A/YL-MP/381
Responses to TD's Comments

Comments from Transport Department (Contact Person: Mr. Donald LEUNG at 2399 2778)	**Responses**
a. Please incorporate the reply of RtC, such as the operation mode of proposed car park, in the Report.	Noted. The revised report is attached in Annex A.
b. From the RtC, noted only 20% (~40 nos.) of the parking space in the captioned planning application are opened to public for hourly rent, it is not preferably to erect car park symbol directional sign in Fairview Park Interchange and Castle Peak Road - Tam Mi to guide the motorist to the subject site. Please rewrite para. 1.8 and update the figures in the Report.	Noted. The car park symbol directional sign will not be proposed and the para. 1.8 has been rewritten.
c. As per para. 1.8, car park users will be instructed to avoid using Fairview Park Boulevard for access, hence, the applicant should propose necessary signs or measures within the site to guide the car park users to follow the above-mentioned routing.	The parking ingress will be routed via Castle Peak Road – Tam Mi and Kam Pok Road, as Fairview Park Boulevard prohibits right turns onto Kam Pok Road. For egress, traffic signs will be installed near the site access within the boundary to direct vehicles to turn right when leaving. The proposed sign face is illustrated below: 

Annex A

1.1 Background

The Applicant proposes to convert the existing site at Lot 4822 (Part) in D.D. 104, Mai Po, Yuen Long, New Territories into a Temporary Public Vehicle Park (Excluding Container Vehicle), hereafter, "the Proposed Development", for a Period of 3 Years. The site location is depicted in **Figure 1**.

Under the Approved Mai Po & Fairview Park Outline Zoning Plan No. S/YL-MP/8, the application site is zoned as "Residential (Group D)". The uses for temporary public vehicle parking (excluding container vehicle) require planning permission from the Town Planning Board.

Based on the comments provided by Transport Department regarding the planning application, traffic assessment is required to demonstrate there is no adverse impact to the Kam Pok Road and the nearby signalized junction.

AXON Consultancy is therefore commissioned to prepare this traffic assessment report to support the subject Planning Application.

1.2 The Temporary Public Vehicle Park

The Proposed Development has site area of about 28,113m^2. The vehicular access will be provided at Kam Pok Road. The number of parking spaces are showing in **Table 1**.

Table 1 Proposed Development Parameters

Type	No. of Parking Spaces
Private Car	12
Motocycle	6
Light Goods Vehicle	23
Medium Goods Vehicles	166
Total	**207**

1.3 Traffic Count Surveys

In order to appraise the existing traffic conditions, classified traffic count surveys have been carried out at the section of Kam Pok Road (L1) and the nearby signalised junction J1 (J/O Fairview Park Boulevard / Kam Pok Road), as presented in **Figure 2**, on 3 January 2025 from 7:00am to 10:00am and 5:00pm to 8:00pm.

The traffic counts were recorded in a 15-minutes interval; and to be converted into passenger car unit (pcu) values. The highest consecutive 15-minutes hourly traffic volume is adopted as the peak hour traffic flow.

The morning and afternoon peak hours of the road network have been identified as 8:15am to 9:15am and 5:00pm to 6:00pm respectively. The observed traffic flows in the traffic survey are presented in **Figure 3**.

1.4 Existing Link Capacity Assessment

The road link capacity assessment is summarised in **Table 2**. The Peak Hourly Flows/Design Flow Ratios (P/Df) ratio indicates the proportion of the road capacity being used by the peak hour traffic flow. Higher P/Df ratio of a road indicates heavier usage of the road link concerns. A P/Df ratio equal or less than 0.85 indicates that adequate capacity is available, and vehicles are not expected to experience significant queues and delays.

Table 2 Existing Link Performance

No.	Road Link	Direction	Observed Flow (pcu/hr)		P/Df Ratio	
			AM	PM	AM	PM
L1	Kam Pok Road	NB	26	42	0.03	0.05
		SB	42	61	0.05	0.07

Note: Assumed 900 pcu/hour for each direction, TPDM Volume 2 Chapter 2

It can be seen from **Table 2** that road link L1 perform satisfactorily with ample reserved capacity during the AM and PM peak hours.

1.5 Existing Junction Capacity Assessment

Based on the observed traffic flows, the junction performance analysis of the adjacent signalised junction J1 of the subject site during the morning and evening peak hours were assessed.

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.

The results are summarised and presented in **Table 3** and the detailed calculation sheets are attached in **Appendix A**.

Table 3 Existing Junction Performance

Junction	Location	Type / Capacity Index	Observed	
			AM	PM
J1	J/O Fairview Park Boulevard / Kam Pok Road	Signalised / RC	76.7%	70.9%

Notes: RC = reserved capacity

It can be seen from **Table 3** that junction J1 performs satisfactorily during the AM and PM peak hours.

1.6 2028 Design Year Road Network

The design year is the end of the planning approval. Therefore, year 2028 is used as the design year of the traffic assessment.

1.7 Development Traffic Generation & Attraction

Based on the existing and committed public vehicle parks, the traffic generation and attraction rates are outlined in **Table 4**. To account for the impact of LGV and MGV parking spaces on trip generation, PCU factors of 1.5 for LGVs and 2 for MGVs are assumed. These factors are applied to the proposed number of parking spaces to determine the equivalent number of car parking spaces, resulting in a more conservative assessment of traffic generation and attraction. It is important to note that LGVs and MGVs typically generate traffic during non-peak hours, making this trip generation assumption conservative.

Table 4 Peak Hours Trip Generation

Public Vehicle Park		Generation		Attraction	
		AM	PM	AM	PM
	No. of Spaces	**Traffic flow[1] (pcu)**			
Hoi Shing Road, Tsuen Wan [1]	214	17	41	18	40
Sze Mei Street, San Po Kong [2]	300	44	25	7	59
Wai Hong Road, Fanling [1]	63	9	12	7	4
HZMB, Lantau [1]	163	21	39	42	33
Trip rate[1] (pcu/hr/parking space)					
Hoi Shing Road, Tsuen Wan [1]		0.0794	0.1915	0.0841	0.1869
Sze Mei Street, San Po Kong [2]		0.1475	0.0246	0.0820	0.1967
Wai Hong Road, Fanling [1]		0.1429	0.1905	0.1111	0.0635
HZMB, Lantau [1]		0.1288	0.2393	0.2577	0.2025
Average Trip Rate		**0.1247**	**0.1615**	**0.1337**	**0.1624**
Trip Generation (pcu/hr)					
Proposed Parking Facilities (385 equivalent car parking spaces)		**48**	**62**	**51**	**63**

1. *Data referenced from the existing public vehicle parks.*
2. *Anticipated data reference from approved TIA of Planning Application No. A/K11/235.*

On the other hand, it is estimated that over 80% of the parking spaces are designated for monthly parking. This high proportion of long-term parking indicates that the majority of vehicles are parked for extended periods, reducing the frequency of daily trips in and out of the parking facility. As a result, this arrangement minimizes the overall volume of traffic generated on a daily basis, as fewer vehicles enter and exit the area compared to facilities primarily serving short-term or hourly parking.

1.8 Development Traffic Routes

Users of the proposed car park will be instructed to avoid using Fairview Park Boulevard for access, ensuring that development traffic flows through Castle Peak Road – Tam Mi and Kam Pok Road instead.

In this traffic assessment, it is assumed that 20% of users will still utilize Fairview Park Boulevard for exiting the site as a sensitivity test. This assumption is made to ensure that, even with this scenario, the traffic impact remains at an acceptable level.

1.9 Adjacent Development

The light public housing project on Yau Pok Road is scheduled for completion in Q1 of 2025. The traffic impact resulting from this development has been evaluated and included in this report. The parameters of the development are shown in **Table 5.**

Table 5 Traffic Generation and Attraction from adjacent development

Adjacent Development	Parameters
Yau Pok Road LPH Development	No. of Units: About 2100 units Public Transport: 3 routes (assumed 6 franchised bus services for each route per hour during peak hours) Public Transport Termini: Two, each in the northern and southern positions of the site.

1.10 Annual Traffic Growth

For the estimation of traffic flows in the design year of 2028, it is proposed to adjust the existing traffic flows by considering the natural traffic growth which is related to the increase in car usage.

The traffic forecasts were developed using existing traffic flows from 2025, obtained from traffic surveys, and applying an appropriate annual growth factor to project the background traffic for 2028.

According to the "2019-based Territorial Population and Employment Data Matrix," the population growth in Northwest New Territories (Other Area) from the base year 2019 to 2031 is presented in **Table 6.**

Table 6 Population Estimation from 2019 Base TPEDM (NWNT Other Area)

2019		2031		Growth Rates p.a. (%)	
Population	Employment	Population	Employment	31/19 Population	31/19 Employment
222,800	30,885	353,900	140,150	1.6%	2.5%

The TPEDM data shows that the population is projected to grow at an annual rate of 1.6%, while employment is expected to increase at a rate of 2.5% per year from 2019 to 2031.

After comparing historical data with future planning data, a conservative assessment led to the adoption of an annual growth rate of 2.5%. This growth factor will be applied to the observed traffic flows from 2025.

1.11 Reference and Design Flows

The growth factor will be applied to the 2025 observed traffic flows to estimate the 2028 reference flows.

The reference and design flows for the year 2028 are calculated from the following formulae:

2028 Reference Flows **(Figure 4)** = 2025 Observed Flows **(Figure 3)** x $(1 + 2.5\%)^3$ + Adjacent Development Flows

2028 Design Flows **(Figure 6)** = 2028 Reference Flows **(Figure 4)** + Total Development Flows **(Figure 5)**

Based on the observed traffic flows and the patterns of the existing road network, the 2028 peak hour Reference and Design traffic flows at the concerned road link and junction are shown in **Figures 4** and **6**, respectively.

1.12 Link Capacity Assessment

The link capacity assessment results with reference to the development traffic are summaries in **Table 7**.

Table 7 Link Capacity Assessment

No.	Road Link	Direction	Reference Flow (pcu/hr)		Reference P/Df Ratio		Design Flow (pcu/hr)		Design P/Df Ratio	
			AM	PM	AM	PM	AM	PM	AM	PM
L1	Kam Pok Road	NB	47	66	0.05	0.07	85	116	0.09	0.13
		SB	66	87	0.07	0.10	117	150	0.13	0.17

Note: Assumed 900 pcu/hour for each direction, TPDM Volume 2 Chapter 2

As shown in **Table 7** the capacity of road link L1 will maintain ample reserved capacity during peak periods for both Reference and Design Scenarios.

1.13 Junction Capacity Assessment

The results of the junction capacity assessment concerning the development traffic are summarized in **Table 8**, with detailed calculation sheets provided in **Appendix A**.

Table 8 2028 Junction Capacity Assessments

Junction	Location	Type / Capacity Index	2028			
			Reference		Design	
			AM	PM	AM	PM
J1	J/O Fairview Park Boulevard / Kam Pok Road	Signalised / RC	56.2%	51.1%	54.2%	48.9%

Notes: RC = reserved capacity

Table 8 indicates that junction J1 will operate within its capacity during peak hours for both the Reference and Design Scenarios.

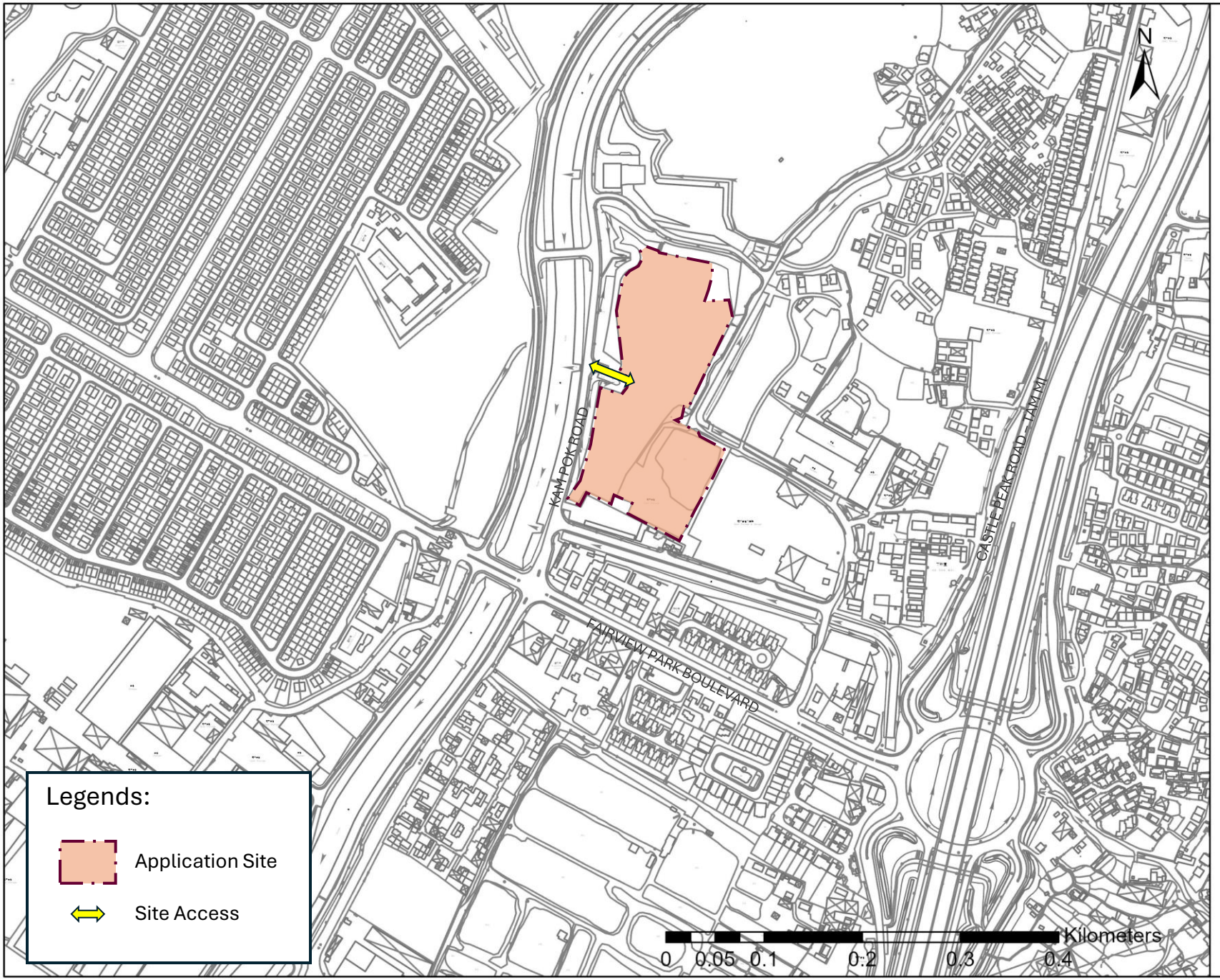
1.14 Traffic Management Plan

The parking ingress will be routed via Castle Peak Road – Tam Mi and Kam Pok Road, as Fairview Park Boulevard prohibits right turns onto Kam Pok Road. For egress, traffic signs will be installed within the site boundary to direct vehicles to turn right when exiting. The proposed sign face is illustrated below:

1.15 Conclusion

The traffic assessment findings suggest that the road network surrounding the site can accommodate the traffic generated by the proposed development without causing any adverse impacts from a traffic perspective.

Figures



Site Location

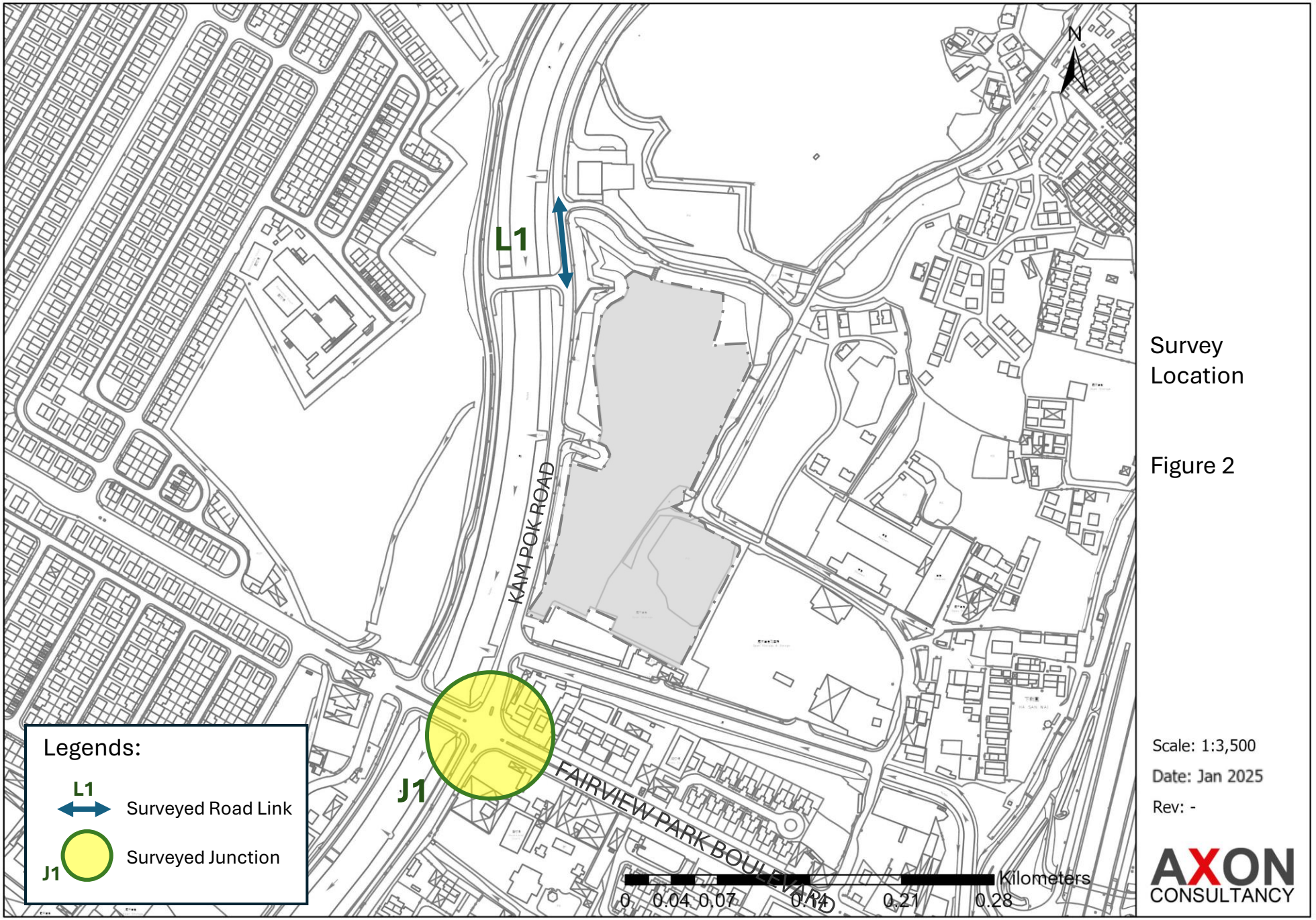
Figure 1

Scale: 1:5,000

Date: Jan 2025

Rev: -

AXON CONSULTANCY



Survey Location

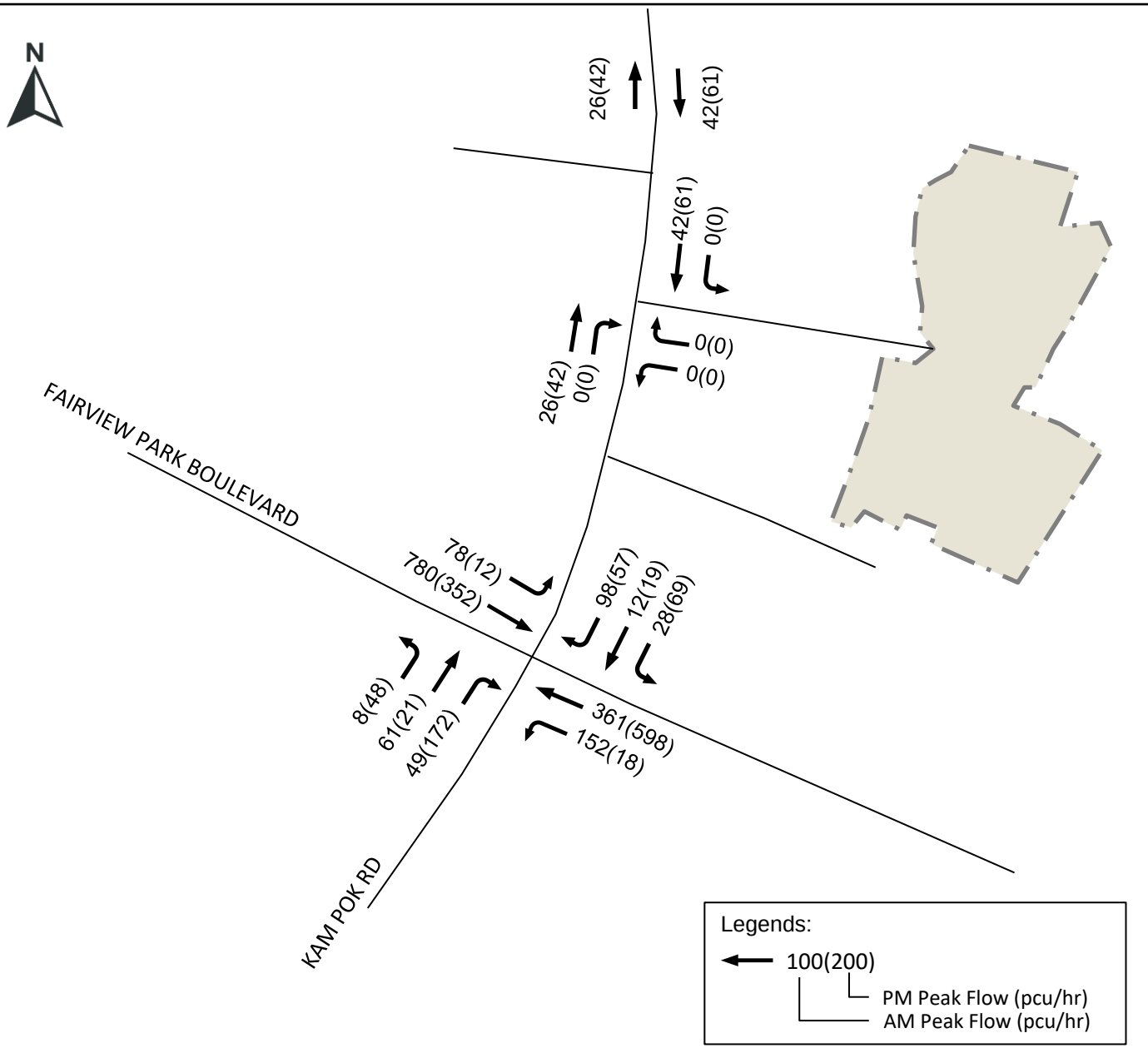
Figure 2

Scale: 1:3,500

Date: Jan 2025

Rev: -

AXON CONSULTANCY



Proposed Temporary Car Park at DD104 Lot 4822, Fairview Park

2025 Observed Traffic Flows

Figure 3

Scale: N.T.S

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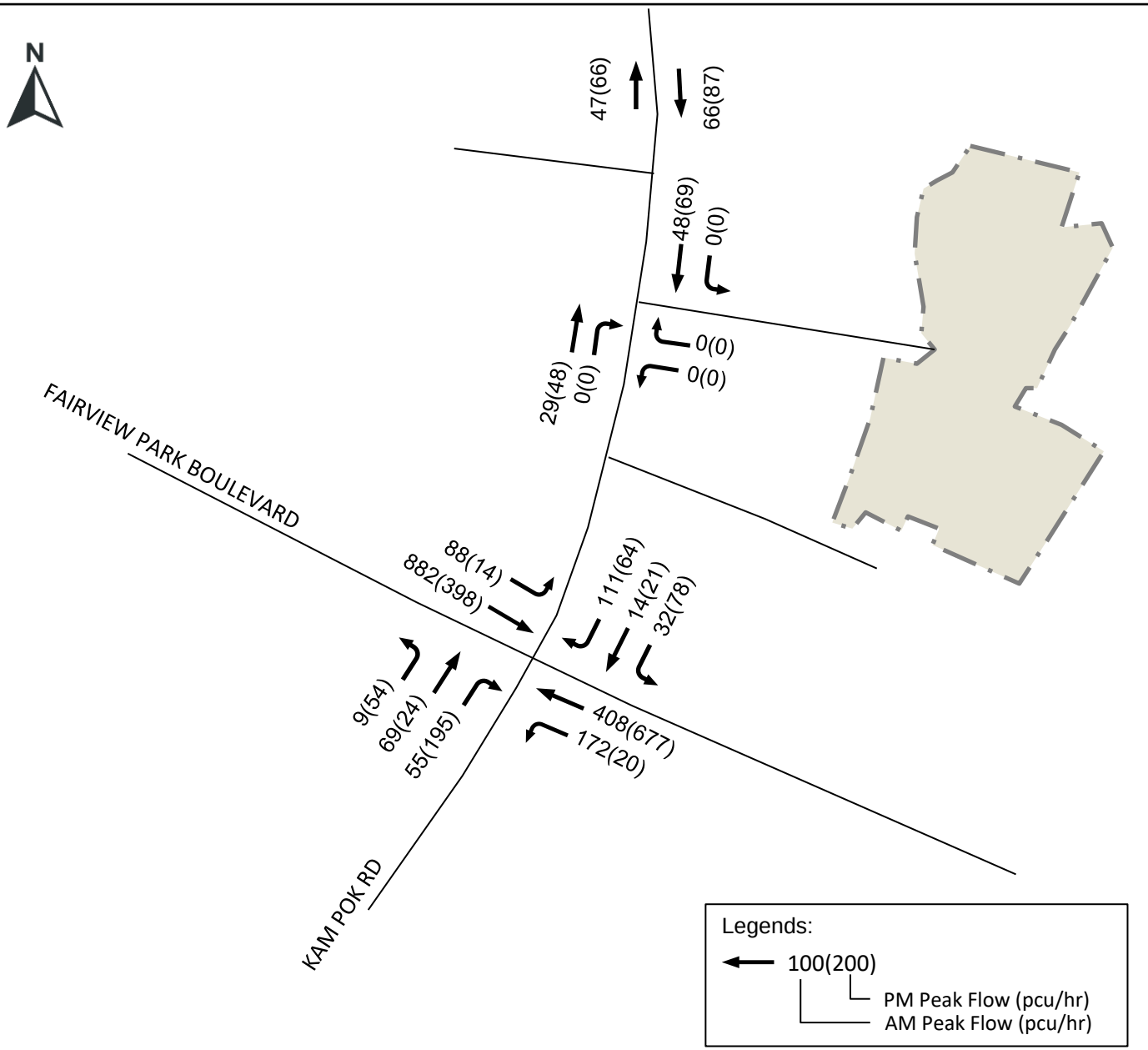

Proposed Temporary Car Park at DD104 Lot 4822, Fairview Park

2028 Anticipated Reference Traffic Flows

Figure 4

Scale: N.T.S

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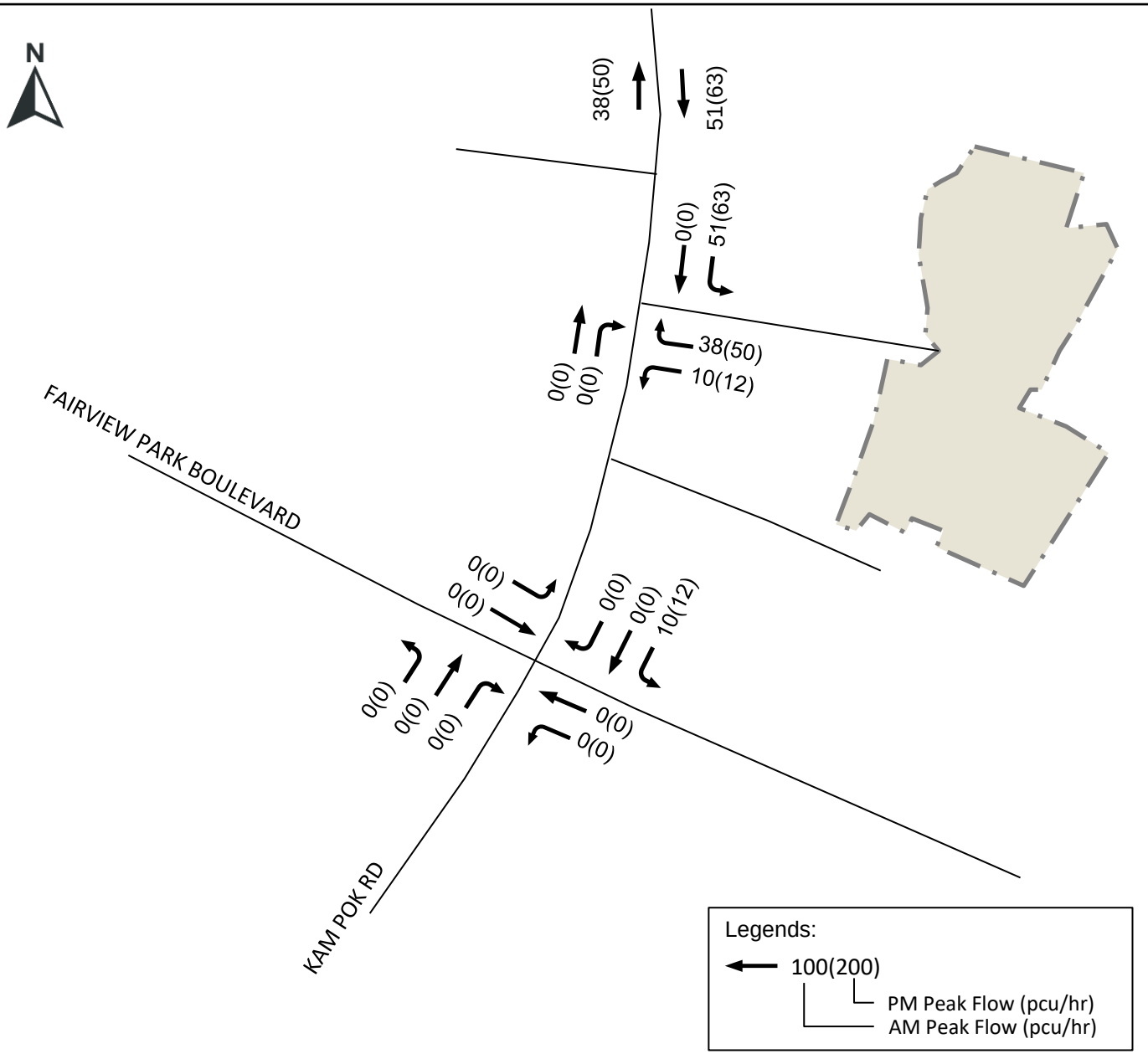

Proposed Temporary Car Park at DD104 Lot 4822, Fairview Park

Total Development Flows

Figure 5

Scale: N.T.S

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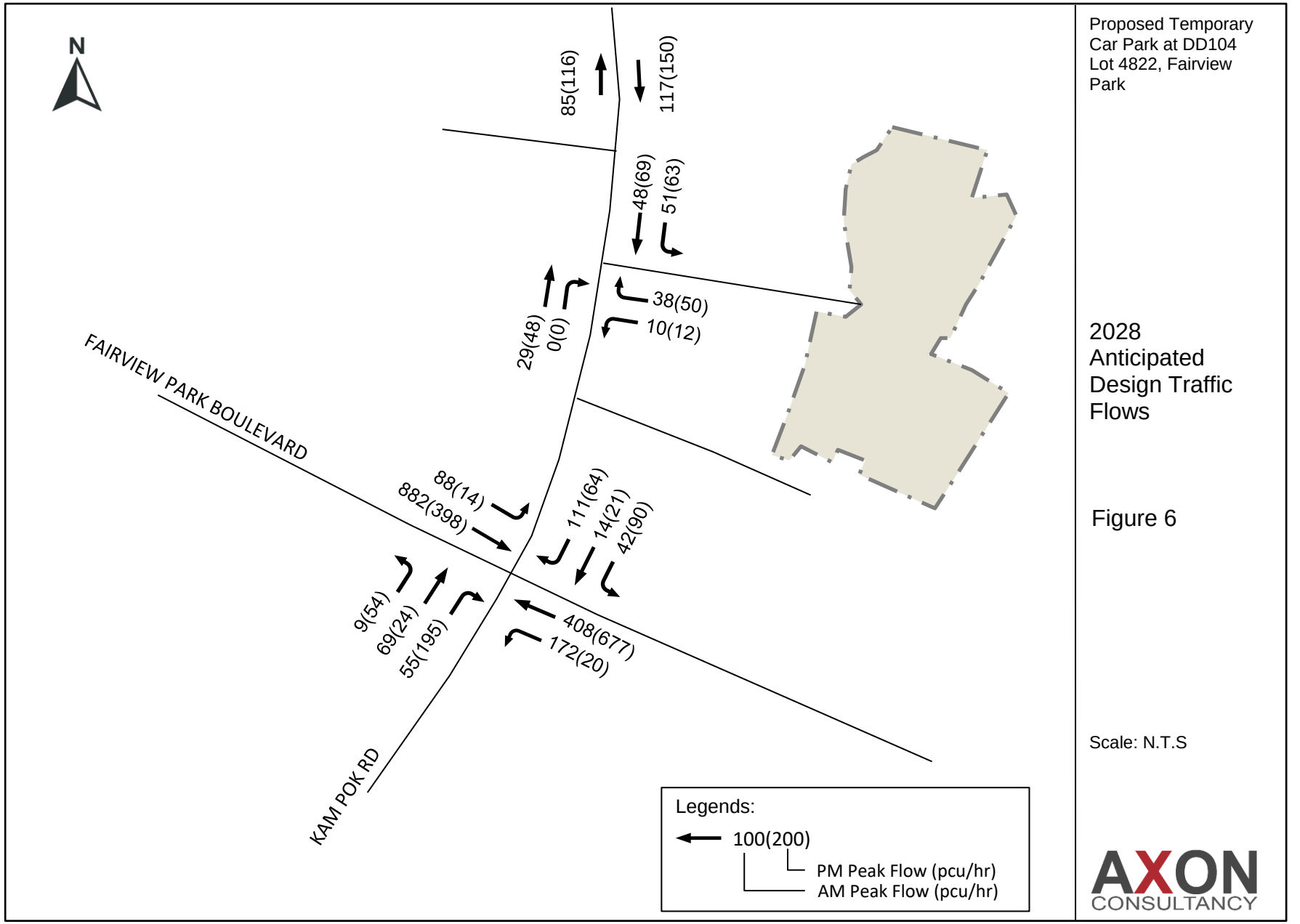

Proposed Temporary Car Park at DD104 Lot 4822, Fairview Park

2028 Anticipated Design Traffic Flows

Figure 6

Scale: N.T.S

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Appendix A

Junction Analysis

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TRAFFIC SIGNAL CALCULATION

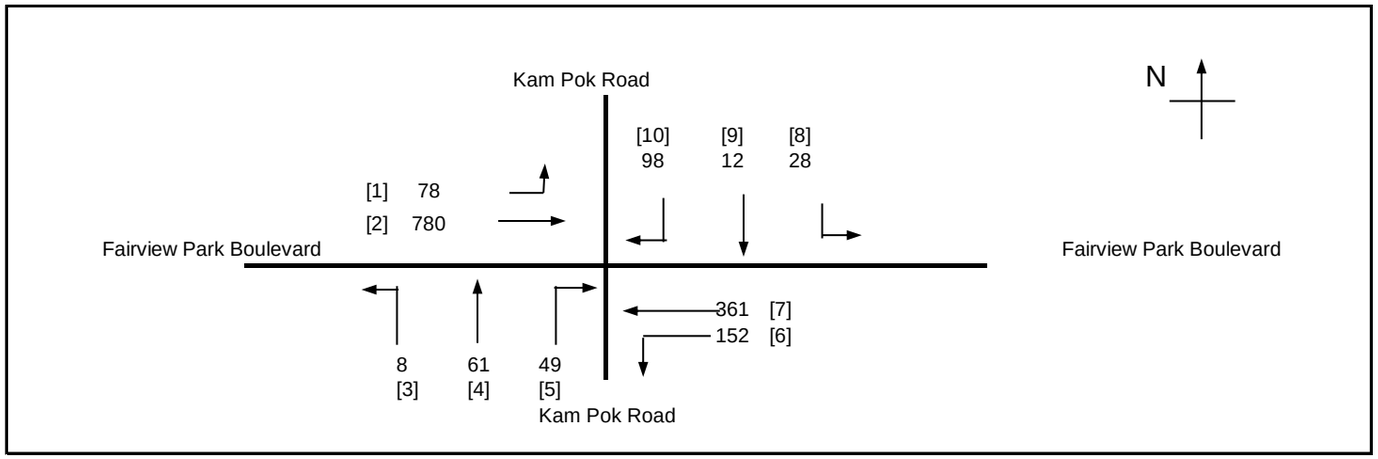
INITIALS		DATE

Proposed Temporary Car Park at DD104 Lot 4822, Fairview Park

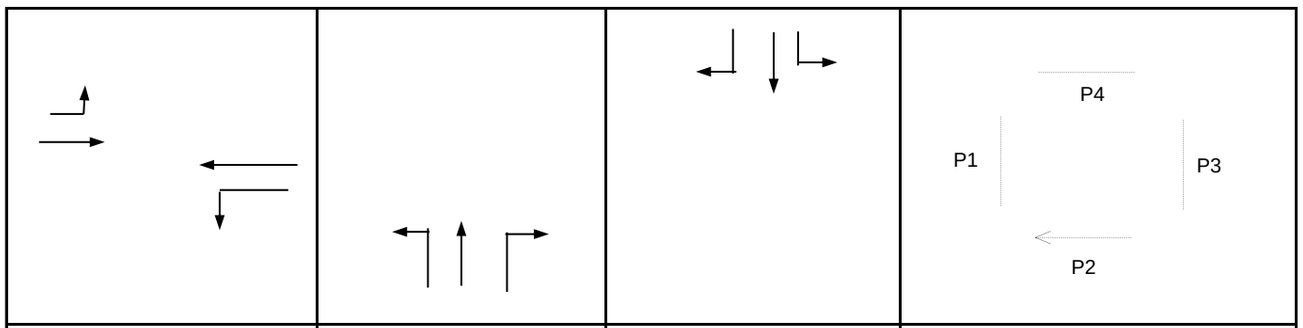
J/O Fairview Park Boulevard / Kam Pok Road (J1)

2025 Observed AM

Project No.:	31052	Prepared By:	Jan-25
		Checked By:	Jan-25
		Reviewed By:	Jan-25



No. of stages per cycle	N =	4
Intergreen Period Stage 1 - 2	I =	7 sec
Stage 2 - 3	I =	7 sec
Stage 3 - 4	I =	11 sec
Stage 4 - 1	I =	2 sec
Cycle time	C =	140 sec
Sum(y)	Y =	0.346
Loss time	L =	45 sec
Total Flow	=	1627 pcu
Co = (1.5*L+5)/(1-Y)	=	110.8 sec
Cm = L/(1-Y)	=	68.8 sec
Yult	=	0.563
R.C.ult = (Yult-Y)/Y*100%	=	62.7 %
Cp = 0.9*L/(0.9-Y)	=	73.1 sec
Ymax = 1-L/C	=	0.679
R.C.(C) = (0.9*Ymax-Y)/Y*100%	=	76.7 %



Stage 1 | Stage 2 | Stage 3 | Stage 4

Pedestriar Phase	Width (m)	Stage	Green Time Required SG	Green Time Required FG	Green Time Provided (s) SG	Green Time Provided (s) FG	Check
P1	13.2	4	7	11	10	11	OK
P2	13.2	4	7	11	10	11	OK
P3	13.2	4	7	11	10	11	OK
P4	13.2	4	7	11	10	11	OK

	Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	m Left pcu/h	m Straight pcu/h	m Right pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lan 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)
																					24				
	1,2	1	3.40		1	10		N	1955	78	331		409	0.19	1901			1901	0.215	0.215		59	59	0.509	46	31
	2	1	3.30		1				2085		449		449	0.00	2085			2085	0.215			59	59	0.509	50	31
	3,4,5	2	3.70		1	15		N	1985	8	61	49	118	0.48	1894			1894	0.062	0.062		17	17	0.509	20	60
	6,7	1	3.30		1	19		N	1945	152	90		242	0.63	1853			1853	0.131			36	36	0.509	35	46
	7	1	3.20		1				2075		271		271	0.00	2075			2075	0.131			36	36	0.509	39	46
	8,9,10	3	5.50		1	20		N	2165	28	12	98	138	0.91	2026			2026	0.068	0.068		19	19	0.509	23	58
		4		Ped																	21	21	21			

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TRAFFIC SIGNAL CALCULATION

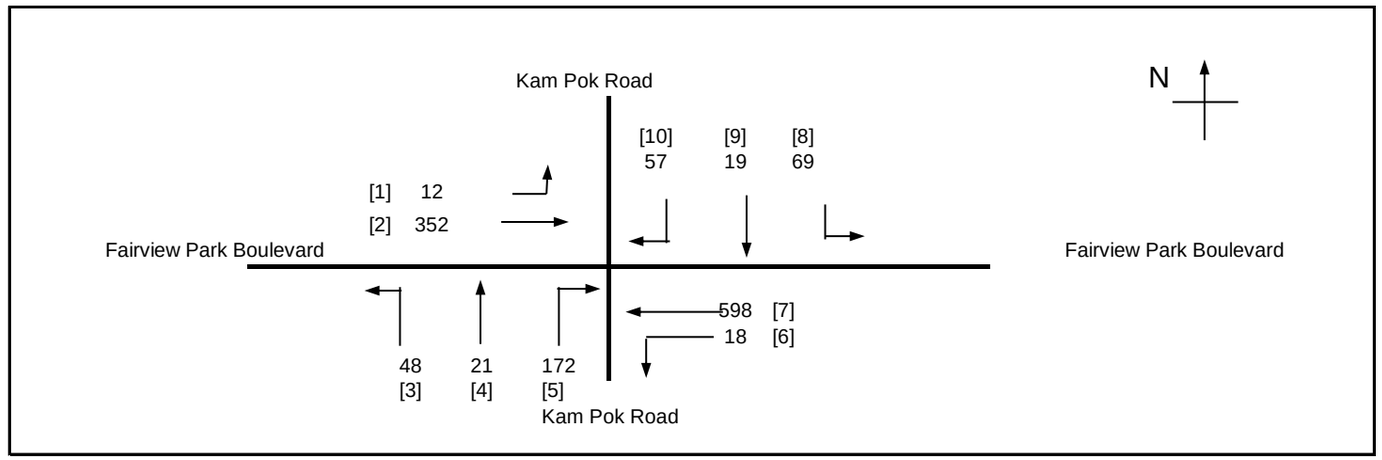
INITIALS		DATE

Proposed Temporary Car Park at DD104 Lot 4822, Fairview Park

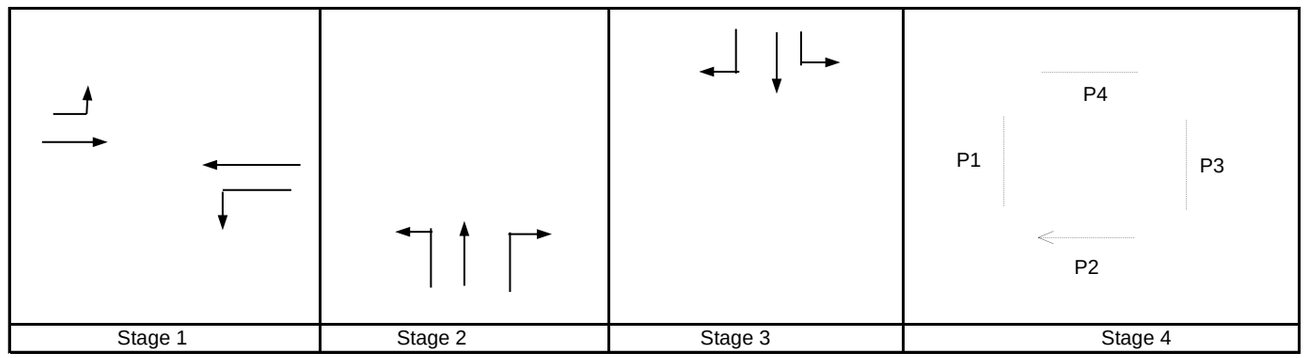
J/O Fairview Park Boulevard / Kam Pok Road (J1)

2025 Observed PM

Project No.:	31052	Prepared By:	Jan-25
		Checked By:	Jan-25
		Reviewed By:	Jan-25



No. of stages per cycle	N = 4
Intergreen Period Stage 1 - 2	I = 7 sec
Stage 2 - 3	I = 7 sec
Stage 3 - 4	I = 11 sec
Stage 4 - 1	I = 2 sec
Cycle time	C = 140 sec
Sum(y)	Y = 0.357
Loss time	L = 45 sec
Total Flow	= 1366 pcu
Co = (1.5*L+5)/(1-Y)	= 112.8 sec
Cm = L/(1-Y)	= 70.0 sec
Yult	= 0.563
R.C.ult = (Yult-Y)/Y*100%	= 57.4 %
Cp = 0.9*L/(0.9-Y)	= 74.6 sec
Ymax = 1-L/C	= 0.679
R.C.(C) = (0.9*Ymax-Y)/Y*100%	= 70.9 %



Pedestrian Phase	Width (m)	Stage	Green Time Required SG	Green Time Required FG	Green Time Provided (s) SG	Green Time Provided (s) FG	Check
P1	13.2	4	7	11	10	11	OK
P2	13.2	4	7	11	10	11	OK
P3	13.2	4	7	11	10	11	OK
P4	13.2	4	7	11	10	11	OK

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	m Left pcu/h	m Straight pcu/h	m Right 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)
																				24					
1,2	1	3.40		1	10		N	1955	12	163		175	0.07	1935			1935	0.091	0.154		24	41	0.311	24	40
2	1	3.30		1				2085		189		189	0.00	2085			2085	0.091			24	41	0.311	26	40
3,4,5	2	3.70		1	15		N	1985	48	21	172	241	0.91	1819			1819	0.132	0.132		35	35	0.527	35	47
6,7	1	3.30		1	19		N	1945	18	279		297	0.06	1936			1936	0.154			41	41	0.527	41	43
7	1	3.20		1				2075		319		319	0.00	2075			2075	0.154			41	41	0.527	44	43
8,9,10	3	5.50		1	20		N	2165	69	19	57	145	0.87	2033			2033	0.071	0.071		19	19	0.527	24	58
	4		Ped																	21	21	21			

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TRAFFIC SIGNAL CALCULATION

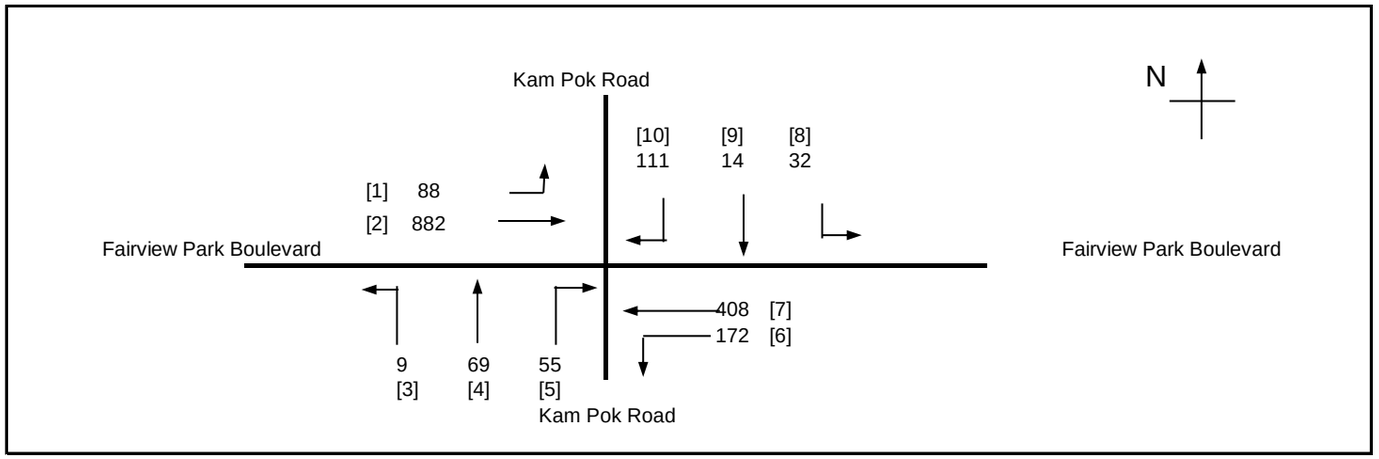
INITIALS		DATE

Proposed Temporary Car Park at DD104 Lot 4822, Fairview Park

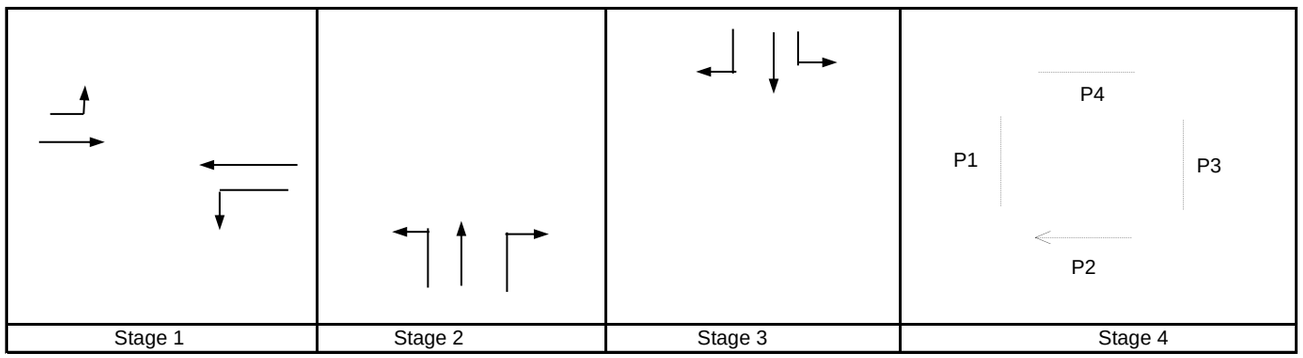
J/O Fairview Park Boulevard / Kam Pok Road (J1)

2028 Reference AM

Project No.:	31052	Prepared By:	Jan-25
		Checked By:	Jan-25
		Reviewed By:	Jan-25



No. of stages per cycle	N =	4
Intergreen Period Stage 1 - 2	I =	7 sec
Stage 2 - 3	I =	7 sec
Stage 3 - 4	I =	11 sec
Stage 4 - 1	I =	2 sec
Cycle time	C =	140 sec
Sum(y)	Y =	0.391
Loss time	L =	45 sec
Total Flow	=	1840 pcu
Co = (1.5*L+5)/(1-Y)	=	119.1 sec
Cm = L/(1-Y)	=	73.9 sec
Yult	=	0.563
R.C.ult = (Yult-Y)/Y*100%	=	43.8 %
Cp = 0.9*L/(0.9-Y)	=	79.6 sec
Ymax = 1-L/C	=	0.679
R.C.(C) = (0.9*Ymax-Y)/Y*100%	=	56.2 %



Pedestriar Phase	Width (m)	Stage	Green Time Required SG	Green Time Required FG	Green Time Provided (s) SG	Green Time Provided (s) FG	Check
P1	13.2	4	7	11	10	11	OK
P2	13.2	4	7	11	10	11	OK
P3	13.2	4	7	11	10	11	OK
P4	13.2	4	7	11	10	11	OK

	Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	m Left pcu/h	m Straight pcu/h	m Right pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lan 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)
																					24					
	1,2	1	3.40		1	10		N	1955	88	375		463	0.19	1901			1901	0.243	0.243		59	59	0.576	52	33
	2	1	3.30		1				2085		507		507	0.00	2085			2085	0.243			59	59	0.576	57	32
	3,4,5	2	3.70		1	15		N	1985	9	69	55	133	0.48	1894			1894	0.070	0.070		17	17	0.576	23	61
	6,7	1	3.30		1	19		N	1945	172	102		274	0.63	1853			1853	0.148			36	36	0.576	40	48
	7	1	3.20		1				2075		306		306	0.00	2075			2075	0.148			36	36	0.576	44	47
	8,9,10	3	5.50		1	20		N	2165	32	14	111	157	0.91	2027			2027	0.077	0.077		19	19	0.576	26	60
		4		Ped																	21	21	21			

AXON CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

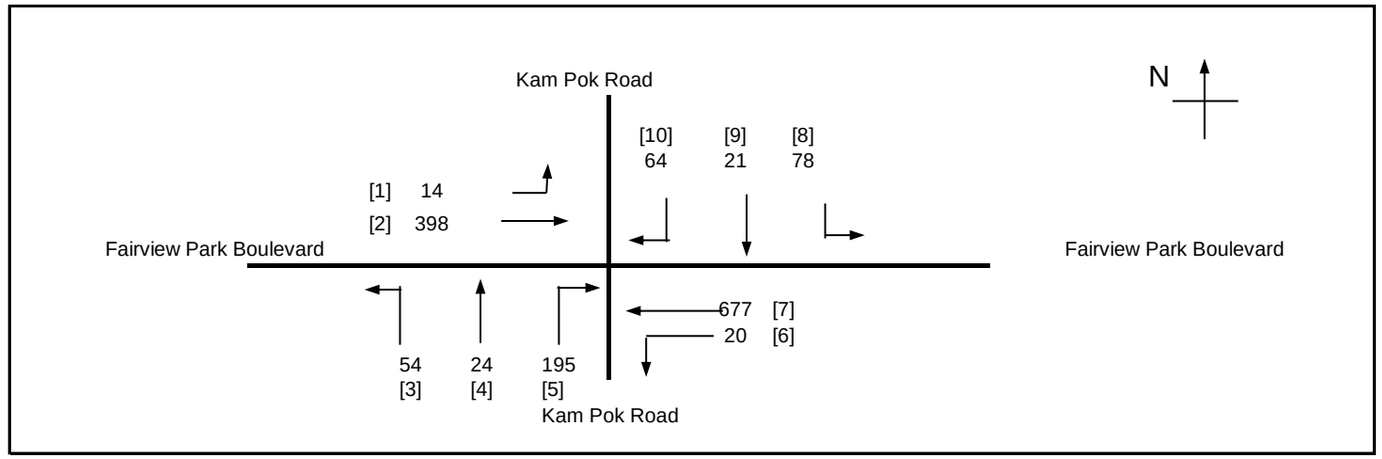
INITIALS		DATE

Proposed Temporary Car Park at DD104 Lot 4822, Fairview Park

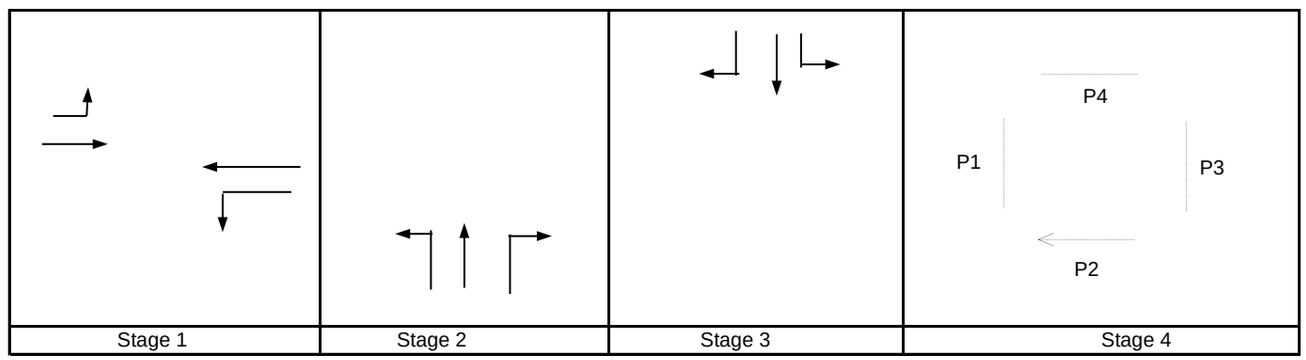
J/O Fairview Park Boulevard / Kam Pok Road (J1)

2028 Reference PM

Project No.:	31052		
Prepared By:			Jan-25
Checked By:			Jan-25
Reviewed By:			Jan-25



No. of stages per cycle	N = 4
Intergreen Period Stage 1 - 2	I = 7 sec
Stage 2 - 3	I = 7 sec
Stage 3 - 4	I = 11 sec
Stage 4 - 1	I = 2 sec
Cycle time	C = 140 sec
Sum(y)	Y = 0.404
Loss time	L = 45 sec
Total Flow	= 1545 pcu
Co = (1.5*L+5)/(1-Y)	= 121.7 sec
Cm = L/(1-Y)	= 75.5 sec
Yult	= 0.563
R.C.ult = (Yult-Y)/Y*100%	= 39.2 %
Cp = 0.9*L/(0.9-Y)	= 81.7 sec
Ymax = 1-L/C	= 0.679
R.C.(C) = (0.9*Ymax-Y)/Y*100%	= 51.1 %



Stage 1 | Stage 2 | Stage 3 | Stage 4

Pedestriar Phase	Width (m)	Stage	Green Time Required SG	Green Time Required FG	Green Time Provided (s) SG	Green Time Provided (s) FG	Check
P1	13.2	4	7	11	10	11	OK
P2	13.2	4	7	11	10	11	OK
P3	13.2	4	7	11	10	11	OK
P4	13.2	4	7	11	10	11	OK

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	m Left pcu/h	m Straight pcu/h	m Right pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lan 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)
																				24					
1,2	1	3.40		1	10		N	1955	14	184		198	0.07	1935			1935	0.103	0.174		24	41	0.351	27	40
2	1	3.30		1				2085		214		214	0.00	2085			2085	0.103			24	41	0.351	29	40
3,4,5	2	3.70		1	15		N	1985	54	24	195	273	0.91	1819			1819	0.150	0.150		35	35	0.595	40	48
6,7	1	3.30		1	19		N	1945	20	316		336	0.06	1936			1936	0.174			41	41	0.595	46	44
7	1	3.20		1				2075		361		361	0.00	2075			2075	0.174			41	41	0.595	50	44
8,9,10	3	5.50		1	20		N	2165	78	21	64	163	0.87	2032			2032	0.080	0.080		19	19	0.595	27	60
	4		Ped																	21	21	21			

AXON CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

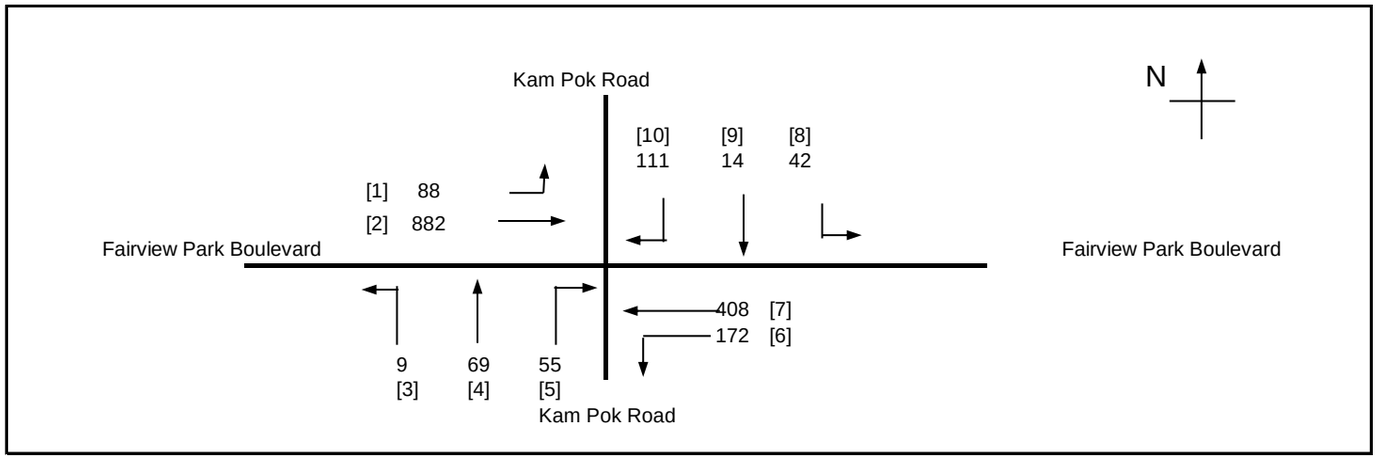
INITIALS		DATE

Proposed Temporary Car Park at DD104 Lot 4822, Fairview Park

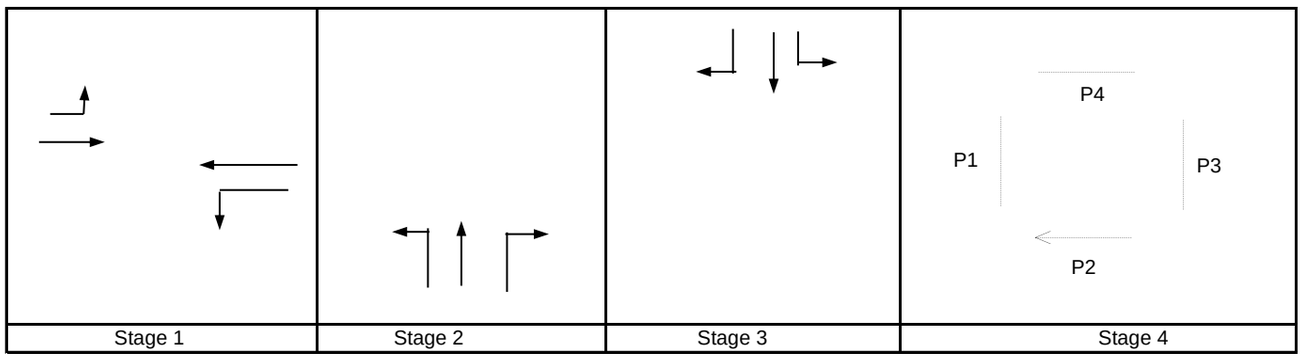
J/O Fairview Park Boulevard / Kam Pok Road (J1)

2028 Design AM

Project No.:	31052	Prepared By:		Jan-25
		Checked By:		Jan-25
		Reviewed By:		Jan-25



No. of stages per cycle	N =	4
Intergreen Period Stage 1 - 2	I =	7 sec
Stage 2 - 3	I =	7 sec
Stage 3 - 4	I =	11 sec
Stage 4 - 1	I =	2 sec
Cycle time	C =	140 sec
Sum(y)	Y =	0.396
Loss time	L =	45 sec
Total Flow	=	1850 pcu
Co = (1.5*L+5)/(1-Y)	=	120.0 sec
Cm = L/(1-Y)	=	74.5 sec
Yult	=	0.563
R.C.ult = (Yult-Y)/Y*100%	=	42.0 %
Cp = 0.9*L/(0.9-Y)	=	80.4 sec
Ymax = 1-L/C	=	0.679
R.C.(C) = (0.9*Ymax-Y)/Y*100%	=	54.2 %



Stage 1 | Stage 2 | Stage 3 | Stage 4

Pedestriar Phase	Width (m)	Stage	Green Time Required SG	Green Time Required FG	Green Time Provided (s) SG	Green Time Provided (s) FG	Check
P1	13.2	4	7	11	10	11	OK
P2	13.2	4	7	11	10	11	OK
P3	13.2	4	7	11	10	11	OK
P4	13.2	4	7	11	10	11	OK

	Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	m Left pcu/h	m Straight pcu/h	m Right pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lan 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)
																					24					
	1,2	1	3.40		1	10		N	1955	88	375		463	0.19	1901			1901	0.243	0.243		58	58	0.584	52	33
	2	1	3.30		1				2085		507		507	0.00	2085			2085	0.243			58	58	0.584	58	33
	3,4,5	2	3.70		1	15		N	1985	9	69	55	133	0.48	1894			1894	0.070	0.070		17	17	0.584	23	62
	6,7	1	3.30		1	19		N	1945	172	102		274	0.63	1853			1853	0.148			35	35	0.584	40	48
	7	1	3.20		1				2075		306		306	0.00	2075			2075	0.148			35	35	0.584	45	48
	8,9,10	3	5.50		1	20		N	2165	42	14	111	167	0.92	2026			2026	0.082	0.082		20	20	0.584	28	59
		4		Ped																	21	21	21			

AXON CONSULTANCY LIMITED

TRAFFIC SIGNAL CALCULATION

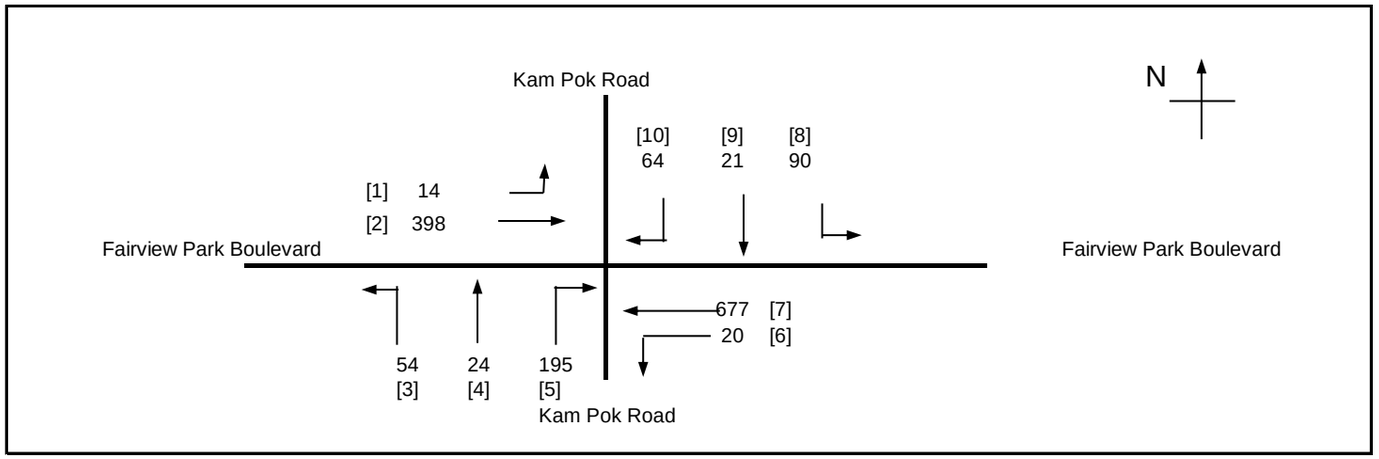
INITIALS		DATE

Proposed Temporary Car Park at DD104 Lot 4822, Fairview Park

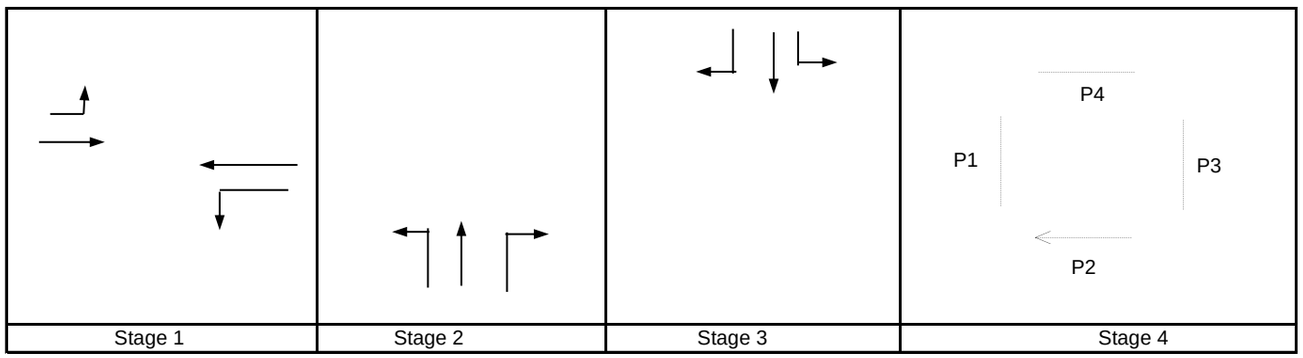
J/O Fairview Park Boulevard / Kam Pok Road (J1)

2028 Design PM

Project No.:	31052		
Prepared By:			Jan-25
Checked By:			Jan-25
Reviewed By:			Jan-25



No. of stages per cycle	N = 4
Intergreen Period Stage 1 - 2	I = 7 sec
Stage 2 - 3	I = 7 sec
Stage 3 - 4	I = 11 sec
Stage 4 - 1	I = 2 sec
Cycle time	C = 140 sec
Sum(y)	Y = 0.410
Loss time	L = 45 sec
Total Flow	= 1557 pcu
Co = (1.5*L+5)/(1-Y)	= 122.9 sec
Cm = L/(1-Y)	= 76.3 sec
Yult	= 0.563
R.C.ult = (Yult-Y)/Y*100%	= 37.2 %
Cp = 0.9*L/(0.9-Y)	= 82.7 sec
Ymax = 1-L/C	= 0.679
R.C.(C) = (0.9*Ymax-Y)/Y*100%	= 48.9 %



Pedestriar Phase	Width (m)	Stage	Green Time Required SG	Green Time Required FG	Green Time Provided (s) SG	Green Time Provided (s) FG	Check
P1	13.2	4	7	11	10	11	OK
P2	13.2	4	7	11	10	11	OK
P3	13.2	4	7	11	10	11	OK
P4	13.2	4	7	11	10	11	OK

Move-ment	Stage	Lane Width m.	Phase	No. of lane	Radius m.	O	N	Straight-Ahead Sat. Flow	m Left pcu/h	m Straight pcu/h	m Right pcu/h	Total Flow pcu/h	Proportion of Turning Vehicles	Sat. Flow pcu/h	Flare lan 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)
																				24					
1,2	1	3.40		1	10		N	1955	14	184		198	0.07	1935			1935	0.103	0.174		24	40	0.356	27	41
2	1	3.30		1				2085		214		214	0.00	2085			2085	0.103			24	40	0.356	30	41
3,4,5	2	3.70		1	15		N	1985	54	24	195	273	0.91	1819			1819	0.150	0.150		35	35	0.604	40	49
6,7	1	3.30		1	19		N	1945	20	316		336	0.06	1936			1936	0.174			40	40	0.604	47	45
7	1	3.20		1				2075		361		361	0.00	2075			2075	0.174			40	40	0.604	50	45
8,9,10	3	5.50		1	20		N	2165	90	21	64	175	0.88	2031			2031	0.086	0.086		20	20	0.604	29	59
	4		Ped																	21	21	21			