Proposed Medical Centre

99-101 Newcastle Street, East Maitland, NSW 2323

Traffic Impact Assessment

Prepared by

Northern Transport Planning and Engineering Pty Ltd

A.B.N. 79 056 088 629

243768

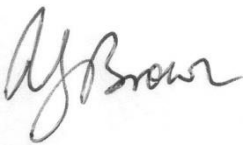
February 2024

TABLE OF CONTENTS

Contents

Report Prepared by: Robert Creech
Report Checked by: Ron Brown

QUALITY ASSURANCE
This document has been prepared, checked and released in accordance with the Quality Control Standards established by NTPE Pty Ltd.

This document has been authorised by Ron Brown BE, EngSc  5th February, 2024

1. INTRODUCTION

Northern Transport Planning & Engineering (NTPE) have been engaged by Health Design Australia (HDA) to undertake a Traffic Impact Assessment for a proposed medical centre in East Maitland, NSW 2323. The development is located within the Maitland City Council (MCC) Local Government Area and has been assessed in this report according to the MCC Development Control Plan.

The report contains an assessment of intersection surveys to understand current traffic behaviour in the vicinity, an assessment of the traffic impacts of the proposed medical centre as well as a recommended carpark design.

2. EXISTING SITE

The existing site is a heritage Flour Mill located on 99-101 Newcastle Street (New England Highway), East Maitland. An overhead view of the existing site and the surrounding road network is shown below in Figure 2-1:

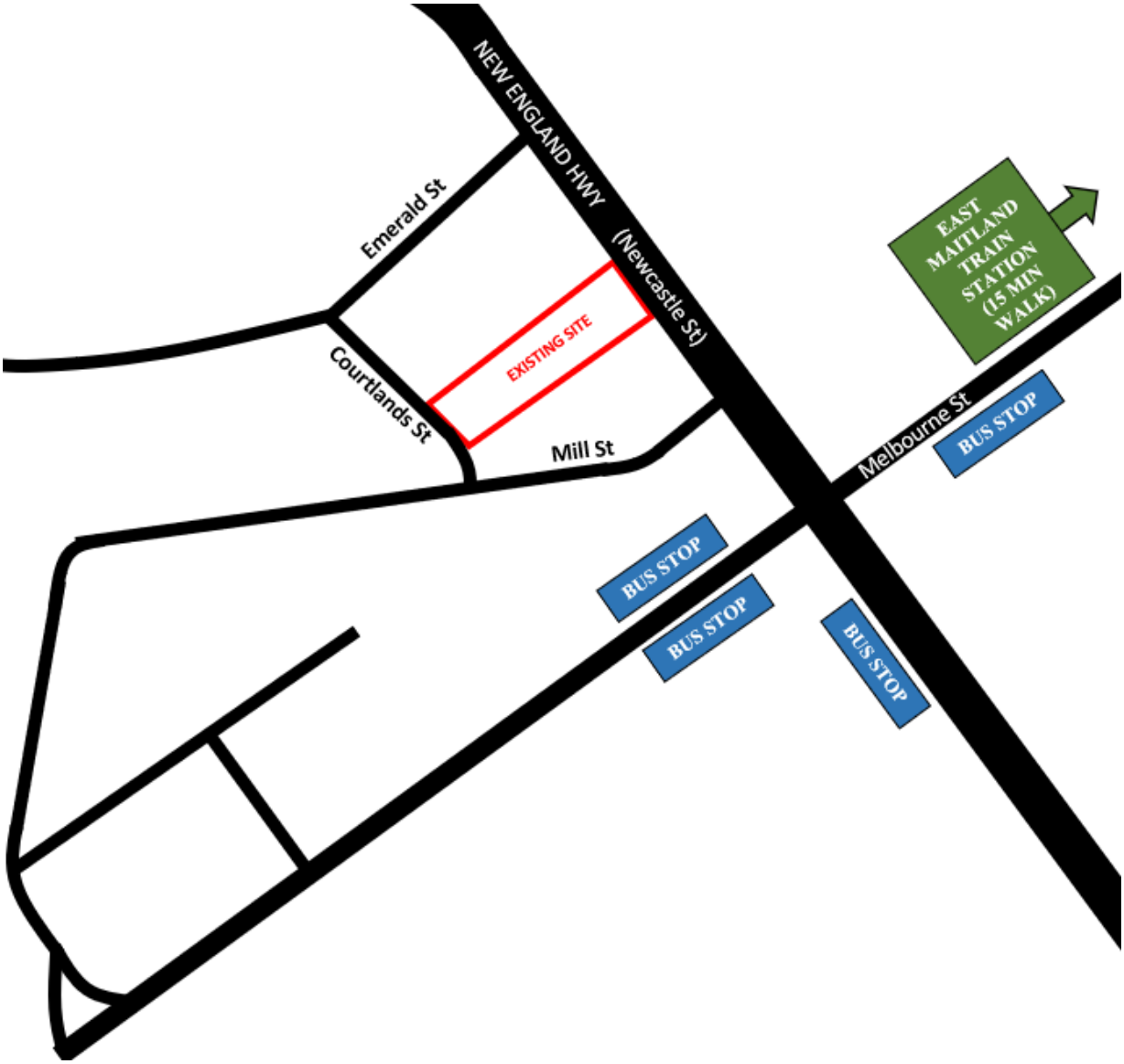


Figure 2-1: Overhead view of Existing Site

A street-view of the existing development from Newcastle St is shown below in Figure 2-2:

Figure 2-2: Existing Site fronting Newcastle St, East Maitland

Access to off-street parking is currently available to the west on Courtlands St shown below in Figure 2-3:

Figure 2-3: Access Driveway is found on Courtlands St

Discussion

The proposed development is situated in a commercial and light residential area. Most vehicles will approach the entrance on Courtlands St from Newcastle St. In the vicinity of the proposed development, Newcastle St is a 5-lane 2-way road servicing 40,000+ vehicles on an average day.

The closest bus stops are a 5min walk away near the intersection of Melbourne St & Newcastle St. East Maitland train station is a 15min walk away.

Pedestrian Access to the proposed Medical Centre will be provided from Newcastle Street.

Off-street parking is planned to be provided from the rear of the development fronting Courtlands St.

On-street parking is available on Mill St and Emerald St, but is not available on Newcastle St in the vicinity of the development or on Courtlands St.

3. PROPOSED PLANS FOR MEDICAL CENTRE

The site plan for the proposed medical centre is shown below in Figure 3-1:

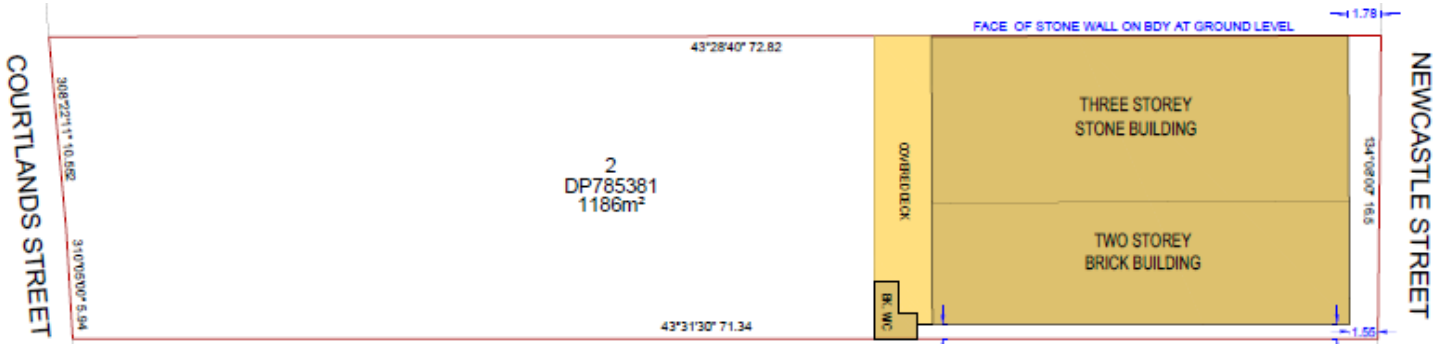


Figure 3-1: Site Plan of proposed medical centre

The floor plans for the medical centre are shown in Figure 3-2 to Figure 3-4 below:

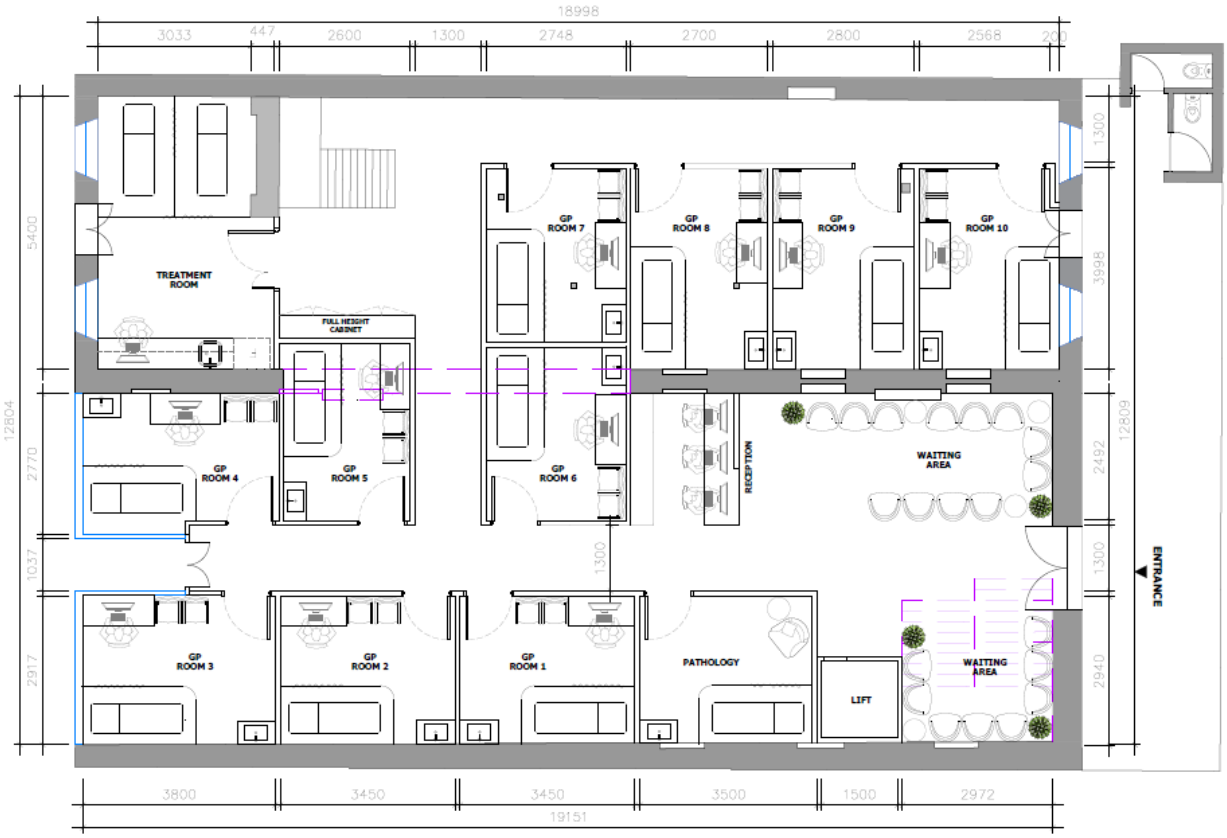


Figure 3-2: Ground Floor Plan

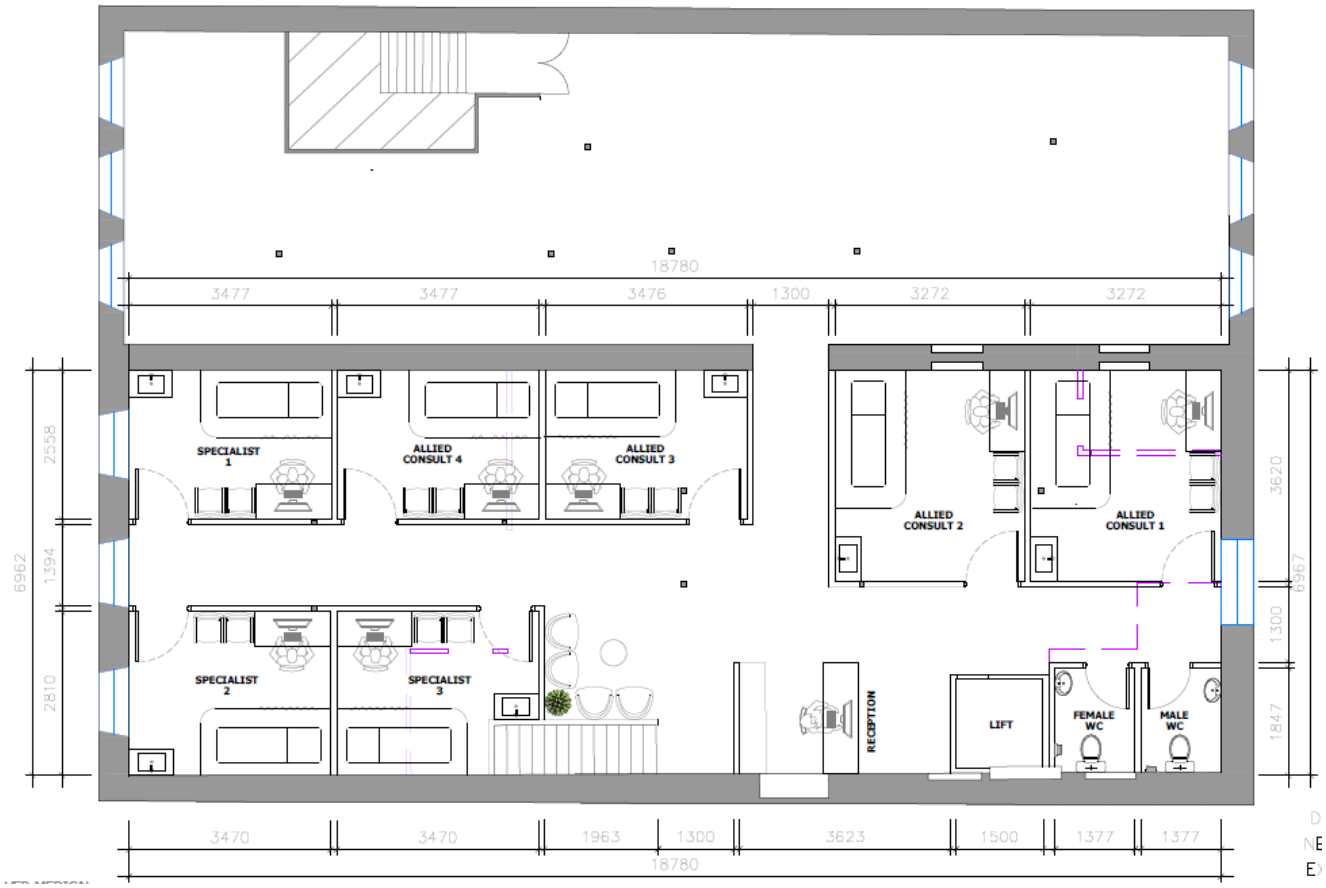


Figure 3-3: First Floor Plan

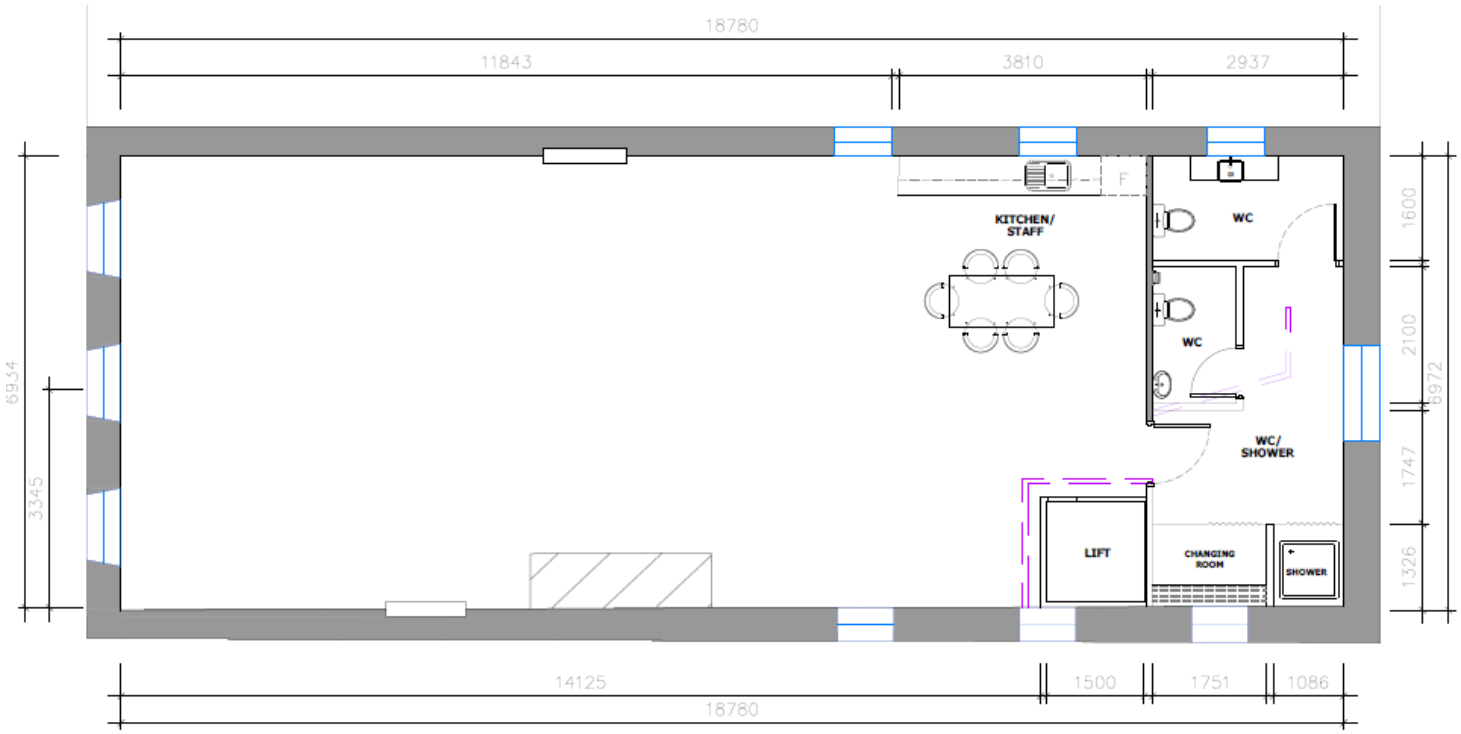


Figure 3-4: Second Floor Plan

The Gross Floor Area (GFA) and use for each level is shown below in Table 3-1:

Table 3-1: Medical Centre Levels and Usage

Level	GFA ($m^{2)}$	Use
Ground Floor	243.25	GP Room x 10
		Treatment Room
		Waiting Area
		Pathology Room
		Lift
First Floor	243.25	Specialist Room x3
		Allied Health Room x4
		Male and Female Bathroom
Second Floor	130.22	Kitchen Area
		Bathroom x2
		Shower

Discussion

The proposed development aims to retain the structure of the existing heritage building. The parking area to the west will see the removal of the existing shed and be redesigned as a medical centre carpark.

The total gross floor area of the development is 617m^2. However, it can be considered that the total active floor area of the development is 420.78m^2, which does not include the dead space on the first and second floors.

There are a total 19 rooms relating to the use of General Practitioners (GP) and other specialists, however only 8 staff will be working at any one time including 6 health professionals and 2 receptionist/administrator positions. Specialists and GPs will each be utilising more than one room for their services.

4. OFF-STREET PARKING PROVISIONS

Maitland DCP Parking Requirements

Maitland Development Control Plan 2011 (DCP) sets out the following parking requirements for a medical centre:

Table 4-1: Parking space requirements (Maitland DCP)

Category	Rate
Accessible Spaces	One space per two to five surgeries (or equivalent) Two spaces for six or more surgeries (or equivalent)
Standard Spaces	2 spaces per practitioner/professional

The proposed Medical Centre will provide 19 rooms with up to 6 practitioner/professional staff present at any one time. Therefore, the parking requirement for the facility is 2 accessible parking spaces plus 12 standard spaces (2 spaces x 6 professionals).

Australian Standards Parking Layout Requirements

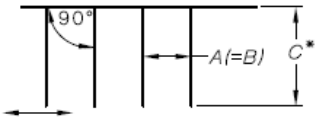
According to Table 1.1 from AS NZS 2890.1-2004, medical centres are classified as User Class 3, shown below in Figure 4-1:

CLASSIFICATION OF OFF-STREET CAR PARKING FACILITIES

User class	Required door opening	Required aisle width	Examples of uses (Note 1)
3	Full opening, all doors	Minimum for single manoeuvre entry and exit	Short-term city and town centre parking, parking stations, hospital and medical centres

Figure 4-1: User class classification for medical centres

The dimensions for 90-deg angle spaces for Class 3 vehicles are 2.6m x 5.4m, shown in Figure 4-2:

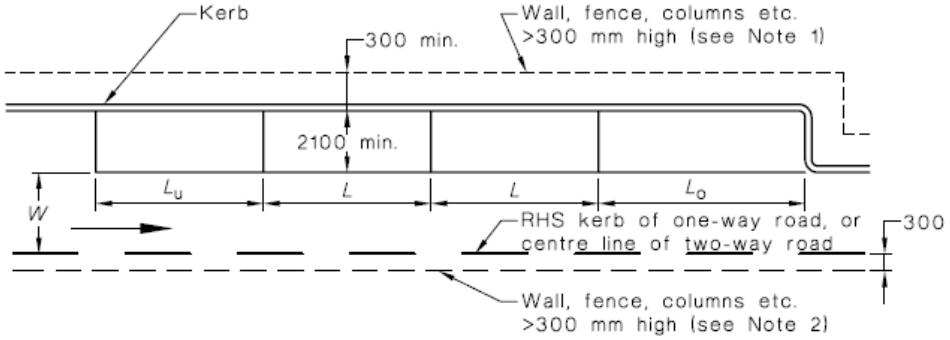


(d) Bays at 90°

User class (Note 1)	A (Note 3)	B	C_1	C_2	C_3	Aisle width (Note 4)
1	2.4	2.4	5.4	4.8	5.4	6.2
1A	2.4	2.4	5.4	4.8	5.4	5.8
2	2.6	2.6	5.4	4.8	5.4	5.8
3	2.6	2.6	5.4	4.8	5.4	5.8
3A	2.7	2.7	5.4	4.8	5.4	6.2

Figure 4-2: Dimensions for 90-degree angle parking per user class

For parallel parking, Figure 4-3 below shows the required space dimensions per aisle width:



metres

Aisle width (one-way), W	Space length, L	Space length obstructed end spaces, L_o	Space length unobstructed end spaces, L_u (Note 4)
3.0	6.3	6.6	5.4
3.3	6.1	6.4	5.4
3.6	5.9	6.2	5.4

Figure 4-3: Parking space dimensions for parallel parking

NTPE's carpark design utilises a Width value of 3.3m resulting in space length (L) of 6.1m, obstructed end space (L_o) of 6.4m and unobstructed end spaces (L_u) of 5.4m.

Placed alongside a wall boundary higher than 300mm, the width of parallel spaces shall be 2.1m and offset from the boundary by 300mm.

5. CARPARK DESIGN

The following carpark design is planned for Hunter River Medical Centre in Figure 5-1:

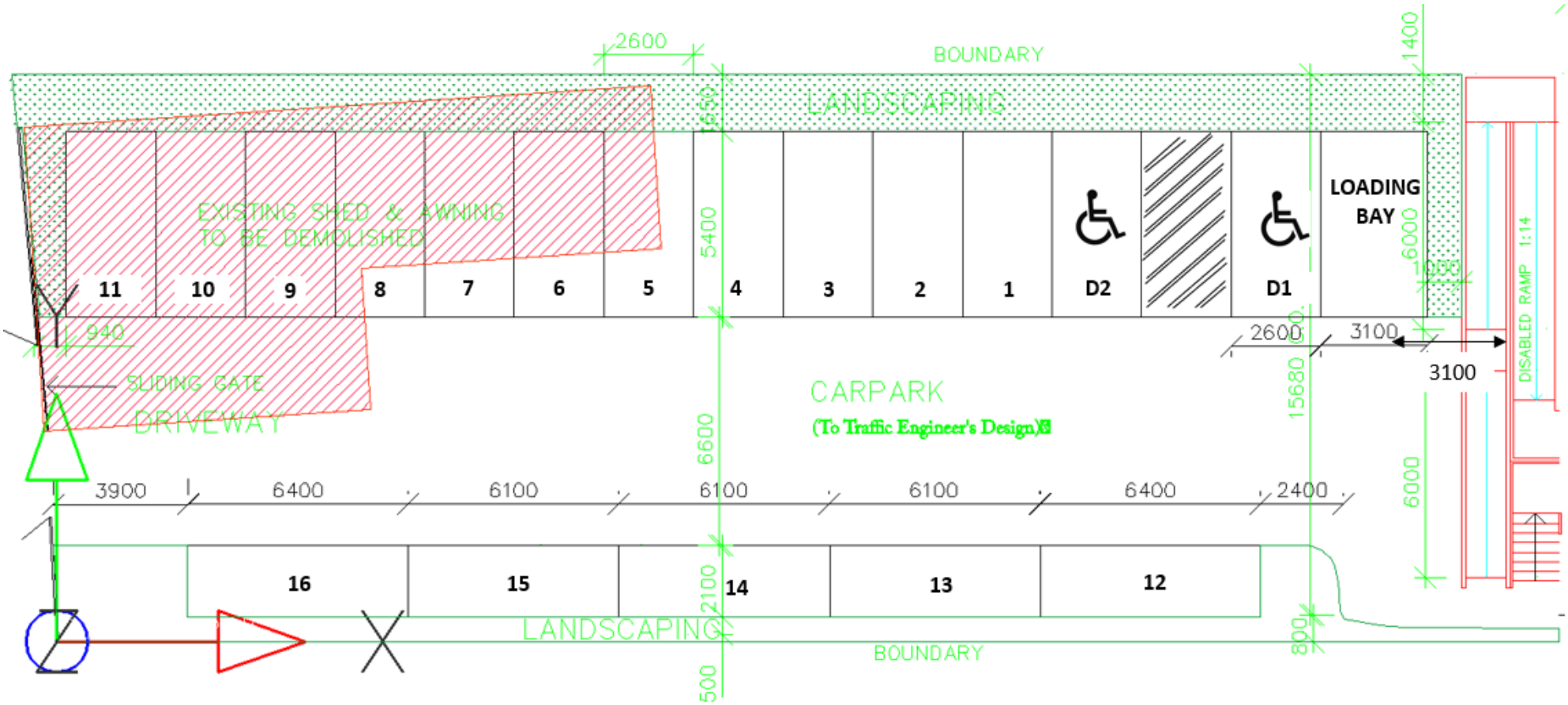


Figure 5-1: NTPE Carpark Design (measurements in mm)

Discussion
There are a total of 16 standard parking spaces provided, a surplus of 4 spaces as per Maitland City Council's DCP. Closest to the medical centre building is a loading bay followed by 2 accessible parking spaces.

The parallel parking spaces along the southern boundary are of differing lengths; in accordance with AS NZS 2890.1-2004 Parking Facilities spaces 12 & 16 are obstructed end spaces 6.4m long whilst Spaces 13 to 15 are required to be 6.1m long.

The proposed driveway is located towards the centre of the carpark aisle and is 5m wide.

The aisle width is 6.6m.

6. TURNING PATHS

The following turning paths were conducted to test how they conform with AS NZS 2890.1-2004:

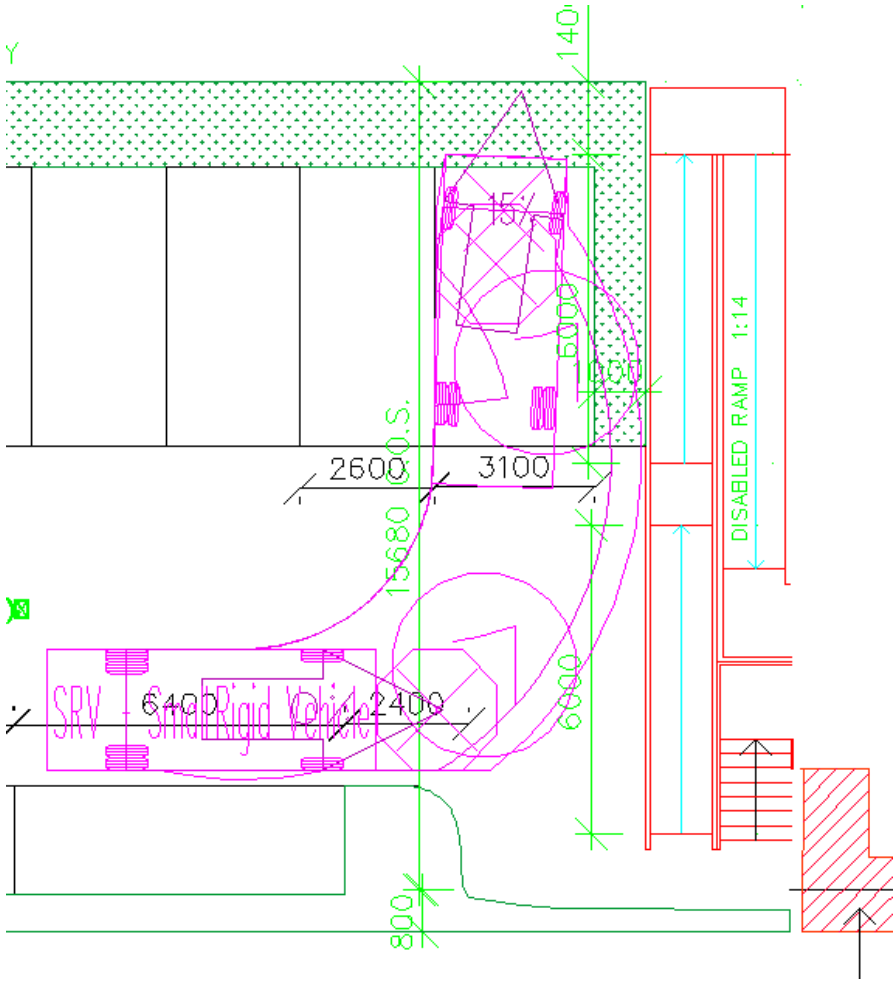


Figure 6-1: Loading Bay – Forward In

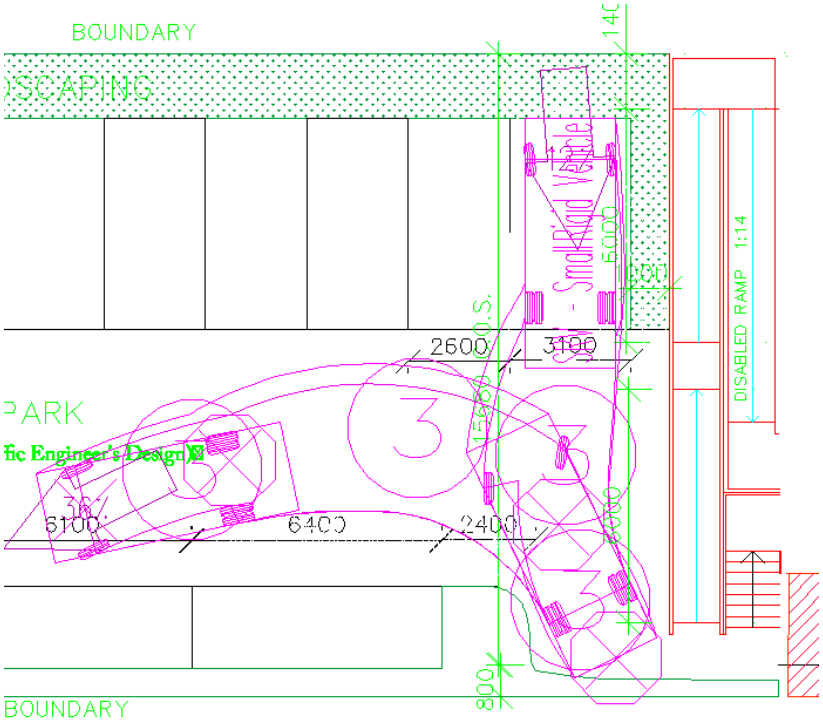


Figure 6-2: Loading Bay – Reverse Out

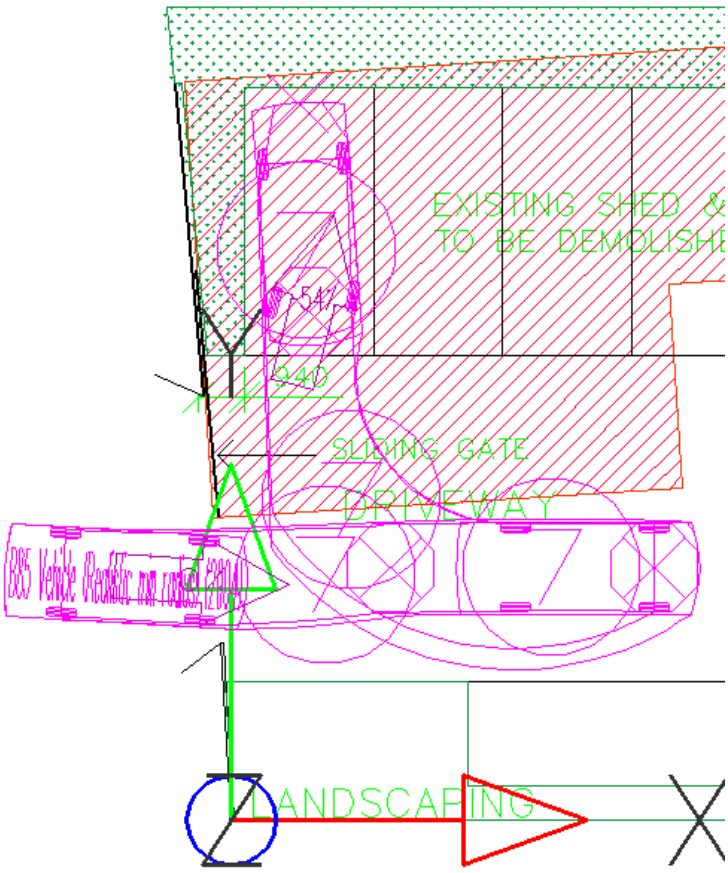


Figure 6-3: Parking Space #11 – Reverse In

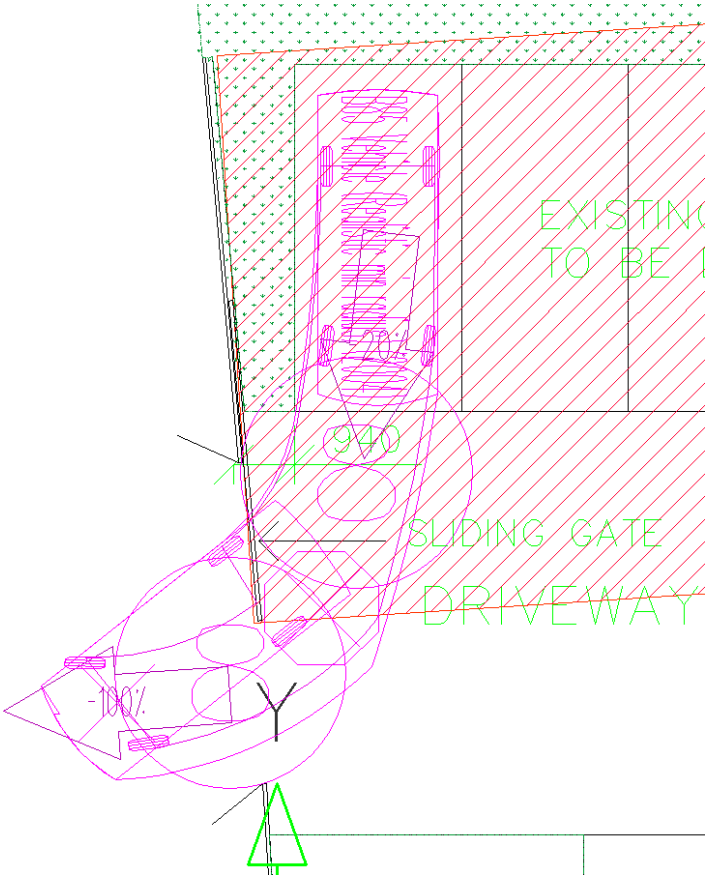


Figure 6-4: Parking Space #11 – Forward Out

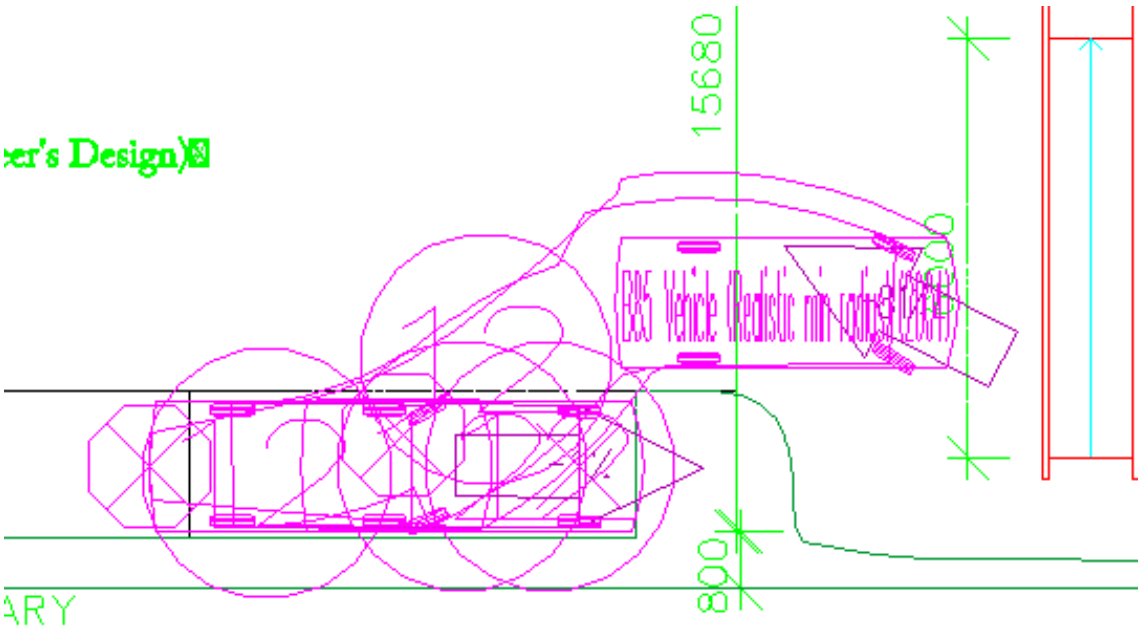


Figure 6-5: Parking Space #12 – Reverse In

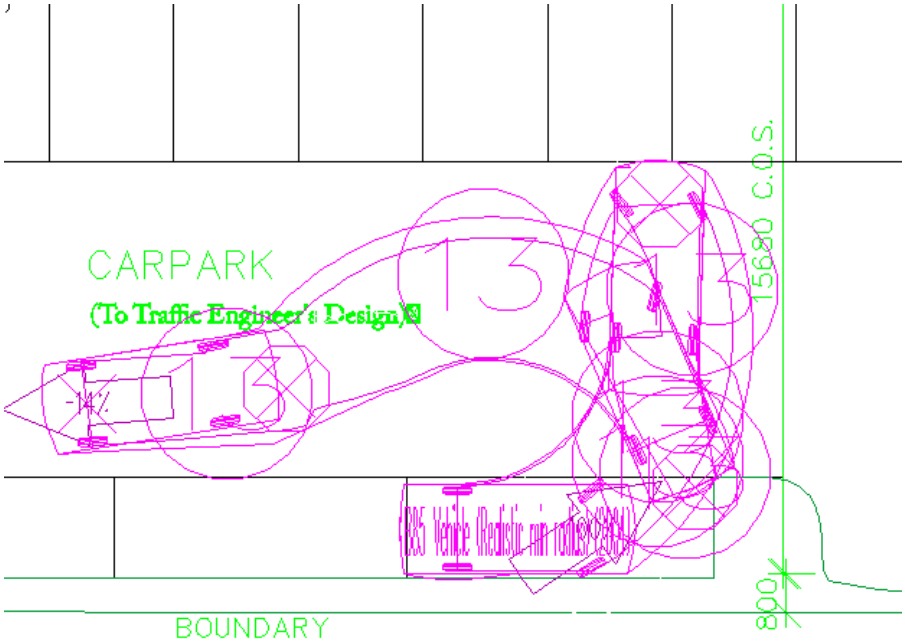


Figure 6-6: Parking Space #12 – Forward Out

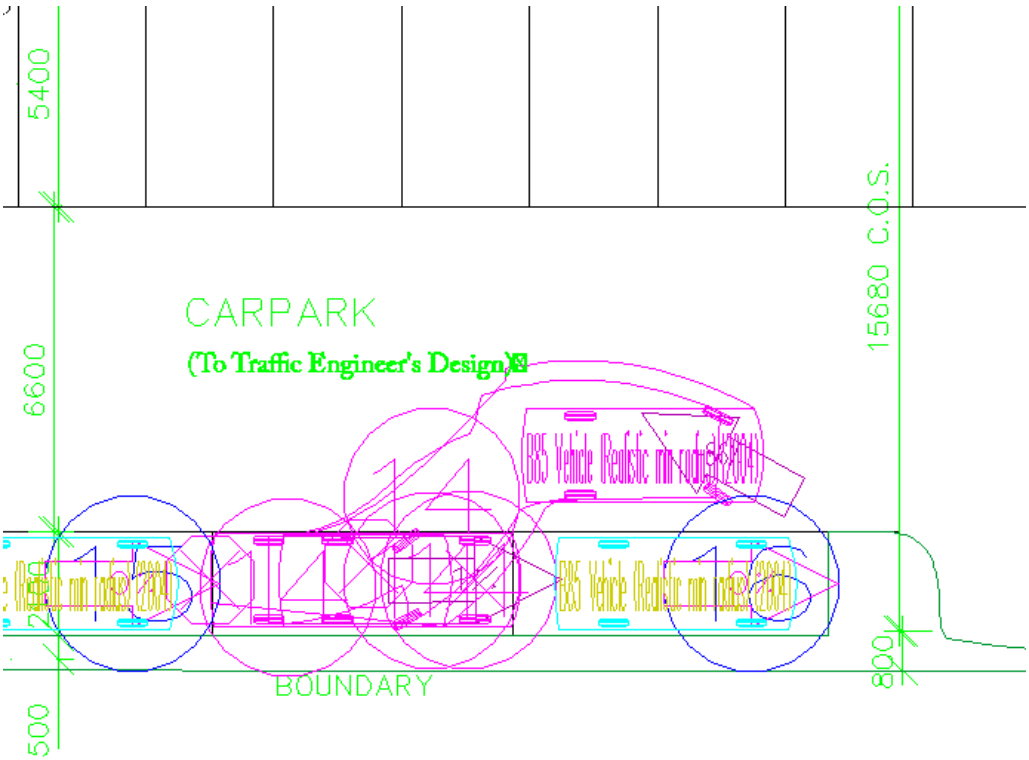


Figure 6-7: Parking Space #13 – Reverse In

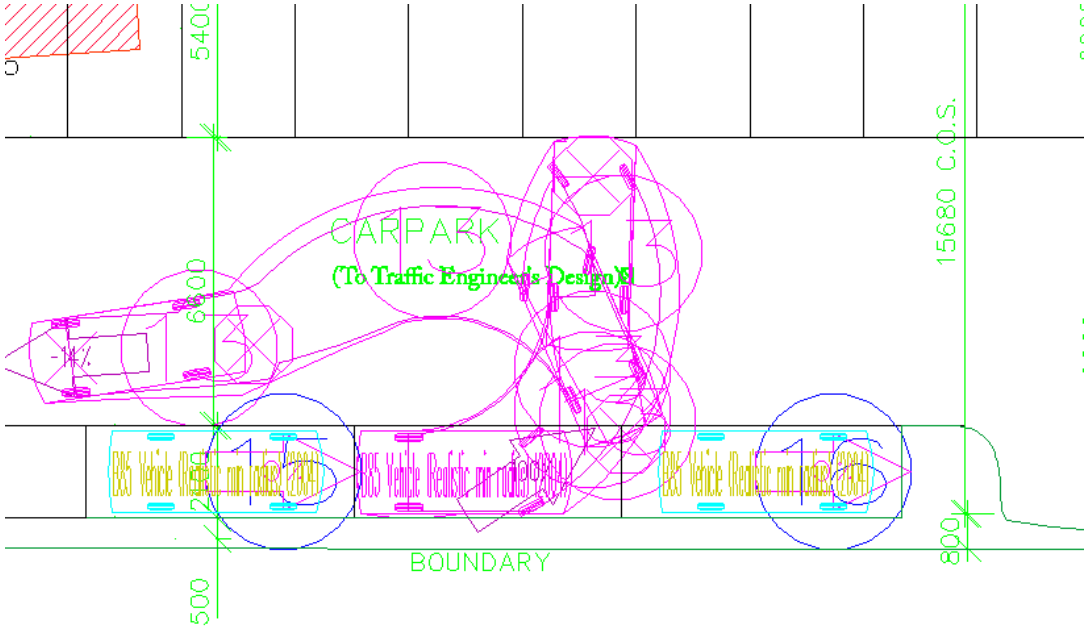


Figure 6-8: Parking Space #13 – Forward Out

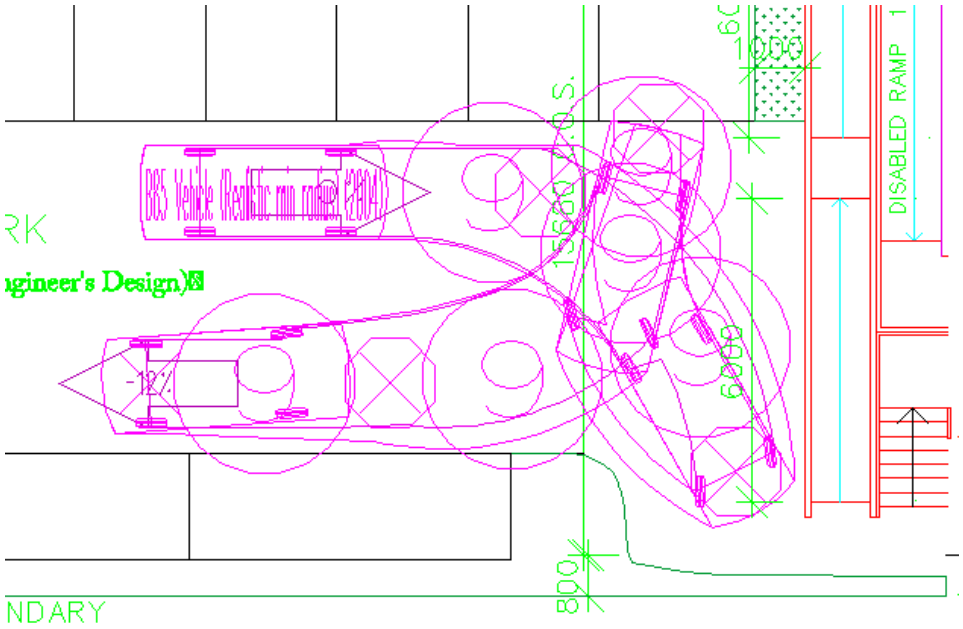


Figure 6-9: 3-Point Turn Area

Discussion

Drivers parking in the parallel parking spaces will also be able to complete a three point turn before accessing each of the parallel parking spaces. All turning paths for the proposed carpark design conform with the requirements of as NZS 2890.1-2004.

7. INTERSECTION SURVEYS

Surveys of existing traffic flows were undertaken at the intersection of Courtlands St & Mill St on Wednesday 8th November between 8am and 7pm. Peak Hour traffic flows recorded are presented in Figure 7-1 to Figure 7-3 below:

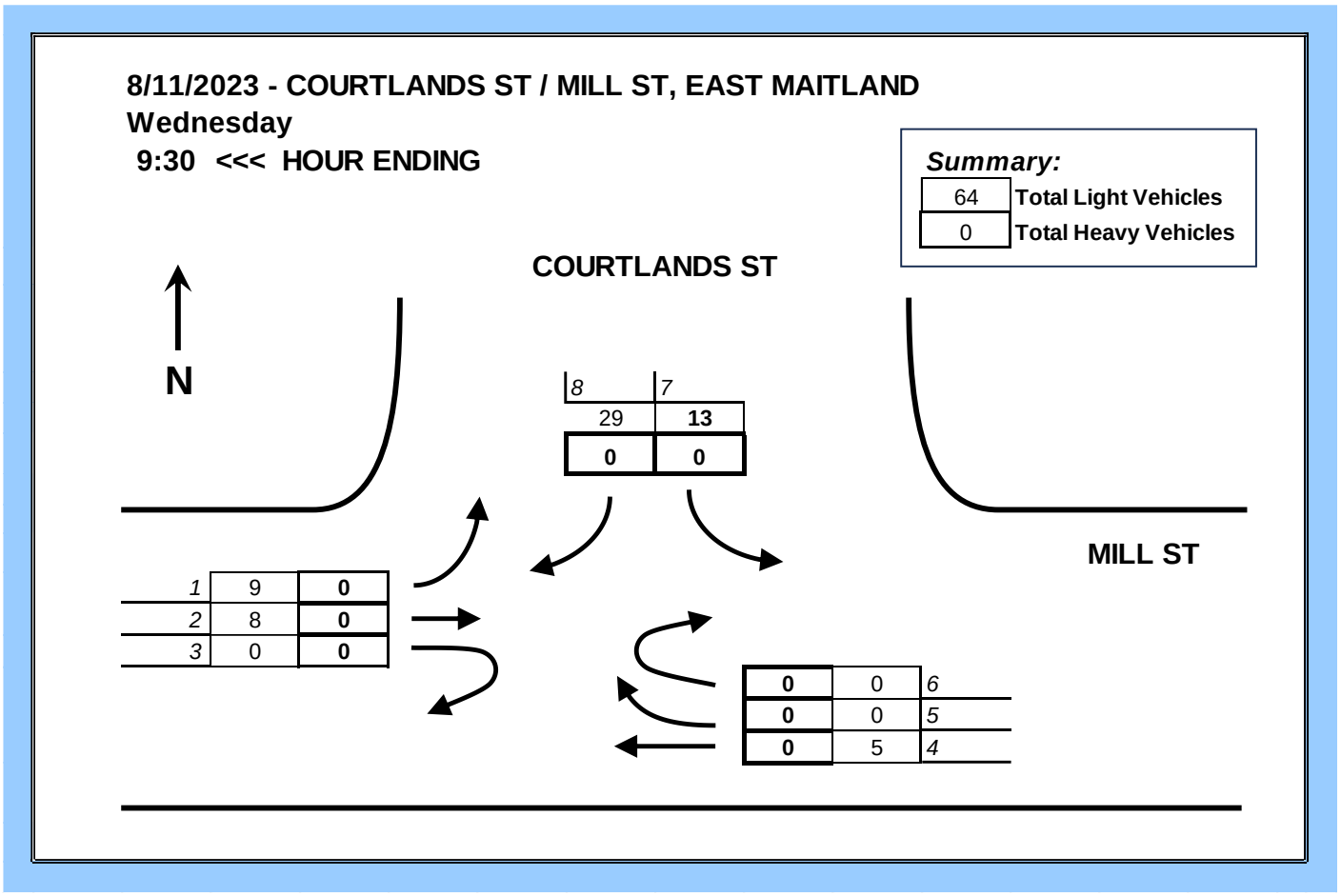


Figure 7-1: Intersection Survey Courtlands St & Mill St (Wednesday, Morning Peak Hour)

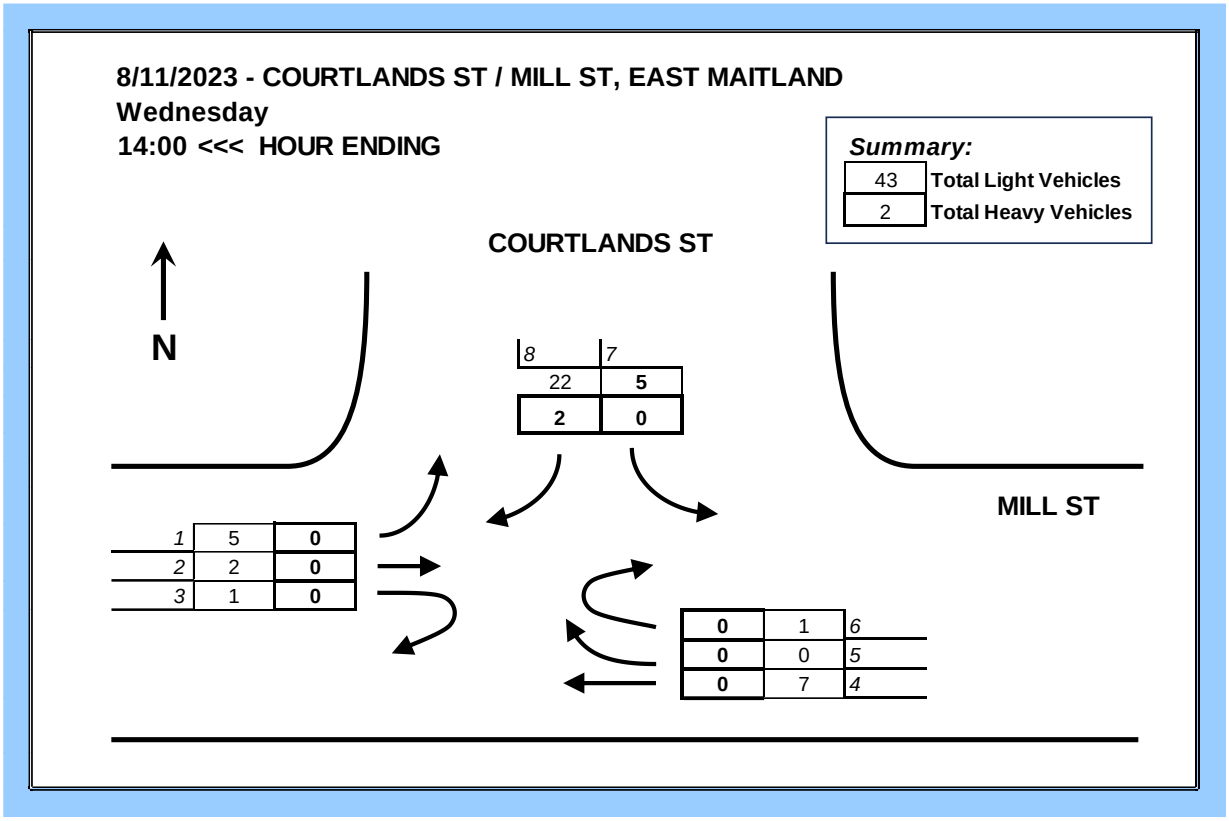


Figure 7-2: Intersection Survey Courtlands St & Mill St (Wednesday, Midday Peak Hour)

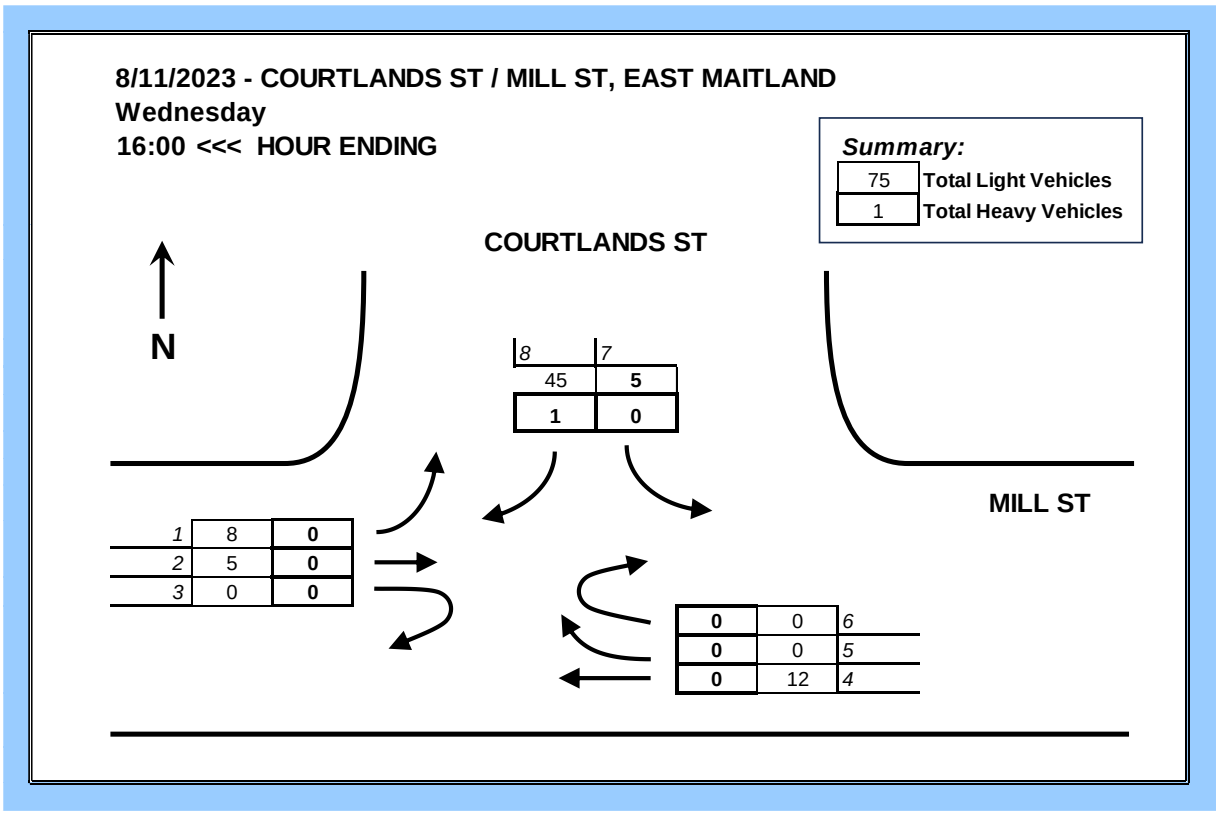


Figure 7-3: Intersection Survey Courtlands St & Mill St (Wednesday, Afternoon Peak Hour)

Full reports of the intersection counts is shown in Appendix A.

Discussion
There were 64 overall traffic movements at the intersection of Courtlands St / Mill St on Wednesday during the AM Peak hour, 45 during the midday peak and 76 during the PM peak. There was no queueing observed at the intersection.

8. TRIP GENERATION & DISTRIBUTION

In 2015, RTA (now Transport for NSW) commissioned a survey in 2015 of a variety or urban and rural medical centres. 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 8-1:

Table 8-1: Trips generated in AM & PM Peak Hour

Regional Sites	Min	Max	Average
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

The average values have been applied as a rate to the Active Floor Area (AFA) of the proposed development in East Maitland with the equation as follows:

$$\frac{Trip\ Rate}{100(m^2)} \times \frac{East\ Maitland\ AFA\ (m^2)}{100} = No.\ of\ Trips$$

The number of trips generated by East Maitland Medical Centre are shown in Table 8-2:

Table 8-2: Predicted Trips for Proposed Medical Centre

	Trip Rate / 100m^2	AFA (m^2)	Pred. Trips
Medical Centre AM Peak Hour	7.35	420	31
Medical Centre PM Peak Hour	6	420	26

For the purpose of this assessment, it is assumed that both the AM Peak and PM Peak trip generation for the proposed medical centre would be 31 trips

Accordingly, it is considered the 31 trips would be distributed in the road network as in Figure 8-1 below, with a quarter of approaching vehicles from either the West or East on Melbourne St, and either South or North on Newcastle St:

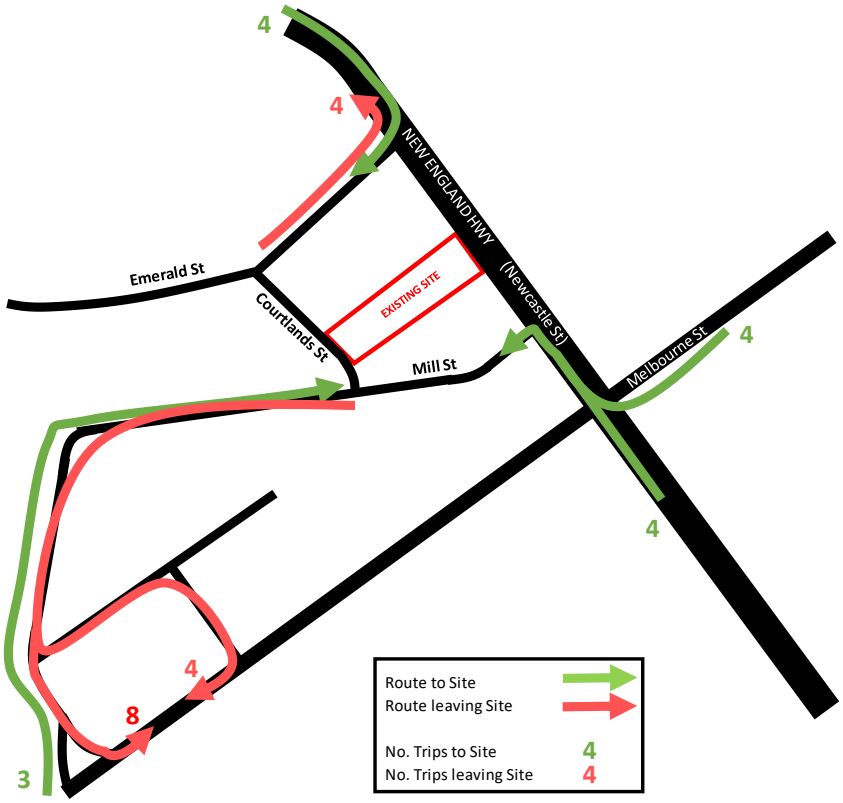


Figure 8-1: Trip Distribution to enter and exit proposed development

The number of trips from each direction is further detailed below in Figure 88-2:

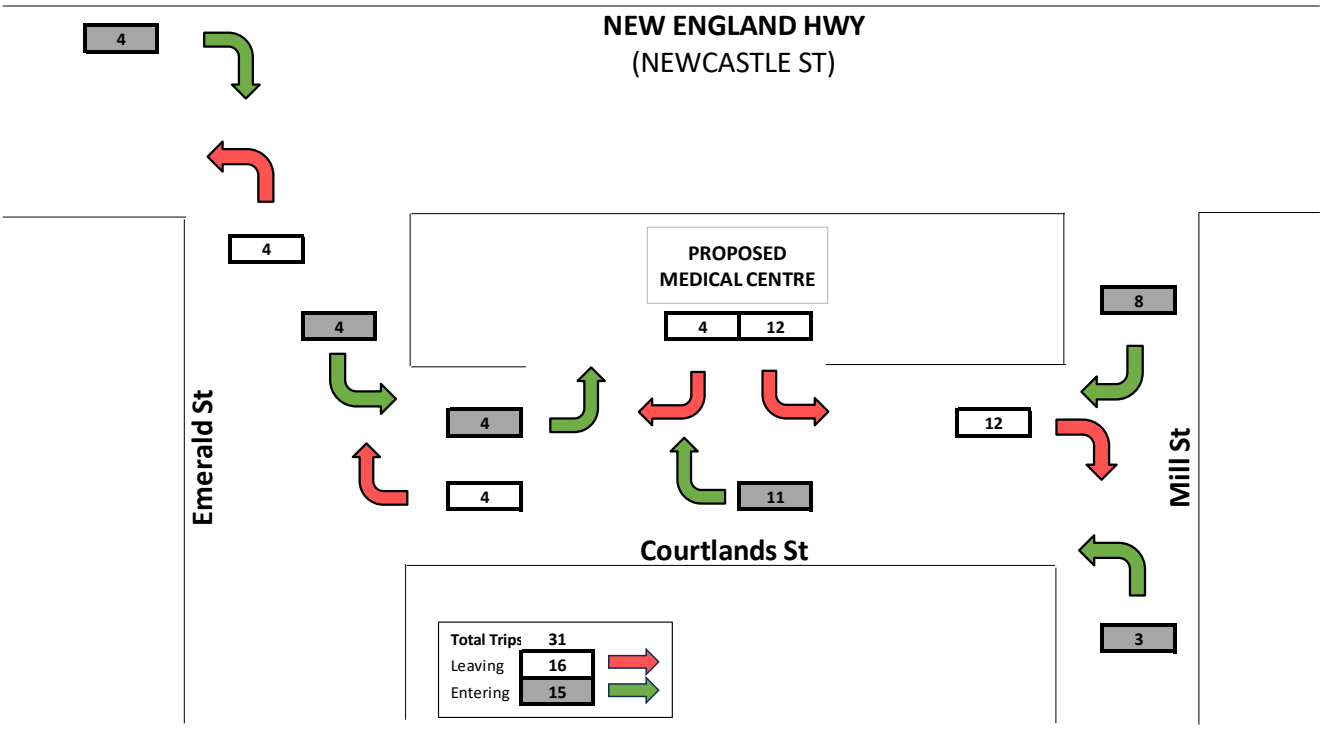


Figure 88-2: Peak Hour Trip Generation & Distribution of Proposed Development

Discussion

Previous surveys in 2017 by NTPE on Newcastle St near Emerald St show a flow rate of approximately 3,800vph for the hour ending 4pm. However, gaps in the flow of traffic are provided by the signalised intersection of Newcastle St and Melbourne St suitable for right-turning vehicles into Emerald St.

A survey by NTPE of Emerald St and Newcastle St on Wednesday 8th November 2023 confirmed that up to 35 vehicles turned right into Emerald St during the PM peak hour period with average queue lengths of 1 vehicle. It is therefore considered that the extra 4 trips turning right into Emerald St will have a negligible impact on the performance of the intersection. Similarly, the 4 trips turning left into Newcastle St also have a negligible impact on the performance of the intersection.

It was observed during the survey on Wednesday 8th November 2023 that there were no cars turning right into Newcastle St from Emerald St. This indicates that drivers leaving this area are choosing to avoid this right turn due to the congestion of Newcastle St. It is therefore expected that patients attending the proposed Medical Centre will also prefer to exit via Mill St and Melbourne St as shown above in Figure 8-1.

Traffic volumes observed on the intersection of Mill St & Courtlands St are relatively low. It is considered that the extra 23 trips that will be added by the Medical Centre to this intersection will have a negligible impact on intersection performance.

9. RECOMMENDATIONS

The proposed development has the capacity to provide adequate off-street parking spaces which comply with Australian Standards and Maitland City Council DCP requirements. The vehicular accesses and turning paths of NTPE's design all conform for all vehicles up to small rigid vehicles.

It is considered that the surrounding road network will be able to accommodate the relatively small increase in trips generated by the proposed Medical Centre.

Based on the assessment presented in this report it is recommended that the proposed development be approved.

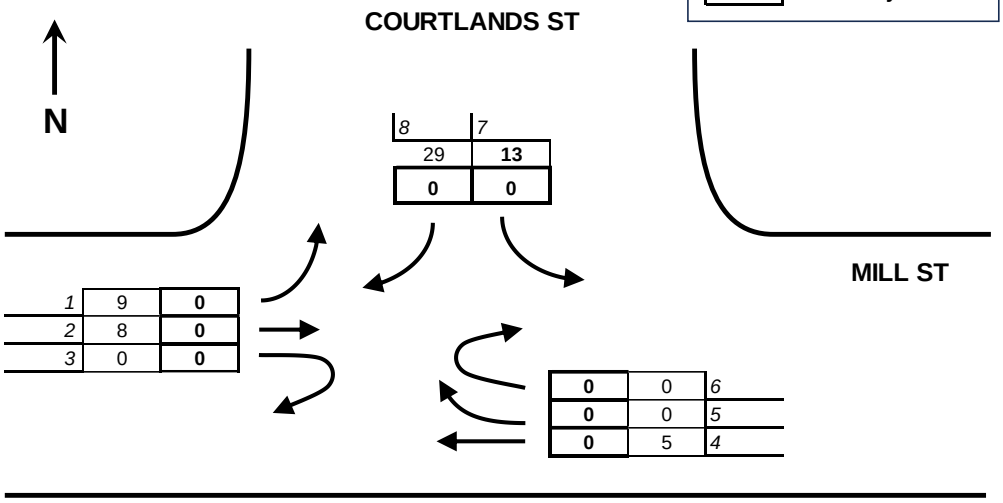
Appendix A

Intersection Count Reports

8/11/2023 - COURTLANDS ST / MILL ST, EAST MAITLAND
Wednesday
9:30 <<< HOUR ENDING

Summary:

64	Total Light Vehicles
0	Total Heavy Vehicles



8/11/2023 - COURTLANDS ST / MILL ST, EAST MAITLAND

Light Vehicles

	1	2	3	4	5	6	7	8	9	Total Vehicles 15 MIN	Total Vehicles HOUR
08:15	4	0	0	0	0	0	1	4	0	9	
08:30	2	1	0	0	0	0	0	7	0	10	
08:45	4	2	0	0	0	0	1	12	0	19	
09:00	2 <	2	0	0	0	0	3	10 <	0	17	55
09:15	1	3 <	0	1	0	0	3	4 <	0	12	58
09:30	2	1 <	0	4	0	0	6 <	3	0	16	64 <
09:45	4	1	1 <	3	0	0	1 <	2	0	12	57
10:00	0	2	0 <	3	0	0	2	3	0	10	50
10:15	0	0	0 <	3 <	0	1 <	2	5	0	11	49
10:30	1	1	0 <	3	1	0 <	3	4	0	13	46
10:45	2	1	0	2	0	0 <	2	3	0	10	44
11:00	2	0	0	3	1	0 <	1	4	0	11	45
11:15	0	0	0	2	2 <	0	0	5	0	9	43
11:30	0	0	0	1	0	0	3	8	0	12	42
11:45	0	1	0	6	0	0	1	3	0	11	43
12:00	2	1	0	3	0	0	0	6	0	12	44

Heavy Vehicles

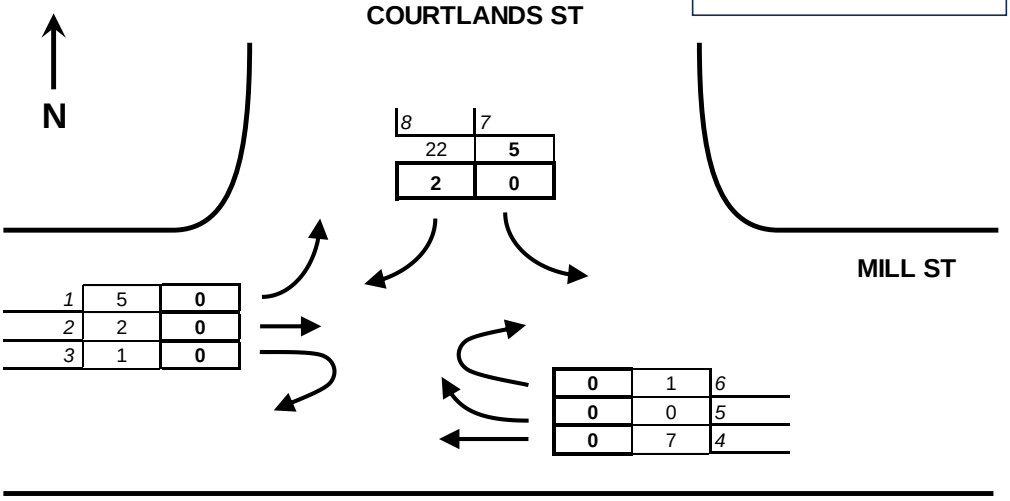
	1	2	3	4	5	6	7	8	9	Total Vehicles 15 MIN	Total Vehicles HOUR
08:15	0	0	0	0	0	0	0	0	0	0	
08:30	0	0	0	0	0	0	0	0	0	0	
08:45	0	0	0	0	0	0	0	0	0	0	
09:00	0	0	0	0	0	0	0	0	0	0	0
09:15	0	0	0	0	0	0	0	0	0	0	0
09:30	0	0	0	0	0	0	0	0	0	0	0
09:45	0	0	0	0	0	0	0	0	0	0	0
10:00	0	0	0	0	0	0	0	2	0	2	2
10:15	0	0	0	0	0	0	0	1	0	1	3
10:30	0	0	0	0	0	0	0	2 <	0	2	5
10:45	0	0	0	0	0	0	0	0 <	0	0	5
11:00	0	0	0	0	0	0	0	0	0	0	3
11:15	0	0	0	0	0	0	0	1	0	1	3
11:30	0	0	0	0	0	0	0	0	0	0	1
11:45	0	0	0	1 <	0	0	0	0	0	1	2 <
12:00	0	0	0	0 <	0	0	0	0	0	0	2 <

Light + Heavy Vehicles	1	2	3	4	5	6	7	8	9	Total Vehicles 15 MIN	HOUR
08:15	4	0	0	0	0	0	1	4	0	9	
08:30	2	1	0	0	0	0	0	7	0	10	
08:45	4	2	0	0	0	0	1	12	0	19	
09:00	2 <	2	0	0	0	0	3	10 <	0	17	55
09:15	1	3 <	0	1	0	0	3	4 <	0	12	58
09:30	2	1 <	0	4	0	0	6 <	3	0	16	64
09:45	4	1	1 <	3	0	0	1 <	2	0	12	57
10:00	0	2	0 <	3	0	0	2	5	0	12	52 <
10:15	0	0	0 <	3 <	0	1 <	2	6	0	12	52
10:30	1	1	0 <	3	1	0 <	3	6	0	15	51
10:45	2	1	0	2	0	0 <	2	3	0	10	49
11:00	2	0	0	3	1	0 <	1	4	0	11	48
11:15	0	0	0	2	2 <	0	0	6	0	10	46
11:30	0	0	0	1	0	0	3	8	0	12	43
11:45	0	1	0	7 <	0	0	1	3	0	12	45
12:00	2	1	0	3 <	0	0	0	6	0	12	46

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

8/11/2023 - COURTLANDS ST / MILL ST, EAST MAITLAND
Wednesday
14:00 <<< HOUR ENDING

Summary:	
43	Total Light Vehicles
2	Total Heavy Vehicles



8/11/2023 - COURTLANDS ST / MILL ST, EAST MAITLAND

Light Vehicles

	1	2	3	4	5	6	7	8	9	Total Vehicles 15 MIN	Total Vehicles HOUR
12:15	2	0	1	2	0	0	0	3	0	8	
12:30	0	0	0	1	0	0	1	5	0	7	
12:45	2	0	0	3	1	0	2	5	0	13	
13:00	0	1	0 <	0	0 <	0	0	2	0	3	31
13:15	2	0	1 <	1	0 <	0	1	9	0	14	37
13:30	2	1	0 <	1	0 <	0	1	4	0	9	39
13:45	1	1	0 <	0	0	0	2	4	0	8	34
14:00	0	0	0 <	5	0	1 <	1 <	5 <	0	12	43 <
14:15	0	0	0	3	0	0 <	1 <	3	0	7	36
14:30	4	2	0	0	0	0 <	1 <	5	0	12	39
14:45	2	1	0	3 <	0	0 <	1	4	0	11	42
15:00	2 <	2 <	0	3	0	0	2 <	1	0	10	40

Heavy Vehicles

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

Light + Heavy Vehicles

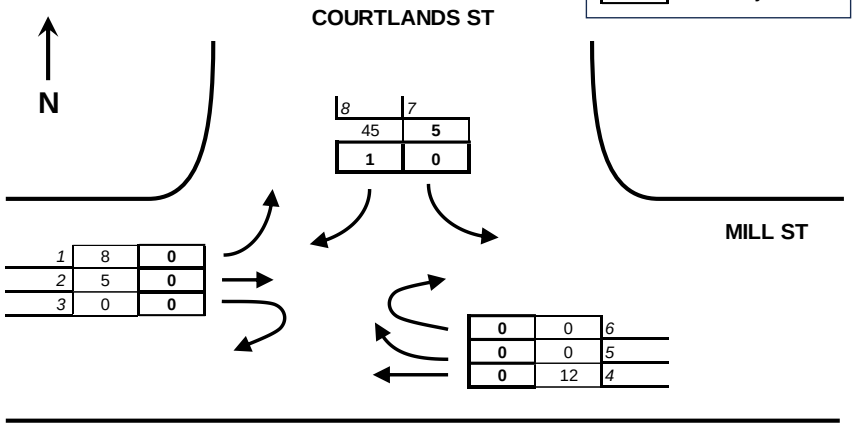
	1	2	3	4	5	6	7	8	9	Total Vehicles 15 MIN	Total Vehicles HOUR
12:15	3	0	1	2	0	0	0	5	0	11	
12:30	0	0	0	1	0	0	1	6	0	8	
12:45	2	1	0	3	1	0	2	5	0	14	
13:00	0	1	0 <	0	0 <	0	0	2	0	3	36
13:15	2	0	1 <	1	0 <	0	1	9	0	14	39
13:30	2	1	0 <	1	0 <	0	1	5	0	10	41
13:45	1	1	0 <	0	0	0	2	4	0	8	35
14:00	0	0	0 <	5	0	1 <	1 <	6 <	0	13	45
14:15	0	0	0	3	0	0 <	1 <	3	0	7	38
14:30	4	2	0	0	0	0 <	1 <	5	0	12	40
14:45	2	1	0	3 <	0	0 <	1	4	0	11	43 <
15:00	2 <	2 <	0	3	0	0	2 <	1	0	10	40

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

8/11/2023 - COURTLANDS ST / MILL ST, EAST MAITLAND
Wednesday
16:00 <<< HOUR ENDING

Summary:

75	Total Light Vehicles
1	Total Heavy Vehicles



8/11/2023 - COURTLANDS ST / MILL ST, EAST MAITLAND

Light Vehicles

	1	2	3	4	5	6	7	8	9	Total Vehicles 15 MIN	Total Vehicles HOUR
15:15	0	3	0	0	0	0	3	9	0	15	
15:30	3	0	0	4	0	0	1	17	0	25	
15:45	4	2	0	6	0	0	1	14	0	27	
16:00	1	0 <	0	2 <	0	0	0	5 <	0	8	75 <
16:15	3 <	1	0	0 <	0	0	3	4	0	11	71
16:30	0	2 <	0	3	1	0	1	3	0	10	56
16:45	1	0	0	0	0	0	1	5	0	7	36
17:00	3	0	0	2	0	0	0	10	0	15	43
17:15	3	0	0	5	0	0	0	2	0	10	42
17:30	2	0	0	1	0	0	0	9	0	12	44
17:45	2	0	0	1	0	0	0	0	0	3	40
18:00	1	0	0	2	0	0	1	3	0	7	32
18:15	0	1	0	1	1	0	1	4	0	8	30
18:30	2	3	0	4	0	1	1	1	0	12	30
18:45	4	0	0	5 <	0	1 <	4 <	2	0	16	43
19:00	1	1 <	0	2 <	1 <	0 <	1 <	1	0	7	43

Heavy Vehicles

	1	2	3	4	5	6	7	8	9	Total Vehicles 15 MIN	Total Vehicles HOUR
15:15	0	0	0	0	0	0	0	0	0	0	
15:30	0	0	0	0	0	0	0	0	0	0	
15:45	0	0	0	0	0	0	0	1	0	1	
16:00	0	0	0	0	0	0	0	0	0	0	1
16:15	0	0	0	0	0	0	0	0	0	0	1
16:30	0	0	0	0	0	0	0	0	0	0	1
16:45	0	0	0	0	0	0	0	1	0	1	1
17:00	0	0	0	0	0	0	0	1 <	0	1	2
17:15	0	0	0	0	0	0	0	0 <	0	0	2
17:30	0	0	0	0	0	0	0	0 <	0	0	2
17:45	0	0	0	0	0	0	0	0	0	0	1
18:00	0	0	0	0	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	0	0
19:00	0	0	0	0	0	0	0	0	0	0	0

Light + Heavy Vehicles	1	2	3	4	5	6	7	8	9	Total Vehicles 15 MIN	HOUR
15:15	0	3	0	0	0	0	3	9	0	15	
15:30	3	0	0	4	0	0	1	17	0	25	
15:45	4	2	0	6	0	0	1	15	0	28	
16:00	1	0 <	0	2 <	0	0	0	5 <	0	8	76
16:15	3 <	1	0	0 <	0	0	3	4	0	11	72
16:30	0	2 <	0	3	1	0	1	3	0	10	57
16:45	1	0	0	0	0	0	1	6	0	8	37
17:00	3	0	0	2	0	0	0	11	0	16	45
17:15	3	0	0	5	0	0	0	2	0	10	44
17:30	2	0	0	1	0	0	0	9	0	12	46
17:45	2	0	0	1	0	0	0	0	0	3	41
18:00	1	0	0	2	0	0	1	3	0	7	32
18:15	0	1	0	1	1	0	1	4	0	8	30
18:30	2	3	0	4	0	1	1	1	0	12	30
18:45	4	0	0	5 <	0	1 <	4 <	2	0	16	43
19:00	1	1 <	0	2 <	1 <	0 <	1 <	1	0	7	43

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