

McDONALD'S AUSTRALIA LIMITED

REPORT ON THE TRAFFIC
IMPLICATIONS OF THE
PROPOSED McDONALD'S,
PEEL STREET AND MARIUS STREET,
NORTH TAMWORTH

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I. INTRODUCTION

- I.1. Colston Budd Rogers & Kafes Pty Ltd has been commissioned by McDonald's Australia Limited to prepare a report on traffic aspects of the proposed McDonald's on Peel Street and Marius Street at North Tamworth. The site is located on the south eastern corner of the intersection, as shown on Figure I.
- I.2. The site is currently vacant. The proposed McDonald's would have 82 seats and a drive-through. Vehicular access is proposed from Marius Street and Peel Street.
- I.3. This report assesses the implications of the proposed development through the following chapters:
- Chapter 2 - describing the existing situation; and
 - Chapter 3 - assessing the implications of the proposed development.

2. EXISTING CONDITIONS

Site Location and Road Network

- 2.1. The site is on the south eastern corner of the intersection of Peel Street and Marius Street at North Tamworth, as shown on Figure 1. The site is currently vacant. There is a shopping centre and residential development north and east of the site. To the south and west there are recreational areas.
- 2.2. Peel Street forms part of a route between Tamworth, Manilla, Barraba, Bingara and Warialda in the north. In the vicinity of the site it provides a four lane divided carriageway, with two traffic lanes in each direction and a central median. The intersection of Peel Street with Marius Street is controlled by a roundabout. There are two approach and circulating lanes on the Peel Street approaches to the roundabout. There are two approach lanes on the Marius Street approaches. The left turn lanes on these approaches do not enter the roundabout.
- 2.3. Marius Street provides a connection into the Tamworth CBD to the south. Adjacent to the site it provides access to the shopping centre and residential properties. It provides for one traffic lane and one parking lane in each direction, clear of intersections. It forms part of a bus route. West of Peel Street, Marius Street provides access to recreational areas.
- 2.4. South east of the site, Marius Street intersects Jewry Street at a single lane roundabout. Dean Street provides a fourth (northern) approach to the intersection. Dean Street provides access to the hospital and residential areas. Between Marius Street and Peel Street, Jewry Street provides for one traffic lane and one parking lane in each direction. It provides access to retail and residential development. Jewry Street has two intersections with Peel Street: its northern intersection is controlled by signs, with right turn movements restricted. Its
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southern intersection with Peel Street is controlled by traffic signals. West of Peel Street, Jewry Street provides access to employment areas.

Traffic Flows

2.5. In order to gauge traffic conditions, traffic counts were undertaken during weekday afternoon and Saturday periods at the following intersections:

- Peel Street/Marius Street;
- Marius Street/Dean Street/Jewry Street; and
- Peel Street/Jewry Street (north).

2.6. The results of the surveys are shown in Figures 2 and 3 and summarised in Table 2.1.

Table 2.1: Existing two-way (sum of both directions) hourly traffic flows			
Road	Location	Weekday afternoon	Saturday
Peel Street	North of Marius Street	1,540	1,280
	South of Marius Street	1,480	1,220
	South of Jewry Street	1,660	1,340
Marius Street	West of Peel Street	140	115
	East of Peel Street	620	415
	East of Jewry Street	565	400
Dean Street	North of Marius Street	420	245
Jewry Street	South of Marius Street	200	200

2.7. Table 2.1 shows that Peel Street carried some 1,220 to 1,660 vehicles per hour two-way during the surveyed weekday afternoon and Saturday periods. Marius Street carried lower flows of some 400 to 620 vehicles per hour two-way. Dean Street and Jewry Street carried some 200 to 420 vehicles per hour two-way.

Intersection Operations

- 2.8. The capacity of the road network is generally determined by the ability of its intersections to cater for peak period traffic flows. The surveyed intersections have been analysed using the SIDRA program for the traffic flows shown in Figures 2 and 3.
- 2.9. SIDRA produces a number of measures of intersection operations. The most useful measure provided is average delay per vehicle expressed in seconds per vehicle.
- 2.10. Based on average delay per vehicle, SIDRA estimates the following levels of service (LOS):
- For traffic signals, the average delay per vehicle in seconds is calculated as delay/(all vehicles), for roundabouts the average delay per vehicle in seconds is selected for the movement with the highest average delay per vehicle, equivalent to the following LOS:

0 to 14	=	“A”	Good
15 to 28	=	“B”	Good with minimal delays and spare capacity
29 to 42	=	“C”	Satisfactory with spare capacity
43 to 56	=	“D”	Satisfactory but operating near capacity
57 to 70	=	“E”	At capacity and incidents will cause excessive delays. Roundabouts require other control mode
>70	=	“F”	Unsatisfactory and requires additional capacity
 - For give way and stop signs, the average delay per vehicle in seconds is selected from the movement with the highest average delay per vehicle, equivalent to following LOS:
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0 to 14	=	“A”	Good
15 to 28	=	“B”	Acceptable delays and spare capacity
29 to 42	=	“C”	Satisfactory but accident study required
43 to 56	=	“D”	Near capacity and accident study required
57 to 70	=	“E”	At capacity and requires other control mode
>70	=	“F”	Unsatisfactory and requires other control mode

- 2.11. It should be noted that for roundabouts, give way and stop signs, in some circumstances, simply examining the highest individual average delay can be misleading. The size of the movement with the highest average delay per vehicle should also be taken into account. Thus, for example, an intersection where all movements are operating at a level of service A, except one which is at level of service E, may not necessarily define the intersection level of service as E if that movement is very small. That is, longer delays to a small number of vehicles may not justify upgrading an intersection unless a safety issue was also involved.
- 2.12. The SIDRA analysis found that the roundabout at the intersection of Peel Street with Marius Street operates with average delays for all movements of less than 20 seconds per vehicle. This represents level of service B, a good level of service.
- 2.13. The roundabout at Marius Street/Dean Street/Jewry Street operates with average delays for all movements of less than 15 seconds per vehicle. This represents level of service A/B, a good level of service.
- 2.14. The unsignalised intersection of Peel Street with Jewry Street operates with average delays for all movements of less than 15 seconds per vehicle. This represents level of service A/B, a good level of service.

Public Transport

- 2.15. As previously noted, there are bus stops on Marius Street, close to the site. Buses also operate along Peel Street, adjacent to the site.
- 2.16. Local bus services are provided by Tamworth Bus Line. Route 430 connects Tamworth to Oxley Vale via the hospital. Services are generally every 45 minutes on weekdays. Three services are provided on Saturdays.
- 2.17. The site is therefore accessible by public transport.

3. IMPLICATIONS OF PROPOSED DEVELOPMENT

3.1. The proposed McDonald's would have 82 seats and a drive-through. Vehicular access is proposed from Marius Street and Peel Street. The traffic implications of the proposed McDonald's are assessed through the following sections:

- public transport;
- parking provision;
- access, servicing and internal layout;
- traffic effects; and
- summary.

Public Transport

3.2. As noted in Chapter 2, the site is adjacent to bus services which operate along Marius Street and Peel Street. The McDonald's will therefore be accessible by public transport.

3.3. While the majority of customers are expected to travel by car, public transport will be an option available for employees.

Parking Provision

3.4. The Tamworth Regional Development Control Plan 2010 includes the following parking requirement for drive-in take-away food shops:

- one space per 8.5m² GFA plus one space per three seats, with an exclusive area for queuing of cars for a drive through facility (five to 12 cars measured from the pick-up point, including four cars from the ordering point).
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- 3.5. The above requirements compare to those in the RMS “Guide to Traffic Generating Developments”, which are as follows:
- developments with no on-site seating or no drive-through facilities: 12 spaces per 100m² GFA (one space per 8.3m²);
 - developments with on-site seating but no drive-through facilities: 12 spaces per 100m² GFA, or the greater of one space per five seats (internal plus external) or one space per two seats (internal);
 - developments with on-site seating and drive-through facilities: greater of one space per two seats (internal) or one space per three seats (internal plus external).
- 3.6. The RMS parking rates are based on extensive surveys of drive-in take-away food outlets, and distinguish between facilities with and without drive-through facilities. By comparison, the DCP parking rate *adds together* the parking rate for developments with no on-site seating and no drive-through facilities, with the parking rate for developments with drive-through facilities.
- 3.7. The RMS parking rate is considered more appropriate for the proposed McDonald’s, because:
- it is based on extensive surveys of similar facilities; and
 - it is more nuanced than the DCP because it distinguishes between take-away food outlets with and without drive-through facilities.
- 3.8. The proposed McDonald’s will provide 82 internal seats and will therefore require 41 parking spaces. The proposed parking provision of 41 spaces, including one disabled space, satisfies this requirement and is therefore considered appropriate.
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- 3.9. The dual drive through facility provides queuing for some 19 vehicles, clear of car park circulation, in accordance with the DCP and RMS guidelines. Two waiting bays are also proposed.

Access, Servicing and Internal Layout

- 3.10. Vehicular access would be provided from Marius Street, via an entry/exit driveway. A separate exit driveway will also be provided to Peel Street. This exit will better cater for passing trade with a destination to the south and west, without using Marius Street. It will also reduce traffic exiting to Marius Street, in which there are residential properties.
- 3.11. There are good sight lines along Peel Street at the proposed exit driveway location. The driveway will also be provided with appropriate sight lines to pedestrians on the footpath, in accordance with Australian Standards, and noting that pedestrian volumes on Peel Street are low. The roundabout at Marius Street creates gaps in the traffic stream which vehicles exiting the site will readily be able to use. The proposed exit driveway is consistent with pre-development application advice from council to improve traffic flow through the site.
- 3.12. The driveway from Marius Street and Peel Street will be provided with appropriate width, in accordance with the Australian Standard for Parking Facilities (Part 1: Off-street car parking and Part 2: Off-street commercial vehicle facilities), AS 2890.1:2004 and AS 2890.2:2018, to cater for a parking area of the size and type proposed, as well as for service vehicles.
- 3.13. Parking for the McDonald's will be provided at grade. Spaces will be a minimum of 2.6 metres wide by 5.4 metres long, with 6.6 metre wide circulation aisles. Spaces with adjacent obstructions will be 0.3 metres wider to provide for doors to open. The disabled parking space will be 2.4 metres wide, with a 2.4 metre
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wide adjacent area for wheelchairs. These dimensions are considered appropriate, being in accordance with AS 2890.1:2004 and AS 2890.6:2009.

- 3.14. A loading bay will be provided for the McDonald's, for garbage collection and deliveries. The McDonald's will be serviced by vehicles ranging in size up to small semi-trailers. The design provides for service vehicles to enter and exit in a forward direction. Deliveries will be made outside of busy periods. Service vehicle swept paths are shown in plans prepared by Richmond + Ross.
- 3.15. The McDonald's drive-through will provide for some 19 cars. This satisfies RMS guidelines which suggest a drive-through capacity of 10 to 12 cars. It also satisfies the DCP which requires queuing for five to 12 cars.

Traffic Effects

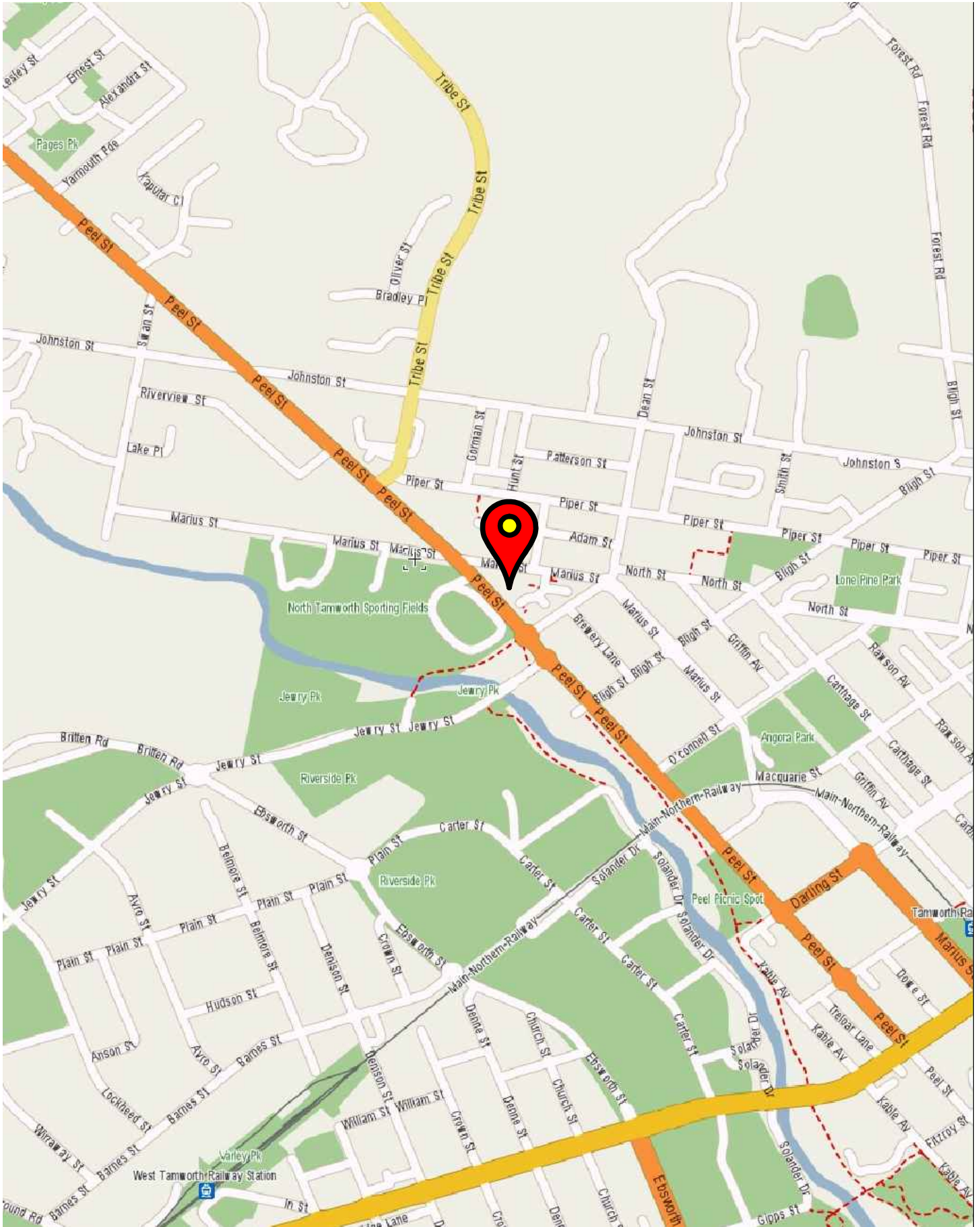
- 3.16. The RMS guidelines include design traffic generations for McDonald's of 180 vehicles per hour two-way. Existing traffic flows plus the additional McDonald's traffic are shown in Figures 2 and 3 and summarised in Table 3.1.

Road	Location	Weekday afternoon		Saturday	
		Existing	Plus development	Existing	Plus development
Peel Street	North of Marius Street	1,540	+60	1,280	+60
	South of Marius Street	1,480	+30	1,220	+30
	South of Jewry Street	1,660	+60	1,340	+60
Marius Street	West of Peel Street	140	-	115	-
	East of Peel Street	620	+90	415	+90
	East of Jewry Street	565	+40	400	+40
Dean Street	North of Marius Street	420	+20	245	+20
Jewry Street	South of Marius Street	200	-	200	-

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- 3.17. Table 3.1 shows that traffic increases on Marius Street would be some 40 to 90 vehicles per hour two-way. Increases on Peel Street and Dean Street would be lower at some 20 to 60 vehicles per hour two-way.
- 3.18. The intersections previously analysed in Chapter 2 have been reanalysed with SIDRA for the additional development traffic flows shown in Figures 2 and 3. The analysis found that the intersection of Peel Street with Marius Street would continue to operate with average delays for all movements of less than 20 seconds per vehicle. This represents level of service B, a good level of service.
- 3.19. The Marius Street/Dean Street/Jewry Street intersection would continue to operate with average delays for all movements of less than 15 seconds per vehicle. This represents level of service A/B, a good level of service.
- 3.20. The Peel Street/Jewry Street intersection would continue to operate with average delays for all movements of less than 15 seconds per vehicle. This represents level of service A/B, a good level of service.
- 3.21. Therefore, the road network will be able to cater for the traffic from the proposed McDonald's.

Summary

- 3.22. In summary, the main points relating to the traffic implications of the proposed McDonald's at North Tamworth are as follows:
- (i) the proposed parking provision and access arrangements are appropriate;
 - (ii) parking layout, servicing and drive through operation are appropriate; and
 - (iii) the road network will be able to cater for the traffic from the proposed McDonald's.
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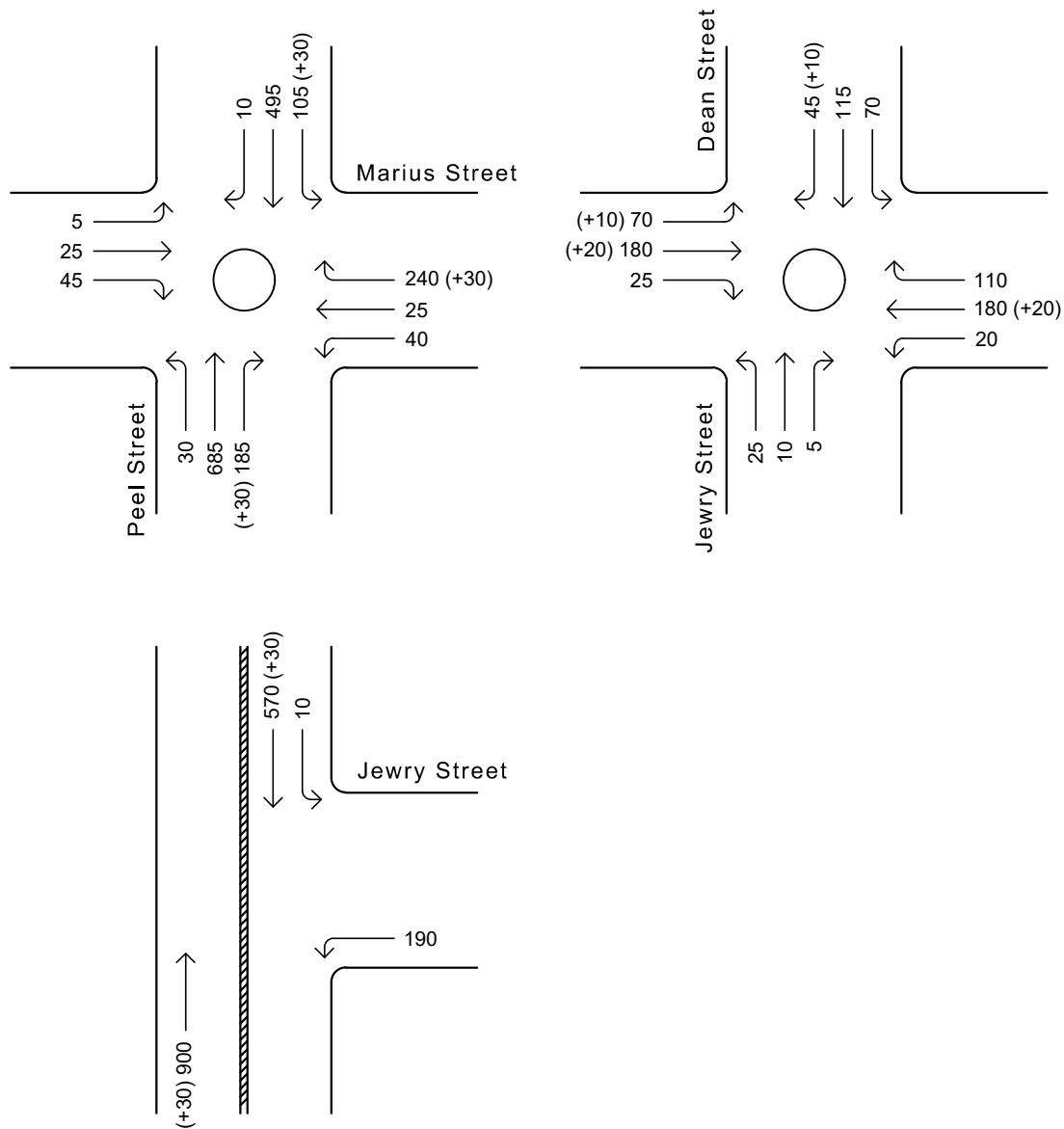
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Location Plan

Colston Budd Rogers & Kafes Pty Ltd

Drawn By: CBRK Pty Ltd_hs Ref: 11417 19.02.2020

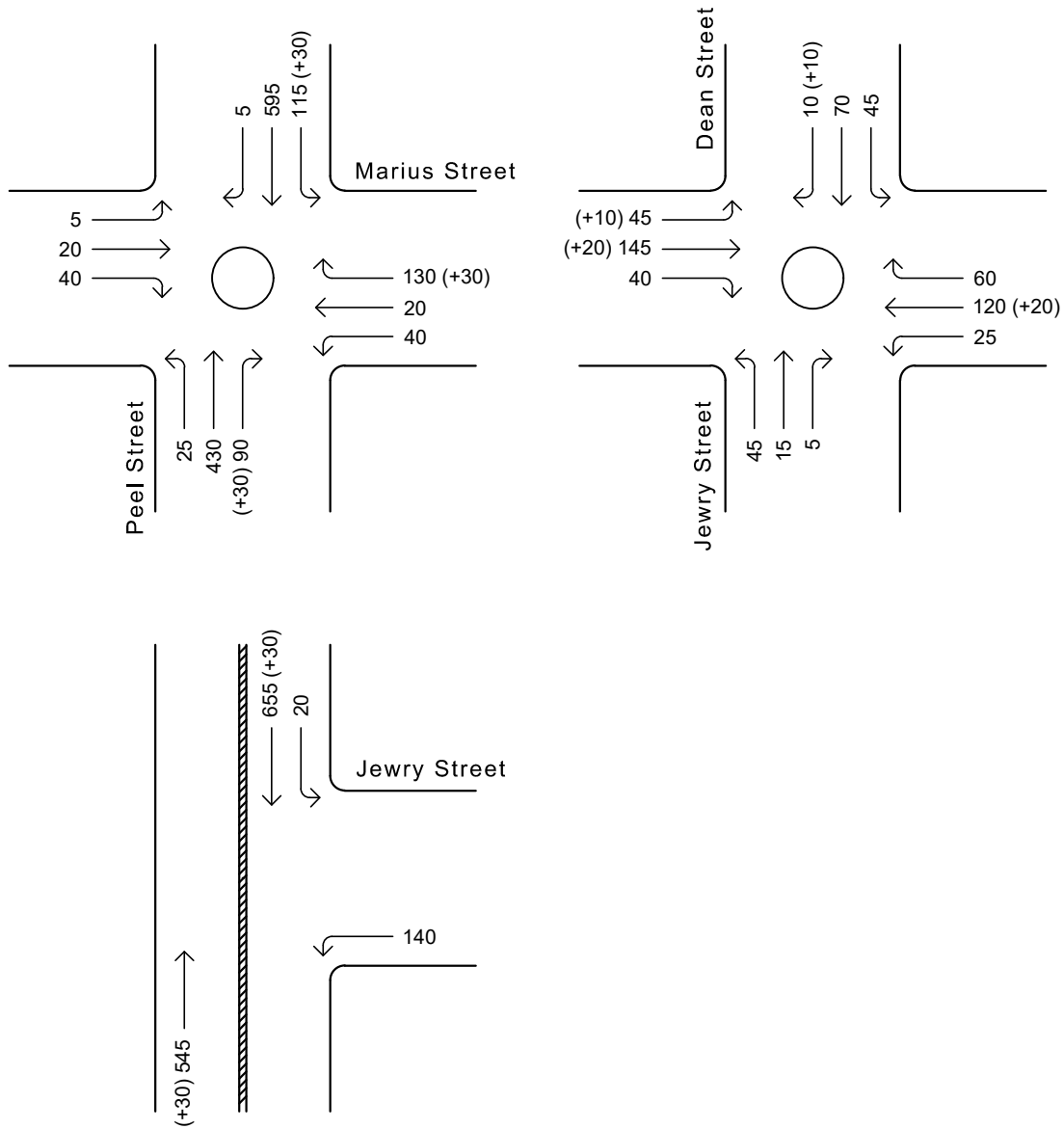
Figure 1



LEGEND

- 100 - Existing Hourly Traffic Flows
- (+10) - Additional Development Traffic
- - Roundabout

**Existing Friday afternoon
hourly traffic flows plus
development traffic
Figure 2**



LEGEND

- 100 - Existing Hourly Traffic Flows
- (+10) - Additional Development Traffic
- - Roundabout

**Existing Saturday lunchtime
hourly traffic flows plus
development traffic
Figure 3**