGM=7											
14															
15															

Stage / Phase Diagrams



I=7 (7) I=5 (5) I=7 (7) I=6 (6)

		Stages 1+2+3+4 Critical			Stages 1+2+3+4 Critical
Total Y		0.456	Total Y		0.414
L (sec)		21	L (sec)		21
C (sec)		100	C (sec)		100
Y max		0.790	Y max		0.790
R.C. (%)		56%	R.C. (%)		72%

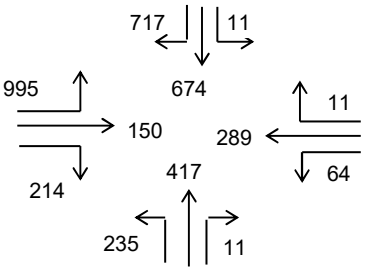
A)Unopposed streams in individual lanes
S1 = (S0 - 140n) / (1 + 1.5 f/r)

B)Opposed streams in individual lanes
S1 = (S0 - 230 - 140n) / (1 + 1.5 f/r)

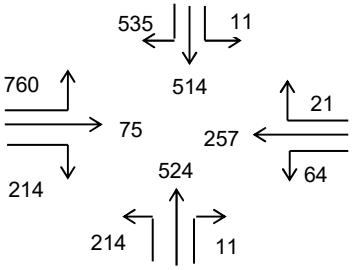
where:
S0 = 2080 - 42gG + 100 (w - 3.25)
g =1 for uphill, 0 otherwise
G = gradient
w = lane width in m
n =1 for n/s lane, 0 otherwise
f = proportion of turning traffic
r = radius of turn

Note: *=manually assigned flow

AM Traffic Flow (pcu's/hr)



PM Traffic Flow (pcu's/hr)



TRAFFIC SIGNAL CALCULATION

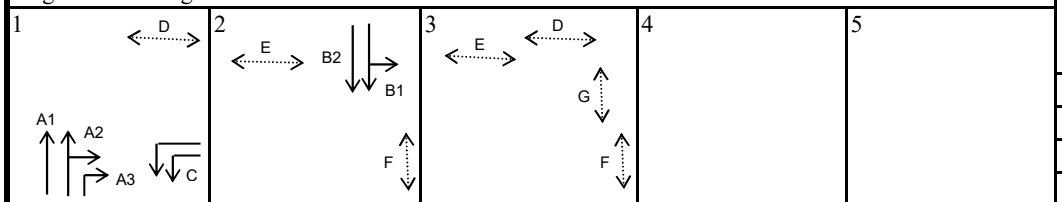
RL CONSULTANCY LTD.

Junction: Yuen Shin Road/Dai Fat Street
Description: With TPBMC (Existing) Date: June 2025
Design Year: 2025 Weekday File:

Designed by: AL
Checked by: RL

	Approach	Phase	Stage	Width (m)	Radius (m)	No. of Lanes	Site Factor	AM Peak Hour Sat Flow (pcu/hr)	AM Peak Hour Design Flow (pcu/hr)	AM Peak Hour y value	AM Peak Hour Critical Y	PM Peak Hour Sat Flow (pcu/hr)	PM Peak Hour Design Flow (pcu/hr)	PM Peak Hour y value	PM Peak Hour Critical Y
1	Yuen Shin Road NB sa	A1	1	3.50		1		1965	517	0.263	0.263	1965	355	0.181	0.181
2	Yuen Shin Road NB sa+rt	A2	1	3.50	15.0	1		1946	511	0.263		2082	376	0.181	
3	Yuen Shin Road NB rt	A3	1	3.50	12.0	1		1871	492	0.263		1871	339	0.181	
4	Yuen Shin Road SB lt+sa	B1	2	3.50	12.0	1		1953	419	0.215	0.215	1951	352	0.180	0.180
5	Yuen Shin Road SB sa	B2	2	3.50		1		2105	451	0.214		2105	378	0.180	
6	Dai Fat Street WB lt	C	1	7.30		2		4100	490	0.120		4100	490	0.120	
7	Pedestrians	D	3,1	GM=5, FGM=8											
8	Pedestrians	E	2,3	GM=5, FGM=8											
9	Pedestrians	F	2,3	GM=5, FGM=7											
10	Pedestrians	G	3	GM=5, FGM=8											
11															
12															
13															
14															
15															

Stage / Phase Diagrams



I=10 (10) I=7 (7) I=9 (9) GM=5

		Stages 1+2+3 Critical			Stages 1+2+3 Critical
Total Y		0.478	Total Y		0.361
L (sec)		29	L (sec)		29
C (sec)		100	C (sec)		100
Y max		0.710	Y max		0.710
R.C. (%)		34%	R.C. (%)		77%

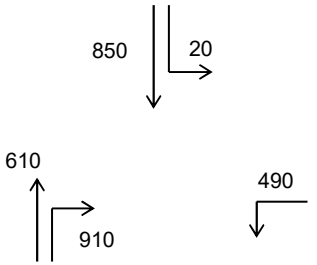
A)Unopposed streams in individual lanes
S1 = (S0 - 140n) / (1 + 1.5 f/r)

B)Opposed streams in individual lanes
S1 = (S0 - 230 - 140n) / (1 + 1.5 f/r)

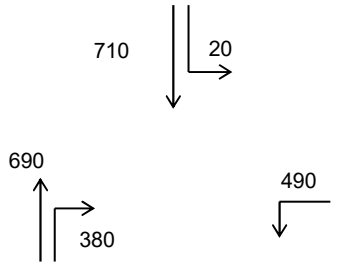
where:
S0 = 2080 - 42gG + 100 (w - 3.25)
g =1 for uphill, 0 otherwise
G = gradient
w = lane width in m
n =1 for n/s lane, 0 otherwise
f = proportion of turning traffic
r = radius of turn

Note: *=manually assigned flow

AM Traffic Flow (pcu's/hr)



PM Traffic Flow (pcu's/hr)



TRAFFIC SIGNAL CALCULATION

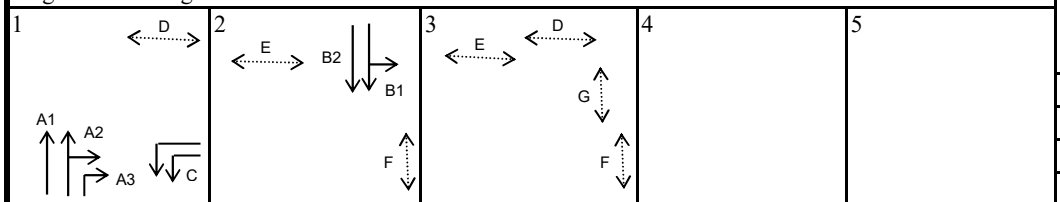
RL CONSULTANCY LTD.

Junction: Yuen Shin Road/Dai Fat Street
Description: With TPBMC (Existing) Date: June 2025
Design Year: 2032 Weekday File:

Designed by: AL
Checked by: RL

	Approach	Phase	Stage	Width (m)	Radius (m)	No. of Lanes	Site Factor	AM Peak Hour Sat Flow (pcu/hr)	AM Peak Hour Design Flow (pcu/hr)	AM Peak Hour y value	AM Peak Hour Critical Y	PM Peak Hour Sat Flow (pcu/hr)	PM Peak Hour Design Flow (pcu/hr)	PM Peak Hour y value	PM Peak Hour Critical Y
1	Yuen Shin Road NB sa	A1	1	3.50		1		1965	553	0.281	0.281	1965	380	0.194	0.194
2	Yuen Shin Road NB sa+rt	A2	1	3.50	15.0	1		1946	547	0.281		2082	403	0.194	
3	Yuen Shin Road NB rt	A3	1	3.50	12.0	1		1871	527	0.281		1871	362	0.193	
4	Yuen Shin Road SB lt+sa	B1	2	3.50	12.0	1		1953	448	0.229	0.229	1951	376	0.193	0.193
5	Yuen Shin Road SB sa	B2	2	3.50		1		2105	483	0.229		2105	405	0.192	
6	Dai Fat Street WB lt	C	1	7.30		2		4100	524	0.128		4100	524	0.128	
7	Pedestrians	D	3,1	GM=5, FGM=8											
8	Pedestrians	E	2,3	GM=5, FGM=8											
9	Pedestrians	F	2,3	GM=5, FGM=7											
10	Pedestrians	G	3	GM=5, FGM=8											
11															
12															
13															
14															
15															

Stage / Phase Diagrams



I=10 (10) I=7 (7) I=9 (9) GM=5

		Stages 1+2+3 Critical			Stages 1+2+3 Critical
Total Y		0.511	Total Y		0.386
L (sec)		29	L (sec)		29
C (sec)		100	C (sec)		100
Y max		0.710	Y max		0.710
R.C. (%)		25%	R.C. (%)		65%

A)Unopposed streams in individual lanes

S1 = (S0 - 140n) / (1 + 1.5 f/r)

B)Opposed streams in individual lanes

S1 = (S0 - 230 - 140n) / (1 + 1.5 f/r)

where:

S0 = 2080 - 42gG + 100 (w - 3.25)

g =1 for uphill, 0 otherwise

G = gradient

w = lane width in m

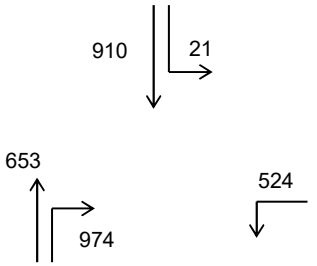
n =1 for n/s lane, 0 otherwise

f = proportion of turning traffic

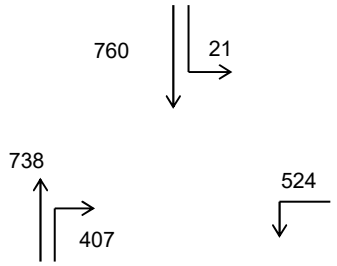
r = radius of turn

Note: *=manually assigned flow

AM Traffic Flow (pcu's/hr)



PM Traffic Flow (pcu's/hr)



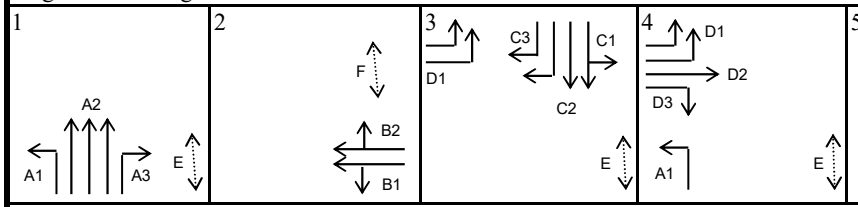
TRAFFIC SIGNAL CALCULATION

RL CONSULTANCY LTD.

Junction:	Ting Kok Road/Yuen Shin Road/Dai Fuk Street		
Description:	Without TPBMC (Existing)	Date: June 2025	Designed by: AL
Design Year:	2025 Sunday	File:	Checked by: RL

	Approach	Phase	Stage	Width (m)	Radius (m)	No. of Lanes	Site Factor	AM Peak Hour Sat Flow (pcu/hr)	AM Design Flow (pcu/hr)	AM y value	AM Critical Y	PM Peak Hour Sat Flow (pcu/hr)	PM Design Flow (pcu/hr)	PM y value	PM Critical Y
1	Yuen Shin Road NB lt	A1	4,1	3.50	12.0	1		1747	80	0.046		1747	160	0.092	
2	Yuen Shin Road NB sa	A2	1	10.50		3		6315	350	0.055	0.055	6315	560	0.089	0.089
3	Yuen Shin Road NB rt	A3	1	3.50	15.0	1		1914	20	0.010		1914	10	0.005	
4	Dai Fuk Street WB lt+sa	B1	2	3.70	13.0	1		1862	70	0.038	0.038	1888	90	0.048	0.048
5	Dai Fuk Street WB sa+rt	B2	2	3.70	15.0	1		2099	80	0.038		2125	100	0.047	
6	Ting Kok Road SB lt+sa	C1	3	3.70	12.0	1		1976	284	0.144	0.144	1978	348	0.176	
7	Ting Kok Road SB sa	C2	3	3.70		1		2125	306	0.144		2125	372	0.175	
8	Ting Kok Road SB rt	C3	3	7.30	14.0	2		3830	470	0.123		3830	710	0.185	0.185
9	Ting Kok Road EB lt	D1	3,4	7.30	12.0	2		3644	540	0.148		3644	880	0.241	
10	Ting Kok Road EB sa	D2	4	3.70		1		2125	50	0.024		2125	40	0.019	
11	Ting Kok Road EB rt	D3	4	3.70	14.0	1		1919	140	0.073	0.073	1919	180	0.094	0.094
12	Pedestrians	E	3,4,1	GM=5, FGM=7											
13	Pedestrians	F	2	GM=5, FGM=7											
14															
15															

Stage / Phase Diagrams



I=7 (7) I=5 (5) I=7 (7) I=6 (6)

		Stages 1+2+3+4 Critical			Stages 1+2+3+4 Critical
Total Y		0.310	Total Y		0.416
L (sec)		21	L (sec)		21
C (sec)		100	C (sec)		100
Y max		0.790	Y max		0.790
R.C. (%)		130%	R.C. (%)		71%

A)Unopposed streams in individual lanes

S1 = (S0 - 140n) / (1 + 1.5 f/r)

B)Opposed streams in individual lanes

S1 = (S0 - 230 - 140n) / (1 + 1.5 f/r)

where:

S0 = 2080 - 42gG + 100 (w - 3.25)

g =1 for uphill, 0 otherwise

G = gradient

w = lane width in m

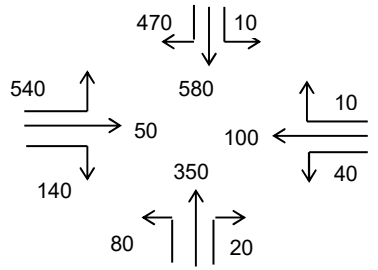
n =1 for n/s lane, 0 otherwise

f = proportion of turning traffic

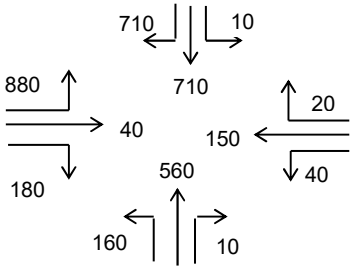
r = radius of turn

Note: *=manually assigned flow

AM Traffic Flow (pcu's/hr)



PM Traffic Flow (pcu's/hr)



TRAFFIC SIGNAL CALCULATION

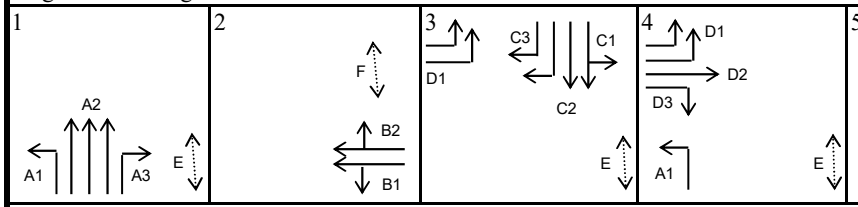
RL CONSULTANCY LTD.

Junction: Ting Kok Road/Yuen Shin Road/Dai Fuk Street
Description: Without TPBMC (Existing) Date: June 2025
Design Year: 2032 Sunday File:

Designed by: AL
Checked by: RL

	Approach	Phase	Stage	Width (m)	Radius (m)	No. of Lanes	Site Factor	AM Peak Hour Sat Flow (pcu/hr)	AM Peak Hour Design Flow (pcu/hr)	AM Peak Hour y value	AM Peak Hour Critical Y	PM Peak Hour Sat Flow (pcu/hr)	PM Peak Hour Design Flow (pcu/hr)	PM Peak Hour y value	PM Peak Hour Critical Y
1	Yuen Shin Road NB lt	A1	4,1	3.50	12.0	1		1747	86	0.049		1747	171	0.098	
2	Yuen Shin Road NB sa	A2	1	10.50		3		6315	375	0.059	0.059	6315	599	0.095	0.095
3	Yuen Shin Road NB rt	A3	1	3.50	15.0	1		1914	21	0.011		1914	11	0.006	
4	Dai Fuk Street WB lt+sa	B1	2	3.70	13.0	1		1864	76	0.041	0.041	1888	96	0.051	0.051
5	Dai Fuk Street WB sa+rt	B2	2	3.70	15.0	1		2098	85	0.040		2125	107	0.050	
6	Ting Kok Road SB lt+sa	C1	3	3.70	12.0	1		1976	304	0.154	0.154	1978	371	0.188	
7	Ting Kok Road SB sa	C2	3	3.70		1		2125	327	0.154		2125	399	0.188	
8	Ting Kok Road SB rt	C3	3	7.30	14.0	2		3830	503	0.131		3830	760	0.198	0.198
9	Ting Kok Road EB lt	D1	3,4	7.30	12.0	2		3644	578	0.159		3644	942	0.258	
10	Ting Kok Road EB sa	D2	4	3.70		1		2125	54	0.025		2125	43	0.020	
11	Ting Kok Road EB rt	D3	4	3.70	14.0	1		1919	150	0.078	0.078	1919	193	0.100	0.100
12	Pedestrians	E	3,4,1	GM=5, FGM=7											
13	Pedestrians	F	2	GM=5, FGM=7											
14															
15															

Stage / Phase Diagrams



I=7 (7) I=5 (5) I=7 (7) I=6 (6)

		Stages 1+2+3+4 Critical			Stages 1+2+3+4 Critical
Total Y		0.332	Total Y		0.445
L (sec)		21	L (sec)		21
C (sec)		100	C (sec)		100
Y max		0.790	Y max		0.790
R.C. (%)		114%	R.C. (%)		60%

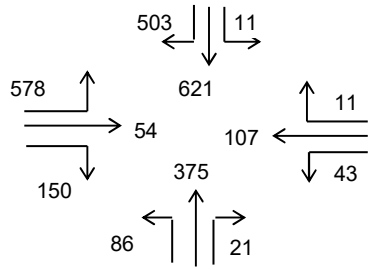
A)Unopposed streams in individual lanes
S1 = (S0 - 140n) / (1 + 1.5 f/r)

B)Opposed streams in individual lanes
S1 = (S0 - 230 - 140n) / (1 + 1.5 f/r)

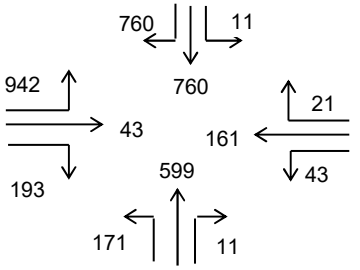
where:
S0 = 2080 - 42gG + 100 (w - 3.25)
g =1 for uphill, 0 otherwise
G = gradient
w = lane width in m
n =1 for n/s lane, 0 otherwise
f = proportion of turning traffic
r = radius of turn

Note: *=manually assigned flow

AM Traffic Flow (pcu's/hr)



PM Traffic Flow (pcu's/hr)



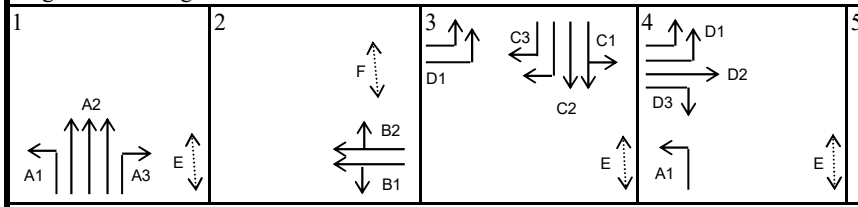
TRAFFIC SIGNAL CALCULATION

RL CONSULTANCY LTD.

Junction:	Ting Kok Road/Yuen Shin Road/Dai Fuk Street		
Description:	With TPBMC	Date: June 2025	Designed by: AL
Design Year:	2032 Sunday	File:	Checked by: RL

	Approach	Phase	Stage	Width (m)	Radius (m)	No. of Lanes	Site Factor	AM Peak Hour Sat Flow (pcu/hr)	AM Peak Hour Design Flow (pcu/hr)	AM Peak Hour y value	AM Peak Hour Critical Y	PM Peak Hour Sat Flow (pcu/hr)	PM Peak Hour Design Flow (pcu/hr)	PM Peak Hour y value	PM Peak Hour Critical Y
1	Yuen Shin Road NB lt	A1	4,1	3.50	12.0	1		1747	86	0.049		1747	171	0.098	
2	Yuen Shin Road NB sa	A2	1	10.50		3		6315	375	0.059	0.059	6315	599	0.095	0.095
3	Yuen Shin Road NB rt	A3	1	3.50	15.0	1		1914	49	0.026		1914	39	0.020	
4	Dai Fuk Street WB lt+sa	B1	2	3.70	13.0	1		1841	96	0.052	0.052	1875	127	0.068	0.068
5	Dai Fuk Street WB sa+rt	B2	2	3.70	15.0	1		2104	109	0.052		2093	141	0.068	
6	Ting Kok Road SB lt+sa	C1	3	3.70	12.0	1		1976	304	0.154	0.154	1978	371	0.188	
7	Ting Kok Road SB sa	C2	3	3.70		1		2125	327	0.154		2125	399	0.188	
8	Ting Kok Road SB rt	C3	3	7.30	14.0	2		3830	503	0.131		3830	760	0.198	0.198
9	Ting Kok Road EB lt	D1	3,4	7.30	12.0	2		3644	578	0.159		3644	942	0.258	
10	Ting Kok Road EB sa	D2	4	3.70		1		2125	82	0.038		2125	71	0.033	
11	Ting Kok Road EB rt	D3	4	3.70	14.0	1		1919	150	0.078	0.078	1919	193	0.100	0.100
12	Pedestrians	E	3,4,1	GM=5, FGM=7											
13	Pedestrians	F	2	GM=5, FGM=7											
14															
15															

Stage / Phase Diagrams



I=7 (7) I=5 (5) I=7 (7) I=6 (6)

		Stages 1+2+3+4 Critical			Stages 1+2+3+4 Critical
Total Y		0.343	Total Y		0.462
L (sec)		21	L (sec)		21
C (sec)		100	C (sec)		100
Y max		0.790	Y max		0.790
R.C. (%)		107%	R.C. (%)		54%

A)Unopposed streams in individual lanes

S1 = (S0 - 140n) / (1 + 1.5 f/r)

B)Opposed streams in individual lanes

S1 = (S0 - 230 - 140n) / (1 + 1.5 f/r)

where:

S0 = 2080 - 42gG + 100 (w - 3.25)

g =1 for uphill, 0 otherwise

G = gradient

w = lane width in m

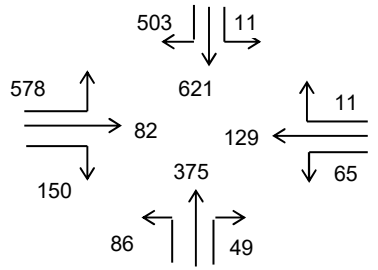
n =1 for n/s lane, 0 otherwise

f = proportion of turning traffic

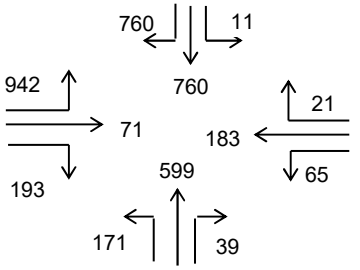
r = radius of turn

Note: *=manually assigned flow

AM Traffic Flow (pcu's/hr)



PM Traffic Flow (pcu's/hr)



TRAFFIC SIGNAL CALCULATION

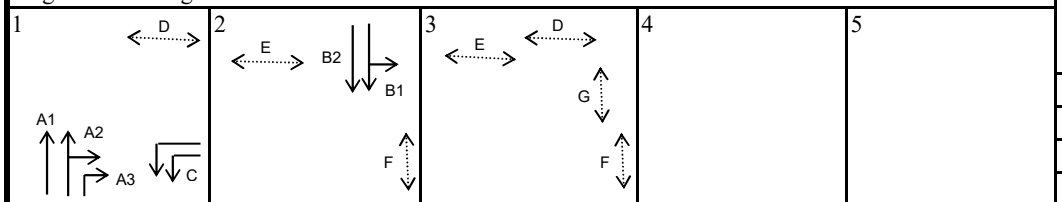
RL CONSULTANCY LTD.

Junction: Yuen Shin Road/Dai Fat Street
Description: Without TPBMC (Existing) Date: June 2025
Design Year: 2025 Sunday File:

Designed by: AL
Checked by: RL

	Approach	Phase	Stage	Width (m)	Radius (m)	No. of Lanes	Site Factor	AM Peak Hour Sat Flow (pcu/hr)	AM Peak Hour Design Flow (pcu/hr)	AM Peak Hour y value	AM Peak Hour Critical Y	PM Peak Hour Sat Flow (pcu/hr)	PM Peak Hour Design Flow (pcu/hr)	PM Peak Hour y value	PM Peak Hour Critical Y
1	Yuen Shin Road NB sa	A1	1	3.50		1		1965	208	0.106	0.106	1965	348	0.177	0.177
2	Yuen Shin Road NB sa+rt	A2	1	3.50	15.0	1		2105	222	0.105		2105	372	0.177	
3	Yuen Shin Road NB rt	A3	1	3.50	12.0	1		1871	190	0.102		1871	220	0.118	
4	Yuen Shin Road SB lt+sa	B1	2	3.50	12.0	1		1958	362	0.185	0.185	1960	448	0.229	0.229
5	Yuen Shin Road SB sa	B2	2	3.50		1		2105	388	0.184		2105	482	0.229	
6	Dai Fat Street WB lt	C	1	7.30		2		4100	190	0.046		4100	250	0.061	
7	Pedestrians	D	3,1	GM=5, FGM=8											
8	Pedestrians	E	2,3	GM=5, FGM=8											
9	Pedestrians	F	2,3	GM=5, FGM=7											
10	Pedestrians	G	3	GM=5, FGM=8											
11															
12															
13															
14															
15															

Stage / Phase Diagrams



I=10 (10) I=7 (7) I=9 (9) GM=5

		Stages 1+2+3 Critical			Stages 1+2+3 Critical
Total Y		0.291	Total Y		0.406
L (sec)		29	L (sec)		29
C (sec)		100	C (sec)		100
Y max		0.710	Y max		0.710
R.C. (%)		120%	R.C. (%)		57%

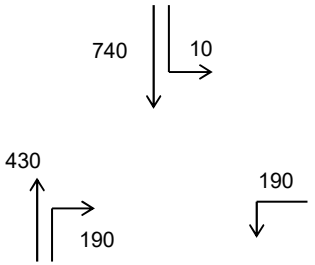
A)Unopposed streams in individual lanes
S1 = (S0 - 140n) / (1 + 1.5 f/r)

B)Opposed streams in individual lanes
S1 = (S0 - 230 - 140n) / (1 + 1.5 f/r)

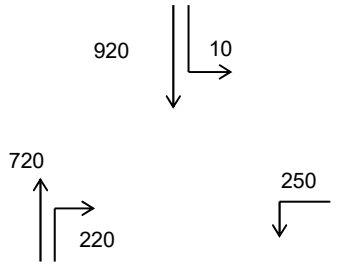
where:
S0 = 2080 - 42gG + 100 (w - 3.25)
g =1 for uphill, 0 otherwise
G = gradient
w = lane width in m
n =1 for n/s lane, 0 otherwise
f = proportion of turning traffic
r = radius of turn

Note: *=manually assigned flow

AM Traffic Flow (pcu's/hr)



PM Traffic Flow (pcu's/hr)



TRAFFIC SIGNAL CALCULATION

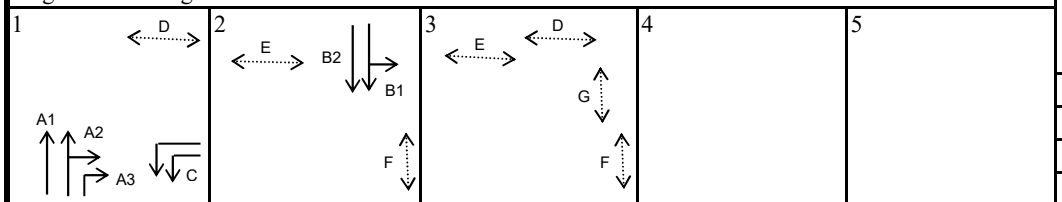
RL CONSULTANCY LTD.

Junction: Yuen Shin Road/Dai Fat Street
Description: Without TPBMC (Existing) Date: June 2025
Design Year: 2032 Sunday File:

Designed by: AL
Checked by: RL

	Approach	Phase	Stage	Width (m)	Radius (m)	No. of Lanes	Site Factor	AM Peak Hour Sat Flow (pcu/hr)	AM Peak Hour Design Flow (pcu/hr)	AM Peak Hour y value	AM Peak Hour Critical Y	PM Peak Hour Sat Flow (pcu/hr)	PM Peak Hour Design Flow (pcu/hr)	PM Peak Hour y value	PM Peak Hour Critical Y
1	Yuen Shin Road NB sa	A1	1	3.50		1		1965	222	0.113	0.113	1965	372	0.190	0.190
2	Yuen Shin Road NB sa+rt	A2	1	3.50	15.0	1		2105	238	0.113		2105	398	0.189	
3	Yuen Shin Road NB rt	A3	1	3.50	12.0	1		1871	203	0.109		1871	235	0.126	
4	Yuen Shin Road SB lt+sa	B1	2	3.50	12.0	1		1958	388	0.198	0.198	1960	480	0.245	0.245
5	Yuen Shin Road SB sa	B2	2	3.50		1		2105	415	0.197		2105	515	0.245	
6	Dai Fat Street WB lt	C	1	7.30		2		4100	203	0.050		4100	268	0.065	
7	Pedestrians	D	3,1	GM=5, FGM=8											
8	Pedestrians	E	2,3	GM=5, FGM=8											
9	Pedestrians	F	2,3	GM=5, FGM=7											
10	Pedestrians	G	3	GM=5, FGM=8											
11															
12															
13															
14															
15															

Stage / Phase Diagrams



I=10 (10) I=7 (7) I=9 (9) GM=5

		Stages 1+2+3 Critical			Stages 1+2+3 Critical
Total Y		0.311	Total Y		0.435
L (sec)		29	L (sec)		29
C (sec)		100	C (sec)		100
Y max		0.710	Y max		0.710
R.C. (%)		106%	R.C. (%)		47%

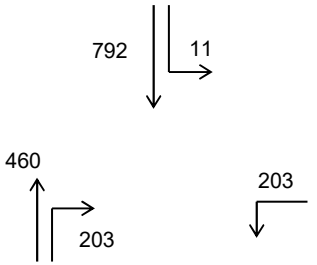
A)Unopposed streams in individual lanes
S1 = (S0 - 140n) / (1 + 1.5 f/r)

B)Opposed streams in individual lanes
S1 = (S0 - 230 - 140n) / (1 + 1.5 f/r)

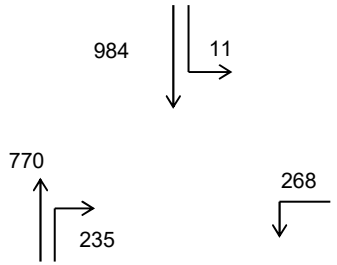
where:
S0 = 2080 - 42gG + 100 (w - 3.25)
g =1 for uphill, 0 otherwise
G = gradient
w = lane width in m
n =1 for n/s lane, 0 otherwise
f = proportion of turning traffic
r = radius of turn

Note: *=manually assigned flow

AM Traffic Flow (pcu's/hr)



PM Traffic Flow (pcu's/hr)



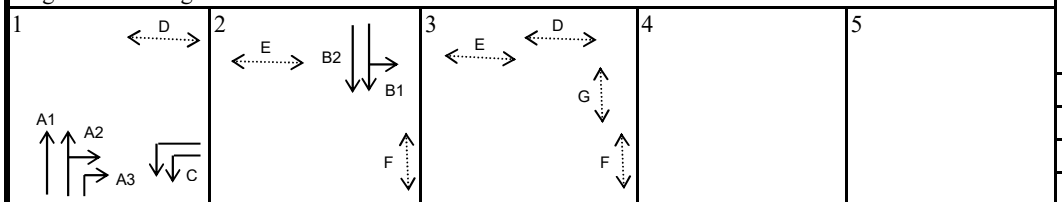
TRAFFIC SIGNAL CALCULATION

RL CONSULTANCY LTD.

Junction: Yuen Shin Road/Dai Fat Street
Description: With TPBMC Date: June 2025 Designed by: AL
Design Year: 2032 Sunday File: Checked by: RL

	Approach	Phase	Stage	Width (m)	Radius (m)	No. of Lanes	Site Factor	AM Peak Hour Sat Flow (pcu/hr)	AM Peak Hour Design Flow (pcu/hr)	AM Peak Hour y value	AM Peak Hour Critical Y	PM Peak Hour Sat Flow (pcu/hr)	PM Peak Hour Design Flow (pcu/hr)	PM Peak Hour y value	PM Peak Hour Critical Y
1	Yuen Shin Road NB sa	A1	1	3.50		1		1965	236	0.120	0.120	1965	385	0.196	0.196
2	Yuen Shin Road NB sa+rt	A2	1	3.50	15.0	1		2105	252	0.120		2105	413	0.196	
3	Yuen Shin Road NB rt	A3	1	3.50	12.0	1		1871	203	0.109		1871	235	0.126	
4	Yuen Shin Road SB lt+sa	B1	2	3.50	12.0	1		1958	398	0.203	0.203	1960	490	0.250	0.250
5	Yuen Shin Road SB sa	B2	2	3.50		1		2105	427	0.203		2105	527	0.250	
6	Dai Fat Street WB lt	C	1	7.30		2		4100	203	0.050		4100	268	0.065	
7	Pedestrians	D	3,1	GM=5, FGM=8											
8	Pedestrians	E	2,3	GM=5, FGM=8											
9	Pedestrians	F	2,3	GM=5, FGM=7											
10	Pedestrians	G	3	GM=5, FGM=8											
11															
12															
13															
14															
15															

Stage / Phase Diagrams



I=10 (10) I=7 (7) I=9 (9) GM=5

		Stages 1+2+3 Critical			Stages 1+2+3 Critical
Total Y		0.323	Total Y		0.446
L (sec)		29	L (sec)		29
C (sec)		100	C (sec)		100
Y max		0.710	Y max		0.710
R.C. (%)		98%	R.C. (%)		43%

A)Unopposed streams in individual lanes

$S1 = (S0 - 140n) / (1 + 1.5\ f/r)$

B)Opposed streams in individual lanes

$S1 = (S0 - 230 - 140n) / (1 + 1.5\ f/r)$

where:

$S0 = 2080 - 42gG + 100\ (w - 3.25)$

g =1 for uphill, 0 otherwise

G = gradient

w = lane width in m

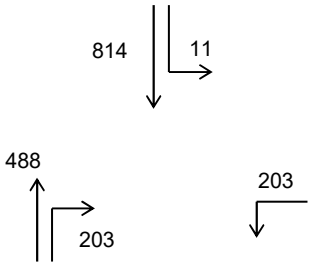
n =1 for n/s lane, 0 otherwise

f = proportion of turning traffic

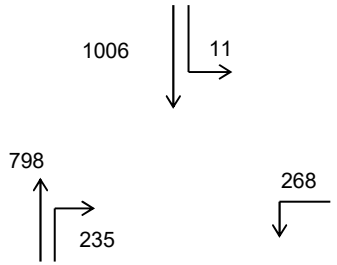
r = radius of turn

Note: *=manually assigned flow

AM Traffic Flow (pcu's/hr)



PM Traffic Flow (pcu's/hr)



ROUNDABOUT CAPACITY CALCULATION

RL CONSULTANCY LTD.

Junction:	Dai Fuk Street/Dai Wah Street/Dai Hung Street RA				
Description:	With TPBMC (Existing)	Date:	June 2025	Designed by:	AL
Design Year:	2025 Weekday	File:		Checked by:	RL

				Description:	Dai Wah St NB	Dai Fuk St EB	Dai Wah St SB	Dai Hung St WB
Input:								
V	=	Approach half width (m)			3.6	7.3	3.5	3.0
E	=	Entry width (m)			7.3	9.0	6.5	4.2
L	=	Effective length of flare (m)			20.0	100.0	8.0	8.0
R	=	Entry radius (m)			80.0	60.0	60.0	45.0
D	=	Inscribed circle diameter (m)			65.0	65.0	65.0	65.0
A	=	Entry angle (degree)			40	35	80	40
Q	=	Entry flow (pcus/hr)		AM	110	170	30	300
				PM	100	100	50	270
Qc	=	Circulating flow across entry (pcus/hr)		AM	300	90	90	30
				PM	290	80	70	50
Output:								
S	=	Sharpness of flare = 1.6(E-V)/L			0.30	0.03	0.60	0.24
K	=	1-0.00347(A-30)-0.978(1/R-0.05)			1.00	1.02	0.86	0.99
X2	=	V + ((E-V)/(1+2S))			5.92	8.91	4.86	3.81
M	=	EXP((D-60)/10)			1.65	1.65	1.65	1.65
F	=	303*X2			1795	2700	1474	1155
Td	=	1+(0.5/(1+M))			1.19	1.19	1.19	1.19
Fc	=	0.21*Td(1+0.2*X2)			0.55	0.69	0.49	0.44
Qe	=	K(F-Fc*Qc)		AM	1635	2678	1228	1133
				PM	1640	2685	1236	1124
DFC	=	Design flow/Capacity = Q/Qe		AM	0.07	0.06	0.02	0.26
				PM	0.06	0.04	0.04	0.24

ROUNDABOUT CAPACITY CALCULATION

RL CONSULTANCY LTD.

Junction:	Dai Fuk Street/Dai Wah Street/Dai Hung Street RA				
Description:	With TPBMC	Date:	June 2025	Designed by:	AL
Design Year:	2032 Weekday	File:		Checked by:	RL

				Description:	Dai Wah St NB	Dai Fuk St EB	Dai Wah St SB	Dai Hung St WB
Input:								
V	=	Approach half width (m)			3.6	7.3	3.5	3.0
E	=	Entry width (m)			7.3	9.0	6.5	4.2
L	=	Effective length of flare (m)			20.0	100.0	8.0	8.0
R	=	Entry radius (m)			80.0	60.0	60.0	45.0
D	=	Inscribed circle diameter (m)			65.0	65.0	65.0	65.0
A	=	Entry angle (degree)			40	35	80	40
Q	=	Entry flow (pcus/hr)		AM	118	182	32	321
				PM	107	107	54	289
Qc	=	Circulating flow across entry (pcus/hr)		AM	321	96	96	32
				PM	310	86	75	54
Output:								
S	=	Sharpness of flare = 1.6(E-V)/L			0.30	0.03	0.60	0.24
K	=	1-0.00347(A-30)-0.978(1/R-0.05)			1.00	1.02	0.86	0.99
X2	=	V + ((E-V)/(1+2S))			5.92	8.91	4.86	3.81
M	=	EXP((D-60)/10)			1.65	1.65	1.65	1.65
F	=	303*X2			1795	2700	1474	1155
Td	=	1+(0.5/(1+M))			1.19	1.19	1.19	1.19
Fc	=	0.21*Td(1+0.2*X2)			0.55	0.69	0.49	0.44
Qe	=	K(F-Fc*Qc)		AM	1623	2674	1225	1132
				PM	1629	2681	1234	1123
DFC	=	Design flow/Capacity = Q/Qe		AM	0.07	0.07	0.03	0.28
				PM	0.07	0.04	0.04	0.26

ROUNDABOUT CAPACITY CALCULATION

RL CONSULTANCY LTD.

Junction: Dai Fuk Street/Dai Wah Street/Dai Hung Street RA
Description: Without TPBMC Date: June 2025 Designed by: AL
Design Year: 2025 Sunday File: Checked by: RL

					Description:	Dai Wah St NB	Dai Fuk St EB	Dai Wah St SB	Dai Hung St WB
Input:									
V	=	Approach half width (m)				3.6	7.3	3.5	3.0
E	=	Entry width (m)				7.3	9.0	6.5	4.2
L	=	Effective length of flare (m)				20.0	100.0	8.0	8.0
R	=	Entry radius (m)				80.0	60.0	60.0	45.0
D	=	Inscribed circle diameter (m)				65.0	65.0	65.0	65.0
A	=	Entry angle (degree)				40	35	80	40
Q	=	Entry flow (pcus/hr)			AM	80	90	30	150
					PM	80	60	30	110
Qc	=	Circulating flow across entry (pcus/hr)			AM	150	70	60	30
					PM	110	60	50	30
Output:									
S	=	Sharpness of flare = 1.6(E-V)/L				0.30	0.03	0.60	0.24
K	=	1-0.00347(A-30)-0.978(1/R-0.05)				1.00	1.02	0.86	0.99
X2	=	V + ((E-V)/(1+2S))				5.92	8.91	4.86	3.81
M	=	EXP((D-60)/10)				1.65	1.65	1.65	1.65
F	=	303*X2				1795	2700	1474	1155
Td	=	1+(0.5/(1+M))				1.19	1.19	1.19	1.19
Fc	=	0.21*Td(1+0.2*X2)				0.55	0.69	0.49	0.44
Qe	=	K(F-Fc*Qc)			AM	1717	2692	1241	1133
					PM	1738	2699	1245	1133
DFC	=	Design flow/Capacity = Q/Qe			AM	0.05	0.03	0.02	0.13
					PM	0.05	0.02	0.02	0.10

ROUNDABOUT CAPACITY CALCULATION

RL CONSULTANCY LTD.

Junction: Dai Fuk Street/Dai Wah Street/Dai Hung Street RA
Description: Without TPBMC Date: June 2025 Designed by: AL
Design Year: 2032 Sunday File: Checked by: RL

					Description:	Dai Wah St NB	Dai Fuk St EB	Dai Wah St SB	Dai Hung St WB
Input:									
V	=	Approach half width (m)				3.6	7.3	3.5	3.0
E	=	Entry width (m)				7.3	9.0	6.5	4.2
L	=	Effective length of flare (m)				20.0	100.0	8.0	8.0
R	=	Entry radius (m)				80.0	60.0	60.0	45.0
D	=	Inscribed circle diameter (m)				65.0	65.0	65.0	65.0
A	=	Entry angle (degree)				40	35	80	40
Q	=	Entry flow (pcus/hr)			AM	86	96	32	161
					PM	86	64	32	118
Qc	=	Circulating flow across entry (pcus/hr)			AM	161	75	64	32
					PM	118	64	54	32
Output:									
S	=	Sharpness of flare = 1.6(E-V)/L				0.30	0.03	0.60	0.24
K	=	1-0.00347(A-30)-0.978(1/R-0.05)				1.00	1.02	0.86	0.99
X2	=	V + ((E-V)/(1+2S))				5.92	8.91	4.86	3.81
M	=	EXP((D-60)/10)				1.65	1.65	1.65	1.65
F	=	303*X2				1795	2700	1474	1155
Td	=	1+(0.5/(1+M))				1.19	1.19	1.19	1.19
Fc	=	0.21*Td(1+0.2*X2)				0.55	0.69	0.49	0.44
Qe	=	K(F-Fc*Qc)			AM	1711	2689	1239	1132
					PM	1734	2696	1243	1132
DFC	=	Design flow/Capacity = Q/Qe			AM	0.05	0.04	0.03	0.14
					PM	0.05	0.02	0.03	0.10

ROUNDABOUT CAPACITY CALCULATION

RL CONSULTANCY LTD.

Junction: Dai Fuk Street/Dai Wah Street/Dai Hung Street RA
Description: With TPBMC Date: June 2025 Designed by: AL
Design Year: 2032 Sunday File: Checked by: RL

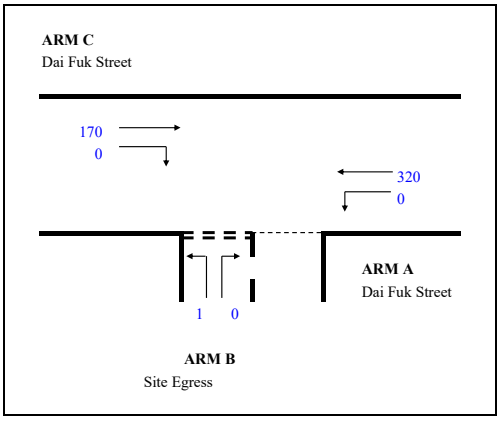
					Description:	Dai Wah St NB	Dai Fuk St EB	Dai Wah St SB	Dai Hung St WB
Input:									
V	=	Approach half width (m)				3.6	7.3	3.5	3.0
E	=	Entry width (m)				7.3	9.0	6.5	4.2
L	=	Effective length of flare (m)				20.0	100.0	8.0	8.0
R	=	Entry radius (m)				80.0	60.0	60.0	45.0
D	=	Inscribed circle diameter (m)				65.0	65.0	65.0	65.0
A	=	Entry angle (degree)				40	35	80	40
Q	=	Entry flow (pcus/hr)			AM	86	124	32	161
					PM	86	92	32	118
Qc	=	Circulating flow across entry (pcus/hr)			AM	189	75	92	60
					PM	146	64	82	60
Output:									
S	=	Sharpness of flare = 1.6(E-V)/L				0.30	0.03	0.60	0.24
K	=	1-0.00347(A-30)-0.978(1/R-0.05)				1.00	1.02	0.86	0.99
X2	=	V + ((E-V)/(1+2S))				5.92	8.91	4.86	3.81
M	=	EXP((D-60)/10)				1.65	1.65	1.65	1.65
F	=	303*X2				1795	2700	1474	1155
Td	=	1+(0.5/(1+M))				1.19	1.19	1.19	1.19
Fc	=	0.21*Td(1+0.2*X2)				0.55	0.69	0.49	0.44
Qe	=	K(F-Fc*Qc)			AM	1696	2689	1227	1120
					PM	1719	2696	1232	1120
DFC	=	Design flow/Capacity = Q/Qe			AM	0.05	0.05	0.03	0.14
					PM	0.05	0.03	0.03	0.11

PRIORITY JUNCTION CALCULATION

RL CONSULTANCY LTD.

Junction: Dai Fuk Street / Site Egress
Description: Existing Layout: With TPBMC (Existing)
Design Year: 2025 Weekday AM

Designed by: AL
Checked by: RL



Notes:
- W = Major road width
- W cr = Central reserve width
- W b-a = Lane width available to vehicle waiting in stream b-a
- W b-c = Lane width available to vehicle waiting in stream b-c
- W c-b = Lane width available to vehicle waiting in stream c-b
- Vl b-a = Visibility to the left for vehicles waiting in stream b-a
- Vr b-a = Visibility to the right for vehicles waiting in stream b-a
- Vr b-c = Visibility to the right for vehicles waiting in stream b-c
- Vr c-b = Visibility to the right for vehicles waiting in stream c-b
- D = Stream-specific b-a
- E = Stream-specific b-c
- F = Stream-specific c-b
- Y = (1-0.0345W)

GEOMETRIC DETAILS:

Road Widths

W	=	7.3 m
W cr	=	0.0 m
W b-a	=	0.0 m
W b-c	=	4.0 m
W c-b	=	0.0 m

Visibility

r:B-A	=	50 m
r:B-C	=	150 m
l:B-C	=	150 m
s:C-B	=	50 m

GEOMETRIC FACTORS :

Y	=	0.7482
D	=	0.6155
E	=	1.0608
F	=	0.6155

THE CAPACITY OF MOVEMENT :

Q b-a	=	314
Q b-c	=	698
Q c-b	=	405
Q b-ac	=	698
Q b-c (O)	=	698

DESIGN FLOW/CAPACITY:

DFC b-a	=	0.0000
DFC b-c	=	0.0014
DFC c-b	=	0.0000

CRITICAL DFC = 0.00

TRAFFIC FLOWS:

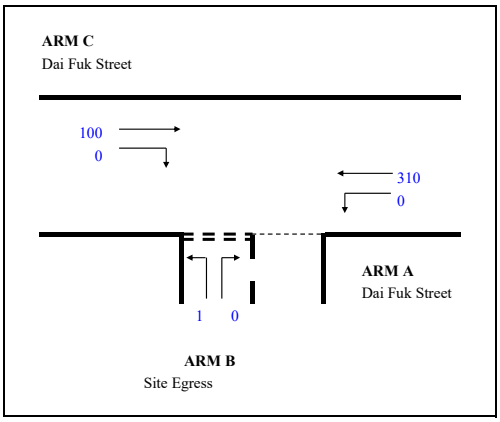
ARM A		
q a-b	=	0 pcus/hr
q a-c	=	320 pcus/hr
ARM B		
q b-a	=	0 pcus/hr
q b-c	=	1 pcus/hr
F for (Qb-ac)	=	1
ARM C		
q c-a	=	170 pcus/hr
q c-b	=	0 pcus/hr

PRIORITY JUNCTION CALCULATION

RL CONSULTANCY LTD.

Junction: Dai Fuk Street / Site Egress
Description: Existing Layout: With TPBMC (Existing)
Design Year: 2025 Weekday PM

Designed by: AL
Checked by: RL



Notes:
- W = Major road width
- W cr = Central reserve width
- W b-a = Lane width available to vehicle waiting in stream b-a
- W b-c = Lane width available to vehicle waiting in stream b-c
- W c-b = Lane width available to vehicle waiting in stream c-b
- Vl b-a = Visibility to the left for vehicles waiting in stream b-a
- Vr b-a = Visibility to the right for vehicles waiting in stream b-a
- Vr b-c = Visibility to the right for vehicles waiting in stream b-c
- Vr c-b = Visibility to the right for vehicles waiting in stream c-b
- D = Stream-specific b-a
- E = Stream-specific b-c
- F = Stream-specific c-b
- Y = (1-0.0345W)

GEOMETRIC DETAILS:

Road Widths

W	=	7.3 m
W cr	=	0.0 m
W b-a	=	0.0 m
W b-c	=	4.0 m
W c-b	=	0.0 m

Visibility

r:B-A	=	50 m
r:B-C	=	150 m
l:B-C	=	150 m
s:C-B	=	50 m

GEOMETRIC FACTORS :

Y	=	0.7482
D	=	0.6155
E	=	1.0608
F	=	0.6155

THE CAPACITY OF MOVEMENT :

Q b-a	=	323
Q b-c	=	701
Q c-b	=	407
Q b-ac	=	701
Q b-c (O)	=	701

DESIGN FLOW/CAPACITY:

DFC b-a	=	0.0000
DFC b-c	=	0.0014
DFC c-b	=	0.0000

CRITICAL DFC = 0.00

TRAFFIC FLOWS:

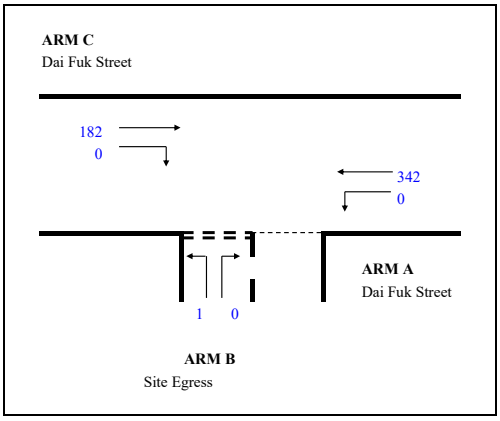
ARM A		
q a-b	=	0 pcus/hr
q a-c	=	310 pcus/hr
ARM B		
q b-a	=	0 pcus/hr
q b-c	=	1 pcus/hr
F for (Qb-ac)	=	1
ARM C		
q c-a	=	100 pcus/hr
q c-b	=	0 pcus/hr

PRIORITY JUNCTION CALCULATION

RL CONSULTANCY LTD.

Junction: Dai Fuk Street / Site Egress
Description: Existing Layout With TPBMC (Existing)
Design Year: 2032 Weekday AM

Designed by: AL
Checked by: RL



Notes:
- W = Major road width
- W cr = Central reserve width
- W b-a = Lane width available to vehicle waiting in stream b-a
- W b-c = Lane width available to vehicle waiting in stream b-c
- W c-b = Lane width available to vehicle waiting in stream c-b
- Vl b-a = Visibility to the left for vehicles waiting in stream b-a
- Vr b-a = Visibility to the right for vehicles waiting in stream b-a
- Vr b-c = Visibility to the right for vehicles waiting in stream b-c
- Vr c-b = Visibility to the right for vehicles waiting in stream c-b
- D = Stream-specific b-a
- E = Stream-specific b-c
- F = Stream-specific c-b
- Y = (1-0.0345W)

GEOMETRIC DETAILS:

Road Widths

W	=	7.3 m
W cr	=	0.0 m
W b-a	=	0.0 m
W b-c	=	4.0 m
W c-b	=	0.0 m

Visibility

r:B-A	=	50 m
r:B-C	=	150 m
l:B-C	=	150 m
s:C-B	=	50 m

GEOMETRIC FACTORS :

Y	=	0.7482
D	=	0.6155
E	=	1.0608
F	=	0.6155

TRAFFIC FLOWS:

ARM A		
q a-b	=	0 pcus/hr
q a-c	=	342 pcus/hr
ARM B		
q b-a	=	0 pcus/hr
q b-c	=	1 pcus/hr
F for (Qb-ac)	=	1
ARM C		
q c-a	=	182 pcus/hr
q c-b	=	0 pcus/hr

THE CAPACITY OF MOVEMENT :

Q b-a	=	309
Q b-c	=	691
Q c-b	=	401
Q b-ac	=	691
Q b-c (O)	=	691

DESIGN FLOW/CAPACITY:

DFC b-a	=	0.0000
DFC b-c	=	0.0015
DFC c-b	=	0.0000

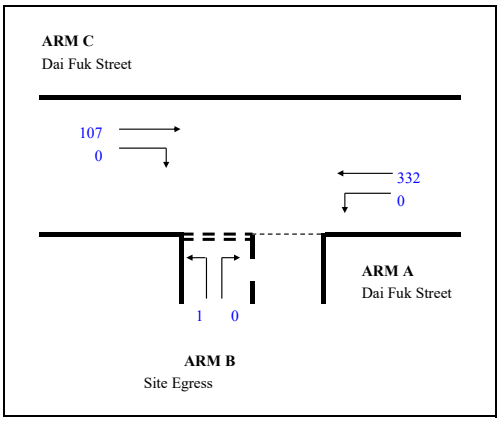
CRITICAL DFC = 0.00

PRIORITY JUNCTION CALCULATION

RL CONSULTANCY LTD.

Junction: Dai Fuk Street / Site Egress
Description: Existing Layout: With TPBMC (Existing)
Design Year: 2032 Weekday PM

Designed by: AL
Checked by: RL



Notes:
- W = Major road width
- W cr = Central reserve width
- W b-a = Lane width available to vehicle waiting in stream b-a
- W b-c = Lane width available to vehicle waiting in stream b-c
- W c-b = Lane width available to vehicle waiting in stream c-b
- Vl b-a = Visibility to the left for vehicles waiting in stream b-a
- Vr b-a = Visibility to the right for vehicles waiting in stream b-a
- Vr b-c = Visibility to the right for vehicles waiting in stream b-c
- Vr c-b = Visibility to the right for vehicles waiting in stream c-b
- D = Stream-specific b-a
- E = Stream-specific b-c
- F = Stream-specific c-b
- Y = (1-0.0345W)

GEOMETRIC DETAILS:

Road Widths

W	=	7.3 m
W cr	=	0.0 m
W b-a	=	0.0 m
W b-c	=	4.0 m
W c-b	=	0.0 m

Visibility

r:B-A	=	50 m
r:B-C	=	150 m
l:B-C	=	150 m
s:C-B	=	50 m

GEOMETRIC FACTORS :

Y	=	0.7482
D	=	0.6155
E	=	1.0608
F	=	0.6155

TRAFFIC FLOWS:

ARM A		
q a-b	=	0 pcus/hr
q a-c	=	332 pcus/hr
ARM B		
q b-a	=	0 pcus/hr
q b-c	=	1 pcus/hr
F for (Qb-ac)	=	1
ARM C		
q c-a	=	107 pcus/hr
q c-b	=	0 pcus/hr

THE CAPACITY OF MOVEMENT :

Q b-a	=	319
Q b-c	=	694
Q c-b	=	403
Q b-ac	=	694
Q b-c (O)	=	694

DESIGN FLOW/CAPACITY:

DFC b-a	=	0.0000
DFC b-c	=	0.0015
DFC c-b	=	0.0000

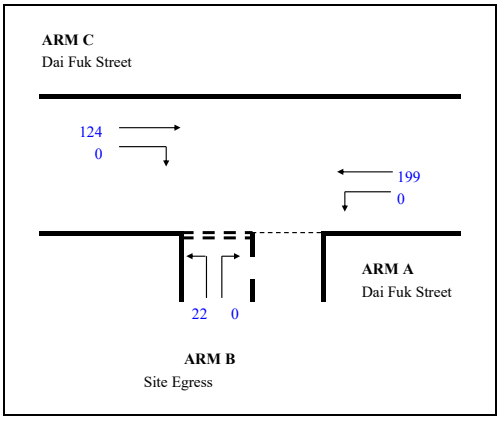
CRITICAL DFC = 0.00

PRIORITY JUNCTION CALCULATION

RL CONSULTANCY LTD.

Junction: Dai Fuk Street / Site Egress
Description: Existing Layout With TPBMC
Design Year: 2032 Sunday AM

Designed by: AL
Checked by: RL



Notes:

W	=	Major road width
W cr	=	Central reserve width
W b-a	=	Lane width available to vehicle waiting in stream b-a
W b-c	=	Lane width available to vehicle waiting in stream b-c
W c-b	=	Lane width available to vehicle waiting in stream c-b
Vl b-a	=	Visibility to the left for vehicles waiting in stream b-a
Vr b-a	=	Visibility to the right for vehicles waiting in stream b-a
Vr b-c	=	Visibility to the right for vehicles waiting in stream b-c
Vr c-b	=	Visibility to the right for vehicles waiting in stream c-b
D	=	Stream-specific b-a
E	=	Stream-specific b-c
F	=	Stream-specific c-b
Y	=	(1-0.0345W)

GEOMETRIC DETAILS:

Road Widths

W	=	7.3	m
W cr	=	0.0	m
W b-a	=	0.0	m
W b-c	=	4.0	m
W c-b	=	0.0	m

Visibility

r:B-A	=	50	m
r:B-C	=	150	m
l:B-C	=	150	m
s:C-B	=	50	m

GEOMETRIC FACTORS :

Y	=	0.7482
D	=	0.6155
E	=	1.0608
F	=	0.6155

TRAFFIC FLOWS:

ARM A		
q a-b	=	0 pcus/hr
q a-c	=	199 pcus/hr
ARM B		
q b-a	=	0 pcus/hr
q b-c	=	22 pcus/hr
F for (Qb-ac)	=	1
ARM C		
q c-a	=	124 pcus/hr
q c-b	=	0 pcus/hr

THE CAPACITY OF MOVEMENT :

Q b-a	=	339
Q b-c	=	733
Q c-b	=	425
Q b-ac	=	733
Q b-c (O)	=	733

DESIGN FLOW/CAPACITY:

DFC b-a	=	0.0000
DFC b-c	=	0.0300
DFC c-b	=	0.0000

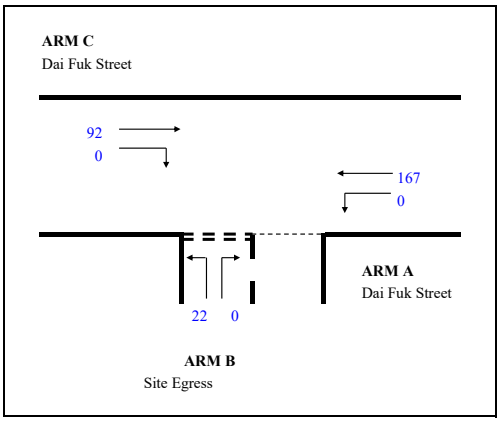
CRITICAL DFC = 0.03

PRIORITY JUNCTION CALCULATION

RL CONSULTANCY LTD.

Junction: Dai Fuk Street / Site Egress
Description: Existing Layout: With TPBMC
Design Year: 2032 Sunday PM

Designed by: AL
Checked by: RL



Notes:

W	=	Major road width
W cr	=	Central reserve width
W b-a	=	Lane width available to vehicle waiting in stream b-a
W b-c	=	Lane width available to vehicle waiting in stream b-c
W c-b	=	Lane width available to vehicle waiting in stream c-b
Vl b-a	=	Visibility to the left for vehicles waiting in stream b-a
Vr b-a	=	Visibility to the right for vehicles waiting in stream b-a
Vr b-c	=	Visibility to the right for vehicles waiting in stream b-c
Vr c-b	=	Visibility to the right for vehicles waiting in stream c-b
D	=	Stream-specific b-a
E	=	Stream-specific b-c
F	=	Stream-specific c-b
Y	=	(1-0.0345W)

GEOMETRIC DETAILS:

Road Widths

W	=	7.3	m
W cr	=	0.0	m
W b-a	=	0.0	m
W b-c	=	4.0	m
W c-b	=	0.0	m

Visibility

r:B-A	=	50	m
r:B-C	=	150	m
l:B-C	=	150	m
s:C-B	=	50	m

GEOMETRIC FACTORS :

Y	=	0.7482
D	=	0.6155
E	=	1.0608
F	=	0.6155

TRAFFIC FLOWS:

ARM A		
q a-b	=	0 pcus/hr
q a-c	=	167 pcus/hr
ARM B		
q b-a	=	0 pcus/hr
q b-c	=	22 pcus/hr
F for (Qb-ac)	=	1
ARM C		
q c-a	=	92 pcus/hr
q c-b	=	0 pcus/hr

THE CAPACITY OF MOVEMENT :

Q b-a	=	348
Q b-c	=	742
Q c-b	=	431
Q b-ac	=	742
Q b-c (O)	=	742

DESIGN FLOW/CAPACITY:

DFC b-a	=	0.0000
DFC b-c	=	0.0296
DFC c-b	=	0.0000

CRITICAL DFC = 0.03