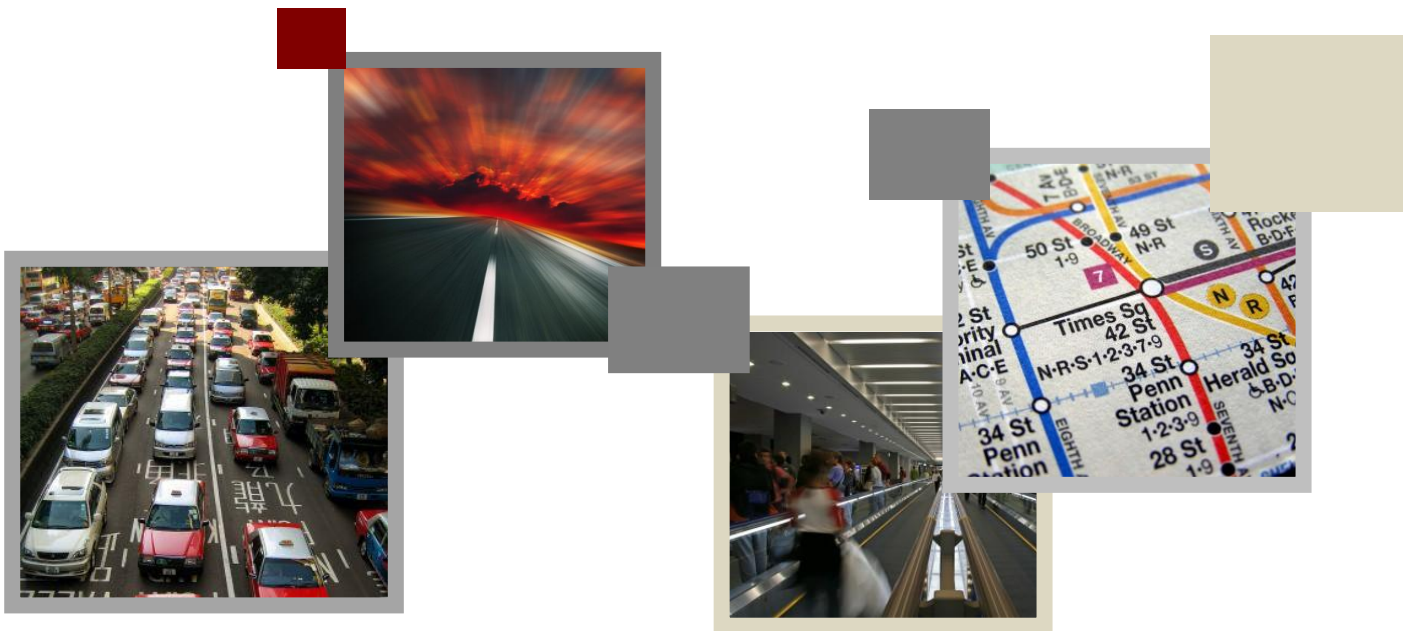


TRAFFIC IMPACT ASSESSMENT

Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning from “Village Type Development” Zone to "Government, Institution and Community (1)" Zone at Lots 1421 (Part), 1422 S.B (Part), 1423 S.B (Part), 1423 S.C (Part) and 1423 S.D (Part) in D.D. 41, Tong To, Sha Tau Kok, New Territories



TRAFFIC IMPACT ASSESSMENT REPORT

Reference: 31041-T01-05

Date: September 2025

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1 Introduction

1.1 Background

“自由福居” located at Nos. 24 and 25 Tong To Ping Tsuen, Sha Tau Kok, New Territories, has been operated as a columbarium use since 1988. The site currently contains a total of 864 niches, including 60 niches sold. The remaining niches are yet to be sold. The facility's operation and capacity necessitate an evaluation of its traffic impact, especially as the columbarium reaches full occupancy (hereafter, “proposed development”).

The Applicant intends to submit an application under Section 12A to the Town Planning Board for an amendment to the approved Sha Tau Kok Outline Zoning Plan Number S/NE-STK/2 from the existing “Village Type Development” zone to the "Government, Institution and Community (1)" Zone.

AXON Consultancy Limited has been commissioned to carry out this Traffic Impact Assessment (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/attraction due to the proposed development; and
- to assess the future traffic situation in the surrounding network; and
- to appraise the potential traffic impacts of the development; and
- to evaluate the transport facilities of the development; and
- to consider road improvement proposals, 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, which describes the site location, development schedules;

Chapter 3 – Traffic Management and Visitor Strategy, outlines the visitor management systems and traffic arrangements, including the administrative visitor booking system and pre-booked shuttle services;

Chapter 4 – Existing Traffic Situation, which presents the existing local road network within the vicinity of the proposed development, the details of the traffic count survey and the traffic assessment of the existing traffic conditions;

Chapter 5 – Future Traffic Situation, which presents future traffic flows for the design year under reference and design scenarios while incorporating the anticipated annual growth rate and the planned developments;

Chapter 6 – Summary and Conclusion, which summarises the findings of this traffic impact assessment and presents the conclusions regarding the traffic issues associated with the proposed development.

2 The Proposed Development

2.1 The Application Site

The Application Site spans approximately 157 m² and is located at Lots 1421 (Part), 1422 S.B (Part), 1423 S.B (Part), 1423 S.C (Part) and 1423 S.D (Part) in D.D. 41, Tong To, Sha Tau Kok, New Territories. The site location is depicted in **Figure 2.1**.

The site can be accessed via a single-track access road, which is branching off from Sha Tau Kok Road - Shek Chung Au.

2.2 The Proposed Development

The existing columbarium-used development, “自由福居”, has been operating since 1988. The Applicant has reported that the site contains a total of 864 niches, with 60 niches sold. The proposed development aims to fully utilize the columbarium's capacity. The development schedule is summarised in **Table 2.1** below.

Table 2.1 Development Schedule

Design Parameter	Quantity of Proposed Development Parameter
Application Area	About 157m ²
Existing Zoning	"Village Type Development" zone
Number of Sold Niches	60
Proposed Zoning	"Government, Institution and Community (1)" Zone
Total Number of Niches	864
Total Number of Visitors*	3,456

Note: * Total Number of Visitors = Total Number of Niches x 4 (Anticipated Average no. of Visitor for 1 Niche)

3 Traffic Management and Visitor Strategy

3.1 Introduction

Effective traffic management is essential to the safe and orderly operation of “自由福居” and to minimising impacts on the surrounding transport network. Given the narrow access road and potential congestion during peak periods, the visitor strategy is structured around:

- A mandatory Administrative Visitor Booking System; and
- Pre-booked shuttle services during Ching Ming and Chung Yeung festivals.

Distinct arrangements apply for festive periods (Ching Ming, Chung Yeung, and the two weekends before and after each festival) and non-festive periods (Wednesdays and Sundays, excluding festive Sundays).

3.2 Administrative Visitor Booking System

To manage visitor traffic effectively, “自由福居” has implemented a comprehensive Administrative Visitor Booking System, which includes the following key components:

a. Advance Reservations

Visitors are required to make appointments in advance through the columbarium's pre-booking system, either by phone or WhatsApp (WhatsApp number:). Reservations are processed on a first-come, first-served basis to ensure fair access for all visitors and to control the flow of visitors.

- Non-festive periods: bookings must be made at least 7 days in advance.
- Festive periods: bookings must be made at least 14 days in advance.

b. Confirmation of Slots

Upon booking, visitors receive confirmation of their session times and access arrangements through the same channel. For festive periods, this includes scheduled shuttle pick-up and drop-off details.

c. **Verification and Access Control**

Festival periods

All visitors must present booking confirmation at the San Wan Road lay-by (westbound outside Exit B of Sheung Shui Station; Figure 3.1) before boarding the shuttle. Walk-in entry to the columbarium premises will not be allowed.

Non-festival periods

No shuttle service is provided. Visitors may reach the site in three ways:

- by public transport, followed by a short walk;
- by taxi set-down along Sha Tau Kok Road, followed by a short walk; or
- directly on foot from nearby areas.

In all cases, only pre-booked visitors are admitted. Direct vehicular access to the columbarium premises is not allowed.

d. **Visitor Cap**

Festival periods

Visitor numbers are capped at 400 per day, aligned with the planned shuttle service capacity. This ensures that the forecast demand of about 3,456 visitors per festival ($\approx 384/\text{day}$) is spread evenly across the nine designated days. The booking system is programmed to prevent reservations beyond this limit. While past festival records suggest lower actual visitation, a full cap of 400 per day has been adopted for assessment to provide a conservative basis of analysis.

Non-festival periods

Non-festive visits are capped at **40 visitors per day (8 per hour)**, scheduled across five non-peak daytime sessions: 10:00–10:45, 11:00–11:45, 12:00–12:45, 14:00–14:45, and 15:00–15:45. This controlled cap is well within the available capacity of local public transport and pedestrian facilities, ensuring no adverse impact on the surrounding network. Based on past records, actual non-festive visitation has generally been lower, but the maximum allowance of 40 visitors per day has been adopted for assessment to provide a conservative basis.

e. Staffing and Information Dissemination

Information on booking arrangements, shuttle services, and traffic rules is consistently provided through WhatsApp, phone, and the columbarium's Facebook page.

Festive periods

A full management and security team is deployed on-site to coordinate shuttle operations and manage visitor admission.

Non-festive periods

Visitor activities are supervised by an on-site duty manager, which is sufficient to manage the smaller visitor numbers effectively.

Communication with Local Residents

Residents of Tong To Village will be informed in advance of the shuttle bus operations and traffic arrangements during festive periods. Notices will be provided through suitable channels (such as written notifications, WhatsApp groups or direct liaison by the management team) so that residents are aware of the operating schedule and safety measures.

3.3 Pre-Booked Shuttle Services

The pre-booked shuttle service is a key part of the visitor management strategy, providing efficient transportation for visitors to “自由福居”. The following sections outline key aspects of the service:

a. Operating Hours

The shuttle operates daily from 07:30 to 18:00 on each of the nine festive days. Services use 27-seater vehicles, capped at 20 passengers per trip for comfort and safety.

b. Pick-Up/Drop-Off Locations

San Wan Road Lay-By

The shuttle service runs between Sheung Shui Station and “自由福居”, with the pick-up and drop-off point located at the southern side lay-by area on San Wan Road westbound outside Exit B of Sheung Shui Station, as shown in **Figure 3.1**. The Applicant has obtained consent from the owners of adjacent private lots, and formal approval from the relevant authorities will be obtained prior to operation.

“自由福居”

On the “自由福居” side, the pick-up/drop-off areas are provided near the application area, as shown in **Figure 3.2**. The Swept Path Analysis of typical 27-seater vehicle, enclosed in **Appendix A**, depicted that sufficient maneuvering space could be provided along between the Access Road to Tong To Ping Tsuen and the “自由福

居” . Consents from the lot owners of adjacent private lots have been obtained from the Applicant.

c. Capacity and Scheduled Intervals

The shuttle operates at 2 trips per hour in each direction, providing 40 places per hour and up to 400 per day. This matches the festive visitor cap. The projected daily demand of about 384 visitors, and peak-hour demand of 35–38 visitors, can be comfortably accommodated within this capacity, ensuring orderly and reliable operations.

d. Safety and Visitor Control

Festival periods

All visitors to the columbarium are required to use the designated shuttle bus service. Shuttle buses will operate at a controlled speed not exceeding 20 km/h. All shuttle bus drivers will receive specific training and briefing on the operating procedures, including maintaining low speed, keeping alert to pedestrians (such as local residents and hikers), and giving way or pulling over when necessary to ensure safe interaction with other road users.

Non-festive periods

With a maximum of 40 visitors per day scheduled across five non-peak sessions, pedestrian flows remain very light. Access to the columbarium premises is regulated through the booking system, and all arrivals (by public transport, taxi set-down, or on foot from nearby areas) must be pre-booked. Safety is overseen by a duty manager and on-site security guards.

4 Existing Traffic Situation

4.1 Existing Road Network

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

Fanling Highway functions as an Expressway, featuring a dual-three carriageway that stretches in an east-west direction. This road is a primary route for the commute of the motorists between Tai Po and San Tin at its endpoints, passing through Fanling and Sheung Shui along the way. At the eastern end, the road links up with the Tolo Highway at the Lam Kam Interchange, which also connects with Tai Wo Service Road West, Lam Kam Road, and Tai Po Road. Towards the western end, the highway goes through the Kwu Tung area and succeeds the San Tin Highway.

Heung Yuen Wai Highway functions as a Rural Trunk, featuring a dual-two carriageway that stretches in the north-south direction. It acts as a primary linkage between the Fanling Highway and the Heung Yuen Wai Boundary Control Point. The road includes the Lung Shan Tunnel and Cheung Shan Tunnel, along with four interchanges, making it easier for motorists in Sha Tau Kok, Ta Kwu Ling, and Ping Che to reach Fanling, Sheung Shui, Tai Po, and Kowloon.

Sha Tau Kok Road – Wo Hang functions as a Rural Road A. It is a single-two carriageway that runs in the east-west direction.

Sha Tau Kok Road – Shek Chung Au functions as a rural road, serving as the sole access route to Sha Tau Kok Control Point. This single two-lane carriageway runs in the east-west direction.

4.2 Pre-booked Shuttle Service Routes

During the festivals and their **shadow periods**, a pre-booked shuttle service follows the following routes:

Ingress Route

Starting from San Wan Road, via Lung Sum Avenue, Lung Wan Street, San Wan Road, So Kwun Po Road, Fanling Highway, Heung Yuen Wai Highway, Sha Tau Kok Road – Wo Hang and then Sha Tau Kok Road – Shek Chung Au, eventually leading to its final stretch on the access road to Tong To Ping Tsuen.

Egress Route

Starting from the access road to Tong To Ping Tsuen, via Sha Tau Kok Road – Shek Chung Au, Sha Tau Kok Road – Wo Hang, Heung Yuen Wai Highway, Fanling Highway and then So Kwun Po Road, ultimately arriving at San Wan Road

The vehicular ingress/egress arrangement of the proposed development is depicted in **Figure 4.1**.

4.3 Public Transport

Public transport services including franchised buses and GMB in the vicinity are depicted in **Figure 4.2** and summarised in **Table 4.1**.

Table 4.1 Franchised Buses Services

Operator	Route No.	Destination
KMB	78	Sha Tau Kok → Sheung Shui (Tai Ping) ^(a)
KMB	78K	Sheung Shui (Tai Ping) ↔ Sha Tau Kok
KMB	78S	Sheung Shui → Sha Tau Kok ^(b)
		Sha Tau Kok → Sheung Shui ^(c)
KMB	N78	Sheung Shui ↔ Sha Tau Kok ^(d)
KMB	277A	Lam Tin Station → Sha Tau Kok ^(e)
		Sha Tau Kok → Lam Tin Station ^(f)

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

(b) Service Period: Mondays to Sundays – Morning Service

(c) Service Period: Mondays to Sundays – Afternoon Service

(d) Service Period: Mondays to Sundays – Midnight Service

(e) Service Period: Mondays to Sundays – Afternoon Service & Saturday and Holiday – Morning Service

(f) Service Period: Mondays to Sundays – Morning Service & Saturday and Holiday – Afternoon Service

4.4 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 Ching Ming Festival in 2024 (4th April 2024) from 07:30 to 18:30.

The traffic counts were recorded in a 15-minute interval, and to be 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 08:15 to 09:15 and 2024 observed traffic flow during peak hour during the festival periods is depicted in **Figure 4.4**.

Lay-by Occupancy Survey

To evaluate the existing occupancy of the San Wan Road Lay-by, which serves as the terminating point for the shuttle service, as shown in **Figure 3.1**, a comprehensive survey was conducted during the Ching Ming Festival on 4th April 2024, from 07:30 to 18:30.

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.

4.5 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. The results of these assessments are summarised in **Table 4.2**, while the detailed calculation sheets can be found in **Appendix B**.

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.

Table 4.2 Existing Junction Performance

Jun No.	Junction Location	Type / Capacity Index *	Observed Scenario
Jn A	Sha Tau Kok Road - Shek Chung Au / Access Road to Tong To Ping Tsuen	Priority/ DFC	0.12
Jn B	Heung Yuen Wai Highway / Sha Tau Kok Road – Wo Hang / Sha Tau Kok Road – Ma Mei Ha	Roundabout/ DFC	0.37

Notes: * DFC - Design Flow / Capacity Ratio.

As depicted in **Table 4.2**, all key junctions, currently operate below their maximum capacities during the identified peak.

Lay-by Occupancy Assessment

To evaluate the lay-by occupancy of the lay-by area on San Wan Road, near Exit B2 of Sheung Shui MTR Station, an extensive survey was conducted throughout the shuttle 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 **Figure 4.5**, which can be interpreted as follows:

- a. **Horizontal Axis:** Represents the time intervals during the Ching Ming Festival, from 07:30 to 18:30, 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 the “自由福居” shuttle service vehicle. While the vehicle itself has an approximate length of 8 meters, an additional buffer is required for safe maneuvering and alignment when parked in the lay-by, leading to an overall occupied length of 9 meters.

The combined height of the blue and red bars at each time interval shows the total length occupied.
- d. **Orange Line:** Represents the maximum length provided by the San Wan Road lay-by, which is 59 meters.

The results show that the busiest periods are observed around 08:00 - 08:05, where the occupancy totals about 45 meters. Even during the peak periods, the lay-by occupancy did not exceed the maximum provided length of 59 meters. This indicates that the lay-by has sufficient capacity to accommodate the shuttle services for “自由福居”, even during peak festival periods.

5 Future Traffic Situation

5.1 2030 Design Year Road Network

Given that “自由福居” has been in operation since 1988. 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 utilizes the historical data from Annual Traffic Census Data (ATC) and demographic trends from the Projected Population by District Council District to predict future traffic volumes. The more significant growth factor derived from these two sources is adopted to ensure the most conservative traffic estimate.

Considering the ongoing and planned infrastructure projects, it is evident that any significant developments influencing traffic patterns are either in the planning stages or already underway. These aspects are elaborated upon in **Section 5.4** of this report.

The current and expected road network developments reinforce the suitability of using the Growth Factor Method. This approach effectively leverages existing traffic trends to project future traffic patterns, ensuring a robust and realistic forecast for the Design Year 2030.

5.2 Development Traffic Generation

Modal Split

According to the internal management and with reference to another significant columbarium project in the government sector, the modal splits of "自由福居" during both the festive and non-festive periods are presented in **Table 5.1**.

Table 5.1 Modal Split of “自由福居”

Period	Means of Access to and from the Columbaria Premises	Modal Split (%)	Remarks
Festive	Shuttle Bus (to/from Sheung Shui)	≈100% (a)	All visitors are required to use designated shuttle service by appointment.
	Walk-in / Taxi / Others	≈0% (a)	

Period	Means of Access to and from the Columbaria Premises	Modal Split (%)	Remarks
Non-Festive	Taxi / Walk to/from Sha Tau Kok Rd	46% ^(b)	Taxi drop-off with visitors walking the final section.
	GMB / Bus (to pickup/ drop-off point)	54% ^(b)	Visitors alight from public transport and walk to the site.
	Shuttle Bus (to/from Sheung Shui)	0%	No service is provided during the non-festival periods.

Notes: (a) During festive periods, all visitors are required to use the designated shuttle bus service to enter and exit 「自由福居」 in accordance with the ash-placement agreement (「自由福居骨灰安放權協議」). Walk-in entry to the columbarium premises by any other means, even with a confirmed booking, is not allowed.

(b) Modal split reference is drawn from Table 5.3 of the *Traffic Impact Assessment Study for Columbarium Development at Cape Collinson Road, Chai Wan – Final Report* (May 2012).

Based on the administrative control listed in **Section 3.3** and modal split summary presented in **Table 5.1** :

- **Festive periods:** During festive periods, all visitors (≈100%) are required to use the pre-booked shuttle service (see Note (a) in Table 5.1). The service, operated by 27-seat vehicles with a 20-passenger cap, provides sufficient capacity to meet the forecast demand. Entry to the columbarium premises by private vehicles, taxis or on foot is not allowed.
- **Non-festive periods:** With a daily cap of 40 visitors (8 per hour across five non-peak sessions), it is estimated that about 46% (≈4 visitors/hour) will arrive by taxi and 54% (≈4 visitors/hour) by bus or GMB. In practice, this equates to roughly one taxi movement per hour and a negligible number of additional bus/GMB boardings. Such levels are minimal and will not impose any measurable impact on either the road network or existing public transport services. Visitors walking directly from nearby areas are very few in number and are included within these proportions.

Trip Generation and Attraction

The pre-booked service operates with a fixed frequency of 2 trips per hour in each direction during peak hours of festive periods from 07:30-18:00. The schedule, based on predicted demand, helps regulate trip generation and manage visitor numbers effectively. The service is expected to handle a consistent flow of visitors while adhering to the capacity limit of 20 passengers per trip, despite the vehicles' ability to seat 27 passengers. This adjustment further ensures safety and traffic management.

Table 5.2 shows the projected vehicular trips of 3 pcu per hour per direction, based on the pre-booked shuttle service schedule during the busiest periods, including festival days and surrounding weekends.

Table 5.2 Fixed Trip Generation and Attraction for “自由福居” during Festive Periods

Vehicular Trips (PCU/hour)	
Generation	Attraction
3	3

Traffic Demand Assessment Summary

On non-festive days, the columbarium operates an exclusive pre-booked shuttle service on Wednesdays and Sundays, offering five scheduled timeslots at 10:00 - 10:45, 11:00 - 11:45, 12:00 - 12:45, 14:00 - 14:45 & 15:00 - 15:45. Each timeslot accommodates a maximum of 8 visitors, resulting in an average of one taxi trip per hour. While this reflects the maximum service capacity, historical data indicates that actual demand is generally low, with many non-festive days recording few or no bookings.

During festive periods, a controlled shuttle service is implemented to manage increased visitor demand. The service operates at a fixed frequency of two trips per hour in each direction, with each trip capped at 20 visitors, despite the 27-seat vehicle capacity. This arrangement translates to a peak traffic volume of 3 Passenger Car Units (PCU) per hour per direction, as outlined in the traffic impact assessment.

The combination of capped visitor numbers, pre-booking requirements, and fixed shuttle scheduling ensures that traffic demand remains well within the capacity of the surrounding road network. Consequently, the columbarium's operations—both during festive and non-festive periods—are expected to have a minimal impact on local traffic conditions.

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 2020 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 5.3**.

Table 5.3 Annual Traffic Census Data

No.	Link	From	To	Road Type	2020	2021	2022	2023	Growth Rate p.a.
5003	Fanling Highway	So Kwun Po INT	Wo Hop Shek INT	EX	61,080	64,840	62,830	75,040	7.10%
5041	Lung Shan Tunnel	Fanling Highway	Sha Tau Kok Road	RT	13,840	16,870	16,400	20,630	14.23%
5660	Sha Tau Kok Rd	On Kui St	Ping Che Rd	RR	23,740	22,980	22,280	22,810	-1.32%
5860	Sha Tau Kok Rd	Ping Che Rd	Shun Lung St	RR	6,300	5,970	4,900	5,010	-7.35%
5885	San Wan Rd	Ramp A of So Kwun Po INT	Lung Sum Ave	DD	17,120	15,680	15,600	15,960	-2.31%
6653	Ping Che Rd	Sha Tau Kok Rd	Lin Ma Hang Rd	DD	11,030	11,870	11,510	12,150	3.28%
Total					133,110	138,210	133,520	151,600	4.43%

Table 5.3 presents the traffic flow information spanning four years. Since the opening of Heung Yuen Wai Highway in 2019, the traffic pattern on Sha Tau Kok Road has undergone a redistribution in 2019 and has remained stable since 2020. Notably, there has been a significant reduction in traffic volume along Sha Tau Kok Road, while there has been a substantial increase in traffic volume within Heung Yuen Wai Highway (Lung Shan Tunnel section). Based on Annual Traffic Census Reports 2020 to 2023, the data indicates 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 **+4.43%**.

Projected Population Data

According to the report "Projections of Population Distribution 2023-2031" published by the Planning Department, the population growth data from the year 2024 to 2030 in North District is summarised in **Table 5.4**.

Table 5.4 Projected Population by District Council District, 2023-2031

District Council District	Year 2024	Year 2030	Growth Rate p.a. (%)
North	344,900	417,100	3.22%

The data indicate the growth in population in North District is at an annual rate of **+3.22%** from 2024 to 2030.

After comparing the historical data and the future planning data, for conservative purposes, an annual growth rate of **+4.43%** was adopted. This growth factor will apply in 2024 observed traffic flows.

5.4 Major Planned/ Committed Developments

The forecast includes traffic generated by major planned or committed developments, which is located near to the area of influence (Refer to Figure 4.3) as defined in this TIA and the surrounding area that may generate or be affected by traffic movements related to the proposed columbarium development, detailed in Table 5.5.

Table 5.5 Major Planned/ Committed Developments

Location	Type of Development	Completion Year
Proposed Temporary Transitional Housing and Ancillary Facilities for a Period of 7 Years at Government Land in D.D. 82, Ping Che, Ta Kwu Ling, New Territories	Residential Development	Before or in 2030

As shown in Table 5.5, only one committed development is expected to generate additional traffic in the assessment area. The list of committed developments was confirmed with the Planning Department, and this development has been incorporated into the future year traffic forecast through the application of the +4.43% annual growth factor, ensuring that its impact is reflected in the 2030 design year analysis.

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:

$$\begin{aligned}
 \text{2030 Reference Flows} &= \text{2024 Observed Flows} \times (1+4.43\%)^6 + \text{Planned Development Traffic} \\
 \text{2030 Design Flows} &= \text{2030 Reference Flows} + 3 \text{ pcu/hr}
 \end{aligned}$$

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

5.6 Future Traffic 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 5.6 with detailed calculation sheets attached in Appendix B.

Table 5.6 Future Junction Performance

Jun No.	Junction Location	Type / Capacity Index *	Reference Scenario	Design Scenario
Jn A	Sha Tau Kok Road - Shek Chung Au / Access Road to Tong To Ping Tsuen	Priority/ DFC	0.16	0.16
Jn B	Heung Yuen Wai Highway / Sha Tau Kok Road – Wo Hang / Sha Tau Kok Road – Ma Mei Ha	Roundabout/ DFC	0.50	0.50

Notes: * DFC - Design Flow / Capacity Ratio.

As shown in **Table 5.6**, 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 4.5** and **Figure 4.5** and incorporating the shuttle service from **Table 5.2**, which projects an additional 3 pcu or 2 trips per hour, the projected lay-by occupancy for 2030 is illustrated in **Figure 5.3**.

The current lay-by occupancy data indicates that the San Wan Road lay-by has adequate capacity to handle existing demand. With the anticipated shuttle service trips by 2030 (3 pcu or 2 trips per hour), the in-house model projects that these 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 59 meters, and the current peak occupancy is well below this limit, the analysis confirms that the lay-by will continue to have sufficient capacity.

Pedestrians Impact

As detailed in Section 3.3(d), safety controls for both festive and non-festive periods are set out in the Management Plan and are supported by signage, driver training, and advance notification to local residents.

During non-festive periods, the columbarium operates only on Wednesdays and Sundays with advance booking. Visits are capped at a maximum of 8 persons per hour (40 per day), and no shuttle service is provided. Visitors may access the site on foot after alighting from public transport or taxis at Sha Tau Kok Road. Given the limited visitor numbers and session-based control, pedestrian activity remains minimal and will not result in any adverse impact on the local environment or transport network.

On-site surveys confirmed that pedestrian activity on the access road is very low, with only two to three persons observed during peak hours. Such flows

are negligible and can be safely accommodated under the proposed traffic management arrangements.

To safeguard pedestrian movements during festive periods:

- Shuttle buses will operate at a controlled speed not exceeding 20 km/h, with footpath available along most sections of the access road (see Figures SP-01 and SP-02).
- Drivers will receive specific training to stay alert to pedestrians and to give way or pull over where necessary to ensure safe interaction.
- Signage will be provided at the columbarium entrance to make clear that only shuttle-bus passengers with bookings may enter the columbarium premises.

6 Summary and Conclusion

6.1 Summary

The applicant has commissioned AXON Consultancy Limited to conduct a Traffic Impact Assessment (TIA) for the proposed development of the “自由福居” columbarium, situated at Lots 1421 (Part), 1422 S.B (Part), 1423 S.B (Part), 1423 S.C (Part) and 1423 S.D (Part) in D.D. 41, Tong To, Sha Tau Kok, New Territories. This development encompasses a total of 864 niches, with 60 niches sold, and aims to formalize the site's rezoning from "Village Type Development" to "Government, Institution and Community (1)" Zone.

The pre-booked shuttle service, operating between “自由福居” and Sheung Shui MTR Station, is integral to minimizing vehicular traffic in the area. The shuttle service operates at a fixed maximum frequency of 2 trips per hour in each direction during festive peak periods, ensuring a controlled and predictable flow of visitors. This fixed schedule effectively manages trip generation and ensures that the traffic impact remains minimal.

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 +4.43% was adopted. This growth factor has been applied to the observed traffic flows in 2024 to project the 2030 anticipated traffic flows.

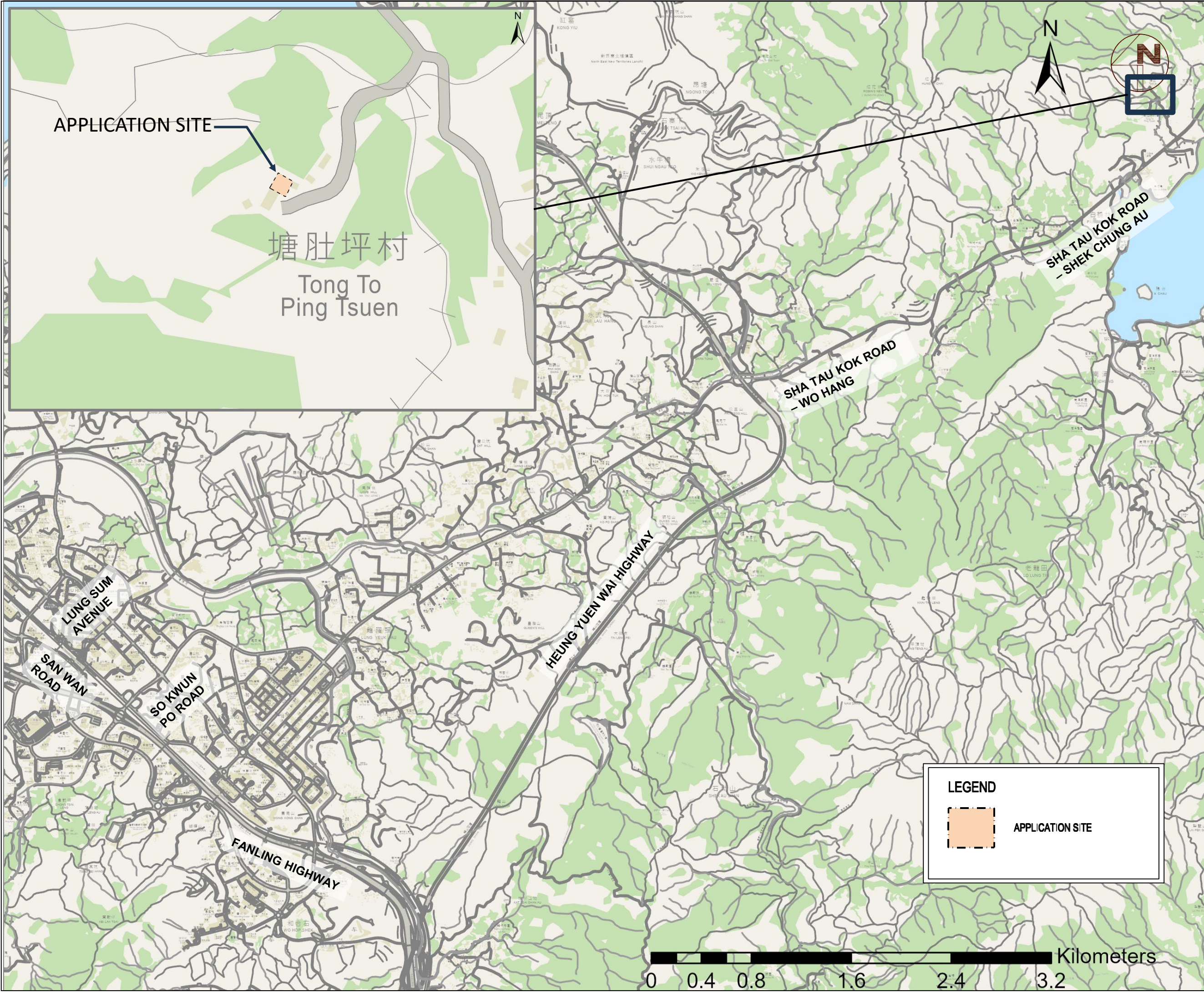
Capacity assessments of all major junctions along the ingress and egress routes indicated that all key junctions would perform satisfactorily under both reference and design scenarios for the year 2030. A detailed survey of the San Wan Road Lay-by confirmed its capacity to handle the increased demand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

Pedestrian activity along the access road is very low. With session-based booking, shuttle-bus control, driver training, speed restrictions, advance notice to Tong To Ping Tsuen residents, and appropriate signage in place, pedestrian safety and access can be effectively managed without adverse impact.

6.2 Conclusions

The traffic impact assessment findings reveal that the road network surrounding the area will be able to handle the traffic from the shuttle service at “自由福居”, which attracts 3 pcu/hr and generates 3 pcu/hr during festivals. 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 from "Village Type Development" Zone to "Government, Institution and Community (1)" Zone at Lots 1421 (Part), 1422 S.B (Part), 1423 S.B (Part), 1423 S.C (Part) and 1423 S.D (Part) in D.D. 41, Tong To, Sha Tau Kok, New Territories

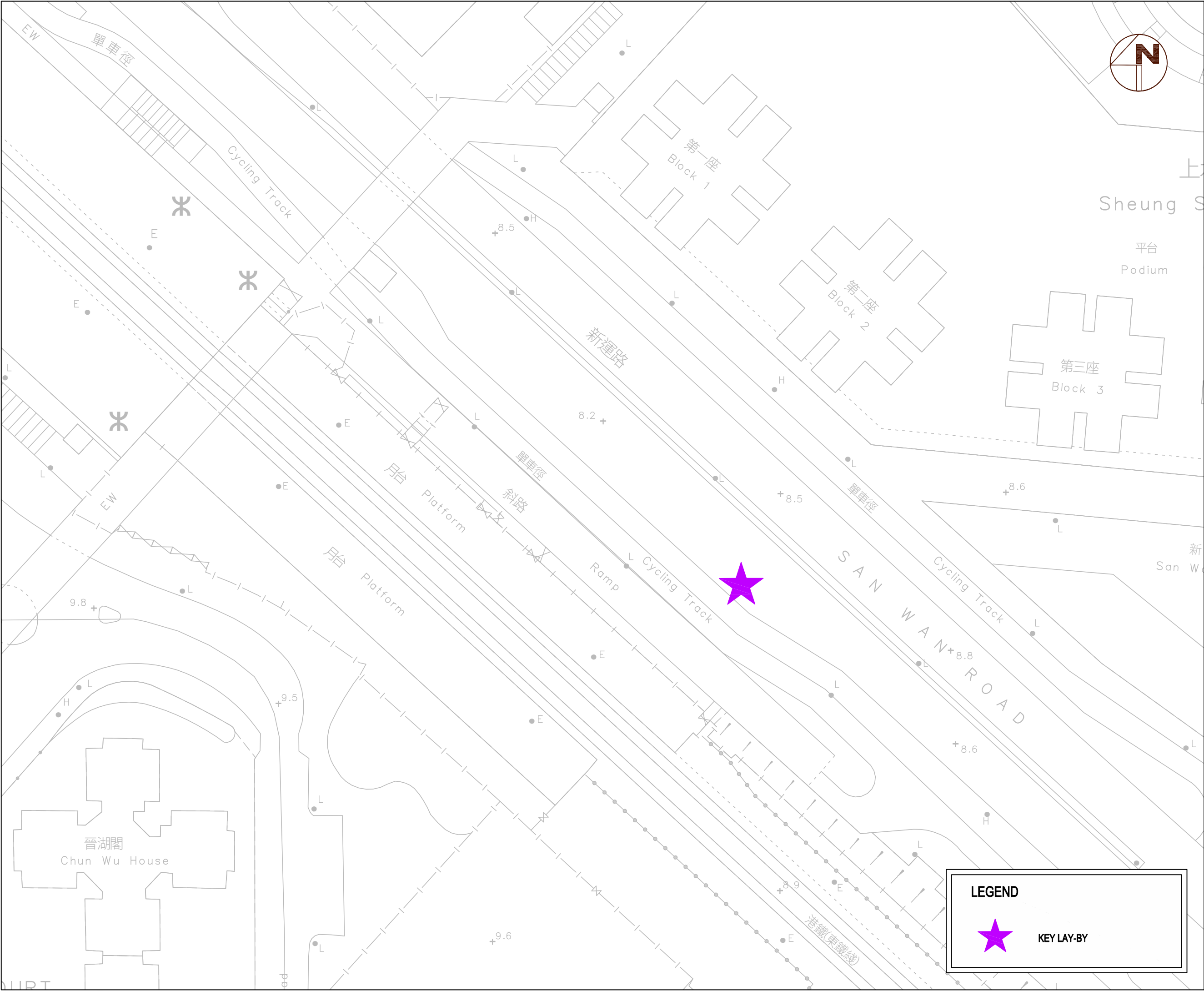
SITE LOCATION

FIGURE 2.1

Scale : N.T.S

Date : JAN 2025

Rev. :



Traffic Impact
Assessment for
Application for
Amendment of Plan for
Proposed Rezoning
from “Village Type
Development” Zone to
"Government,
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at Lots 1421 (Part),
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S.B (Part), 1423 S.C
(Part) and 1423 S.D
(Part) in D.D. 41, Tong
To, Sha Tau Kok, New
Territories

KEY LAY-BY

FIGURE 3.1

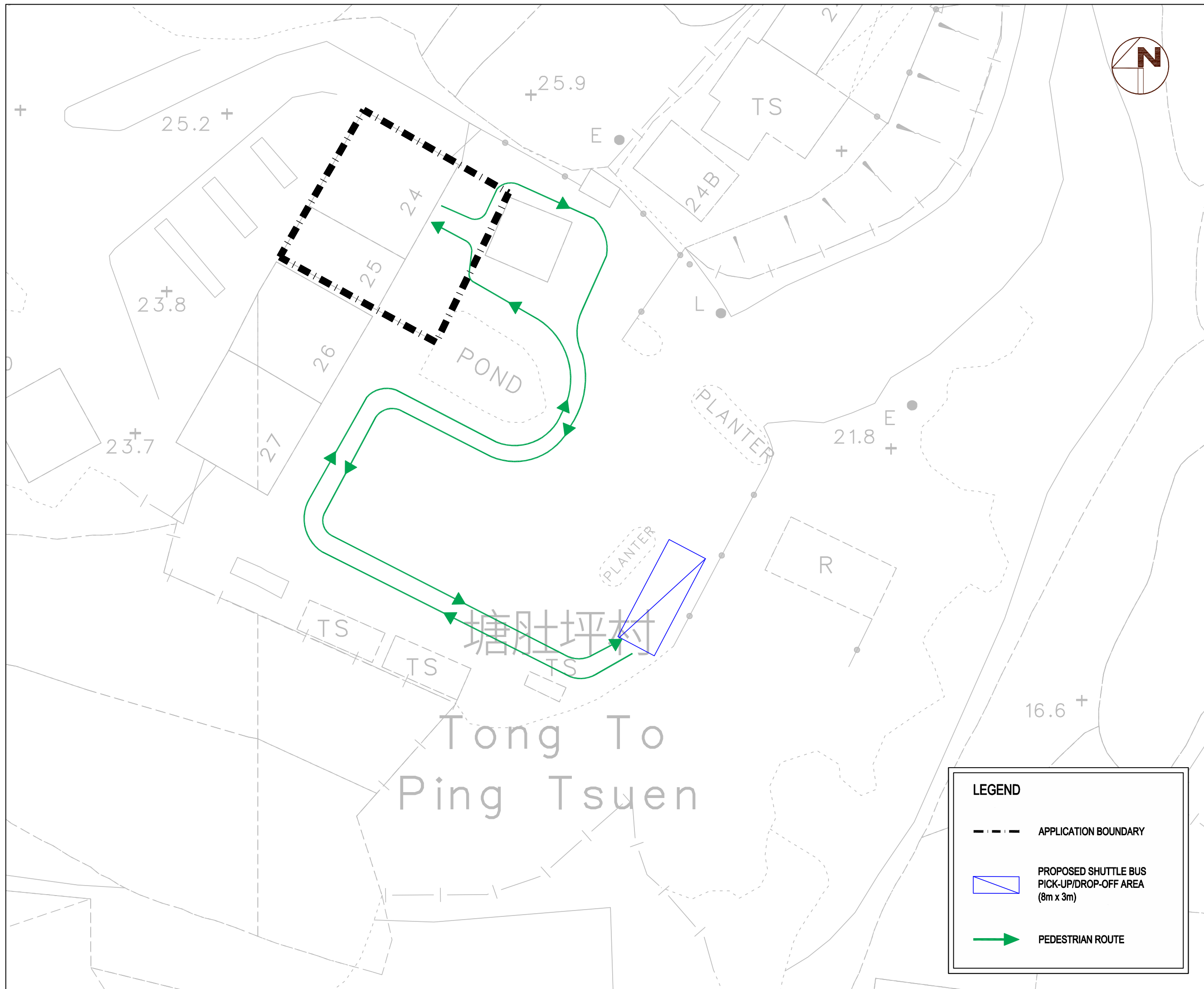
Scale : 1:500 (A3)

Date : JAN 2025

Rev. :

LEGEND

 KEY LAY-BY



Traffic Impact
Assessment for
Application for
Amendment of Plan for
Proposed Rezoning
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(Part) and 1423 S.D
(Part) in D.D. 41, Tong
To, Sha Tau Kok, New
Territories

**TRAFFIC
MANAGEMENT
PLAN**

FIGURE 3.2

LEGEND

APPLICATION BOUNDARY

PROPOSED SHUTTLE BUS
PICK-UP/DROP-OFF AREA
(8m x 3m)

PEDESTRIAN ROUTE

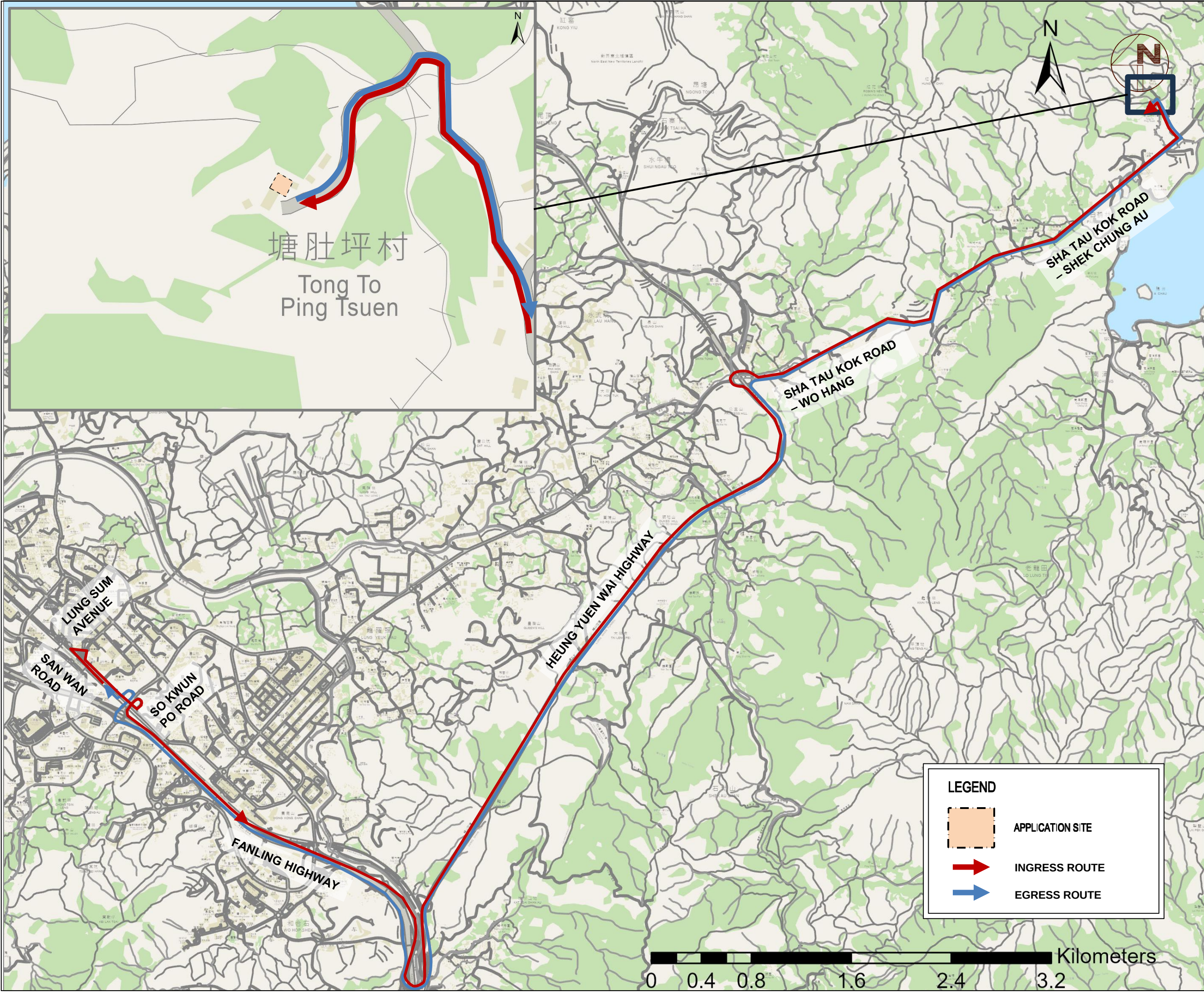
Scale : **1:500 (A3)**

Date : **JAN 2025**

Rev. :

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<http://www.axonhk.com>

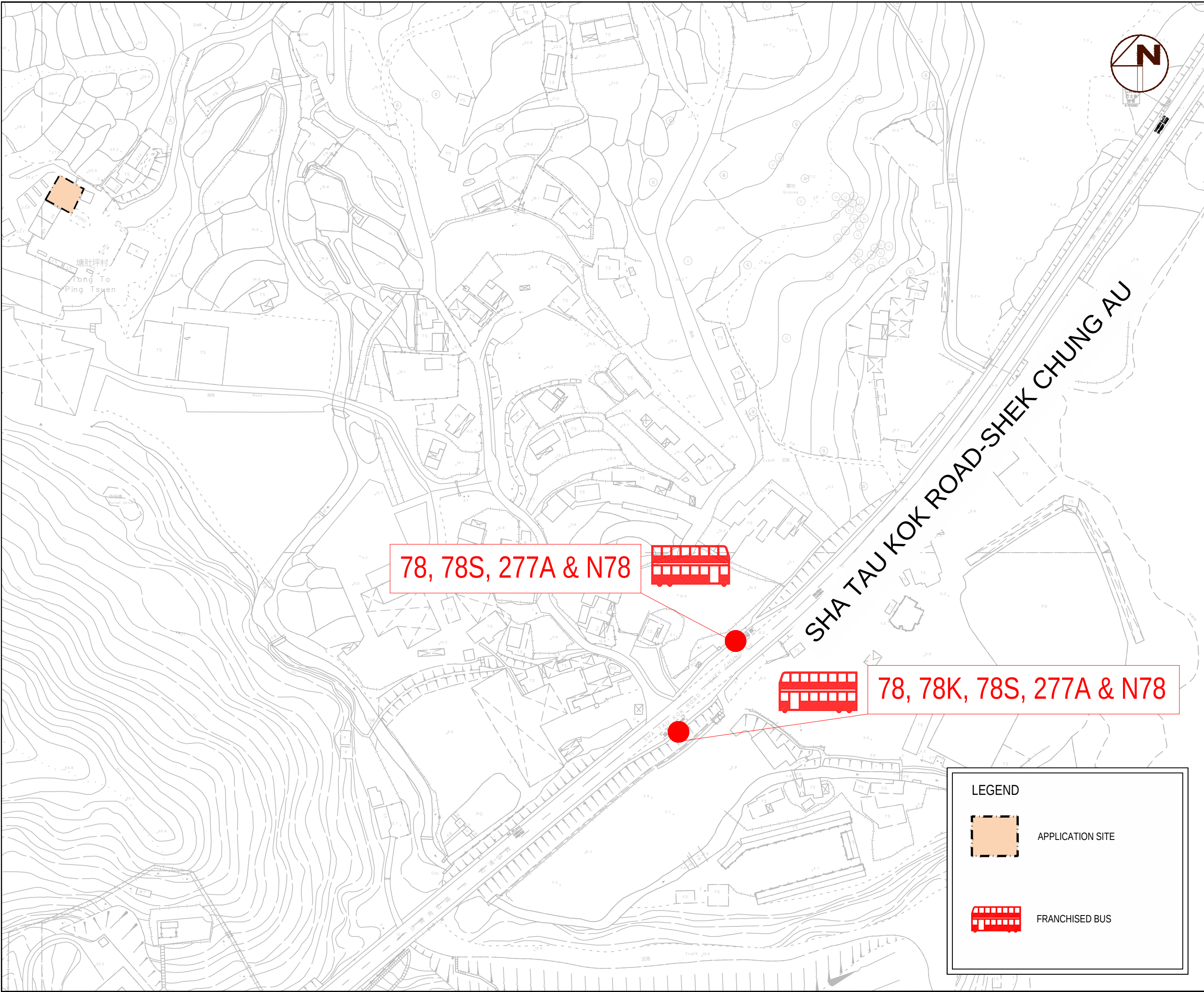
C:\USER\USER\DESKTOP\31041\DATA\DRAWING\REPORT DRAWING\20250108\FIG 3.2, TRAFFIC MANAGEMENT PLAN.DWG



Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning from "Village Type Development" Zone to "Government, Institution and Community (1)" Zone at Lots 1421 (Part), 1422 S.B (Part), 1423 S.B (Part), 1423 S.C (Part) and 1423 S.D (Part) in D.D. 41, Tong To, Sha Tau Kok, New Territories

VEHICULAR INGRESS AND EGRESS ROUTE

FIGURE 4.1



Traffic Impact
Assessment for
Application for
Amendment of Plan for
Proposed Rezoning
from “Village Type
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at Lots 1421 (Part),
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(Part) and 1423 S.D
(Part) in D.D. 41, Tong
To, Sha Tau Kok, New
Territories

**PUBLIC
TRANSPORT
FACILITIES**

FIGURE 4.2

LEGEND

 APPLICATION SITE

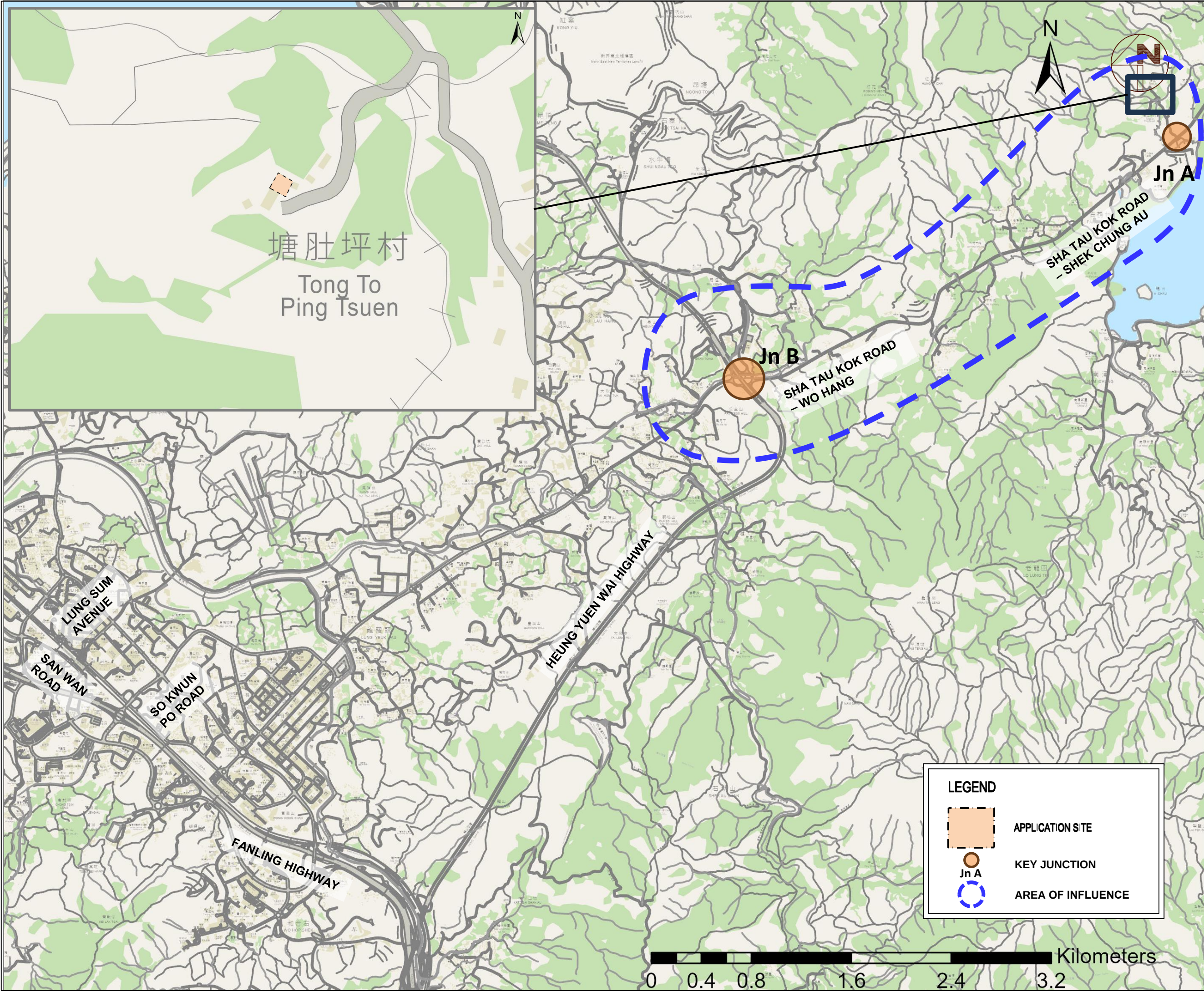
 FRANCHISED BUS

Scale : **1:1500 (A3)**

Date : **MAY 2025**

Rev. :

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Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning from “Village Type Development” Zone to “Government, Institution and Community (1)” Zone at Lots 1421 (Part), 1422 S.B (Part), 1423 S.B (Part), 1423 S.C (Part) and 1423 S.D (Part) in D.D. 41, Tong To, Sha Tau Kok, New Territories

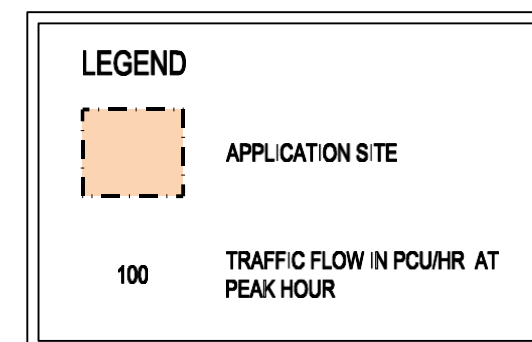
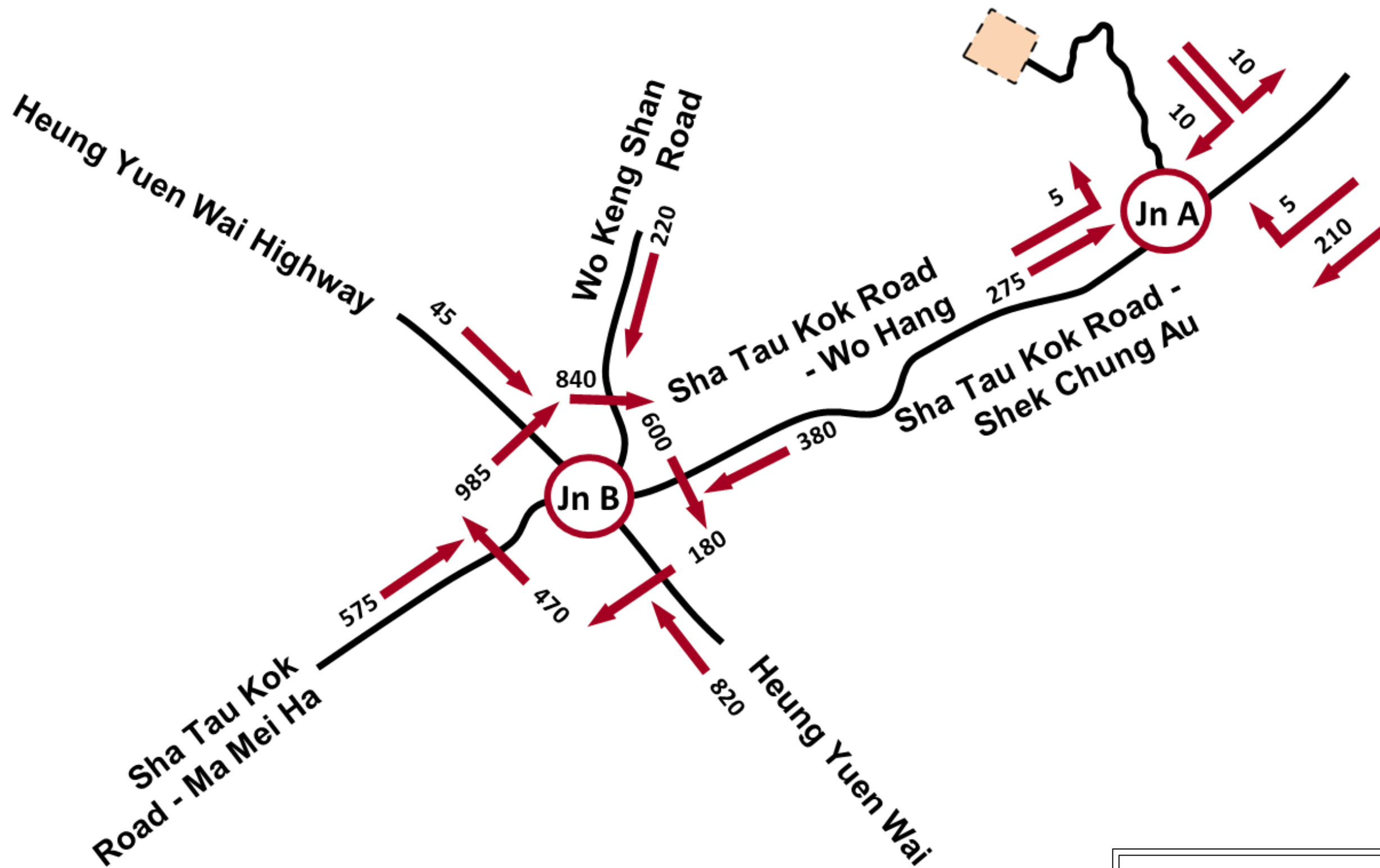
KEY JUNCTION

FIGURE 4.3

Scale : N.T.S

Date : MAY 2025

Rev. : B



Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning from "Village Type Development" Zone to "Government, Institution and Community (1)" Zone at Lots 1421 (Part), 1422 S.B (Part), 1423 S.B (Part), 1423 S.C (Part) and 1423 S.D (Part) in D.D. 41, Tong To, Sha Tau Kok, New Territories

YEAR 2024
OBSERVED
TRAFFIC FLOW

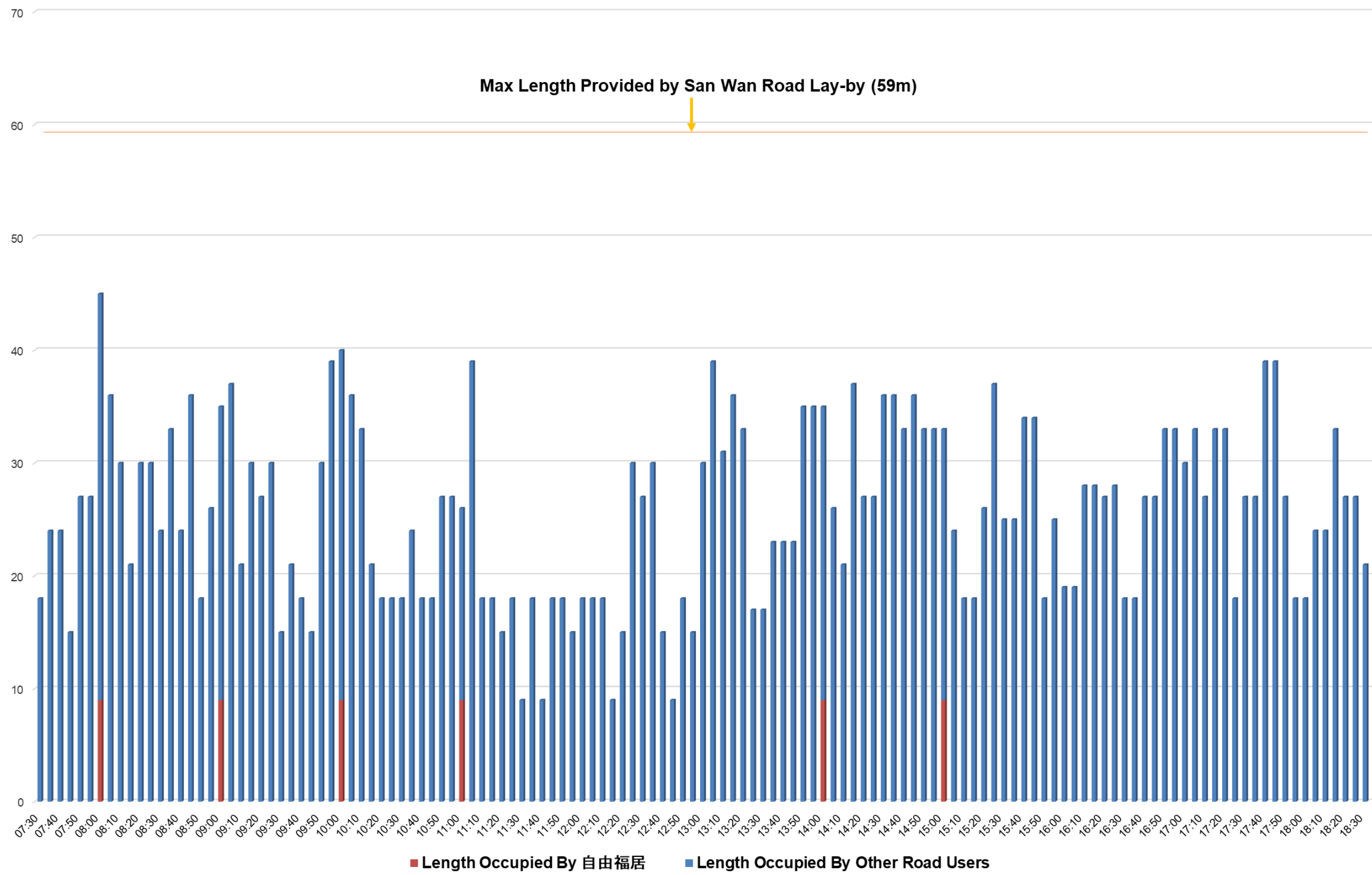
FIGURE 4.4

Scale : N.T.S

Date : JAN 2025

Rev. :

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Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning from "Village Type Development" Zone to "Government, Institution and Community (1)" Zone at Lots 1421 (Part), 1422 S.B (Part), 1423 S.B (Part), 1423 S.C (Part) and 1423 S.D (Part) in D.D. 41, Tong To, Sha Tau Kok, New Territories

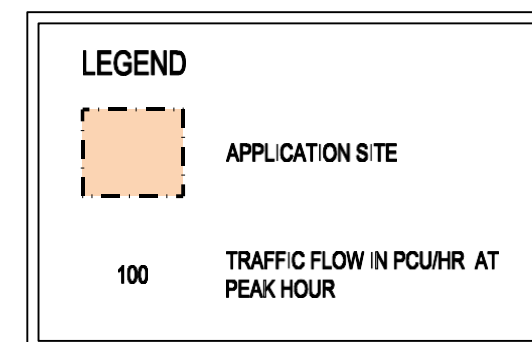
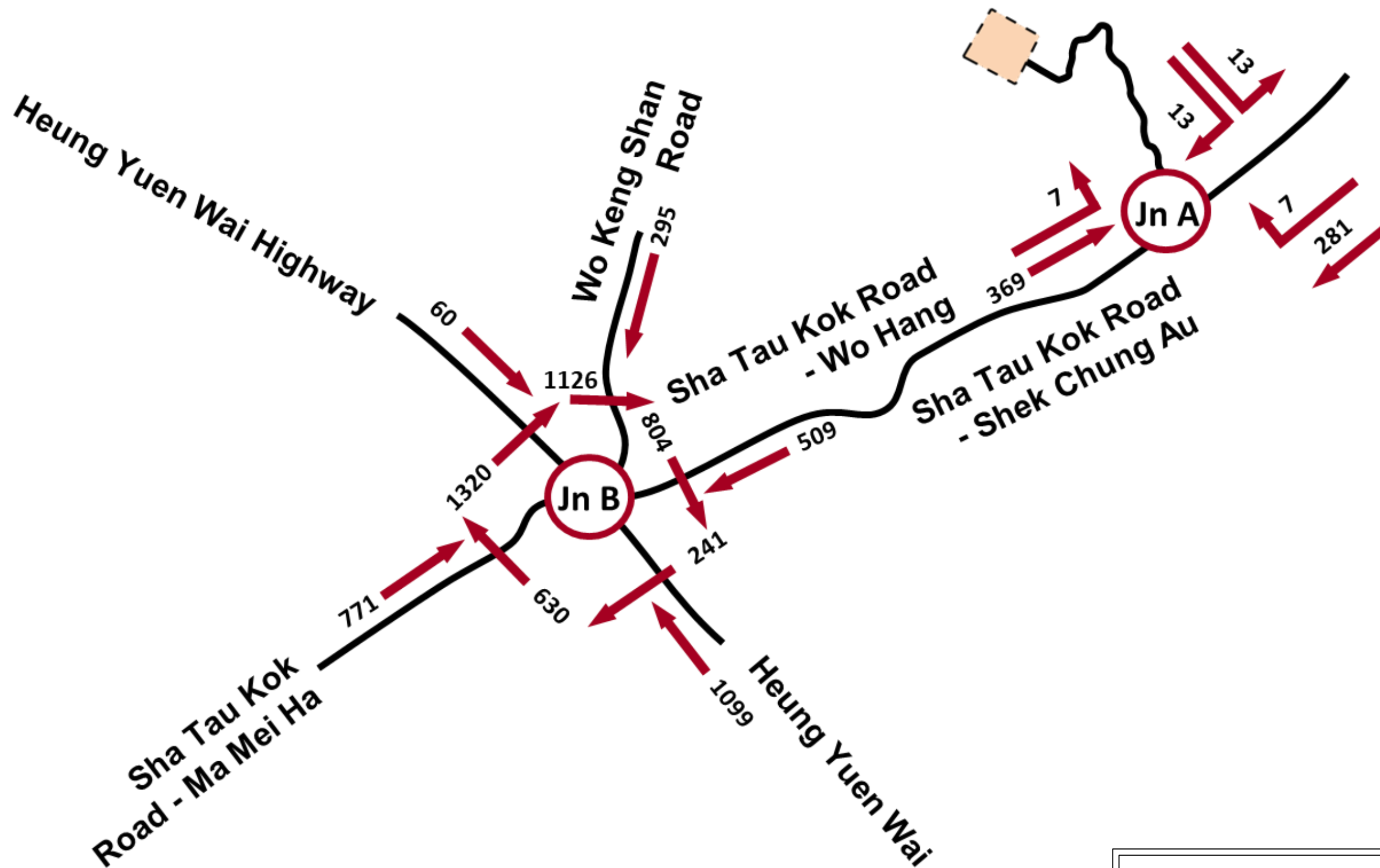
**YEAR 2024
OBSERVED LAY-BY
OCCUPANCY**

FIGURE 4.5

Scale : N.T.S

Date : JAN 2025

Rev. :



Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning from "Village Type Development" Zone to "Government, Institution and Community (1)" Zone at Lots 1421 (Part), 1422 S.B (Part), 1423 S.B (Part), 1423 S.C (Part) and 1423 S.D (Part) in D.D. 41, Tong To, Sha Tau Kok, New Territories

YEAR 2030
REFERENCE
TRAFFIC FLOW

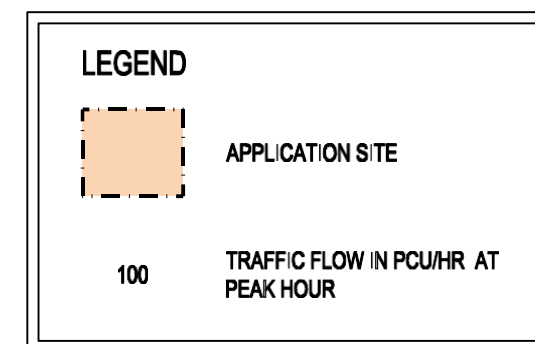
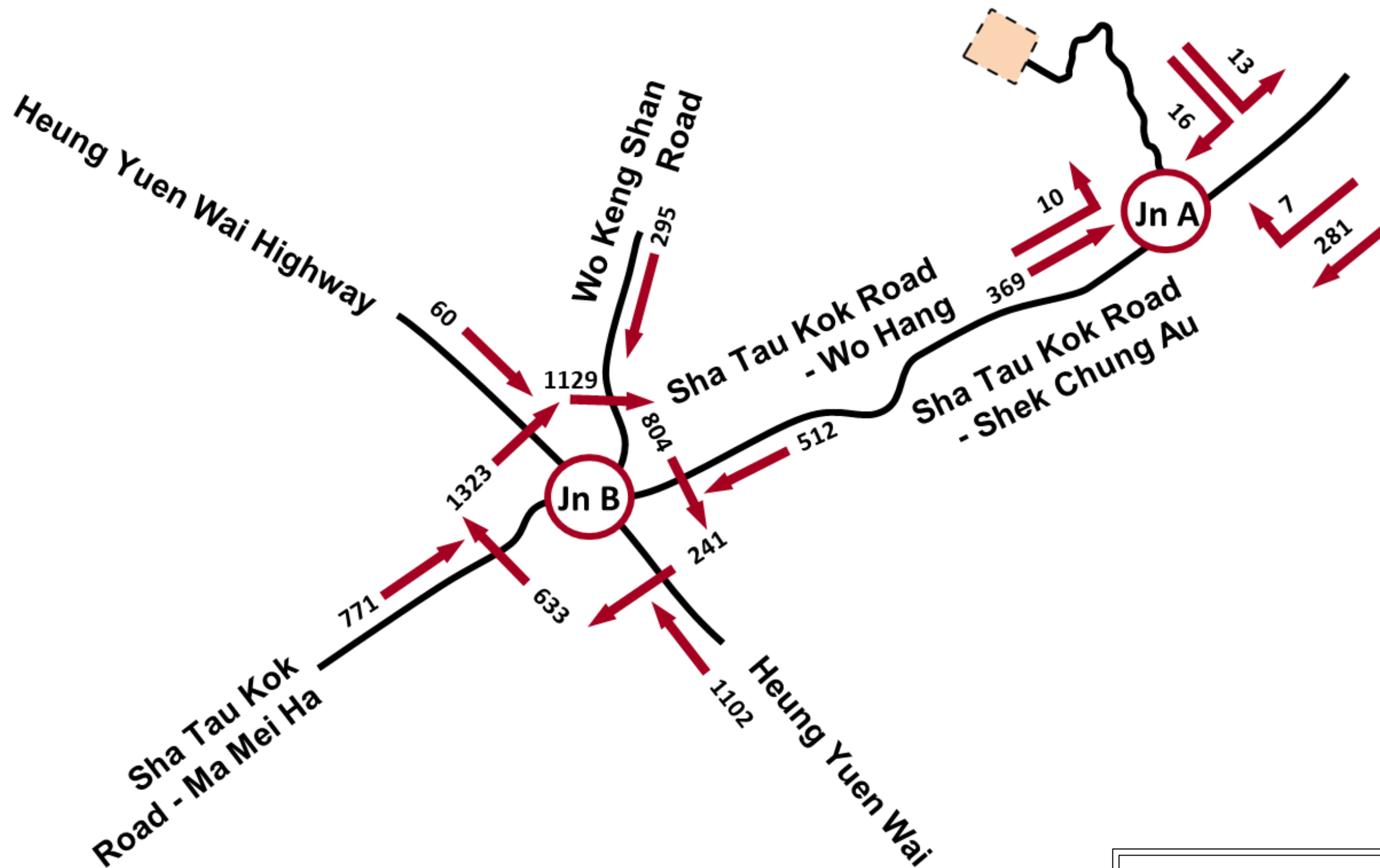
FIGURE 5.1

Scale : N.T.S

Date : JAN 2025

Rev. :

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Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning from "Village Type Development" Zone to "Government, Institution and Community (1)" Zone at Lots 1421 (Part), 1422 S.B (Part), 1423 S.B (Part), 1423 S.C (Part) and 1423 S.D (Part) in D.D. 41, Tong To, Sha Tau Kok, New Territories

YEAR 2030
DESIGN
TRAFFIC FLOW

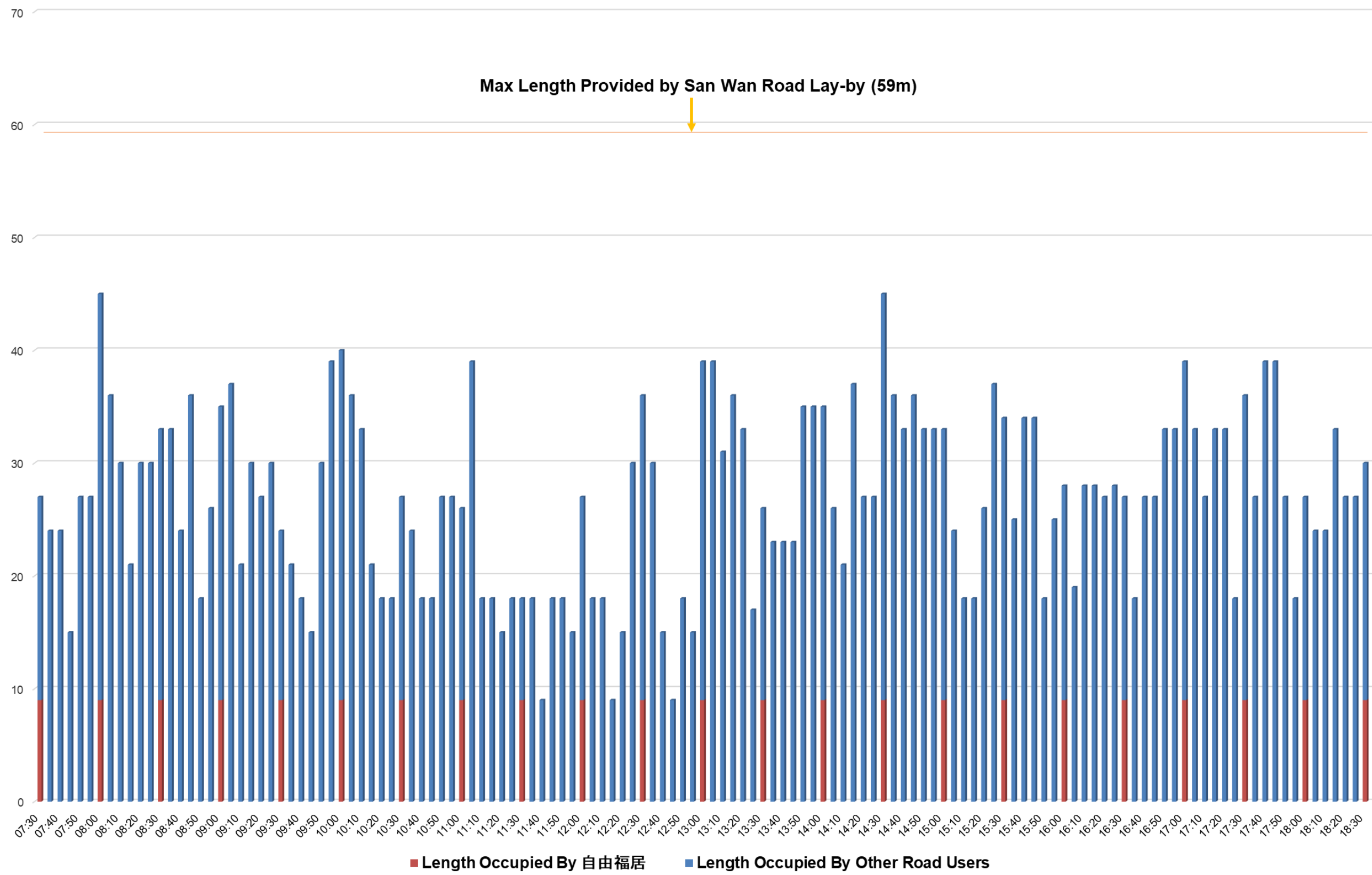
FIGURE 5.2

Scale : N.T.S

Date : JAN 2025

Rev. :

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Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning from "Village Type Development" Zone to "Government, Institution and Community (1)" Zone at Lots 1421 (Part), 1422 S.B (Part), 1423 S.B (Part), 1423 S.C (Part) and 1423 S.D (Part) in D.D. 41, Tong To, Sha Tau Kok, New Territories

**YEAR 2030
DESIGN LAY-BY
OCCUPANCY**

FIGURE 5.3

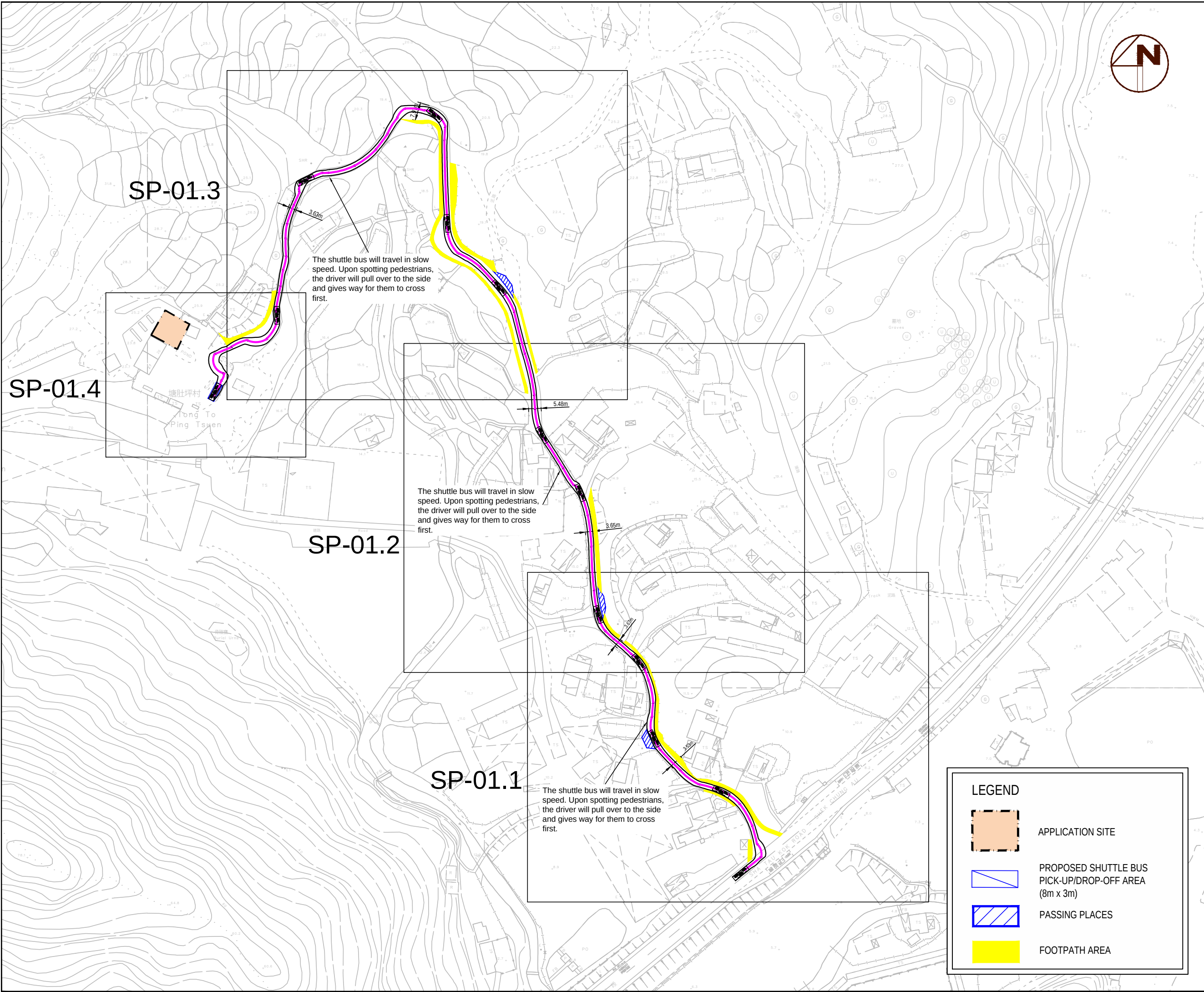
Scale : N.T.S

Date : JAN 2025

Rev. :

Appendix A

Swept Path Analysis



Traffic Impact
Assessment for
Application for
Amendment of Plan for
Proposed Rezoning
from “Village Type
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at Lots 1421 (Part),
1422 S.B (Part), 1423
S.B (Part), 1423 S.C
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(Part) in D.D. 41, Tong
To, Sha Tau Kok, New
Territories

**SWEPT PATH
ANALYSIS FOR
TYPICAL SHUTTLE
BUS (INGRESS)**

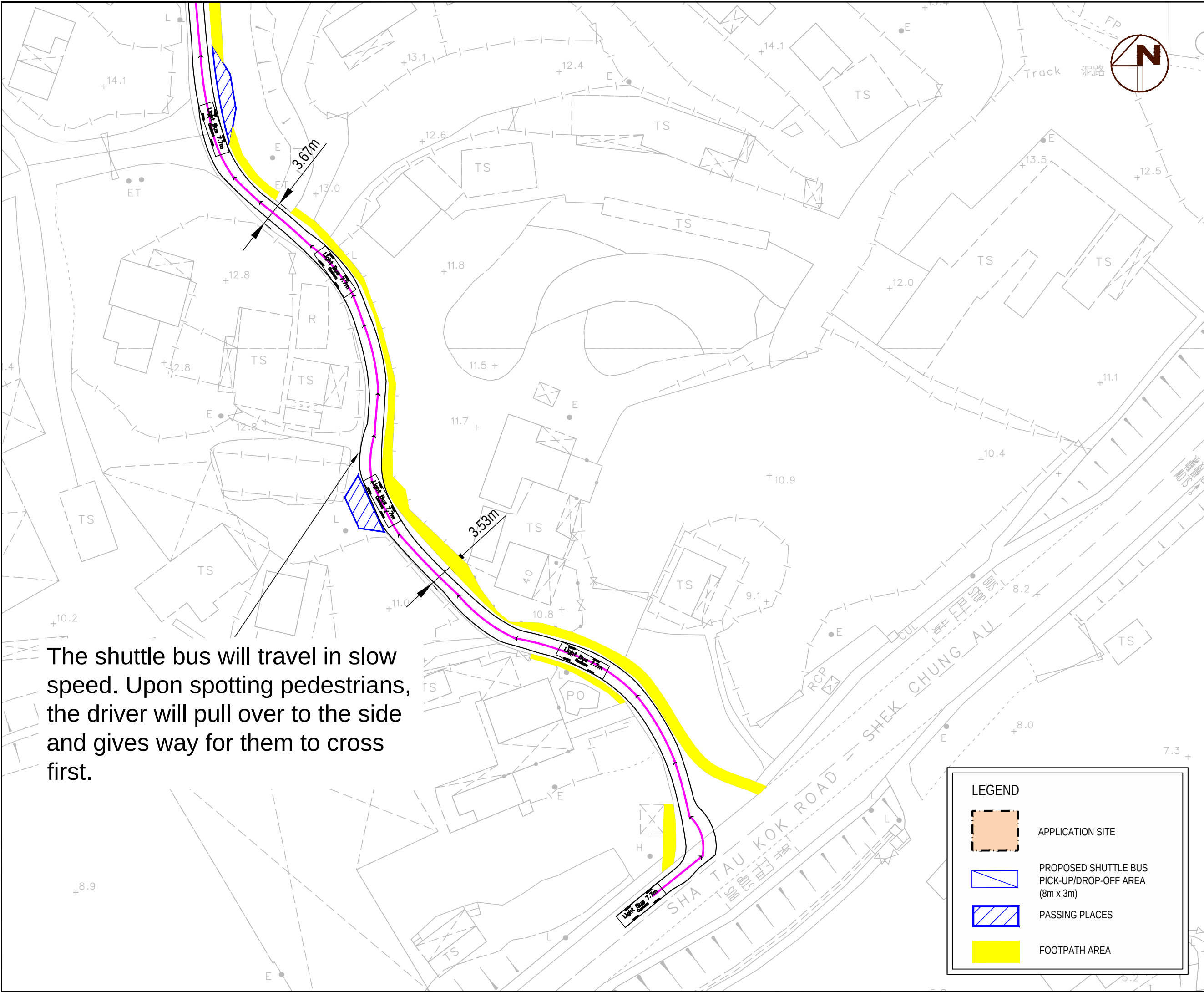
FIGURE SP-01

Scale : **1:1500 (A3)**

Date : **MAY 2025**

Rev. : **A**

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The shuttle bus will travel in slow speed. Upon spotting pedestrians, the driver will pull over to the side and gives way for them to cross first.

LEGEND

APPLICATION SITE

PROPOSED SHUTTLE BUS PICK-UP/DROP-OFF AREA (8m x 3m)

PASSING PLACES

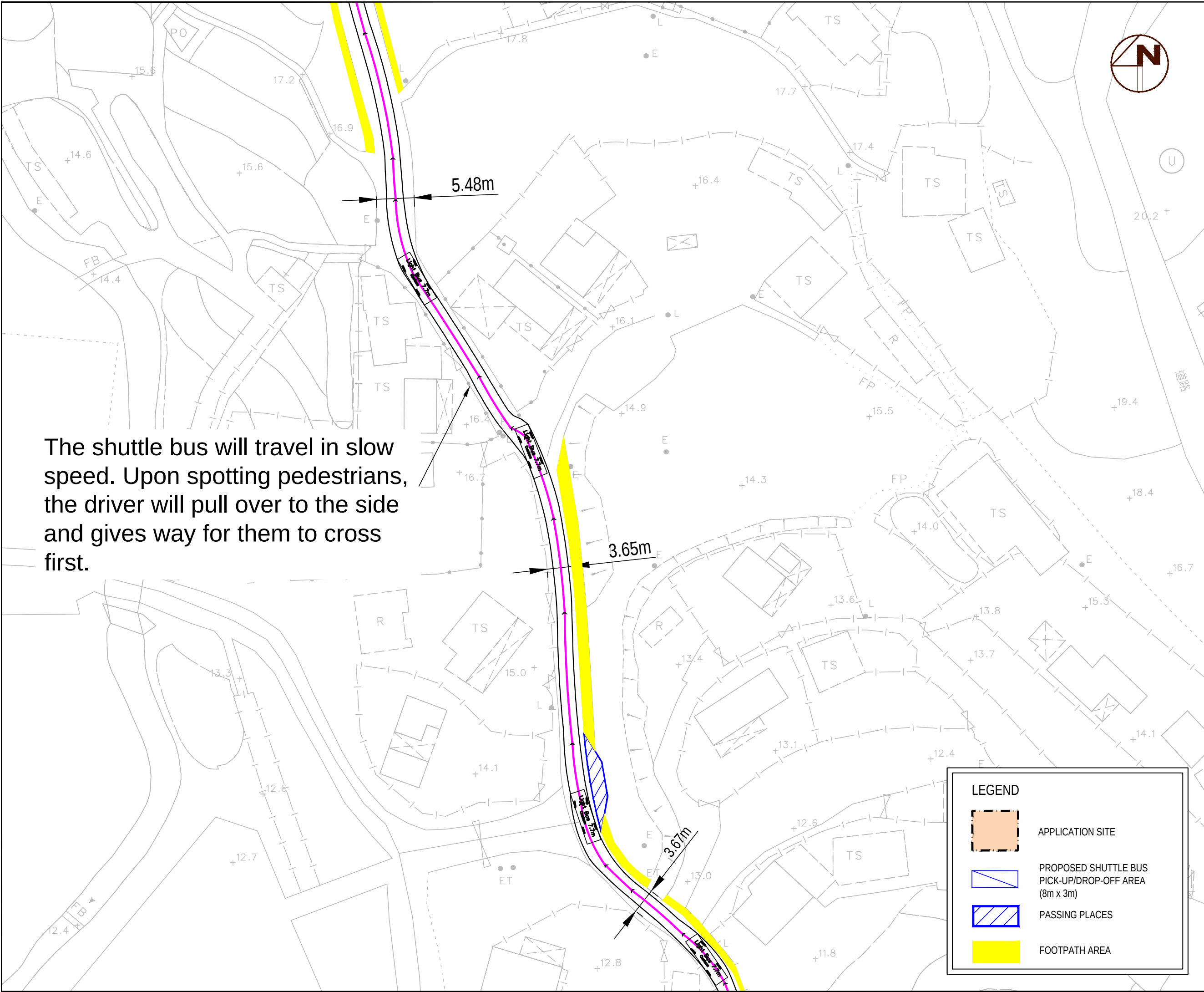
FOOTPATH AREA

Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning from “Village Type Development” Zone to “Government, Institution and Community (1)” Zone at Lots 1421 (Part), 1422 S.B (Part), 1423 S.B (Part), 1423 S.C (Part) and 1423 S.D (Part) in D.D. 41, Tong To, Sha Tau Kok, New Territories

SWEPT PATH ANALYSIS FOR TYPICAL SHUTTLE BUS (INGRESS)

FIGURE SP-01.1

Scale : 1:500 (A3)
Date : MAY 2025
Rev. : A



Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning from "Village Type Development" Zone to "Government, Institution and Community (1)" Zone at Lots 1421 (Part), 1422 S.B (Part), 1423 S.B (Part), 1423 S.C (Part) and 1423 S.D (Part) in D.D. 41, Tong To, Sha Tau Kok, New Territories

SWEPT PATH ANALYSIS FOR TYPICAL SHUTTLE BUS (INGRESS)

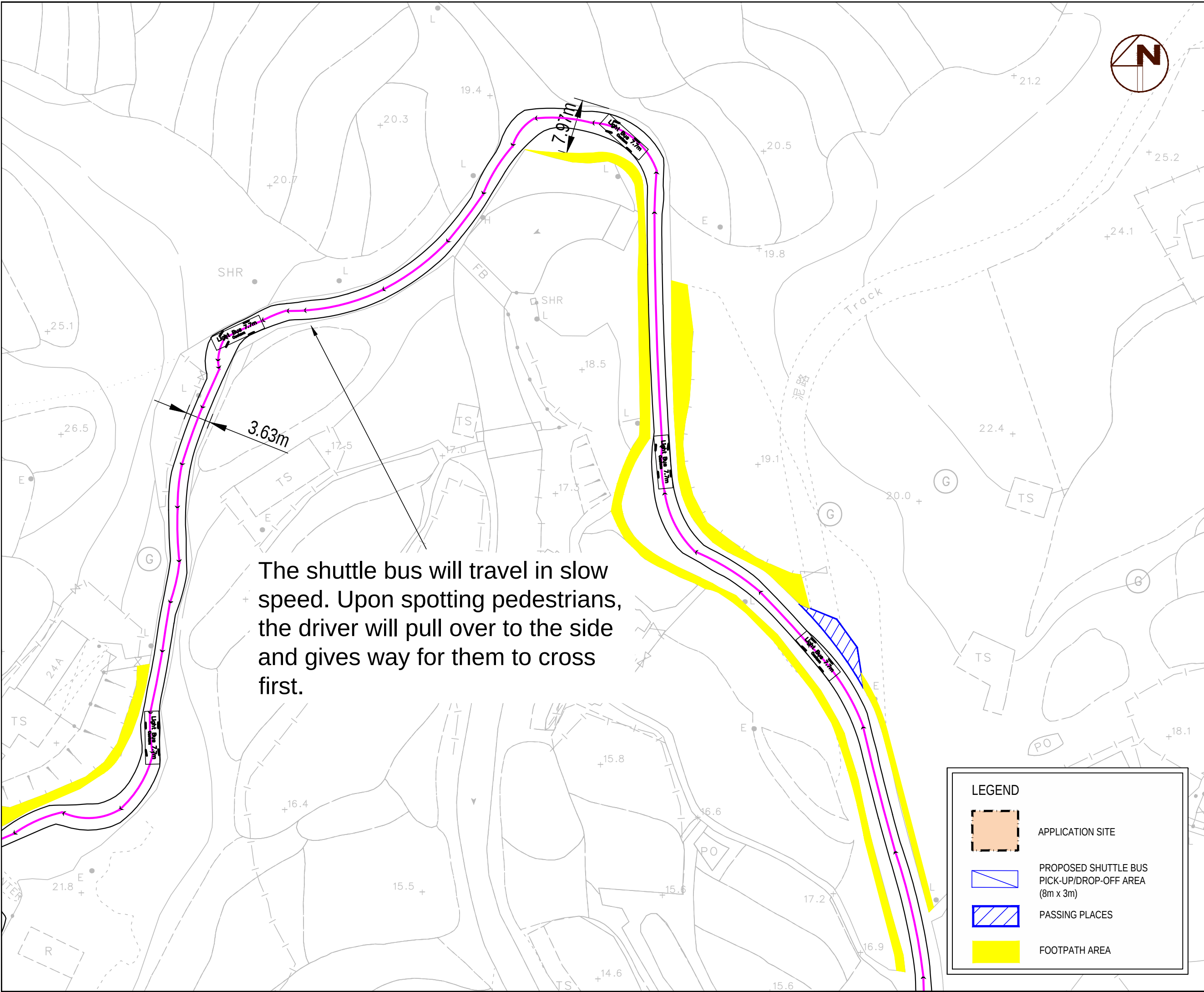
FIGURE SP-01.2

Scale : 1:500 (A3)

Date : MAY 2025

Rev. : A





The shuttle bus will travel in slow speed. Upon spotting pedestrians, the driver will pull over to the side and gives way for them to cross first.

LEGEND

APPLICATION SITE

PROPOSED SHUTTLE BUS PICK-UP/DROP-OFF AREA (8m x 3m)

PASSING PLACES

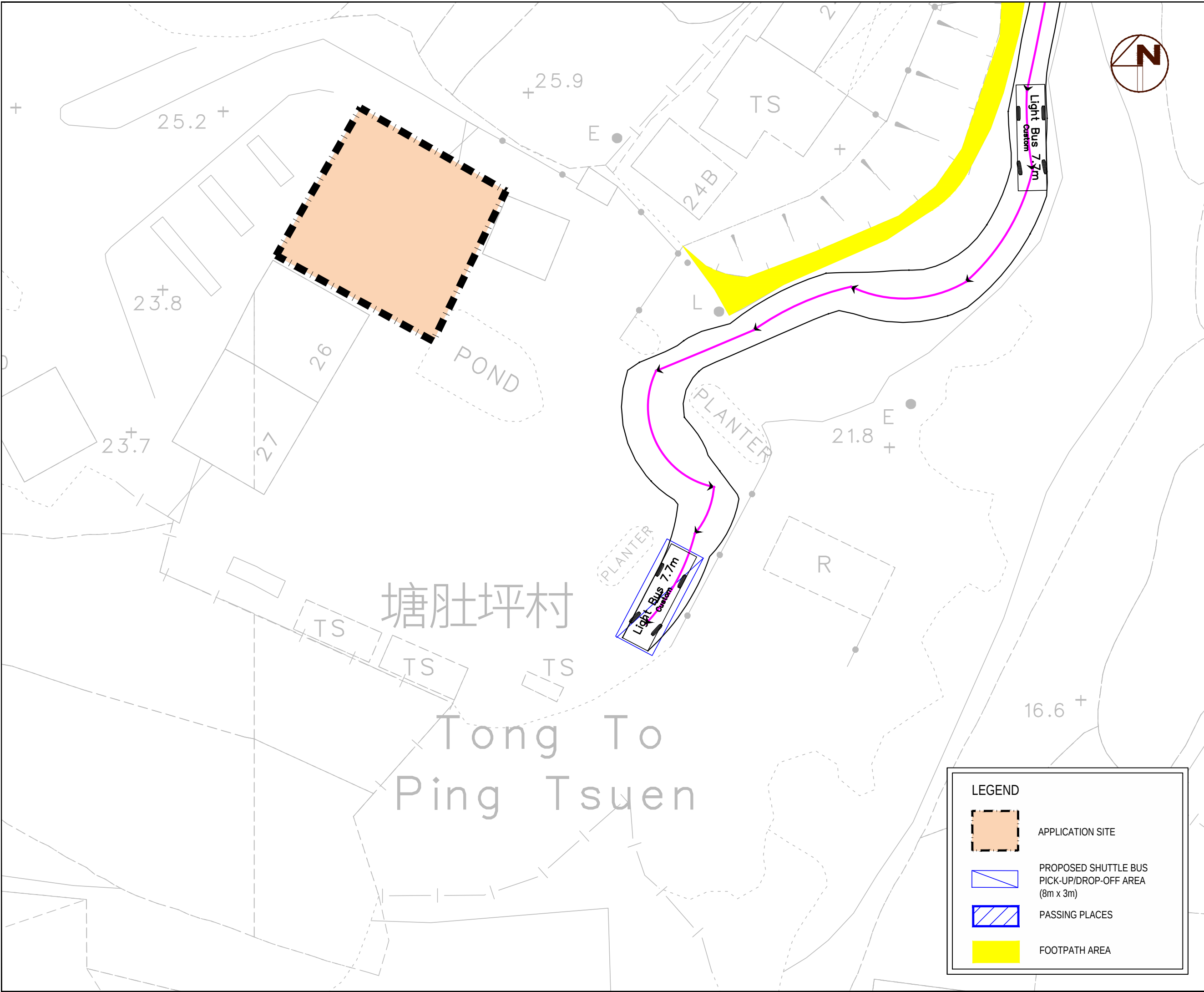
FOOTPATH AREA

Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning from “Village Type Development” Zone to “Government, Institution and Community (1)” Zone at Lots 1421 (Part), 1422 S.B (Part), 1423 S.B (Part), 1423 S.C (Part) and 1423 S.D (Part) in D.D. 41, Tong To, Sha Tau Kok, New Territories

SWEPT PATH ANALYSIS FOR TYPICAL SHUTTLE BUS (INGRESS)

FIGURE SP-01.3

Scale : 1:500 (A3)
Date : MAY 2025
Rev. : A



Traffic Impact
Assessment for
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at Lots 1421 (Part),
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(Part) and 1423 S.D
(Part) in D.D. 41, Tong
To, Sha Tau Kok, New
Territories

**SWEPT PATH
ANALYSIS FOR
TYPICAL SHUTTLE
BUS (INGRESS)**

FIGURE SP-01.4

LEGEND

APPLICATION SITE

PROPOSED SHUTTLE BUS
PICK-UP/DROP-OFF AREA
(8m x 3m)

PASSING PLACES

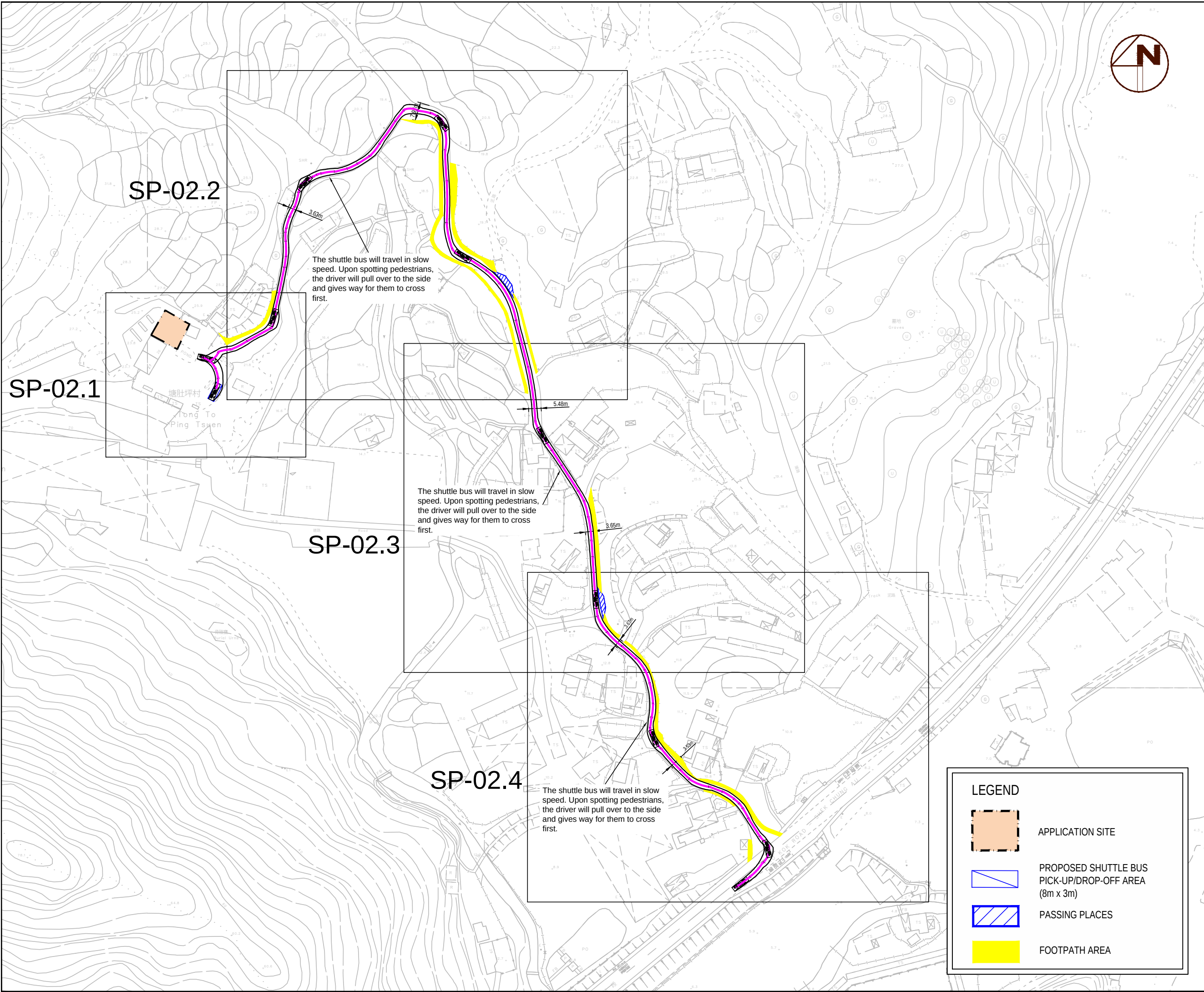
FOOTPATH AREA

Scale : **1:250 (A3)**

Date : **MAY 2025**

Rev. : **A**

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Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning from "Village Type Development" Zone to "Government, Institution and Community (1)" Zone at Lots 1421 (Part), 1422 S.B (Part), 1423 S.B (Part), 1423 S.C (Part) and 1423 S.D (Part) in D.D. 41, Tong To, Sha Tau Kok, New Territories

SWEPT PATH ANALYSIS FOR 7.7m SHUTTLE BUS (EGRESS)

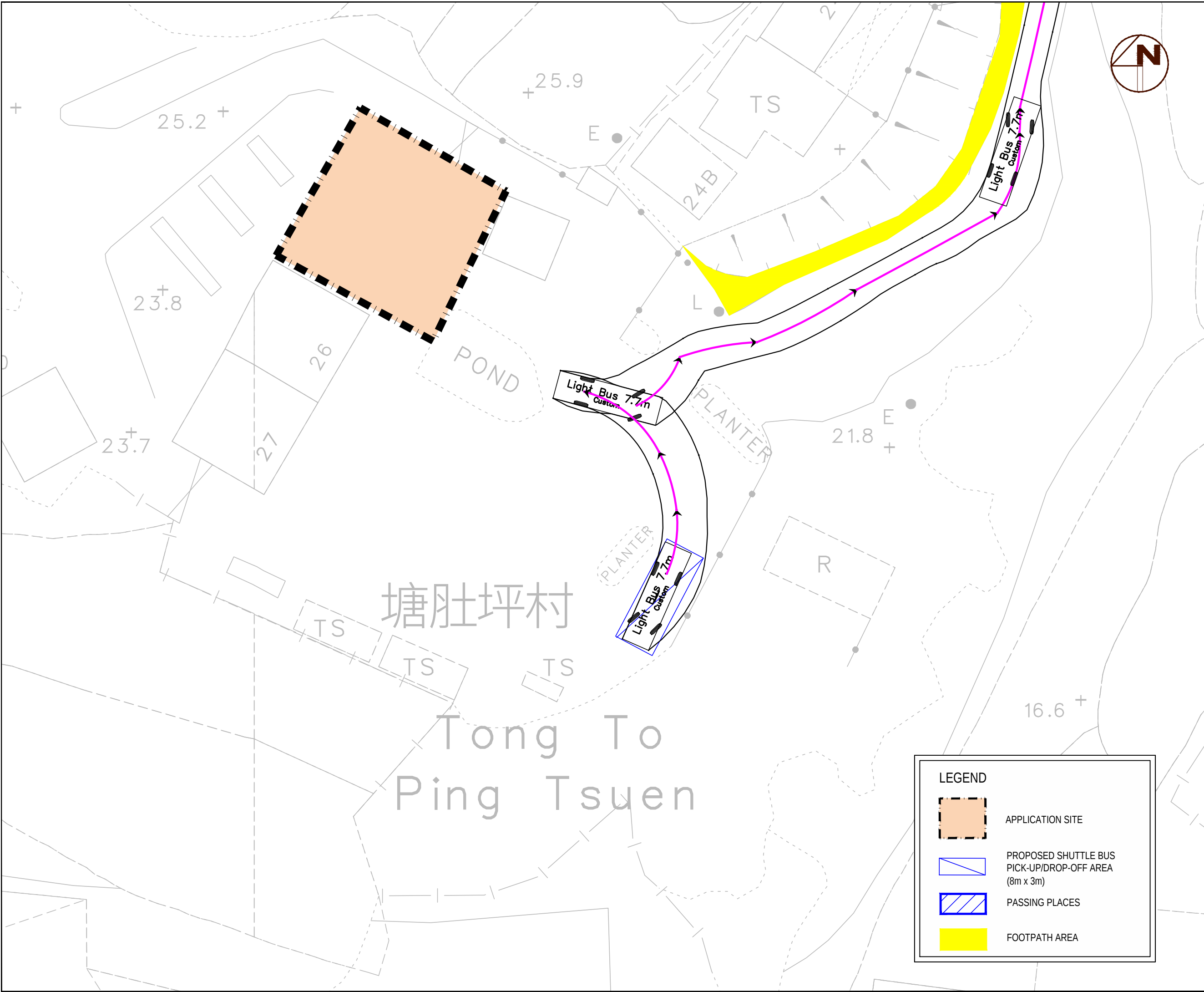
FIGURE SP-02

Scale : 1:1500 (A3)

Date : MAY 2025

Rev. : A

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Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning from "Village Type Development" Zone to "Government, Institution and Community (1)" Zone at Lots 1421 (Part), 1422 S.B (Part), 1423 S.B (Part), 1423 S.C (Part) and 1423 S.D (Part) in D.D. 41, Tong To, Sha Tau Kok, New Territories

SWEPT PATH ANALYSIS FOR 7.7m SHUTTLE BUS (EGRESS)

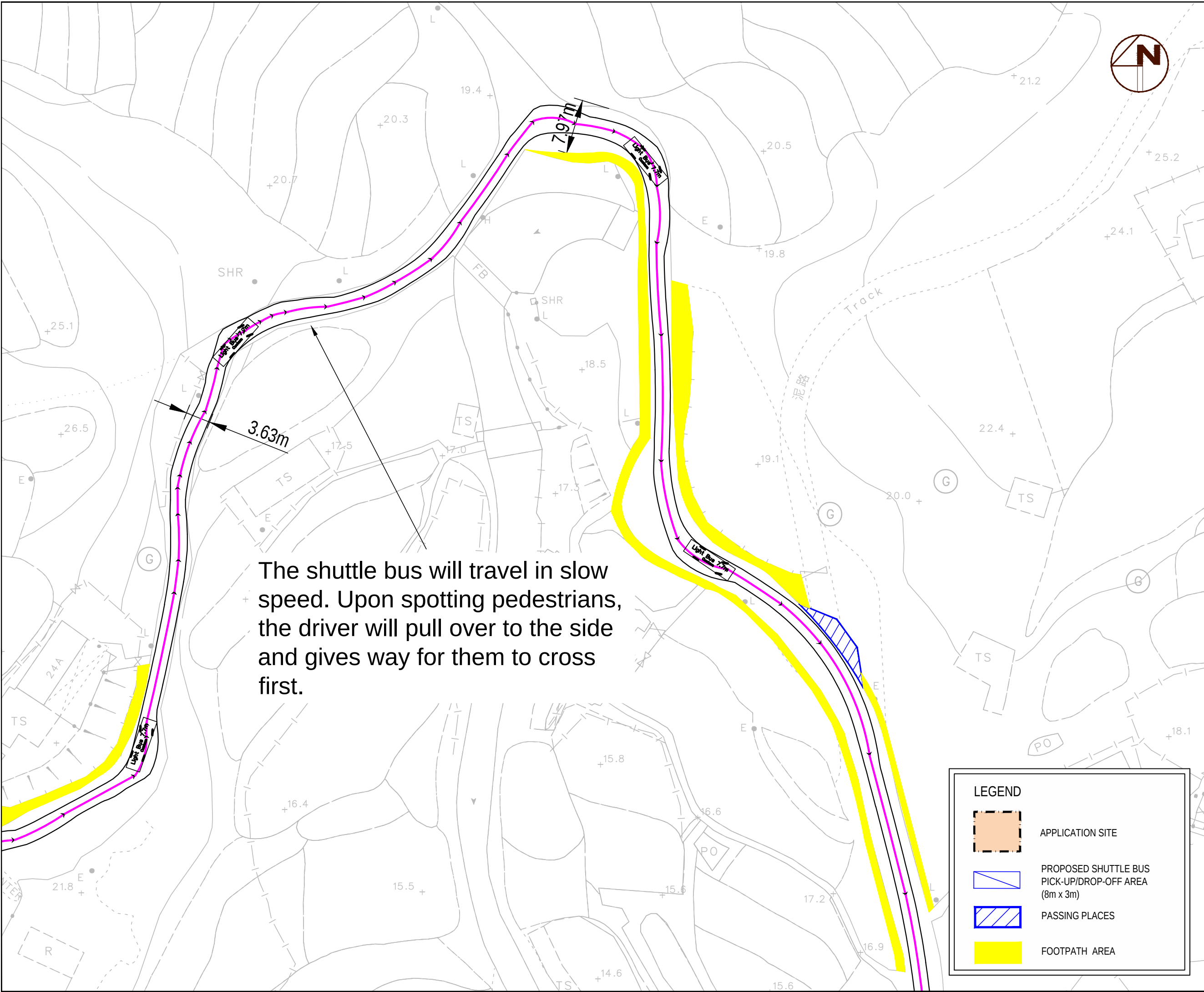
FIGURE SP-02.1

Scale : **1:250 (A3)**

Date : **MAY 2025**

Rev. : **A**

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The shuttle bus will travel in slow speed. Upon spotting pedestrians, the driver will pull over to the side and gives way for them to cross first.

LEGEND

- APPLICATION SITE
- PROPOSED SHUTTLE BUS PICK-UP/DROP-OFF AREA (8m x 3m)
- PASSING PLACES
- FOOTPATH AREA

Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning from "Village Type Development" Zone to "Government, Institution and Community (1)" Zone at Lots 1421 (Part), 1422 S.B (Part), 1423 S.B (Part), 1423 S.C (Part) and 1423 S.D (Part) in D.D. 41, Tong To, Sha Tau Kok, New Territories

SWEPT PATH ANALYSIS FOR 7.7m SHUTTLE BUS (EGRESS)

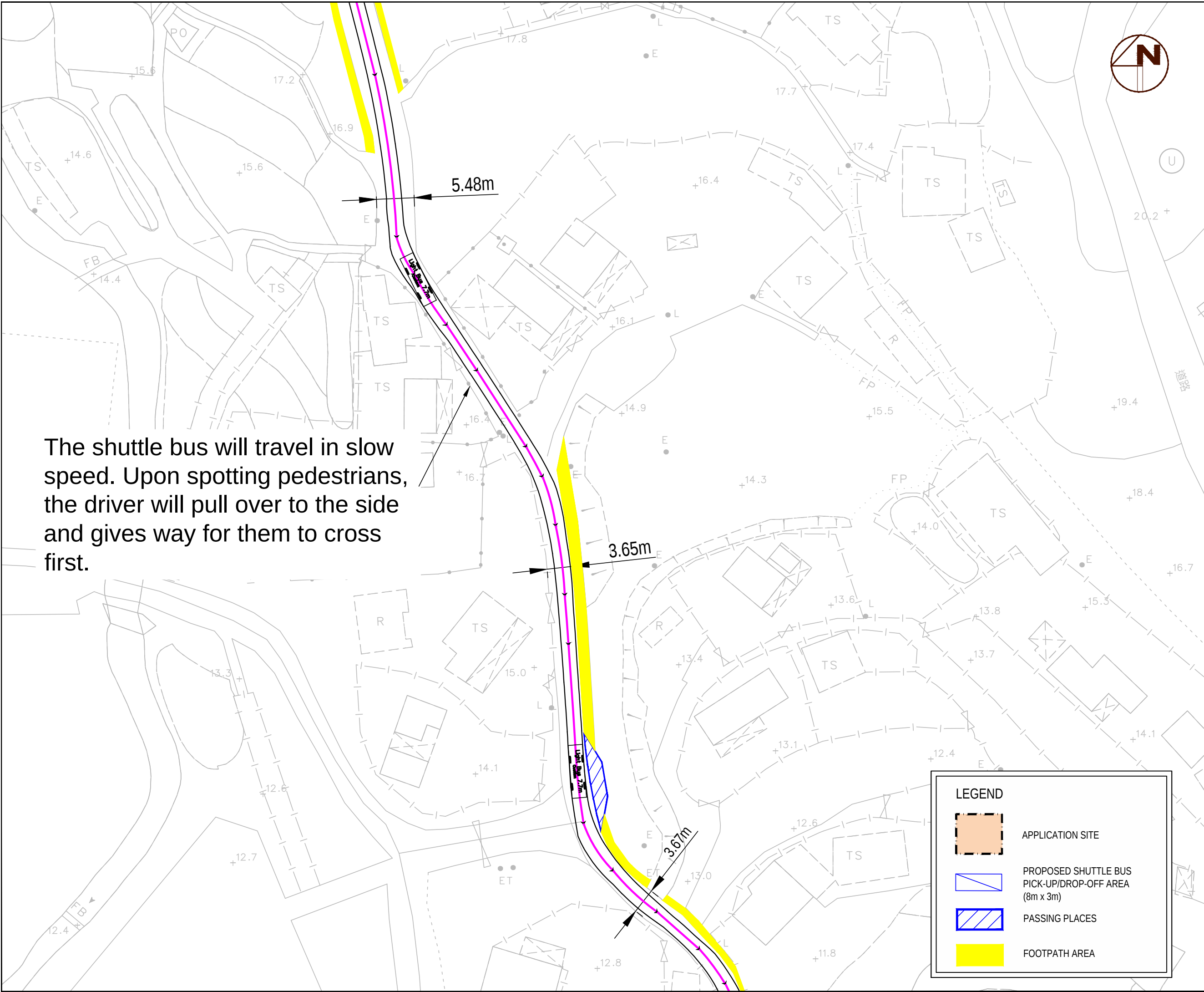
FIGURE SP-02.2

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

Date : **MAY 2025**

Rev. : **A**

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CONSULTANCY
<http://www.axonhk.com>



The shuttle bus will travel in slow speed. Upon spotting pedestrians, the driver will pull over to the side and gives way for them to cross first.

LEGEND

APPLICATION SITE

PROPOSED SHUTTLE BUS PICK-UP/DROP-OFF AREA (8m x 3m)

PASSING PLACES

FOOTPATH AREA

Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning from “Village Type Development” Zone to “Government, Institution and Community (1)” Zone at Lots 1421 (Part), 1422 S.B (Part), 1423 S.B (Part), 1423 S.C (Part) and 1423 S.D (Part) in D.D. 41, Tong To, Sha Tau Kok, New Territories

SWEPT PATH ANALYSIS FOR 7.7m SHUTTLE BUS (EGRESS)

FIGURE SP-02.3

Scale : 1:500 (A3)

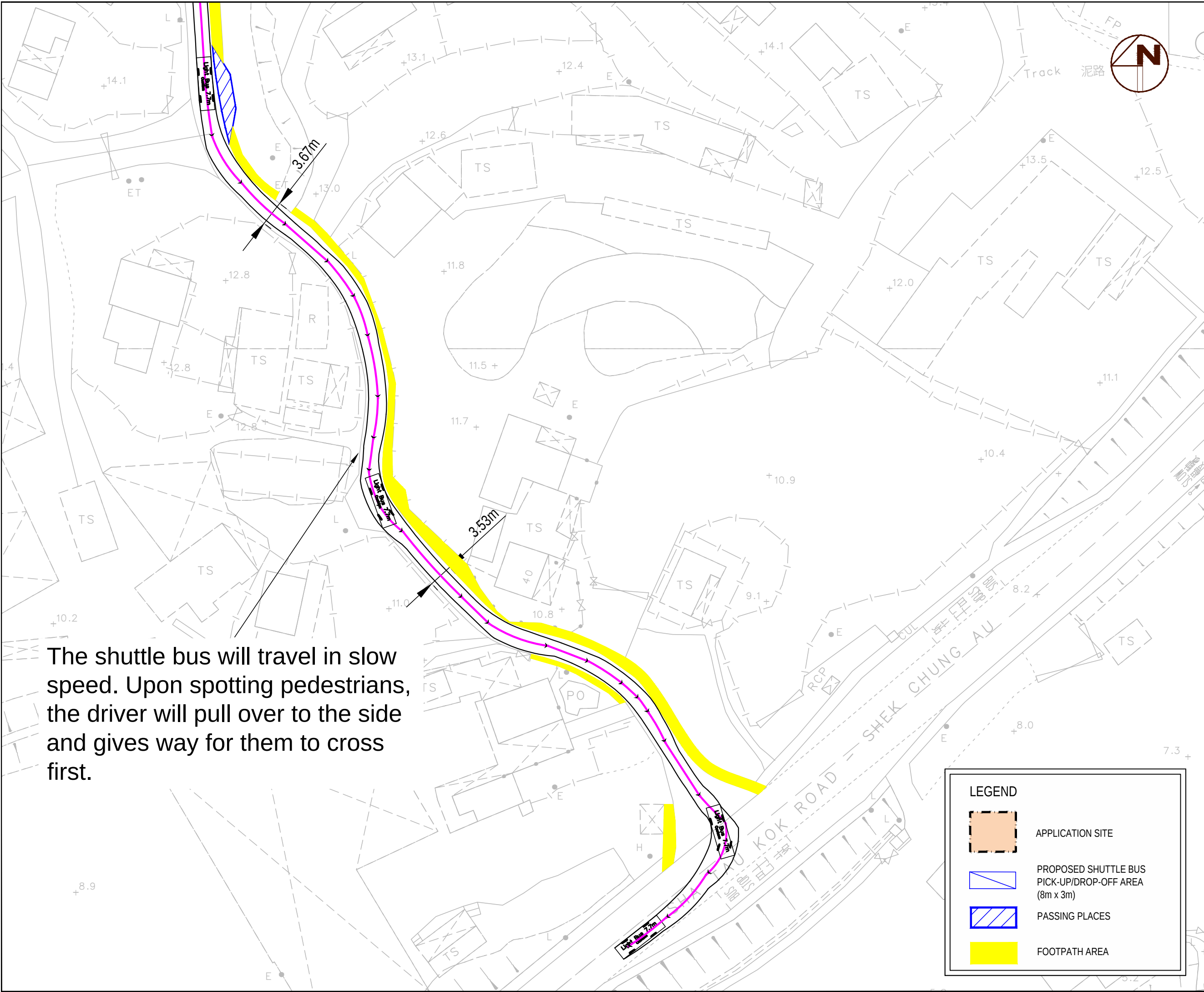
Date : MAY 2025

Rev. : A

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<http://www.axonhk.com>



The shuttle bus will travel in slow speed. Upon spotting pedestrians, the driver will pull over to the side and gives way for them to cross first.

LEGEND

APPLICATION SITE

PROPOSED SHUTTLE BUS PICK-UP/DROP-OFF AREA (8m x 3m)

PASSING PLACES

FOOTPATH AREA

Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning from “Village Type Development” Zone to “Government, Institution and Community (1)” Zone at Lots 1421 (Part), 1422 S.B (Part), 1423 S.B (Part), 1423 S.C (Part) and 1423 S.D (Part) in D.D. 41, Tong To, Sha Tau Kok, New Territories

SWEPT PATH ANALYSIS FOR 7.7m SHUTTLE BUS (EGRESS)

FIGURE SP-02.4

Scale : 1:500 (A3)
Date : MAY 2025
Rev. : A

Appendix B

Junction Analysis

AXON CONSULTANCY LIMITED

PRIORITY JUNCTION CALCULATION

INITIALS

DATE

Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning from "Village Type Development" Zone to "Government, Institution and Community (1)" Zone

Prepared By:

JK

11/1/2025

at Lots 1421 (Part), 1422 S.B (Part), 1423 S.B (Part), 1423 S.C (Part) and 1423 S.D (Part) in D.D. 41, Tong To, Sha Tau Kok, New Territories

Checked By:

SY

11/1/2025

Jn A - Sha Tau Kok Road - Shek Chung Au / Access Road to Tong To Shan Tsuen

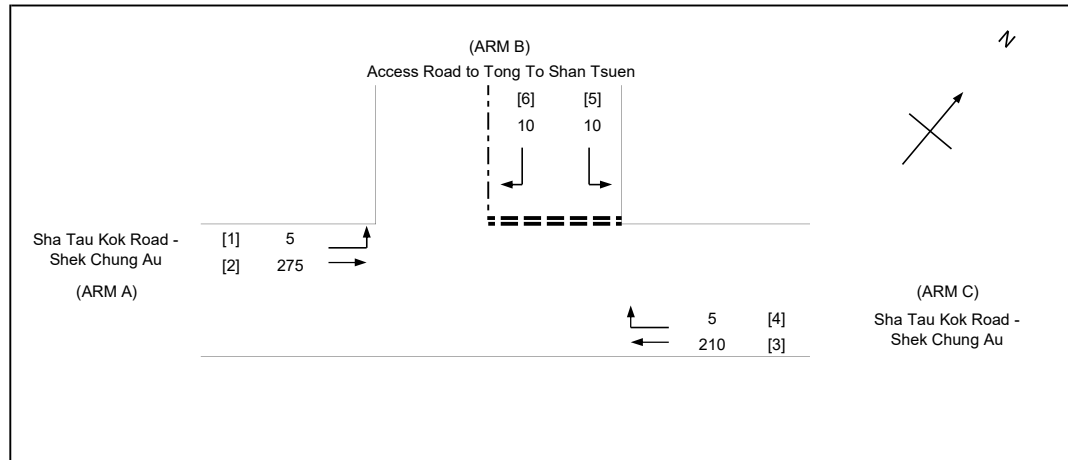
2024 Observed Traffic Flow

Project No.: 31041

Reviewed By:

AW

11/1/2025



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
- VI 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 = 7.0 (metres)
- W cr = 0 (metres)
- q a-b = 5 (pcu/hr)
- q a-c = 275 (pcu/hr)

MAJOR ROAD (ARM C)

- W c-b = 2.1 (metres)
- Vr c-b = 25 (metres)
- q c-a = 210 (pcu/hr)
- q c-b = 5 (pcu/hr)

MINOR ROAD (ARM B)

- W b-a = 3.0 (metres)
- W b-c = 3.0 (metres)
- VI b-a = 25 (metres)
- Vr b-a = 25 (metres)
- Vr b-c = 25 (metres)
- q b-a = 10 (pcu/hr)
- q b-c = 10 (pcu/hr)

GEOMETRIC FACTORS :

- D = 0.794
- E = 0.859
- F = 0.781
- Y = 0.759

- F for (Qb-ac) = 0.5

THE CAPACITY OF MOVEMENT :

- Q b-a = 407 (pcu/hr)
- Q b-c = 574 (pcu/hr)
- Q c-b = 522 (pcu/hr)
- Q b-ac = 476 (pcu/hr)
- Q c-a = 1783 (pcu/hr)
- TOTAL FLOW = 515 (pcu/hr)

COMPARISON OF DESIGN FLOW TO CAPACITY:

- DFC b-a = 0.0246
- DFC b-c = 0.0174
- DFC c-b = 0.0096
- DFC b-ac = 0.0420
- (Share Lane)
- DFC c-a = 0.1178

CRITICAL DFC = 0.12

AXON CONSULTANCY LIMITED

PRIORITY JUNCTION CALCULATION

INITIALS

DATE _____

Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning from "Village Type Development" Zone to "Government, Institution and Community (1)" Zone

Prepared By:

GY

Jan-2025

at Lots 1421 (Part), 1422 S.B (Part), 1423 S.B (Part), 1423 S.C (Part) and 1423 S.D (Part) in D.D. 41, Tong To, Sha Tau Kok, New Territories

Checked By:	
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JK

Jan-2025

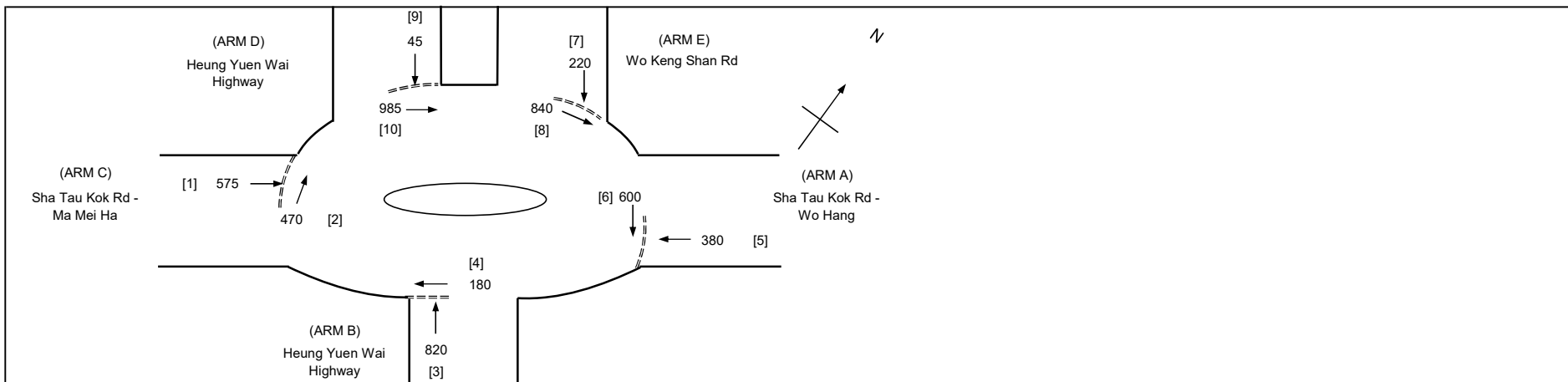
Jn B - Heung Yuen Wai Highway / Sha Tau Kok Road – Wo Hang / Sha Tau Kok Road – Ma	2024 Observed Traffic Flow
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Project No.:	31041
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Reviewed By:

SF

Jan-2025



GEOMETRIC DETAILS:

GEOMETRIC DETAILS:			ARM	A	B	C	D	E
V	=	Approach half width (m)		4.0	4.0	3.7	4.0	3.7
E	=	Entry width (m)		9.5	10.0	9.5	10.0	9.5
L	=	Effective length of flare (m)		29.0	32.0	19.0	50.0	18.0
R	=	Entry radius (m)		30.0	60.0	40.0	40.0	60.0
D	=	Inscribed circle diameter (m)		100.0	100.0	100.0	100.0	100.0
A	=	Entry angle (degree)		40.0	40.0	40.0	40.0	30.0
Q	=	Entry flow (pcu/h)		380	820	575	45	220
Qc	=	Circulating flow across entry (pcu/h)		600	180	470	985	840

OUTPUT PARAMETERS:

S	=	Sharpness of flare = 1.6(E-V)/L	0.30	0.30	0.49	0.19	0.52
K	=	1-0.00347(A-30)-0.978(1/R-0.05)	0.98	1.00	0.99	0.99	1.03
X2	=	V + (E-V)/(1+2S)	7.42	7.75	6.63	8.34	6.56
M	=	EXP((D-60)/10)	54.60	54.60	54.60	54.60	54.60
F	=	303*X2	2249	2348	2010	2526	1986
Td	=	1+(0.5/(1+M))	1.01	1.01	1.01	1.01	1.01
Fc	=	0.21*Td(1+0.2*X2)	0.53	0.54	0.49	0.57	0.49
Qe	=	K(F-Fc*Qc)	1898	2246	1760	1949	1626
DFC	=	Design flow/Capacity = Q/Qe	0.20	0.37	0.33	0.02	0.14

TOTAL FLOW	=	4055 (pcu/hr)
CRITICAL DFC	=	0.37

AXON CONSULTANCY LIMITED

PRIORITY JUNCTION CALCULATION

INITIALS

DATE

Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning from "Village Type Development" Zone to "Government, Institution and Community (1)" Zone

Prepared By:

JK

11/1/2025

at Lots 1421 (Part), 1422 S.B (Part), 1423 S.B (Part), 1423 S.C (Part) and 1423 S.D (Part) in D.D. 41, Tong To, Sha Tau Kok, New Territories

Checked By:

SY

11/1/2025

Jn A - Sha Tau Kok Road - Shek Chung Au / Access Road to Tong To Shan Tsuen

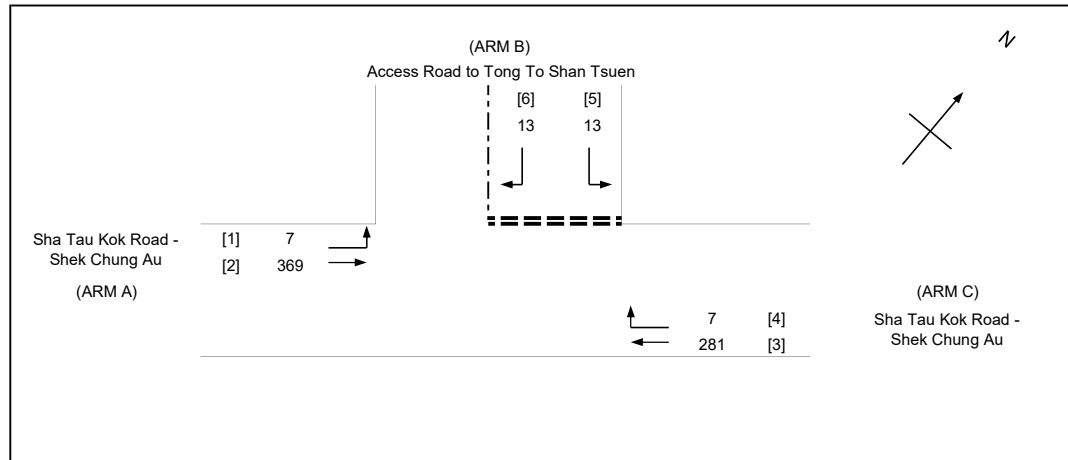
2030 Reference Traffic Flow

Project No.: 31041

Reviewed By:

AW

11/1/2025



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 = 7.0 (metres)
W cr = 0 (metres)
q a-b = 7 (pcu/hr)
q a-c = 369 (pcu/hr)

MAJOR ROAD (ARM C)

W c-b = 2.1 (metres)
Vr c-b = 25 (metres)
q c-a = 281 (pcu/hr)
q c-b = 7 (pcu/hr)

MINOR ROAD (ARM B)

W b-a = 3.0 (metres)
W b-c = 3.0 (metres)
Vl b-a = 25 (metres)
Vr b-a = 25 (metres)
Vr b-c = 25 (metres)
q b-a = 13 (pcu/hr)
q b-c = 13 (pcu/hr)

GEOMETRIC FACTORS :

D = 0.794
E = 0.859
F = 0.781
Y = 0.759

F for (Qb-ac) = 0.5

THE CAPACITY OF MOVEMENT :

Q b-a = 376 (pcu/hr)
Q b-c = 552 (pcu/hr)
Q c-b = 501 (pcu/hr)
Q b-ac = 447 (pcu/hr)
Q c-a = 1775 (pcu/hr)

TOTAL FLOW = 690 (pcu/hr)

COMPARISON OF DESIGN FLOW TO CAPACITY:

DFC b-a = 0.0346
DFC b-c = 0.0236
DFC c-b = 0.0140
DFC b-ac = 0.0581
(Share Lane)
DFC c-a = 0.1583

CRITICAL DFC = 0.16

AXON CONSULTANCY LIMITED

PRIORITY JUNCTION CALCULATION

INITIALS

DATE

Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning from "Village Type Development" Zone to "Government, Institution and Community (1)" Zone

Prepared By:

GY

Jan-2025

at Lots 1421 (Part), 1422 S.B (Part), 1423 S.B (Part), 1423 S.C (Part) and 1423 S.D (Part) in D.D. 41, Tong To, Sha Tau Kok, New Territories

Checked By:

JK

Jan-2025

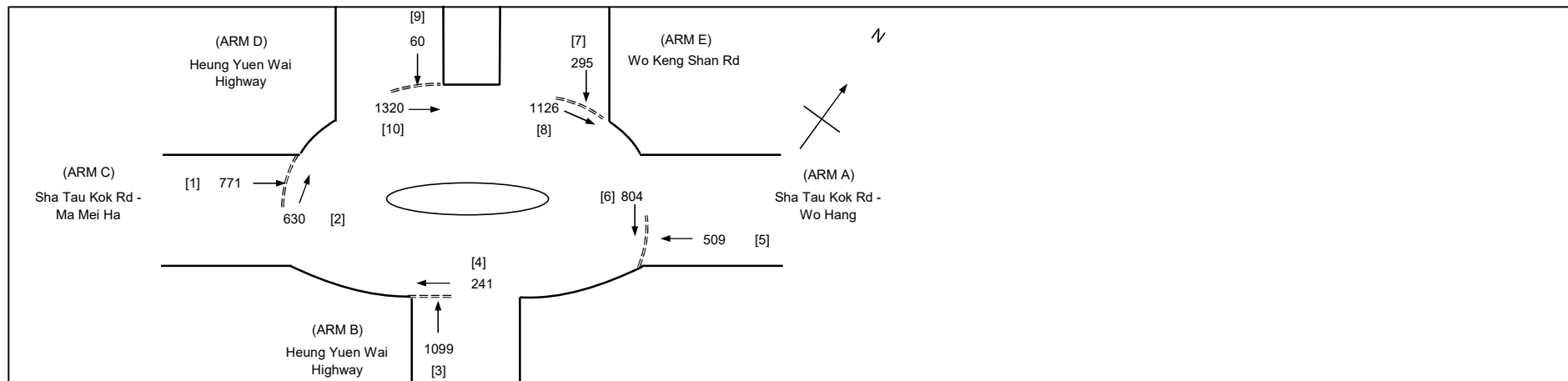
Jn B - Heung Yuen Wai Highway / Sha Tau Kok Road – Wo Hang / Sha Tau Kok Road – Ma

Project No.: 31041

Reviewed By:

SF

Jan-2025



GEOMETRIC DETAILS:

GEOMETRIC DETAILS:			ARM	A	B	C	D	E
V	=	Approach half width (m)		4.0	4.0	3.7	4.0	3.7
E	=	Entry width (m)		9.5	10.0	9.5	10.0	9.5
L	=	Effective length of flare (m)		29.0	32.0	19.0	50.0	18.0
R	=	Entry radius (m)		30.0	60.0	40.0	40.0	60.0
D	=	Inscribed circle diameter (m)		100.0	100.0	100.0	100.0	100.0
A	=	Entry angle (degree)		40.0	40.0	40.0	40.0	30.0
Q	=	Entry flow (pcu/h)		509	1099	771	60	295
Qc	=	Circulating flow across entry (pcu/h)		804	241	630	1320	1126

OUTPUT PARAMETERS:

S	=	Sharpness of flare = $1.6(E-V)/L$	0.30	0.30	0.49	0.19	0.52
K	=	$1-0.00347(A-30)-0.978(1/R-0.05)$	0.98	1.00	0.99	0.99	1.03
X2	=	$V + ((E-V)/(1+2S))$	7.42	7.75	6.63	8.34	6.56
M	=	$EXP((D-60)/10)$	54.60	54.60	54.60	54.60	54.60
F	=	$303 \times X2$	2249	2348	2010	2526	1986
Td	=	$1+(0.5/(1+M))$	1.01	1.01	1.01	1.01	1.01
Fc	=	$0.21 \times Td(1+0.2 \times X2)$	0.53	0.54	0.49	0.57	0.49
Qe	=	$K(F-Fc \times Qc)$	1792	2213	1682	1761	1482
DFC	=	Design flow/Capacity = Q/Qe	0.28	0.50	0.46	0.03	0.20

TOTAL FLOW = 5434 (pcu/hr)
CRITICAL DFC = 0.50

AXON CONSULTANCY LIMITED

PRIORITY JUNCTION CALCULATION

INITIALS

DATE

Traffic Impact Assessment for Application for Amendment of Plan for Proposed Rezoning from "Village Type Development" Zone to "Government, Institution and Community (1)" Zone

Prepared By:

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11/1/2025

at Lots 1421 (Part), 1422 S.B (Part), 1423 S.B (Part), 1423 S.C (Part) and 1423 S.D (Part) in D.D. 41, Tong To, Sha Tau Kok, New Territories

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SY

11/1/2025

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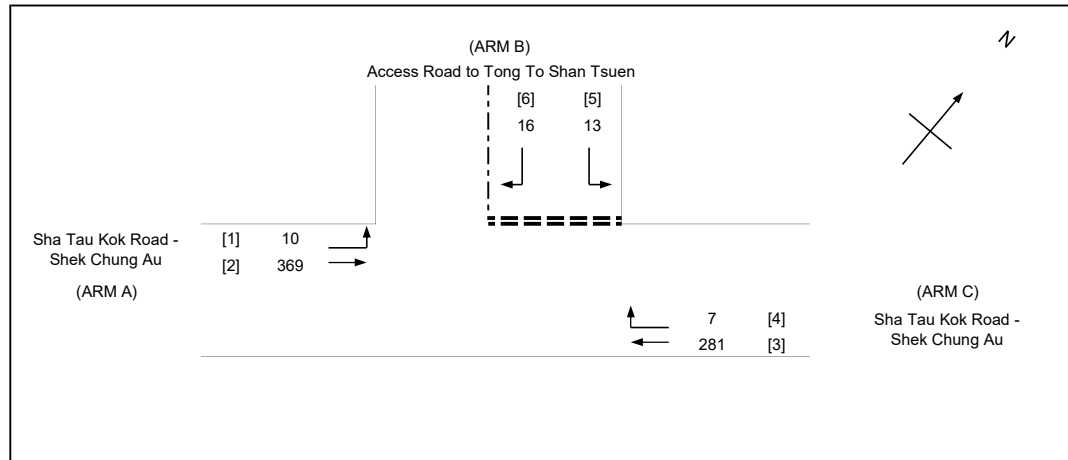
2030 Design Traffic Flow

Project No.: 31041

Reviewed By:

AW

11/1/2025



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
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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 = 7.0 (metres)
W cr = 0 (metres)
q a-b = 10 (pcu/hr)
q a-c = 369 (pcu/hr)

MAJOR ROAD (ARM C)

W c-b = 2.1 (metres)
Vr c-b = 25 (metres)
q c-a = 281 (pcu/hr)
q c-b = 7 (pcu/hr)

MINOR ROAD (ARM B)

W b-a = 3.0 (metres)
W b-c = 3.0 (metres)
Vl b-a = 25 (metres)
Vr b-a = 25 (metres)
Vr b-c = 25 (metres)
q b-a = 16 (pcu/hr)
q b-c = 13 (pcu/hr)

GEOMETRIC FACTORS :

D = 0.794
E = 0.859
F = 0.781
Y = 0.759

F for (Qb-ac) = 0.448

THE CAPACITY OF MOVEMENT :

Q b-a = 375 (pcu/hr)
Q b-c = 551 (pcu/hr)
Q c-b = 500 (pcu/hr)
Q b-ac = 438 (pcu/hr)
Q c-a = 1775 (pcu/hr)
TOTAL FLOW = 696 (pcu/hr)

COMPARISON OF DESIGN FLOW TO CAPACITY:

DFC b-a = 0.0427
DFC b-c = 0.0236
DFC c-b = 0.0140
DFC b-ac = 0.0663
(Share Lane)
DFC c-a = 0.1583

CRITICAL DFC = 0.16

AXON CONSULTANCY LIMITED

PRIORITY JUNCTION CALCULATION

INITIALS

DATE

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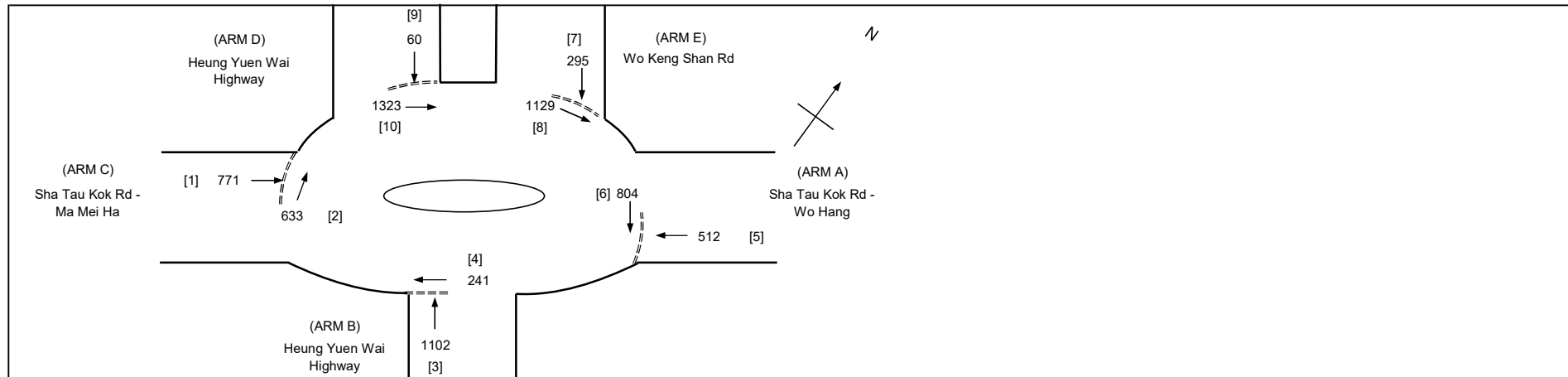
2030 Design Traffic Flow

Project No.: 31041

Reviewed By:

SF

Jan-2025



GEOMETRIC DETAILS:

GEOMETRIC DETAILS:			ARM	A	B	C	D	E
V	=	Approach half width (m)		4.0	4.0	3.7	4.0	3.7
E	=	Entry width (m)		9.5	10.0	9.5	10.0	9.5
L	=	Effective length of flare (m)		29.0	32.0	19.0	50.0	18.0
R	=	Entry radius (m)		30.0	60.0	40.0	40.0	60.0
D	=	Inscribed circle diameter (m)		100.0	100.0	100.0	100.0	100.0
A	=	Entry angle (degree)		40.0	40.0	40.0	40.0	30.0
Q	=	Entry flow (pcu/h)		512	1102	771	60	295
Qc	=	Circulating flow across entry (pcu/h)		804	241	633	1323	1129

OUTPUT PARAMETERS:

S	=	Sharpness of flare = $1.6(E-V)/L$	0.30	0.30	0.49	0.19	0.52
K	=	$1-0.00347(A-30)-0.978(1/R-0.05)$	0.98	1.00	0.99	0.99	1.03
X2	=	$V + ((E-V)/(1+2S))$	7.42	7.75	6.63	8.34	6.56
M	=	$EXP((D-60)/10)$	54.60	54.60	54.60	54.60	54.60
F	=	$303 \times X2$	2249	2348	2010	2526	1986
Td	=	$1+(0.5/(1+M))$	1.01	1.01	1.01	1.01	1.01
Fc	=	$0.21 \times Td(1+0.2 \times X2)$	0.53	0.54	0.49	0.57	0.49
Qe	=	$K(F-Fc \times Qc)$	1792	2213	1681	1760	1480
DFC	=	Design flow/Capacity = Q/Qe	0.29	0.50	0.46	0.03	0.20

TOTAL FLOW = 5446 (pcu/hr)
CRITICAL DFC = 0.50