

CHP

Proposed Health Hub Facility

Showground Rd, Gosford

Traffic Impact Assessment

Prepared by

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TABLE OF CONTENTS

Contents

1. INTRODUCTION	2
2. SITE AND ACCESS	2
3. EXISTING TRAFFIC	3
4. COMPONENTS OF THE PROPOSED HEALTH HUB.....	4
5. COUNCIL PARKING REQUIREMENTS.....	4
6. MEDICAL CENTRE CHARACTERISTICS BASED ON RTA RESEARCH.....	4
7. PARKING REQUIREMENT BASED ON SIMILAR CHP DEVELOPMENTS	5
8. PROPOSED PARKING PROVISION.....	6
9. TRIP GENERATION – HEALTH HUB AND RESIDENTIAL UNITS	6
10. TRIP DISTRIBUTION – HEALTH HUB AND RESIDENTIAL UNITS.....	7
11. PREDICTED TRAFFIC FLOWS WITH THE PROPOSED HEALTH HUB.....	7
12. SIDRA ANALYSIS 2021: ACCESS TO SHOWGROUND RD.....	8
13. SIDRA ANALYSIS 2021: ACCESS TO SHOWGROUND RD.....	9
14. IMPACT ON SURROUNDING ROAD NETWORK.....	10
15. SIDRA ANALYSIS 2021: WITH PROPOSED HEALTH HUB.....	11
SHOWGROUND RD / RACECOURSE RD	11
SHOWGROUND RD / FAUNCE ST.....	14
16. PARKING AND SERVICE AREA DESIGN REQUIREMENTS.....	16
17. WASTE COLLECTION	17
18. VEHICLE TURNING PATHS.....	17
19. RECOMMENDATION	18

Appendix A: Automatic Vehicle Count – Showground Road adjacent to No.64.

Appendix B: Intersection Count– Site 1 – Showground Rd & Racecourse Rd

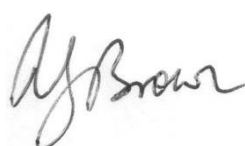
Site 2 –Showground Rd & Faunce St West

Appendix C: Vehicle Turning Paths– Typical Vehicle Turning Paths to and from Parking Bays

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1. Introduction

Northern Transport Planning and Engineering Pty Ltd have been engaged by CHP to assess the traffic impacts of the following proposed Health Hub at 60 -64 Showground Rd, Gosford.

The proposed facility will accommodate:

Basement Parking	Three Levels	226 parking spaces
GP/Pharmacy/Imaging/Retail	Ground Floor	886 m2 Nett Lettable Area
Medical/Specialist Suites	Four Levels	6080 m2 Nett Lettable Area
SDA Housing	Level 5	2 x One Bed Units 5 x two Bed Units

2. Site and Access

The site and general layout of the proposed Facility is presented below in Figure 2-1:

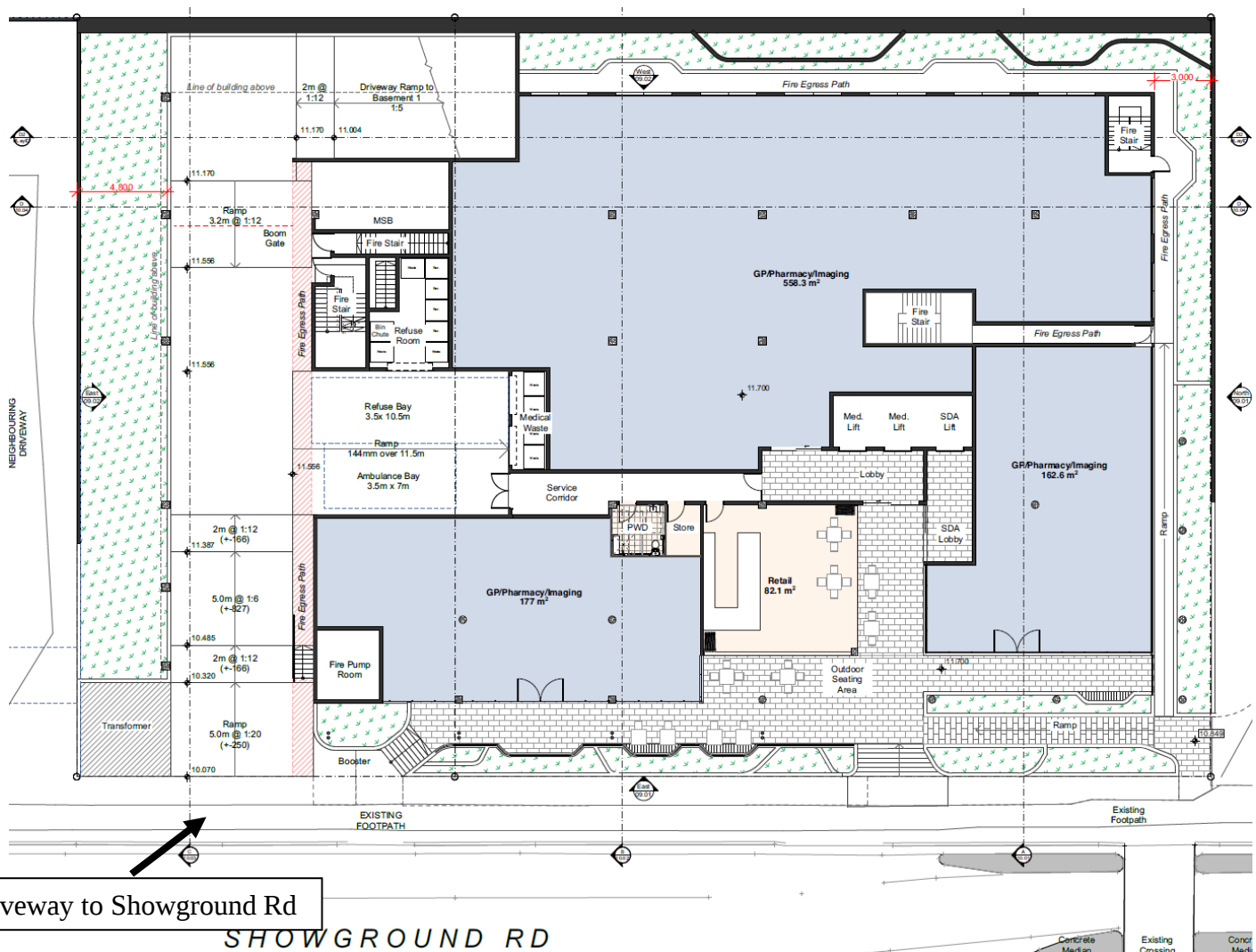


Figure 2-1: Proposed Medical Centre – Ground Floor Site Layout and Driveway

3. Existing Traffic

NTPE has carried out the following surveys of existing traffic flows on Showground Road and at the intersections of Showground Rd/Racecourse Rd and Racecourse Rd/Faunce St:

A summary of the results of the Automatic Vehicle Counts on Showground Road are presented in Table 3-1 below:

Table 3-1: Average Weekday Traffic Flows – 15th May 2021 to 21st May 2021

Street	Location	Direction	AM Peak 7am - 8am	PM Peak 4pm - 5pm	SAT Peak 11am-12noon	Daily
Showground Rd	North of Faunce St	Northbound	434	347	278	4782
		Southbound	297	332	290	4246

A summary of the results of the Intersection Counts are presented in Table 3-2 below:

Table 3-2: Intersection Counts - Showground Rd / Racecourse Rd & Showground Rd / Faunce St

Showground Rd / Racecourse Rd 16th June 2021																	
Peak Hour		Nthb				Wstb				Sthb				Estb			
		Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn
AM	Light	72	154	104	7	119	354	121	3	172	174	109	12	74	280	33	7
	Heavy	2	6	2	0	2	20	7	7	14	3	6	0	5	19	6	0
PM	Light	53	197	201	5	105	364	191	2	171	128	93	2	104	374	23	2
	Heavy	0	2	0	0	0	4	5	5	8	0	0	0	1	5	0	0
SAT	Light	38	145	99	4	142	344	112	3	123	172	85	0	78	341	26	5
	Heavy	0	2	2	0	1	6	3	3	1	2	4	0	1	5	0	0

Showground Rd / Faunce St 16th June 2021																	
Peak Hour		Nthb				Wstb				Sthb				Estb			
		Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn
AM	Light	28	292	6	27	0	0	0	0	7	224	49	1	82	6	123	0
	Heavy	0	11	0	1	0	0	0	0	0	5	1	0	0	0	0	0
PM	Light	32	250	30	40	0	0	0	0	11	260	38	9	99	1	58	1
	Heavy	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SAT	Light	16	224	16	27	0	0	0	0	12	286	30	2	59	1	43	1
	Heavy	0	4	0	0	0	0	0	0	0	3	0	0	0	0	0	0

4. Components of the Proposed Health Hub

The Medical related facilities to be accommodated at the proposed Health Hub are listed below in Table 4-1:

Table 4-1: Components of the Health Hub

Medical Services (total area 6080m ²)	Ground Floor	General Practice/Pharmacy/Imaging		898m ²
	Level 1	Specialist Consulting Rooms	20	1528.7m ²
	Level 2	Specialist Consulting Rooms	20	1527.2m ²
	Level 3	Specialist Consulting Rooms	20	1528.6m ²
	Level 4	Specialist Consulting Rooms	20	1495.2m ²
Retailing	Ground Floor	Café		82.19m ²
Residential	Level 5	2 Bedroom Units	5	
		1 Bedroom Units	2	

Discussion

The total of approximately 95 consulting rooms to be accommodated will operate between 7am and 6pm Monday to Saturday. However, for the purpose of calculating trip generation and parking rates it is expected that 25% of the rooms will be inactive at any one time.

5. Council Parking Requirements

Central Coast Council's Development Control Plan (Gosford) set out the following requirements for parking related to Medical Centres:

Medical Services	3 spaces per consulting room plus 1 space per employee
Residential Units	1.5 spaces per 2 bedroom unit 1 space per 1 bedroom unit
Retail	1 trip per 40m ²

6. Medical Centre Characteristics Based on RTA Research

In 2015 TFORNSW (now Transport for NSW) commissioned a survey of 20 typical Medical Centres in Sydney and Regional Areas. The results of this survey were subsequently published under the Title "Trip Generation Surveys Medical Centres – Analysis Report".

Some of the key outcomes reported from the surveys are summarized below in Table 6-1:

Table 6-1: Key Characteristics Derived from TforNSW Research

Regional Sites	Min	Max	Average
Peak Parking Accumulation per 100m ² of total GFA	2.4	7.2	4.3
Vehicle Trips per 100m ² of Total GFA – AM Peak Hr	1.3	17	7.35
Vehicle Trips per 100m ² of Total GFA – PM Peak Hr	1.9	12.4	6
GFA per Staff member (m ²)	26.8	67.5	41.7
Parking Spaces per 100m ²	1.9	7.6	4.52

These survey results observed by TFORNSW can be used to derive the key characteristics for the proposed development set out in Table 6-2 below:

Table 6-2: Key Characteristics for Medical Centres based on TforNSW Research

Number of Medical Staff	(6080/41.7)	= 146 people
AM Peak Hour Trip Generation	(6080/100*7.35)	= 447 Trips
PM Peak Hour Trip Generation	(6080/100*6)	= 365 Trips
Parking Spaces	(6080/100*1.9)	= 116 spaces (Min)
	(6080/100*7.6)	= 462 spaces (Max)
	(6080/100*4.52)	= 275 spaces (Average)

Discussion

As shown in Table 6-2 the parking requirement for the Medical Centre derived from TforNSW research varies from a minimum of 116 to a maximum of 462. The number of parking spaces required based on the average rate of 4.52 spaces per 100 m2 GFA derived from the 20 sites indicates that 275 parking spaces are required.

The parking requirement for the Medical Centre based on the rates include in Councils DCP would be 431 (95*3 + 146*1).

When compared with the parking requirements based on TforNSW research it can be seen that the Council requirement is closer to the maximum requirements derived by TforNSW.

7. Parking Requirement Based on Similar CHP Developments

Research carried out at other similar facilities in Queensland and Canberra have parking rates ranging from 4.8 space per 100m2 to 1.9 space per 100m2 and an average rate of 3.1 space per 100m2.

A parking rate of 3.1 spaces per 100m2 has also been used recently in support of a similar facility that was opened in 2001 at Kingswood in Sydney, known as the Nepean Health Hub.

Based on the average parking rate of 3.1 space per 100m2 it is considered that the parking requirement for Medical Service components of the proposed Gosford Health Hub would be 190 (6080m2 / 100 * 3.1).

This would be 30% less than the parking requirement based on the average parking requirement of 275 derived based on RTA research. However, it would still be significantly higher than the minimum parking requirement of 116 parking spaces.

It is considered that being located adjacent to the Gosford Hospital combined with the mix of Medical Services to be provided, the proposed development will result in a significant reduction in the parking requirement.

The proximity of the development to Gosford Rail Station and Local Bus Routes will also significantly reduce the number of parking spaces required.

The additional 15 parking spaces required for the Residential and Retail component would bring the parking requirement for the facility to 205 parking spaces.

8. Proposed Parking Provision

It is proposed that the site will provide a total of 226 parking spaces including 6 accessible parking spaces.

Level	Parking Spaces	Assessible	Drop Off	Service Vehicles
Ground				1
Basement 1	45	2	1	2
Basement 2	68	2		
Basement 3	68	2		
Basement 4	35			
Total	216	6	1	3

It is acknowledged that this parking provision is approximately 30% less than the parking requirement recommended by TforNSW and approximately half of the parking requirement recommended per Council's DCP.

However, it is considered that being located adjacent to the Gosford Hospital combined with the mix of Medical Services to be provided, the proposed development will result in a significant reduction in the parking requirement.

The proximity of the development to Gosford Rail Station and Local Bus Routes will also significantly reduce the number of parking spaces required.

9. Trip Generation – Health Hub and Residential Units

As noted in Section 6 it is predicted that the Health Hub will generate 447 and 365 trips in the AM and PM Peak Hour retrospectively based on average trip rates derived from RTA research. Given that the proposed car park will provide 30% less parking than derived using RTA data it is also likely that the number of trips generated by the car park would be up to 30% less. Accordingly, it is expected that the trips generated by the proposed Medical Centre would be 313 and 256 in the AM and PM Peak Hour retrospectively

Trip generation rates for high density residential units based on TforNSW TDT 2013 04A are 0.53 per unit in the AM peak hour and 0.35 per unit in the PM peak hour.

Therefore, the trip generation from the 7 residential units would be 4 (.53*7) in the AM Peak and 3 (.35*7) in the PM Peak Hour.

Total trip generation for the Health Hub and Residential Units would be 317 in the AM Peak hour and 259 in the PM Peak Hour.

10. Trip Distribution – Health Hub and Residential Units

The predicted trip generation for the Health Hub and Residential Units have been assessed based on the trip distribution presented in Figure 10-1 below:

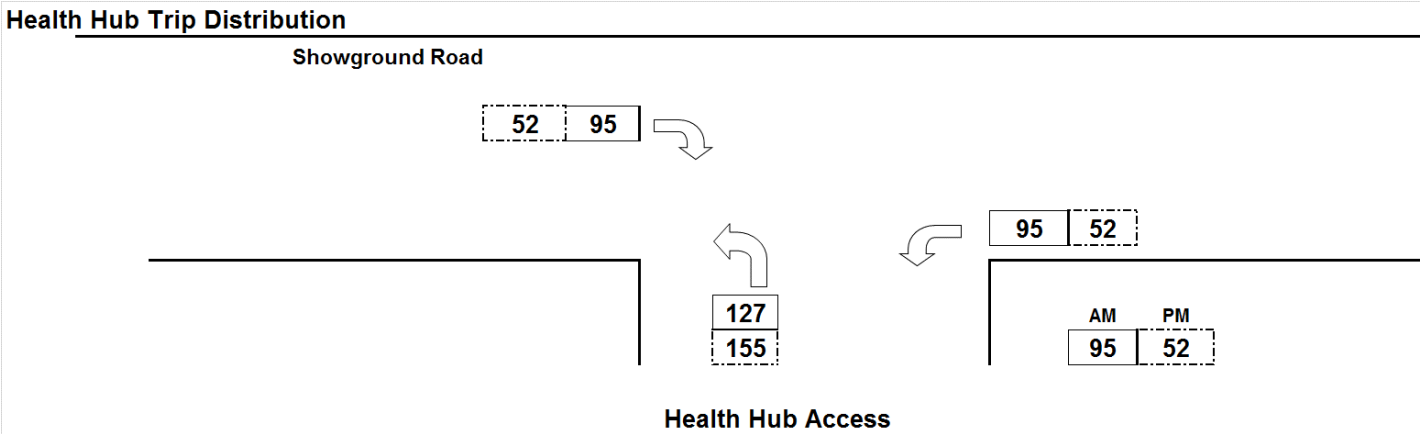


Figure 10-1: Predicted Trip Distribution for Proposed Health Hub

11. Predicted Traffic Flows with the Proposed Health Hub

Existing traffic flows combined with the predicted traffic flows are detailed in Figure 11-1 below:

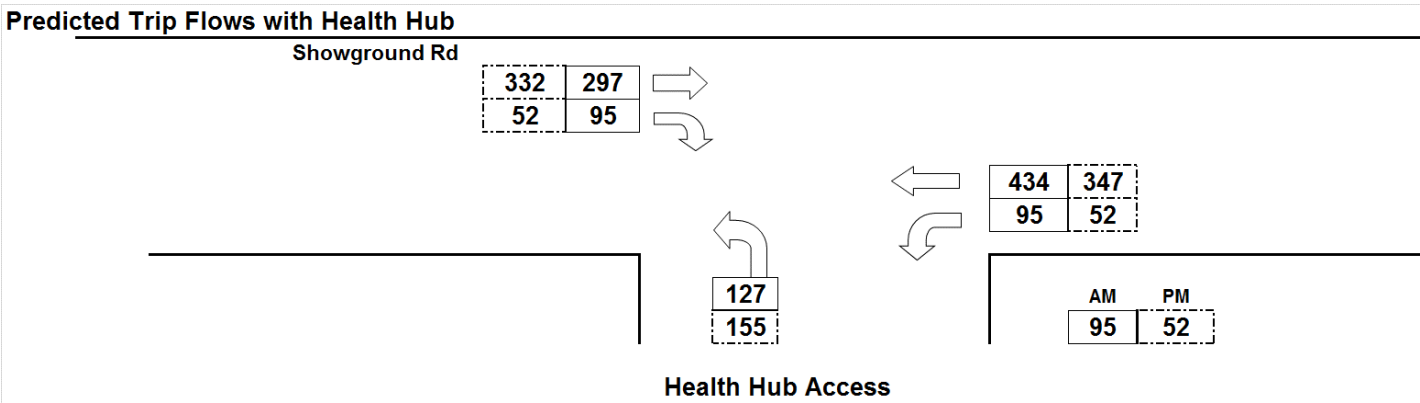


Figure 11-1: Predicted Traffic Flows with Proposed Health Hub

12. SIDRA Analysis 2021: Access to Showground Rd

The impact of the predicted traffic flows generated by the proposed development has been assessed using the Intersection Analysis tool SIDRA. Level of Service at an intersection is based on the average delay per vehicle and can be applied to both an individual movement and the entire intersection. The concept is the same for both signalised and un-signalised intersections. Levels of service are ranked for A to F as summarised below in Table 12-1.

Table 12-1: Intersection Level of Service Performance Categories

	Control Delay per Vehicle	
Level of Service	All Intersection Types	Description
A	$d \leq 14.5$	Excellent
B	$14.5 < d \leq 28.5$	Very Good
C	$28.5 < d \leq 42.5$	Good
D	$42.5 < d \leq 56.5$	Acceptable
E	$56.5 < d \leq 70.5$	Poor
F	$70.5 < d$	Very Poor

Further SIDRA Analysis has been carried out based on the revised layout detailed in Figure 12-1 below:

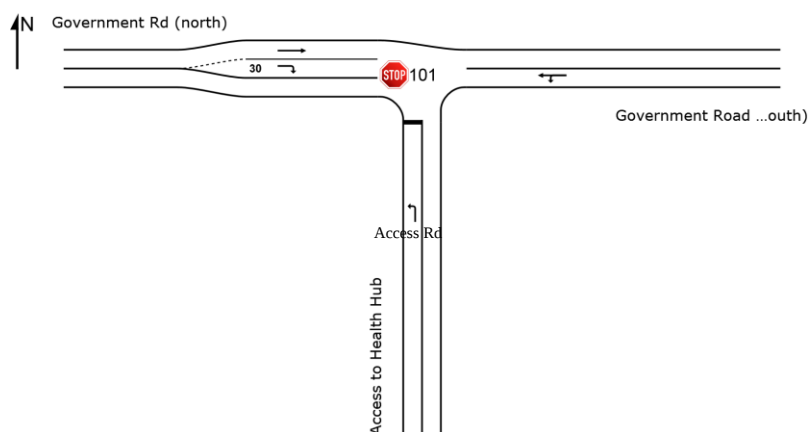


Figure 12-1: Proposed Intersection Layout – Left In and Right In / Left Out Only

Discussion

The proposed layout will allow right and left turn movements into the Health Hub access using a layout similar to the Gosford Hospital Access. However, right turn out of the site will not be permitted in order to avoid long delays and queuing on the exit driveway.

13. SIDRA Analysis 2021: Access to Showground Rd

SIDRA Results for the intersection of the Access Road and Showground Rd are presented in Table 13-1 and 13-2 below:

Table 13-1: SIDRA Results – Access Rd / Showground Road - AM Peak – 2021

MOVEMENT SUMMARY Gosford Health Hub - Showground Rd AM Peak

AM Peak with Development Site Category: (None) Stop (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE [Veh. veh	95% BACK OF QUEUE Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[Total veh/h	HV] %	[Total veh/h	HV] %	v/c	sec							
South: Access to Health Hub														
1	L2	127	0.0	134	0.0	0.154	10.5	LOS A	0.6	4.2	0.51	0.94	0.51	50.7
Approach		127	0.0	134	0.0	0.154	10.5	LOS A	0.6	4.2	0.51	0.94	0.51	50.7
East: Government Road (south)														
4	L2	95	0.0	100	0.0	0.291	5.6	LOS A	0.0	0.0	0.00	0.11	0.00	57.3
5	T1	434	2.0	457	2.0	0.291	0.1	LOS A	0.0	0.0	0.00	0.11	0.00	58.9
Approach		529	1.6	557	1.6	0.291	1.1	NA	0.0	0.0	0.00	0.11	0.00	58.6
West: Government Rd (north)														
11	T1	297	2.0	313	2.0	0.163	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
12	R2	95	0.0	100	0.0	0.100	7.8	LOS A	0.4	2.9	0.54	0.73	0.54	51.3
Approach		392	1.5	413	1.5	0.163	1.9	NA	0.4	2.9	0.13	0.18	0.13	57.6
All Vehicles		1048	1.4	1103	1.4	0.291	2.5	NA	0.6	4.2	0.11	0.23	0.11	57.1

Table 13-2: SIDRA Results – Access Rd / Showground Road - PM Peak – 2021

MOVEMENT SUMMARY Gosford Health Hub - Showground Rd PM Peak

PM Peak with Development Site Category: (None) Stop (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE [Veh. veh	95% BACK OF QUEUE Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[Total veh/h	HV] %	[Total veh/h	HV] %	v/c	sec							
South: Access to Health Hub														
1	L2	155	0.0	163	0.0	0.167	9.9	LOS A	0.7	4.8	0.46	0.91	0.46	51.1
Approach		155	0.0	163	0.0	0.167	9.9	LOS A	0.7	4.8	0.46	0.91	0.46	51.1
East: Government Road (south)														
4	L2	52	0.0	55	0.0	0.219	5.6	LOS A	0.0	0.0	0.00	0.08	0.00	57.6
5	T1	347	2.0	365	2.0	0.219	0.1	LOS A	0.0	0.0	0.00	0.08	0.00	59.2
Approach		399	1.7	420	1.7	0.219	0.8	NA	0.0	0.0	0.00	0.08	0.00	59.0
West: Government Rd (north)														
11	T1	332	2.0	349	2.0	0.183	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
12	R2	52	0.0	55	0.0	0.046	7.0	LOS A	0.2	1.4	0.46	0.64	0.46	51.9
Approach		384	1.7	404	1.7	0.183	1.0	NA	0.2	1.4	0.06	0.09	0.06	58.7
All Vehicles		938	1.4	987	1.4	0.219	2.4	NA	0.7	4.8	0.10	0.22	0.10	57.4

Discussion

The access to Showground Road will perform at LOS A for all movements during both the AM and PM Peak hour. There will also be virtually no queuing on any of the approaches.

14. Impact on Surrounding Road Network

Trips generated by the proposed Health Hub at the intersection of Racecourse Rd/Showground Rd and the intersection of Faunce St/Showground Rd are detailed in Table 14-1 below:

Table 14-1: Health Hub Trips at Nearby Intersections

Showground Rd / Racecourse Rd		Health Hub Trips															
Peak Hour		Nthb				Wstb				Sthb				Estb			
		Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn
AM	Light	44	44	38		33				33						29	
	Heavy																
PM	Light	54	54	47		18				18						16	
	Heavy																
SAT	Light																
	Heavy																

Showground Rd / Faunce St		Health Hub Trips															
Peak Hour		Nthb				Sthb				Estb				Left	Thru	Right	U-Turn
		Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn				
AM	Light		48											48			
	Heavy																
PM	Light		26											26			
	Heavy																
SAT	Light																
	Heavy																

These trips have been combined with existing traffic flows to derive the predicted turning movements with the proposed Health Hub shown in Table 14-2 below:

Table 14-2: Traffic Flows at Nearby Intersections combined with Health Hub trips

Showground Rd / Racecourse Rd		2021 Existing Traffic Plus Trips Generated by Health Hub Development															
Peak Hour		Nthb				Wstb				Sthb				Estb			
		Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn
AM	Light	116	198	142	7	152	354	121	3	172	207	109	12	74	280	62	7
	Heavy	2	6	2	0	2	20	7	7	14	3	6	0	5	19	6	0
PM	Light	107	251	248	5	123	364	191	2	171	146	93	2	104	374	39	2
	Heavy	0	2	0	0	0	4	5	5	8	0	0	0	1	5	0	0
SAT	Light	38	145	99	4	142	344	112	3	123	172	85	0	78	341	26	5
	Heavy	0	2	2	0	1	6	3	3	1	2	4	0	1	5	0	0

Showground Rd / Faunce St		2021 Existing Traffic Plus Trips Generated by Health Hub Development															
Peak Hour		Nthb				Sthb				Estb				Left	Thru	Right	U-Turn
		Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn				
AM	Light	28	340	6	27		7	224	49	1	130	6	123	0			
	Heavy	0	11	0	1		0	5	1	0	0	0	0	0			
PM	Light	32	276	30	40		11	260	38	9	125	1	58	1			
	Heavy	0	3	0	0		0	0	0	0	0	0	0	0			
SAT	Light	16	224	16	27		12	286	30	2	59	1	43	1			
	Heavy	0	4	0	0		0	3	0	0	0	0	0	0			

These traffic flows have been used to assess the performance of the intersections of Showground Rd/Racecourse Rd and Showground Rd/Faunce St using SIDRA.

15. SIDRA Analysis 2021: With Proposed Health Hub

Showground Rd / Racecourse Rd

SIDRA Analysis has been carried out based on the layout detailed in Figure 15-1 below:

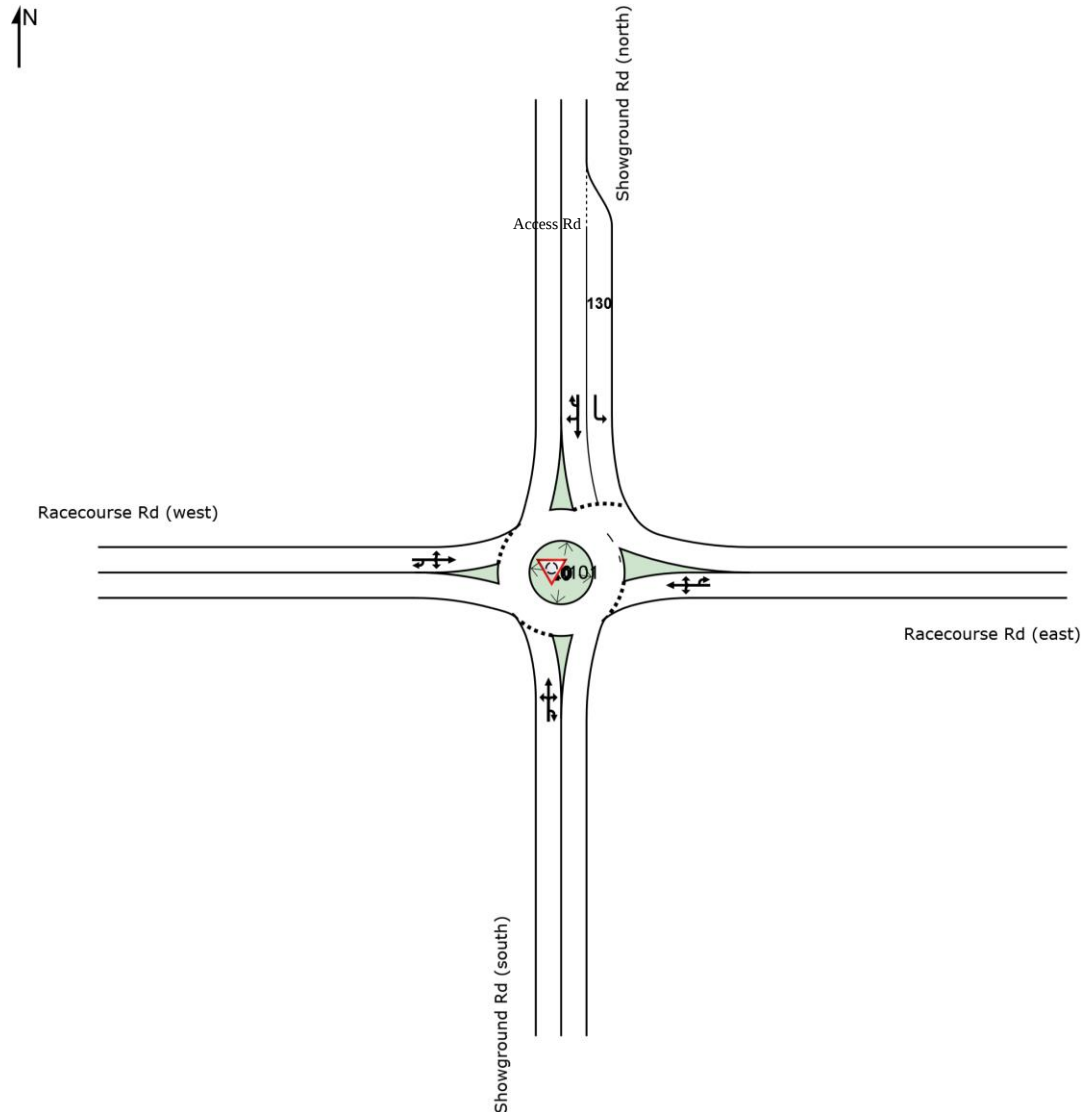


Figure 15-1: Existing Intersection Layout – Showground Rd / Racecourse Rd

SIDRA Results for the intersection of the Showground Rd / Racecourse Rd are presented in Table 15-1 and 15-2 below:

Table 15-1: SIDRA Results – Showground Road/Racecourse Rd - AM Peak – 2021 with Health Hub

MOVEMENT SUMMARY With Dev Racecourse Rd/Showground Rd - AM Peak

AM Peak Site Category: (None) Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] veh/h	[Total veh/h	HV] %	v/c	sec		[Veh. veh	Dist] m				km/h
South: Showground Rd (south)														
1	L2	118	2	118	1.7	0.708	16.0	LOS B	8.4	59.8	1.00	1.16	1.41	45.8
2	T1	204	6	204	2.9	0.708	16.4	LOS B	8.4	59.8	1.00	1.16	1.41	46.5
3	R2	144	2	144	1.4	0.708	19.7	LOS B	8.4	59.8	1.00	1.16	1.41	46.2
3u	U	7	0	7	0.0	0.708	21.3	LOS B	8.4	59.8	1.00	1.16	1.41	46.7
Approach		473	10	473	2.1	0.708	17.4	LOS B	8.4	59.8	1.00	1.16	1.41	46.2
East: Racecourse Rd (east)														
4	L2	154	2	154	1.3	0.779	14.1	LOS A	11.2	81.9	0.97	1.07	1.35	47.1
5	T1	374	20	374	5.3	0.779	14.3	LOS A	11.2	81.9	0.97	1.07	1.35	47.9
6	R2	128	7	128	5.5	0.779	17.8	LOS B	11.2	81.9	0.97	1.07	1.35	47.5
6u	U	10	7	10	70.0	0.779	23.2	LOS B	11.2	81.9	0.97	1.07	1.35	45.7
Approach		666	36	666	5.4	0.779	15.1	LOS B	11.2	81.9	0.97	1.07	1.35	47.6
North: Showground Rd (north)														
7	L2	186	14	186	7.5	0.254	9.4	LOS A	1.6	11.7	0.71	0.79	0.71	50.1
8	T1	210	3	210	1.4	0.350	7.8	LOS A	2.5	18.1	0.74	0.77	0.74	51.5
9	R2	115	6	115	5.2	0.350	11.2	LOS A	2.5	18.1	0.74	0.77	0.74	51.1
9u	U	12	0	12	0.0	0.350	12.7	LOS A	2.5	18.1	0.74	0.77	0.74	51.8
Approach		523	23	523	4.4	0.350	9.2	LOS A	2.5	18.1	0.73	0.78	0.73	50.9
West: Racecourse Rd (west)														
10	L2	79	5	79	6.3	0.600	11.3	LOS A	5.7	42.5	0.87	0.96	1.05	48.8
11	T1	299	19	299	6.4	0.600	11.5	LOS A	5.7	42.5	0.87	0.96	1.05	49.6
12	R2	68	6	68	8.8	0.600	14.9	LOS B	5.7	42.5	0.87	0.96	1.05	49.1
12u	U	7	0	7	0.0	0.600	16.2	LOS B	5.7	42.5	0.87	0.96	1.05	50.1
Approach		453	30	453	6.6	0.600	12.1	LOS A	5.7	42.5	0.87	0.96	1.05	49.4
All Vehicles		2115	99	2115	4.7	0.779	13.5	LOS A	11.2	81.9	0.89	0.99	1.15	48.4

Table 15-2: SIDRA Results – Showground Rd / Racecourse Rd - PM Peak – 2021 with Health Hub
MOVEMENT SUMMARY With Dev Racecourse Rd/Showground Rd - PM Peak

PM Peak Site Category: (None) Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] veh/h	[Total veh/h	HV] %	v/c	sec		[Veh. veh	Dist] m				km/h
South: Showground Rd (south)														
1	L2	107	0	107	0.0	0.969	50.8	LOS D	27.6	193.8	1.00	1.84	3.15	31.9
2	T1	253	2	253	0.8	0.969	50.6	LOS D	27.6	193.8	1.00	1.84	3.15	32.1
3	R2	248	0	248	0.0	0.969	53.3	LOS D	27.6	193.8	1.00	1.84	3.15	32.0
3u	U	5	0	5	0.0	0.969	54.7	LOS D	27.6	193.8	1.00	1.84	3.15	32.1
Approach		613	2	613	0.3	0.969	51.7	LOS D	27.6	193.8	1.00	1.84	3.15	32.0
East: Racecourse Rd (east)														
4	L2	123	0	123	0.0	0.720	10.6	LOS A	9.0	64.2	0.86	0.86	1.03	49.2
5	T1	368	4	368	1.1	0.720	10.3	LOS A	9.0	64.2	0.86	0.86	1.03	49.8
6	R2	196	5	196	2.6	0.720	13.2	LOS A	9.0	64.2	0.86	0.86	1.03	49.4
6u	U	7	5	7	71.4	0.720	17.9	LOS B	9.0	64.2	0.86	0.86	1.03	47.1
Approach		694	14	694	2.0	0.720	11.3	LOS A	9.0	64.2	0.86	0.86	1.03	49.6
North: Showground Rd (north)														
7	L2	179	8	179	4.5	0.286	11.0	LOS A	1.9	13.6	0.81	0.87	0.81	48.9
8	T1	146	0	146	0.0	0.311	9.1	LOS A	2.2	15.6	0.82	0.83	0.82	50.5
9	R2	93	0	93	0.0	0.311	11.9	LOS A	2.2	15.6	0.82	0.83	0.82	50.2
9u	U	2	0	2	0.0	0.311	13.4	LOS A	2.2	15.6	0.82	0.83	0.82	50.5
Approach		420	8	420	1.9	0.311	10.6	LOS A	2.2	15.6	0.81	0.85	0.81	49.7
West: Racecourse Rd (west)														
10	L2	105	1	105	1.0	0.921	39.5	LOS C	19.7	139.0	1.00	1.60	2.54	35.6
11	T1	379	5	379	1.3	0.921	39.2	LOS C	19.7	139.0	1.00	1.60	2.54	35.9
12	R2	62	0	62	0.0	0.921	41.9	LOS C	19.7	139.0	1.00	1.60	2.54	35.8
12u	U	2	0	2	0.0	0.921	43.3	LOS D	19.7	139.0	1.00	1.60	2.54	36.0
Approach		548	6	548	1.1	0.921	39.5	LOS C	19.7	139.0	1.00	1.60	2.54	35.8
All Vehicles		2275	30	2275	1.3	0.969	28.9	LOS C	27.6	193.8	0.92	1.30	1.92	40.0

Discussion

This assessment indicates that the roundabout at Racecourse Rd / Showground Rd is able to accommodate the extra trips generated by the proposed Health Hub in both the AM Peak and PM Peak Hour.

However, it is acknowledged that during the PM Peak Hour the southern approach to the roundabout will perform at LOS D with long queues of 193m. This indicates that this intersection is reaching critical levels and will be sensitive to any further growth in traffic flows.

Showground Rd / Faunce St

SIDRA Analysis has been carried out based on the layout detailed in Figure 15-2 below:

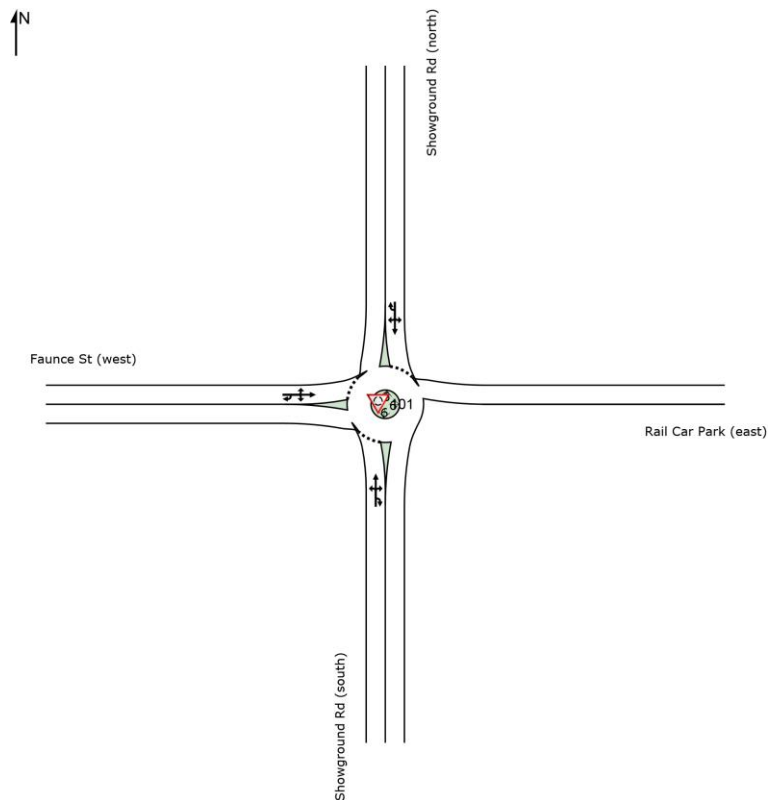


Figure 15-2: Existing Intersection Layout – Showground Rd / Faunce St

SIDRA Results for the intersection of Showground Rd/Faunce St are presented in Table 15-3 and 15-4 below:

Table 15-3: SIDRA Results – Showground Rd/Faunce St - AM and PM Peak – 2021 with Health Hub

MOVEMENT SUMMARY Faunce St/Showground Rd - AM Peak

AM Peak Site Category: (None) Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] veh/h	[Total veh/h	HV] %	v/c	sec		[Veh. veh	Dist] m				km/h
South: Showground Rd (south)														
1	L2	28	0	29	0.0	0.324	5.5	LOS A	2.2	15.9	0.24	0.51	0.24	52.7
2	T1	351	11	369	3.1	0.324	5.2	LOS A	2.2	15.9	0.24	0.51	0.24	53.4
3	R2	6	0	6	0.0	0.324	7.9	LOS A	2.2	15.9	0.24	0.51	0.24	53.1
3u	U	28	1	29	3.6	0.324	9.4	LOS A	2.2	15.9	0.24	0.51	0.24	53.3
Approach		413	12	435	2.9	0.324	5.5	LOS A	2.2	15.9	0.24	0.51	0.24	53.3
North: Showground Rd (north)														
7	L2	7	0	7	0.0	0.279	6.3	LOS A	1.7	12.4	0.43	0.59	0.43	52.0
8	T1	229	5	241	2.2	0.279	6.0	LOS A	1.7	12.4	0.43	0.59	0.43	52.7
9	R2	50	1	53	2.0	0.279	8.8	LOS A	1.7	12.4	0.43	0.59	0.43	52.3
9u	U	1	0	1	0.0	0.279	10.2	LOS A	1.7	12.4	0.43	0.59	0.43	52.8
Approach		287	6	302	2.1	0.279	6.5	LOS A	1.7	12.4	0.43	0.59	0.43	52.6
West: Faunce St (west)														
10	L2	130	0	137	0.0	0.310	8.0	LOS A	1.8	12.9	0.61	0.75	0.61	50.5
11	T1	6	0	6	0.0	0.310	7.7	LOS A	1.8	12.9	0.61	0.75	0.61	51.3
12	R2	123	0	129	0.0	0.310	10.5	LOS A	1.8	12.9	0.61	0.75	0.61	50.9
12u	U	1	0	1	0.0	0.310	11.9	LOS A	1.8	12.9	0.61	0.75	0.61	51.3
Approach		260	0	274	0.0	0.310	9.2	LOS A	1.8	12.9	0.61	0.75	0.61	50.7
All Vehicles		960	18	1011	1.9	0.324	6.8	LOS A	2.2	15.9	0.40	0.60	0.40	52.4

Table 15-4: SIDRA Results – Showground Rd/Faunce St - AM and PM Peak – 2021 with Health Hub

MOVEMENT SUMMARY

 **Site: 101 [Faunce St/Showground Rd - PM Peak (Site Folder: General)]**

PM Peak Site Category: (None) Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] veh/h	[Total veh/h	HV] %				[Veh. veh	Dist] m				
South: Showground Rd (south)														
1	L2	32	0	34	0.0	0.294	5.4	LOS A	1.9	13.5	0.22	0.53	0.22	52.6
2	T1	279	3	294	1.1	0.294	5.1	LOS A	1.9	13.5	0.22	0.53	0.22	53.3
3	R2	30	0	32	0.0	0.294	7.9	LOS A	1.9	13.5	0.22	0.53	0.22	52.9
3u	U	40	0	42	0.0	0.294	9.3	LOS A	1.9	13.5	0.22	0.53	0.22	53.4
Approach		381	3	401	0.8	0.294	5.8	LOS A	1.9	13.5	0.22	0.53	0.22	53.2
North: Showground Rd (north)														
7	L2	11	0	12	0.0	0.286	6.0	LOS A	1.7	12.1	0.37	0.56	0.37	52.2
8	T1	260	0	274	0.0	0.286	5.7	LOS A	1.7	12.1	0.37	0.56	0.37	53.0
9	R2	38	0	40	0.0	0.286	8.5	LOS A	1.7	12.1	0.37	0.56	0.37	52.6
9u	U	9	0	9	0.0	0.286	9.9	LOS A	1.7	12.1	0.37	0.56	0.37	53.0
Approach		318	0	335	0.0	0.286	6.1	LOS A	1.7	12.1	0.37	0.56	0.37	52.9
West: Faunce St (west)														
10	L2	125	0	132	0.0	0.214	7.5	LOS A	1.2	8.3	0.55	0.71	0.55	51.1
11	T1	1	0	1	0.0	0.214	7.2	LOS A	1.2	8.3	0.55	0.71	0.55	51.9
12	R2	58	0	61	0.0	0.214	10.0	LOS A	1.2	8.3	0.55	0.71	0.55	51.5
12u	U	1	0	1	0.0	0.214	11.5	LOS A	1.2	8.3	0.55	0.71	0.55	51.9
Approach		185	0	195	0.0	0.214	8.3	LOS A	1.2	8.3	0.55	0.71	0.55	51.2
All Vehicles		884	3	931	0.3	0.294	6.5	LOS A	1.9	13.5	0.34	0.58	0.34	52.7

Discussion

This assessment indicates that the roundabout at Faunce St / Showground Rd is able to accommodate the extra trips generated by the proposed Health Hub in both the AM Peak and PM Peak Hour.

16. Parking and Service Area Design Requirements

The parking layout provides aisle widths at a minimum of 6m. The site will provide a range of parking bays which will be allocated to the appropriate user group as detailed below:

- Residential and Employee Parking with 2.4m wide by 5.4m parking bays based on User Class 1A drivers in accordance with Figure 2.2 of AS2890.1 2004.
- Long Term and City Centre parking with 2.5m wide by 5.4m parking bays based on User Class 2 drivers in accordance with Figure 2.2 of AS2890.1 2004.

17. Waste Collection

Waste collection will be managed on-site with provision made on the ground floor using the service bay provided for a Medium Rigid truck as detailed in Figure 17-1 below:

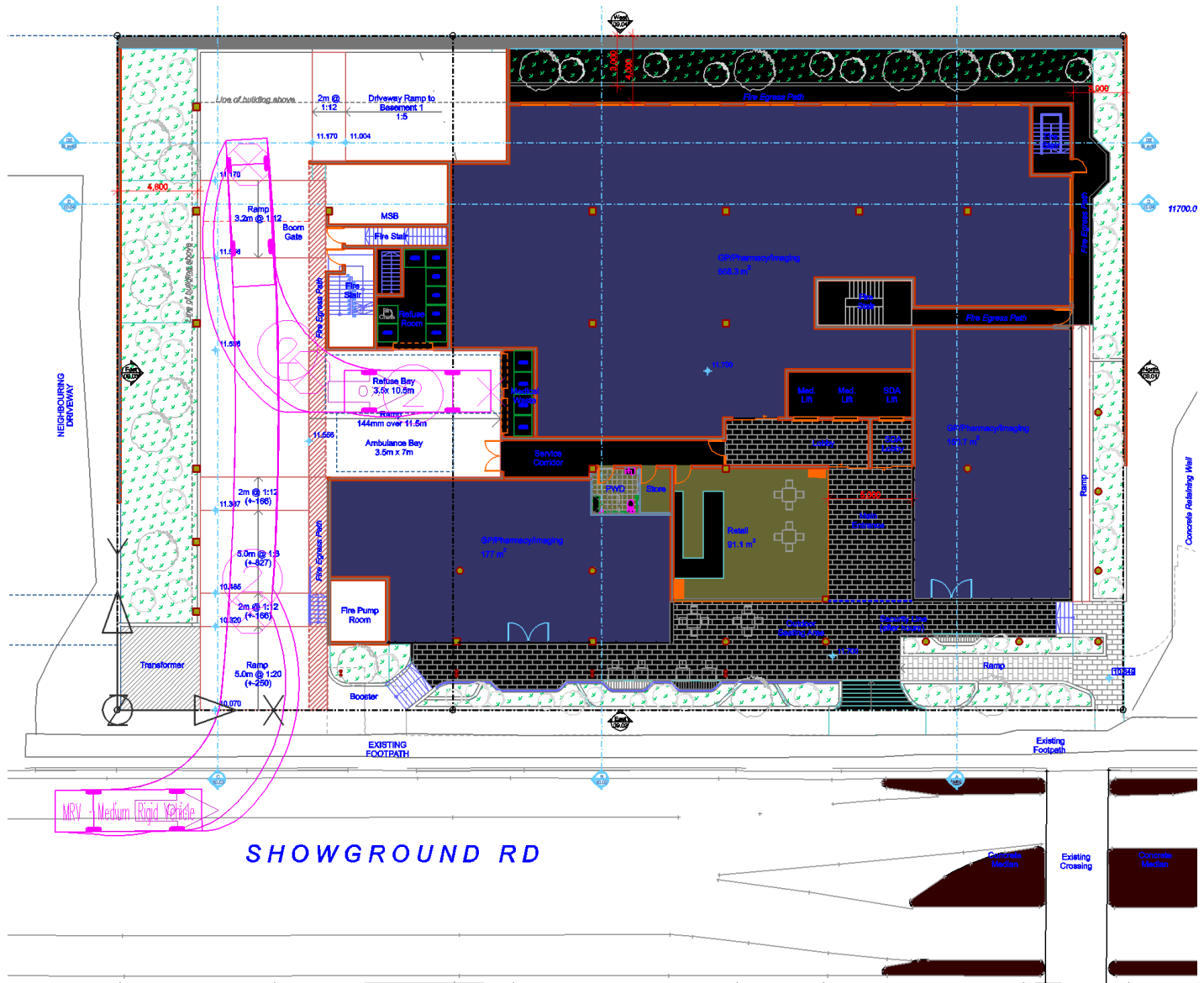


Figure 17-1: Waste Collection using Service Bay on Ground Level - Medium Rigid Garbage Truck

18. Vehicle Turning Paths

The parking layout conforms with Austroads NZ/AS 2890.1 2004. Vehicle turning paths for typical parking bays are detailed in Appendix C.

19. Recommendation

Based on this assessment it is expected that the proposed development will offer a convenient and efficient integrated range of medical services with minimal and manageable impact on the surrounding road network.

Accordingly, it is recommended that the proposed development be approved.

Appendix A

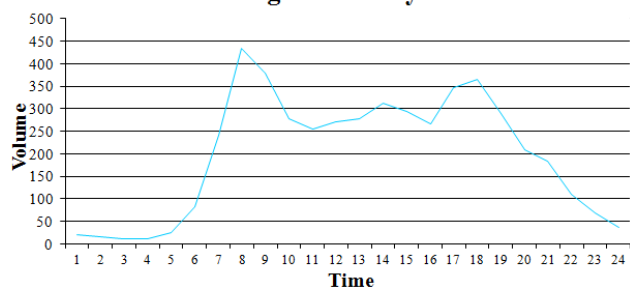
Automatic Count

Showground Rd adjacent to No.64

15th May to 21st May 2021

Site 1 Showground Rd Nth of Faunce St [50]
Northbound

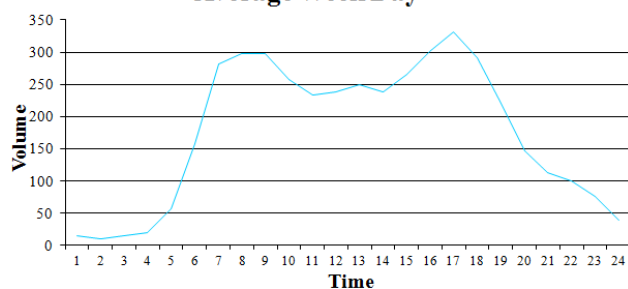
Day Time	Sat 15/05/21	Sun 16/05/2021	Mon 17/05/2021	Tue 18/05/2021	Wed 19/05/2021	Thu 20/05/2021	Fri 21/05/2021	W/Day Ave.	W/End Ave.	7 Day Ave
0:00	41	26	14	19	27	17	30	21	34	25
1:00	26	24	19	9	13	17	20	16	25	18
2:00	18	20	7	10	14	12	10	11	19	13
3:00	18	22	10	8	17	9	10	11	20	13
4:00	4	12	20	20	28	27	27	24	8	20
5:00	32	24	89	86	89	79	70	83	28	67
6:00	104	96	225	235	261	228	254	241	100	200
7:00	122	127	438	470	445	418	398	434	125	345
8:00	165	152	397	390	379	356	378	380	159	317
9:00	249	205	313	250	268	293	267	278	227	264
10:00	277	245	239	238	273	234	291	255	261	257
11:00	287	235	288	243	293	266	265	271	261	268
12:00	279	206	256	290	264	268	310	278	243	268
13:00	293	269	316	306	278	316	341	311	281	303
14:00	275	223	258	290	326	305	297	295	249	282
15:00	248	247	296	248	253	289	248	267	248	261
16:00	211	173	344	361	338	357	333	347	192	302
17:00	224	191	343	384	371	351	379	366	208	320
18:00	187	128	250	302	292	282	316	288	158	251
19:00	117	91	179	195	166	186	318	209	104	179
20:00	114	73	81	119	128	157	429	183	94	157
21:00	103	63	93	111	96	113	134	109	83	102
22:00	83	64	56	71	62	68	83	68	74	70
23:00	50	25	34	33	32	35	51	37	38	37
Total	3527	2941	4565	4688	4713	4683	5259	4782	3234	4339

Average Week Day

Summary

	from	to	
AM Peak	7:00 AM	8:00 AM	470
PM Peak	5:00 PM	6:00 PM	384
Week Day Average			4782
Weekend Day Average			3234
7 Day Average			4339

Site 1 Showground Rd Nth of Faunce St [50]
Southbound

Day Time	Sat 15/05/21	Sun 16/05/2021	Mon 17/05/2021	Tue 18/05/2021	Wed 19/05/2021	Thu 20/05/2021	Fri 21/05/2021	W/Day Ave.	W/End Ave.	7 Day Ave
0:00	24	27	14	15	19	12	14	15	26	18
1:00	26	20	7	11	10	9	11	10	23	13
2:00	16	15	14	13	20	15	12	15	16	15
3:00	22	20	17	22	17	23	17	19	21	20
4:00	17	18	49	52	55	67	54	55	18	45
5:00	46	25	174	164	177	147	123	157	36	122
6:00	84	55	277	314	303	286	228	282	70	221
7:00	144	126	312	314	305	290	265	297	135	251
8:00	211	188	274	312	311	293	295	297	200	269
9:00	274	258	261	255	292	230	253	258	266	260
10:00	280	241	229	228	247	240	221	233	261	241
11:00	319	245	258	213	264	222	235	238	282	251
12:00	312	268	228	245	277	243	252	249	290	261
13:00	273	218	227	231	205	253	271	237	246	240
14:00	244	207	250	272	267	244	297	266	226	254
15:00	238	208	306	317	309	293	290	303	223	280
16:00	219	182	360	340	339	333	289	332	201	295
17:00	215	157	264	287	255	281	366	291	186	261
18:00	192	124	223	194	256	232	199	221	158	203
19:00	118	112	143	161	144	150	136	147	115	138
20:00	87	76	99	103	114	109	135	112	82	103
21:00	102	66	80	117	83	106	109	99	84	95
22:00	68	47	63	84	67	81	80	75	58	70
23:00	38	25	37	30	43	33	49	38	32	36
Total	3569	2928	4166	4294	4379	4192	4201	4246	3249	3961

Average Week Day

Summary

	from	to	
AM Peak	6:00 AM	7:00 AM	314
PM Peak	5:00 PM	6:00 PM	366
Week Day Average			4246
Weekend Day Average			3249
7 Day Average			3961

Appendix B

Intersection Counts

Site 01 - Showground Rd & Racecourse Rd

Sat 15/05/2021 11:30-12:30
Weds 16/06/2021 07:00-10:00
Weds 16/06/2021 15:00-18:00

Site 02 - Showground Rd & Faunce St West

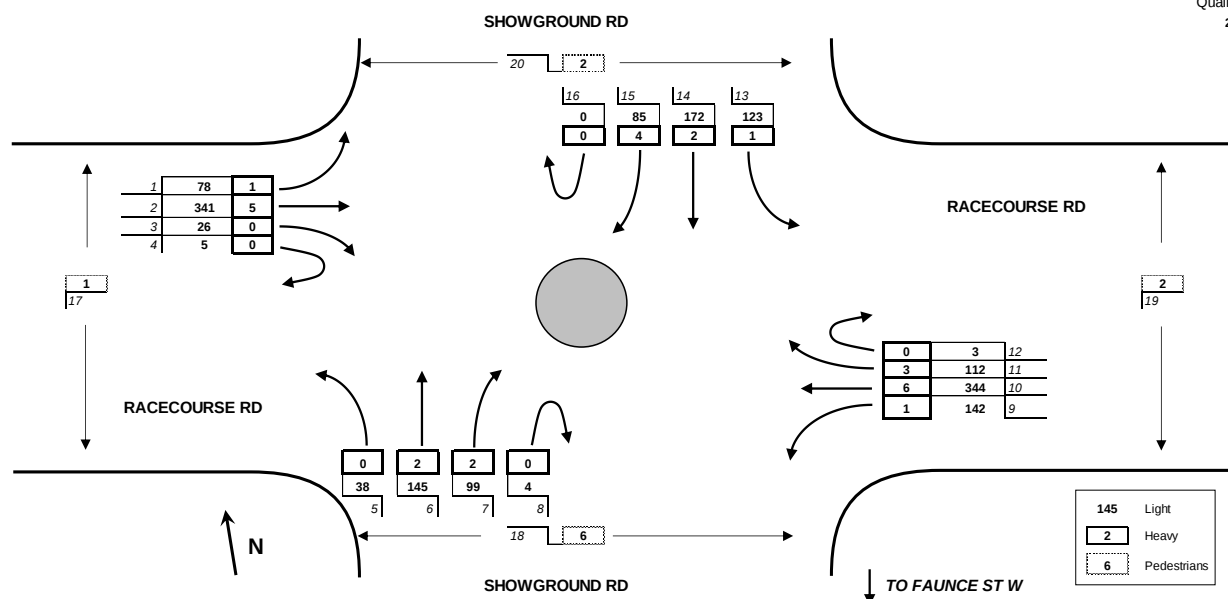
Sat 15/05/2021 10:00-14:00
Weds 16/06/2021 07:00-10:00
Weds 16/06/2021 15:00-18:00

15/5/2021 - SHOWGROUND RD / RACECOURSE RD, GOSFORD

12:30 <<< HOUR ENDING

Tuesday

Summary: SHOWGROUND RD / RACECOURSE RD	
1717	Total Light Vehicles
27	Total Heavy Vehicles
11	Total Pedestrians



15/5/2021 - SHOWGROUND RD / RACECOURSE RD, GOSFORD

Light Vehicles																Total Vehicles		Pedestrians			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	15 MIN	HOUR	17	18	19	20
11:45	15	94	9	2	9	46	25	2	27	91	41	2	29	46	13	451		0	1	0	0
12:00	17	82	9	3	11	41	18	1	33	83	23	0	36	48	24	429		1	2	0	0
12:15	16	69	7	0	3	29	22	0	41	81	23	1	24	42	30	388		0	0	0	1
12:30	30 <	96 <	1 <	0 <	15 <	29 <	34 <	1 <	41 <	89 <	25 <	0 <	34 <	36 <	18 <	449	1717 <	0 <	3 <	2 <	1 <
Heavy Vehicles																Total Vehicles					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	15 MIN	HOUR				
11:45	0	2	0	0	0	0	1	0	0	3	1	0	0	1	1	9					
12:00	1	0	0	0	0	0	1	0	1	1	0	0	1	0	0	5					
12:15	0	1	0	0	0	1	0	0	0	1	1	0	0	1	3	8					
12:30	0 <	2 <	0	0	0	1 <	0 <	0	0 <	1 <	1 <	0	0 <	0 <	0 <	5	27 <				
All Vehicles																Total Vehicles					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	15 MIN	HOUR				
11:45	15	96	9	2	9	46	26	2	27	94	42	2	29	47	14	460					
12:00	18	82	9	3	11	41	19	1	34	84	23	0	37	48	24	434					
12:15	16	70	7	0	3	30	22	0	41	82	24	1	24	43	33	396					
12:30	30 <	98 <	1 <	0 <	15 <	30 <	34 <	1 <	41 <	90 <	26 <	0 <	34 <	36 <	18 <	454	1744 <				

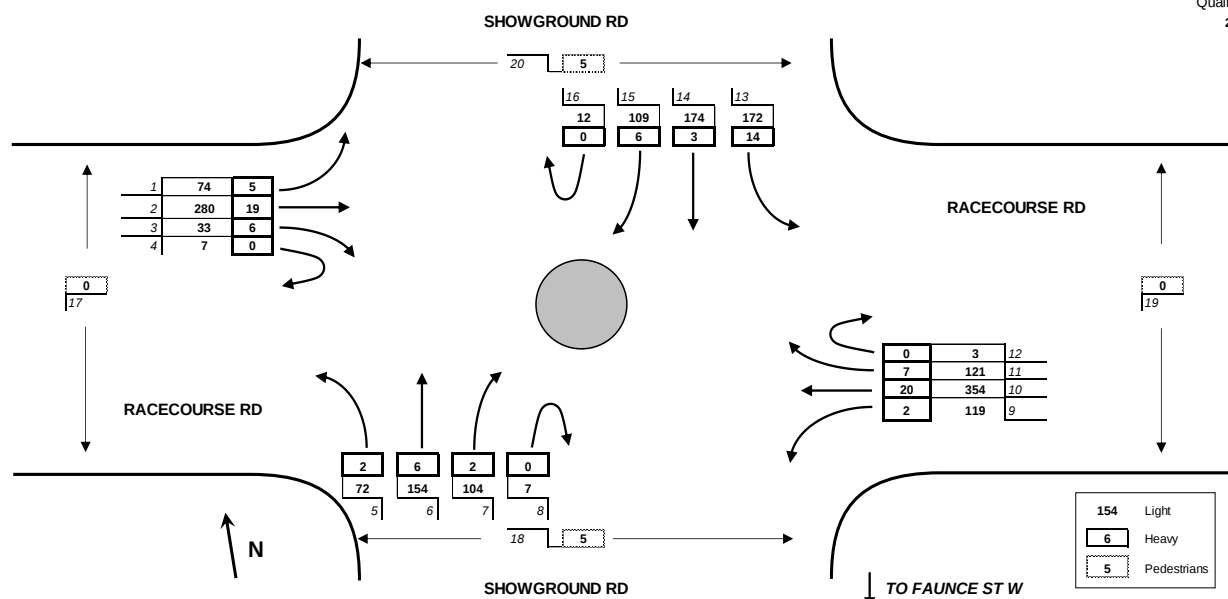
Note: Arrows "<" indicate the end time for the peak hour for each turning movement.

16/6/2021 - SHOWGROUND RD / RACECOURSE RD, GOSFORD

09:00 <<< HOUR ENDING

Wednesday

Summary: SHOWGROUND RD / RACECOURSE RD	
1795	Total Light Vehicles
92	Total Heavy Vehicles
10	Total Pedestrians



16/6/2021 - SHOWGROUND RD / RACECOURSE RD, GOSFORD

Light Vehicles

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	15 MIN	HOUR	17	18	19	20	
07:15	10	49	2	1	17	30	19	0	46	57	17	0	10	51	33	1	343		0	0	0	0	
07:30	17	62	12	1	21	29	17	0	32	81	26	0	14	58	24	4	398		0	2	0	3	
07:45	20	49	12	1	28	42	19	2	47	68	24	0	25	52	42	5	436		0	2	0	0	
08:00	17	80	11	2	24	49	21	1	43 <	90	30	0	20	42 <	32 <	5 <	467	1644	0	0	0	0	
08:15	14	71	10 <	3	28 <	49	27	2	33	88	29	1	44	44	27	1 <	471	1772	0	0	0	1	
08:30	17	76	8	1	19	34 <	21	2	31	87	30	2	<	35	47	21	2	433	1807 <	0	0	0	2
08:45	17	70 <	6	2 <	16	38	22	1	31	101 <	20	0	<	41	41	21	1	428	1799	0	2	0	0
09:00	26	63	9	1	9	33	34	2	24	78	42	0	<	52 <	42	40	8	463	1795	0	3	0	2 <
09:15	17 <	82	5	0	17	30	33	4 <	26	72	33 <	0	40	43	17	0	419	1743	0	2	0	0	
09:30	14	71	8	1	12	16	23	2 <	36	62	21	0	25	36	15	1	343	1653	0	3 <	0	1	
09:45	10	60	8	1	10	29	21	0	18	57	24	0	22	38	18	1	317	1542	0	1	0	2 <	
10:00	20	81	5	0	14	27	37 <	2	39	85	29	3 <	28	35	15	2	422	1501	0	3	0	0	

Heavy Vehicles

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	15 MIN	HOUR	
07:15	1	2	0	0	0	1	0	0	1	2	3	0	2	0	1	0	13		
07:30	0	6	0	0	1	1	0	0	0	4	0	0	1	2	2	0	17		
07:45	2	2	0	0	1	0	0	0	2	0	6	0	0	0	0	0	13		
08:00	0	3	0	0	0	1	0	0	0 <	0	3	0	6	2	2	0	17	60	
08:15	4 <	5	2	0	1 <	1	0	0	0	2	1	0	5	1	1	0	23	70	
08:30	0 <	6	1	0	0	4 <	0	0	0	8	3 <	0	1	0	0	0	23	76	
08:45	0	3	3 <	0	1	0 <	1	0	1	6	1	0	4 <	1	4	0	25	88	
09:00	1	5 <	0 <	0	0	1 <	1 <	0	1	4 <	2	0	4	1	1	0	21	92 <	
09:15	2	3	0	0	1	0	0 <	0	0	2 <	3	0	3	2	1	0	17	86	
09:30	1	3	0	0	0	3	0 <	0	1 <	2	1	0	3	1	3 <	0	18	81	
09:45	0	2	1	0	1	0	0	0	0	3	0	0	4	1	2	0	14	70	
10:00	1	6	0	0	0	1	1	0	0	0	4	0	2	2 <	0	0	17	66	

All Vehicles

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	15 MIN	HOUR	
07:15	11	51	2	1	17	31	19	0	47	59	20	0	12	51	34	1	356		
07:30	17	68	12	1	22	30	17	0	32	85	26	0	15	60	26	4	415		
07:45	22	51	12	1	29	42	19	2	49	68	30	0	25	52	42	5	449		
08:00	17	83	11	2	24	50	21	1	43 <	90	33	0	26	44 <	34 <	5 <	484	1704	
08:15	18	76	12 <	3	29 <	50	27	2	33	90	30	1	49	45	28	1 <	494	1842	
08:30	17	82	9	1	19	38	21	2	31	95	33	2 <	36	47	21	2	456	1883	
08:45	17	73 <	9	2 <	17	38	23	1	32	107 <	21	0	45	42	25	1	453	1887 <	
09:00	27	68	9	1	9	34	35	2	25	82	44	0	56 <	43	41	8	484	1887 <	
09:15	19 <	85	5	0	18	30	33	4 <	26	74	36 <	0	43	45	18	0	436	1829	
09:30	15	74	8	1	12	19	23	2 <	37	64	22	0	28	37	18	1	361	1734	
09:45	10	62	9	1	11	29	21	0	18	60	24	0	26	39	20	1	331	1612	
10:00	21	87	5	0	14	28	38 <	2	39	85	33	3 <	30	37	15	2	439	1567	

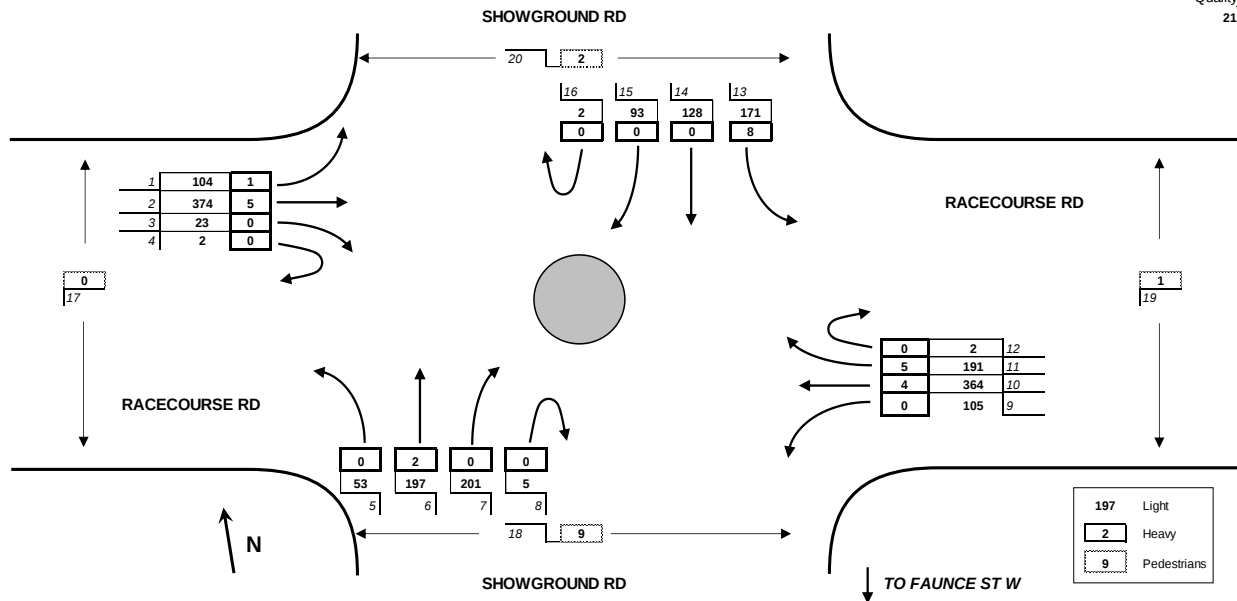
Note: Arrows "<" indicate the end time for the peak hour for each turning movement.

16/6/2021 - SHOWGROUND RD / RACECOURSE RD, GOSFORD

17:30 <<< HOUR ENDING

Wednesday

Summary: SHOWGROUND RD / RACECOURSE RD		
2015	Total Light Vehicles	
25	Total Heavy Vehicles	
12	Total Pedestrians	



16/6/2021 - SHOWGROUND RD / RACECOURSE RD, GOSFORD

Light Vehicles																Total Vehicles		Pedestrians							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	15 MIN	HOURLY	17	18	19	20			
15:15	23	97	6	1	14	51	34	0	28	92	43	0	43	34	23	1	490		0	0	0	1			
15:30	19	81	6	1	5	36	48	0	21	93	49	0	36	41	22	1	459		0	2	0	5			
15:45	12	73	3	0	10	52	44	0	26	64	35	1	55	25	21	3	424		0	0	0	0			
16:00	27	70	4	0	18	58	47	3	30	66	43	1	49	33	<	21	0	470	1843	0	0	0	0		
16:15	23	92	3	0	12	51	66	0	21	94	39	0	52	31	16	2	<	502	1855	0	3	0	0		
16:30	19	85	3	0	13	47	46	2	22	68	53	0	52	<	29	22	1	<	462	1858	1	<	2	1	
16:45	25	96	5	0	9	40	46	1	<	30	93	40	0	47	32	23	1	488	1922	0	3	0	<		
17:00	22	98	6	0	23	<	56	58	<	1	34	<	40	0	45	32	17	1	520	1972	0	<	1	<	
17:15	29	86	8	0	9	46	50	2	<	13	98	61	<	1	44	40	<	30	0	517	1987	0	<	1	0
17:30	28	94	<	4	<	2	12	55	<	47	1	28	86	<	50	1	35	24	23	<	0	4	<	1	
17:45	27	<	85	2	0	6	62	<	53	0	25	77	31	0	39	32	18	1	458	1985	0	2	0	<	
18:00	21	89	4	2	<	12	46	<	47	0	21	57	28	1	<	31	32	21	0	412	1877	0	2	<	0
Heavy Vehicles																Total Vehicles									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	15 MIN	HOURLY							
15:15	1	1	0	0	0	3	0	0	0	0	3	1	0	0	2	0	0	11							
15:30	0	3	0	0	2	1	0	0	0	6	3	0	5	2	2	0	0	24							
15:45	4	3	0	0	0	3	0	0	0	1	5	1	0	6	2	2	0	27							
16:00	3	2	<	0	0	0	<	0	0	0	3	<	2	<	0	1	<	0	12	74	<				
16:15	1	0	0	0	0	<	1	2	0	0	2	0	0	2	<	0	1	<	9	72					
16:30	1	<	3	0	0	0	1	2	<	0	1	<	1	0	1	0	0	0	12	60					
16:45	1	1	0	0	0	1	0	<	0	0	2	3	0	2	0	0	0	10	43						
17:00	0	1	0	0	0	0	0	0	0	0	1	0	2	0	0	0	0	4	35						
17:15	0	2	0	0	0	0	0	0	0	0	1	0	0	2	0	0	0	5	31						
17:30	0	1	0	0	0	1	0	0	0	1	1	0	0	2	0	0	0	6	25						
17:45	0	3	0	0	0	0	1	0	0	2	0	0	0	0	0	0	0	6	21						
18:00	0	2	0	0	1	1	0	0	0	2	1	0	2	0	0	0	0	9	26						
All Vehicles																Total Vehicles									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	15 MIN	HOURLY							
15:15	24	98	6	1	14	54	34	0	28	95	44	0	43	36	23	1	501								
15:30	19	84	6	1	7	37	48	0	21	99	52	0	41	43	24	1	483								
15:45	16	76	3	0	10	55	44	0	27	69	36	1	61	27	23	3	451								
16:00	30	72	4	0	18	58	47	3	30	69	45	1	50	34	<	21	0	482	1917						
16:15	24	92	3	0	12	52	68	0	21	96	39	0	54	31	17	2	<	511	1927						
16:30	20	88	3	0	13	48	48	2	23	70	54	0	53	<	29	22	1	<	474	1918					
16:45	26	97	5	0	9	41	46	1	<	30	95	43	0	49	32	23	1	498	1965						
17:00	22	99	6	0	23	<	56	58	<	1	34	<	41	0	47	32	17	1	524	2007					
17:15	29	88	8	0	9	46	50	2	<	13	99	61	<	1	46	40	30	0	522	2018					
17:30	28	95	<	4	<	2	12	56	47	1	28	87	<	51	1	37	24	23	<	0	496	2040	<		
17:45	27	<	88	2	0	6	62	<	54	0	25	79	31	0	39	32	18	1	464	2006					
18:00	21	91	4	2	<	13	47	47	0	21	59	29	1	<	33	32	21	0	421	1903					

Note: Arrows "<" indicate the end time for the peak hour for each turning movement.

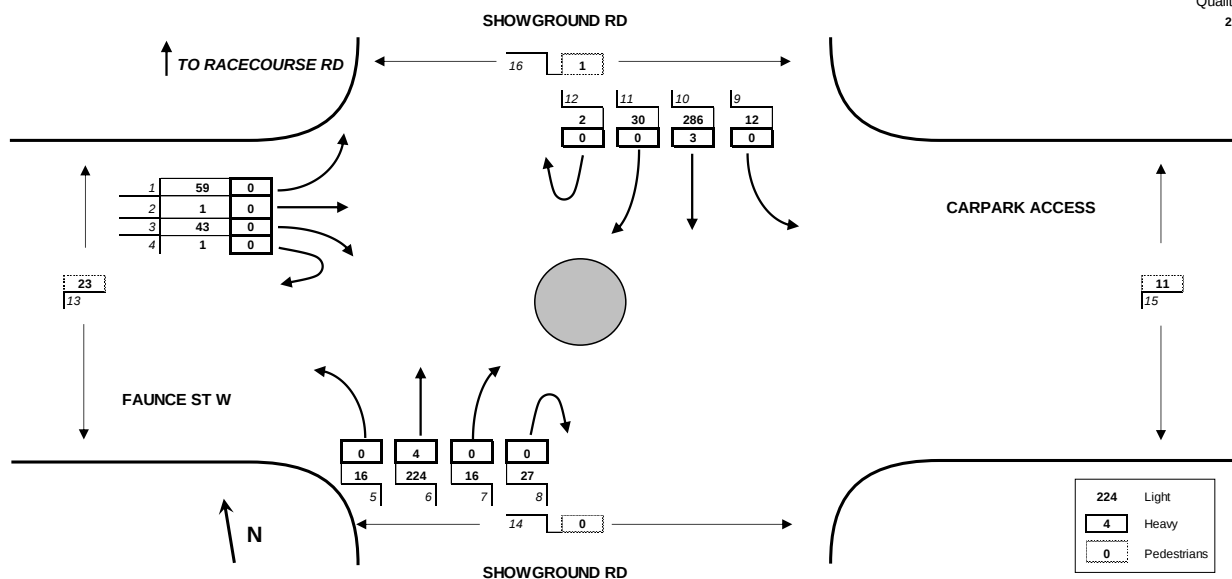
15/5/2021 - SHOWGROUND RD / FAUNCE ST W, GOSFORD

12:30 <<< HOUR ENDING

Saturday

Summary: SHOWGROUND RD / FAUNCE ST W

717 Total Light Vehicles
7 Total Heavy Vehicles
35 Total Pedestrians



15/5/2021 - SHOWGROUND RD / FAUNCE ST W, GOSFORD

Light Vehicles

	1	2	3	4	5	6	7	8	9	10	11	12	Total Vehicles 15 MIN	HOUR	Pedestrians 13	14	15	16
10:15	11	0	8	0	6	56	3	7	3	52	6	0	152		1	0	5	3
10:30	8	0	8	0	4	64	3	6	3	51	5	0	152		5	0	1	0
10:45	5	0	8	1	3	51	1	7	3	67	7	1	154		10	0	7	0
11:00	6	0	13	0	2	69	9	9	1	74	8	1	192	650	3	0	6	<
11:15	8	0	5	0	8	52	3	11	1	70	12	1	171	669	4	0	0	0
11:30	10	0	14	0	4	64	1	7	3	62	5	0	170	687	2	0	4	0
11:45	17	0	9	0	4	62	4	6	3	72	7	0	184	717	6	0	3	1
12:00	18	0	14	0	4	52	4	11	5	71	5	0	184	709	6	0	3	0
12:15	13	0	11	<	0	6	38	5	0	73	11	1	163	701	4	0	0	0
12:30	11	<	1	<	9	1	2	72	3	5	4	70	176	717	7	<	0	5
12:45	9	0	<	6	0	7	66	2	11	6	<	6	173	706	2	0	0	0
13:00	8	0	<	3	0	2	54	1	8	1	64	9	150	672	1	0	3	0
13:15	11	0	<	11	0	5	55	3	3	0	43	12	143	652	2	0	4	0
13:30	7	0	14	0	4	62	7	10	1	86	3	1	195	661	9	0	4	0
13:45	11	1	<	11	1	4	54	2	11	1	52	10	159	647	5	0	3	0
14:00	17	0	<	11	1	<	2	77	<	2	7	1	184	681	1	0	4	0

Heavy Vehicles

	1	2	3	4	5	6	7	8	9	10	11	12	Total Vehicles 15 MIN	HOUR	Pedestrians 13	14	15	16
10:15	0	0	0	0	0	0	0	0	0	0	0	0	0					
10:30	0	0	0	0	0	0	0	0	0	0	0	0	0					
10:45	0	0	1	0	0	1	0	0	0	1	0	0	3					
11:00	0	0	0	<	0	0	0	0	0	0	0	0	0	3				
11:15	0	0	0	<	0	0	0	0	0	1	0	0	1	4				
11:30	0	0	0	<	0	0	0	0	0	0	0	0	0	4				
11:45	0	0	0	0	0	1	0	0	0	1	0	0	2	3				
12:00	0	0	0	0	0	1	0	0	0	1	0	0	2	5				
12:15	0	0	0	0	0	1	0	0	0	1	0	0	2	6				
12:30	0	0	0	0	0	1	0	0	0	0	0	0	1	7				
12:45	0	0	1	<	0	0	1	0	0	1	<	3	6	11				
13:00	0	0	0	<	0	0	1	0	0	0	<	1	2	11				
13:15	0	0	0	<	0	0	2	<	0	0	<	1	3	12				
13:30	0	0	0	<	0	0	0	0	0	0	<	0	0	11				
13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	5				
14:00	0	0	0	0	1	<	0	0	0	0	0	0	1	4				

All Vehicles

	1	2	3	4	5	6	7	8	9	10	11	12	Total Vehicles 15 MIN	HOUR	Pedestrians 13	14	15	16
10:15	11	0	8	0	6	56	3	7	3	52	6	0	152					
10:30	8	0	8	0	4	64	3	6	3	51	5	0	152					
10:45	5	0	9	1	3	52	1	7	3	68	7	1	157					
11:00	6	0	13	0	2	69	9	9	1	74	8	1	192	653				
11:15	8	0	5	0	8	52	3	11	1	71	12	1	172	673				
11:30	10	0	14	0	4	64	1	7	3	62	5	0	170	691				
11:45	17	0	9	0	4	63	4	6	3	73	7	0	186	720				
12:00	18	0	14	0	4	53	4	11	5	72	5	0	186	714				
12:15	13	0	11	<	0	6	39	5	5	74	11	1	165	707				
12:30	11	<	1	<	9	1	2	73	3	5	4	70	187	724				
12:45	9	0	<	7	0	7	67	2	11	7	<	63	179	717				
13:00	8	0	<	3	0	2	55	1	8	1	65	9	152	683				
13:15	11	0	<	11	0	5	57	<	3	3	0	44	146	664				
13:30	7	0	14	0	4	62	7	10	1	86	3	1	195	672				
13:45	11	1	<	11	1	4	54	2	11	1	52	10	159	652				
14:00	17	0	<	11	1	<	3	77	2	7	1	55	185	685				

Note: Arrows "<" indicate the end time for the peak hour for each turning movement.

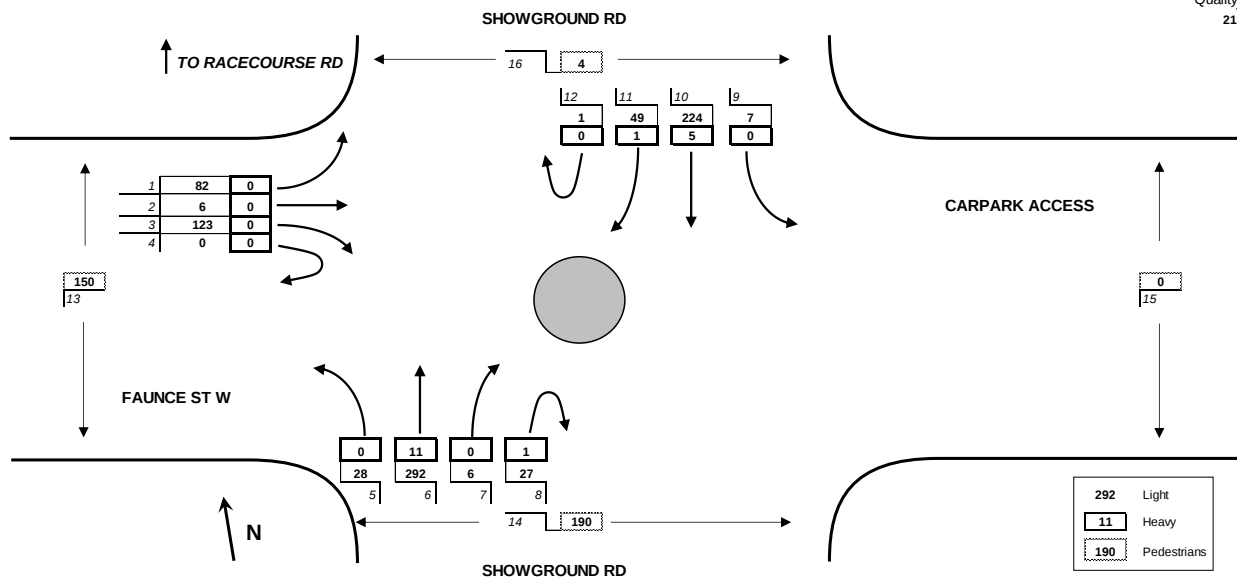
16/6/2021 - SHOWGROUND RD / FAUNCE ST W, GOSFORD

09:00 <<< HOUR ENDING

Wednesday

Summary: SHOWGROUND RD / FAUNCE ST W

845 Total Light Vehicles
18 Total Heavy Vehicles
344 Total Pedestrians



16/6/2021 - SHOWGROUND RD / FAUNCE ST W, GOSFORD

Light Vehicles

	1	2	3	4	5	6	7	8	9	10	11	12	Total Vehicles 15 MIN	HOURLY	Pedestrians 13	14	15	16
07:15	17	0	7	2	2	72	7	17	3	81	8	2	218		10	16	0	0
07:30	14	0	9	0	5	85	3	11	1	63	12	1	204		11	21	0	1
07:45	25	4	15	0	4	88	13	14	2	67	15	0	247		11	28	0	0
08:00	25	2	10	0 <	7	119	10 <	26 <	4	61 <	10	1 <	275	944	9	17	0	0
08:15	18	2	20	0	6	101 <	1	10	4	56	9	0	227	953 <	49	82	0	0
08:30	13	2 <	24	0	5	65	2	4	2 <	63	14	1	195	944	20	20	0	0
08:45	24	1	40	0	8	70	2	6	0	56	8	0	215	912	60	67	0	4
09:00	27	1	39	0	9	56	1	7	1	49	18	0	208	845	21 <	21 <	0	0
09:15	26 <	0	30 <	1	8	71	0	10	2	55	14	0	217	835	22	24	0	1 <
09:30	13 <	0	10	0	8 <	37	3	6	4	53	15 <	1	150	790	9	17	0	0 <
09:45	13	0	8	0	3	48	1	4	2	44	7	1	131	706	13	16	0	0
10:00	12	0	5	0	3	63	2	1	1	52	13	2 <	154	652	8	15	0	1

Heavy Vehicles

	1	2	3	4	5	6	7	8	9	10	11	12	Total Vehicles 15 MIN	HOURLY
07:15	0	0	0	0	0	3	0	0	0	1	0	0	4	
07:30	0	0	0	0	2	2	0	0	0	1	0	0	5	
07:45	0	0	0	0	0	0	0	0	0	2	0	0	2	
08:00	0	0	0	0	0 <	1	0	0	0	2	0	0	3	14
08:15	0	0	0	0	0 <	3	0	1 <	0	1	0	0	5	15
08:30	0	0	0	0	0	4	0	0 <	0	0	0	0	4	14
08:45	0	0	0	0	0	4 <	0	0 <	0	3	0	0	7	19 <
09:00	0	0	0	0	0	0	0	0 <	0	1	1 <	0	2	18
09:15	0	0	1	0	0	0	0	0	0	2	0 <	0	3	16
09:30	0	0	2 <	0	0	3	0	0	1 <	1 <	0 <	0	7	19 <
09:45	1 <	0	0 <	0	0	0	0	0	0 <	2	0 <	0	3	15
10:00	0 <	0	0 <	0	1	3	0	0	0 <	2 <	0	0	6	19 <

All Vehicles

	1	2	3	4	5	6	7	8	9	10	11	12	Total Vehicles 15 MIN	HOURLY
07:15	17	0	7	2	2	75	7	17	3	82	8	2	222	
07:30	14	0	9	0	7	87	3	11	1	64	12	1	209	
07:45	25	4	15	0	4	88	13	14	2	69	15	0	249	
08:00	25	2	10	0 <	7	120	10 <	26 <	4	63 <	10	1 <	278	958
08:15	18	2	20	0	6	104 <	1	11	4	57	9	0	232	968 <
08:30	13	2 <	24	0	5	69	2	4	2 <	63	14	1	199	958
08:45	24	1	40	0	8	74	2	6	0	59	8	0	222	931
09:00	27	1	39	0	9	56	1	7	1	50	19	0	210	863
09:15	26 <	0	31 <	1	8	71	0	10	2	57	14	0	220	851
09:30	13 <	0	12	0	8 <	40	3	6	5	54	15 <	1	157	809
09:45	14	0	8	0	3	48	1	4	2	46	7	1	134	721
10:00	12	0	5	0	4	66	2	1	1	54	13	2 <	160	671

Note: Arrows "<" indicate the end time for the peak hour for each turning movement.

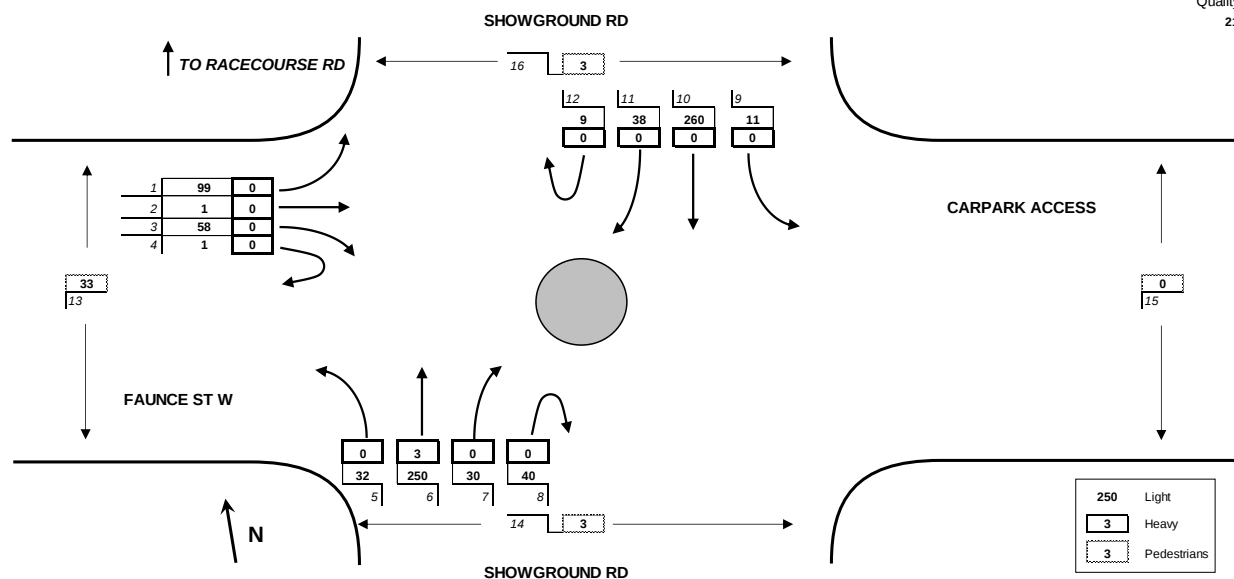
16/6/2021 - SHOWGROUND RD / FAUNCE ST W, GOSFORD

17:30 <<< HOUR ENDING

Wednesday

Summary: SHOWGROUND RD / FAUNCE ST W

829 Total Light Vehicles
3 Total Heavy Vehicles
39 Total Pedestrians



16/6/2021 - SHOWGROUND RD / FAUNCE ST W, GOSFORD

Light Vehicles

	1	2	3	4	5	6	7	8	9	10	11	12	Total Vehicles 15 MIN	Hour	Pedestrians 13	14	15	16
15:15	32	2	31	0	2	51	2	5	1	73	7	1	207		43	0	0	2
15:30	40	3	23	0	8	42	2	7	2	64	7	0	198		206	1	0	0
15:45	35	2	30	1	10	47	3	13	2	65	7	0	215		17	1	0	0
16:00	29	0	19	0	11	56	1	14	2	70	11	0	213	833	11	0	0	1
16:15	38	0	24	0	4	61	2	2	1	65	8	0	205	831	14	0	0	2
16:30	29	0	12	1	5	55	1	16	3	61	12	3	198	831	15	0	0	0
16:45	28	1	13	0	4	57	7	10	4	65	7	3	199	815	21	1	0	1
17:00	29	0	16	1	10	61	10	12	3	69	15	2	228	830	4	0	0	0
17:15	23	0	18	0	8	81	8	11	2	74	9	4	238	863	7	1	0	0
17:30	19	0	11	0	10	51	5	7	2	52	7	0	164	829	1	1	0	2
17:45	18	0	11	0	5	63	4	14	5	63	10	1	194	824	3	1	0	0
18:00	22	1	9	0	6	72	7	14	2	48	11	5	197	793	0	1	0	0

Heavy Vehicles

	1	2	3	4	5	6	7	8	9	10	11	12	Total Vehicles 15 MIN	Hour
15:15	0	0	1	0	1	6	0	0	0	2	0	0	10	
15:30	0	0	1	0	1	3	0	0	0	3	0	0	8	
15:45	0	0	0	0	1	0	0	0	0	4	0	0	5	
16:00	0	0	0	0	0	0	0	0	0	1	1	0	2	25
16:15	0	0	0	0	1	3	0	0	0	0	0	0	4	19
16:30	0	0	0	0	0	3	0	1	0	1	0	0	5	16
16:45	0	0	0	0	0	1	0	0	0	0	0	0	1	12
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	10
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	6
17:30	0	0	0	0	0	2	0	0	0	0	0	0	2	3
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	2
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	2

All Vehicles

	1	2	3	4	5	6	7	8	9	10	11	12	Total Vehicles 15 MIN	Hour
15:15	32	2	32	0	3	57	2	5	1	75	7	1	217	
15:30	40	3	24	0	9	45	2	7	2	67	7	0	206	
15:45	35	2	30	1	10	48	3	13	2	69	7	0	220	
16:00	29	0	19	0	11	56	1	14	2	71	12	0	215	858
16:15	38	0	24	0	5	64	2	2	1	65	8	0	209	850
16:30	29	0	12	1	5	58	1	17	3	62	12	3	203	847
16:45	28	1	13	0	4	58	7	10	4	65	7	3	200	827
17:00	29	0	16	1	10	61	10	12	3	69	15	2	228	840
17:15	23	0	18	0	8	81	8	11	2	74	9	4	238	869
17:30	19	0	11	0	10	53	5	7	2	52	7	0	166	832
17:45	18	0	11	0	5	63	4	14	5	63	10	1	194	826
18:00	22	1	9	0	6	72	7	14	2	48	11	5	197	795

Note: Arrows "<" indicate the end time for the peak hour for each turning movement.

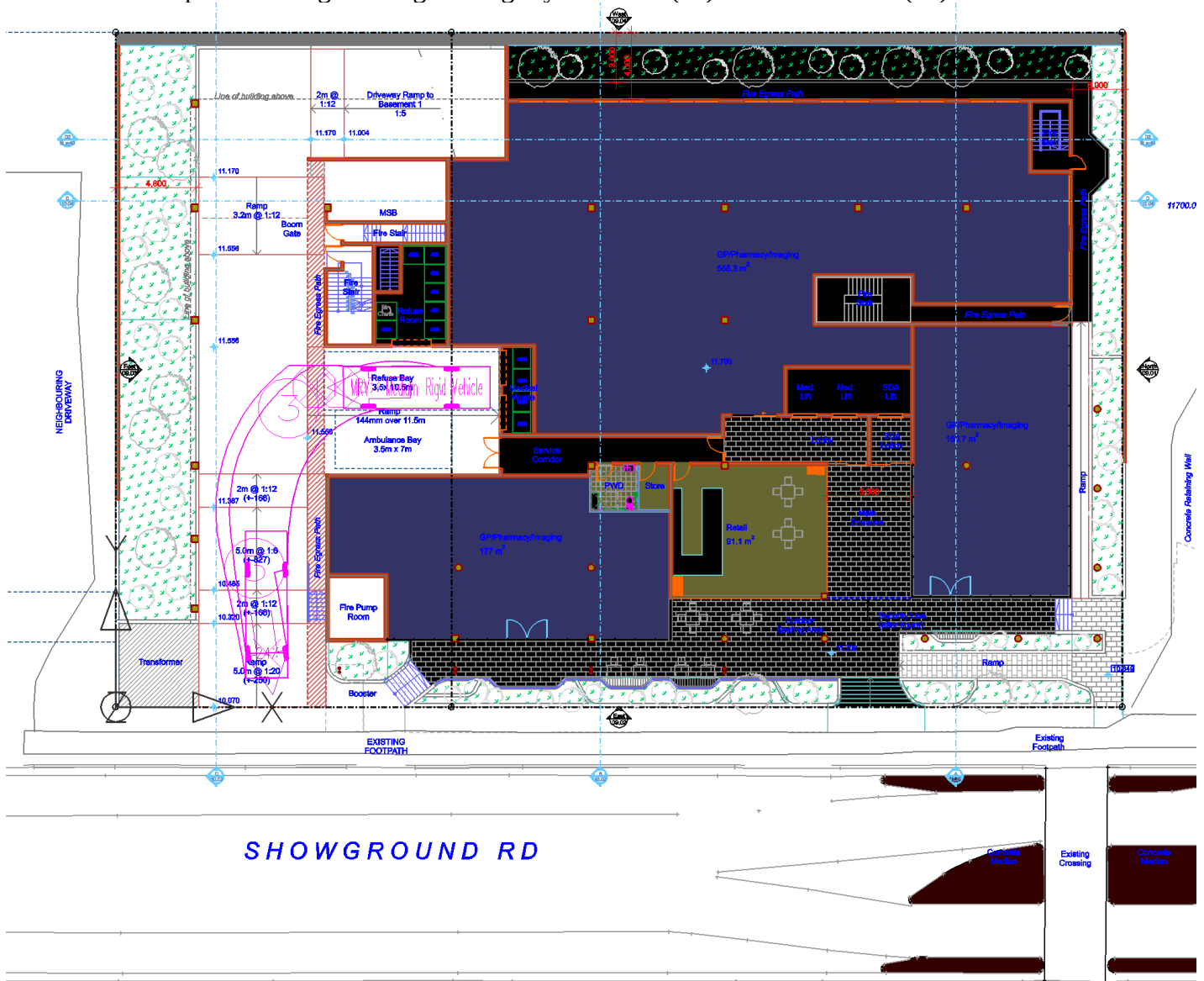
Appendix C

Vehicle Turning Paths

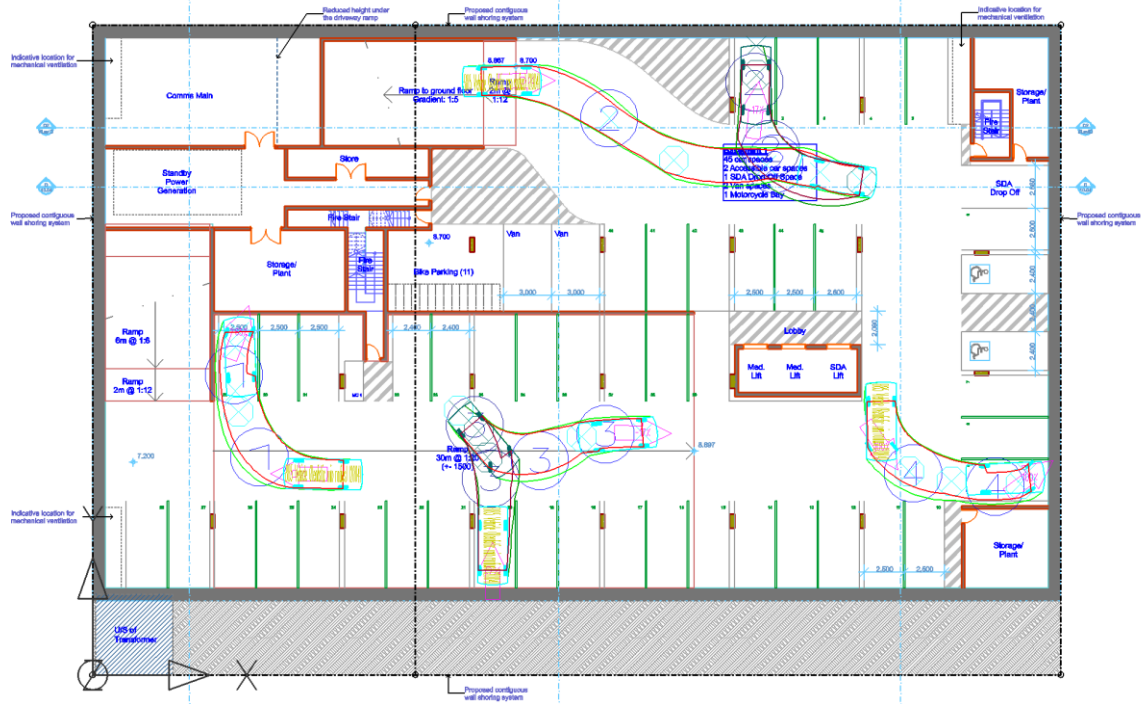
Typical Vehicle Turning Paths to and from Parking Bays.



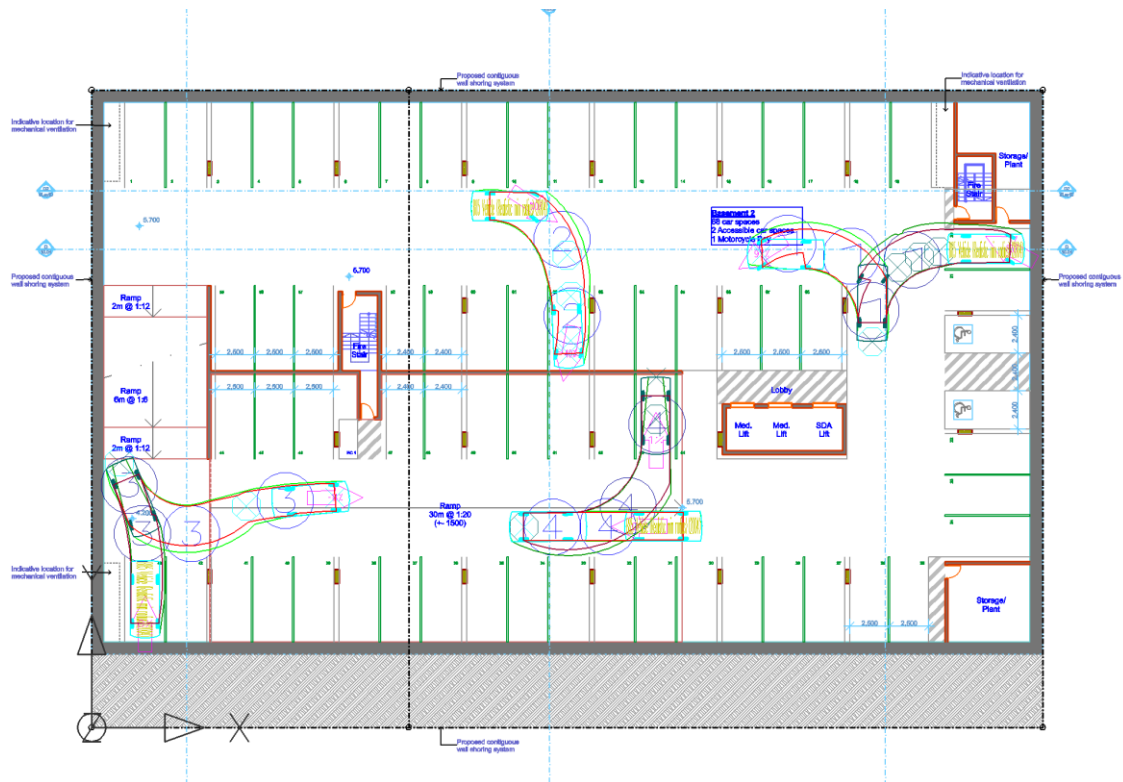
Concrete Median



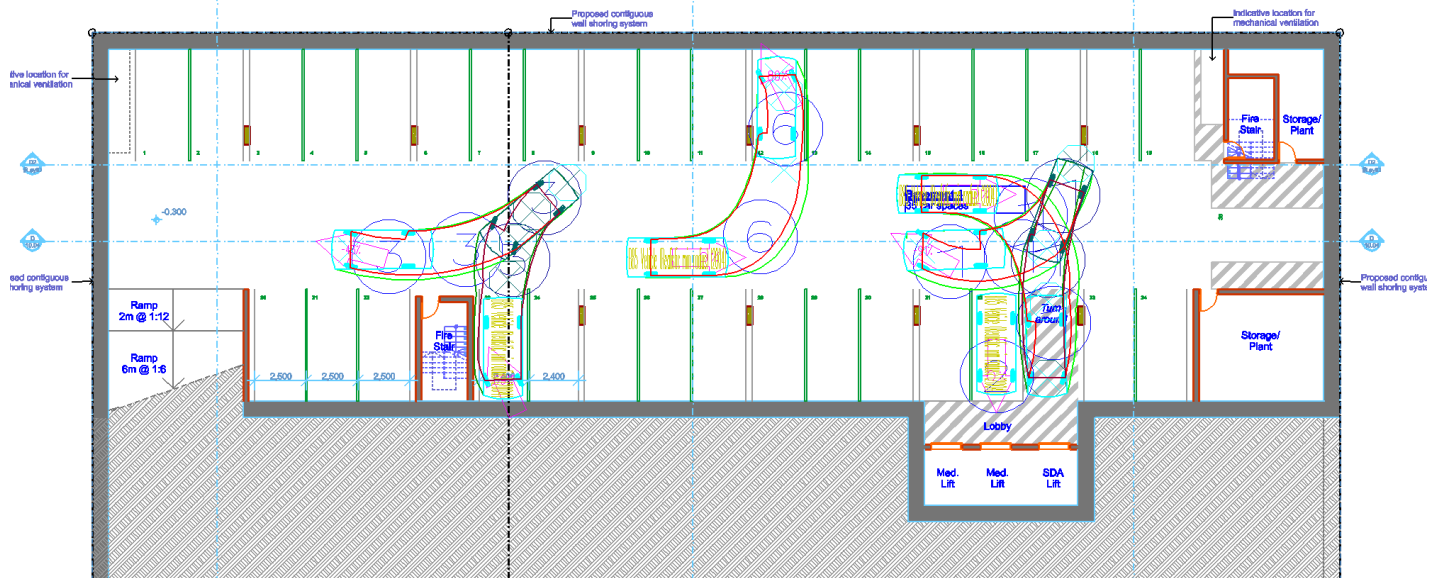
Ground Floor - Waste Removal – Forward Out



Basement 1 – Parking



Basement 2 – Parking



Basement 4 – Parking & Turning Bay