Appendix 2 – Traffic Impact Assessment
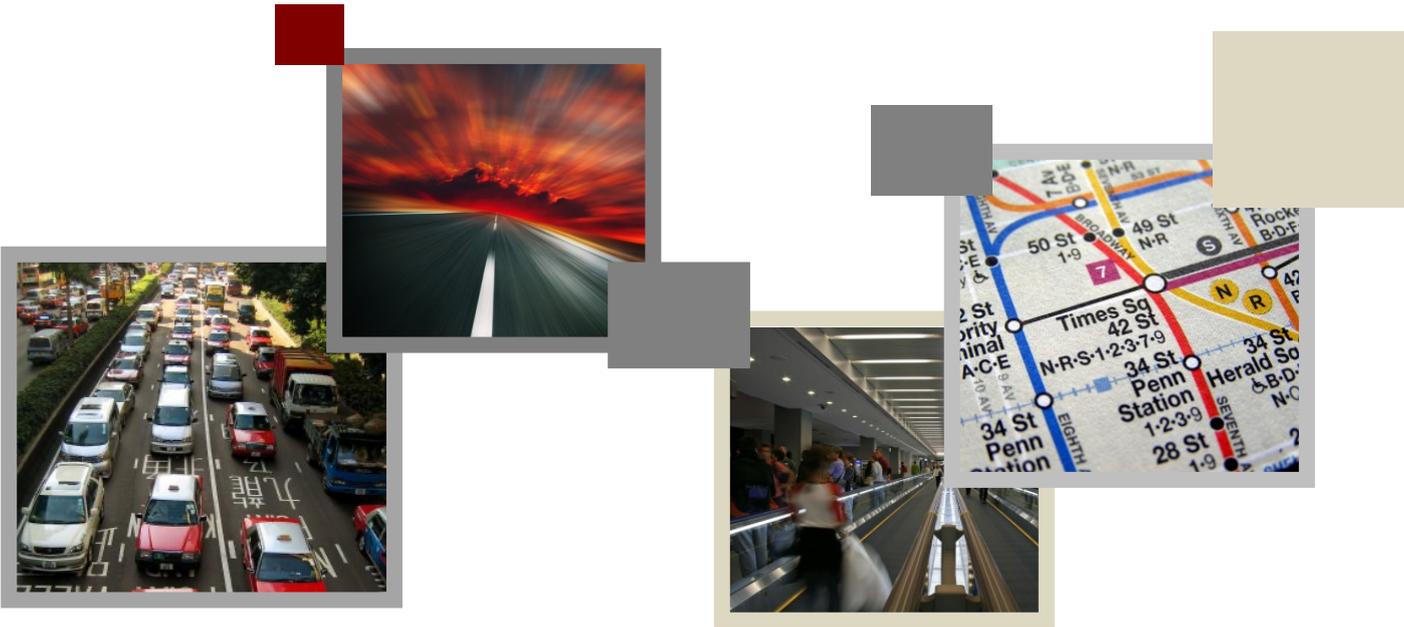
Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning of Ching To Yuen from "Green Belt" Zone to "Other Specified Uses" zone annotated "Columbarium (3)" Zone at Lot Nos. 374, 375 S.A and 375 S.B in D.D.186, To Fung Shan, Sha Tin

TRAFFIC IMPACT ASSESSMENT REPORT

Reference: 31036-R01-01
Date: January 2026

AXON
CONSULTANCY

Contents

Traffic Impact Assessment for Application for Amendment
of Plan for Proposed Rezoning of Ching To Yuen from
"Green Belt" Zone to "Other Specified Uses" zone
annotated "Columbarium (3)" at Lot Nos. 374, 375 S.A
and 375 S.B in D.D.186, To Fung Shan, Sha Tin

1   Introduction

1.1   Background

Ching To Yuen, located at No. 60 To Fung Shan Road, Sha Tin (the "proposed development"), has operated as a columbarium since 2005 with a total capacity of 6,396 niches. To support a rezoning application and to ensure that the surrounding road network can safely accommodate future demand, a Traffic Impact Assessment (TIA) has been prepared. The study adopts a worst-case scenario based on full capacity utilisation, recognising that this provides the most conservative assessment of potential traffic impacts during peak visiting periods such as the Ching Ming and Chung Yeung Festivals.

The Applicant will submit an application under Section 12A of the Town Planning Ordinance to the Town Planning Board to amend the Draft Sha Tin Outline Zoning Plan No. S/ST/39 from the existing "Green Belt" zone to "Other Specified Uses" annotated "Columbarium (3)".

AXON Consultancy Limited has been commissioned to carry out this TIA to support the application for the amendment of the plan and facilitate the proposed development at the Application Site.

1.2   Objectives

The objectives of the traffic impact study are as follows:

- To estimate the potential traffic generation and attraction under full development capacity;
- To assess the future traffic situation in the surrounding network, particularly during festive peak periods;
- To appraise the potential traffic impacts of the development;
- To evaluate the adequacy of internal transport facilities; and
- To recommend any road or traffic management improvements, if required.

1.3 Structure of Report

Chapter 1 – Introduction, which covers the study's background, objectives and report structure.

After this introductory chapter, there are the following chapters:

Chapter 2 – The Proposed Development: Site characteristics and development parameters.

Chapter 3 – Traffic Management and Visitor Strategy: Visitor booking system, shuttle bus arrangements, and festive traffic measures.

Chapter 4 – Existing Traffic Situation: Local Road network, traffic surveys, and baseline traffic assessment.

Chapter 5 – Future Traffic Situation: Forecast traffic flows for the 2030 design year under reference and development scenarios.

Chapter 6 – Crowd Control and Contingency Plan: Admission control, temporary transport and traffic measures, and contingency arrangements.

Chapter 7 – Summary and Conclusion: Key findings and conclusions on traffic implications of the development.

2 The Proposed Development

2.1 The Application Site

The Application Site spans approximately 4,363m^2 and is located at Lot Nos. 374, 375 S.A and 375 S.B in D.D.186, also known as No. 60 To Fung Shan Road, Shatin. The site location is depicted in **Figure 2.1**. The site can be accessed via a single-track access road connecting to To Fung Shan Road. During festive periods, this access route is opened under the special traffic arrangements, which ensure the road is available for shuttle bus operations and visitor access.

2.2 The Proposed Development

The existing columbarium, "Ching To Yuen," has been operating since 2005 and it operates daily from 09:30 to 17:30, except New Year Day (元旦) and the first three days of Lunar New Year (農曆年初一、二及三).

The columbarium provides a total of 6,396 niches. For the purpose of this TIA, traffic assessment has been undertaken on a conservative worst-case basis, assuming all niches are fully occupied. Notwithstanding this assessment basis, the actual visitor holding capacity is strictly capped at 300/per/hour under the administrative booking system and management measures (as described in later sections) during festive periods. The key development parameters are summarised in **Table 2.1** below.

Table 2.1 Development Parameters

Design Parameter	Quantity of Proposed Development Parameter
Application Area	About 4,363m^2
Existing Zoning	"Green Belt" zone
Proposed Zoning	"Other Specified Uses" zone annotated "Columbarium (3)"
Total Number of Niches	6,396

Design Parameter	Quantity of Proposed Development Parameter
Sold Niches (as of 2024)	2,993
Occupied Niches (as of 2024)	2,255
Unoccupied Niches (as of 2024)	4,141
Visitor Holding Capacity	300 persons per hour

Note: "Occupied niches" represent those currently in use and form the basis for existing trip-rate calculations. The traffic assessment assumes full occupancy (6,396 niches) as the design scenario.

3 Existing Shuttle Service

3.1 Introduction

Effective traffic management and visitor control are essential to ensure that Ching To Yuen operates smoothly without causing adverse impacts on the surrounding road network. This chapter outlines the administrative visitor booking system and the shuttle bus services, which together regulate visitor flow and minimise traffic impact, particularly during festive periods.

3.2 Administrative Visitor Booking System

To manage visitor traffic effectively, Ching To Yuen has implemented a comprehensive Administrative Visitor Booking System, which includes the following key components:

a. **Advance Reservations**
   Visitors must make appointments in advance through the columbarium's booking system. Reservations are processed on a first-come, first-served basis to ensure fair access for all visitors and to control the flow of visitors.

b. **Confirmation of Slots**
   Upon booking, visitors receive confirmation of their pick-up and drop-off times. These slots are carefully managed to avoid overlapping and excessive traffic at any given time, ensuring a steady flow of visitors and reducing congestion.

c. **Booking Verification**
   Visitors are required to present their booking confirmation at the lay-by near Tai Wai Station before boarding the shuttle bus. This verification process ensures that only those with scheduled appointments are allowed to visit, maintaining the planned traffic flow and preventing unplanned influxes of visitors.

d. **Information Dissemination**
   Clear instructions and guidelines are provided to visitors regarding the booking process, shuttle bus usage, and traffic management measures. This information is disseminated through various channels, including booking confirmation emails/messages, the columbarium's website, and informational brochures.

3.3 Shuttle Bus Services and Operations

The operating hours of Ching To Yuen are from 09:30 to 17:30, while the shuttle bus service operates from 09:30 to 17:00. The existing shuttle bus service with the largest size of 28-seater light buses is an integral part of the visitor management strategy, providing a convenient and efficient means of transportation for visitors to Ching To Yuen. The shuttle bus service includes the following features:

a. **Operating Hours**
   The shuttle service operates from 09:30 to 17:30 in line with the operation hours of Ching To Yuen, providing regular and reliable transportation for visitors.

b. **Pick-Up/Drop-Off Locations**

   Tsuen Nam Road Lay-By
   The shuttle bus service runs between Tai Wai Station and Ching To Yuen, with the pick-up and drop-off point located at the southern side lay-by area on Tsuen Nam Road, close to Exit A of Tai Wai MTR Station, as shown in **Figure 3.1**.

   Ching To Yuen
   On the Ching To Yuen side, the pick-up/drop-off areas are provided within the application area of our private lots.

c. **Scheduled Intervals**
   Shuttle buses run at scheduled intervals, coordinated with the visitor booking system to ensure that the number of visitors is regulated throughout the day. This scheduling helps to prevent congestion and maintain smooth traffic flow.

d. **Visitor Control**
   All visitors to Ching To Yuen are required to use the shuttle bus service, which helps to control the number of visitors and manage traffic effectively. The use of the shuttle service ensures that the local road network is not overwhelmed by private vehicles, particularly during peak periods.

e. **Provision of Shuttle Bus Service**
   The shuttle bus services arranged by the Applicant are summarized and presented in **Table 3.1**.

Table 3.1   Shuttle Bus Service Arrangements

Time Period		Max. Frequency	Max. Capacity (Person)
Festive Period	Ching Ming & Chung Yeung	≤11 trips per hour (1-way) 28-seater Light Bus	300/hour^
	Easter Holidays & National Day	≤11 trips per hour (1-way) 28-seater Light Bus	300/hour ^
	Sunday & Saturday*	≤11 trips per hour (1-way) 28-seater Light Bus	300/hour ^

Note:* Please note that the Saturdays and Sundays occurring during the two weeks preceding and following the Ching Ming Festival and the Chung Yeung Festival are classified as part of the Festive Period. In contrast, any other days fall under the Non-Festive Period.

^ Although the theoretical bus provision could accommodate up to 308 persons/hour, visitor numbers are strictly capped at 300 persons/hour through the booking and admission control system.

4 Existing Traffic Situation

4.1 Existing Road Network

The major road networks in the vicinity of the Application Site are listed as follows:

Tai Po Road - Tai Wai Road serves as a district distributor in the section between Tai Wai Road and Shing Ho Road. It subsequently functions as a primary distributor, linking Shing Ho Road and Shing Chuen Road. Moreover, it is established as a major connector to Shing Mun Tunnel Road. This road is designed for running in the east-west direction.

Tsuen Nam Road functions as a district distributor. It is a two-lane one-way street running in the east-west direction.

Pak Lok Path is a privately-owned single-two lane carriageway, running in the east-west direction.

To Fung Shan Road (Section between the Chung Ling Road and the roundabout intersection) is a one-lane one-way street running in the uphill direction. The proposed widening of the curved section of To Fung Shan Road near Villa Le Parc, as illustrated in **Appendix A**, aims to offer additional maneuvering space and improved sight lines for motorists.

To Fung Shan Road (Section between the Application Site and the roundabout intersection) is a single-track access road, which serves the local community and provides access to the Application Site.

4.2 Special Traffic Arrangements

Special traffic arrangements are in place during Ching Ming and Chung Yeung Festivals (春秋二祭) and their shadow periods (i.e. two weeks before and after festivals), to manage the increased volume of visitors and ensure the safety and efficiency of the road network, taking into consideration that Pak Lok Path is closed to all vehicular and pedestrian traffic except for residents of Pristine Villa during festive periods.

These arrangements include:

a. **Two-Way Traffic Conversion**

Temporary traffic control is implemented on the lower section of To Fung Shan Road between Chung Ling Road and the roundabout intersection, converting the original one-lane, one-way uphill street into a two-way uphill and downhill traffic route. This conversion is designed to ensure smooth traffic flow during peak periods.

Traffic light signals are strategically installed at key points, specifically on the downhill side (To Fung Shan Road / Pak Lok Path Roundabout) and the uphill side (To Fung Shan Road / Chung Ling Road), to effectively manage the flow of vehicles. When necessary, traffic marshals are deployed to assist in maintaining order and ensuring safety.

b. **Restricted Access**

To Fung Shan Road north of its intersection at the roundabout is closed to vehicular traffic, excluding emergency vehicles and those catering to residents and workers in To Fung Shan. This restriction helps to minimize traffic congestion and ensure that the road network can handle the increased volume of visitors during peak periods.

The above arrangements refer to the existing operation as outlined in the Transport Department notice regarding the special traffic arrangements in Sha Tin during the 2024 Ching Ming and Chung Yeung Festive Period, as depicted in **Appendix B**.

4.3 Public Transport

Public transport services, including railways, franchised buses and green minibuses (GMB), in the vicinity of the Ching To Yuen's shuttle service Tai Wai sided pick-up/drop-off point are depicted in **Figure 4.1** and summarised in **Table 4.1**, **Table 4.2** and **Table 4.3**.

Table 4.1   Railway Services

Operator	Route	Destination
MTR	East Rail Line	Lo Wu / Lok Ma Chau Station ↔ Admiralty Station
MTR	Tuen Ma Line	Tuen Mun Station ↔ Wu Kai Sha Station

Table 4.2   Franchised Bus Services

Operator	Route No.	Destination
KMB	46S	Hin Keng → Tsuen Wan (Nina Tower) [a]
KMB	46S	Tsuen Wan (Nina) → Hin Keng [b]
KMB	46X	Hin Keng ↔ Mei Foo
KMB	72A	Tai Wai Station ↔ Tai Po Industrial Estate
CTB	79	Tai Wai Station ↔ Queen's Hill Fanling
KMB	80	Mei Lam ↔ Kwun Tong Ferry
KMB	80A	Mei Lam → Kwun Tong Ferry [a]
KMB	80K	Sun Chui ↔ Yu Chui Court
KMB	81	Wo Che ↔ Jordan West Kowloon Station
KMB	81C	Yiu On ↔ Tsim Sha Tsui East (Mody Road)
KMB	82B	Mei Tin → Tai Wai Station [a]
KMB	82D	Pak Shek Kok → Tai Wai Station [c]
KMB	82K	Mei Tin ↔ Yu Chui Court
KMB	85	Fo Tan (Shan Mei Street) ↔ Kowloon City Ferry
KMB	85B	Chun Shek → Kowloon City Ferry [a]
KMB	86A	Shatin Wai ↔ Cheung Sha Wan (Kom Tsun Street)
KMB	87B	Shatin Wai ↔ Island Harbourview
KMB	88	Sau Mau Ping (Central) ↔ Tai Wai Station
KMB	88K	Hin Keng ↔ Royal Ascot
KMB	89B	Shatin Wai ↔ Ngau Tau Kok
KMB & CTB	170	Sha Tin Station ↔ Wah Fu (Central)
KMB & CTB	182	Central (Macau Ferry) ↔ Sha Tin (Yu Chui Court)
KMB & CTB	182X	Central (Macau Ferry) → Sha Tin (Yu Chui Court) [b]
KMB	249X	Pok Hong ↔ Tsing Yi Station
KMB	281	Tai Wai Station ↔ Sun Tin Wai (Circular)
KMB	286A	Shatin Wai ↔ Cheung Sha Wan (Circular) [d]

Operator	Route No.	Destination
KMB	286C	Lee On ↔ Cheung Sha Wan (Hoi Tat Estate)
KMB	286P	Mei Chung Court → Cheung Sha Wan [a]
KMB	286X	Hin Keng ↔ Sham Shui Po (Circular)
KMB	287P	Shui Chuen O → Yau Ma Tei [a]
KMB	287X	Shui Chuen O ↔ Jordan (Circular)
KMB	288C	Shui Chuen O → Hin Keng [a]
CTB	798P	Tai Wai Station ↔ Tseung Kwan O Industrial Estate [a]
KMB & CTB	982X	Yu Chui Court / Shui Chuen O → Wan Chai (Fleming Road) [a]
		Wan Chai (Fleming Road) → Yu Chui Court [b]
KMB & CTB	985	Mei Tin (Mei Chi House) → Wan Chai [e]
		Admiralty Station (East) → Mei Tin [b]
KMB & CTB	985A	Mei Tin Estate (Mei Chi House) → Wan Chai [a]
CTB	986	Shatin Wai → Sai Wan Ho [a]
CTB	987	Sai Wan → Fo Tan (Chun Yeung Estate) [b]
CTB	989	Fo Tan (Chun Yeung Estate) ↔ Sai Wan [a]
LWB	A41	Airport (Ground Transportation Centre) ↔ Shek Mun Estate
CTB	B8	Heung Yuen Wai Port ↔ Tai Wai Station
LWB	E42	Airport (Ground Transportation Centre) ↔ Pok Hong
LWB	E42C	Pok Hong → Aircraft Maintenance Area [a]
		Aircraft Maintenance Area → Pok Hong [b]
LWB	E42P	Tung Chung (Yat Tung) → Fo Tan (Shan Mei Street) [f]
		Fo Tan (Shan Mei Street) → Tung Chung (Yat Tung) [g]
LWB	N42	Yiu On ↔ Tung Chung Station [h]
KMB & CTB	N170	Shatin Central ↔ Wah Fu (Central) [h]
KMB & CTB	N182	Kwong Yuen ↔ Central (Macau Ferry) [h]
KMB	N281	Kam Ying Court ↔ Hung Hom Station [h]

Operator	Route No.	Destination
LWB	NA41	Shui Chuen O ↔ HZMB Hong Kong Port [h]
LWB	R42	Tai Wai Station → Disneyland [i]
		Disneyland → Tai Wai Station [j]
KMB	T80	Mei Tin → Kowloon Bay [a]

Note: (a) Service Period: Mondays to Fridays except Public Holidays – Morning Service
(b) Service Period: Mondays to Fridays, except Public Holidays – Afternoon Service
(c) Service Period: Daily – Morning and Afternoon Service
(d) Service Period: Daily – Morning Service
(e) Service Period: Saturdays except Public Holidays – Morning Service
(f) Service Period: Mondays to Saturdays, except Public Holidays – Morning Service
(g) Service Period: Mondays to Saturdays, except Public Holidays – Afternoon Service
(h) Service Period: Daily – Midnight Service
(i) Service Period: Holidays – Morning Service
(j) Service Period: Saturdays and Holidays – Afternoon Service

Table 4.3   Green Minibus (GMB) Services

Route No.	Destination
61M[a]	Sha Tin (Worldwide Gardens) ↔ Kowloon Tong Station
63A	Mei Chung Court ↔ Tai Wai Station
63B	Granville Garden ↔ Tai Wai Station
63S[b]	Tai Wai (Mei Tin Estate) ↔ Mong Kok (Sai Yeung Choi St S)
63K	Mei Tin Estate ↔ Tai Wai Station
64A[a]	Tai Wai Station ↔ Pui Kiu College
64K	Fu Shan ↔ Tai Wai Station
68K	Julimount Garden ↔ Sha Tin Station
403X	Tai Wai Station ↔ Shek Lei Estate
481B	Tsuen Wan (Tsuen Wan Market St) ↔ Tai Wai (Tung Lo Wan Hill)
803	Hin Keng Estate ↔ Lee On Estate
804	Hin Keng Estate ↔ Kwong Yuen Estate
812	Shui Chuen O Estate ↔ Hin Keng Station

Note: (a) Service Period: Mondays to Fridays except Public Holidays – Morning Service
(b) Service Period: Daily – Midnight Service

4.4 Shuttle Bus Routes

Under festive traffic arrangements, the shuttle bus routes are as follows:

Ingress Route

Starting from Tsuen Nam Road, via Tai Wai Road, Tai Po Road - Tai Wai, and Chung Ling Road, eventually leading to its final stretch on To Fung Shan Road

Egress Route

Starting from To Fung Shan Road, via Chung Ling Road, Shing Chuen Road, and then Shing Ho Road, ultimately arriving at Tsuen Nam Road

The vehicular ingress/egress arrangement of the proposed development is depicted in **Figure 4.2**.

4.5 Traffic Surveys

Classified Turning Movement Count Survey

In order to appraise the existing traffic conditions, classified turning movement count surveys have been carried out at the key junctions of the study area, as shown in **Figure 4.3**, on the 2024 Ching Ming Festival (4th April 2024) and 2024 Chung Yeung Festival (11th October 2024) from 9:00 to 18:00.

The traffic counts were recorded in a 15-minute interval, and converted into passenger car unit (pcu). The highest consecutive 15-minute hourly traffic volume was adopted as the peak hour traffic flow.

The peak hour of the road network has been identified as 12:00 to 13:00 for Ching Ming Festival and 13:00 to 14:00 for Chung Yeung Festival, while the observed traffic flows during peak hours during the festive periods are depicted in **Figure 4.5**.

Lay-by Occupancy Survey

To evaluate the existing occupancy of the Tsuen Nam Road Lay-by, which serves as the terminating point for the shuttle bus service, as shown in **Figure 3.1,** a comprehensive survey was conducted during the Ching Ming Festival on 4th April 2024 and the Chung Yeung Festival on 11th October 2024, from 09:00 to 18:00.

During the survey, vehicles entering and exiting the lay-by were categorized by vehicle type, and their arrival and departure times were recorded. The primary objective was to determine the lay-by's occupancy throughout the day.

4.6 Passing Places along To Fung Shan Road

As outlined in **Section 4.1**, To Fung Shan Road (the section between the Application Site and Pak Lok Path) is a single-track access road that serves the local community and facilitates access to the Application Site. It offers a lane width ranging from 3.2 to 7.3 meters.

Consequently, passing bays are essential for a one-lane two-way access road. It has been noted that a total of 10 passing places is available along the 1-km stretch of the To Fung Shan Road. **Figure 4.4** illustrates the locations of these passing places.

During the peak hours of the 2024 Ching Ming Festival and the 2024 Chung Yeung Festival, the two-way traffic flow of 73 and 67 vehicles per hour was recorded respectively. According to the Transport Planning and Design Manual ("TPDM") Volume 2, a single-track road with sufficient passing areas can support a two-way traffic flow of 100 vehicles per hour. Furthermore, on-site observations indicated that vehicles were able to travel along the road smoothly and safely, without encountering any queuing or delays. Consequently, this demonstrates that To Fung Shan Road performs satisfactorily under critical conditions. In conclusion, the road section is adequate for vehicles traveling in opposite directions to pass each other.

4.7 Existing Traffic Assessment

Junction Capacity Assessment

Junction capacity assessments have been conducted at major junctions along the vehicular ingress/egress route, following the guidelines set out in the Transport Planning and Design Manual ("TPDM") Volumes 2 and 4. The results of these assessments are summarised in **Table 4.4**, while the detailed calculation sheets can be found in **Appendix C**.

The performance of a priority junction or roundabout is indicated by its Design Flow / Capacity Ratio ("DFC"). A DFC value of 0.85 or below is considered within an acceptable level without causing undue delay to motorists passing through the concerned junctions.

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The performance of a traffic signalised junction is indicated by its reserve capacity ("RC"). A RC value of 15% or above is considered within an acceptable level without causing undue delay to motorists passing through the concerned junctions.

Table 4.4   Existing Junction Performance

| Jun No. | Junction Location | Type / Capacity Index * | 2024 Observed Scenario | |
			Ching Ming Peak Hour	Chung Yeung Peak Hour
J1	Tai Wai Road / Tsuen Nam Road	Signal / RC	>100%	>100%
J2	Tai Wai Road / Chik Fai Street	Signal / RC	>100%	>100%
J3	Tai Po Road - Tai Wai / Tai Wai Road	Signal / RC	>100%	>100%
J4	Chung Ling Road / Tung Lo Wan Hill Road	Priority/ DFC	0.23	0.25
J5	Tai Po Road - Tai Wai / Shing Chuen Road / Chung Ling Road	Signal / RC	>100%	>100%
TCA-1^	To Fung Shan Road - Lower Section Between Chung Ling Road and Pak Lok Path	Signal / RC	>100%	>100%

Notes: * RC =reserve capacity; DFC - Design Flow / Capacity Ratio.
^TCA-1 =Temporary Traffic Arrangement Scheme implemented during festivals and their shadow periods (i.e. two weeks before and after festivals).

As depicted in **Table 4.4**, all key junctions, currently operate below their maximum capacities during the identified peak.

Lay-by Occupancy Assessment

To evaluate the lay-by occupancy at the southern side lay-by area on Tsuen Nam Road, near Exit A of Tai Wai MTR Station, an extensive survey was conducted throughout the shuttle bus service period during the Ching Ming Festival. The instant occupancy of the lay-by was collected in a 5-minute interval.

The results were illustrated in **Figures 4.6** & **4.7**, which can be interpreted as follows:

a. **Horizontal Axis**: Represents the time intervals during the Ching Ming Festival, from 09:00 to 18:00, with data points collected every 5 minutes.
b. **Vertical Axis**: Represents the length of the lay-by occupied, measured in meters.

c. **Blue Bars:** Indicate the length of the lay-by occupied by other road users.

d. **Red Bars:** Indicate the length of the lay-by occupied by Ching To Yuen shuttle buses which is assumed to be 8m in length.

e. **The Combined Height of the Blue and Red Bars** at each time interval shows the total length occupied.

f. **Orange Line**: Represents the maximum length provided by the Tsuen Nam Road lay-by, which is 93 meters.

The results show that the busiest periods are observed around 15:20 - 15:25 in Ching Ming Festival, where the occupancy totals about 66 meters. For Chung Yeung Festival, the busiest periods are observed around 13:15 - 13:20, where the occupancy totals about 78 meters. Even during the peak periods, the lay-by occupancy did not exceed the maximum provided length of 93 meters. This indicates that the lay-by has sufficient capacity to accommodate the shuttle bus services for Ching To Yuen, even during peak festive periods.

5 Future Traffic Situation

5.1 2030 Design Year Road Network

Given that Ching To Yuen has been in operation since 2005. Typically, the design year is determined as either three years post-completion (not applicable) or five years subsequent to the application year (resulting in 2030). The decision has been made to adopt the longer duration as it provides a more conservative approach. Consequently, the year 2030 has been selected as the design year for this study.

For the Design Year 2030, the Growth Factor Method is employed to forecast traffic. This method utilises the historical data from Annual Traffic Census Data (ATC) and demographic and employment trends from the Territorial Population and Employment Data Matrix to predict future traffic volumes. The more significant growth factor derived from these two sources is adopted to ensure the most conservative traffic estimate.

An examination of upcoming road and junction improvement projects reveals few expected changes to the current road network. Given the lack of significant new road link developments, the application of the Growth Factor Method is justified. This method predominantly projects future traffic patterns based on existing ones.

5.2 Development Traffic Generation

Modal Split

Based on the details outlined in **Section 3.3**, shuttle bus services with a capacity of 28 seats were made available for grave sweepers visiting Ching To Yuen during festivals and their shadow periods (i.e. two weeks before and after festivals). An analysis of vehicular and pedestrian traffic carried out during the 2024 Ching Ming Festival revealed that all visitors accessed Ching To Yuen by utilizing the shuttle buses. These findings were a direct outcome of the applicant's comprehensive Administrative Visitor Booking System and the specific traffic arrangements highlighted in **Sections 3.2** and **4.2**, respectively.

<u>Trip Generation and Attraction</u>

According to the results of the traffic survey outlined in **Section 4.5**, the shuttle bus service has a maximum provision of 5 vehicles per hour for each direction during peak hours during the 2024 Ching Ming Festival and the Chung Yeung Festival.

In 2024 Ching Ming Festival, a trip generation survey was carried out and the results are demonstrated in **Table 5.1**.

Table 5.1   Peak Hour Person Generation/Attraction For Ching To Yuen

No. of Person Trips in Peak Hour (person/hour)		Hourly Person Trip Rate (person/hour per niche)[^]	
Generation	Generation	Generation	Attraction
135	136	0.0599	0.0603

Notes: [^] *Information provided by the applicant in Table 2.1, occupied niches = 2,255.*
Hourly Person Trip Rate = No. of Person Trips in Peak Hour / 2,255

Based on the Hourly Person Trip Rate (person/hour) calculated and outlined in **Table 5.1**, the Peak Hour Vehicular Trip Generation/Attraction Rates (person/hour per niche) are estimated and summarised in **Table 5.2**.

Table 5.2   Anticipated Peak Hour Traffic Trip Generation/Attraction Rate For Ching To Yuen

Hourly Person Trip Rate (person/hour per niche)		Hourly Vehicular Trip Rate (pcu/hour per niche)[^]	
Generation	Attraction	Generation	Attraction
0.0599	0.0603	0.00321	0.00323

Notes: [^] *Hourly Vehicular Trip Rate = Hourly Person Trip Rate / 28 (no. of seats per shuttle bus) × 1.5 (pcu factor of shuttle bus)*

The person and vehicular trip rates illustrated in **Table 5.1** and **Table 5.2** were utilized to calculate the net growth in trip generation for Ching To Yuen after selling all the remaining niches in the future i.e full columbarium capacity of 6,396 niches. The results are illustrated in **Table 5.3.**

Table 5.3   Future Trips Generation/Attraction For Ching To Yuen

Ching To Yuen	No. of Person Trips in Peak Hour (person/hour)		No. of Vehicular Trips in Peak Hour (pcu/hour)	
	Generation	Attraction	Generation	Attraction
Adopted Trip Rate	0.0599	0.0603	0.00321	0.00323
Total Trip (By Trip Rate) 6,396 niches are occupied*	383	386	21	21
With Management Control (capped at 300 visitors/hour)	**300**	**300**	**16.5**	**16.5**
Observed Development Trip (2024 condition)	135	136	7.5	7.5
Net Increase (Future vs Existing)	**165**	**164**	**9***	**9***

Note: ^The observed 135 persons/hour reflects current occupancy (2 255 niches). Scaling by total capacity (6 396 niches) yields a proportional peak of 383 persons/hour .
*The 9 pcu/hr increase represents the net difference compared with the 2024 observed operation, equivalent to approximately six additional shuttle-bus trips per hour under full-capacity conditions

The **Table 5.3** indicate that, under a full-occupancy scenario, the theoretical demand could exceed the visitor capacity limit of 300 persons per hour. To manage this, Ching To Yuen will continue to operate the Administrative Visitor Booking System, which caps hourly admissions at 300 visitors.

When booking requests exceed this cap, the system will automatically reallocate excess demand to the next available time slots, ensuring a steady and controlled visitor flow throughout the day. This mechanism effectively spreads peak-hour demand and prevents queuing or congestion both at the Tsuen Nam Road lay-by and along To Fung Shan Road.

With this measure in place, the effective peak-hour traffic is limited to approximately 16.5 pcu/hour, equivalent to about 11 shuttle-bus trips per hour (both directions). The net increase compared with the 2024 observed condition is estimated at 9 pcu/hour, or approximately 6 additional shuttle-bus trips per hour.

5.3   Regional Traffic Growth

For the estimation of traffic flows in the design year of 2030, it is proposed to adjust the existing traffic flows to take into account the natural traffic growth.

Annual Traffic Census (ATC)

Reference has been made to the 2018 to 2023 Annual Traffic Census Reports, published by Transport Department. The traffic data recorded at counting stations adjacent to the Application Site are shown in **Table 5.4.**

Table 5.4   Annual Traffic Census Data

No.	Link	From	To	Road Type	2018	2019	2020	2021	2022	2023	Growth Rate %
5214	Tai Po Rd - Tai Wai	Shing Ho Rd	Lion Rock Tunnel Rd	PD	9,000	9,430	8,900	9,460	8,860	10,280	2.70
5417	Mei Tin Rd	Che Kung Miu Rd	Tsuen Nam Rd	PD	39,600	41,140	39,040	41,490	38,880	40,250	0.33
5448	Tsuen Nam Rd,Chik Fuk St & Shing Ho Rd	Tai Po Rd- Tai Wai	Tai Wai Rd	DD	9,510	8,070	7,910	8,280	7,920	7,930	-3.57
5449	Tai Po Rd - Tai Wai	Shing Ho Rd	Mei Tin Rd	DD	9,310	7,860	9,470	9,920	9,480	9,490	0.38
5617	Mei Tin Rd	Tai Po Rd - Tai Wai	Tsuen Nam Rd	PD	28,940	28,910	26,890	29,120	27,290	28,250	-0.48
6615	Shing Wan Rd	Shing Chuen Rd	Shing Chuen Rd	LD	1,410	1,520	1,360	1,450	1,300	1,330	-1.16
Total					97,770	96,930	93,570	99,720	93,730	97,530	**-0.05**

Table 5.4 presents the traffic flow information spanning five years. The data reveals variable annual growth rates for different road links, with some experiencing increases and others experiencing decreases in traffic volume. When considering all the links collectively, the compounded annual growth rate averages out to **-0.05%**.

Territorial Population and Employment Data Matrix (TPEDM)

According to the report "2021 - based Territorial Population and Employment Data Matrix" published by the Planning Department, the population and employment growth data from the year 2021 to 2031 in Sha Tin District Council District are summarised in **Table 5.5**.

Table 5.5   2021-Based TPEDM data

Sha Tin District Council District	Year		Average Growth per Annum
	2021	**2031**	**2021-2031**
Population	692,800	667,750	**-0.37%**
Employment	222,150	220,400	**-0.08%**

The data indicate the growth in population and employment in Sha Tin District Council District are at annual rates of **-0.37%** and **-0.08%** respectively from 2021 to 2031.

Although historical and demographic data suggest stable or declining growth, a **+0.5%** rate was adopted to ensure conservatism in assessing potential future traffic demand.

5.4   Major Planned/ Committed Developments

The forecast includes major planning applications or committed developments near the site, detailed in **Table 5.6**.

Table 5.6   Major Planned / Committed Development

Location	Type of Development	Source of Information/ Planning Application No.	Development Parameters	Operational/ Completion Year
Lot Nos. 2 & 671 in D.D. 181 in Tai Wai, Sha Tin, New Territories	Columbarium Development	Y/ST/49	Additional 3,000 Niches	Full Operation in 2024
Lots No.60 S.A, 60 S.B and 561 in D.D. 184 and adjoining Government Land, South of Che Kung Miu Road, Tai Wai, New Territories	Columbarium Development	A/ST/1013	Additional 1,365 Niches & 1,373 Memorial Tablets	Full Operation in 2028
Lot 380 RP (Part) in D.D. 186, Tung Lo Wan Hill Road, Sha Tin, New Territories	Residential Development	Y/ST/58	160 Flats	Completion in 2030

5.5   Reference and Design Flows

The growth factor will be applied to the traffic flows of 2024 Observed Peak Hour, to estimate the 2030 Reference Flows. The reference and design flows for Design Year 2030 are calculated from the following formulae:

$$2030 \text{ Reference Flows} = 2024 \text{ Observed Flows} \times (1+0.50\%)^6 + \text{Planned Development Traffic}$$

$$2030 \text{ Design Flows} = 2030 \text{ Reference Flows} + \text{Net Difference of Development Traffic}$$

Figure 5.1 shows the 2030 Reference Peak Hour Flows in the road network. By adding the Net Difference of Development Traffic, **Figure 5.2** shows the 2030 Design Peak Hour Traffic Flows.

5.6   Future Traffic and Pedestrian Assessment

Junction Capacity Assessment

Junction capacity assessments were carried out for the major junctions in the local road network for both the Reference and Design scenarios. The results are summarised and presented in **Table 5.7** with detailed calculation sheets attached in **Appendix C**.

Table 5.7   Future Junction Performance

Jun No.	Junction Location	Type / Capacity Index *	Reference Scenario		Design Scenario	
			Ching Ming Peak Hour	Chung Yeung Peak Hour	Ching Ming Peak Hour	Chung Yeung Peak Hour
J1	Tai Wai Road / Tsuen Nam Road	Signal / RC	>100%	>100%	>100%	>100%
J2	Tai Wai Road / Chik Fai Street	Signal / RC	>100%	>100%	>100%	>100%
J3	Tai Po Road - Tai Wai / Tai Wai Road	Signal / RC	>100%	>100%	>100%	>100%
J4	Chung Ling Road / Tung Lo Wan Hill Road	Priority/ DFC	0.29	0.31	0.29	0.31
J5	Tai Po Road - Tai Wai / Shing Chuen Road / Chung Ling Road	Signal / RC	>100%	>100%	>100%	>100%
TCA-1^	To Fung Shan Road - Lower Section Between Chung Ling Road and Pak Lok Path	Signal / RC	>100%	>100%	>100%	>100%

Notes: * RC =reserve capacity; DFC - Design Flow / Capacity Ratio.
^TCA-1 =Temporary Traffic Arrangement Scheme implemented during festivals and their shadow periods (i.e. two weeks before and after festivals).

As shown in **Table 5.7**, the capacities of all key junctions would be performing satisfactorily during the peak periods for both the Reference and Design Scenarios. Furthermore, based on the results, the impact of the proposed development traffic on the road network is negligible.

Lay-by Occupancy Assessment

Based on the lay-by occupancy data presented in **Section 4.4** and **Figure 4.4**, and incorporating the net growth of shuttle service from **Table 5.3**, which projects an additional 9 pcu or 6 trips, the projected lay-by occupancy for Year 2030 is illustrated in **Figures 5.3 & 5.4**.

The current lay-by occupancy data indicates that the Tsuen Nam Road lay-by has adequate capacity to handle the existing demand. With the anticipated increase of 6 additional shuttle bus trips by 2030, the in-house model projects that these additional trips will only require 1 more loading bay, which is approximately 9 more meters of the lay-by space.

Given that the maximum length provided by the lay-by is 93 meters, and the current peak occupancy is well below this limit, the analysis confirms that the lay-by will continue to have sufficient capacity.

6   Crowd Control and Contingency Plan

6.1   Admission Control

Ching To Yuen is a privately owned columbarium where only niche owners and their family members, who can provide proof of membership, are permitted to enter the columbarium. The individuals who purchase niches within the columbarium are recognized as members of Ching To Yuen. The sale agreement for niche purchases will encompass a set of house rules.

These house rules are designed to govern the behavior of members and visitors regarding the use of the niches, including visiting hours, admission control, and the maximum duration of stay within the columbarium during the peak hours of the Ching Ming and Chung Yeung Festivals. It is important to note that other visitors may only gain access to Ching To Yuen when accompanied and authorized by the staff of Ching To Yuen.

Visitor admission is strictly regulated through the mandatory Administrative Visitor Booking System. Only niche owners and their family members are permitted entry, and visits must be scheduled in advance. During festive periods the following controls apply:

- Visits are by appointment only, with pick-up/drop-off times assigned in advance.
- Each family is permitted a maximum stay of 20 minutes.
- No more than 300 visitors per hour are admitted to the site.
- Security staff regulate entry at all times, ensuring numbers remain within the cap.

6.2   Internal Temporary Transport Arrangement

The operating hours of Ching To Yuen are from 09:30 to 17:30, while the shuttle bus service operates from 09:30 to 17:00. Shuttle services are offered for members traveling between MTR Tai Wai Station and Ching To Yuen. The designated pick-up/drop-off location in Tai Wai is situated at the lay-by of Tsuen Nam Road, close to Exit A of Tai Wai MTR Station.

During festive period, 28-seater buses are employed to accommodate the increased demand. No private vehicle parking will be provided during the festive periods. The shuttle-only arrangement ensures orderly traffic management, prevents conflicts between vehicles and pedestrians within the site, and minimises impacts on the surrounding road network.

As illustrated in **Figure 6.1**, shuttle bus pick-up/drop-off bays, designated visitor waiting areas, and staff deployment points are provided within the site to ensure safe circulation and to minimise potential conflicts between pedestrians and vehicles.

The internal circulation layout will be reviewed and maintained by the project architect to ensure that shuttle-bus turning movements remain adequate. Relevant layout details have been included in the planning application package, which the Transport Department may refer to for reference.

6.3 Crowd Control Measure

The Applicant aims to ensure the smooth operation of the columbarium, with visitor access regulated by the "Administrative Visitor Booking System", discussed in **Section 3.2**. This system will control and limit the number of visitors permitted to enter the site to 300 persons per hour.

Furthermore, clear signage will be installed to direct visitors to the entrance and the ceremonial area within Ching To Yuen. Additionally, staff members will be assigned to assist visitors during the ceremonial process, facilitating smooth movement throughout the areas.

Moreover, the columbarium building has a limited floor area of approximately $107m^2$, with a maximum capacity of 53 persons, as stipulated by the "Code of Practice for Fire Safety in Buildings". Consequently, for safety reasons, the columbarium will be restricted to a maximum of 53 persons at any given time. To manage this, visitors will be permitted to enter the columbarium in sessions, ensuring that the number of persons inside does not exceed 53. Visitors will be instructed to wait outside the columbarium building within the Application Site. As illustrated in **Figure 6.1**, sufficient waiting areas and staff deployment points are provided within the site to ensure safe, orderly, and efficient crowd management.

6.4 Temporary Traffic Arrangements by Applicant

To Fung Shan Road

As discussed in **Section 4.2b**, during festive period, the section of To Fung Shan Road located north of its intersection at the roundabout will be closed to all vehicular traffic from 9:00 am to 5:00 pm, except for emergency vehicles and those serving residents and individuals working in To Fung Shan, along with the shuttle bus service operating between To Fung Shan and Tai Wai Station. Directional signage will be erected along To Fung Shan Road, and staff will be deployed to assist visitors along the route, as illustrated in **Figure 6.2**.

<u>Tsuen Nam Road Lay-by</u>

Members have to queue and wait for the shuttle bus services at the general lay-by of Tsuen Nam Road near Exit A of Tai Wai MTR Station. Only visitors with proof of membership of Ching To Yuen will be allowed to use the shuttle bus services. Staff will be deployed to register and to regulate the queuing situation at the lay-by, as illustrated in **Figure 6.3**.

- Road markings will be affixed to the footpath, clearly delineating the queuing area, which has a width of 0.5 meters.
- Signs will also be affixed to the footpath in the queuing area, starting from the end of the queue. These signs will prominently display "淨土園巴士" and "單行排隊" to direct visitors and remind them to queue in a single line.
- For the management staff positioned at the front of the queue near the shuttle bus stop, a flag will be held to guide the queue, indicating when to move or stop. When no shuttle bus is present, visitors will not be permitted to cross beyond the queuing area to minimize disruption to pedestrians, other layby users, and cyclists.
- The management staff will continuously patrol the area and remind visitors in the queue to maintain their position in line to prevent disturbances to pedestrians, other layby users, and cyclists nearby.

6.5 Contingency Plan

In the event of an incident occurring in Ching To Yuen, the nearby marshals will promptly report to the First Aid Station and notify all other marshals via walkie-talkie to initiate the emergency procedure. The marshals will assist and direct pedestrian movements to ensure a clear path for the emergency response.

If an emergency incident takes place within the Columbarium, the security staff stationed at the entrances will immediately evacuate the columbarium by guiding all visitors to the open area outside.

A First Aid Station will be established in Ching To Yuen. One staff member, trained in first aid, will be assigned to the Administrative Office with a first-aid kit box. An ambulance will be called for any injuries unless the first aid provided is sufficient or if requested by the injured individual or their friends or relatives.

Movable barriers, cordon tapes, loudhailers, and radios (walkie-talkies) are available on the Site for any emergencies.

7 Summary and Conclusion

7.1 Summary

The Applicant has commissioned AXON Consultancy Limited to conduct a Traffic Impact Assessment (TIA) for the proposed development of the *Ching To Yuen* columbarium, located at Lot Nos. 374, 375 S.A and 375 S.B in D.D. 186 at To Fung Shan, Sha Tin. The columbarium has been in operation since 2005 with a total capacity of 6,396 niches. As of 2024, approximately 2,993 niches have been sold, of which 2,255 are occupied. The traffic assessment is based on a full-capacity scenario, representing the conservative worst case for evaluating potential traffic impacts. The study supports the application to rezone the site from "Green Belt" to "Other Specified Uses" annotated "Columbarium (3)".

To evaluate the traffic impact during the Ching Ming Festive period, peak hour trip generation rates from the existing columbarium in Ching To Yuen during 2024 Ching Ming Festival were derived to ensure an accurate estimate. The observed trip rates were adopted for estimating the additional peak hour development trips by the unoccupied niches. Based on the observed festive-period trip-rate, the future full-capacity operation would theoretically generate 21 pcu/hr. With the existing 300-visitor booking cap, the effective flow remains at 16.5 pcu/hr, producing only about six additional shuttle-bus trips per hour compared with the 2024 observed condition, which the surrounding road network can comfortably accommodate.

To minimize vehicular traffic in the area, the applicant provides shuttle bus services between Ching To Yuen and Tai Wai MTR Station for all visitors and staff. Special traffic management and visitor strategies will be implemented to ensure smooth operations.

The year 2030 is used as the design year for the traffic impact assessment. After comparing historical data and future planning data, a conservative annual growth rate of +0.5% was adopted. This growth factor has been applied to the observed traffic flows in 2024 to project the 2030 anticipated traffic flows.

Capacity assessments of all major junctions along the ingress and egress routes indicated that all key junctions would perform satisfactorily under both reference and design scenarios for the year 2030. A detailed survey of the Tsuen Nam Road Lay-by confirmed its capacity to handle the increased demand from additional shuttle-bus trips during peak periods.

7.2   Conclusions

The traffic impact assessment findings reveal that the road network surrounding the area will be able to handle the additional traffic from the shuttle bus service at Ching To Yuen, which attracts 9 pcu/hr and generates 9 pcu/hr during festive periods. This assessment confirms that the proposed development would not cause any adverse impact from a traffic perspective.

Figures
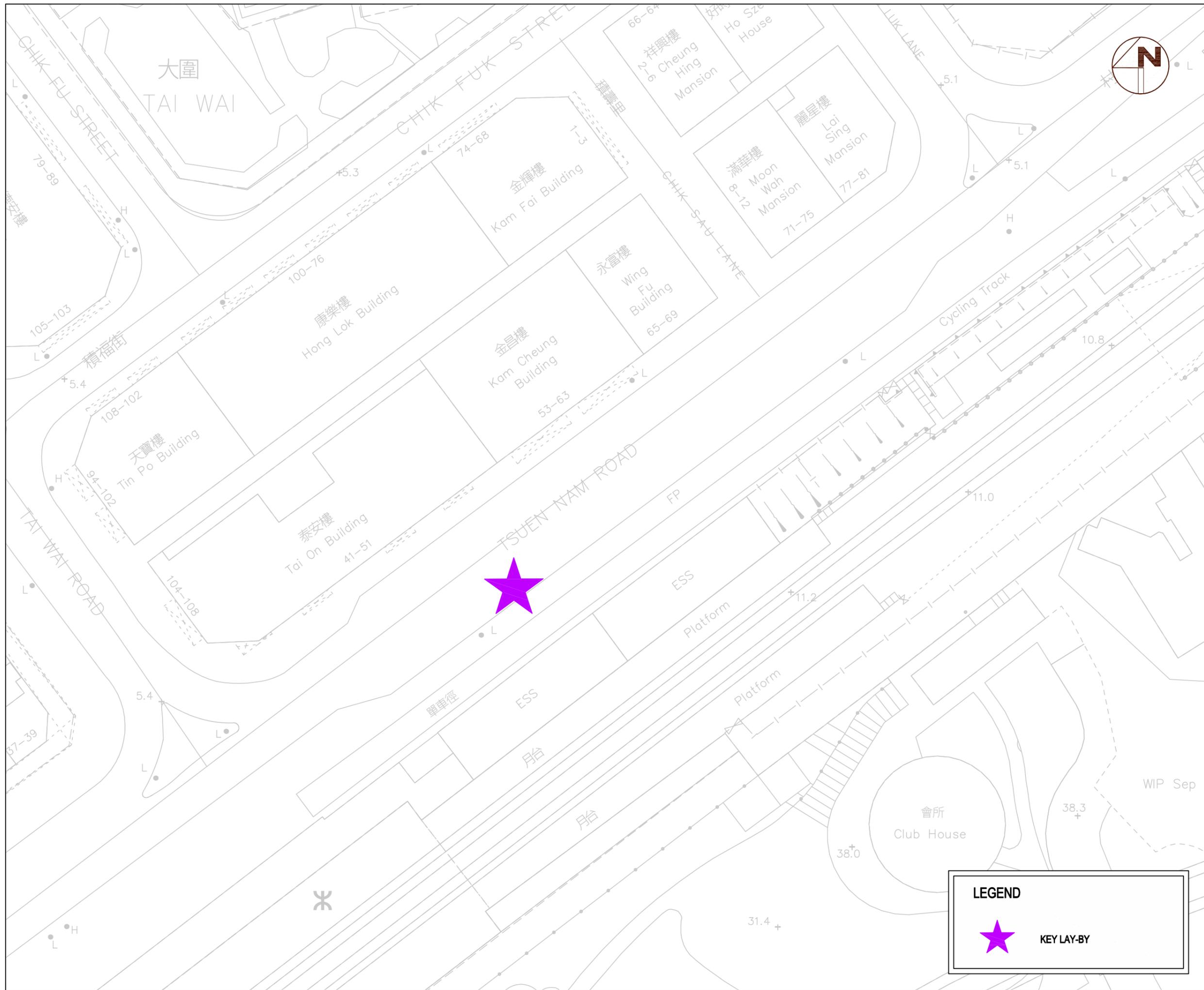
Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning of Ching To Yuen from "Green Belt" Zone to "Other Specified Uses" zone annotated "Columbarium" Zone at Lot Nos. 374, 375 S.A and 375 S.B in D.D.186, To Fung Shan, Sha Tin

SITE LOCATION

FIGURE 2.1

Scale : **1:8000 (A3)**

Date : **JUN 2024**

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LEGEND

APPLICATION AREA

- · - · - APPLICATION BOUNDARY

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KEY LAY-BY

FIGURE 3.1

Scale : **1:500 (A3)**

Date : **JUN 2024**

Rev. :

大圍
TAI WAI

CHIK FU STREET

79-89
105-103
108-102
94-102
104-108
87-39
100-76
積福街

TAI WAI ROAD

CHIK FUK STREET

74-68
1-3

貓轉街

CHIK SAU LANE

金輝樓
Kam Fai Building

康樂樓
Hong Lok Building

天寶樓
Tin Po Building

泰安樓
Tai On Building
41-51

金昌樓
Kam Cheung Building
53-63

永富樓
Wing Fu Building
65-69

66-64
好時樓
Ho Sze House

祥興樓
2-6 Cheung Hing Mansion

滿華樓
Moon Wah Mansion
8-12

麗星樓
Lai Sing Mansion
77-81
71-75

LUK LANE

TSUEN NAM ROAD

FP

ESS

Platform

ESS

Platform

月台

單車徑

月台

會所
Club House

Cycling Track

WIP Sep

31.4

38.0

38.3

LEGEND

⭐ KEY LAY-BY

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PUBLIC TRANSPORT

FIGURE 4.1
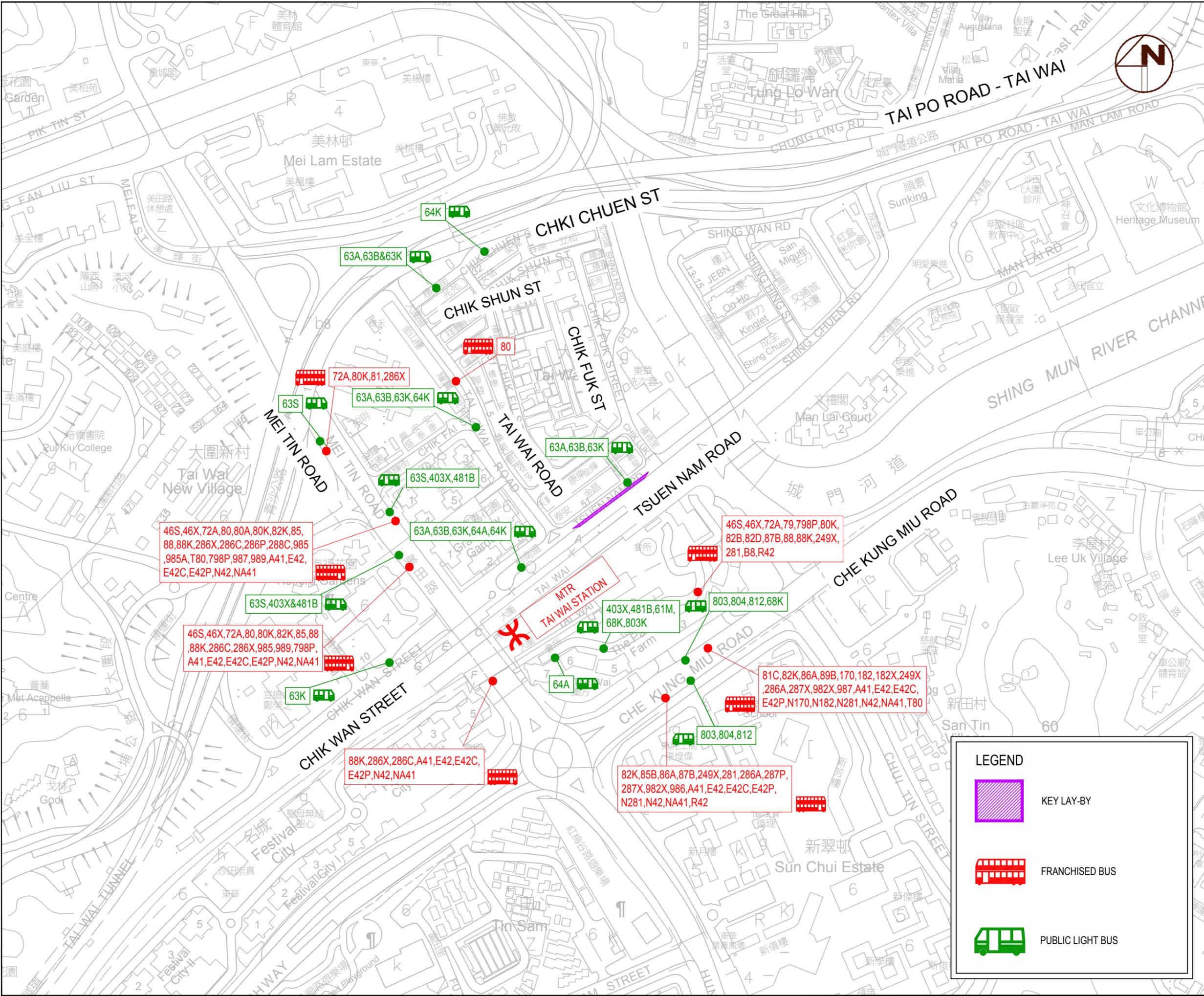
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Date : **JUN 2025**

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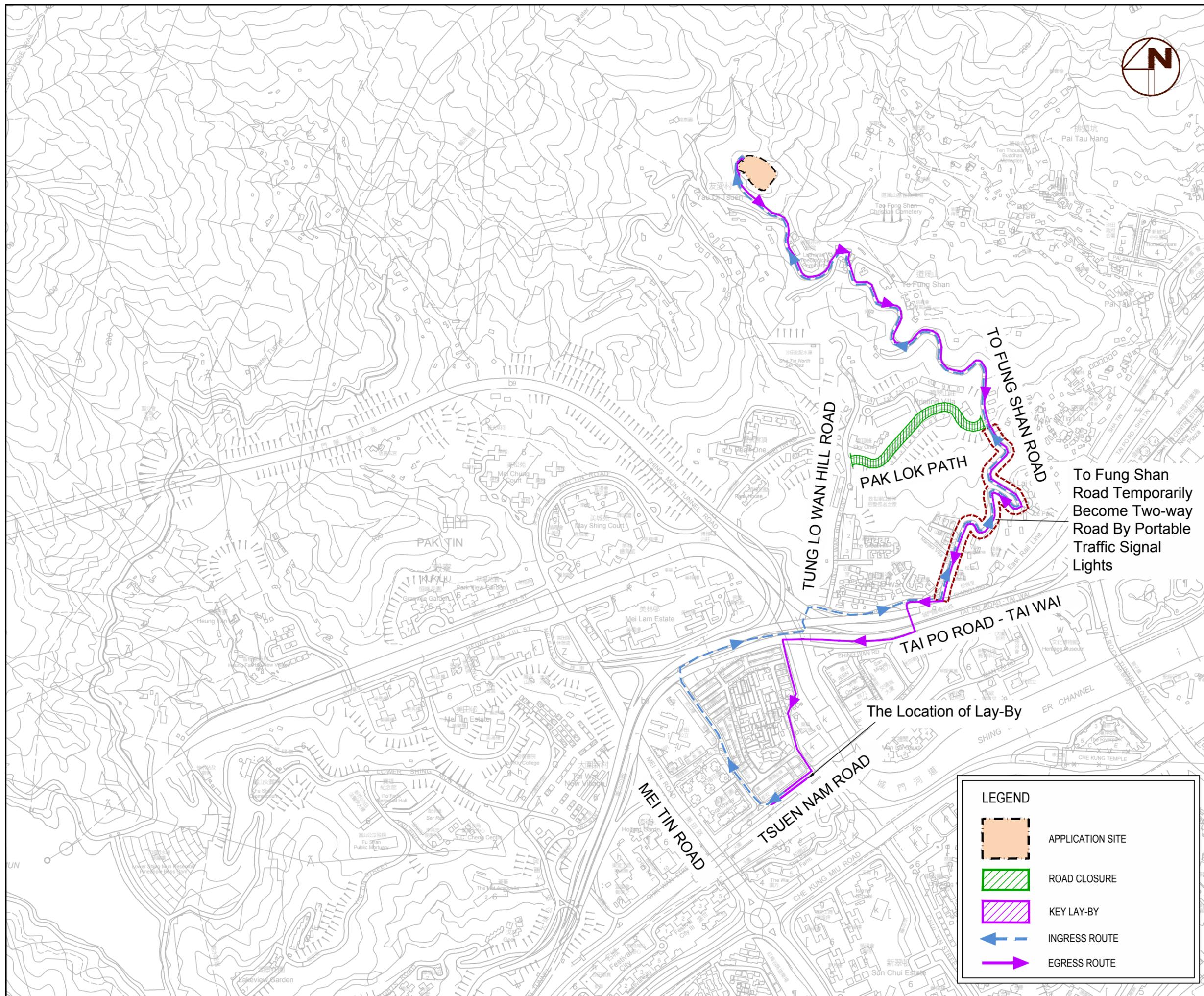
LEGEND

KEY LAY-BY

FRANCHISED BUS

PUBLIC LIGHT BUS

Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning of Ching To Yuen from "Green Belt" Zone to "Other Specified Uses" zone annotated "Columbarium" Zone at Lot Nos. 374, 375 S.A and 375 S.B in D.D.186, To Fung Shan, Sha Tin

VEHICULAR INGRESS AND EGRESS ROUTE

FIGURE 4.2

Scale : **1:8000 (A3)**

Date : **JUN 2024**

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To Fung Shan Road Temporarily Become Two-way Road By Portable Traffic Signal Lights

The Location of Lay-By

PAK LOK PATH

TUNG LO WAN HILL ROAD

TO FUNG SHAN ROAD

TAI PO ROAD - TAI WAI

MEI TIN ROAD

TSUEN NAM ROAD

LEGEND

	APPLICATION SITE
	ROAD CLOSURE
	KEY LAY-BY
	INGRESS ROUTE
	EGRESS ROUTE

Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning of Ching To Yuen from "Green Belt" Zone to "Other Specified Uses" zone annotated "Columbarium" Zone at Lot Nos. 374, 375 S.A and 375 S.B in D.D.186, To Fung Shan, Sha Tin

KEY JUNCTION

FIGURE 4.3

Scale : **1:8000 (A3)**

Date : **JUN 2025**

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PAK LOK PATH

To Fung Shan Road Temporarily Become Two-way Road By Portable Traffic Signal Lights

TUNG LO WAN HILL ROAD

TO FUNG SHAN ROAD

PAK TIN

TAI PO ROAD - TAI WAI

J4

J5

J3

J2

J1

MEI TIN ROAD

TSUEN NAM ROAD
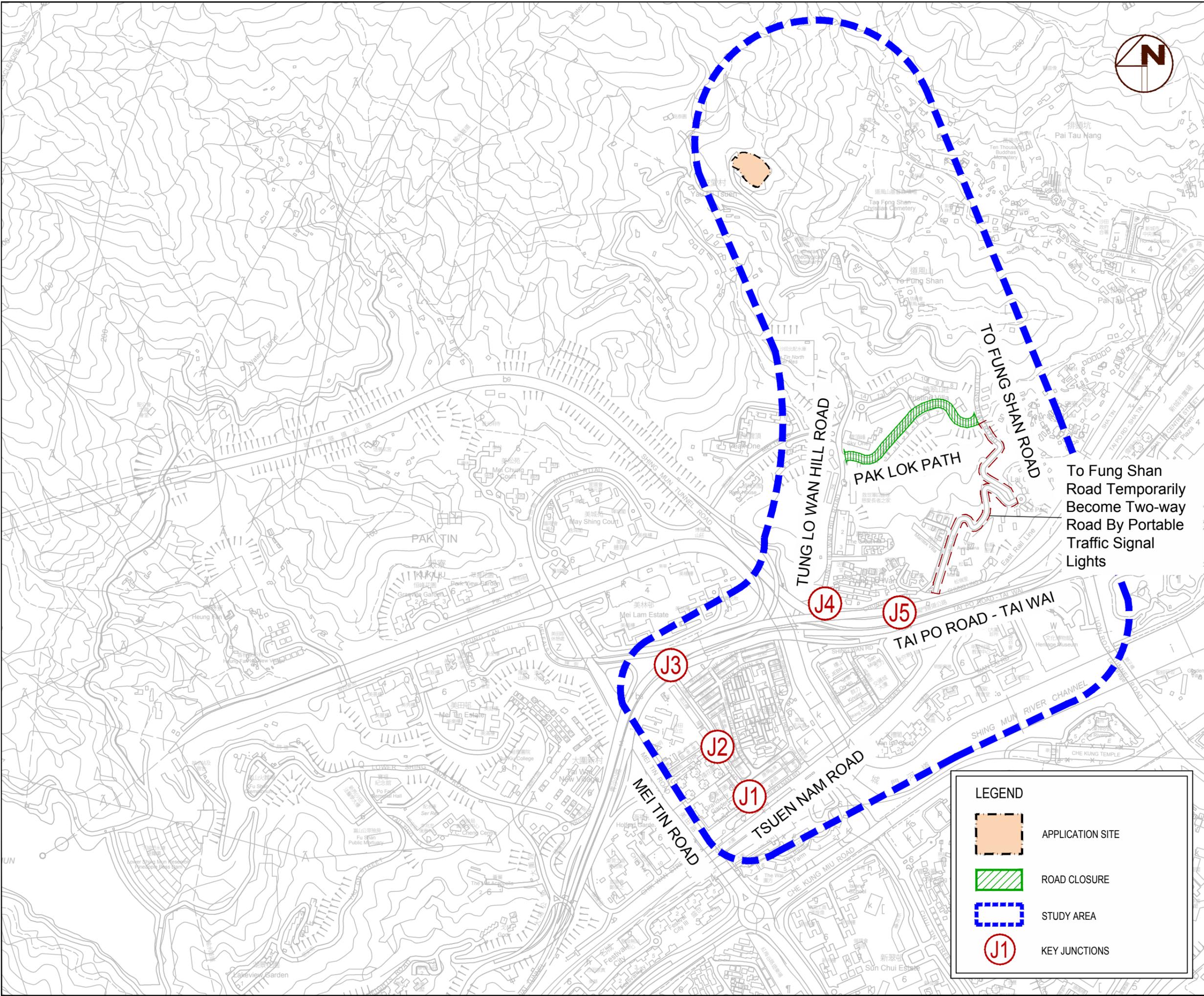
LEGEND

APPLICATION SITE

ROAD CLOSURE

STUDY AREA

J1 KEY JUNCTIONS

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Z:\DOWNLOADS\做緊\交通\安排\31036 TIA\DRAWING\FIG 4.3_KEY JUNCTION.DWG

Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning of Ching To Yuen from "Green Belt" Zone to "Other Specified Uses" zone annotated "Columbarium" Zone at Lot Nos. 374, 375 S.A and 375 S.B in D.D.186, To Fung Shan, Sha Tin
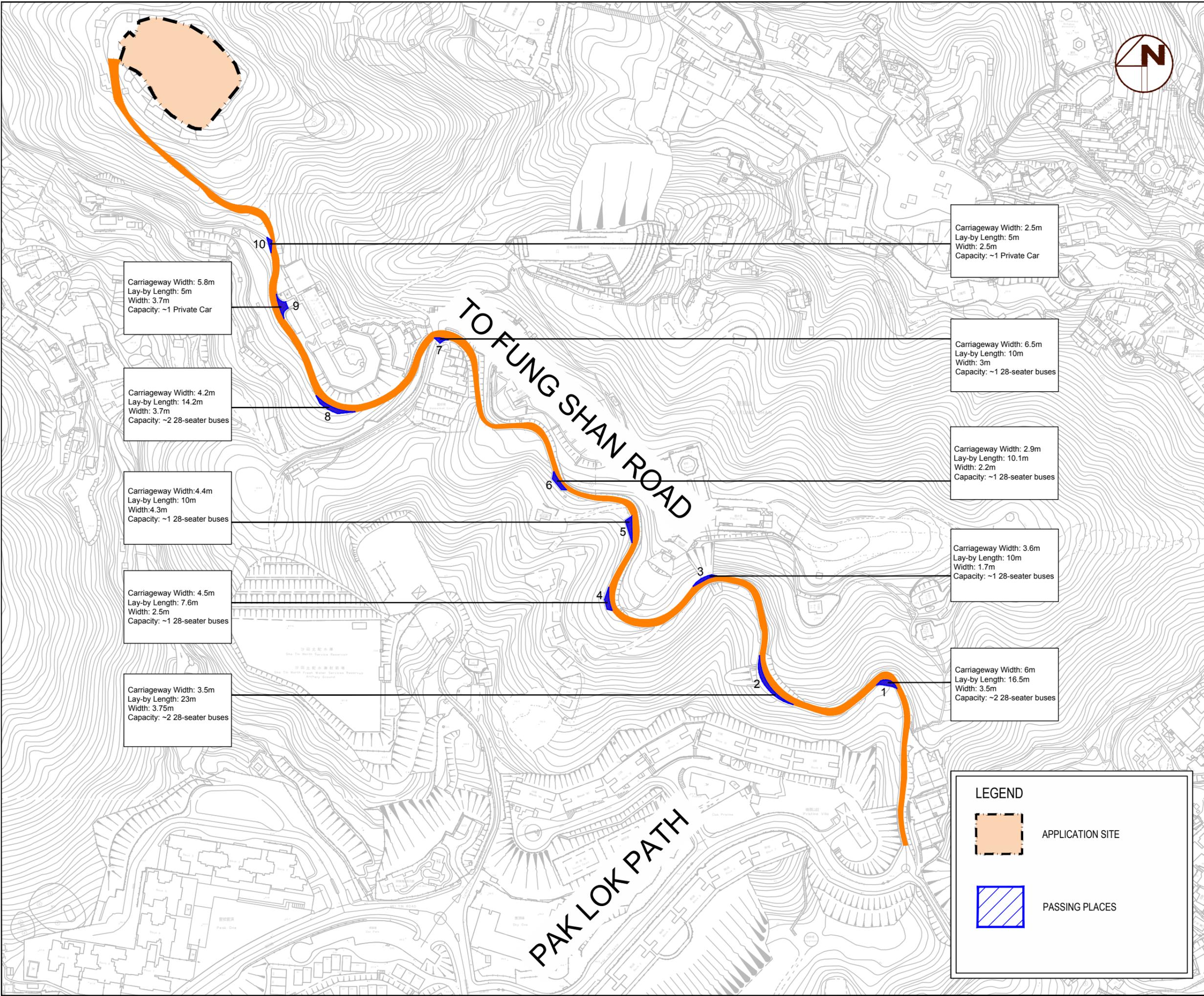
EXISTING PASSING PLACE ALONG TO FUNG SHAN ROAD

FIGURE 4.4

Scale : **N.T.S**

Date : **JUN 2025**

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Carriageway Width: 2.5m
Lay-by Length: 5m
Width: 2.5m
Capacity: ~1 Private Car

Carriageway Width: 5.8m
Lay-by Length: 5m
Width: 3.7m
Capacity: ~1 Private Car

Carriageway Width: 6.5m
Lay-by Length: 10m
Width: 3m
Capacity: ~1 28-seater buses

Carriageway Width: 4.2m
Lay-by Length: 14.2m
Width: 3.7m
Capacity: ~2 28-seater buses

Carriageway Width: 2.9m
Lay-by Length: 10.1m
Width: 2.2m
Capacity: ~1 28-seater buses

Carriageway Width:4.4m
Lay-by Length: 10m
Width:4.3m
Capacity: ~1 28-seater buses

Carriageway Width: 3.6m
Lay-by Length: 10m
Width: 1.7m
Capacity: ~1 28-seater buses

Carriageway Width: 4.5m
Lay-by Length: 7.6m
Width: 2.5m
Capacity: ~1 28-seater buses

Carriageway Width: 6m
Lay-by Length: 16.5m
Width: 3.5m
Capacity: ~2 28-seater buses

Carriageway Width: 3.5m
Lay-by Length: 23m
Width: 3.75m
Capacity: ~2 28-seater buses

TO FUNG SHAN ROAD

PAK LOK PATH

LEGEND

APPLICATION SITE

PASSING PLACES

Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning of Ching To Yuen from "Green Belt" Zone to "Other Specified Uses" zone annotated "Columbarium" Zone at Lot Nos. 374, 375 S.A and 375 S.B in D.D.186, To Fung Shan, Sha Tin

YEAR 2024 OBSERVED TRAFFIC FLOW

FIGURE 4.5

Scale : **N.T.S**

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LEGEND

APPLICATION SITE

100 (100)   TRAFFIC FLOW IN PCU AT CMF (CYF) PEAK HOUR

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Max Length Provided by Tsuen Nam Road Lay-by

■ Length Occupied By Other Road Users   ■ Length Occupied By Ching To Yuen

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Max Length Provided by Tsuen Nam Road Lay-by

Length Occupied By Other Road Users Length Occupied By Ching To Yuen

Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning of Ching To Yuen from "Green Belt" Zone to "Other Specified Uses" zone annotated "Columbarium" Zone at Lot Nos. 374, 375 S.A and 375 S.B in D.D.186, To Fung Shan, Sha Tin
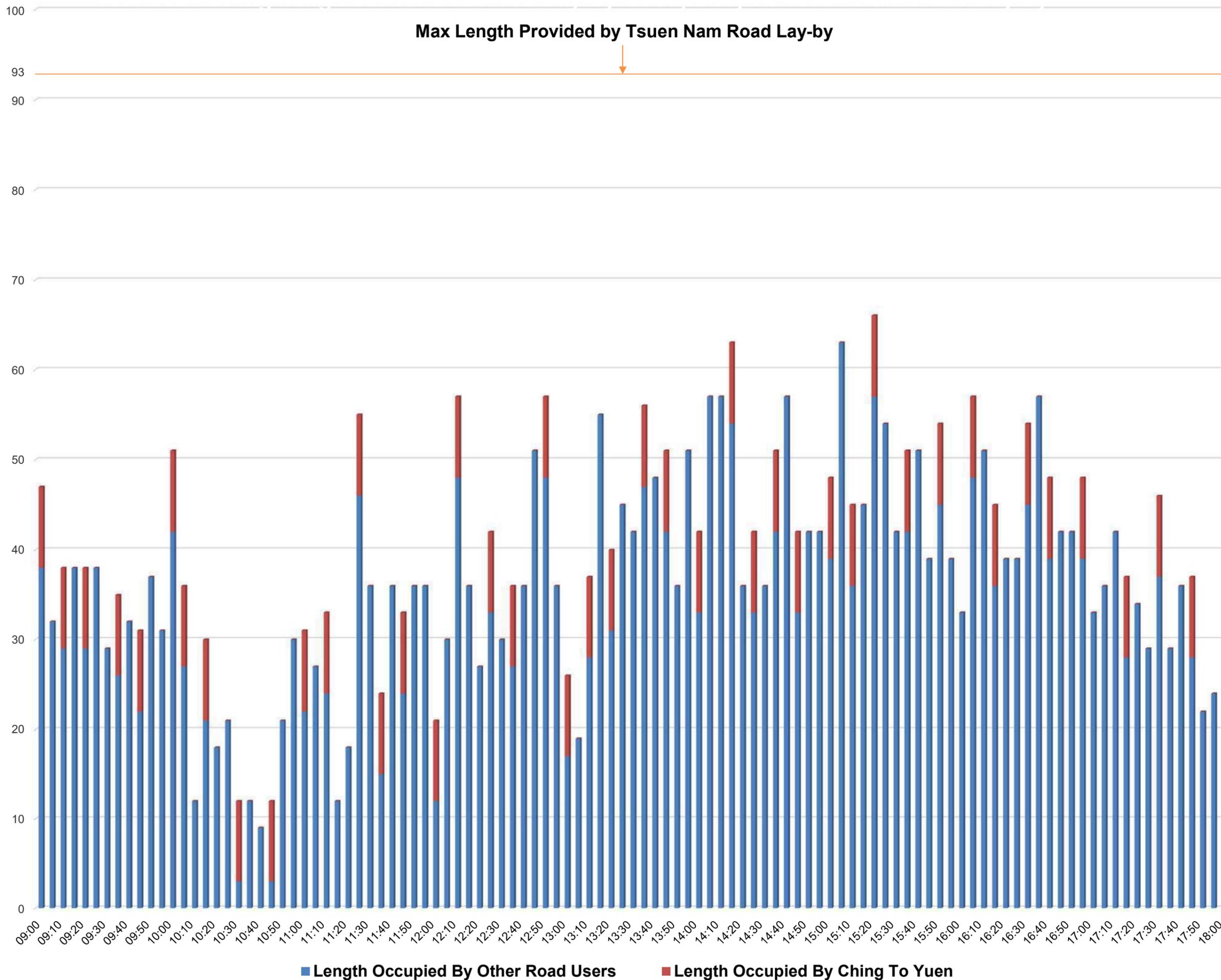
YEAR 2024 CYF OBSERVED LAY-BY OCCUPANCY

FIGURE 4.7

Scale : N.T.S

Date : JUL 2025
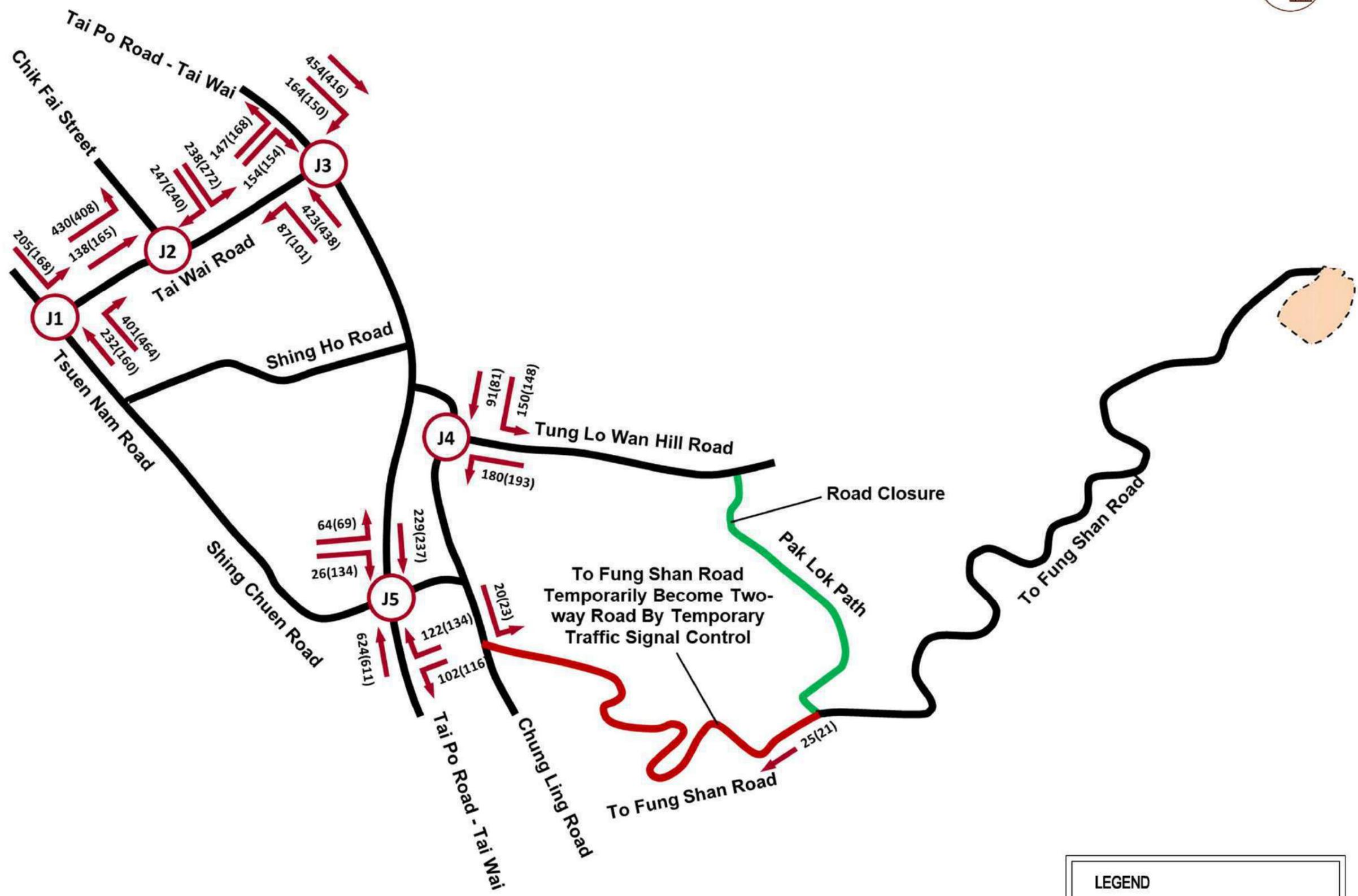
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YEAR 2030 REFERENCE TRAFFIC FLOW

FIGURE 5.1

Scale : **N.T.S**

Date : **JUL 2025**
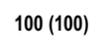
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LEGEND

APPLICATION SITE

100 (100) TRAFFIC FLOW IN PCU AT CMF (CYF) PEAK HOUR

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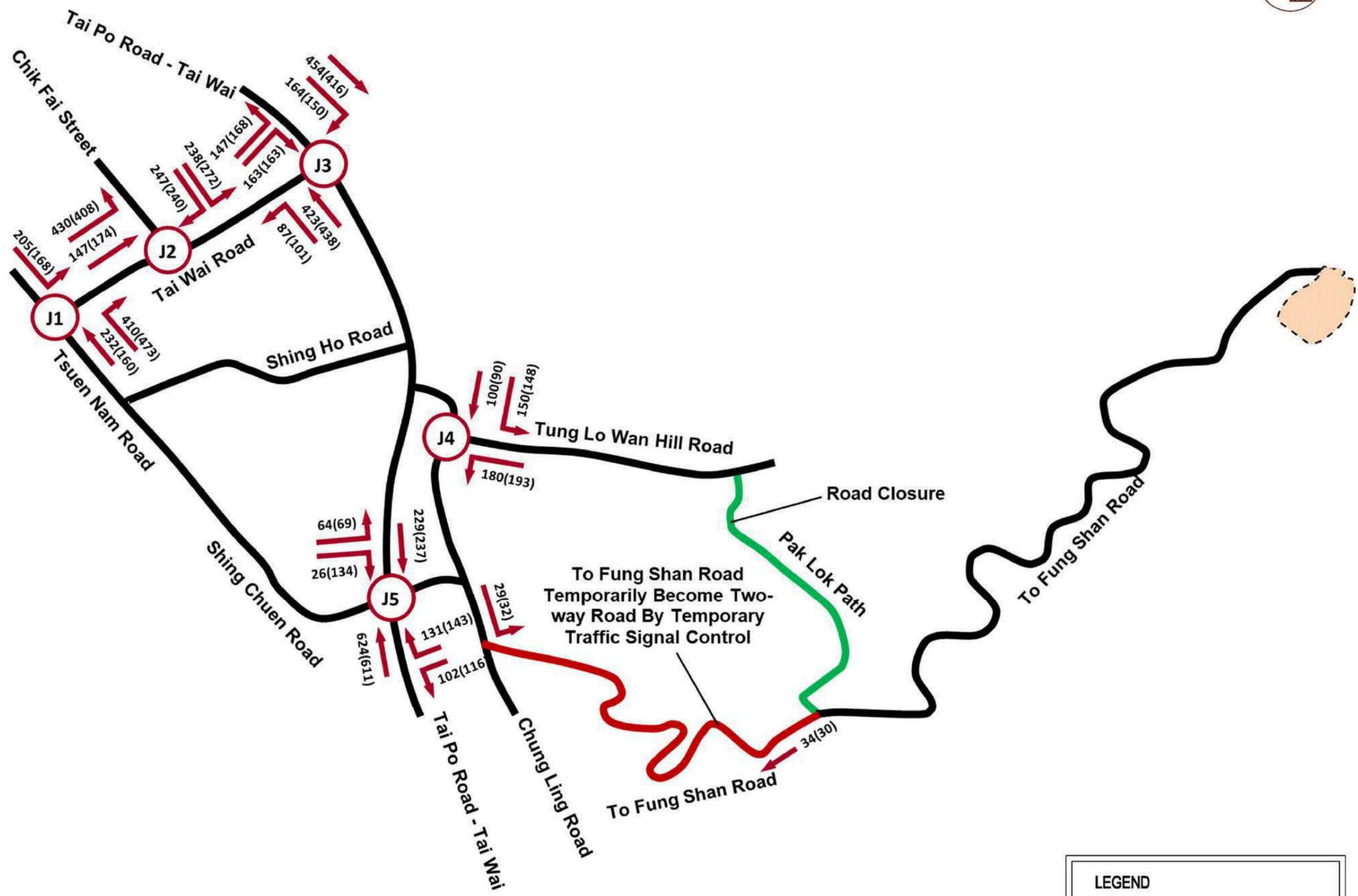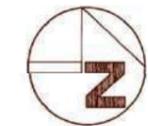
Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning of Ching To Yuen from "Green Belt" Zone to "Other Specified Uses" zone annotated "Columbarium" Zone at Lot Nos. 374, 375 S.A and 375 S.B in D.D.186, To Fung Shan, Sha Tin

YEAR 2030 DESIGN TRAFFIC FLOW

FIGURE 5.2

Scale : **N.T.S**

Date : **JUL 2025**

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LEGEND

APPLICATION SITE

100 (100)　TRAFFIC FLOW IN PCU AT CMF (CYF) PEAK HOUR

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Max Length Provided by Tsuen Nam Road Lay-by

Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning of Ching To Yuen from "Green Belt" Zone to "Other Specified Uses" zone annotated "Columbarium" Zone at Lot Nos. 374, 375 S.A and 375 S.B in D.D.186, To Fung Shan, Sha Tin
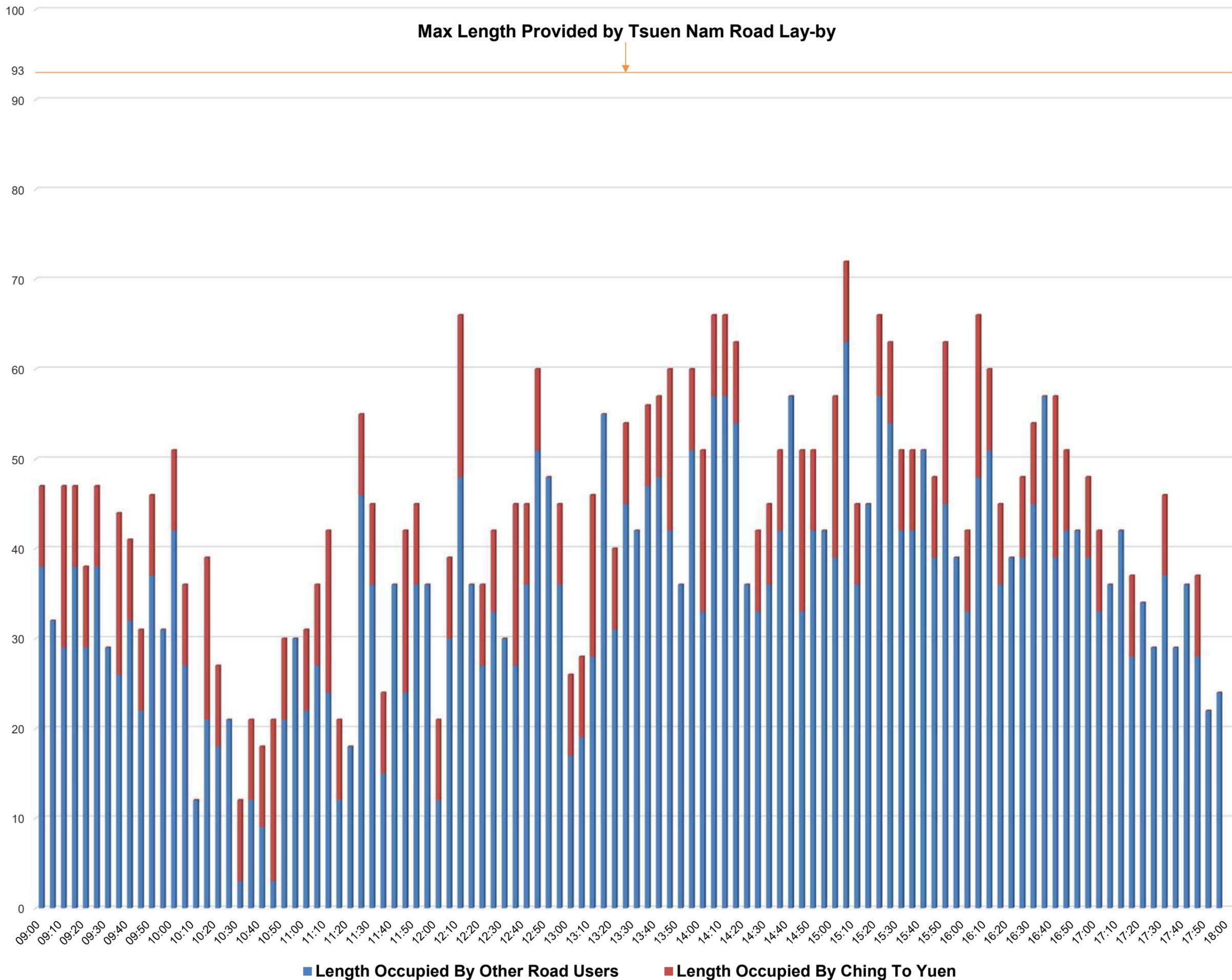
YEAR 2029 CMF DESIGN LAY-BY OCCUPANCY

FIGURE 5.3

Scale : **N.T.S**

Date : **JUL 2025**

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■ **Length Occupied By Other Road Users** ■ **Length Occupied By Ching To Yuen**

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Max Length Provided by Tsuen Nam Road Lay-by

Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning of Ching To Yuen from **"Green Belt"** Zone to **"Other Specified Uses"** zone annotated **"Columbarium"** Zone at Lot Nos. 374, 375 S.A and 375 S.B in D.D.186, To Fung Shan, Sha Tin
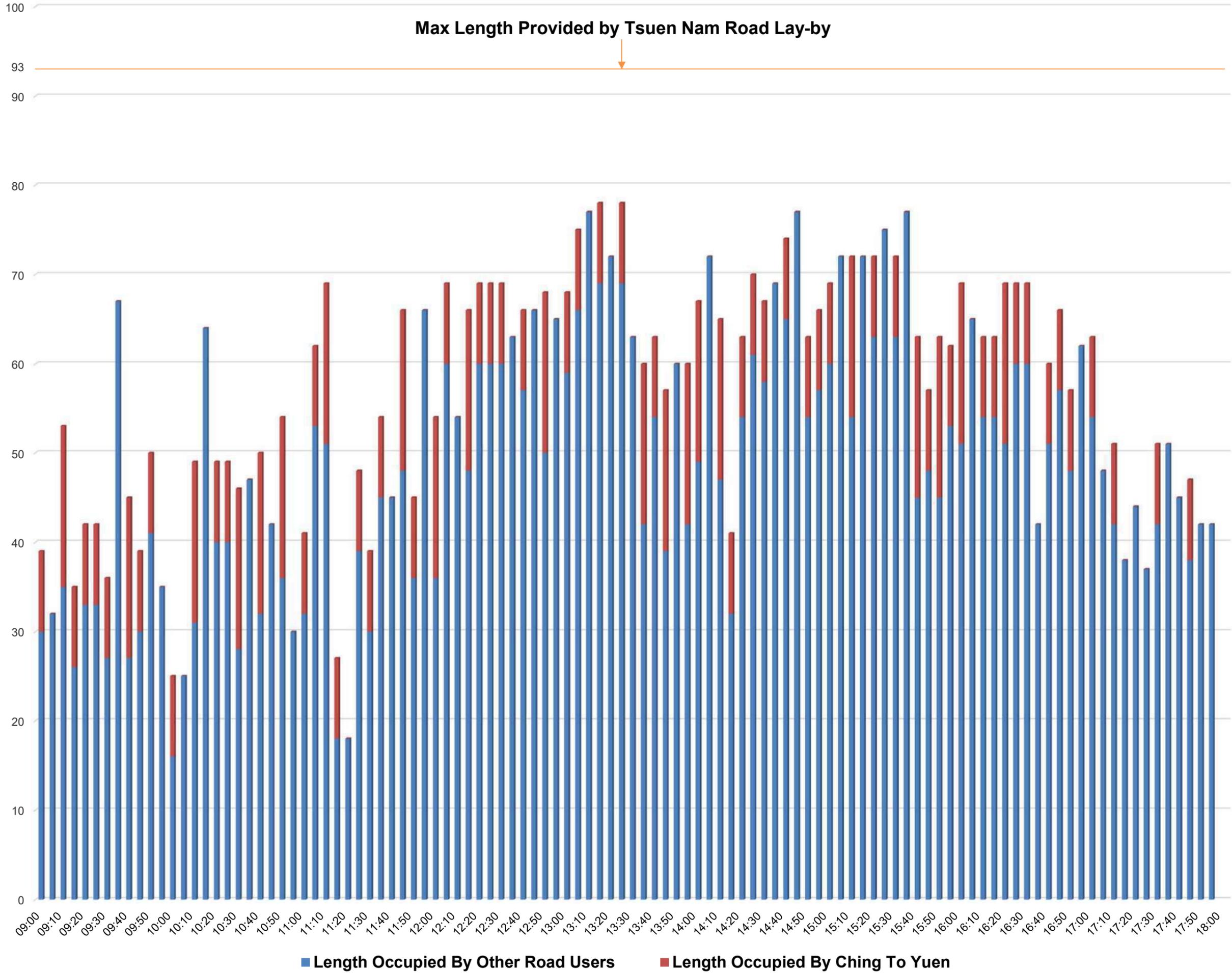
YEAR 2029 CYF DESIGN LAY-BY OCCUPANCY

FIGURE 5.4

Scale : **N.T.S**

Date : **JUL 2025**

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- ■ **Length Occupied By Other Road Users**
- ■ **Length Occupied By Ching To Yuen**

Staff to be provided to assist pedestrian

Staff to be provided to assist pedestrian

Staff to be provided to assist pedestrian

C

D

B

A
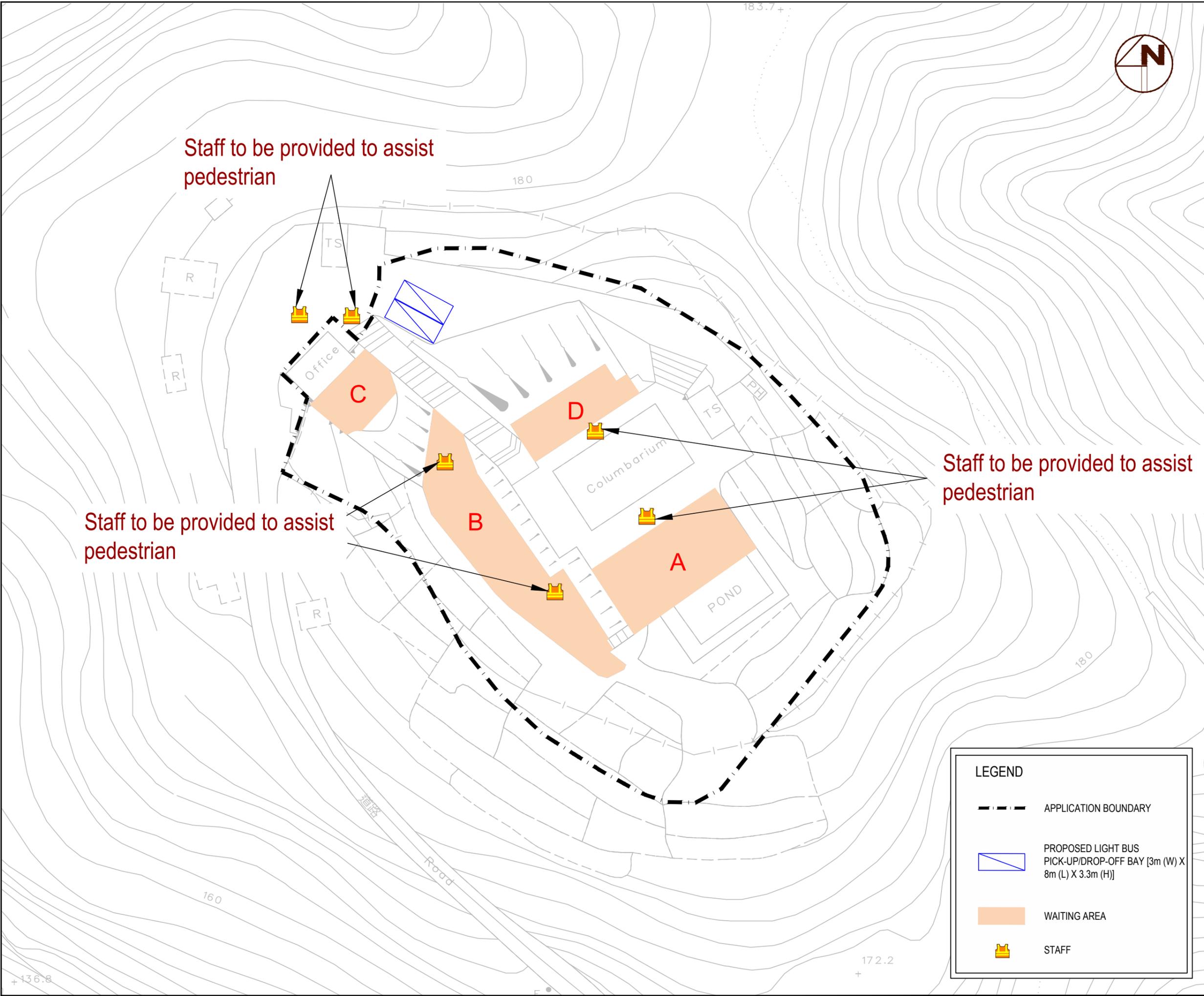
TRAFFIC MANAGEMENT PLAN

FIGURE 6.1

Scale : **1:500 (A3)**

Date : **JUN 2025**

Rev. :

LEGEND

— · · — · · — APPLICATION BOUNDARY

PROPOSED LIGHT BUS PICK-UP/DROP-OFF BAY [3m (W) X 8m (L) X 3.3m (H)]

WAITING AREA

STAFF

AXON CONSULTANCY
http://www.axonhk.com

Staff to be provided for assisting pedestrians

Ching To Yuen
淨土園 ↑

Sraff to be provided for assisting pedestrians

TO FUNG SHAN ROAD

Ching To Yuen
淨土園 ↑
675mmx1000mm

Ching To Yuen
淨土園 ↑
675mmx1000mm

Ching To Yuen
淨土園 ↑
675mmx1000mm

Ching To Yuen
淨土園 ↑
675mmx1000mm

PAK LOK PATH

Staff to be provided for assisting pedestrians
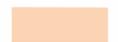
Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning of Ching To Yuen from "Green Belt" Zone to "Other Specified Uses" zone annotated "Columbarium" Zone at Lot Nos. 374, 375 S.A and 375 S.B in D.D.186, To Fung Shan, Sha Tin

SPECIAL TEMPORARY TRAFFIC ARRANGEMENT

FIGURE 6.2
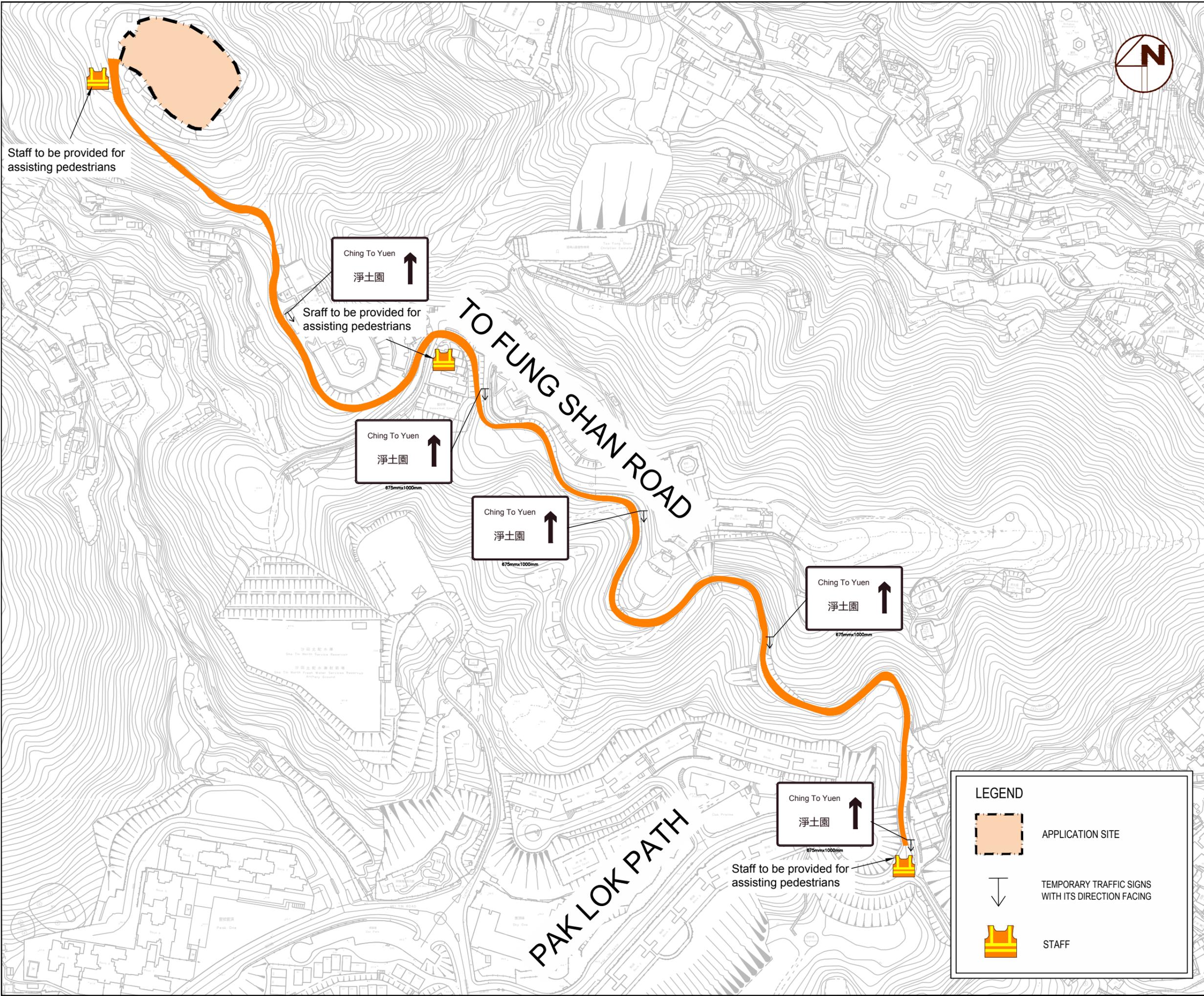
Scale : **1:2500(A3)**

Date : **JUN 2025**

Rev. :

LEGEND

APPLICATION SITE

TEMPORARY TRAFFIC SIGNS WITH ITS DIRECTION FACING

STAFF

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CHIK FUK STREET

積福街

108-102

天寶樓
Tin Po Building
94-102

104-108

泰安樓
Tai On Building
41-51

100-76

康樂樓
Hong Lok Building

金昌樓
Kam Cheung
Building
53-63

74-68

金輝樓
Kam Fai Building
1-3

永富樓
Wing Fu Building
65-69

66-64

祥興樓
Cheung Hing Mansion
2-6

滿華樓
Moon Wah Mansion
8-12
71-75

62-60

好時洋樓
Ho Sze House
2-6

麗星樓
Lai Sing Mansion
77-81

TAI WAI ROAD

CHIK LUK LANE

Total Length of Lay-by=95m

Queue Area =30m²
Queuing Capacity=25
Persons(with LOS A)
or 50 Persons(with LOS C)

TSUEN NAM ROAD

Stopping Place for Pick-up/Drop off

8m

3.0m

Remaining Footpath Width=3.0m

60m

0.5m

Major Pedestrian Flow

Existing Footpath Width=3.5m

3.5m

3.5m

Sticker Road Marking

Sticker Signage on Road

No Changing to Existing Cycling Track=3.5m

5cm

45cm

5cm

Single Line 單行排隊   Ching To Yuen Bus 泰士園巴士

0   0.2   0.4   0.8

CROWD CONTROL MEASURE

FIGURE 6.3

Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning of Ching To Yuen from "Green Belt" Zone to "Other Specified Uses" zone annotated "Columbarium" Zone at Lot Nos. 374, 375 S.A and 375 S.B in D.D.186, To Fung Shan, Sha Tin

LEGEND

QUEUING AREA

STICKER ROAD MARKING

STICKER SIGNAGE ON ROAD

STAFF
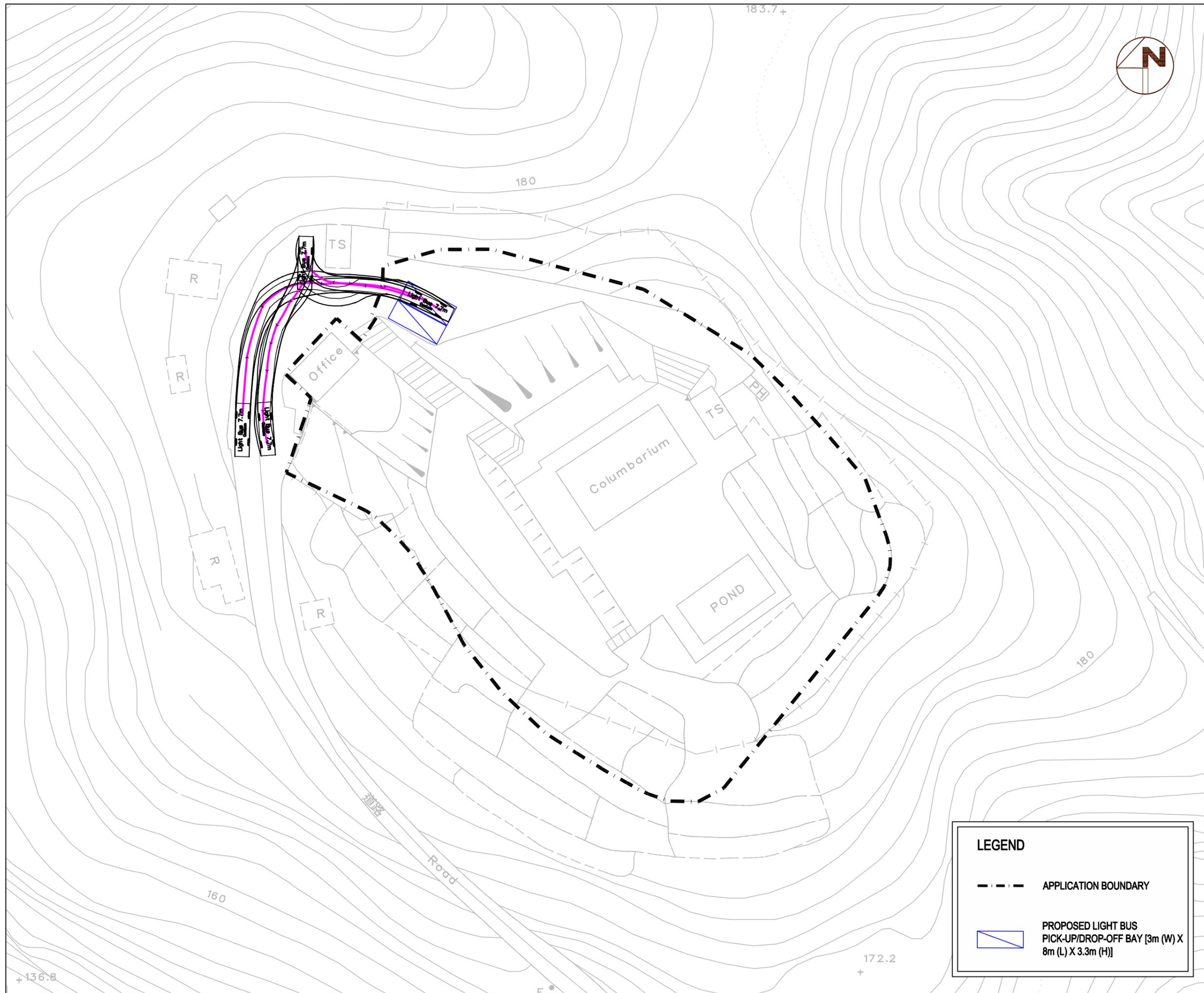
0   5   10   20

Scale : **1:500(A3)**

Date : **JUL 2025**

Rev. :

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Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning of Ching To Yuen from "Green Belt" Zone to "Other Specified Uses" zone annotated "Columbarium" Zone at Lot Nos. 374, 375 S.A and 375 S.B in D.D.186, To Fung Shan, Sha Tin

SWEPT PATH ANALYSIS FOR 7.7m SHUTTLE BUS

FIGURE SP-01

Scale : **1:500 (A3)**

Date : **JUN 2024**

Rev. :

LEGEND

— · · — · · — APPLICATION BOUNDARY

PROPOSED LIGHT BUS PICK-UP/DROP-OFF BAY [3m (W) X 8m (L) X 3.3m (H)]

AXON CONSULTANCY
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SWEPT PATH ANALYSIS FOR 7.7m SHUTTLE BUS

FIGURE SP-02

Scale : **1:500 (A3)**

Date : **JUN 2024**

Rev. :

LEGEND

— · — · — APPLICATION BOUNDARY

PROPOSED LIGHT BUS PICK-UP/DROP-OFF BAY [3m (W) X 8m (L) X 3.3m (H)]

AXON CONSULTANCY
http://www.axonhk.com

Columbarium

POND

Office
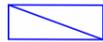
Appendix A

Proposed Widening Works near Villa Le Parc

北 N

TO FUNG SHAN ROAD

道風山路

墓地
Graves

荔華園

荔枝園
LAI CHI YUEN

A座
Block A

B座
Block B

高架道路

麗柏苑
Villa Le Parc

+48.0

37.4

+45.3
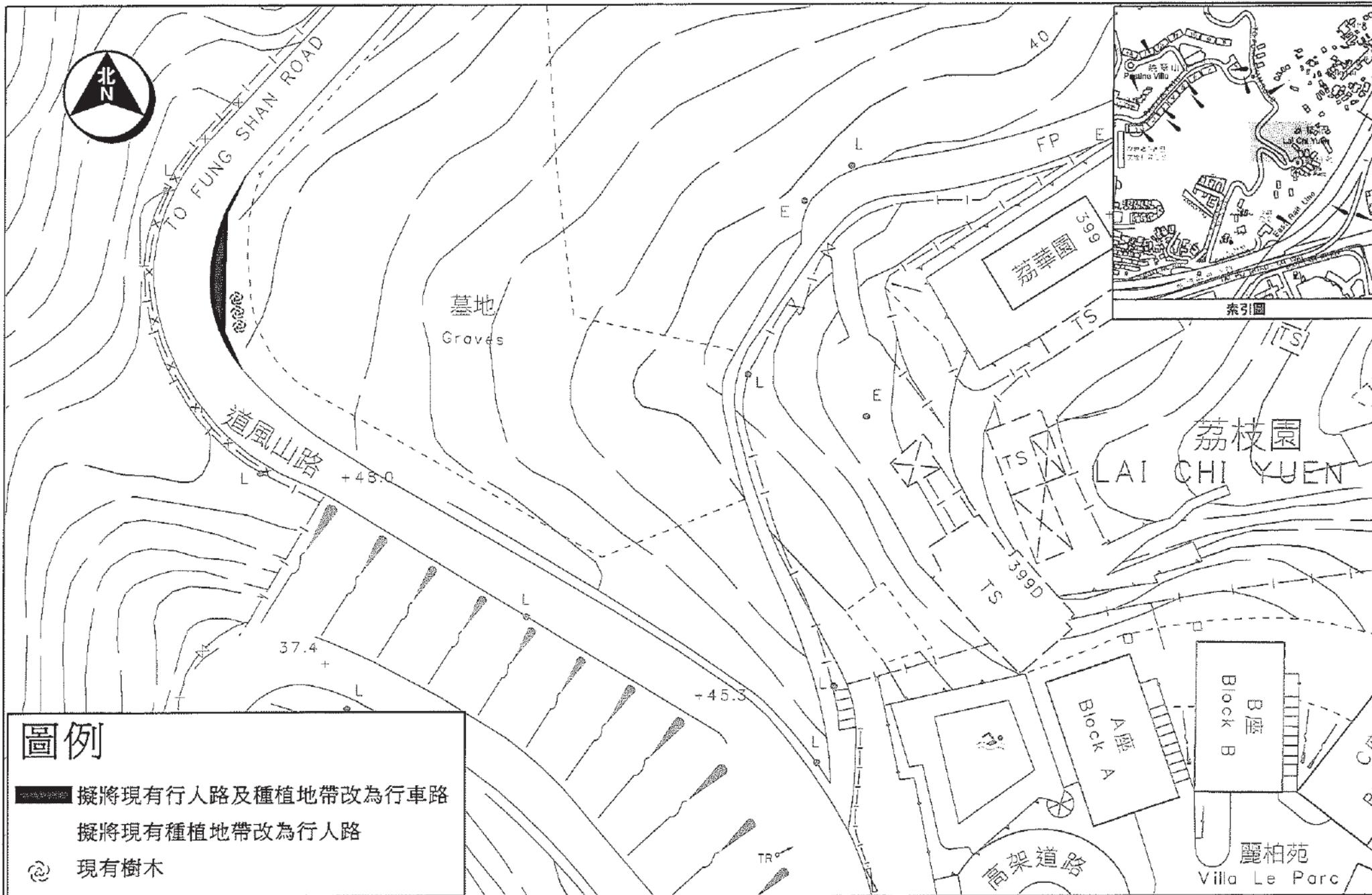
圖例

擬將現有行人路及種植地帶改為行車路

擬將現有種植地帶改為行人路

現有樹木

運輸署 Transport Department	交通工程部 (新界東)辦事處	圖則名稱：道風山路近麗柏苑			施工紙編號：
		輔助交通設備圖：E07R15D	比例：1：500(A4)	圖則日期：7/4/2022	圖則編號：E220251.00

Appendix B

Transport Department Notice

Transport Department
The Government of the Hong Kong Special Administrative Region

TRAFFIC NOTICES

<u>Transport Department Notice</u>
<u>Special Traffic Arrangements</u>
<u>in Sha Tin for Ching Ming Festival 2024</u>

Notice is hereby given that the following special traffic arrangements will be implemented in Sha Tin for Ching Ming Festival 2024:

A. <u>Po Fook Memorial Hall, Fu Shan Crematorium in Tai Wai and Po Fook Hill in Sha Tin</u>

From 7.00 am to 6.00 pm daily on 23, 24, 29, 30, 31 March and 1, 4, 6, 7, 13 and 14 April 2024, the following road sections will be closed to all vehicular traffic:

i. the section of Lower Shing Mun Road between Yau On Street and Fu Shan Crematorium, Yau On Street and Yau Ting Street (except for hearses, vehicles taking part in funeral processions, Green Minibus Route No. 64K, emergency vehicles and vehicles of residents of Pak Tin Areas 2 to 5 and Lakeview Garden); and

ii. the section of Pai Tau Street west of its junction with Sheung Wo Che Road (except for emergency vehicles).

B. <u>To Fung Shan</u>

From 9.00 am to 5.00 pm daily on 23, 24, 29, 30 and 31 March and 1, 4, 6, 7, 13 and 14 April 2024, the section of To Fung Shan Road north of its junction with Pak Lok Path (except for emergency vehicles and vehicles serving residents and persons working in To Fung Shan) will be closed to all vehicular traffic.

The section of To Fung Shan Road between Chung Ling Road and Pak Lok Path will be temporarily converted into one-lane two-way traffic from 9.00 am to 5.00 pm daily on 30 and 31 March and 1, 4, 6 and 7 April 2024.

C. Suspension of Parking Spaces

From 7.00 am to 6.00 pm daily on 23, 24, 29, 30, 31 March and 1, 4, 6, 7, 13 and 14 April 2024, all metered parking spaces on Yau On Street and Lower Shing Mun Road will be suspended.

During the above period of road closure, grave-sweepers are advised to make use of public transport to go to the above areas. Any vehicle found illegally parked near the above areas may be towed away by the Police without prior notice.

Appropriate traffic signs will be put up and Police Officers will be on-site to guide the public. Actual implementation of and adjustments to road closures and traffic control will be made by the Police at the time depending on conditions in the areas.

Members of public can browse the following website for details of the opening hour of Cemeteries and Crematoria:

Food and Environmental Hygiene Department (Cemeteries and Crematoria Services)	http://www.fehd.gov.hk/english/cc/introduction.html

LEE Chung-yan, Angela *Commissioner for Transport*

香港特別行政區政府
運輸署

交通通告

<div align="center">

運輸署公告

2024年清明節期間

在沙田實施的特別交通安排

</div>

現公布當局將於2024年清明節期間，在沙田實施下列特別交通安排：

A. <u>大圍寶福紀念館、富山火葬場及沙田寶福山</u>

在2024年3月23日、24日、29日、30日及31日、4月1日、4日、6日、7日、13日及14日，每日上午7時至晚上6時，下列路段將會封閉，禁止所有車輛駛入：

i. 介乎悠安街與富山火葬場之間的一段下城門道、悠安街及悠定街 (靈車、送殯行列車輛、專線小巴第64K號線、緊急車輛及白田二區至五區與湖景花園居民車輛除外)；及

ii. 排頭街由其與上禾輋路交界處以西的路段 (緊急車輛除外)。

B. <u>道風山</u>

在2024年3月23日、24日、29日、30日及31日、4月1日、4日、6日、7日、13日及14日，每日上午9時至下午5時，道風山路由其與百樂徑交界處以北的路段將會封閉，禁止所有車輛駛入(緊急車輛、道風山居民及道風山工作人士乘坐的車輛除外)。

在2024年3月30日及31日、4月1日、4日、6日及7日，每日上午9時至下午5時，松嶺路與百樂徑之間的一段道風山路，將會臨時實施單線雙程行車安排。

C. 暫停使用泊車位

在2024年3月23日、24日、29日、30日及31日、4月1日、4日、6日、7日、13日及14日，每日上午7時至晚上6時，位於悠安街及下城門道所有設有收費錶的泊車位將暫停使用。

在上述封路期間，前往上述地點的掃墓人士，應盡量乘搭公共交通工具。警方或會拖走在上述地點附近違例停泊的車輛，而毋須事先通知。

有關地點將設置適當交通標誌，警方將於現場指導公眾人士。警方將視乎當時情況而實施及調整封路及交通管制措施。

有關公眾墳場及火葬場的開放時間，市民可瀏覽以下網頁：

食物環境衛生署(墳場及火葬場服務)	http://www.fehd.gov.hk/tc_chi/cc/introduction.html

運輸署署長李頌恩

修訂日期：2024年3月19日

Transport Department
The Government of the Hong Kong Special Administrative Region

TRAFFIC NOTICES

<u>Transport Department Notice</u>
<u>Special Traffic Arrangements</u>
<u>in Sha Tin for Chung Yeung Festival 2024</u>

Notice is hereby given that the following special traffic arrangements will be implemented in Sha Tin for Chung Yeung Festival 2024:

A. Po Fook Memorial Hall and Fu Shan Crematorium in Tai Wai

From 8.00 am to 6.00 pm daily on 28 and 29 September and 1, 5, 6, 11, 12, 13, 19 and 20 October 2024, the following special traffic arrangements will be implemented:

i. <u>Road Closure</u>
The section of Lower Shing Mun Road between Yau On Street and Fu Shan Crematorium, Yau On Street and Yau Ting Street will be closed to all vehicular traffic (except for hearses, vehicles taking part in funeral processions, Green Minibus Route No. 64K, emergency vehicles and vehicles of residents of Pak Tin Areas 2 to 5 and Lakeview Garden).

ii. <u>Suspension of Parking Spaces</u>
All parking spaces on Yau On Street and Lower Shing Mun Road will be suspended.

B. Po Fook Hill in Sha Tin

From 8.00 am to 6.00 pm daily on 28 and 29 September and 1, 5, 6, 11, 12, 13, 19 and 20 October 2024, the western section of Pai Tau Street from its junction with Sheung Wo Che Road will be closed to all vehicular traffic (except for emergency vehicles).

C. To Fung Shan

i. <u>Road Closure</u>
From 9.00 am to 5.00 pm on 28 and 29 September and 1, 5, 6, 11, 12, 13, 19 and 20 October 2024, the northern section of To Fung Shan Road from its junction with Pak Lok Path will be closed to all vehicular traffic (except for emergency vehicles and vehicles serving residents and persons

working at To Fung Shan).

ii. <u>Traffic Direction</u>

From 9.00 am to 5.00 pm on 5, 6, 11, 12 and 13 October 2024, the section of To Fung Shan Road between Chung Ling Road and Pak Lok Path will be converted into one-lane two-way traffic.

During the implementation of the above special traffic arrangements, grave sweepers heading for the above areas are advised to make use of public transport. Any illegally parked vehicle near the above areas may be towed away by the Police without prior notice. Appropriate traffic signs will be erected on-site to guide the public. The Police would implement and adjust road closures and traffic control measures subject to situations on site.

Members of public can browse the website of Food and Environmental Hygiene Department (http://www.fehd.gov.hk/english/cc/introduction.html) for details of the opening hours of Cemeteries and Crematoria.

LEE Chung-yan, Angela *Commissioner for Transport*

Last revision date: 25 Sep 2024

香港特別行政區政府
運輸署

交通通告

運輸署公告
2024年重陽節期間沙田區特別交通安排

現公布，當局將於2024年重陽節期間，在沙田區實施下列特別交通安排：

A. 大圍寶福紀念館及富山火葬場

在2024年9月28日、29日及10月1日、5日、6日、11日、12日、13日、19日及20日，由上午8時至晚上6時，實施下列特別交通安排：

i. 道路封閉
介乎悠安街與富山火葬場之間的一段下城門道、悠安街及悠定街將會封閉，禁止所有車輛駛入（靈車、送殯行列車輛、專線小巴第64K號線、緊急車輛及白田二區至五區與湖景花園居民車輛除外）。

ii. 暫停使用泊車位
位於悠安街及下城門道所有泊車位將暫停使用。

B. 沙田寶福山

在2024年9月28日、29日及10月1日、5日、6日、11日、12日、13日、19日及20日，由上午8時至晚上6時，排頭街由其與上禾輋路交界處以西的路段將會封閉，禁止所有車輛駛入（緊急車輛除外）。

C. 道風山

i. 道路封閉
在2024年9月28日、29日及10月1日、5日、6日、11日、12日、13日、19日及20日，由上午9時至下午5時，道風山路由其與百樂徑交界處以北的路段將會封閉，禁止所有車輛駛入（緊急車輛、道風山居民及道風山工作人士車輛除外）。

ii. 行車方向
在2024年10月5日、6日、11日、12日及13日，由上午9時至下午5時，介乎松嶺路與百樂徑之間的一段道風山路將會實施單線雙程行車。

在實施上述特別交通安排期間,前往上述地點的掃墓人士,應盡量乘搭公共交通工具。警方或會拖走在上述地點附近違例停泊的車輛,而毋須事先通知。有關地點將設置適當交通標誌,指導公眾人士。警方將視乎當時情況而實施及調整封路及交通管制措施。

市民可瀏覽食物環境衛生署網頁(http://www.fehd.gov.hk/tc_chi/cc/introduction.html),查詢有關墳場及火葬場的開放時間。

運輸署署長李頌恩

修訂日期:2024年9月25日

Appendix C

Junction Analysis

AXON CONSULTANCY LIMITED — TRAFFIC SIGNAL CALCULATION

	INITIALS	DATE
Traffic Impact Assessment for Proposed Application for Amendment of Plan for Rezoning of Ching To Yuen from "Green Belt" Zone to "Government, Institution or Community (1)" Zone Project No.: 31036 Prepared By:	JK	11/7/2025
at Lot Nos. 374, 375 S.A and 375 S.B in D.D.186, To Fung Shan, Sha Tin Checked By:	SY	11/7/2025
J1 - Tai Wai Road / Tsuen Nam Road 2024 Observed Traffic Flow (Ching Ming Festival Peak Hour) Reviewed By:	AW	11/7/2025

Tai Wai Road

Tsuen Nam Road   [3]   199

389   [1]

225   [2]   Tsuen Nam Road

No. of critical vehicluar phase per cycle: N = 2

Intergreen Period	Stage A - B	I =	5	sec
	Stage B - C	I =	2	sec
	Stage C - A	I =	5	sec

Cycle time	C =	104	sec
Sum(y)	Y =	0.303	
Loss time	L =	18	sec
Total Flow	=	813	pcu
Co	= (1.5*L+5)/(1-Y)	=	45.9	sec
Cm	= L/(1-Y)	=	25.8	sec
Yult	= 0.9-0.0075L	=	0.765	
R.C.ult	= (Yult-Y)/Y*100%	=	152.8	%
Cp	= 0.9*L/(0.9-Y)	=	27.1	sec
Ymax	= 1-L/C	=	0.827	
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	=	145.9	%

Existing Method of Control

A   B   C

Pedestrian Phase	Width (m)	Stage no.	Green Time Required (s) SG	FG	Green Time Provided (s) SG	FG	Check
4		B,C	5	7	34	7	OK
5		B,C	5	7	34	7	OK
6		A,B	5	6	61	6	OK

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Left Flow pcu/h	Straight Flow pcu/h	Right Flow pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Flare lane Effect	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m/lane)	Average Delay (sec)
1	A	3.5	1	1	20			2105			389	389	1.00	1958			1958	0.199	0.199		56	56	0.366	26	14
2	A	3.5	2	1				2105		225		225	0.00	2105			2105	0.107			30	56	0.197	15	13
3	C	3.5	3	1	15			2105	199			199	1.00	1914			1914	0.104	0.104		30	30	0.366	21	31

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NOTE :   O - OPPOSING TRAFFIC   N - NEAR SIDE LANE   SG - STEADY GREEN   FG - FLASHING GREEN   PEDESTRAIN WALKING SPEED = 1.2m/s   QUEUING LENGTH = AVERAGE QUEUE * 6m

AXON CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

	INITIALS	DATE
Traffic Impact Assessment for Proposed Application for Amendment of Plan for Rezoning of Ching To Yuen from "Green Belt" Zone to "Government, Institution or Community (1)" Zone Project No.: 31036	Prepared By: JK	11/7/2025
at Lot Nos. 374, 375 S.A and 375 S.B in D.D.186, To Fung Shan, Sha Tin	Checked By: SY	11/7/2025
J2 - Tai Wai Road / Chik Fai Street	2024 Observed Traffic Flow (Ching Ming Festival Peak Hour) Reviewed By: AW	11/7/2025

Tai Wai Road

Tai Wai Road

← 134 [3]

← 417 [2]

231 240

[4] [1]

Chik Fai Street

No. of critical vehicluar phase per cycle:	N =	1	
Intergreen Period Stage A - B	I =	2	sec
Stage B - C	I =	4	sec
Stage C - A	I =	0	sec
Cycle time	C =	106	sec
Sum(y)	Y =	0.218	
Loss time	L =	21	sec
Total Flow	=	1022	pcu
Co = (1.5*L+5)/(1-Y)	=	46.7	sec
Cm = L/(1-Y)	=	26.9	sec
Yult = 0.9-0.0075L	=	0.743	
R.C.ult = (Yult-Y)/Y*100%	=	240.7	%
Cp = 0.9*L/(0.9-Y)	=	27.7	sec
Ymax = 1-L/C	=	0.802	
R.C.(C) = (0.9*Ymax-Y)/Y*100%	=	231.2	%

Existing Method of Control

A   CHIK FAI STREET   D1-2   TAI WAI ROAD

B

C

Pedestrian Phase	Width (m)	Stage no.	Green Time Required (s) SG	FG	Green Time Provided (s) SG	FG	Check
4		C	5	9	5	9	OK
5		B,C	5	9	37	9	OK

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Left Flow pcu/h	Straight Flow pcu/h	Right Flow pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Flare lane Effect	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m/lane)	Average Delay (sec)
4	A	3.5	1	1	15			2105	231			231	1.00	1914			1914	0.121			47	53	0.243	17	16
1	A	3.5	1	1	20			2105			240	240	1.00	1958			1958	0.123			48	53	0.247	18	16
3	B	3.5	3	1				2105		134		134	0.00	2105			2105	0.064			25	27	0.247	15	32
2	A,B	3.5	2	1	15			2105	417			417	1.00	1914			1914	0.218	0.218		85	85	0.272	12	3

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NOTE :   O - OPPOSING TRAFFIC   N - NEAR SIDE LANE   SG - STEADY GREEN   FG - FLASHING GREEN   PEDESTRAIN WALKING SPEED = 1.2m/s   QUEUING LENGTH = AVERAGE QUEUE * 6m

AXON CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

	INITIALS	DATE
Traffic Impact Assessment for Proposed Application for Amendment of Plan for Rezoning of Ching To Yuen from "Green Belt" Zone to "Government, Institution or Community (1)" Zone	Project No.: 31036	Prepared By:	JK	11/7/2025
at Lot Nos. 374, 375 S.A and 375 S.B in D.D.186, To Fung Shan, Sha Tin		Checked By:	SY	11/7/2025
J3 - Tai Po Road - Tai Wai / Tai Wai Road	2024 Observed Traffic Flow (Ching Ming Festival Peak Hour)	Reviewed By:	AW	11/7/2025

Tai Po Road - Tai Wai

[1] 432 →
[2] 159

[6] ← 395
[5] ← 84

Tai Po Road - Tai Wai

143 149
[3] [4]

Tai Wai Road

No. of critical vehicluar phase per cycle:	N =	3	
Intergreen Period Stage A - B	I =	5	sec
Stage B - C	I =	5	sec
Stage C - D	I =	2	sec
Stage D - A	I =	7	sec

Cycle time	C =	104	sec
Sum(y)	Y =	0.227	
Loss time	L =	42	sec
Total Flow	=	1362	pcu
Co = (1.5*L+5)/(1-Y)	=	87.9	sec
Cm = L/(1-Y)	=	54.3	sec
Yult = 0.9-0.0075L	=	0.585	
R.C.ult = (Yult-Y)/Y*100%	=	158.1	%
Cp = 0.9*L/(0.9-Y)	=	56.1	sec
Ymax = 1-L/C	=	0.596	
R.C.(C) = (0.9*Ymax-Y)/Y*100%	=	136.7	%

Existing Method of Control

Pedestrian Phase	Width (m)	Stage no.	Green Time Required (s)		Green Time Provided (s)		Check
			SG	FG	SG	FG	
5		A,B,C	5	7	65	7	OK
6		B,C	10	14	54	14	OK
7		C,D,A	5	5	70	5	OK
8		C,D	5	9	45	9	OK
9		C,D	5	9	40	9	OK

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Left Flow pcu/h	Straight Flow pcu/h	Right Flow pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Flare lane Effect	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m/lane)	Average Delay (sec)
1	A,B	3.5	4	2				4210		432		432	0.00	4210			4210	0.103				28	42	0.252	19	21
2	B	3.5	2	1	20			2105		159	159	159	1.00	1958			1958	0.081	0.081		22	22	0.380	18	36
6	A	3.5	1	3				6315		395		395	0.00	6315			6315	0.063	0.063		17	17	0.380	16	39
5	A	3.5	1	1	15			2105	84			84	1.00	1914			1914	0.044			12	17	0.267	10	39
3	D	3.4	V4	1	10		N	1955		141		141	1.00	1700			1700	0.083	0.083		23	23	0.380	16	36
3,4	D	3.4	V4	1	10			2095	149	2		151	1.00	1822			1822	0.083			23	23	0.380	17	36

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NOTE :   O - OPPOSING TRAFFIC   N - NEAR SIDE LANE   SG - STEADY GREEN   FG - FLASHING GREEN   PEDESTRAIN WALKING SPEED = 1.2m/s   QUEUING LENGTH = AVERAGE QUEUE * 6m

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PRIORITY JUNCTION CALCULATION

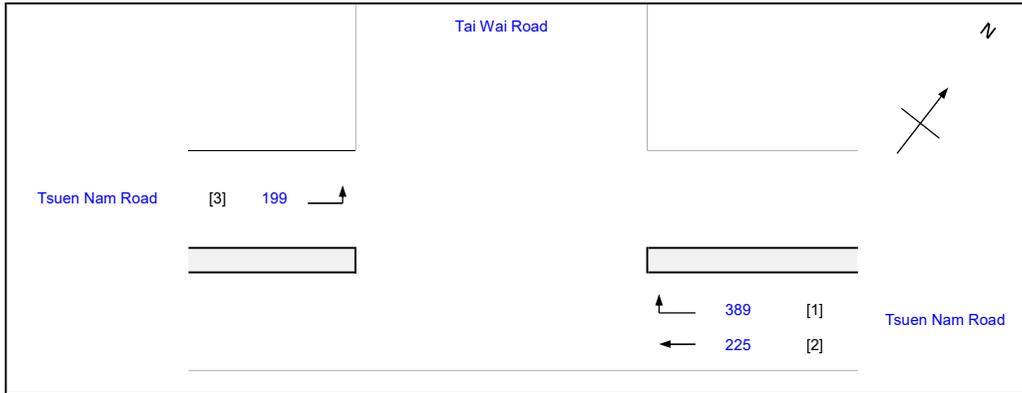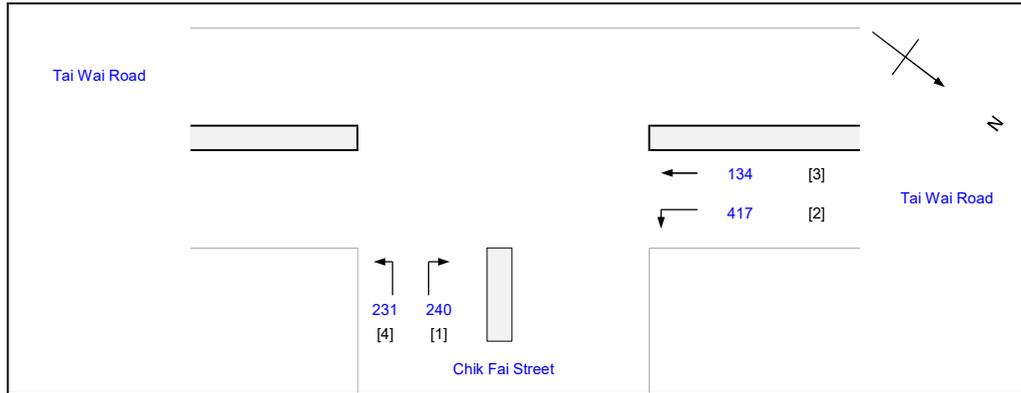|	INITIALS	DATE
Traffic Impact Assessment for Proposed Application for Amendment of Plan for Rezoning of Ching To Yuen from "Green Belt" Zone to "Government, Institution or Community (1)" Zone Project No.: 31036	Prepared By: JK	11/7/2025
at Lot Nos. 374, 375 S.A and 375 S.B in D.D.186, To Fung Shan, Sha Tin	Checked By: SY	11/7/2025
J4 - Chung Ling Road / Tung Lo Wan Hill Road	2024 Observed Traffic Flow (Ching Ming Festival Peak Hour)	Reviewed By: AW	11/7/2025

Tung Lo Wan Hill Road

[4]   [3]
0   144

Chung Ling Road

[5]   128

[6]   88

0   [2]

Chung Ling Road

0   [1]

N

NOTES : (GEOMETRIC INPUT DATA)

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:

MAJOR ROAD (ARM A)

W	=	7.8	(metres)
W cr	=	0	(metres)
q a-b	=	128	(pcu/hr)
q a-c	=	88	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	2.1	(metres)
Vr c-b	=	50.0	(metres)
q c-a	=	0	(pcu/hr)
q c-b	=	0	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	3.1	(metres)
W b-c	=	3.1	(metres)
Vl b-a	=	50.0	(metres)
Vr b-a	=	50.0	(metres)
Vr b-c	=	50.0	(metres)
q b-a	=	0	(pcu/hr)
q b-c	=	144	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.835
E	=	0.889
F	=	0.8
Y	=	0.731
F for (Qb-ac)	=	1

THE CAPACITY OF MOVEMENT :

Q b-a	=	493	(pcu/hr)
Q b-c	=	629	(pcu/hr)
Q c-b	=	550	(pcu/hr)
Q b-ac	=	629	(pcu/hr)
TOTAL FLOW =		360	(pcu/hr)

COMPARISION OF DESIGN FLOW TO CAPACITY:

DFC b-a	=	0.0000
DFC b-c	=	0.2289
DFC c-b	=	0.0000

CRITICAL DFC	**=**	**0.23**

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TRAFFIC SIGNAL CALCULATION

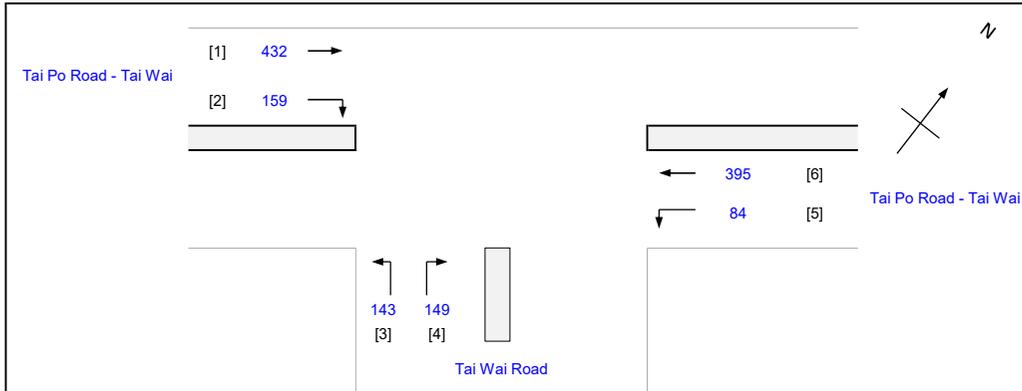|	INITIALS	DATE
Traffic Impact Assessment for Proposed Application for Amendment of Plan for Rezoning of Ching To Yuen from "Green Belt" Zone to "Government, Institution or Community (1)" Zone Project No.: 31036	Prepared By: JK	11/7/2025
at Lot Nos. 374, 375 S.A and 375 S.B in D.D.186, To Fung Shan, Sha Tin	Checked By: SY	11/7/2025
J5 - Tai Po Road - Tai Wai / Shing Chuen Road / Ching Ling Road 2024 Observed Traffic Flow (Ching Ming Festival Peak Hour)	Reviewed By: AW	11/7/2025

Chung Ling Road

[2] [1]
118 99

Tai Po Road - Tai Wai [3] 207 →

← 597 [6] Tai Po Road - Tai Wai

62 25
[4] [5]
Shing Chuen Road

No. of critical vehicluar phase per cycle:	N =	3	
Intergreen Period Stage A - B	I =	5	sec
Stage B - C	I =	7	sec
Stage C - A	I =	6	sec
Cycle time	C =	80	sec
Sum(y)	Y =	0.189	
Loss time	L =	15	sec
Total Flow	=	1108	pcu
Co = (1.5*L+5)/(1-Y)	=	33.9	sec
Cm = L/(1-Y)	=	18.5	sec
Yult = 0.9-0.0075L	=	0.788	
R.C.ult = (Yult-Y)/Y*100%	=	317.3	%
Cp = 0.9*L/(0.9-Y)	=	19.0	sec
Ymax = 1-L/C	=	0.813	
R.C.(C) = (0.9*Ymax-Y)/Y*100%	=	287.5	%

Existing Method of Control

Pedestrian Phase	Width (m)	Stage no.	Green Time Required (s) SG	FG	Green Time Provided (s) SG	FG	Check
5		C,A	5	14	49	14	OK
6		A,B	5	15	10	15	OK

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Left Flow pcu/h	Straight Flow pcu/h	Right Flow pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Flare lane Effect	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m/lane)	Average Delay (sec)
3	A	3.5	2	2				4210		207		207	0.00	4210			4210	0.049			17	49	0.081	4	6
6	A	3.5	1	2				4210		597		597	0.00	4210			4210	0.142	0.142		49	49	0.232	13	7
2	B	3.5	3	2	20			4210			118	118	1.00	3916			3916	0.030			10	10	0.232	6	32
1	B	3.5	3	2	15		N	4070	99			99	1.00	3700			3700	0.027	0.030		9	10	0.206	5	32
4	C	3.5	4	2	15		N	4070	62			62	1.00	3700			3700	0.017	0.017		6	6	0.232	3	36
5	C	3.5	4	2	20			4210			25	25	1.00	3916			3916	0.006			2	6	0.088	1	35

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NOTE :   O - OPPOSING TRAFFIC   N - NEAR SIDE LANE   SG - STEADY GREEN   FG - FLASHING GREEN   PEDESTRAIN WALKING SPEED = 1.2m/s   QUEUING LENGTH = AVERAGE QUEUE * 6m

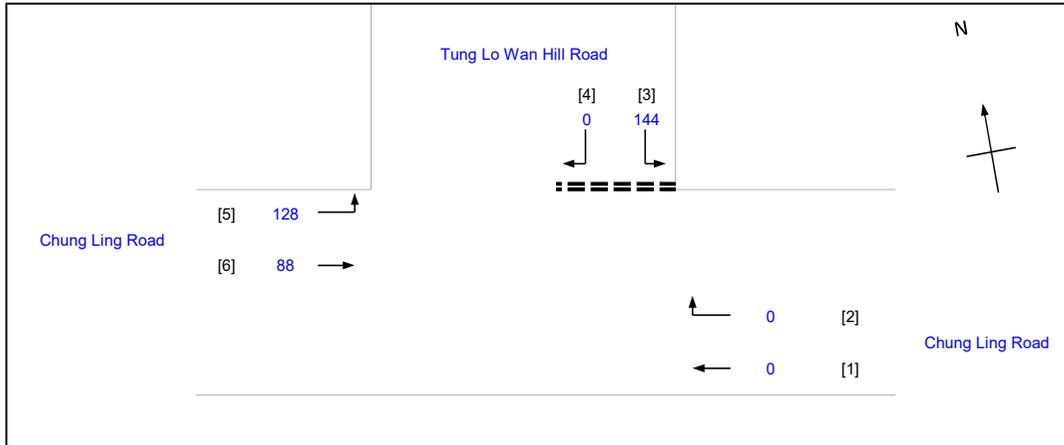|			
Traffic Impact Assessment for Proposed Application for Amendment of Plan for Rezoning of Ching To Yuen from "Green Belt" Zone to "Government, Institution or Community (1)" Zone	Project No.: 31036	Prepared By:	JK	11/7/2025
at Lot Nos. 374, 375 S.A and 375 S.B in D.D.186, To Fung Shan, Sha Tin		Checked By: SY	11/7/2025
TCA-1 - Tao Fung Shan Road - Lower Section Between Ching Ling Road and Pak Lok Path	2024 Observed Traffic Flow (Ching Ming Festival Peak Hour)	Reviewed By: AW	11/7/2025

Tao Fung Shan Road Uphill [1] 19 →

← 24 [2] Tao Fung Shan Road Downhill

N

No. of critical vehicluar phase per cycle: N = 2

Intergreen Period Stage A - B I = 120 sec
Stage B - A I = 120 sec

Cycle time C = 270 sec
Sum(y) Y = 0.022
Loss time L = 238 sec
Total Flow = 43 pcu
$Co = (1.5*L+5)/(1-Y)$ = 370.1 sec
$Cm = L/(1-Y)$ = 243.3 sec
$Yult = 0.9-0.0075L$ =
$R.C.ult = (Yult-Y)/Y*100\%$ =
$Cp = 0.9*L/(0.9-Y)$ = 243.9 sec
$Ymax = 1-L/C$ = 0.119
$R.C.(C) = (0.9*Ymax-Y)/Y*100\%$ = 387.4 %

Existing Method of Control

A | B

→ 1

2 ←

Pedestrian Phase	Width (m)	Stage no.	Green Time Required (s) SG	FG	Green Time Provided (s) SG	FG	Check

	Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Left Flow pcu/h	Straight Flow pcu/h	Right Flow pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Flare lane Effect	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m/lane)	Average Delay (sec)
→	1	A	3.5	1	1			N	1965		19		19	0.00	1965			1965	0.010	0.010		14	16	0.163	7	121
←	2	B	3.5	2	1			N	1965		24		24	0.00	1965			1965	0.012	0.012		18	16	0.206	8	122

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NOTE : O - OPPOSING TRAFFIC   N - NEAR SIDE LANE   SG - STEADY GREEN   FG - FLASHING GREEN   PEDESTRAIN WALKING SPEED = 1.2m/s   QUEUING LENGTH = AVERAGE QUEUE * 6m

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TRAFFIC SIGNAL CALCULATION

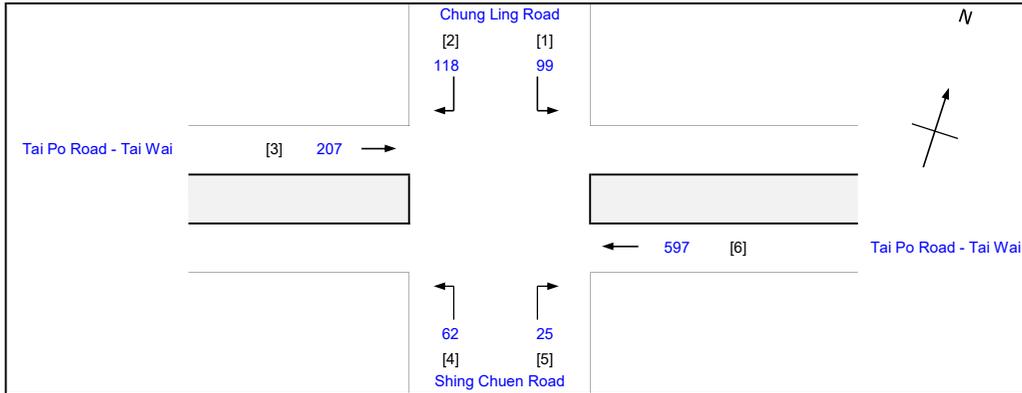|	INITIALS	DATE
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at Lot Nos. 374, 375 S.A and 375 S.B in D.D.186, To Fung Shan, Sha Tin Checked By:	SY	11/7/2025
J1 - Tai Wai Road / Tsuen Nam Road 2024 Observed Traffic Flow (Chung Yeung Festival Peak Hour) Reviewed By:	AW	11/7/2025

Tai Wai Road

Tsuen Nam Road [3] 163

450 [1]

155 [2]

Tsuen Nam Road

No. of critical vehicluar phase per cycle:	N =	2	
Intergreen Period Stage A - B	I =	5	sec
Stage B - C	I =	2	sec
Stage C - A	I =	5	sec
Cycle time	C =	104	sec
Sum(y)	Y =	0.315	
Loss time	L =	18	sec
Total Flow	=	768	pcu
Co $= (1.5*L+5)/(1-Y)$	=	46.7	sec
Cm $= L/(1-Y)$	=	26.3	sec
Yult $= 0.9-0.0075L$	=	0.765	
R.C.ult $= (Yult-Y)/Y*100\%$	=	142.9	%
Cp $= 0.9*L/(0.9-Y)$	=	27.7	sec
Ymax $= 1-L/C$	=	0.827	
R.C.(C) $= (0.9*Ymax-Y)/Y*100\%$	=	136.3	%

Existing Method of Control

A B C

Pedestrian Phase	Width (m)	Stage no.	Green Time Required (s) SG	FG	Green Time Provided (s) SG	FG	Check
4		B,C	5	7	27	7	OK
5		B,C	5	7	27	7	OK
6		A,B	5	6	68	6	OK

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Left Flow pcu/h	Straight Flow pcu/h	Right Flow pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Flare lane Effect	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m/lane)	Average Delay (sec)
1	A	3.5	1	1	20			2105			450	450	1.00	1958			1958	0.230	0.230		63	63	0.381	26	11
2	A	3.5	2	1				2105		155		155	0.00	2105			2105	0.074			20	63	0.122	9	9
3	C	3.5	3	1	15			2105	163			163	1.00	1914			1914	0.085	0.085		23	23	0.381	18	36

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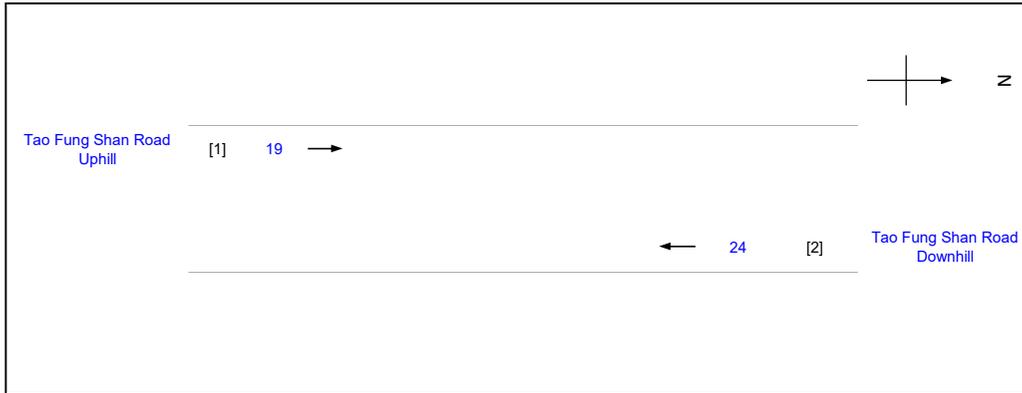
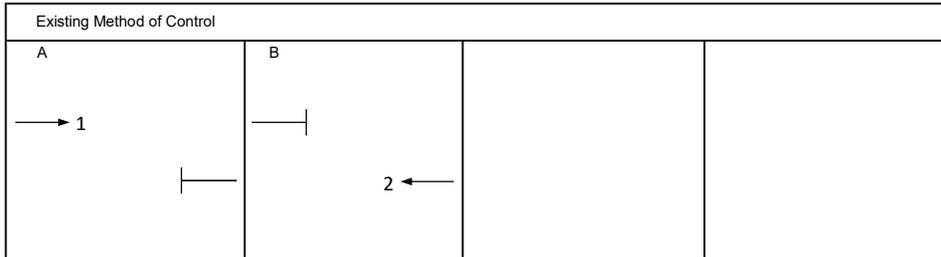NOTE : O - OPPOSING TRAFFIC   N - NEAR SIDE LANE   SG - STEADY GREEN   FG - FLASHING GREEN   PEDESTRAIN WALKING SPEED = 1.2m/s   QUEUING LENGTH = AVERAGE QUEUE * 6m

AXON CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

	INITIALS	DATE
Traffic Impact Assessment for Proposed Application for Amendment of Plan for Rezoning of Ching To Yuen from "Green Belt" Zone to "Government, Institution or Community (1)" Zone Project No.: 31036	Prepared By: JK	11/7/2025
at Lot Nos. 374, 375 S.A and 375 S.B in D.D.186, To Fung Shan, Sha Tin	Checked By: SY	11/7/2025
J2 - Tai Wai Road / Chik Fai Street 2024 Observed Traffic Flow (Chung Yeung Festival Peak Hour)	Reviewed By: AW	11/7/2025

Tai Wai Road

Tai Wai Road

← 160 [3]

↓ 396 [2]

↰ 264   ↱ 233

[4]   [1]

Chik Fai Street

No. of critical vehicluar phase per cycle:	N =	1	
Intergreen Period Stage A - B	I =	2	sec
Stage B - C	I =	4	sec
Stage C - A	I =	0	sec
Cycle time	C =	106	sec
Sum(y)	Y =	0.207	
Loss time	L =	21	sec
Total Flow	=	1053	pcu
Co = (1.5*L+5)/(1-Y)	=	46.0	sec
Cm = L/(1-Y)	=	26.5	sec
Yult = 0.9-0.0075L	=	0.743	
R.C.ult = (Yult-Y)/Y*100%	=	258.8	%
Cp = 0.9*L/(0.9-Y)	=	27.3	sec
Ymax = 1-L/C	=	0.802	
R.C.(C) = (0.9*Ymax-Y)/Y*100%	=	248.8	%

Existing Method of Control

Pedestrian Phase	Width (m)	Stage no.	Green Time Required (s) SG	FG	Green Time Provided (s) SG	FG	Check
4		C	5	9	5	9	OK
5		B,C	5	9	38	9	OK

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Left Flow pcu/h	Straight Flow pcu/h	Right Flow pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Flare lane Effect	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m/lane)	Average Delay (sec)
4	A	3.5	1	1	15			2105	264			264	1.00	1914			1914	0.138			57	52	0.284	20	17
1	A	3.5	1	1	20			2105			233	233	1.00	1958			1958	0.119			49	52	0.245	18	16
3	B	3.5	3	1				2105		160		160	0.00	2105			2105	0.076			31	28	0.284	17	32
2	A,B	3.5	2	1	15			2105	396			396	1.00	1914			1914	0.207	0.207		85	85	0.258	12	3

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NOTE :   O - OPPOSING TRAFFIC   N - NEAR SIDE LANE   SG - STEADY GREEN   FG - FLASHING GREEN   PEDESTRAIN WALKING SPEED = 1.2m/s   QUEUING LENGTH = AVERAGE QUEUE * 6m

AXON CONSULTANCY LIMITED — TRAFFIC SIGNAL CALCULATION

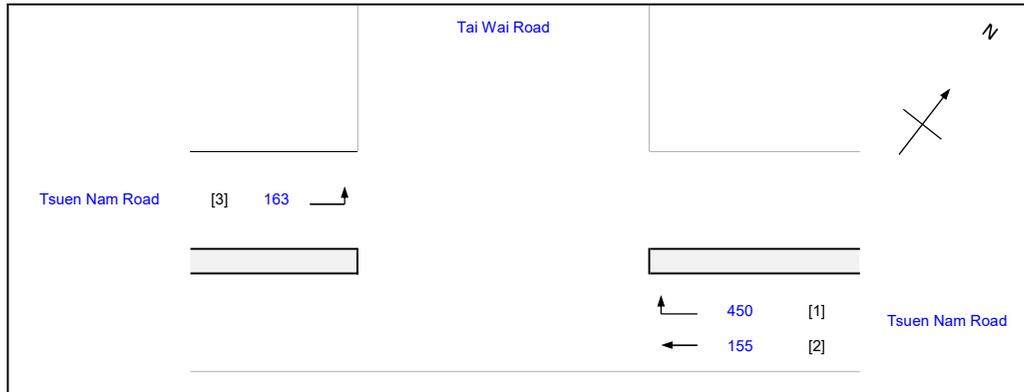|	INITIALS	DATE
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at Lot Nos. 374, 375 S.A and 375 S.B in D.D.186, To Fung Shan, Sha Tin	Checked By: SY	11/7/2025
J3 - Tai Po Road - Tai Wai / Tai Wai Road — 2024 Observed Traffic Flow (Chung Yeung Festival Peak Hour)	Reviewed By: AW	11/7/2025

Tai Po Road - Tai Wai
- [1] 395 →
- [2] 146 →
- [6] ← 410
- [5] ← 98
- Tai Po Road - Tai Wai
- [3] 163 [4] 149
- Tai Wai Road

No. of critical vehicluar phase per cycle:		N =	3	
Intergreen Period	Stage A - B	I =	5	sec
	Stage B - C	I =	5	sec
	Stage C - D	I =	2	sec
	Stage D - A	I =	7	sec
Cycle time		C =	104	sec
Sum(y)		Y =	0.228	
Loss time		L =	42	sec
Total Flow		=	1361	pcu
Co	= (1.5*L+5)/(1-Y)	=	88.1	sec
Cm	= L/(1-Y)	=	54.4	sec
Yult	= 0.9-0.0075L	=	0.585	
R.C.ult	= (Yult-Y)/Y*100%	=	156.5	%
Cp	= 0.9*L/(0.9-Y)	=	56.3	sec
Ymax	= 1-L/C	=	0.596	
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	=	135.2	%

Existing Method of Control

Pedestrian Phase	Width (m)	Stage no.	Green Time Required (s) SG	FG	Green Time Provided (s) SG	FG	Check
5		A,B,C	5	7	64	7	OK
6		B,C	10	14	52	14	OK
7		C,D,A	5	5	72	5	OK
8		C,D	5	9	46	9	OK
9		C,D	5	9	41	9	OK

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Left Flow pcu/h	Straight Flow pcu/h	Right Flow pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Flare lane Effect	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m/lane)	Average Delay (sec)
1	A,B	3.5	4	2				4210		395		395	0.00	4210			4210	0.094				26	41	0.238	17	21
2	B	3.5	2	1	20			2105		146	146	146	1.00	1958			1958	0.075	0.075		20	20	0.383	17	38
6	A	3.5	1	3				6315		410		410	0.00	6315			6315	0.065	0.065		18	18	0.383	16	39
5	A	3.5	1	1	15			2105	98			98	1.00	1914			1914	0.051			14	18	0.302	12	39
3	D	3.4	V4	1	10		N	1955		151		151	1.00	1700			1700	0.089	0.089		24	24	0.383	17	35
3,4	D	3.4	V4	1	10			2095	149	12		161	1.00	1822			1822	0.089			24	24	0.383	18	35

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NOTE : O - OPPOSING TRAFFIC   N - NEAR SIDE LANE   SG - STEADY GREEN   FG - FLASHING GREEN   PEDESTRAIN WALKING SPEED = 1.2m/s   QUEUING LENGTH = AVERAGE QUEUE * 6m

AXON CONSULTANCY LIMITED

PRIORITY JUNCTION CALCULATION

	INITIALS	DATE

Traffic Impact Assessment for Proposed Application for Amendment of Plan for Rezoning of Ching To Yuen from "Green Belt" Zone to "Government, Institution or Community (1)" Zone | Project No.: 31036 | Prepared By: JK | 11/7/2025

at Lot Nos. 374, 375 S.A and 375 S.B in D.D.186, To Fung Shan, Sha Tin | | Checked By: SY | 11/7/2025
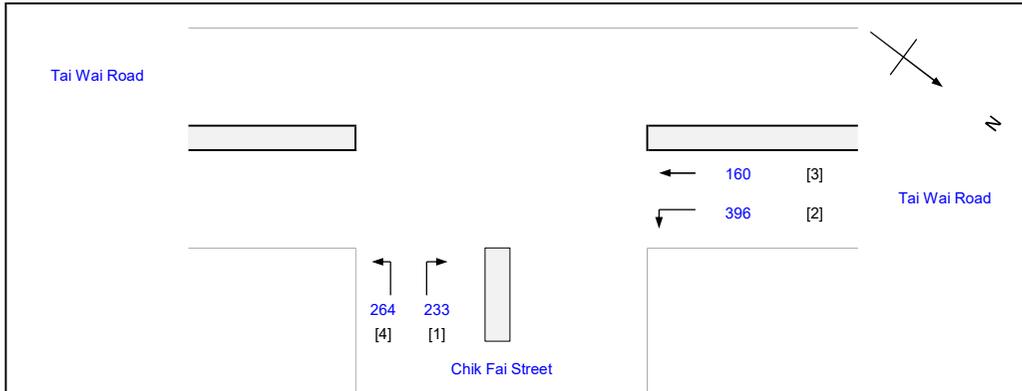
J4 - Chung Ling Road / Tung Lo Wan Hill Road | 2024 Observed Traffic Flow (Chung Yeung Festival Peak Hour) | Reviewed By: AW | 11/7/2025

N

Tung Lo Wan Hill Road

[4]   [3]
0   156

[5]   126

Chung Ling Road

[6]   79

0   [2]

Chung Ling Road

0   [1]

NOTES : (GEOMETRIC INPUT DATA)

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:

MAJOR ROAD (ARM A)

W	=	7.8	(metres)
W cr	=	0	(metres)
q a-b	=	126	(pcu/hr)
q a-c	=	79	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	2.1	(metres)
Vr c-b	=	50.0	(metres)
q c-a	=	0	(pcu/hr)
q c-b	=	0	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	3.1	(metres)
W b-c	=	3.1	(metres)
Vl b-a	=	50.0	(metres)
Vr b-a	=	50.0	(metres)
Vr b-c	=	50.0	(metres)
q b-a	=	0	(pcu/hr)
q b-c	=	156	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.835
E	=	0.889
F	=	0.8
Y	=	0.731
F for (Qb-ac)	=	1

THE CAPACITY OF MOVEMENT :

Q b-a	=	495	(pcu/hr)
Q b-c	=	632	(pcu/hr)
Q c-b	=	553	(pcu/hr)
Q b-ac	=	632	(pcu/hr)
TOTAL FLOW	=	361	(pcu/hr)

COMPARISION OF DESIGN FLOW TO CAPACITY:

DFC b-a	=	0.0000
DFC b-c	=	0.2468
DFC c-b	=	0.0000
CRITICAL DFC	**=**	**0.25**

AXON CONSULTANCY LIMITED — TRAFFIC SIGNAL CALCULATION

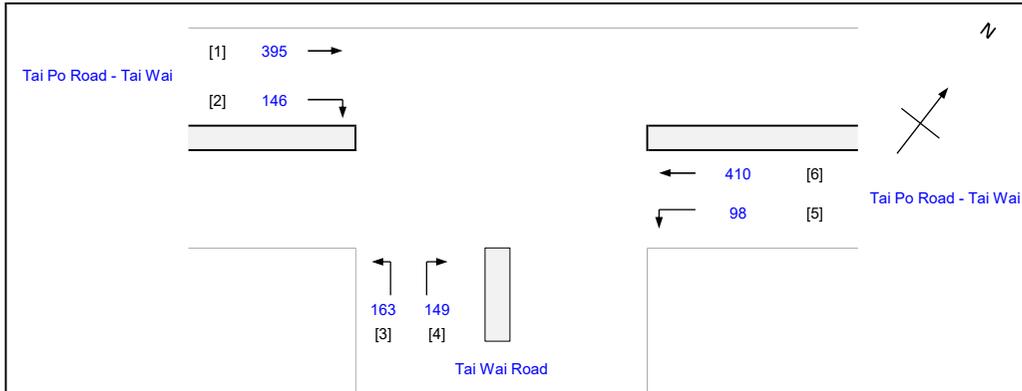|	INITIALS	DATE
Traffic Impact Assessment for Proposed Application for Amendment of Plan for Rezoning of Ching To Yuen from "Green Belt" Zone to "Government, Institution or Community (1)" Zone Project No.: 31036 Prepared By:	JK	11/7/2025
at Lot Nos. 374, 375 S.A and 375 S.B in D.D.186, To Fung Shan, Sha Tin Checked By:	SY	11/7/2025
J5 - Tai Po Road - Tai Wai / Shing Chuen Road / Ching Ling Road 2024 Observed Traffic Flow (Chung Yeung Festival Peak Hour) Reviewed By:	AW	11/7/2025

Junction diagram

Chung Ling Road
[2] 130 [1] 113

Tai Po Road - Tai Wai [3] 214 →

← 584 [6] Tai Po Road - Tai Wai

[4] 67 [5] 130
Shing Chuen Road

Calculation parameters

No. of critical vehicluar phase per cycle:		N =	3	
Intergreen Period	Stage A - B	I =	5	sec
	Stage B - C	I =	7	sec
	Stage C - A	I =	6	sec
Cycle time		C =	80	sec
Sum(y)		Y =	0.205	
Loss time		L =	15	sec
Total Flow		=	1238	pcu
Co	= (1.5*L+5)/(1-Y)	=	34.6	sec
Cm	= L/(1-Y)	=	18.9	sec
Yult	= 0.9-0.0075L	=	0.788	
R.C.ult	= (Yult-Y)/Y*100%	=	283.9	%
Cp	= 0.9*L/(0.9-Y)	=	19.4	sec
Ymax	= 1-L/C	=	0.813	
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	=	256.5	%
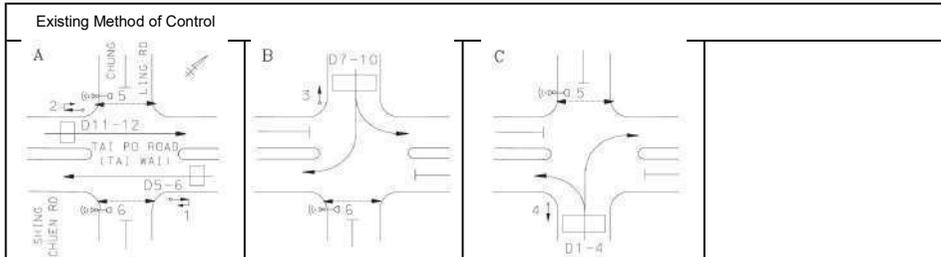
Existing Method of Control

Pedestrian Phase table

Pedestrian Phase	Width (m)	Stage no.	Green Time Required (s) SG	FG	Green Time Provided (s) SG	FG	Check
5		C,A	5	14	49	14	OK
6		A,B	5	15	16	15	OK

Movement table

Movement	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Left Flow pcu/h	Straight Flow pcu/h	Right Flow pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Flare lane Effect	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m/lane)	Average Delay (sec)
3	A	3.5	2	2				4210		214		214	0.00	4210			4210	0.051				16	44	0.093	5	9
6	A	3.5	1	2				4210		584		584	0.00	4210			4210	0.139	0.139			44	44	0.252	15	10
2	B	3.5	3	2	20			4210			130	130	1.00	3916			3916	0.033				11	11	0.252	6	32
1	B	3.5	3	2	15		N	4070	113			113	1.00	3700			3700	0.031	0.033			10	11	0.232	5	32
4	C	3.5	4	2	15		N	4070	67			67	1.00	3700			3700	0.018	0.033			6	11	0.138	3	31
5	C	3.5	4	2	20			4210			130	130	1.00	3916			3916	0.033				11	11	0.252	6	32

NOTE : O - OPPOSING TRAFFIC   N - NEAR SIDE LANE   SG - STEADY GREEN   FG - FLASHING GREEN   PEDESTRAIN WALKING SPEED = 1.2m/s   QUEUING LENGTH = AVERAGE QUEUE * 6m

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AXON CONSULTANCY LIMITED — TRAFFIC SIGNAL CALCULATION

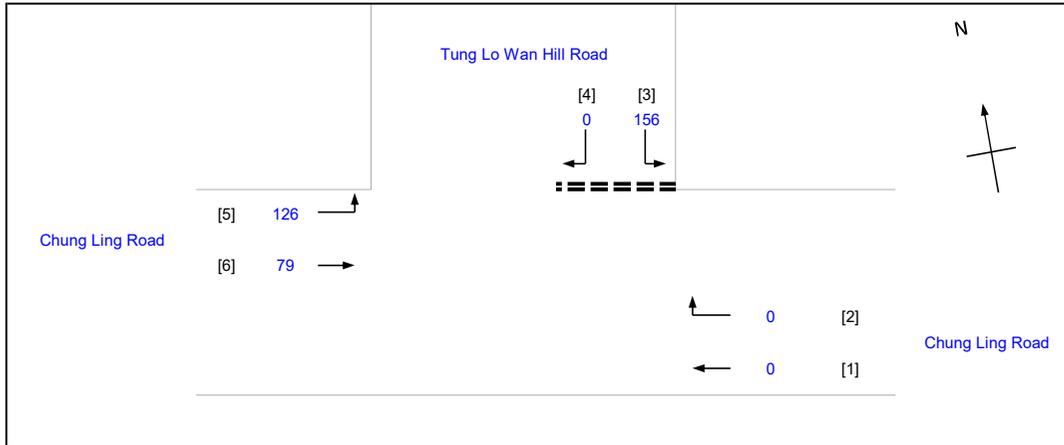|	INITIALS	DATE
Traffic Impact Assessment for Proposed Application for Amendment of Plan for Rezoning of Ching To Yuen from "Green Belt" Zone to "Government, Institution or Community (1)" Zone Project No.: 31036	Prepared By: JK	11/7/2025
at Lot Nos. 374, 375 S.A and 375 S.B in D.D.186, To Fung Shan, Sha Tin	Checked By: SY	11/7/2025
TCA-1 - Tao Fung Shan Road - Lower Section Between Ching Ling Road and Pak Lok Path 2024 Observed Traffic Flow (Chung Yeung Festival Peak Hour)	Reviewed By: AW	11/7/2025

Tao Fung Shan Road Uphill [1] 22 →

← 20 [2] **Tao Fung Shan Road Downhill**

N

No. of critical vehicluar phase per cycle:	N =	2
Intergreen Period Stage A - B	I =	120 sec
Stage B - A	I =	120 sec
Cycle time	C =	270 sec
Sum(y)	Y =	0.022
Loss time	L =	238 sec
Total Flow	=	42 pcu
Co = (1.5*L+5)/(1-Y)	=	370.3 sec
Cm = L/(1-Y)	=	243.5 sec
Yult = 0.9-0.0075L	=	
R.C.ult = (Yult-Y)/Y*100%	=	
Cp = 0.9*L/(0.9-Y)	=	244.1 sec
Ymax = 1-L/C	=	0.119
R.C.(C) = (0.9*Ymax-Y)/Y*100%	=	376.4 %

Existing Method of Control

A
→ 1

B
2 ←

Pedestrian Phase	Width (m)	Stage no.	Green Time Required (s) SG	FG	Green Time Provided (s) SG	FG	Check

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Left Flow pcu/h	Straight Flow pcu/h	Right Flow pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Flare lane Effect	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m/lane)	Average Delay (sec)
1	A	3.5	1	1			N	1965		22		22	0.00	1965			1965	0.011	0.011		16	16	0.189	8	122
2	B	3.5	2	1			N	1965		20		20	0.00	1965			1965	0.010	0.011		15	16	0.172	7	122

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NOTE :   O - OPPOSING TRAFFIC   N - NEAR SIDE LANE   SG - STEADY GREEN   FG - FLASHING GREEN   PEDESTRAIN WALKING SPEED = 1.2m/s   QUEUING LENGTH = AVERAGE QUEUE * 6m

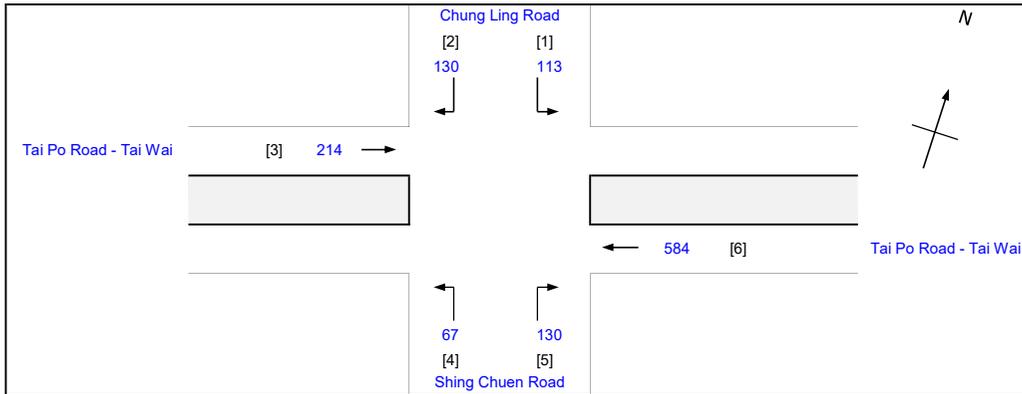|		INITIALS	DATE
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at Lot Nos. 374, 375 S.A and 375 S.B in D.D.186, To Fung Shan, Sha Tin		Checked By: SY	11/7/2025
J1 - Tai Wai Road / Tsuen Nam Road	2030 Reference Traffic Flow (Ching Ming Festival Peak Hour)	Reviewed By: AW	11/7/2025

Tai Wai Road

Tsuen Nam Road [3] 205

401 [1]
232 [2]

Tsuen Nam Road

No. of critical vehicluar phase per cycle:	N =	2	
Intergreen Period Stage A - B	I =	5	sec
Stage B - C	I =	2	sec
Stage C - A	I =	5	sec
Cycle time	C =	104	sec
Sum(y)	Y =	0.312	
Loss time	L =	18	sec
Total Flow	=	838	pcu
Co = (1.5*L+5)/(1-Y)	=	46.5	sec
Cm = L/(1-Y)	=	26.2	sec
Yult = 0.9-0.0075L	=	0.765	
R.C.ult = (Yult-Y)/Y*100%	=	145.3	%
Cp = 0.9*L/(0.9-Y)	=	27.5	sec
Ymax = 1-L/C	=	0.827	
R.C.(C) = (0.9*Ymax-Y)/Y*100%	=	138.6	%

Existing Method of Control

A   B   C

Pedestrian Phase	Width (m)	Stage no.	Green Time Required (s) SG	FG	Green Time Provided (s) SG	FG	Check
4		B,C	5	7	34	7	OK
5		B,C	5	7	34	7	OK
6		A,B	5	6	61	6	OK

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Left Flow pcu/h	Straight Flow pcu/h	Right Flow pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Flare lane Effect	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m/lane)	Average Delay (sec)
1	A	3.5	1	1	20			2105			401	401	1.00	1958			1958	0.205	0.205		56	56	0.377	26	15
2	A	3.5	2	1				2105		232		232	0.00	2105			2105	0.110			30	56	0.203	15	13
3	C	3.5	3	1	15			2105	205			205	1.00	1914			1914	0.107	0.107		30	30	0.377	21	31

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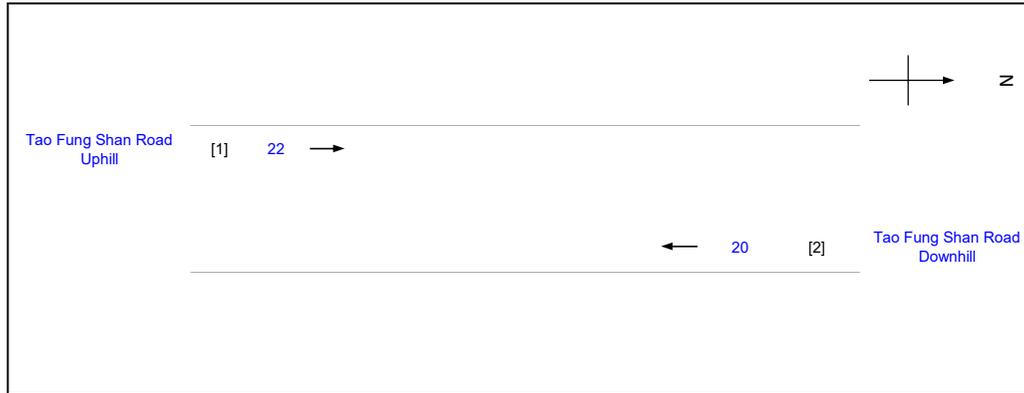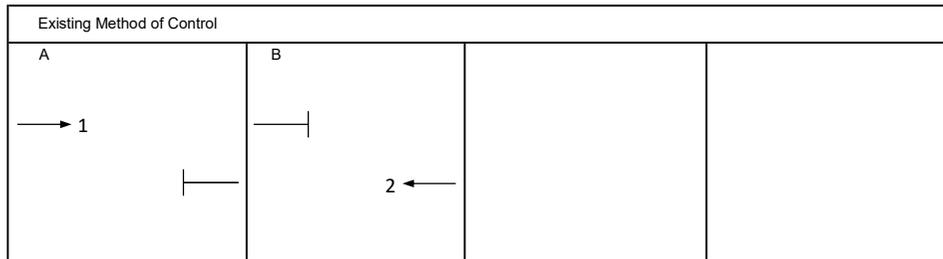NOTE :   O - OPPOSING TRAFFIC   N - NEAR SIDE LANE   SG - STEADY GREEN   FG - FLASHING GREEN   PEDESTRAIN WALKING SPEED = 1.2m/s   QUEUING LENGTH = AVERAGE QUEUE * 6m

AXON CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

	INITIALS	DATE

Traffic Impact Assessment for Proposed Application for Amendment of Plan for Rezoning of Ching To Yuen from "Green Belt" Zone to "Government, Institution or Community (1)" Zone | Project No.: 31036 | Prepared By: JK | 11/7/2025

at Lot Nos. 374, 375 S.A and 375 S.B in D.D.186, To Fung Shan, Sha Tin | | Checked By: SY | 11/7/2025

J2 - Tai Wai Road / Chik Fai Street | 2030 Reference Traffic Flow (Ching Ming Festival Peak Hour) | Reviewed By: AW | 11/7/2025

Tai Wai Road

Tai Wai Road

← 138 [3]

↓ 430 [2]

238 [4] 247 [1]

Chik Fai Street

No. of critical vehicluar phase per cycle: N = 1

Intergreen Period	Stage A - B	I =	2	sec
	Stage B - C	I =	4	sec
	Stage C - A	I =	0	sec

Cycle time	C =	106	sec
Sum(y)	Y =	0.225	
Loss time	L =	21	sec
Total Flow	=	1053	pcu
Co = (1.5*L+5)/(1-Y)	=	47.1	sec
Cm = L/(1-Y)	=	27.1	sec
Yult = 0.9-0.0075L	=	0.743	
R.C.ult = (Yult-Y)/Y*100%	=	230.4	%
Cp = 0.9*L/(0.9-Y)	=	28.0	sec
Ymax = 1-L/C	=	0.802	
R.C.(C) = (0.9*Ymax-Y)/Y*100%	=	221.2	%

Existing Method of Control

A

B

C

CHIK FAI STREET

TAI WAI ROAD

Pedestrian Phase	Width (m)	Stage no.	Green Time Required (s)		Green Time Provided (s)		Check
			SG	FG	SG	FG	
4		C	5	9	5	9	OK
5		B,C	5	9	37	9	OK

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Left Flow pcu/h	Straight Flow pcu/h	Right Flow pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Flare lane Effect	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m/lane)	Average Delay (sec)
4	A	3.5	1	1	15			2105	238			238	1.00	1914			1914	0.124			47	53	0.250	18	16
1	A	3.5	1	1	20			2105			247	247	1.00	1958			1958	0.126			48	53	0.254	18	16
3	B	3.5	3	1				2105		138		138	0.00	2105			2105	0.066			25	27	0.254	15	32
2	A,B	3.5	2	1	15			2105	430			430	1.00	1914			1914	0.225	0.225		85	85	0.280	13	3

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NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

AXON CONSULTANCY LIMITED — TRAFFIC SIGNAL CALCULATION

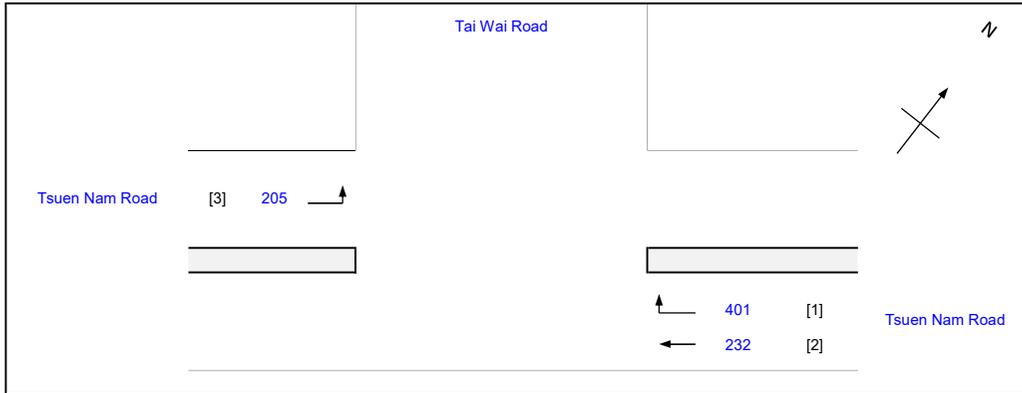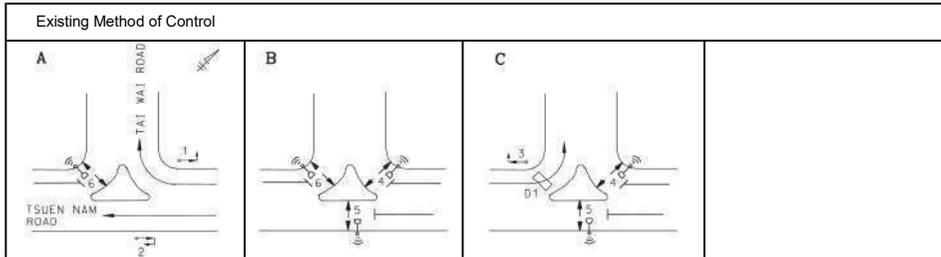|	INITIALS	DATE
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J3 - Tai Po Road - Tai Wai / Tai Wai Road 2030 Reference Traffic Flow (Ching Ming Festival Peak Hour) Reviewed By:	AW	11/7/2025

Tai Po Road - Tai Wai

[1] 454 →
[2] 164 →

← 423 [6]
↓ 87 [5]   Tai Po Road - Tai Wai

↑ 147 154
[3] [4]
Tai Wai Road

No. of critical vehicluar phase per cycle: $N = 3$

Intergreen Period			
Stage A - B	$I =$	5	sec
Stage B - C	$I =$	5	sec
Stage C - D	$I =$	2	sec
Stage D - A	$I =$	7	sec

Cycle time		$C =$	104	sec
Sum(y)		$Y =$	0.236	
Loss time		$L =$	42	sec
Total Flow		$=$	1429	pcu
Co	$= (1.5*L+5)/(1-Y)$	$=$	89.0	sec
Cm	$= L/(1-Y)$	$=$	55.0	sec
Yult	$= 0.9-0.0075L$	$=$	0.585	
R.C.ult	$= (Yult-Y)/Y*100\%$	$=$	147.7	%
Cp	$= 0.9*L/(0.9-Y)$	$=$	56.9	sec
Ymax	$= 1-L/C$	$=$	0.596	
R.C.(C)	$= (0.9*Ymax-Y)/Y*100\%$	$=$	127.1	%
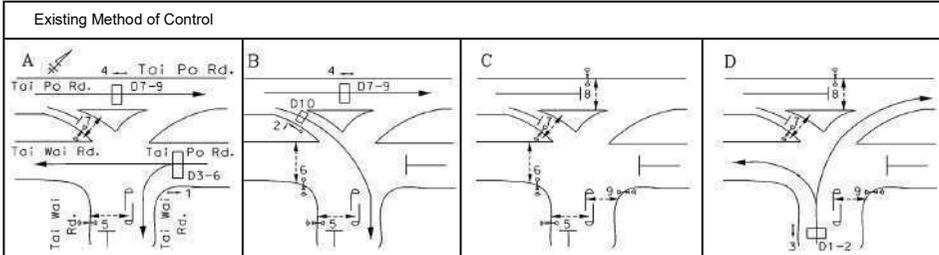
Existing Method of Control

A 4 → Toi Po Rd. D7-9 Tai Po Rd. → Tai Wai Rd. Tai Po Rd. D3-6

B 4 ← D7-9 D10

C

D

Pedestrian Phase	Width (m)	Stage no.	Green Time Required (s) SG	Green Time Required (s) FG	Green Time Provided (s) SG	Green Time Provided (s) FG	Check
5		A,B,C	5	7	66	7	OK
6		B,C	10	14	54	14	OK
7		C,D,A	5	5	70	5	OK
8		C,D	5	9	44	9	OK
9		C,D	5	9	39	9	OK

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Left Flow pcu/h	Straight Flow pcu/h	Right Flow pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Flare lane Effect	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m/lane)	Average Delay (sec)
1	A,B	3.5	4	2				4210		454		454	0.00	4210			4210	0.108				28	43	0.263	19	21
2	B	3.5	2	1	20			2105		164		164	1.00	1958			1958	0.084	0.084		22	22	0.396	19	37
6	A	3.5	1	3				6315		423		423	0.00	6315			6315	0.067	0.067		18	18	0.396	17	39
5	A	3.5	1	1	15			2105	87			87	1.00	1914			1914	0.045			12	18	0.269	10	39
3	D	3.4	V4	1	10		N	1955		145		145	1.00	1700			1700	0.085	0.085		22	22	0.396	16	37
3,4	D	3.4	V4	1	10			2095	154	2		156	1.00	1822			1822	0.085			22	22	0.396	18	37

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NOTE :   O - OPPOSING TRAFFIC   N - NEAR SIDE LANE   SG - STEADY GREEN   FG - FLASHING GREEN   PEDESTRAIN WALKING SPEED = 1.2m/s   QUEUING LENGTH = AVERAGE QUEUE * 6m

AXON CONSULTANCY LIMITED

PRIORITY JUNCTION CALCULATION

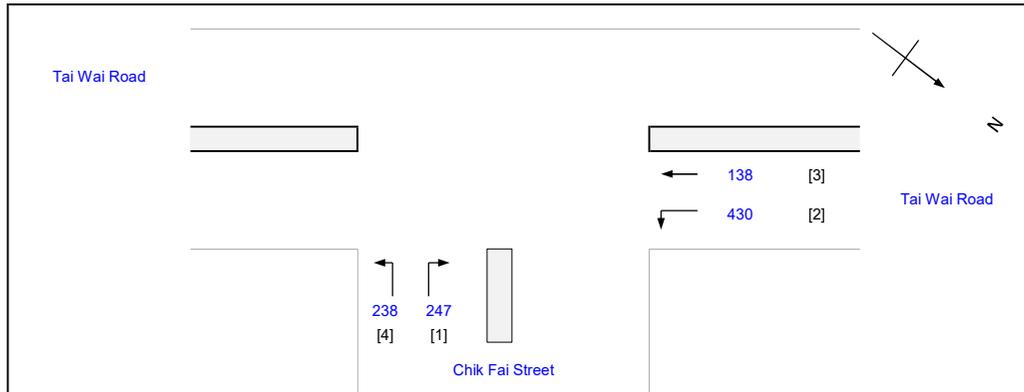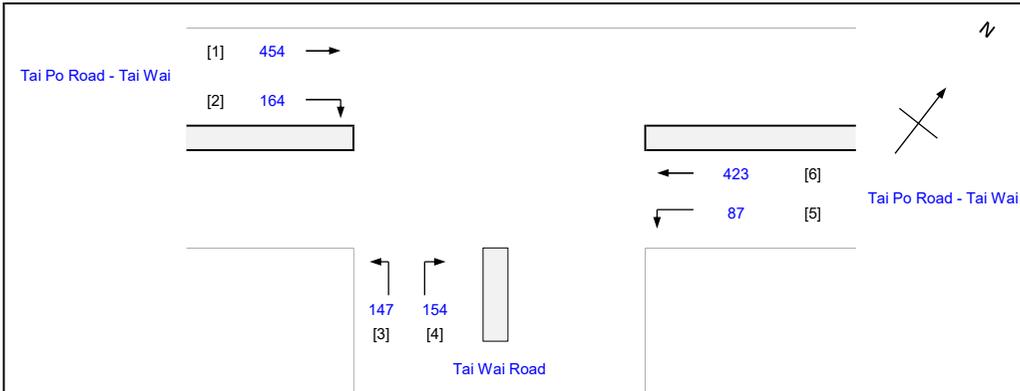|	INITIALS	DATE
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at Lot Nos. 374, 375 S.A and 375 S.B in D.D.186, To Fung Shan, Sha Tin — Checked By:	SY	11/7/2025
J4 - Chung Ling Road / Tung Lo Wan Hill Road — 2030 Reference Traffic Flow (Ching Ming Festival Peak Hour) — Reviewed By:	AW	11/7/2025

Tung Lo Wan Hill Road

[4] [3]
0 180

Chung Ling Road

[5] 150

[6] 91

0 [2]

Chung Ling Road

0 [1]

N

NOTES : (GEOMETRIC INPUT DATA)

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:

MAJOR ROAD (ARM A)
W	=	7.8	(metres)
W cr	=	0	(metres)
q a-b	=	150	(pcu/hr)
q a-c	=	91	(pcu/hr)

MAJOR ROAD (ARM C)
W c-b	=	2.1	(metres)
Vr c-b	=	50.0	(metres)
q c-a	=	0	(pcu/hr)
q c-b	=	0	(pcu/hr)

MINOR ROAD (ARM B)
W b-a	=	3.1	(metres)
W b-c	=	3.1	(metres)
Vl b-a	=	50.0	(metres)
Vr b-a	=	50.0	(metres)
Vr b-c	=	50.0	(metres)
q b-a	=	0	(pcu/hr)
q b-c	=	180	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.835
E	=	0.889
F	=	0.8
Y	=	0.731
F for (Qb-ac)	=	1

THE CAPACITY OF MOVEMENT :

Q b-a	=	490	(pcu/hr)
Q b-c	=	626	(pcu/hr)
Q c-b	=	545	(pcu/hr)
Q b-ac	=	626	(pcu/hr)
TOTAL FLOW	=	421	(pcu/hr)

COMPARISION OF DESIGN FLOW TO CAPACITY:

DFC b-a	=	0.0000
DFC b-c	=	0.2875
DFC c-b	=	0.0000

CRITICAL DFC	**=**	**0.29**

AXON CONSULTANCY LIMITED — TRAFFIC SIGNAL CALCULATION

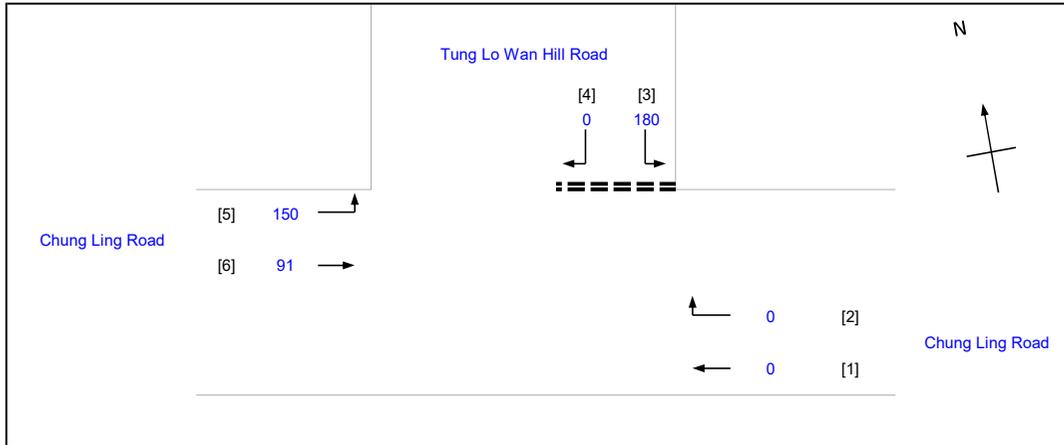|	INITIALS	DATE
Traffic Impact Assessment for Proposed Application for Amendment of Plan for Rezoning of Ching To Yuen from "Green Belt" Zone to "Government, Institution or Community (1)" Zone Project No.: 31036 Prepared By:	JK	11/7/2025
at Lot Nos. 374, 375 S.A and 375 S.B in D.D.186, To Fung Shan, Sha Tin Checked By:	SY	11/7/2025
J5 - Tai Po Road - Tai Wai / Shing Chuen Road / Ching Ling Road 2030 Reference Traffic Flow (Ching Ming Festival Peak Hour) Reviewed By:	AW	11/7/2025

Junction Diagram

Chung Ling Road

[2] 122   [1] 102

Tai Po Road - Tai Wai   [3] 229 →

← 624 [6]   Tai Po Road - Tai Wai

[4] 64   [5] 26

Shing Chuen Road

N

Calculation Summary

Parameter		Value	Unit
No. of critical vehicluar phase per cycle:	N =	3	
Intergreen Period Stage A - B	I =	5	sec
Stage B - C	I =	7	sec
Stage C - A	I =	6	sec
Cycle time	C =	80	sec
Sum(y)	Y =	0.197	
Loss time	L =	15	sec
Total Flow	=	1167	pcu
Co $= (1.5*L+5)/(1-Y)$	=	34.2	sec
Cm $= L/(1-Y)$	=	18.7	sec
Yult $= 0.9-0.0075L$	=	0.788	
R.C.ult $= (Yult-Y)/Y*100\%$	=	300.4	%
Cp $= 0.9*L/(0.9-Y)$	=	19.2	sec
Ymax $= 1-L/C$	=	0.813	
R.C.(C) $= (0.9*Ymax-Y)/Y*100\%$	=	271.8	%

Existing Method of Control

A / B / C (schematic diagrams)

Pedestrian Phase	Width (m)	Stage no.	Green Time Required (s) SG	FG	Green Time Provided (s) SG	FG	Check
5		C,A	5	14	49	14	OK
6		A,B	5	15	10	15	OK

Movement Table

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Left Flow pcu/h	Straight Flow pcu/h	Right Flow pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Flare lane Effect	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m/lane)	Average Delay (sec)
3	A	3.5	2	2				4210		229		229	0.00	4210			4210	0.054			18	49	0.089	5	6
6	A	3.5	1	2				4210		624		624	0.00	4210			4210	0.148	0.148		49	49	0.242	13	7
2	B	3.5	3	2	20			4210			122	122	1.00	3916			3916	0.031			10	10	0.242	6	32
1	B	3.5	3	2	15		N	4070	102			102	1.00	3700			3700	0.028	0.031		9	10	0.214	5	32
4	C	3.5	4	2	15		N	4070	64			64	1.00	3700			3700	0.017	0.017		6	6	0.242	3	36
5	C	3.5	4	2	20			4210			26	26	1.00	3916			3916	0.007			2	6	0.093	1	35

NOTE :   O - OPPOSING TRAFFIC   N - NEAR SIDE LANE   SG - STEADY GREEN   FG - FLASHING GREEN   PEDESTRAIN WALKING SPEED = 1.2m/s   QUEUING LENGTH = AVERAGE QUEUE * 6m

AXON CONSULTANCY LIMITED — TRAFFIC SIGNAL CALCULATION

	INITIALS	DATE

Traffic Impact Assessment for Proposed Application for Amendment of Plan for Rezoning of Ching To Yuen from "Green Belt" Zone to "Government, Institution or Community (1)" Zone | Project No.: 31036 | Prepared By: JK | 11/7/2025

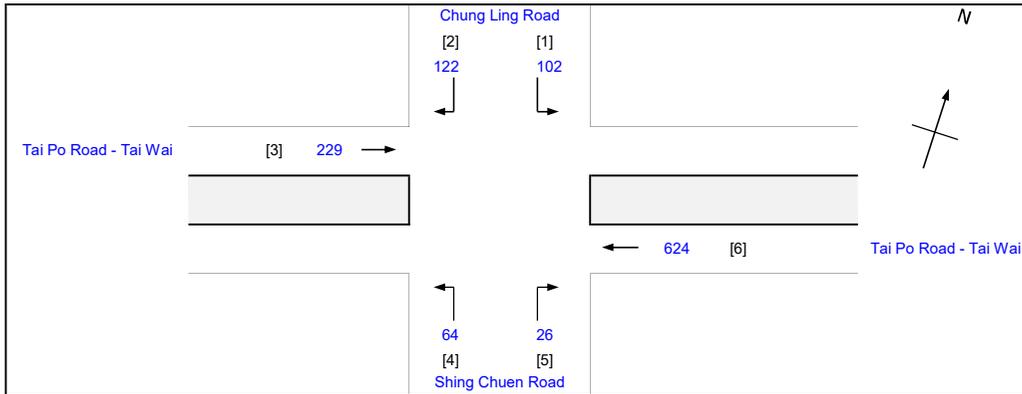at Lot Nos. 374, 375 S.A and 375 S.B in D.D.186, To Fung Shan, Sha Tin | Checked By: SY | 11/7/2025

TCA-1 - Tao Fung Shan Road - Lower Section Between Ching Ling Road and Pak Lok Path | 2030 Reference Traffic Flow (Ching Ming Festival Peak Hour) | Reviewed By: AW | 11/7/2025

Tao Fung Shan Road Uphill [1] 20 →

← 25 [2] **Tao Fung Shan Road Downhill**

N

No. of critical vehicluar phase per cycle: N = 2

Intergreen Period Stage A - B   I = 120 sec

Stage B - A   I = 120 sec

Cycle time	C =	270	sec
Sum(y)	Y =	0.023	
Loss time	L =	238	sec
Total Flow	=	45	pcu
Co = (1.5*L+5)/(1-Y)	=	370.5	sec
Cm = L/(1-Y)	=	243.6	sec
Yult = 0.9-0.0075L	=		
R.C.ult = (Yult-Y)/Y*100%	=		
Cp = 0.9*L/(0.9-Y)	=	244.2	sec
Ymax = 1-L/C	=	0.119	
R.C.(C) = (0.9*Ymax-Y)/Y*100%	=	365.8	%

Existing Method of Control

A → 1

B ⊢

2 ←

Pedestrian Phase	Width (m)	Stage no.	Green Time Required (s) SG	FG	Green Time Provided (s) SG	FG	Check

---

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Left Flow pcu/h	Straight Flow pcu/h	Right Flow pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Flare lane Effect	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m/lane)	Average Delay (sec)
→ 1	A	3.5	1	1			N	1965		20		20	0.00	1965			1965	0.010	0.010		14	16	0.172	7	122
← 2	B	3.5	2	1			N	1965		25		25	0.00	1965			1965	0.013	0.013		18	16	0.215	9	122

NOTE :   O - OPPOSING TRAFFIC   N - NEAR SIDE LANE   SG - STEADY GREEN   FG - FLASHING GREEN   PEDESTRAIN WALKING SPEED = 1.2m/s   QUEUING LENGTH = AVERAGE QUEUE * 6m

AXON CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

	INITIALS	DATE
Traffic Impact Assessment for Proposed Application for Amendment of Plan for Rezoning of Ching To Yuen from "Green Belt" Zone to "Government, Institution or Community (1)" Zone Project No.: 31036	Prepared By: JK	11/7/2025
at Lot Nos. 374, 375 S.A and 375 S.B in D.D.186, To Fung Shan, Sha Tin	Checked By: SY	11/7/2025
J1 - Tai Wai Road / Tsuen Nam Road 2030 Reference Traffic Flow (Chung Yeung Festival Peak Hour)	Reviewed By: AW	11/7/2025

Tai Wai Road

Tsuen Nam Road   [3]   168

464   [1]

160   [2]   Tsuen Nam Road

No. of critical vehicluar phase per cycle:	N =	2	
Intergreen Period Stage A - B	I =	5	sec
Stage B - C	I =	2	sec
Stage C - A	I =	5	sec
Cycle time	C =	104	sec
Sum(y)	Y =	0.325	
Loss time	L =	18	sec
Total Flow	=	792	pcu
Co $= (1.5*L+5)/(1-Y)$	=	47.4	sec
Cm $= L/(1-Y)$	=	26.7	sec
Yult $= 0.9-0.0075L$	=	0.765	
R.C.ult $= (Yult-Y)/Y*100\%$	=	135.6	%
Cp $= 0.9*L/(0.9-Y)$	=	28.2	sec
Ymax $= 1-L/C$	=	0.827	
R.C.(C) $= (0.9*Ymax-Y)/Y*100\%$	=	129.2	%

Existing Method of Control

Pedestrian Phase	Width (m)	Stage no.	Green Time Required (s) SG	Green Time Required (s) FG	Green Time Provided (s) SG	Green Time Provided (s) FG	Check
4		B,C	5	7	27	7	OK
5		B,C	5	7	27	7	OK
6		A,B	5	6	68	6	OK

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Left Flow pcu/h	Straight Flow pcu/h	Right Flow pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Flare lane Effect	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m/lane)	Average Delay (sec)
1	A	3.5	1	1	20			2105			464	464	1.00	1958			1958	0.237	0.237		63	63	0.393	27	12
2	A	3.5	2	1				2105		160		160	0.00	2105			2105	0.076			20	63	0.126	9	9
3	C	3.5	3	1	15			2105	168			168	1.00	1914			1914	0.088	0.088		23	23	0.393	19	36

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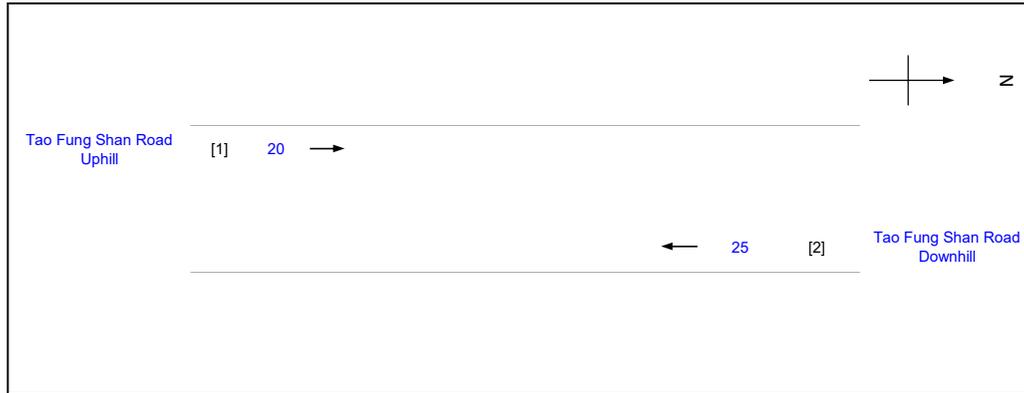
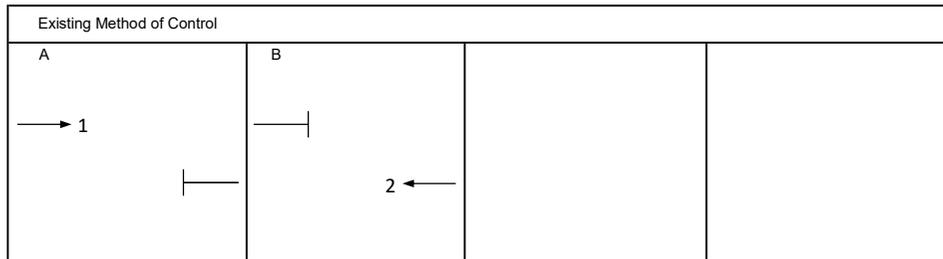NOTE :   O - OPPOSING TRAFFIC   N - NEAR SIDE LANE   SG - STEADY GREEN   FG - FLASHING GREEN   PEDESTRAIN WALKING SPEED = 1.2m/s   QUEUING LENGTH = AVERAGE QUEUE * 6m

AXON CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

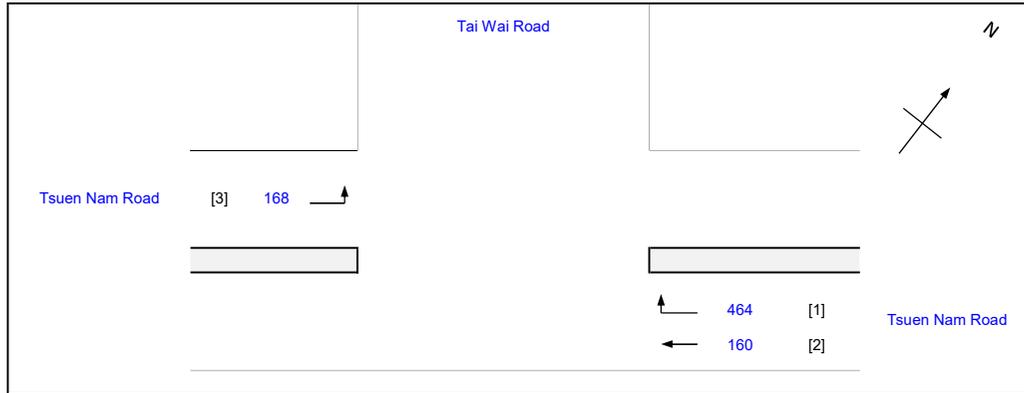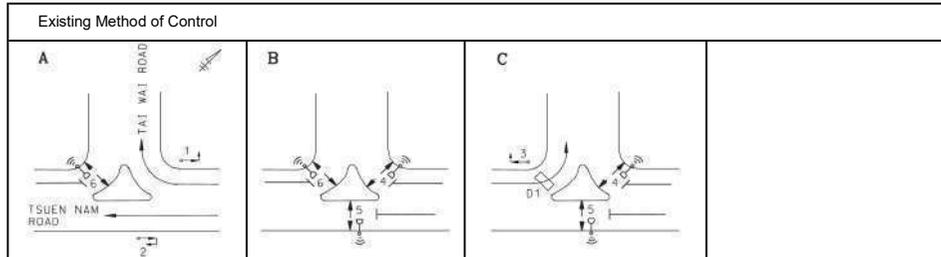|	INITIALS	DATE
Traffic Impact Assessment for Proposed Application for Amendment of Plan for Rezoning of Ching To Yuen from "Green Belt" Zone to "Government, Institution or Community (1)" Zone Project No.: 31036	Prepared By: JK	11/7/2025
at Lot Nos. 374, 375 S.A and 375 S.B in D.D.186, To Fung Shan, Sha Tin	Checked By: SY	11/7/2025
J2 - Tai Wai Road / Chik Fai Street	2030 Reference Traffic Flow (Chung Yeung Festival Peak Hour)	Reviewed By: AW	11/7/2025

Tai Wai Road

Tai Wai Road

165 [3]

408 [2]

272 [4]   240 [1]

Chik Fai Street

No. of critical vehicluar phase per cycle:	N =	1	
Intergreen Period Stage A - B	I =	2	sec
Stage B - C	I =	4	sec
Stage C - A	I =	0	sec
Cycle time	C =	106	sec
Sum(y)	Y =	0.213	
Loss time	L =	21	sec
Total Flow	=	1085	pcu
Co = (1.5*L+5)/(1-Y)	=	46.4	sec
Cm = L/(1-Y)	=	26.7	sec
Yult = 0.9-0.0075L	=	0.743	
R.C.ult = (Yult-Y)/Y*100%	=	248.3	%
Cp = 0.9*L/(0.9-Y)	=	27.5	sec
Ymax = 1-L/C	=	0.802	
R.C.(C) = (0.9*Ymax-Y)/Y*100%	=	238.5	%

Existing Method of Control

A

CHIK FAI STREET

TAI WAI ROAD

B

C

Pedestrian Phase	Width (m)	Stage no.	Green Time Required (s) SG	FG	Green Time Provided (s) SG	FG	Check
4		C	5	9	5	9	OK
5		B,C	5	9	38	9	OK

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Left Flow pcu/h	Straight Flow pcu/h	Right Flow pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Flare lane Effect	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m/lane)	Average Delay (sec)
4	A	3.5	1	1	15			2105	272			272	1.00	1914			1914	0.142			57	52	0.292	21	17
1	A	3.5	1	1	20			2105			240	240	1.00	1958			1958	0.123			49	52	0.252	18	17
3	B	3.5	3	1				2105		165		165	0.00	2105			2105	0.078			31	28	0.292	18	32
2	A,B	3.5	2	1	15			2105	408			408	1.00	1914			1914	0.213	0.213		85	85	0.266	12	3

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NOTE :   O - OPPOSING TRAFFIC   N - NEAR SIDE LANE   SG - STEADY GREEN   FG - FLASHING GREEN   PEDESTRAIN WALKING SPEED = 1.2m/s   QUEUING LENGTH = AVERAGE QUEUE * 6m

AXON CONSULTANCY LIMITED — TRAFFIC SIGNAL CALCULATION

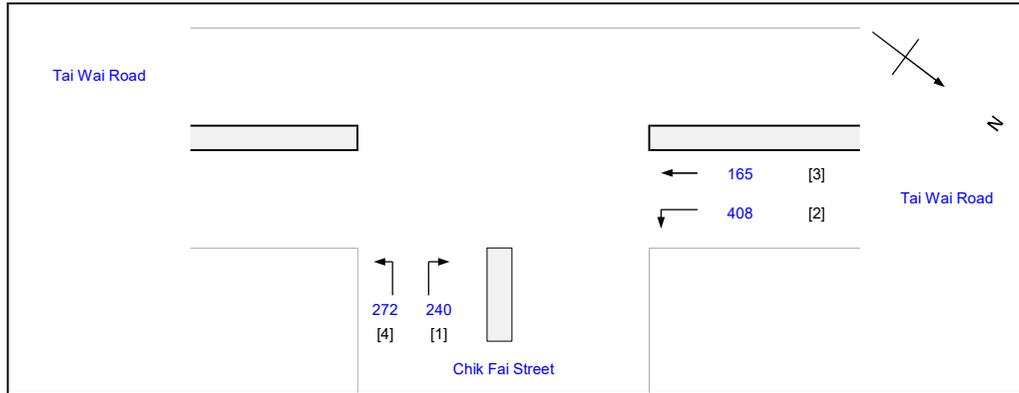|	INITIALS	DATE
Traffic Impact Assessment for Proposed Application for Amendment of Plan for Rezoning of Ching To Yuen from "Green Belt" Zone to "Government, Institution or Community (1)" Zone Project No.: 31036 Prepared By:	JK	11/7/2025
at Lot Nos. 374, 375 S.A and 375 S.B in D.D.186, To Fung Shan, Sha Tin Checked By:	SY	11/7/2025
J3 - Tai Po Road - Tai Wai / Tai Wai Road 2030 Reference Traffic Flow (Chung Yeung Festival Peak Hour) Reviewed By:	AW	11/7/2025

Tai Po Road - Tai Wai

[1] 416 →
[2] 150 →

← 438 [6]
↓ 101 [5]   **Tai Po Road - Tai Wai**

168 154
[3] [4]

Tai Wai Road

No. of critical vehicular phase per cycle: N = 3

Intergreen Period			
Stage A - B	I =	5	sec
Stage B - C	I =	5	sec
Stage C - D	I =	2	sec
Stage D - A	I =	7	sec

Cycle time C = 104 sec
Sum(y) Y = 0.237
Loss time L = 42 sec
Total Flow = 1427 pcu

$Co = (1.5*L+5)/(1-Y)$ = 89.2 sec
$Cm = L/(1-Y)$ = 55.1 sec
$Yult = 0.9-0.0075L$ = 0.585
$R.C.ult = (Yult-Y)/Y*100\%$ = 146.4 %
$Cp = 0.9*L/(0.9-Y)$ = 57.0 sec
$Ymax = 1-L/C$ = 0.596
$R.C.(C) = (0.9*Ymax-Y)/Y*100\%$ = 126.0 %

Existing Method of Control

Pedestrian Phase	Width (m)	Stage no.	Green Time Required (s) SG	FG	Green Time Provided (s) SG	FG	Check
5		A,B,C	5	7	64	7	OK
6		B,C	10	14	52	14	OK
7		C,D,A	5	5	72	5	OK
8		C,D	5	9	46	9	OK
9		C,D	5	9	41	9	OK

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Left Flow pcu/h	Straight Flow pcu/h	Right Flow pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Flare lane Effect	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m/lane)	Average Delay (sec)
1	A,B	3.5	4	2				4210		416		416	0.00	4210			4210	0.099			26	41	0.250	18	21
2	B	3.5	2	1	20			2105		150	150	150	1.00	1958			1958	0.077	0.077		20	20	0.398	17	38
6	A	3.5	1	3				6315		438		438	0.00	6315			6315	0.069	0.069		18	18	0.398	17	38
5	A	3.5	1	1	15			2105	101			101	1.00	1914			1914	0.053			14	18	0.303	12	39
3	D	3.4	V4	1	10		N	1955		155		155	1.00	1700			1700	0.091	0.091		24	24	0.398	17	36
3,4	D	3.4	V4	1	10			2095	154	13		167	1.00	1822			1822	0.091			24	24	0.398	19	36

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NOTE : O - OPPOSING TRAFFIC   N - NEAR SIDE LANE   SG - STEADY GREEN   FG - FLASHING GREEN   PEDESTRAIN WALKING SPEED = 1.2m/s   QUEUING LENGTH = AVERAGE QUEUE * 6m

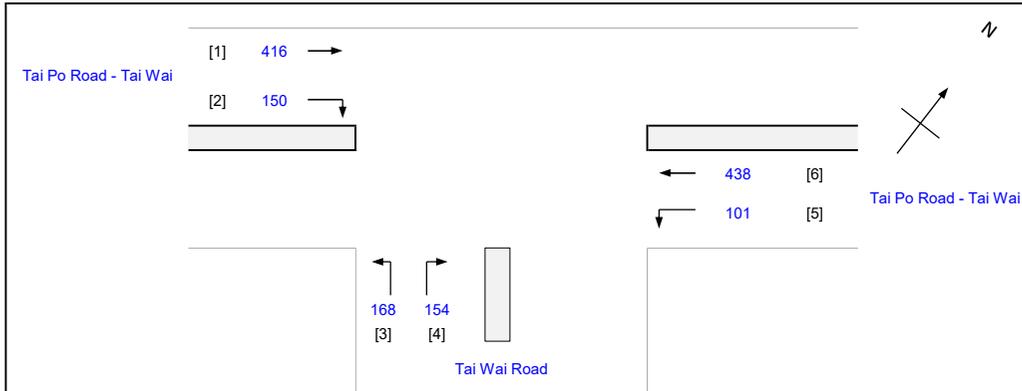|			
Traffic Impact Assessment for Proposed Application for Amendment of Plan for Rezoning of Ching To Yuen from "Green Belt" Zone to "Government, Institution or Community (1)" Zone	Project No.: 31036	Prepared By: JK	11/7/2025
at Lot Nos. 374, 375 S.A and 375 S.B in D.D.186, To Fung Shan, Sha Tin		Checked By: SY	11/7/2025
J4 - Chung Ling Road / Tung Lo Wan Hill Road	2030 Reference Traffic Flow (Chung Yeung Festival Peak Hour)	Reviewed By: AW	11/7/2025

Tung Lo Wan Hill Road

[4] [3]
0 193

Chung Ling Road

[5] 148

[6] 81

0 [2]

Chung Ling Road

0 [1]

N

NOTES : (GEOMETRIC INPUT DATA)

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:

MAJOR ROAD (ARM A)
W	=	7.8	(metres)
W cr	=	0	(metres)
q a-b	=	148	(pcu/hr)
q a-c	=	81	(pcu/hr)

MAJOR ROAD (ARM C)
W c-b	=	2.1	(metres)
Vr c-b	=	50.0	(metres)
q c-a	=	0	(pcu/hr)
q c-b	=	0	(pcu/hr)

MINOR ROAD (ARM B)
W b-a	=	3.1	(metres)
W b-c	=	3.1	(metres)
Vl b-a	=	50.0	(metres)
Vr b-a	=	50.0	(metres)
Vr b-c	=	50.0	(metres)
q b-a	=	0	(pcu/hr)
q b-c	=	193	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.835
E	=	0.889
F	=	0.8
Y	=	0.731

F for (Qb-ac) = 1

THE CAPACITY OF MOVEMENT :

Q b-a	=	493	(pcu/hr)
Q b-c	=	629	(pcu/hr)
Q c-b	=	548	(pcu/hr)
Q b-ac	=	629	(pcu/hr)

TOTAL FLOW = 422 (pcu/hr)

COMPARISION OF DESIGN FLOW TO CAPACITY:

DFC b-a	=	0.0000
DFC b-c	=	0.3068
DFC c-b	=	0.0000

CRITICAL DFC = 0.31

AXON CONSULTANCY LIMITED — TRAFFIC SIGNAL CALCULATION

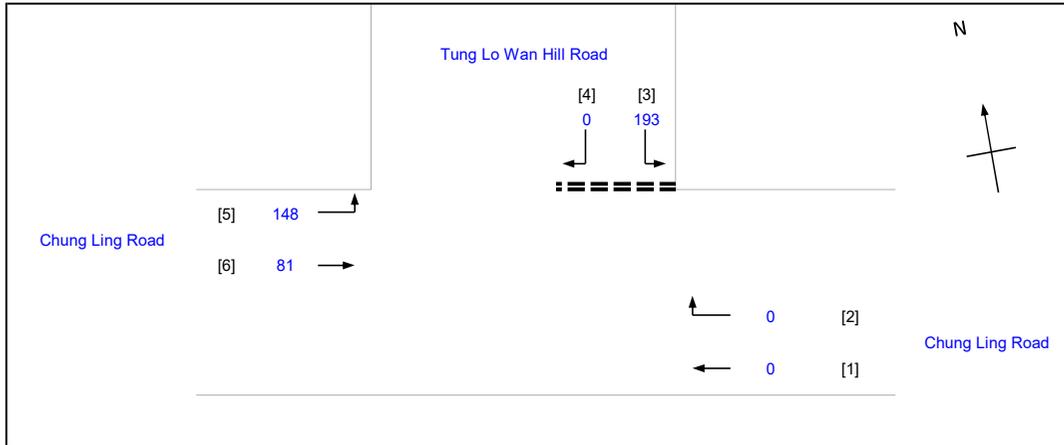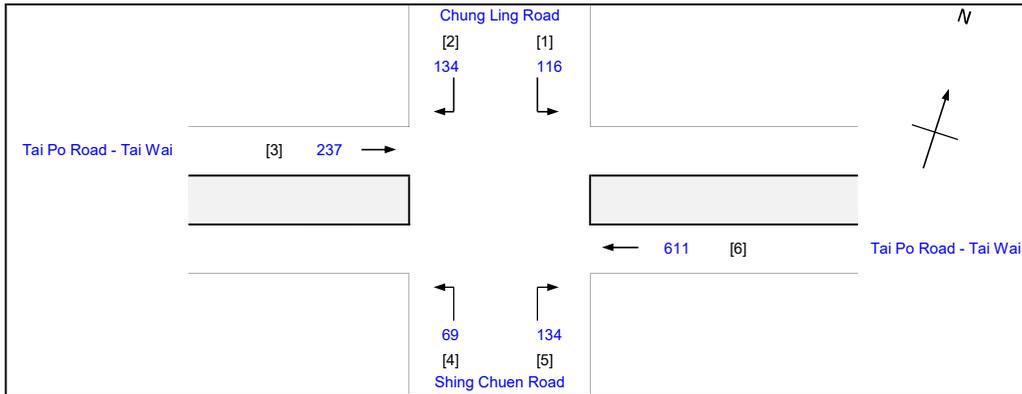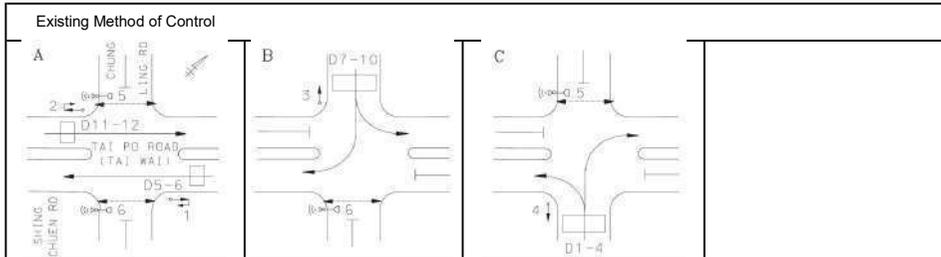|	INITIALS	DATE
Traffic Impact Assessment for Proposed Application for Amendment of Plan for Rezoning of Ching To Yuen from "Green Belt" Zone to "Government, Institution or Community (1)" Zone Project No.: 31036 Prepared By:	JK	11/7/2025
at Lot Nos. 374, 375 S.A and 375 S.B in D.D.186, To Fung Shan, Sha Tin Checked By:	SY	11/7/2025
J5 - Tai Po Road - Tai Wai / Shing Chuen Road / Ching Ling Road 2030 Reference Traffic Flow (Chung Yeung Festival Peak Hour) Reviewed By:	AW	11/7/2025

Junction layout

Chung Ling Road

[2] 134   [1] 116

Tai Po Road - Tai Wai   [3] 237 →

← 611 [6]   Tai Po Road - Tai Wai

69 [4]   134 [5]

Shing Chuen Road

N

Calculation summary

No. of critical vehicluar phase per cycle:	N =	3	
Intergreen Period Stage A - B	I =	5	sec
Stage B - C	I =	7	sec
Stage C - A	I =	6	sec
Cycle time	C =	80	sec
Sum(y)	Y =	0.214	
Loss time	L =	15	sec
Total Flow	=	1301	pcu
$Co = (1.5 \times L + 5)/(1-Y)$	=	35.0	sec
$Cm = L/(1-Y)$	=	19.1	sec
$Yult = 0.9 - 0.0075L$	=	0.788	
$R.C.ult = (Yult-Y)/Y \times 100\%$	=	268.7	%
$Cp = 0.9 \times L/(0.9-Y)$	=	19.7	sec
$Ymax = 1 - L/C$	=	0.813	
$R.C.(C) = (0.9 \times Ymax - Y)/Y \times 100\%$	=	242.4	%

Existing Method of Control

A — CHUNG LING RD / TAI PO ROAD (TAI WAI) / SHING CHUEN RD B C

Pedestrian Phase	Width (m)	Stage no.	Green Time Required (s) SG	FG	Green Time Provided (s) SG	FG	Check
5		C,A	5	14	48	14	OK
6		A,B	5	15	14	15	OK

Movement table

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Left Flow pcu/h	Straight Flow pcu/h	Right Flow pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Flare lane Effect	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m/lane)	Average Delay (sec)
3	A	3.5	2	2				4210		237		237	0.00	4210			4210	0.056			17	44	0.102	6	9
6	A	3.5	1	2				4210		611		611	0.00	4210			4210	0.145	0.145		44	44	0.263	15	10
2	B	3.5	3	2	20			4210			134	134	1.00	3916			3916	0.034			10	10	0.263	6	32
1	B	3.5	3	2	15		N	4070	116			116	1.00	3700			3700	0.031	0.034		10	10	0.241	6	32
4	C	3.5	4	2	15		N	4070	69			69	1.00	3700			3700	0.019	0.034		6	10	0.143	3	31
5	C	3.5	4	2	20			4210			134	134	1.00	3916			3916	0.034			10	10	0.263	6	32

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NOTE : O - OPPOSING TRAFFIC   N - NEAR SIDE LANE   SG - STEADY GREEN   FG - FLASHING GREEN   PEDESTRAIN WALKING SPEED = 1.2m/s   QUEUING LENGTH = AVERAGE QUEUE * 6m

AXON CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

	INITIALS	DATE

Traffic Impact Assessment for Proposed Application for Amendment of Plan for Rezoning of Ching To Yuen from "Green Belt" Zone to "Government, Institution or Community (1)" Zone	Project No.: 31036	Prepared By:	JK	11/7/2025
at Lot Nos. 374, 375 S.A and 375 S.B in D.D.186, To Fung Shan, Sha Tin		Checked By:	SY	11/7/2025
TCA-1 - Tao Fung Shan Road - Lower Section Between Ching Ling Road and Pak Lok Path	2030 Reference Traffic Flow (Chung Yeung Festival Peak Hour)	Reviewed By:	AW	11/7/2025

Tao Fung Shan Road Uphill   [1]   23 →

← 21   [2]   Tao Fung Shan Road Downhill

N

No. of critical vehicluar phase per cycle:	N =	2	
Intergreen Period Stage A - B	I =	120	sec
Stage B - A	I =	120	sec
Cycle time	C =	270	sec
Sum(y)	Y =	0.023	
Loss time	L =	238	sec
Total Flow	=	44	pcu
Co = (1.5*L+5)/(1-Y)	=	370.7	sec
Cm = L/(1-Y)	=	243.7	sec
Yult = 0.9-0.0075L	=		
R.C.ult = (Yult-Y)/Y*100%	=		
Cp = 0.9*L/(0.9-Y)	=	244.4	sec
Ymax = 1-L/C	=	0.119	
R.C.(C) = (0.9*Ymax-Y)/Y*100%	=	355.7	%

Existing Method of Control

A   B

→ 1

2 ←

Pedestrian Phase	Width (m)	Stage no.	Green Time Required (s) SG	FG	Green Time Provided (s) SG	FG	Check

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Left Flow pcu/h	Straight Flow pcu/h	Right Flow pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Flare lane Effect	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m/lane)	Average Delay (sec)
→ 1	A	3.5	1	1			N	1965		23		23	0.00	1965			1965	0.012	0.012		16	16	0.198	8	122
← 2	B	3.5	2	1			N	1965		21		21	0.00	1965			1965	0.011	0.012		15	16	0.180	7	122

C:\Users\user\Desktop\31036\Data\Calculation\[31036 - Junction_REF(CYF).xls]TCA-1

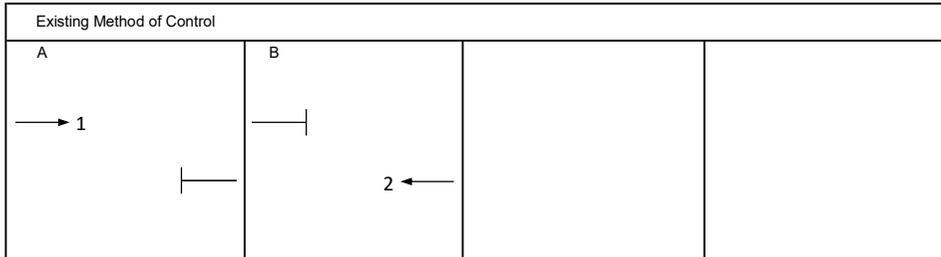NOTE :   O - OPPOSING TRAFFIC   N - NEAR SIDE LANE   SG - STEADY GREEN   FG - FLASHING GREEN   PEDESTRAIN WALKING SPEED = 1.2m/s   QUEUING LENGTH = AVERAGE QUEUE * 6m

Traffic Impact Assessment for Proposed Application for Amendment of Plan for Rezoning of Ching To Yuen from "Green Belt" Zone to "Government, Institution or Community (1)" Zone Project No.: 31036	Prepared By: JK	11/7/2025
at Lot Nos. 374, 375 S.A and 375 S.B in D.D.186, To Fung Shan, Sha Tin	Checked By: SY	11/7/2025
J1 - Tai Wai Road / Tsuen Nam Road 2030 Design Traffic Flow (Ching Ming Festival Peak Hour)	Reviewed By: AW	11/7/2025

Tai Wai Road

Tsuen Nam Road [3] 205

410 [1]

Tsuen Nam Road

232 [2]

No. of critical vehicluar phase per cycle:	N =	2	
Intergreen Period Stage A - B	I =	5	sec
Stage B - C	I =	2	sec
Stage C - A	I =	5	sec
Cycle time	C =	104	sec
Sum(y)	Y =	0.317	
Loss time	L =	18	sec
Total Flow	=	847	pcu
Co = (1.5*L+5)/(1-Y)	=	46.8	sec
Cm = L/(1-Y)	=	26.3	sec
Yult = 0.9-0.0075L	=	0.765	
R.C.ult = (Yult-Y)/Y*100%	=	141.7	%
Cp = 0.9*L/(0.9-Y)	=	27.8	sec
Ymax = 1-L/C	=	0.827	
R.C.(C) = (0.9*Ymax-Y)/Y*100%	=	135.1	%
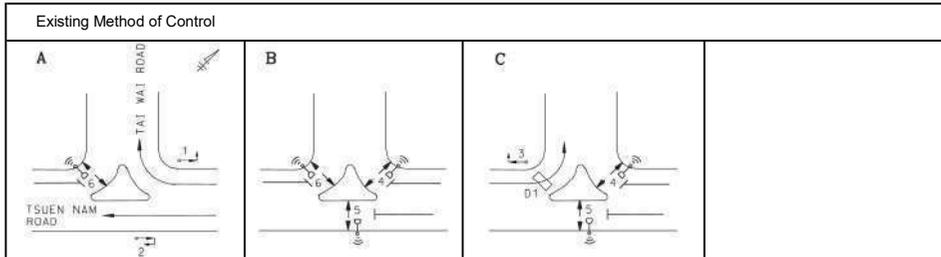
Existing Method of Control

A B C

Pedestrian Phase	Width (m)	Stage no.	Green Time Required (s)		Green Time Provided (s)		Check
			SG	FG	SG	FG	
4		B,C	5	7	33	7	OK
5		B,C	5	7	33	7	OK
6		A,B	5	6	62	6	OK

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Left Flow pcu/h	Straight Flow pcu/h	Right Flow pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Flare lane Effect	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m/lane)	Average Delay (sec)
1	A	3.5	1	1	20			2105			410	410	1.00	1958			1958	0.209	0.209		57	57	0.383	27	14
2	A	3.5	2	1				2105		232		232	0.00	2105			2105	0.110			30	57	0.201	15	12
3	C	3.5	3	1	15			2105	205			205	1.00	1914			1914	0.107	0.107		29	29	0.383	21	31

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NOTE :   O - OPPOSING TRAFFIC   N - NEAR SIDE LANE   SG - STEADY GREEN   FG - FLASHING GREEN   PEDESTRAIN WALKING SPEED = 1.2m/s   QUEUING LENGTH = AVERAGE QUEUE * 6m

AXON CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

	INITIALS	DATE

Traffic Impact Assessment for Proposed Application for Amendment of Plan for Rezoning of Ching To Yuen from "Green Belt" Zone to "Government, Institution or Community (1)" Zone | Project No.: 31036 | Prepared By: JK | 11/7/2025

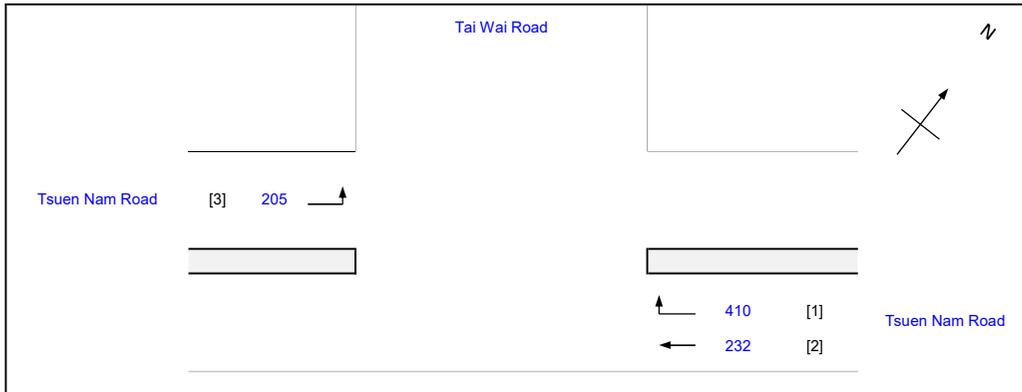at Lot Nos. 374, 375 S.A and 375 S.B in D.D.186, To Fung Shan, Sha Tin | Checked By: SY | 11/7/2025

J2 - Tai Wai Road / Chik Fai Street | 2030 Design Traffic Flow (Ching Ming Festival Peak Hour) | Reviewed By: AW | 11/7/2025

Tai Wai Road

Tai Wai Road

147 [3]

430 [2]

238 [4] 247 [1]

Chik Fai Street

No. of critical vehicluar phase per cycle: N = 1

Intergreen Period Stage A - B   I = 2 sec
                   Stage B - C   I = 4 sec
                   Stage C - A   I = 0 sec

Cycle time   C = 106 sec
Sum(y)   Y = 0.225
Loss time   L = 21 sec
Total Flow   = 1062 pcu
Co   = (1.5*L+5)/(1-Y)   = 47.1 sec
Cm   = L/(1-Y)   = 27.1 sec
Yult   = 0.9-0.0075L   = 0.743
R.C.ult = (Yult-Y)/Y*100%   = 230.4 %
Cp   = 0.9*L/(0.9-Y)   = 28.0 sec
Ymax   = 1-L/C   = 0.802
R.C.(C) = (0.9*Ymax-Y)/Y*100%   = 221.2 %

Existing Method of Control

A CHIK FAI STREET / TAI WAI ROAD

B

C

Pedestrian Phase	Width (m)	Stage no.	Green Time Required (s) SG	FG	Green Time Provided (s) SG	FG	Check
4		C	5	9	5	9	OK
5		B,C	5	9	39	9	OK

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Left Flow pcu/h	Straight Flow pcu/h	Right Flow pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Flare lane Effect	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m/lane)	Average Delay (sec)
4	A	3.5	1	1	15			2105	238			238	1.00	1914			1914	0.124			47	51	0.256	18	17
1	A	3.5	1	1	20			2105			247	247	1.00	1958			1958	0.126			48	51	0.260	19	17
3	B	3.5	3	1				2105		147		147	0.00	2105			2105	0.070			26	29	0.260	16	31
2	A,B	3.5	2	1	15			2105	430			430	1.00	1914			1914	0.225	0.225		85	85	0.280	13	3

NOTE :   O - OPPOSING TRAFFIC   N - NEAR SIDE LANE   SG - STEADY GREEN   FG - FLASHING GREEN   PEDESTRAIN WALKING SPEED = 1.2m/s   QUEUING LENGTH = AVERAGE QUEUE * 6m

AXON CONSULTANCY LIMITED
TRAFFIC SIGNAL CALCULATION

	INITIALS	DATE

Traffic Impact Assessment for Proposed Application for Amendment of Plan for Rezoning of Ching To Yuen from "Green Belt" Zone to "Government, Institution or Community (1)" Zone | Project No.: 31036 | Prepared By: JK | 11/7/2025

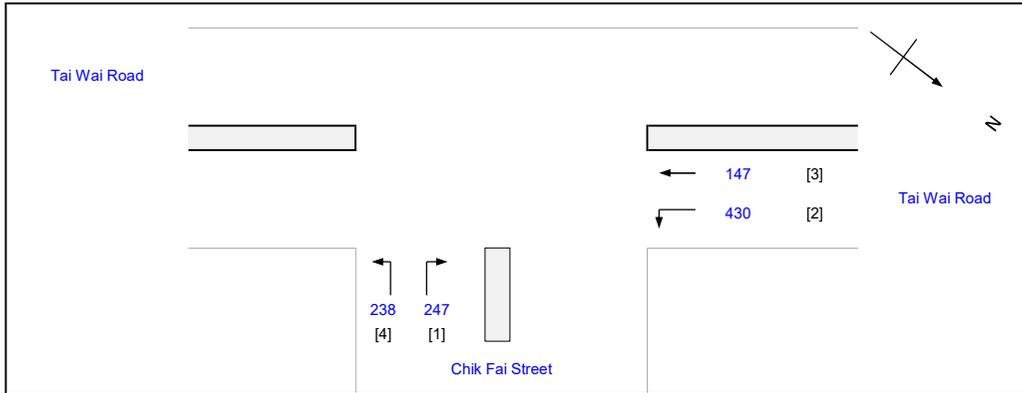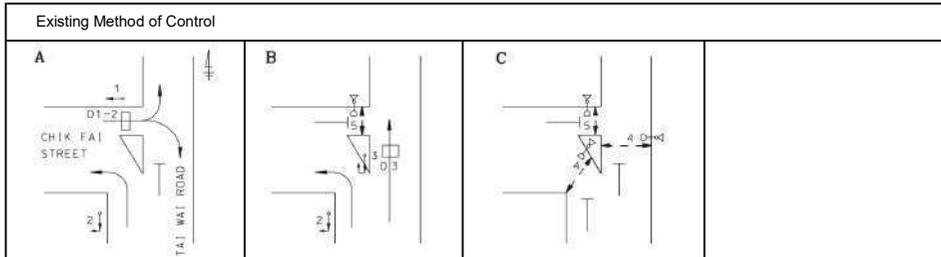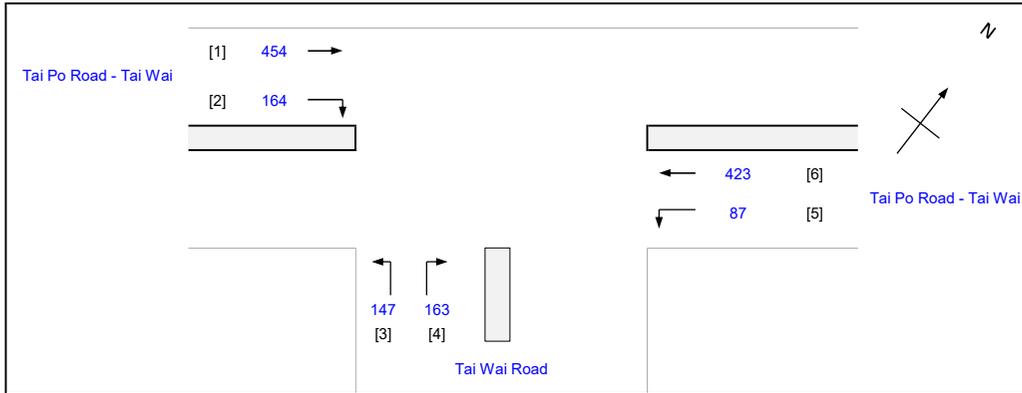at Lot Nos. 374, 375 S.A and 375 S.B in D.D.186, To Fung Shan, Sha Tin | Checked By: SY | 11/7/2025

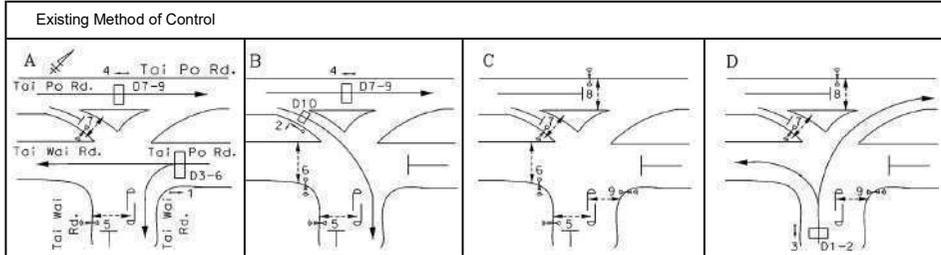J3 - Tai Po Road - Tai Wai / Tai Wai Road | 2030 Design Traffic Flow (Ching Ming Festival Peak Hour) | Reviewed By: AW | 11/7/2025

Tai Po Road - Tai Wai

[1] 454 →
[2] 164

[6] ← 423
[5] 87

Tai Po Road - Tai Wai

147 163
[3] [4]

Tai Wai Road

No. of critical vehicluar phase per cycle:		N =	3	
Intergreen Period	Stage A - B	I =	5	sec
	Stage B - C	I =	5	sec
	Stage C - D	I =	2	sec
	Stage D - A	I =	7	sec
Cycle time		C =	104	sec
Sum(y)		Y =	0.240	
Loss time		L =	42	sec
Total Flow		=	1438	pcu
Co	= (1.5*L+5)/(1-Y)	=	89.5	sec
Cm	= L/(1-Y)	=	55.3	sec
Yult	= 0.9-0.0075L	=	0.585	
R.C.ult	= (Yult-Y)/Y*100%	=	143.5	%
Cp	= 0.9*L/(0.9-Y)	=	57.3	sec
Ymax	= 1-L/C	=	0.596	
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	=	123.4	%

Existing Method of Control

Pedestrian Phase	Width (m)	Stage no.	Green Time Required (s)		Green Time Provided (s)		Check
			SG	FG	SG	FG	
5		A,B,C	5	7	65	7	OK
6		B,C	10	14	54	14	OK
7		C,D,A	5	5	70	5	OK
8		C,D	5	9	45	9	OK
9		C,D	5	9	40	9	OK

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Left Flow pcu/h	Straight Flow pcu/h	Right Flow pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Flare lane Effect	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m/lane)	Average Delay (sec)
1	A,B	3.5	4	2				4210		454		454	0.00	4210			4210	0.108				28	42	0.268	20	21
2	B	3.5	2	1	20			2105		164		164	1.00	1958			1958	0.084	0.084		22	22	0.403	19	37
6	A	3.5	1	3				6315		423		423	0.00	6315			6315	0.067	0.067		17	17	0.403	17	39
5	A	3.5	1	1	15			2105	87			87	1.00	1914			1914	0.045			12	17	0.273	10	39
3	D	3.4	V4	1	10		N	1955		147		147	1.00	1700			1700	0.086	0.089		22	23	0.389	17	36
3,4	D	3.4	V4	1	10			2095	163	0		163	1.00	1822			1822	0.089			23	23	0.403	18	36

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NOTE : O - OPPOSING TRAFFIC   N - NEAR SIDE LANE   SG - STEADY GREEN   FG - FLASHING GREEN   PEDESTRAIN WALKING SPEED = 1.2m/s   QUEUING LENGTH = AVERAGE QUEUE * 6m

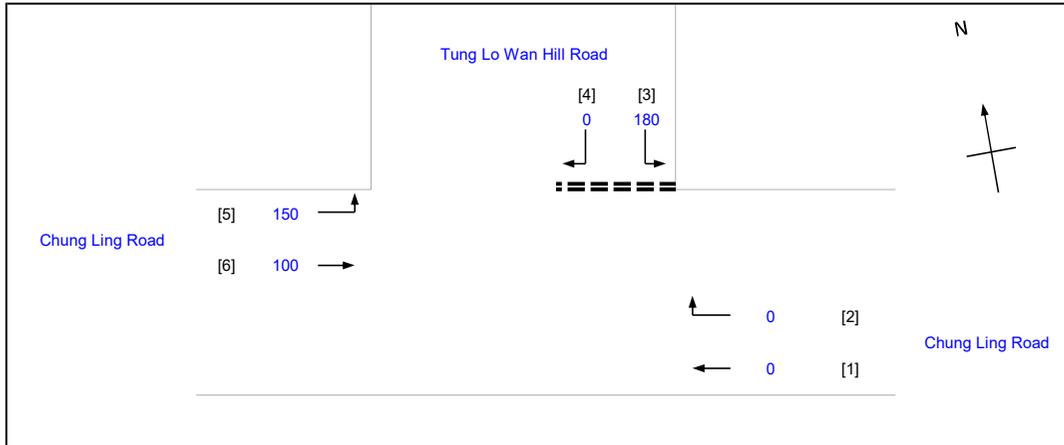|			
Traffic Impact Assessment for Proposed Application for Amendment of Plan for Rezoning of Ching To Yuen from "Green Belt" Zone to "Government, Institution or Community (1)" Zone	Project No.: 31036	Prepared By: JK	11/7/2025
at Lot Nos. 374, 375 S.A and 375 S.B in D.D.186, To Fung Shan, Sha Tin		Checked By: SY	11/7/2025
J4 - Chung Ling Road / Tung Lo Wan Hill Road	2030 Design Traffic Flow (Ching Ming Festival Peak Hour)	Reviewed By: AW	11/7/2025

NOTES : (GEOMETRIC INPUT DATA)

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:

MAJOR ROAD (ARM A)

W	=	7.8	(metres)
W cr	=	0	(metres)
q a-b	=	150	(pcu/hr)
q a-c	=	100	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	2.1	(metres)
Vr c-b	=	50.0	(metres)
q c-a	=	0	(pcu/hr)
q c-b	=	0	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	3.1	(metres)
W b-c	=	3.1	(metres)
Vl b-a	=	50.0	(metres)
Vr b-a	=	50.0	(metres)
Vr b-c	=	50.0	(metres)
q b-a	=	0	(pcu/hr)
q b-c	=	180	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.835
E	=	0.889
F	=	0.8
Y	=	0.731
F for (Qb-ac)	=	1

THE CAPACITY OF MOVEMENT :

Q b-a	=	488	(pcu/hr)
Q b-c	=	624	(pcu/hr)
Q c-b	=	543	(pcu/hr)
Q b-ac	=	624	(pcu/hr)
TOTAL FLOW	=	430	(pcu/hr)

COMPARISION OF DESIGN FLOW TO CAPACITY:

DFC b-a	=	0.0000
DFC b-c	=	0.2885
DFC c-b	=	0.0000

CRITICAL DFC	**=**	**0.29**

AXON CONSULTANCY LIMITED — TRAFFIC SIGNAL CALCULATION

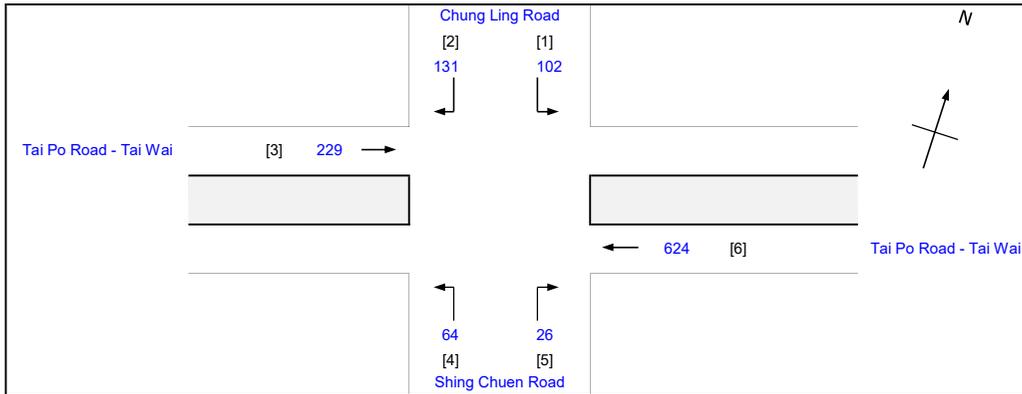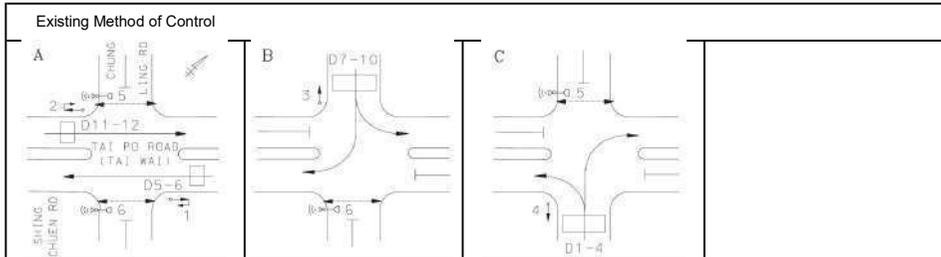|		INITIALS	DATE
Traffic Impact Assessment for Proposed Application for Amendment of Plan for Rezoning of Ching To Yuen from "Green Belt" Zone to "Government, Institution or Community (1)" Zone Project No.: 31036	Prepared By:	JK	11/7/2025
at Lot Nos. 374, 375 S.A and 375 S.B in D.D.186, To Fung Shan, Sha Tin	Checked By:	SY	11/7/2025
J5 - Tai Po Road - Tai Wai / Shing Chuen Road / Ching Ling Road 2030 Design Traffic Flow (Ching Ming Festival Peak Hour)	Reviewed By:	AW	11/7/2025

Junction Layout

Chung Ling Road
[2] 131   [1] 102

Tai Po Road - Tai Wai   [3] 229 →

← 624 [6]   Tai Po Road - Tai Wai

[4] 64   [5] 26
Shing Chuen Road

Signal Calculation Parameters

Parameter		Value	Unit
No. of critical vehicluar phase per cycle:	N =	3	
Intergreen Period Stage A - B	I =	5	sec
Stage B - C	I =	7	sec
Stage C - A	I =	6	sec
Cycle time	C =	80	sec
Sum(y)	Y =	0.199	
Loss time	L =	15	sec
Total Flow	=	1176	pcu
Co = (1.5*L+5)/(1-Y)	=	34.3	sec
Cm = L/(1-Y)	=	18.7	sec
Yult = 0.9-0.0075L	=	0.788	
R.C.ult = (Yult-Y)/Y*100%	=	295.8	%
Cp = 0.9*L/(0.9-Y)	=	19.3	sec
Ymax = 1-L/C	=	0.813	
R.C.(C) = (0.9*Ymax-Y)/Y*100%	=	267.5	%

Pedestrian Phase

Pedestrian Phase	Width (m)	Stage no.	Green Time Required (s) SG	FG	Green Time Provided (s) SG	FG	Check
5		C,A	5	14	48	14	OK
6		A,B	5	15	11	15	OK

Existing Method of Control

Movement Calculation Table

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Left Flow pcu/h	Straight Flow pcu/h	Right Flow pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Flare lane Effect	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m/lane)	Average Delay (sec)
3	A	3.5	2	2				4210		229		229	0.00	4210			4210	0.054			18	48	0.090	5	7
6	A	3.5	1	2				4210		624		624	0.00	4210			4210	0.148	0.148		48	48	0.245	14	8
2	B	3.5	3	2	20			4210			131	131	1.00	3916			3916	0.033			11	11	0.245	6	31
1	B	3.5	3	2	15		N	4070	102			102	1.00	3700			3700	0.028	0.033		9	11	0.202	5	31
4	C	3.5	4	2	15		N	4070	64			64	1.00	3700			3700	0.017	0.017		6	6	0.245	3	36
5	C	3.5	4	2	20			4210			26	26	1.00	3916			3916	0.007			2	6	0.094	1	35

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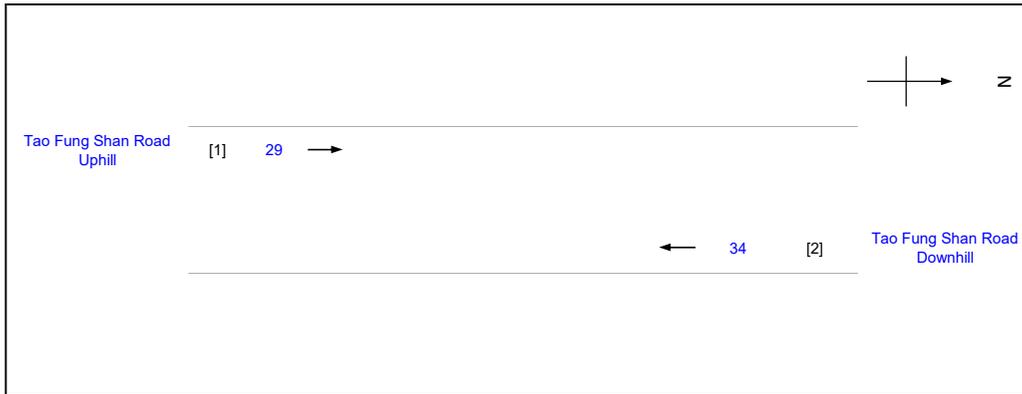
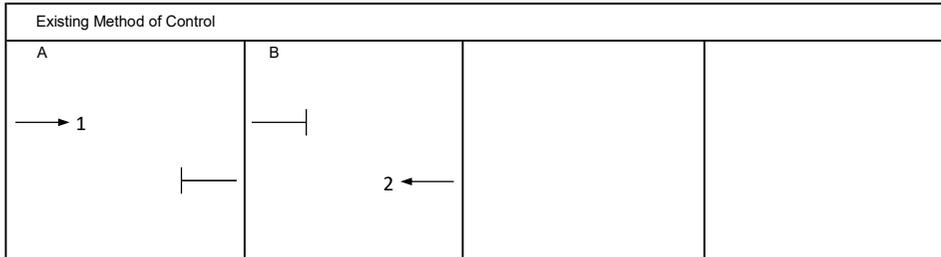NOTE :   O - OPPOSING TRAFFIC   N - NEAR SIDE LANE   SG - STEADY GREEN   FG - FLASHING GREEN   PEDESTRAIN WALKING SPEED = 1.2m/s   QUEUING LENGTH = AVERAGE QUEUE * 6m

AXON CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

	INITIALS	DATE
Traffic Impact Assessment for Proposed Application for Amendment of Plan for Rezoning of Ching To Yuen from "Green Belt" Zone to "Government, Institution or Community (1)" Zone Project No.: 31036	Prepared By: JK	11/7/2025
at Lot Nos. 374, 375 S.A and 375 S.B in D.D.186, To Fung Shan, Sha Tin	Checked By: SY	11/7/2025
TCA-1 - Tao Fung Shan Road - Lower Section Between Ching Ling Road and Pak Lok Path 2030 Design Traffic Flow (Ching Ming Festival Peak Hour)	Reviewed By: AW	11/7/2025

Tao Fung Shan Road Uphill   [1]   29 →

← 34   [2]   Tao Fung Shan Road Downhill

N

No. of critical vehicluar phase per cycle: N = 2

Intergreen Period   Stage A - B   I = 120 sec
                    Stage B - A   I = 120 sec

Cycle time	C =	270	sec
Sum(y)	Y =	0.032	
Loss time	L =	238	sec
Total Flow	=	63	pcu
Co = (1.5*L+5)/(1-Y)	=	374.0	sec
Cm = L/(1-Y)	=	245.9	sec
Yult = 0.9-0.0075L	=		
R.C.ult = (Yult-Y)/Y*100%	=		
Cp = 0.9*L/(0.9-Y)	=	246.8	sec
Ymax = 1-L/C	=	0.119	
R.C.(C) = (0.9*Ymax-Y)/Y*100%	=	232.7	%

Existing Method of Control

A

→ 1

B

2 ←

Pedestrian Phase	Width (m)	Stage no.	Green Time Required (s) SG	FG	Green Time Provided (s) SG	FG	Check

	Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Left Flow pcu/h	Straight Flow pcu/h	Right Flow pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Flare lane Effect	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m/lane)	Average Delay (sec)
→	1	A	3.5	1	1			N	1965		29		29	0.00	1965			1965	0.015	0.015		15	16	0.249	10	122
←	2	B	3.5	2	1			N	1965		34		34	0.00	1965			1965	0.017	0.017		17	16	0.292	12	122

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NOTE :   O - OPPOSING TRAFFIC   N - NEAR SIDE LANE   SG - STEADY GREEN   FG - FLASHING GREEN   PEDESTRAIN WALKING SPEED = 1.2m/s   QUEUING LENGTH = AVERAGE QUEUE * 6m

Tai Wai Road

Tsuen Nam Road [3] 168

473 [1]

Tsuen Nam Road

160 [2]

No. of critical vehicluar phase per cycle:	N =	2	
Intergreen Period Stage A - B	I =	5	sec
Stage B - C	I =	2	sec
Stage C - A	I =	5	sec
Cycle time	C =	104	sec
Sum(y)	Y =	0.329	
Loss time	L =	18	sec
Total Flow	=	801	pcu
Co = (1.5*L+5)/(1-Y)	=	47.7	sec
Cm = L/(1-Y)	=	26.8	sec
Yult = 0.9-0.0075L	=	0.765	
R.C.ult = (Yult-Y)/Y*100%	=	132.3	%
Cp = 0.9*L/(0.9-Y)	=	28.4	sec
Ymax = 1-L/C	=	0.827	
R.C.(C) = (0.9*Ymax-Y)/Y*100%	=	126.0	%

Existing Method of Control

Pedestrian Phase	Width (m)	Stage no.	Green Time Required (s) SG	FG	Green Time Provided (s) SG	FG	Check
4		B,C	5	7	27	7	OK
5		B,C	5	7	27	7	OK
6		A,B	5	6	68	6	OK

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Left Flow pcu/h	Straight Flow pcu/h	Right Flow pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Flare lane Effect	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m/lane)	Average Delay (sec)
1	A	3.5	1	1	20			2105			473	473	1.00	1958			1958	0.242	0.242		63	63	0.398	27	12
2	A	3.5	2	1				2105		160		160	0.00	2105			2105	0.076			20	63	0.125	9	9
3	C	3.5	3	1	15			2105	168			168	1.00	1914			1914	0.088	0.088		23	23	0.398	19	36

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NOTE :   O - OPPOSING TRAFFIC   N - NEAR SIDE LANE   SG - STEADY GREEN   FG - FLASHING GREEN   PEDESTRAIN WALKING SPEED = 1.2m/s   QUEUING LENGTH = AVERAGE QUEUE * 6m

AXON CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

	INITIALS	DATE

Traffic Impact Assessment for Proposed Application for Amendment of Plan for Rezoning of Ching To Yuen from "Green Belt" Zone to "Government, Institution or Community (1)" Zone	Project No.: 31036	Prepared By:	JK	11/7/2025
at Lot Nos. 374, 375 S.A and 375 S.B in D.D.186, To Fung Shan, Sha Tin		Checked By:	SY	11/7/2025
J2 - Tai Wai Road / Chik Fai Street	2030 Design Traffic Flow (Chung Yeung Festival Peak Hour)	Reviewed By:	AW	11/7/2025

Tai Wai Road

Tai Wai Road

← 174 [3]

← 408 [2]

272 [4] 240 [1]

Chik Fai Street

No. of critical vehicluar phase per cycle:		N =	1	
Intergreen Period	Stage A - B	I =	2	sec
	Stage B - C	I =	4	sec
	Stage C - A	I =	0	sec
Cycle time		C =	106	sec
Sum(y)		Y =	0.213	
Loss time		L =	21	sec
Total Flow		=	1094	pcu
Co	= (1.5*L+5)/(1-Y)	=	46.4	sec
Cm	= L/(1-Y)	=	26.7	sec
Yult	= 0.9-0.0075L	=	0.743	
R.C.ult	= (Yult-Y)/Y*100%	=	248.3	%
Cp	= 0.9*L/(0.9-Y)	=	27.5	sec
Ymax	= 1-L/C	=	0.802	
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	=	238.5	%

Existing Method of Control

A B C

CHIK FAI STREET TAI WAI ROAD

Pedestrian Phase	Width (m)	Stage no.	Green Time Required (s) SG	FG	Green Time Provided (s) SG	FG	Check
4		C	5	9	5	9	OK
5		B,C	5	9	39	9	OK

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Left Flow pcu/h	Straight Flow pcu/h	Right Flow pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Flare lane Effect	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m/lane)	Average Delay (sec)
4	A	3.5	1	1	15			2105	272			272	1.00	1914			1914	0.142			57	51	0.298	21	18
1	A	3.5	1	1	20			2105			240	240	1.00	1958			1958	0.123			49	51	0.257	18	17
3	B	3.5	3	1				2105		174		174	0.00	2105			2105	0.083			33	29	0.298	19	31
2	A,B	3.5	2	1	15			2105	408			408	1.00	1914			1914	0.213	0.213		85	85	0.266	12	3

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NOTE : O - OPPOSING TRAFFIC N - NEAR SIDE LANE SG - STEADY GREEN FG - FLASHING GREEN PEDESTRAIN WALKING SPEED = 1.2m/s QUEUING LENGTH = AVERAGE QUEUE * 6m

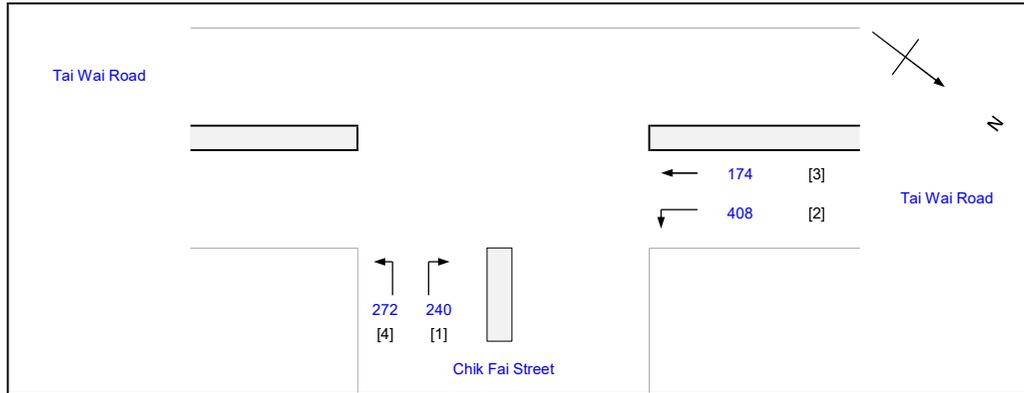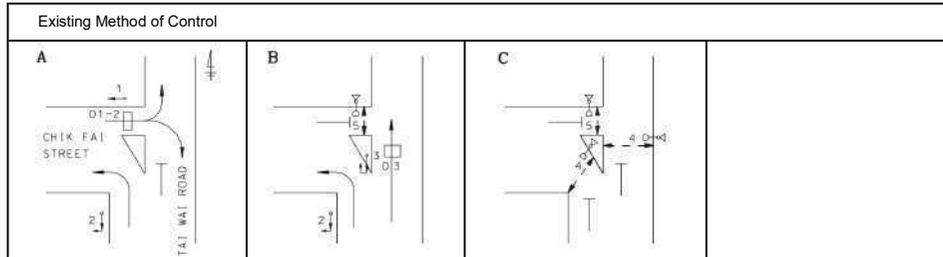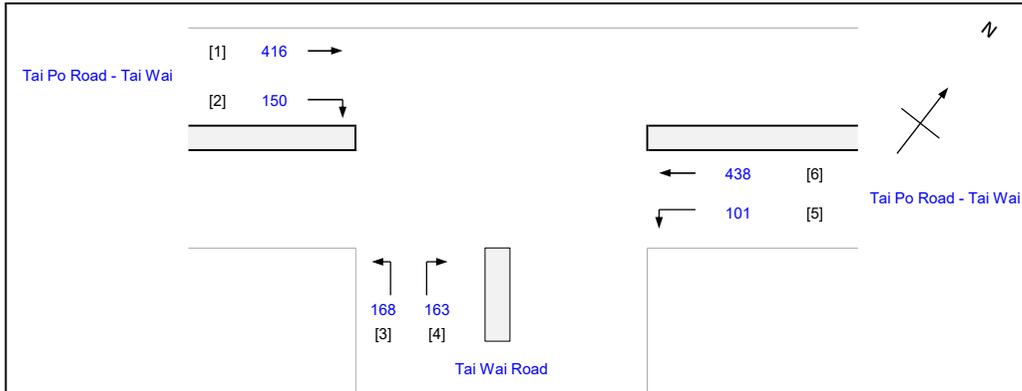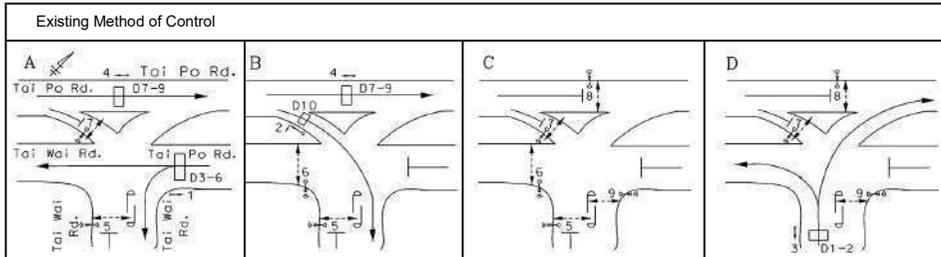|			
Traffic Impact Assessment for Proposed Application for Amendment of Plan for Rezoning of Ching To Yuen from "Green Belt" Zone to "Government, Institution or Community (1)" Zone	Project No.: 31036	Prepared By:	JK	11/7/2025
at Lot Nos. 374, 375 S.A and 375 S.B in D.D.186, To Fung Shan, Sha Tin		Checked By:	SY	11/7/2025
J3 - Tai Po Road - Tai Wai / Tai Wai Road	2030 Design Traffic Flow (Chung Yeung Festival Peak Hour)	Reviewed By:	AW	11/7/2025

Tai Po Road - Tai Wai

[1] 416 →
[2] 150 →

← 438 [6]
← 101 [5]

Tai Po Road - Tai Wai

168 163
[3] [4]

Tai Wai Road

No. of critical vehicluar phase per cycle: N = 3

Intergreen Period	Stage A - B	I =	5	sec
	Stage B - C	I =	5	sec
	Stage C - D	I =	2	sec
	Stage D - A	I =	7	sec

Cycle time   C = 104 sec
Sum(y)   Y = 0.240
Loss time   L = 42 sec
Total Flow   = 1436 pcu
Co = (1.5*L+5)/(1-Y) = 89.5 sec
Cm = L/(1-Y)   = 55.3 sec
Yult = 0.9-0.0075L   = 0.585
R.C.ult = (Yult-Y)/Y*100% = 143.8 %
Cp = 0.9*L/(0.9-Y)   = 57.3 sec
Ymax = 1-L/C   = 0.596
R.C.(C) = (0.9*Ymax-Y)/Y*100% = 123.6 %

Existing Method of Control

Pedestrian Phase	Width (m)	Stage no.	Green Time Required (s) SG	FG	Green Time Provided (s) SG	FG	Check
5		A,B,C	5	7	64	7	OK
6		B,C	10	14	52	14	OK
7		C,D,A	5	5	72	5	OK
8		C,D	5	9	46	9	OK
9		C,D	5	9	41	9	OK

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Left Flow pcu/h	Straight Flow pcu/h	Right Flow pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Flare lane Effect	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m/lane)	Average Delay (sec)
1	A,B	3.5	4	2	20			4210		416		416	0.00	4210			4210	0.099			26	41	0.252	18	22
2	B	3.5	2	1	20			2105			150	150	1.00	1958			1958	0.077	0.077		20	20	0.402	18	38
6	A	3.5	1	3				6315		438		438	0.00	6315			6315	0.069	0.069		18	18	0.402	17	38
5	A	3.5	1	1	15			2105	101			101	1.00	1914			1914	0.053			14	18	0.306	12	39
3	D	3.4	V4	1	10		N	1955		160		160	1.00	1700			1700	0.094	0.094		24	24	0.402	18	35
3,4	D	3.4	V4	1	10			2095	163	8		171	1.00	1822			1822	0.094			24	24	0.402	19	35

NOTE : O - OPPOSING TRAFFIC   N - NEAR SIDE LANE   SG - STEADY GREEN   FG - FLASHING GREEN   PEDESTRAIN WALKING SPEED = 1.2m/s   QUEUING LENGTH = AVERAGE QUEUE * 6m

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PRIORITY JUNCTION CALCULATION

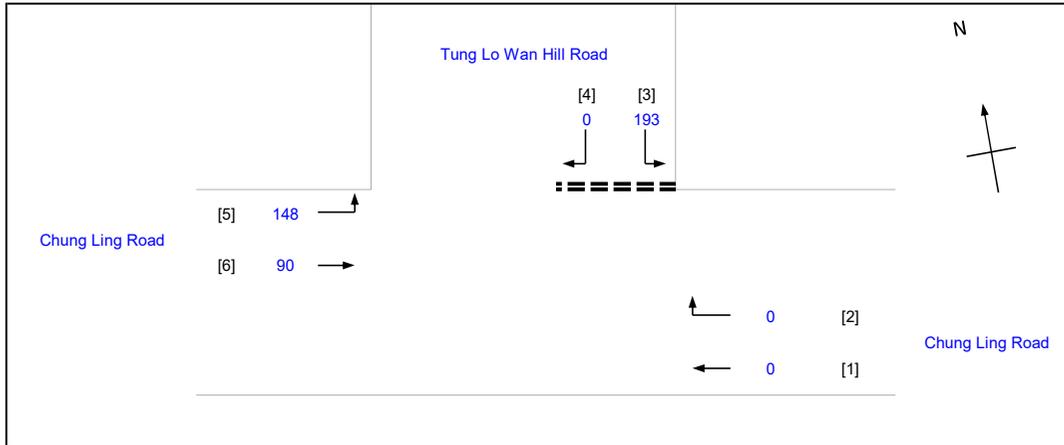|	INITIALS	DATE
Traffic Impact Assessment for Proposed Application for Amendment of Plan for Rezoning of Ching To Yuen from "Green Belt" Zone to "Government, Institution or Community (1)" Zone Project No.: 31036	Prepared By: JK	11/7/2025
at Lot Nos. 374, 375 S.A and 375 S.B in D.D.186, To Fung Shan, Sha Tin	Checked By: SY	11/7/2025
J4 - Chung Ling Road / Tung Lo Wan Hill Road 2030 Design Traffic Flow (Chung Yeung Festival Peak Hour)	Reviewed By: AW	11/7/2025

NOTES : (GEOMETRIC INPUT DATA)

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:

MAJOR ROAD (ARM A)

W	=	7.8	(metres)
W cr	=	0	(metres)
q a-b	=	148	(pcu/hr)
q a-c	=	90	(pcu/hr)

MAJOR ROAD (ARM C)

W c-b	=	2.1	(metres)
Vr c-b	=	50.0	(metres)
q c-a	=	0	(pcu/hr)
q c-b	=	0	(pcu/hr)

MINOR ROAD (ARM B)

W b-a	=	3.1	(metres)
W b-c	=	3.1	(metres)
Vl b-a	=	50.0	(metres)
Vr b-a	=	50.0	(metres)
Vr b-c	=	50.0	(metres)
q b-a	=	0	(pcu/hr)
q b-c	=	193	(pcu/hr)

GEOMETRIC FACTORS :

D	=	0.835
E	=	0.889
F	=	0.8
Y	=	0.731
F for (Qb-ac)	=	1

THE CAPACITY OF MOVEMENT :

Q b-a	=	491	(pcu/hr)
Q b-c	=	627	(pcu/hr)
Q c-b	=	546	(pcu/hr)
Q b-ac	=	627	(pcu/hr)
TOTAL FLOW =		431	(pcu/hr)

COMPARISION OF DESIGN FLOW TO CAPACITY:

DFC b-a	=	0.0000
DFC b-c	=	0.3078
DFC c-b	=	0.0000

CRITICAL DFC	**=**	**0.31**

AXON CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

	INITIALS	DATE

Traffic Impact Assessment for Proposed Application for Amendment of Plan for Rezoning of Ching To Yuen from "Green Belt" Zone to "Government, Institution or Community (1)" Zone | Project No.: 31036 | Prepared By: JK | 11/7/2025

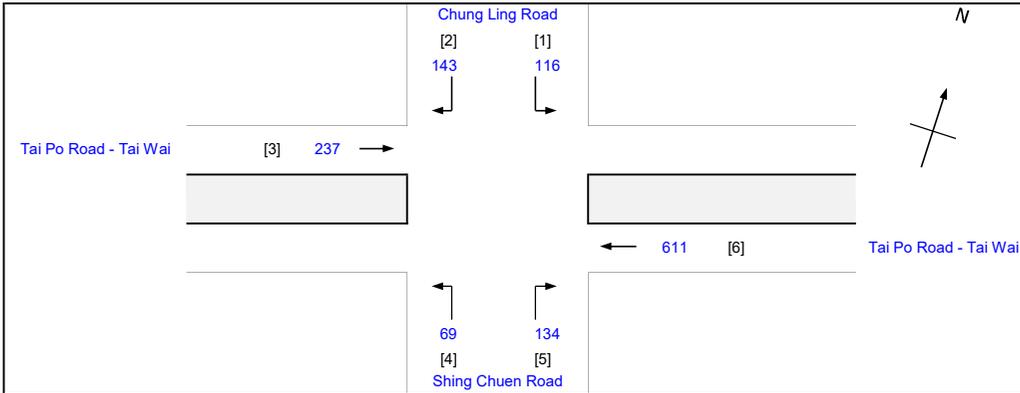at Lot Nos. 374, 375 S.A and 375 S.B in D.D.186, To Fung Shan, Sha Tin | | Checked By: SY | 11/7/2025

J5 - Tai Po Road - Tai Wai / Shing Chuen Road / Ching Ling Road | 2030 Design Traffic Flow (Chung Yeung Festival Peak Hour) | Reviewed By: AW | 11/7/2025

Junction Diagram

Chung Ling Road
[2] [1]
143 116

Tai Po Road - Tai Wai [3] 237 →

← 611 [6] Tai Po Road - Tai Wai

69 134
[4] [5]
Shing Chuen Road

N

Calculation Parameters

No. of critical vehicluar phase per cycle:		N =	3	
Intergreen Period	Stage A - B	I =	5	sec
	Stage B - C	I =	7	sec
	Stage C - A	I =	6	sec
Cycle time		C =	80	sec
Sum(y)		Y =	0.216	
Loss time		L =	15	sec
Total Flow		=	1310	pcu
Co	= (1.5*L+5)/(1-Y)	=	35.1	sec
Cm	= L/(1-Y)	=	19.1	sec
Yult	= 0.9-0.0075L	=	0.788	
R.C.ult	= (Yult-Y)/Y*100%	=	264.8	%
Cp	= 0.9*L/(0.9-Y)	=	19.7	sec
Ymax	= 1-L/C	=	0.813	
R.C.(C)	= (0.9*Ymax-Y)/Y*100%	=	238.8	%
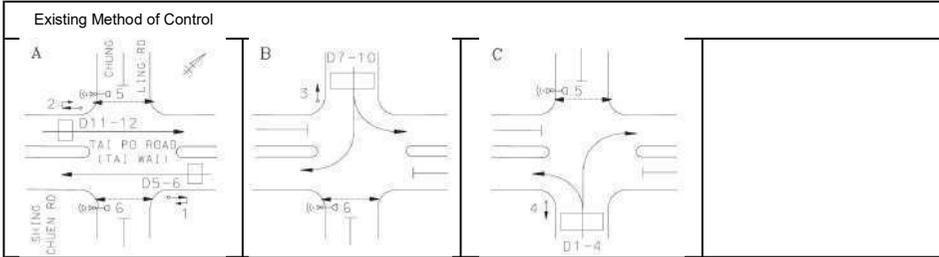
Existing Method of Control

A, B, C diagrams

Pedestrian Phase	Width (m)	Stage no.	Green Time Required (s) SG	FG	Green Time Provided (s) SG	FG	Check
5		C,A	5	14	48	14	OK
6		A,B	5	15	15	15	OK

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Left Flow pcu/h	Straight Flow pcu/h	Right Flow pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Flare lane Effect	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m/lane)	Average Delay (sec)
3	A	3.5	2	2				4210		237		237	0.00	4210			4210	0.056			17	44	0.103	6	9
6	A	3.5	1	2				4210		611		611	0.00	4210			4210	0.145	0.145		44	44	0.266	15	10
2	B	3.5	3	2	20			4210			143	143	1.00	3916			3916	0.037			11	11	0.266	7	31
1	B	3.5	3	2	15		N	4070	116			116	1.00	3700			3700	0.031	0.037		9	11	0.228	6	31
4	C	3.5	4	2	15		N	4070	69			69	1.00	3700			3700	0.019	0.034		6	10	0.145	3	31
5	C	3.5	4	2	20			4210			134	134	1.00	3916			3916	0.034			10	10	0.266	6	32

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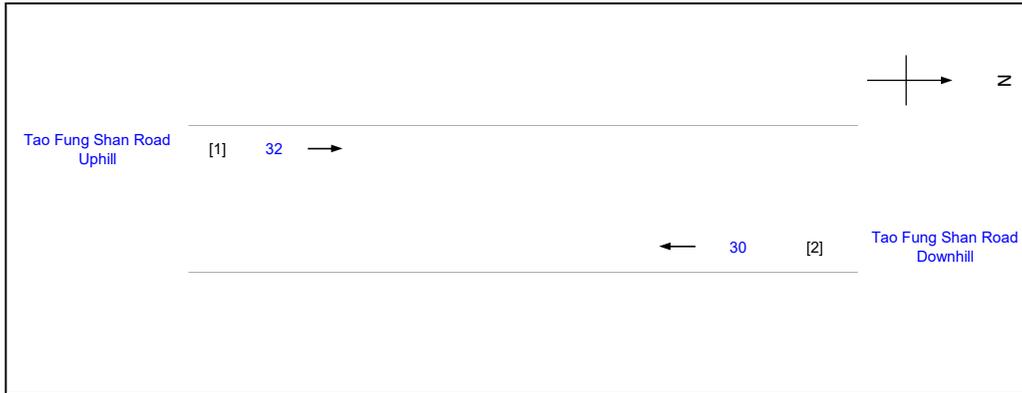
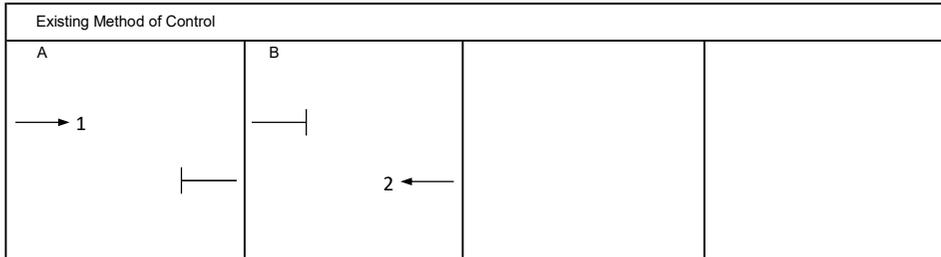NOTE : O - OPPOSING TRAFFIC   N - NEAR SIDE LANE   SG - STEADY GREEN   FG - FLASHING GREEN   PEDESTRAIN WALKING SPEED = 1.2m/s   QUEUING LENGTH = AVERAGE QUEUE * 6m

Tao Fung Shan Road Uphill [1] 32 →

← 30 [2] Tao Fung Shan Road Downhill

N

No. of critical vehicluar phase per cycle:	N =	2
Intergreen Period Stage A - B	I =	120 sec
Stage B - A	I =	120 sec
Cycle time	C =	270 sec
Sum(y)	Y =	0.033
Loss time	L =	238 sec
Total Flow	=	62 pcu
Co = (1.5*L+5)/(1-Y)	=	374.2 sec
Cm = L/(1-Y)	=	246.0 sec
Yult = 0.9-0.0075L	=	
R.C.ult = (Yult-Y)/Y*100%	=	
Cp = 0.9*L/(0.9-Y)	=	246.9 sec
Ymax = 1-L/C	=	0.119
R.C.(C) = (0.9*Ymax-Y)/Y*100%	=	227.5 %

Existing Method of Control

A   B

→ 1   ⊢

      ⊢ 2 ←

Pedestrian Phase	Width (m)	Stage no.	Green Time Required (s) SG	FG	Green Time Provided (s) SG	FG	Check

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	Left Flow pcu/h	Straight Flow pcu/h	Right Flow pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lane Length m.	Flare lane Effect	Revised Sat. Flow pcu/h	y	Greater y	L sec	g (required) sec	g (input) sec	Degree of Saturation X	Queue Length (m/lane)	Average Delay (sec)
1	A	3.5	1	1			N	1965		32		32	0.00	1965			1965	0.016	0.016		16	16	0.275	11	122
2	B	3.5	2	1			N	1965		30		30	0.00	1965			1965	0.015	0.016		15	16	0.258	11	122

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NOTE : O - OPPOSING TRAFFIC   N - NEAR SIDE LANE   SG - STEADY GREEN   FG - FLASHING GREEN   PEDESTRAIN WALKING SPEED = 1.2m/s   QUEUING LENGTH = AVERAGE QUEUE * 6m