HARNESS RACING NSW

TRAFFIC AND PARKING REPORT FOR PROPOSED HARNESS RACING FACILITY, CARTWRIGHTS HILL

FEBRUARY 2014

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1. INTRODUCTION

1.1 Colston Budd Hunt and Kafes Pty Ltd has been commissioned by Harness Racing NSW to prepare a report examining the traffic and parking implications of a proposed harness racing complex at Cartwrights Hill. The site is on the northern side of Cooramin Street, west of Hampden Avenue, as shown in Figure 1.

1.2 The site is currently vacant. The proposed harness racing facility will replace the existing facility in Turvey Park to the south.

1.3 The traffic and parking implications of the proposed development are assessed through the following chapters:

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

2. EXISTING CONDITIONS

Site Location and Road Network

2.1 The site is lots 1-6 and 19-24 in DP 2655 at Cartwrights Hill, as shown in Figure 1. It is on the northern side of Cooramin Street and west of Hampden Avenue. The site is currently vacant. Surrounding land use is generally rural and rural-related businesses.

2.2 Cooramin Street is a two lane two-way unsealed road which provides access to rural properties. It intersects Hampden Avenue at a four way priority controlled intersection.

2.3 Hampden Avenue is a two lane two-way rural road with sealed shoulders and an 80 kilometre per hour speed limit. North of Cooramin Street it provides a 60 kilometre per hour speed limit. It provides access to rural properties.

2.4 North of the site, Hampden Avenue intersects Horseshoe Road at an unsignalised t-intersection. There are give way controls on the Horseshoe Road approach to the intersection. Horseshoe Road is a two lane two-way road with a 60 kilometre per hour speed limit. It provides access to tourist accommodation and rural properties.

2.5 West of Hampden Avenue, Horseshoe Road connects to the Olympic Highway at a roundabout. Coolamon Road provides a fourth (western) approach to the roundabout. The Olympic Highway provides one traffic lane in each direction with sealed shoulders. It connects to Junee and Temora to the north.

2.6 South of the site, Hampden Avenue intersects with Mill Street at an unsignalised t-intersection controlled by give way signs, with Hampden Avenue having priority. There is a right turn bay in Hampden Avenue and separate left and right turn lanes in Mill Street at the intersection. Mill Street provides a connection to Oura, Wantabadgery and Gundagai. It provides a 60 kilometre per hour speed limit with one traffic lane in each direction. There is a connection to Marah Street which forms a fourth (western) approach to the intersection.

Race Meet Parking Conditions

2.7 In order to gauge parking conditions on a race day, we have undertaken counts of the number of vehicles parked at the existing facility in Turvey Park on Sunday 12th January 2014. This was a day meeting with eight races held. The results of the surveys are summarised in Table 2.1.

Table 2.1: Number of parked vehicles on Sunday 12 January

Time	Number of parked vehicles
11:00 am	20
12:00 pm	13
1:00	31
2:00	91
3:00	78
4:00	133
5:00	116
6:00	96

2.8 Table 2.1 shows that the peak parking demand at the existing facility on the race day was 133 vehicles, at 4:00 pm. Of the 133 vehicles at 4:00 pm, some 45 were horse floats and the remainder was cars.

Traffic Flows

2.9 The Wagga Harness Racing Club's usual meeting day is Friday. Traffic generated by the proposed development will have its greatest effects during Friday afternoon periods when it combines with other traffic on the surrounding road network. In order to gauge traffic conditions, counts were undertaken on a Friday afternoon (7 February 2014) at the following intersections:

- Olympic Highway/Horseshoe Road/Coolamon Road;
- Hampden Avenue/Horseshoe Road;
- Hampden Avenue/Cooramin Street; and
- Hampden Avenue/Mill Street/Marah Street.

2.10 The results of the surveys are shown in Figure 2, and summarised in Table 2.2.

Table 2.2: Existing two-way (sum of both directions) peak hour traffic flows

Road	Location	Afternoon peak hour
Olympic Highway	North of Horseshoe Road	430
	South of Horseshoe Road	550
Coolamon Road	West of Olympic Highway	315
Horseshoe Road	East of Olympic Highway	125
	West of Hampden Avenue	130
Hampden Avenue	North of Horseshoe Road	120
	North of Cooramin Street	265
	South of Cooramin Street	275
	North of Mill Street	320
	South of Mill Street	660
Cooramin Street	East of Hampden Avenue	15
	West of Hampden Avenue	4
Mill Street	East of Hampden Avenue	450
Marah Street	West of Hampden Avenue	30

2.11 Table 2.2 shows that The Olympic Highway, Coolamon Road, Mill Street and Hampden Avenue (south of Horseshoe Road) carried some 250 to 700 vehicles per hour two-way during the surveyed afternoon peak hour. Flows on Horseshoe Road and Hampden Avenue (north of Horseshoe Road) were lower at some 120 to 130 vehicles per hour two-way. Marah Street and Cooramin Street carried low flows of less than 50 vehicles per hour two-way.

Intersection Operations

2.12 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 Figure 2 have been analysed using the SIDRA computer program. SIDRA analyses 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

ρ 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 The analysis found that the roundabout controlled intersection of Olympic Highway with Horseshoe Road and Coolamon Road operates with average delays of less than 20 seconds per vehicle during the afternoon period. This represents level of service B, a good level of service.

2.15 The unsignalised intersections of Hampden Avenue with Horseshoe Road, Cooramin Street and Mill Street/Marah Street operate with average delays for all movements of less than 15 seconds per vehicle during the afternoon period. This represents levels of service A/B, a good level of service.

3. IMPLICATIONS OF PROPOSED DEVELOPMENT

3.1 The proposed harness racing facility will replace the existing facility in Turvey Park. The proposed facilities include a trotting track, clubhouse/marquee, stables, parade ring and on-site parking. Vehicular access is proposed from Cooramin Street, which will be sealed between Hampden Avenue and the site access points.

3.2 This chapter assesses the implications of the proposed development through the following sections:

- parking provision;
- access, internal circulation and layout;
- traffic generation and effects; and
- summary.

Site Operations

3.3 The harness racing event calendar indicates that some one to five meetings are typically held per month. These can be on weekdays or weekends during the day, twilight or night. Race meets can be regular meets or trials which typically attract a lower attendance.

3.4 The usual meeting days are Fridays, with other meeting days including Saturdays, Sundays and occasionally other weekdays. The number of races at a meet can vary but is typically between some six and 10, with eight being typical.

3.5 People attending a race meeting arrive prior to their races and are able to leave once their commitments are completed.

3.6 The applicant expects that the activities at the proposed facility will be similar to those at the existing facility. Most people attending a race day are owners/trainers and those associated with the organization of the race meeting. The number of spectators attending is typically small.

Parking Provision

3.7 As previously discussed, the peak parking demand measured at the existing facility was 133 cars on a race day, including some 90 cars and 45 horse floats.

3.8 The proposed parking provision at the facility is 210 spaces comprising 150 spaces for cars plus 60 spaces trucks/trailers/horse floats. The proposed provision will therefore readily cater for the parking demands on race days.

Access, Internal Circulation and Layout

3.9 Vehicular access to the site is proposed to be provided from Cooramin Street. Two driveways are proposed: one to the truck/trailer/horse float parking areas and one to the general car parking area. An internal connection will be provided between the two parking areas.

3.10 The driveways will cater for two-way traffic and 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 cater for the size and type of vehicles proposed. Vehicles will be able to enter and exit the site in a forward direction.

3.11 The larger vehicle parking area will provide for vehicles ranging in size up to small semi trailers. Spaces will be 15 metres long and 3.5 metres wide. These spaces will cater for cars/trailers, rigid trucks and small semi trailers.

3.12 Within the general car park, parking spaces will be 2.5 metres wide by 5.4 metres long, with two-way circulation aisles a minimum of 6.5 metres wide. These dimensions are considered appropriate, being in accordance with AS 2890.1:2004.

Traffic Generation and Effects

3.13 Traffic counts undertaken at the existing facility on a race day indicated a peak hour traffic generation of some 130 vehicles per hour two-way (some 100 in and 30 out). This generation occurred earlier during the event when people were arriving. As noted above, people are able to leave the event once their commitments are completed, for example, following the completion of a race. Our traffic counts recorded lower generations later in the day.

3.14 We have assessed a traffic generation of 130 vehicles per hour two-way. The additional traffic has been assigned to the road network. Existing peak hour traffic flows plus the additional traffic from the proposed development are shown in Figure 2, and summarized in Table 3.1.

3.15 Traffic increases in Cooramin Street, from where access is proposed, would be some 130 vehicles per hour two-way at peak times. Increases on Olympic Highway, Coolamon Road, Horseshoe Road, Hampden Avenue and Mill Street would be lower at some 10 to 75 vehicles per hour two-way.

Table 3.1: Existing two-way (sum of both directions) peak hour traffic flows

Road	Location	Afternoon peak hour	
		Existing	Plus development
Olympic Highway	North of Horseshoe Road	430	+25
	South of Horseshoe Road	550	+25
Coolamon Road	West of Olympic Highway	315	+15
Horseshoe Road	East of Olympic Highway	125	+65
	West of Hampden Avenue	130	+65
Hampden Avenue	North of Horseshoe Road	120	+10
	North of Cooramin Street	265	+75
	South of Cooramin Street	275	+55
	North of Mill Street	320	+55
	South of Mill Street	660	+40
Cooramin Street	East of Hampden Avenue	15	-
	West of Hampden Avenue	4	+130
Mill Street	East of Hampden Avenue	450	+15
Marah Street	West of Hampden Avenue	30	-

3.16 The intersections previous analysed in Chapter 2 have been re-analysed with SIDRA for the additional development traffic flows shown in Figure 2. The analysis found that the intersection of Olympic Highway with Horseshoe Road and Coolamon Road would continue to operate with average delays of less than 20 seconds per vehicle during the afternoon period. This represents level of service B, a good level of service.

3.17 The unsignalised intersections of Hampden Avenue with Horseshoe Road, Cooramin Street and Mill Street/Marah Street would continue to operate with average delays for all movements of less than 15 seconds per vehicle during the afternoon period. This represents levels of service A/B, a good level of service.

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

Summary

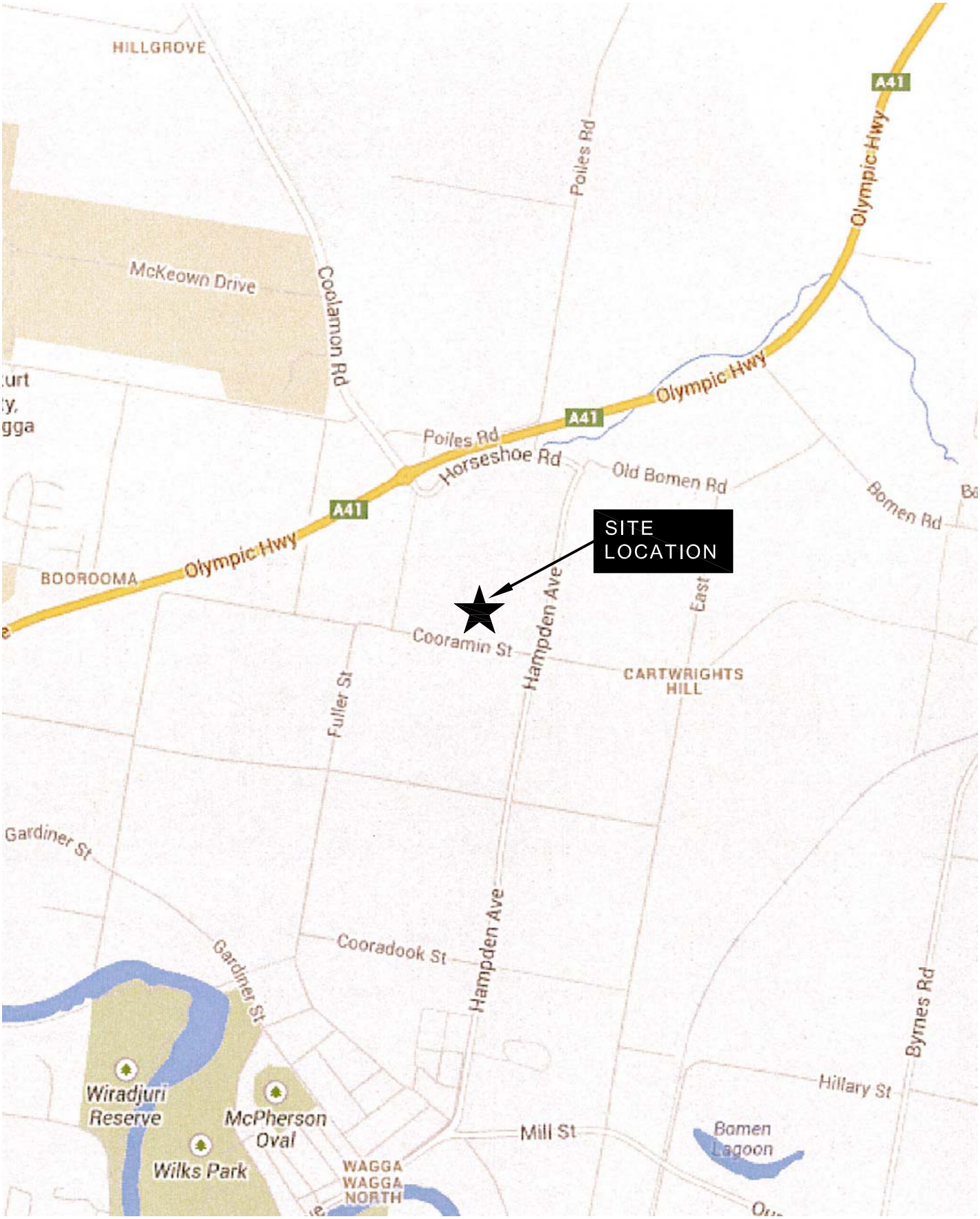
3.19 In summary, the main points relating to the implications of the proposed harness racing facility are as follows:

i) the proposed facility would replace the existing facility in Turvey Park;

ii) the proposed parking provision is considered appropriate;

iii) vehicular access, internal circulation and layout are considered appropriate; and

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



Location Plan

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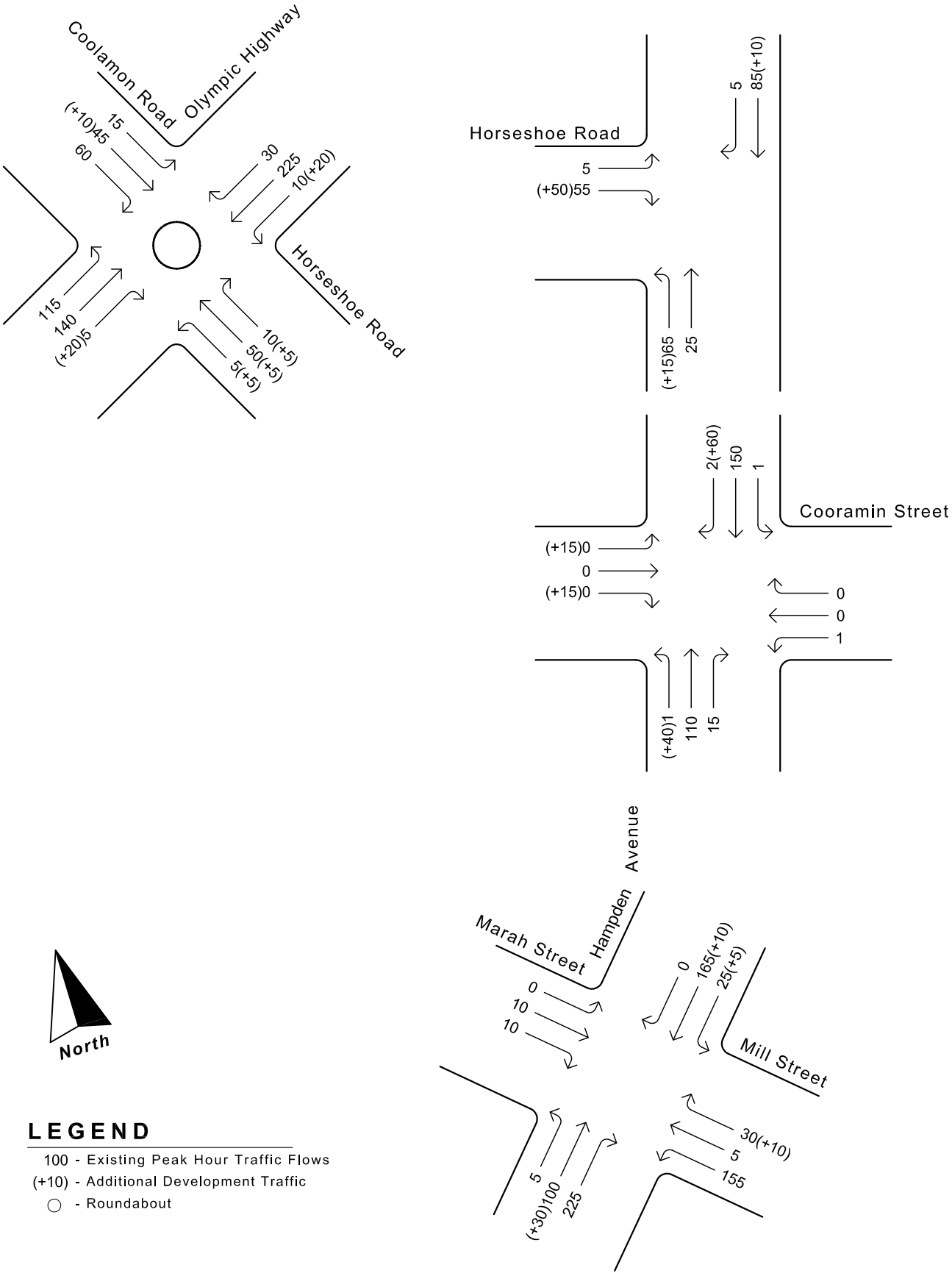
Figure 1



Existing weekday afternoon peak hour traffic flows plus development traffic

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Figure 2