FABCOT PTY LTD

TRAFFIC REPORT FOR PROPOSED SUPERMARKET, LIQUOR STORE AND CAFE, MIRANDA

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1. INTRODUCTION

1.1 Colston Budd Rogers and Kafes Pty Ltd has been commissioned by Fabcot Pty Ltd to prepare a report examining the traffic implications of a proposed retail development in Miranda. The site is on the south-eastern corner of Parraweena Road and Kareena Road and is shown in Figure 1.

1.2 The site is currently occupied by commercial and industrial development. A planning proposal is being lodged for a supermarket of 3,800m^2, liquor store of 200m^2, café of 70m^2 and on-site car parking, with vehicular access from Parraweena Road and Kareena Road.

1.3 This report assesses the traffic implications of the proposed development through the following chapters:

- Chapter 2 - describing the existing conditions; and
- Chapter 3 - assessing the traffic implications of the proposed development.

2. EXISTING CONDITIONS

Site Location and Road Network

2.1 The site is at 130 – 142 Parraweena Road, on the south-eastern corner of the Parraweena Road/Kareena Road intersection, at Miranda. It is occupied by commercial/industrial development which has vehicular access from Parraweena Road and Kareena Road. The site location is shown in Figure 1.

2.2 There are retail uses on Parraweena Road east of Kareena Road and residential uses to the west. Further east, there are retail, industrial and bulky goods uses in Taren Point. South of the site there are commercial and industrial uses.

2.3 Parraweena Road connects Taren Point Road and employment areas in the east with Port Hacking Road in the west. It generally provides for one traffic lane and one parking lane in each direction, clear of intersections. There are traffic calming measures in place in the residential section, west of the site. It has a 50 kilometre per hour speed limit, and a 4.5 tonne load limit west of the site.

2.4 Kareena Road provides access to employment areas and residential properties. It provides for one traffic lane and one parking lane in each direction, clear of intersections. The intersection of Kareena Road with Parraweena Road is an unsignalised t-intersection, with Parraweena Road having priority.

2.5 South of the site, Kareena Road has an unsignalised intersection with The Boulevard. The Boulevard provides a significant east-west connection, with two traffic lanes and a bicycle lane in each direction, with parking permitted clear of intersections. There are right turn bays on The Boulevard for turns into both

sides of Kareena Road. Right turns from Kareena Road onto The Boulevard are not permitted.

2.6 Taren Point Road provides a major north-south road connection, connecting the Captain Cook Bridge with Taren Point and Caringbah. It generally provides a six lane divided carriageway, with three traffic lanes in each direction and parking permitted clear of intersections, outside peak periods. The intersection of Taren Point Road with Parraweena Road is controlled by traffic signals. Right turns from Parraweena Road (eastbound) and Taren Point Road (northbound) are not permitted.

2.7 West of the site, Port Hacking Road provides another major north-south link between the Princes Highway at Sylvania in the north and Miranda in the south. It generally provides a four to six lane divided carriageway, with two to three traffic lanes in each direction, and additional turn lanes at intersections. The intersection of Port Hacking Road with Parraweena Road is an unsignalised t-intersection controlled by stop signs. There is a right turn bay in Port Hacking Road for turns into Parraweena Road. Right turns from Parraweena Road are not permitted.

Traffic Flows

2.8 Traffic generated by the proposed development will have its greatest effects during weekday afternoon and Saturday lunchtime peak periods when it combines with other traffic on the surrounding road network. In order to gauge traffic conditions, counts were undertaken during weekday afternoon and Saturday lunchtime periods at the following intersections:

- Taren Point Road/Parraweena Road;

- Parraweena Road/Port Hacking Road;
- Parraweena Road/Kareena Road; and
- Kareena Road/The Boulevard.

2.9 The results of the surveys are shown in Figures 2 and 3 and summarised in Table 2.1. Taren Point Road, Port Hacking Road and The Boulevard carried some 2,150 to 3,600 vehicles per hour two-way during the weekday afternoon and Saturday lunchtime peak periods.

2.10 Parraweena Road carried lower flows of some 600 to 1,100 vehicles per hour two-way and Kareena Road carried some 150 to 400 vehicles per hour two-way during the surveyed peak hours.

Table 2.1: Existing two-way (sum of both directions) peak hour traffic flows

Road	Location	Weekday afternoon	Saturday lunchtime
Taren Point Road	North of Parraweena Road	3,570	3,505
	South of Parraweena Road	3,290	3,230
Port Hacking Road	North of Parraweena Road	2,140	2,565
	South of Parraweena Road	2,640	3,090
The Boulevard	East of Kareena Road	2,455	2,375
	West of Kareena Road	2,485	2,385
Parraweena Road	East of Taren Point Road	870	585
	East of Kareena Road	1,085	1,020
	East of Port Hacking Road	840	995
Kareena Road	South of Parraweena Road	180	180
	North of The Boulevard	170	140
	South of The Boulevard	390	240

Intersection Operations

2.11 The capacity of the road network is largely determined by the capacity of its intersections to cater for peak period traffic flows. The surveyed intersections shown in Figures 2 and 3 have been analysed using the SIDRA program.

2.12 SIDRA simulates the operations of intersections to provide a number of performance measures. The most useful measure provided is average delay per vehicle expressed in seconds per vehicle. 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:

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

2.13 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.

2.14 There are approved Bunnings and bulky goods developments east of the site, east of Taren Point Road. The analysis includes traffic from these developments.

2.15 The analysis found that with the above approved developments, the signalized intersection of Taren Point Road with Parraweena Road would operate with average delays of less than 40 seconds per vehicle during weekday afternoon and Saturday lunchtime peak periods. This represents level of service C, a satisfactory level of service.

2.16 The unsignalised intersection of Port Hacking Road with Parraweena Road would operate with average delays for the highest delayed movement of less than 35 seconds per vehicle during peak periods. This represents level of service C, a satisfactory level of service.

2.17 The unsignalised intersections of Kareena Road with Parraweena Road and The Boulevard would operate with average delays for the highest delayed movements of less than 30 seconds per vehicle during peak periods. This represents level of service C, a satisfactory level of service.

Public Transport

2.18 Local bus services are provided by Transdev ad Sydney Buses. Services operate along Parraweena Road, adjacent to the site and Taren Point Road and Port Hacking Road, east and west of the site.

2.19 Route 477 operates along Taren Point Road and connects Miranda with Taren Point, Sans Souci, Ramsgate, Kogarah and Rockdale. Services are every 30 minutes in each direction, Monday to Saturday and every 60 minutes in each direction on Sundays.

2.20 Route 971 operates along Port Hacking Road and connects Cronulla with Miranda, Port Hacking Road and Hurstville. Services are every 30 minutes in each direction, Monday to Saturday, and every 60 minutes in each direction on Sundays. During weekday peak periods, services are more frequent.

2.21 Route 986 operates along Parraweena Road and connects Miranda with North Miranda via Sutherland Hospital. Two services are provided in each direction on weekdays.

2.22 The site is therefore accessible by public transport.

3. IMPLICATIONS OF PROPOSED DEVELOPMENT

3.1 The planning proposal would provide for a supermarket of 3,800m^2, liquor store of 200m^2, café of 70m^2 and on-site car parking, with vehicular access from Parraweena Road and Kareena Road. This chapter assesses the implications of the proposed development through the following sections:

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

Public Transport

3.2 As previously discussed, the site is close to bus services which operate along Taren Point Road, Parraweena Road and Port Hacking Road. These services offer alternatives to travel by modes other than car, particularly for employees.

3.3 The proposed development would provide employment opportunities and retail facilities close to public transport services. The proposal would therefore strengthen demand for these services. The proposed development is therefore consistent with government policy and the planning principles of:

(a) improving accessibility to employment and services by walking, cycling, and public transport;

(b) improving the choice of transport and reducing dependence solely on cars for travel purposes;

(c) supporting the efficient and viable operation of public transport services; and

(d) moderating growth in the demand for travel and the distances travelled, especially by car.

Parking Provision

3.4 Chapter 35 of the draft Sutherland Shire Council Development Control Plan 2015 (Roads, Vehicular Access, Traffic, Parking and Bicycles) indicates that retail development should provide parking at a minimum rate of one space per 30m^2 GFA.

3.5 On this basis, the development would require a minimum of 136 spaces. The proposed development will provide some 200 spaces which satisfies this requirement. Appropriate disabled parking will be included in this provision.

3.6 The DCP includes a motor cycle parking requirement of one space per 25 car spaces. On this basis, six motor cycle spaces would be required. At least six motor cycle spaces will be provided in accordance with the DCP.

3.7 The DCP incudes a bicycle parking requirement of one space per 10 car spaces. On this basis, a minimum of 20 bicycle parking spaces would be required. 20 bicycle spaces will be provided in accordance with the DCP.

Access, Servicing and Internal Layout

3.8 Vehicular access is proposed to be provided from Parraweena Road and Kareena Road for customers and service vehicles respectively. Driveway widths will be

provided 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 – 2002, to accommodate cars and service vehicles.

3.9 The on site parking will be provided at grade. Parking space dimensions, aisle widths and internal circulation will be provided in accordance with AS 2890.1:2004.

3.10 The development will be serviced by vehicles ranging in size up to 19 metre semi-trailers and 12.5 metre rigid trucks. The design will provide for service vehicles to enter the site from Kareena Road, manoeuvre into the loading dock and exit in a forward direction.

Traffic Generation and Effects

3.11 Traffic generated by the proposed development will have its greatest effects during weekday afternoon and Saturday lunchtime peak periods when it combines with other traffic on the surrounding road network. The RMS "Guide to Traffic Generating Developments" incudes the following traffic generation rates for supermarkets and specialty retail:

- supermarkets: 15.5 and 14.7 vehicles per hour per 100m^2 two-way during weekday afternoon and Saturday peak hours respectively; and

- specialty retail: 4.6 and 10.7 vehicles per hour per 100m^2 two-way during weekday afternoon and Saturday peak hours respectively.

3.12 On this basis, the development would generate some 600 vehicles per hour two-way during Thursday afternoon and Saturday peak hours.

3.13 The RMS guidelines suggest that 25 per cent of visits are likely to be passing trade, i.e. customers who would have driven past the site regardless of their visit to the site. We have used this percentage.

3.14 The additional traffic has been assigned to the road network. Existing two-way peak hour traffic flows plus the additional traffic from the proposed development are shown in Figures 2 and 3, and summarised in Table 3.1.

Table 3.1: Existing two-way peak hour traffic flows plus development traffic

Road	Location	Weekday afternoon		Saturday lunchtime	
		Existing	Plus development	Existing	Plus development
Taren Point Road	North of Parraweena Road	3,570	+90	3,505	+90
	South of Parraweena Road	3,290	+40	3,230	+40
Port Hacking Road	North of Parraweena Road	2,140	+50	2,565	+50
	South of Parraweena Road	2,640	+60	3,090	+60
The Boulevard	East of Kareena Road	2,455	+80	2,375	+80
	West of Kareena Road	2,485	+40	2,385	+40
Parraweena Road	East of Taren Point Road	870	+40	585	+40
	East of Kareena Road	1,085	+290	1,020	+290
	East of Port Hacking Road	840	+110	995	+110
Kareena Road	South of Parraweena Road	180	+120	180	+120
	North of The Boulevard	170	+120	140	+120
	South of The Boulevard	390	-	240	-

3.15 Table 3.1 shows that traffic increases on Parraweena Road would be some 40 to 290 vehicles per hour two-way during peak hours. Increases on Taren Point Road, Port Hacking Road, The Boulevard and Kareena Road would be lower at some 40 to 120 vehicles per hour two-way.

3.16 The intersections previously analysed in Chapter 2 have been re-analysed with SIDRA for the additional development traffic flows shown in Figures 2 and 3. The analysis found that the intersection of Taren Point Road with Parraweena Road would continue to operate with average delays of less than 40 seconds per vehicle during weekday afternoon and Saturday peak periods. This represents level of service C, a satisfactory level of service.

3.17 The intersection of Port Hacking Road with Parraweena Road would operate with average delays for all movements of less than 35 seconds per vehicle during peak periods. This represents level of service C, a satisfactory level of service.

3.18 The intersections of Kareena Road with Parraweena Road and The Boulevard would continue to operate with average delays for the highest delayed movements of less than 30 seconds per vehicle during peak periods. This represents level of service C, a satisfactory level of service.

3.19 The site access points on Parraweena Road would operate with average delays for the highest delayed movement of less than 28 seconds per vehicle during peak periods. This represents level of service B, a reasonable level of service.

3.20 Therefore, the road network will be able to cater for the additional traffic from the proposed development.

Summary

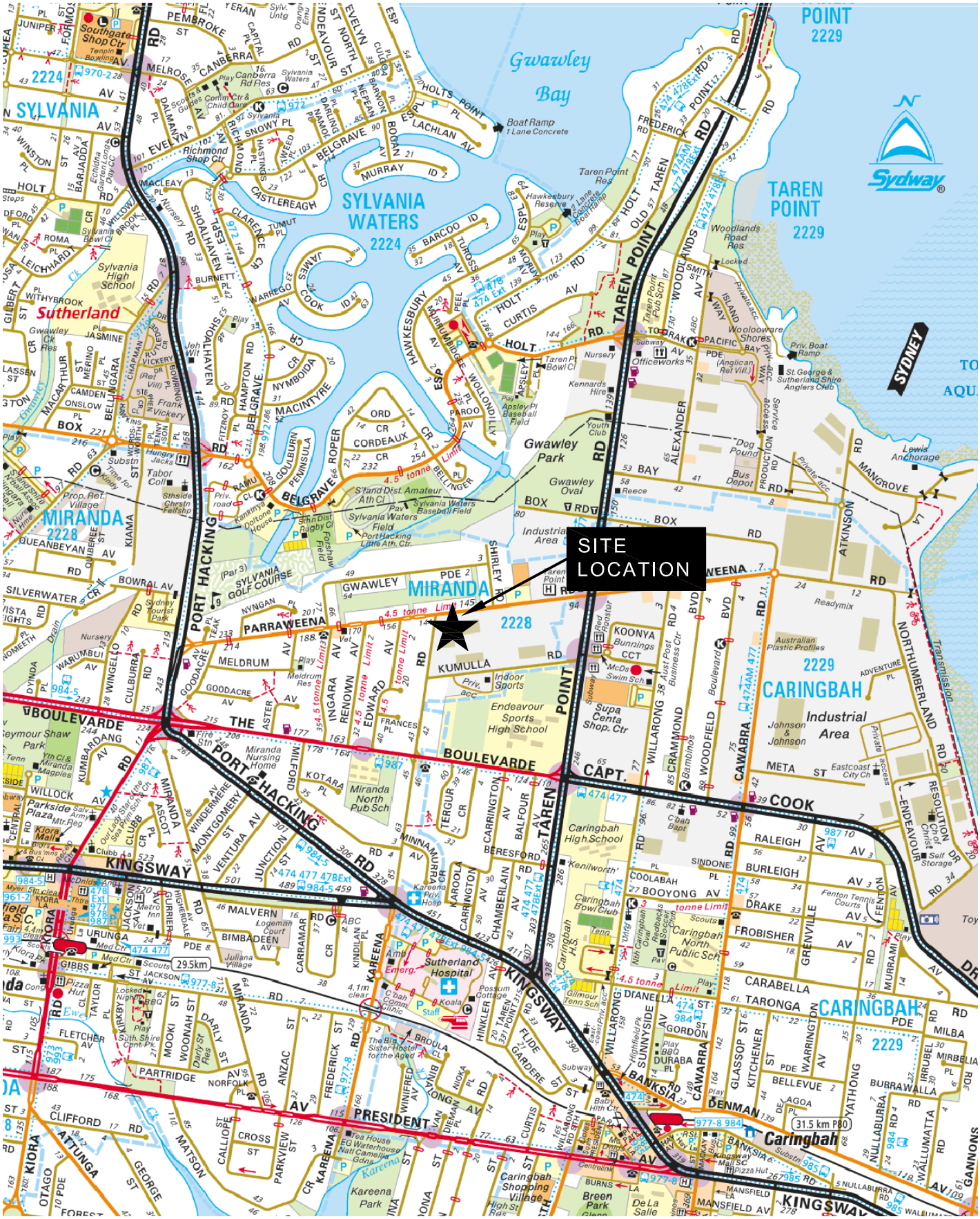
3.21 In summary, the main points relating to the traffic implications of the proposed development are as follows:

i) the proposed development would be accessible by public transport services;

ii) appropriate parking will be provided;

iii) access, servicing and internal layout will be provided in accordance with AS 2890.1:2004 and AS 2890.2 – 2002; and

iv) the road network will be able to accommodate the additional traffic from the proposed development.



Location Plan

Colston Budd Rogers & Kafes Pty Ltd

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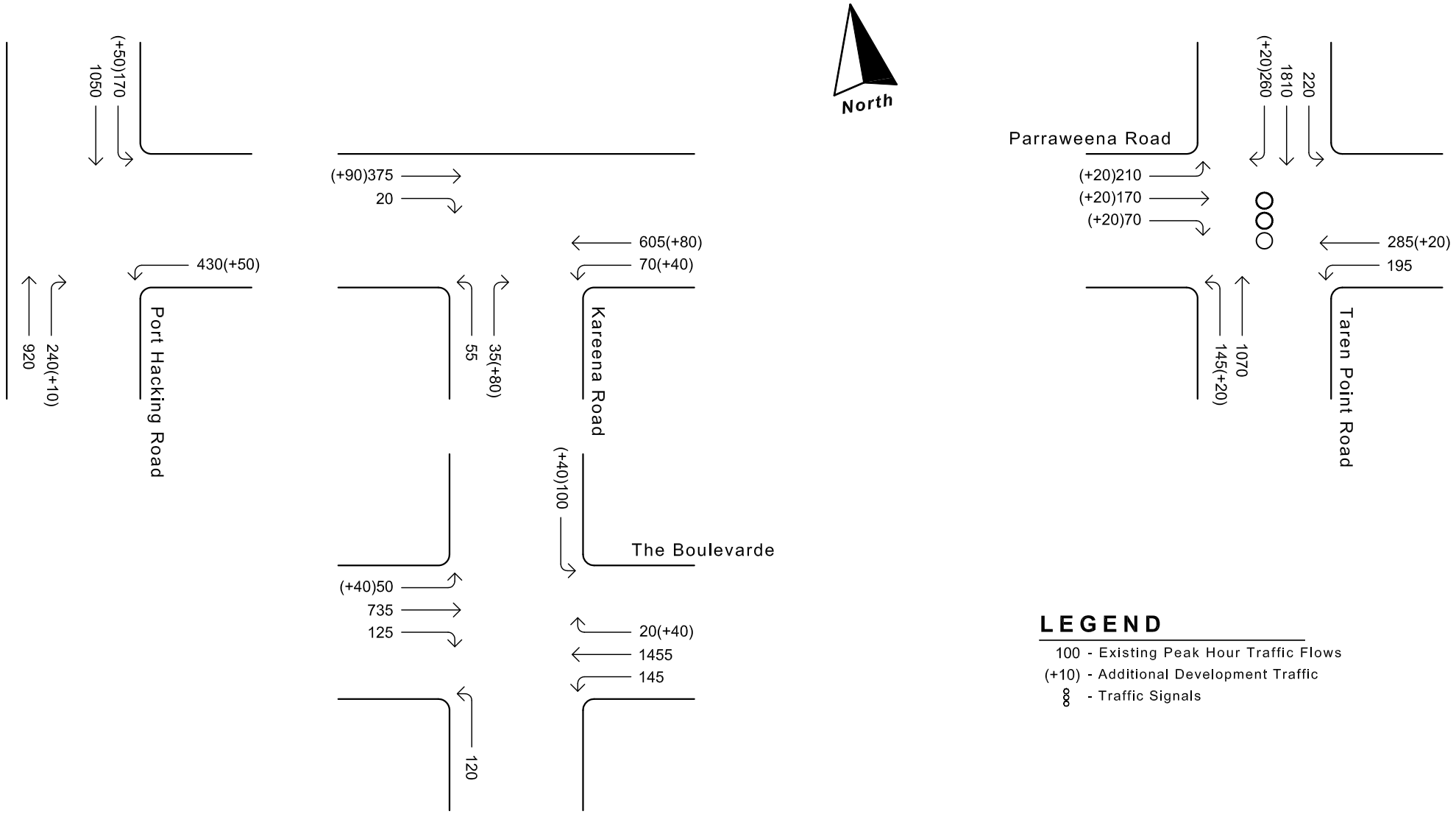
Figure 1



Existing Thursday afternoon peak hour traffic flows plus development traffic

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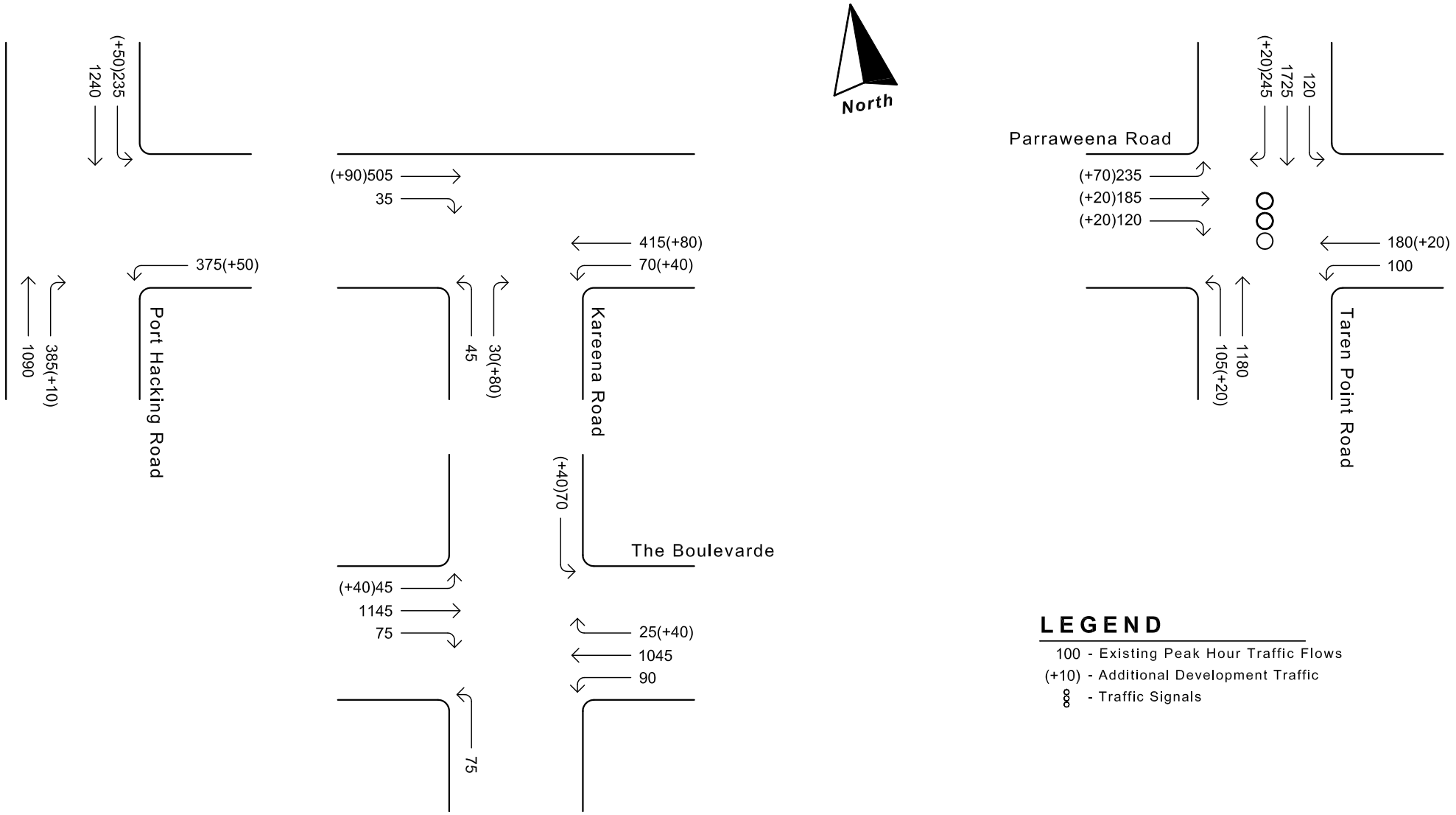
Figure 2



Existing Saturday midday peak hour traffic flows plus development traffic

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Figure 3