Gmail Chi Chung Heung <caltondespace@gmail.com>

S16 Town Planning Application Planning Application Yuen Long Theatre Lot 3678 DD 120 -Technical Note on Methodology for Estimating Traffic Forecast for Traffic Noise Impact Assessment (TNIA)

1 封郵件

Claudia Yim <claudiayim@ctaconsultants.com> 2024年8月5日 上午10:52
收件者: Sai Tung CHAN <saitungchan@td.gov.hk>
副本: W K Kwong <wkkwong@ctaconsultants.com>, kelvinleung@ctaconsultants.com

Dear Ms Chan,

S16 Town Planning Application Planning Application

Yuen Long Theatre Lot 3678 DD 120

Technical Note on Methodology for Estimating Traffic Forecast for Traffic Noise Impact Assessment (TNIA)

We refer to the Transport Department's Comments issued on regards on 8th July 2024 the captioned project. We are pleased to submit herewith the "Responses to Comments" with the revised technical notes for your kind consideration and approval.

Thank you very much for your kind attention and we are looking forward to receive your favorable reply at your earliest convenience. Should you have any queries or require further information, please do not hesitate to contact me or the undersigned at 2214 0849.

Thanks and regards,

Claudia Yim

CTA Consultants Limited

Unit 2108, 21/F, Westlands Centre, 20 Westlands Road, Quarry Bay, Hong Kong

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By E-mail & Post
(E-mail: saitungchan@td.gov.hk)

5th Aug 2024

Transport Department,
NT Regional Office,
Traffic Engineering (NTW) Division
Yuen Long 2 Section
7/F, Mong Kok Government Office,
30 Luen Wan Street, Mong Kok,
Kowloon

Attn: Ms Chan Sai Tung (Engr/ Yuen Long Central)

Dear Ms Chan,

S16 Town Planning Application Planning Application
Yuen Long Theatre Lot 3678 DD 120

Technical Note on Methodology for Estimating Traffic Forecast for Traffic Noise Impact Assessment (TNIA)

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Thank you very much for your kind attention and we are looking forward to receive your favourable reply at your earliest convenience. Should you have any queries or require further information, please do not hesitate to contact Ms Claudia Yim or the undersigned at 2214 0849.

Yours faithfully,
For and on behalf of
CTA Consultants Limited

Kelvin Leung
CEO

Encl

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S16 Town Planning Application Yuen Long Theatre Lot 3678 DD120

Technical Notes on Methodology for Estimating Traffic Forecast for Traffic Noise Impact Assessment (TNIA)

Comments from TD	Responses
I refer to your above referenced letter dated 29 April 2024 and have the following comments on the traffic forecast methodology from traffic engineering perspective:	
1. Please note that the Noise Impact Assessment is not under our purview. We are not in a position to provide comments on the traffic figures tailor-made for the environmental assessment purposes.	Noted.
2. Please ensure that the methodology for traffic forecast is the same as the adopted in the TTIA for the captioned project, and the base year observed traffic data and road descriptions are tally with those for TTIA. Please advise if there is any discrepancy in the traffic data and the methodology for traffic forecast between TTIA and this assessment.	Noted and agreed. The methodology for the traffic forecast, the base year observed traffic data and the road descriptions are tally with those in the TTIA. No discrepancy on the base year observed traffic data and methodology for traffic forecast between TTIA and this assessment.
3. Please advise whether the traffic forecast has considered the planned committed major developments in the vicinity of the subject development.	The traffic forecast has considered all committed major developments in the vicinity. The detail of the major planned development is shown in the **Table 3.7** of the revised technical notes.

S16 Town Planning Application
Yuen Long Theater Lot 3678 DD 120

Technical Note of Methodology for Estimating Traffic Forecasts for Traffic Noise Impact Assessment (TNIA)

1. Objective

1.1 This technical note summarizes the methodology and results of the traffic forecasts in supporting of the Traffic Noise Impact Assessment (TNIA) of proposed RCHE, residential and retail uses development of Yuen Long Theater Lot 3678 in DD120, Yuen Long.

2. Approach

2.1 The Annual Growth Rate Method has be adopted.

3. Methodology

3.1 The proposed development will be occupied in year 2027 and hence, year 2042 traffic forecast (i.e. year 2027+15 years) within the 300M catchment area roads are required. Details is summarized in **Appendix A**.

Annual Growth Rate

3.2 In order to assess the impact of the proposed development related to the traffic on the road links required, reference is made to the growth factor in Annual Traffic Census (ATC) and 2019-Based Territorial Population and Employment Data Matrices (TPEDM) published by the Planning Department for years 2019, 2026 and 2031. Such information is summarized in **Table 3.1 and Table 3.2** respectively.

Table 3.1 Historical Traffic Data from Annual Traffic Census (ATC)

ATC Stn	Road Name	Annual Average Daily Traffic (AADT)							Avg. Annual Growth Rate
		2012	2013	2014	2015	2016	2017	2018	
5011	Wang Chau Road (From Yuen Long On Ning Rd to Yuen Long On Lok Rd)	5,380	5,240*	5,010*	4,880*	5,150	5,400	5,970	1.75%
5837	Yuen Long On Ning Rd (From Tai Kiu Rd to Wang Chau Rd)	17,080	17,220	17,040*	16,890*	11,900*	9,900	10,140	-8.32%
5812	Long Yip St & Yuen Long On Lok Rd (From Tai Kiu Rd to Wang Chau Rd)	19,860	20,700	20,570	21,520	22,950	23,050	23,790	3.06%
6032	Yuen Long On Ning Rd (From Wang Chau Rd to Tai Cheung Rd)	15,730	14,280	14,130	14,020	14,600	15,350	16,080	0.37%
6008	Long Yip St & Yuen Long On Lok Rd (From Wang Chau Rd to Tai Cheung St)	32,000	29,280	29,090	30,440	32,160	31,810	32,160	0.08%
Total		**90,050**	**86,720**	**85,840**	**87,750**	**86,760**	**85,510**	**84,140**	**-0.36%**

*Note: *AADT estimated by Growth factor*
***Due to the social movement in 2019 and COVID in 2020, the traffic flow will not be reliable and hence the growth rate will only take into account from 2016 to 2018*
****As the traffic flow listed in the designated ATC stations are predicted, yet the flow will not be reliable and will not take it into the account*

Table 3.2 2019-Based Planning Data from 2019 to 2031

Yuen Long District				
Data	**Year**			**Average Annual Growth Rate**
	2019	2026	2031	
Population	175,150	172,350	159,850	-0.76%
Employment	68,100	70,700	70,250	0.26%
Total	**243,250**	**243,050**	**230,100**	**-0.46%**

3.3 A.A.D.T. of ATC indicates that the traffic flow of the local road network has an average annual growth rate of -0.36% from year 2012 to year 2018.

3.4 Whilst, the planning data indicates that both population and employment in the area are expected to develop with an average annual growth rate of -0.76% and 0.26% respectively from 2019 to 2031.

3.5 Therefore, as the conservative approach, the annual growth rate of **+1%** p.a. has adopted for projecting traffic forecasts from year 2024 to year 2042.

Proposed Development

3.6 The parameters of the proposed development list in **Table 3.3.**

Table 3.3 Parameters of the Proposed Development

Proposed Development		
Proposed Use	Flats, Residential Care Home for the Elderly (RCHE) & Shops and services	
Site Area	~780m^2	
Accountable GFA	Shop and services	1,546 m^2
	RCHE	4,723 m^2
	Flats	3,088 m^2
	Total	9,357 m^2
No of Blocking	1	
No of Beds & Units	220 beds (RCHE) & 74 units (Flats)	
No of Storey	21 storeys and 2 basement floors	

3.7 As the use of RCHE does not specify in the latest Transport Planning & Design Manual (TPDM), the estimation of the traffic trips related to the RCHE is based on the in-house survey which carried out at Tung Wah Group Hospital – Wong Cho Social Services Building. The detail is summarised in the **Table 3.4**.

Table 3.4 Adopted Trip Rates for the Proposed RCHE

Use	**Units / Parameters**	**AM**		**PM**	
		Gen.	**Att.**	**Gen.**	**Att.**
Salvation Army Kam Tin Residence for Senior Citizens at 103, Kam Tin Road, Yuen Long, New Territories	(pcu/hr)	4	6	10	8
Adopted Traffic Trip Rates (150 beds)	(pcu/hr/bed)	0.0267	0.04	0.06667	0.0533
Estimated Traffic Trips (220 beds)	**(pcu/hr)**	**6**	**9**	**15**	**12**

3.8 The estimation of trip rates of the proposed residential, shops and services have been made reference to the trip generation rates as stipulated in Volume 1 Chapter 3 Appendix C Table 1 of the latest T.P.D.M. published by Transport Department. The adopted trip rates are also summarized in below **Table 3.5**.

Table 3.5 Estimated Traffic Trips of the Proposed Residential Use, Shops and Services

Residential Use										
			Trips Rates				Trips			
Use	Average Flat Size (sq. m.)	No. of Flats	Weekday AM Peak (pcu/hr/flat)		Weekday PM Peak (pcu/hr/flat)		Weekday AM Peak (pcu/hr)		Weekday PM Peak (pcu/hr)	
			Gen.	Att.	Gen.	Att.	Gen.	Att.	Gen.	Att.
Private Housing: High-Density	FS ≤ 60	74	0.0718	0.0425	0.0286	0.0370	6	4	3	3
	Total		*Sub-Total*				**6**	**4**	**3**	**3**
Shops and Services										
			Trips Rates				**Trips**			
Use	**Average Size (sq. m.)**		**Weekday AM Peak (pcu/hr/flat)**		**Weekday PM Peak (pcu/hr/flat)**		**Weekday AM Peak (pcu/hr)**		**Weekday PM Peak (pcu/hr)**	
			Gen.	**Att.**	**Gen.**	**Att.**	**Gen.**	**Att.**	**Gen.**	**Att.**
Shops and Services	1546		0.2296	0.2434	0.31	0.3563	4	4	5	6
						Sub-total	**4**	**4**	**5**	**6**
						Sub-Total	**10**	**8**	**8**	**9**

3.9 Based on the adopted trip rate listed in **Table 3.4** and **Table 3.5** and the development parameters in **Table 3.3**, the total of the trip generation and attraction of the proposed development are estimated and summarized in the **Table 3.6.**

Table 3.6 Total Estimated Traffic Trips of the Proposed Development

Residential Use						
			Trips			
Use	Average Flat Size (sq. m.)	No. of Flats	Weekday AM Peak (pcu/hr)		Weekday PM Peak (pcu/hr)	
			Gen.	Att.	Gen.	Att.
Private Housing: High-Density	FS ≤ 60	72	6(1)	4(1)	3(1)	3(1)
Sub-Total			**6**	**4**	**3**	**3**
RCHE						
			Trips			
Use	No of beds		Weekday AM Peak (pcu/hr)		Weekday PM Peak (pcu/hr)	
			Gen.	Att.	Gen.	Att.
RCHE	220		6(2)	9(2)	15(2)	12(2)
Sub-Total			**6**	**9**	**15**	**12**
Shops and Services						
			Trips			
Use	No of beds		Weekday AM Peak (pcu/hr)		Weekday PM Peak (pcu/hr)	
			Gen.	Att.	Gen.	Att.
Shops and Services	1740		4(1)	4(1)	5(1)	6(1)
Sub-total			4	4	5	6
Total			**16**	**17**	**23**	**21**

Note:

(1) Reference to the Table 3.5

(2) Reference to the Table 3.4

Adjacent New Development

3.10 Additional traffic generation and attraction of major committed/ planned developments in the vicinity have been considered and superimposed onto the road network to derive of the reference traffic flow. The committed/ planned developments in the vicinity are summarized in **Table 3.7**.

Table 3.7 Major Planned/ Committed Development in the Vicinity

Development Type	Average Flat Size m^2	Range	Trip Rates			
			Weekday AM Peak		Weekday PM Peak	
			Gen.	Att.	Gen	Att.
			pcu/hr			
Private Housing	60 m^2	mean	0.0718	0.0425	0.0286	0.0370
	60 m^2	upper limit	0.1021	0.0709	0.0415	0.0464
	140 m^2	upper limit	0.3021	0.2234	0.2258	0.2226
	300 m^2	upper limit	0.3896	0.3423	0.3598	0.497
Public Housing	40 m^2	mean	0.0432	0.0326	0.0237	0.0301
	40 m^2	upper limit	0.0539	0.0439	0.0278	0.0339
Commercial	/	mean	0.2296	0.2434	0.31	0.3563
Industrial	/	mean	0.0926	0.1386	0.135	0.1049
Planning Application No.	**Development Site**	**Uses**	**Trip Rates**			
			Weekday AM Peak		Weekday PM Peak	
			Gen.	Att.	Gen.	Att.
/	Wang Chau Phase 1	Domestic	190	143	104	132
A/YL/290	Tung Tau Industrial Area Playground, Keung Yip Street, Tung Tau Industrial Area, Yuen Long	Non-domestic	27(1)	42(1)	33(1)	31(1)
A/YL/312	West of the existing YLIE, bounded by Fuk Hi Street to the east and Kai Shan to the west	Non-domestic	150	224	219	170
A/YL/304	21-35 Wang Yip Street East, Tung Tau Industrial Area, Yuen Long, New Territories (Yuen Long Town Lot No. 362)	Domestic	73	43	29	38
		Non-domestic	4	4	5	6
	Public Housing Development at Tin Tsz Road	Domestic	410	310	225	286
		Non-domestic	83	97	94	62
/	Wing Ning Tsuen	Domestic	379	289	178	210
/	Wang Chau Remaining Phase	Domestic	562	424	308	391
		Non- domestic	138	147	187	214
A/YL-NSW/282	Government Land in DD 115 at Chung Yip Road, Nam Sang Wai Yuen Long	Domestic	662	494	485	501
/	Proposed Extension of YLIE	Non-domestic	270	394	404	306
		Total	2948	2611	2271	2347

Note:

(1) According to the approved TIA report.

Formulation

3.11 The traffic forecasts for year 2042 could be derived based on the following formula with the data as shown in **Tables 3.1** to **3.7**:

Year 2042 Traffic Flows	**=**	**2024 Observed Flows**	**x**	**Adopted Growth Factor i.e. +1% p.a. for 18 years**	**+**	**Adjacent Development Traffic**	**+**	**Traffic Flows of the Proposed Development Traffic**

3.12 As a result, the traffic forecasts for year 2042 has been estimated and summarized in **Appendix A**.

Appendix A

Year 2042 Traffic Forecasts for TNIA

23122HK

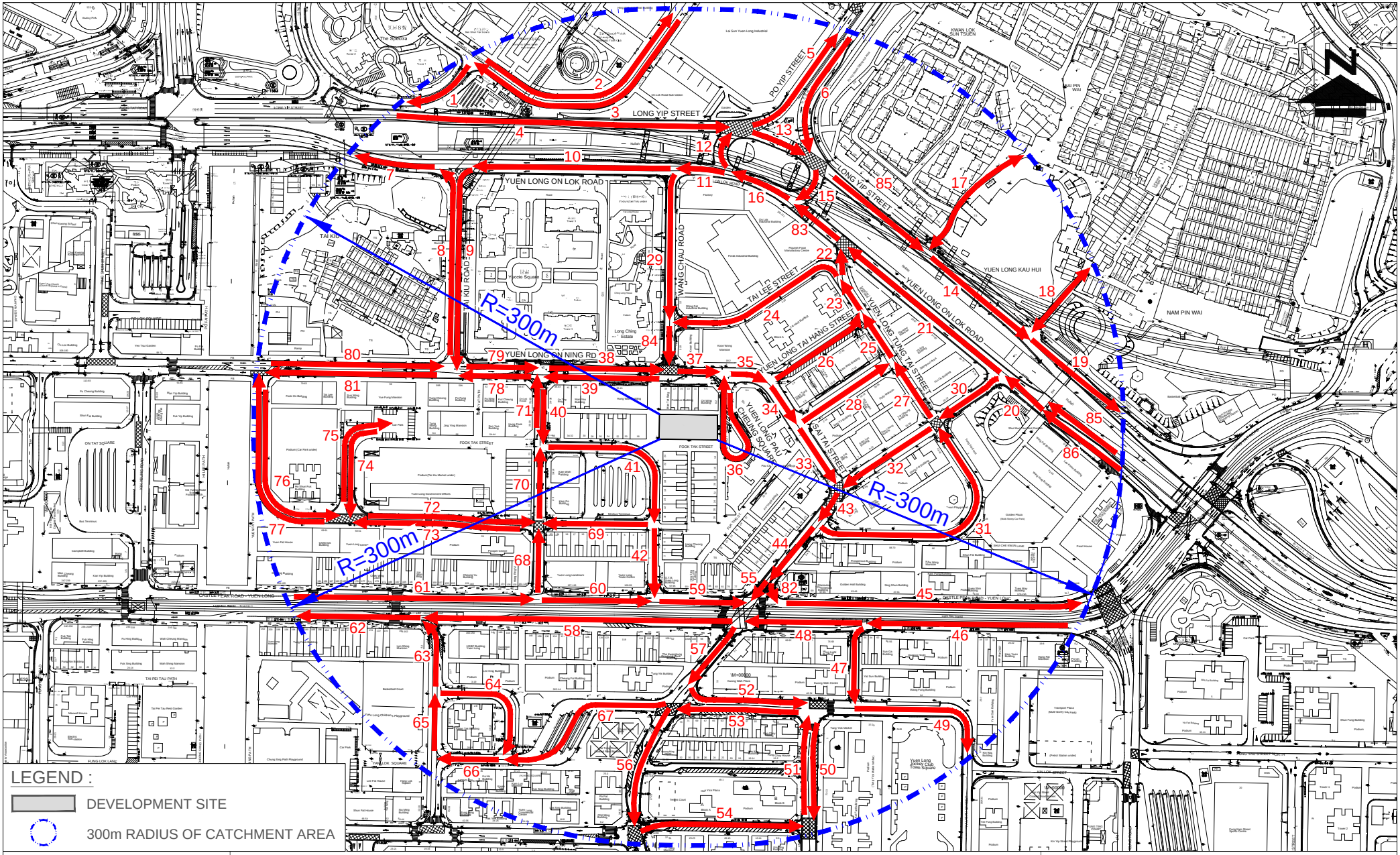
Yuen Long Theatre DD 120 Lot 3678

TRAFFIC FORECAST FOR TRAFFIC NOISE IMPACT ASSESSMENT

CTA Consultants Limited
志達顧問有限公司

Link No.	Road Name	Speed	Direction	Year 2042			
				AM Peak		PM Peak	
				Traffic Flow (veh/hr)	HV%	Traffic Flow (veh/hr)	HV%
1	Kwong Yip Street	50	WB	30	18%	30	19%
2	Wang Yip Street South / Wang Yip Street East	50	NB	50	24%	80	10%
3	Wang Yip Street South / Wang Yip Street East	50	WB	30	36%	60	12%
4	Long Yip Street	50	EB	2,430	22%	2,010	13%
5	Po Yip Street	50	NB	500	22%	470	17%
6	Po Yip Street	50	SB	1,340	32%	1,050	13%
7	Yuen Long On Lok Road	50	WB	1,940	25%	1,970	15%
8	Tai Kiu Road	50	NB	270	44%	300	28%
9	Tai Kiu Road	50	SB	390	14%	380	14%
10	Yuen Long On Lok Road	50	WB	2,060	19%	2,050	13%
11	Yuen Long On Lok Road	50	WB	2,680	19%	2,810	13%
12	Yuen Long On Lok Road/Long Yip Street	50	Roundabout	650	22%	640	16%
13	Long Yip Street	50	Roundabout	2,580	22%	2,180	13%
14	Long Yip Street	50	EB	3,190	26%	2,520	14%
15	Yuen Long On Lok Road/Long Yip Street	50	Roundabout	680	22%	660	12%
16	Yuen Long On Lok Road	50	Roundabout	3,330	23%	3,450	15%
17	Sai Kai Road	50	2-way	50	15%	50	12%
18	Cheung Shing Street	50	2-way	50	13%	50	11%
19	Long Yip Street	50	EB	3,140	24%	2,470	10%
20	Yuen Long On Lok Road	50	WB	2,470	18%	2,430	11%
21	Yuen Long On Lok Road	50	WB	2,250	19%	2,210	13%
22	Yuen Long Tung Tai Street	50	NB	400	20%	580	14%
23	Yuen Long Tung Tai Street	50	NB	470	20%	560	13%
24	Tai Lee Street	50	WB	70	25%	110	18%
25	Yuen Long Tung Tai Street	50	NB	250	24%	280	17%
26	Yuen Long Tai Hang Street	50	EB	220	16%	280	10%
27	Yuen Long Tung Tai Street	50	NB	200	26%	210	16%
28	Tai Fung Street	50	EB	50	24%	70	17%
29	Wang Chau Road	50	SB	590	15%	620	10%
30	Yuen Long Tai Cheung Street	50	WB	220	26%	290	22%
31	Shui Che Kwun Street	50	NB	210	35%	230	25%
32	Yuen Long Tai Cheung Street	50	WB	230	34%	300	20%
33	Sai Tai Street	50	SB	400	19%	460	10%
34	Sai Tai Street	50	SB	450	17%	530	10%
35	Yuen Long On Ning Road	50	EB	670	17%	810	10%
36	Yuen Long Pau Cheung Square	50	NB	50	10%	70	10%
37	Yuen Long On Ning Road	50	EB	860	17%	910	10%
38	Yuen Long On Ning Road	50	EB	390	17%	440	10%
39	Yuen Long On Ning Road	50	WB	190	15%	260	10%
40	Tung Lok Street	50	SB	150	30%	230	22%
41	Fook Tak Street	50	SB	150	30%	230	22%
42	Fook Hong Street	50	SB	60	20%	90	25%
43	Kuk Ting Street	50	WB	630	25%	760	16%
44	Kuk Ting Street	50	WB	420	20%	530	12%
45	Castle Peak Road - Yuen Long	50	EB	320	53%	500	32%
46	Castle Peak Road - Yuen Long	50	WB	780	36%	830	32%
47	Yat San Street	50	SB	90	41%	130	18%
48	Castle Peak Road - Yuen Long	50	WB	690	36%	700	34%
49	Fau Tsoi Street/Yau San Street	50	SB	250	37%	320	23%
50	Hop Choi Street	50	SB	10	75%	20	10%
51	Hop Choi Street	50	NB	260	17%	290	6%
52	Fau Tsoi Street	50	EB	160	35%	190	26%
53	Fau Tsoi Street	50	WB	60	10%	90	17%
54	Mau Tan Street	50	EB	420	25%	420	22%
55	Kuk Ting Street	50	SB	350	17%	440	11%
56	Tai Tong Road	50	SB	310	16%	430	10%
57	Tai Tong Road	50	SB	580	22%	730	16%
58	Castle Peak Road - Yuen Long	50	WB	460	40%	410	44%
59	Castle Peak Road - Yuen Long	50	EB	250	58%	400	37%
60	Castle Peak Road - Yuen Long	50	EB	190	55%	190	31%
61	Castle Peak Road - Yuen Long	50	EB	370	52%	360	29%
62	Castle Peak Road - Yuen Long	50	WB	600	38%	570	36%
63	Yuen Long Hong Lok Road	50	NB	140	29%	160	20%
64	Hong King Street	50	SB	80	23%	130	10%
65	Yuen Long Hong Lok Road	50	NB	220	34%	290	12%
66	Hong King Street	50	WB	230	34%	300	23%

Link No.	Road Name	Speed	Direction	Year 2042			
				AM Peak		PM Peak	
				Traffic Flow (veh/hr)	HV%	Traffic Flow (veh/hr)	HV%
67	Yu King Square	50	WB	150	36%	170	24%
68	Tung Lok Street	50	NB	180	33%	170	17%
69	Sau Fu Street	50	WB	160	48%	230	26%
70	Tung Lok Street	50	NB	200	39%	250	18%
71	Tung Lok Street	50	NB	180	26%	210	16%
72	Sau Fu Street	50	EB	120	34%	150	12%
73	Sau Fu Street	50	WB	130	34%	170	23%
74	Kiu Lok Square	50	SB	50	18%	50	15%
75	Kiu Lok Square	50	NB	50	15%	50	15%
76	Sau Fu Street	50	EB	170	11%	200	17%
77	Sau Fu Street	50	NB	180	23%	180	14%
78	Yuen Long On Ning Road	50	WB	150	28%	210	10%
79	Yuen Long On Ning Road	50	EB	210	10%	260	10%
80	Yuen Long On Ning Road	50	EB	130	23%	180	15%
81	Yuen Long On Ning Road	50	WB	440	19%	520	10%
82	Kuk Ting Street	50	SB	70	22%	100	14%
83	Yuen Long On Lok Road	50	WB	2,650	22%	2,790	15%
84	Wang Chau Road	50	SB	660	16%	730	11%
85	Long Yip Street	50	EB	3,240	28%	2,570	16%
86	Castle Peak Road - Yuen Long Section (Elevated)	50	WB	1,460	18%	1,870	10%
87	Castle Peak Road - Yuen Long Section (at grade)	50	WB	570	20%	560	18%



LEGEND :

DEVELOPMENT SITE

300m RADIUS OF CATCHMENT AREA

FIGURE NO.: 1	PROJECT TITLE: Yuen Long Theatre DD120 Lot 3678	CTA Consultants Limited 志達顧問有限公司
PROJECT NO.: 23122HK	DRAWING TITLE: INDEX PLAN FOR TNIA	
SCALE: 1 : 3750 @A4	DATE: 20 FEB 2024	