GOODMAN LIMITED

TRAFFIC REPORT FOR PROPOSED PREFORM INJECTION MOULDING PLANT AT COCA-COLA AMATIL SITE, ROUSSELL ROAD, EASTERN CREEK

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1. INTRODUCTION

1.1 Colston Budd Hunt & Kafes Pty Ltd has been commissioned by Goodman Limited to prepare a report examining the traffic and parking implications of the proposed preform injection moulding plant at the existing Coca-Cola Amatil distribution facility in Eastern Creek. This report supports the Part 3A application.

1.2 The site is located within the M7 industrial precinct at Eastern Creek, which is bounded by Wallgrove Road to the east and Old Wallgrove Road to the north and west. The site is located on the southern side of Roussell Road, west of Wallgrove Road, as shown on Figure 1.

1.3 The proposed development involves the construction of a new preform injection moulding plant within the south-eastern corner of the existing distribution centre. The proposed development will be integrated with the existing Coca-Cola Amatil distribution facility with access from Roussell Road.

1.4 The Director-General's requirements for the project include:-

"Traffic – an assessment that includes:

- *details of the proposed access and parking arrangements on site;*
- *details of the traffic volumes likely to be generated during construction and operation;*
- *an assessment of the predicted impacts of this traffic on the safety and efficiency of the surrounding road network specifically the Roussell Road/Wallgrove Road intersection;*

- *details of any proposed road upgrade works, the measures that would be implemented to ensure that the relevant road network is appropriately maintained during the life of the project;*

- *an assessment of cumulative impacts.*

During the preparation of the Environmental Assessment, you should consult with the relevant local, State andr Commonwealth Government authorities, service providers, community groups and affected landowners.

In particular you must consult with the:

- *Blacktown City Council;*
- *Department of Environment, Climate Change and Water;*
- *NSW Office of Water; and*
- *Roads and Traffic Authority.*

The consultation process and the issues raised must be described in the Environmental Assessment.

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

- Chapter 2 - describing existing conditions; and

- Chapter 3 - assessing the implications of the proposed development.

2. EXISTING CONDITIONS

Site Location

2.1 The site of the proposed development is located on the southern side of Roussell Road, west of Wallgrove Road, as shown on Figure 1. The site is occupied by an existing Coca-Cola Amatil distribution facility, located within the southern part of the M7 industrial precinct at Eastern Creek. The industrial area is bounded by Wallgrove Road to the east, Old Wallgrove Road to the north and west, and the Warragamba – Prospect water supply pipeline to the south.

2.2 The existing Coca-Cola Amatil distribution facility is located on a site of some 15ha, with access provided via two driveways on the southern side of Roussell Road. Service vehicle access and the main security gatehouse to the distribution facility are located adjacent to the eastern boundary of the site. Separate car park access is provided via a combined entry and exit driveway off the existing turning area at the western end of Roussell Road.

2.3 Surrounding land use in the vicinity of the site is primarily industrial, comprising a mix of warehouse, distribution and business park uses.

Road Network

2.4 The road network in the vicinity of the site includes the M4 and M7 Motorways, Wallgrove Road, Old Wallgrove Road, Roussell Road, Clay Place and Shale Place. The M4 Motorway is located to the north of the site and provides a major east-west arterial (RTA State Road) traffic route running from Strathfield in the east to Blue Mountains in the west. It provides a divided carriageway with three traffic

lanes in each direction. The M4 intersects with the M7 Motorway at a major grade separated intersection.

2.5 The M7 Motorway is located to the east of the site and provides a major north-south arterial (RTA State Road) traffic route running from the M2 Motorway at Baulkham Hills in the north east to the M5 Motorway at Casula in the south. It provides a divided carriageway with generally two traffic lanes in each direction.

2.6 Wallgrove Road is located to the east of the site adjacent to the M7 Motorway. It provides a north-south traffic route from the Great Western Highway to Elizabeth Drive at Cecil Hills. Adjacent to the site it provides a two lane undivided road. To the north of Old Wallgrove Road it provides an undivided road with two traffic lanes in each direction, clear of intersections. Wallgrove Road intersects with Roussell Road at a traffic signal controlled intersection.

2.7 Old Wallgrove Road is located to the north of the site and provides access to the northern part of the Eastern Creek industrial area. It intersects with Wallgrove Road at a signalised intersection and provides one traffic lane and one parking lane in each direction, clear of intersections.

2.8 Roussell Road is located adjacent to the northern boundary of the site and provides the main access road servicing the southern part of the Eastern Creek industrial area from Wallgrove Road. Roussell Road provides an undivided industrial road with one traffic lane and one parking lane in each direction clear of intersections. Roussell Road intersects with Shale Place and Clay Place at a roundabout controlled intersection.

2.9 Clay Place and Shale Place are industrial roads located within the industrial precinct. They provide access to a number of industrial developments to the north and south of Roussell Road respectively. Clay Place and Shale Place are no

through roads with one traffic lane in each direction and kerbside parking permitted clear of intersections. Turnaround facilities for large service vehicles are available at the end of Roussell Road, Clay Place and Shale Place.

Traffic Flows

2.10 Traffic generated by the proposed development will have its greatest effects during the morning and afternoon peak periods, when traffic from the proposed development combines with other industrial and commuter traffic on the surrounding road network. In order to gauge traffic conditions, counts were undertaken during the morning (7.00am to 10.00am) and afternoon (1.00pm to 6.00pm) peak periods at the following intersections:-

- Wallgrove Road/Roussell Road; and
- Roussell Road/Clay Place/Shale Place;.

2.11 The results of the surveys (morning 7.45am to 8.45am and afternoon 2.30pm to 3.30pm) are shown on Figures 2 and 3, and summarised in Table 2.1.

Table 2.1: Existing Two-Way (Sum of Both Directions) Peak Hour Traffic Flows

Road/Location	Morning (Vehicles /Hour)	Afternoon (Vehicles /Hour)
Wallgrove Road		
- north of Roussell Road	1875	2080
- south of Roussell Road	1835	2000
Roussell Road		
- west of Wallgrove Road	180	200
- west of Clay Place	70	75
Clay Place		
- north of Roussell Road	75	70
Shale Place		
- south of Roussell Road	55	70

2.12 Table 2.1 shows that Wallgrove Road carried traffic flows of some 1800 to 1900 vehicles per hour two-way during the morning peak hour period and some 2000 to 2100 vehicles per hour during the afternoon peak hour period.

2.13 Traffic flows on Roussell Road, between Wallgrove Road and Clay Place, were some 180 to 200 vehicles per hour two-way during peak periods. West of Clay Place, flows were lower at some 70 to 80 vehicles per hour two-way.

2.14 Peak hour traffic flows on Clay Place and Shale Place were found to be some 50 to 80 vehicles per hour two-way during the morning and afternoon peak periods.

2.15 Surveys undertaken of the current site operation during the morning and afternoon peak periods indicated a traffic generation of some 45 vehicles per hour two-way during the morning peak (comprising some 25 truck movements two-way and some 20 car movements two-way). During the afternoon peak period the site was observed to generate some 50 vehicles per hour two-way (comprising some 15 truck movements two-way and some 35 car movements two-way).

2.16 The peak traffic generation of the staff car park did not coincide with the morning and afternoon peak periods. The car park was observed to generate some 50 to 60 vehicles per hour two-way at the start (5.00am to 6.00am) and end (2.00pm to 3.00pm) of the main day time shift period.

Intersection Operation

2.17 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 of

Wallgrove Road/Roussell Road and Roussell Road/Clay Place/Shale Place have been analysed using the SIDRA program.

2.18 The SIDRA program 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 roundabouts, 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 the 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

2.19 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.

2.20 The SIDRA analysis found that the signalised intersection of Wallgrove Road and Roussell Road is operating with average delays of less than 25 seconds per vehicle during the morning and afternoon peak periods. This represents a level of service B, which is a good level of intersection operation.

2.21 The roundabout controlled intersection of Roussell Road/Clay Place/Shale Place is operating with average delays for the movement with the highest average delay of less than 15 seconds per vehicle during peak periods. This represents a level of service A/B, which is a good level of intersection operation.

Public Transport

2.22 Local bus services are provided by Busways. Bus route 738 – Mount Druitt to Eastern Creek Business Park, operates Mondays to Fridays and links the Eastern

Creek industrial precinct to Mount Druitt Railway Station. The bus service operates along Wallgrove Road and Old Wallgrove Road, to the north of the site, with limited services to the south of Old Wallgrove Road linking to Horsley Park. This bus service operates on a 20 to 30 minute service frequency during peak periods.

2.23 Passengers can transfer from bus to rail services at Mount Druitt Railway Station, allowing access to the surrounding Sydney metropolitan rail network.

3. IMPLICATIONS OF PROPOSED DEVELOPMENT

3.1 It is proposed to construct a new preform injection moulding plant within the south-eastern corner of the existing Coca-Cola Amatil distribution centre. The proposed development will be integrated with the existing facility with access available from Roussell Road.

3.2 The existing distribution facility will continue to operate on the site with the main loading docks and product dispatch area located on the southern side of the warehouse building.

3.3 The proposed new preform injection moulding plant will incorporate a building footprint of some 10,000m^2 and will provide technical facilities, production and manufacturing area and associated storage and staging of the finished product. The plant will operate 24 hours per day (two 12 hour shifts) with up to 16 personnel during the day shift and four personnel during the evening shift.

3.4 The implications of the proposed development are assessed through the following sections:-

- public transport;
- work place travel plan;
- parking provision;
- access arrangements;
- internal circulation and servicing;
- pedestrian measures;
- traffic effects;
- Director General's requirements; and
- summary.

Public Transport

3.5 The proposed development would increase employment densities and strengthen demand for existing public transport services in the area. This is consistent with government objectives.

3.6 These objectives are to ensure that urban structure, built forms, land use locations, development designs, subdivision locations and street layouts help achieve the following planning principles:-

(a) improving accessibility to housing, 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) moderating growth in the demand for travel and the distances travelled, especially by car; and

(d) supporting the efficient and viable operation of public transport services.

Work Place Travel Plan

3.7 To encourage travel modes other than private vehicle, it is proposed to adopt a travel demand management approach, through a work place travel plan to meet the needs of the site and employees. The specific requirements and needs of the tenant and employees, hours of work, shift times, etc., will be incorporated in the work place travel plan to encourage the use of public transport.

3.8 The principles of the work place travel plan, to be developed in consultation with Council, RTA and other stakeholders, will include the following:-

- encourage the use of public transport;
- encourage public transport by employees through the provision of information, maps and timetables;
- raise awareness of health benefits of walking (including maps showing safe walking routes);
- encourage cycling by providing safe and secure bicycle parking, including the provision of lockers and change facilities;
- provide parking consistent with the government's objective of reducing traffic generation and encouraging public transport.

3.9 The travel plan may take a variety of forms including a green transport plan or company travel plan. The work place travel plan will assist in delivering sustainable transport objectives by considering the means available for reducing dependence solely on cars for travel purposes, encouraging the use of public transport and supporting the efficient and viable operation of public transport services.

Parking Provision

3.10 Blacktown City Council's SEPP 59 – Eastern Creek Precinct Plan specifies the following requirements for the provision of on-site parking for industrial and commercial developments:-

- Industrial
  - Buildings 7,500m^2 or less – 1 space per 100m^2 GFA;

- Buildings greater than 7,500m^2 – 1 space per 200m^2 GFA only for the area in excess of 7,500m^2 where there is a specific end user which would not demand a higher rate and where employee parking is adequately catered for;

- Commercial/Office

  - 1 space per 40m^2 GFA.

3.11 However, for the proposed development it is considered that adoption of these parking rates will result in an excessive parking provision, bearing in mind the proposed development would only have 16 people on the site during the day.

3.12 The current distribution facility provides on-site parking for some 300 vehicles. In order to establish parking conditions for the existing distribution facility, surveys were undertaken during a weekday period between 5:00am and 6:00pm. The parking surveys observed the number of vehicles parked within the car park every hour. Results of the parking survey are set out in Table 3.1.

3.13 It can be seen from Table 3.1 that the peak parking demand for the existing distribution centre was observed to be some 145 vehicles at 10:00am. This corresponds to a parking utilisation of some 48%. There is available parking (some 155 or more vacant spaces) within the car park at all times.

3.14 The proposed preform injection moulding plant will operate 24 hours per day (two 12 hour shifts) with up to 16 personnel during the day shift and four personnel during the evening shift. The existing available vacant spaces will comfortably cater for the additional parking demands generated by these employees.

Table 3.1: Car Parking Demand	
Time	**Parking Accumulation**
5:00	60
6:00	100
7:00	110
8:00	125
9:00	140
10:00	145
11:00	140
12:00	135
13:00	130
14:00	125
15:00	90
16:00	75
17:00	55
18:00	35
Supply	**300**

Access Arrangements

3.15 The site access arrangements remain unchanged. Access to parking will be retained via the combined entry/exit driveway off the turning area at the western end of Roussell Road. Access to the main loading docks servicing areas for trucks will be retained via separate entry and exit driveways onto the eastern perimeter access road. The truck access driveway has been designed to accommodate the swept path of 19 metre articulated vehicles and 26 metre B-doubles.

Internal Circulation and Servicing

3.16 Service vehicles generated by the existing distribution centre and vehicles transporting raw material and finished preforms to/from the proposed development will range from rigid trucks, articulated vehicles and B-doubles. These service vehicles will access the site via the existing truck access onto the

eastern perimeter access road. An existing gatehouse located some 90 metres into the site controls the movement of service vehicles to and from the site.

3.17 Truck access and circulation within the distribution centre and to/from the proposed development has been assessed using the AUTOTURN computer program. We have assessed the internal truck circulation for use by 19 metre articulated vehicles and 26 metre B-doubles. Swept paths for the various design vehicles are provided in Appendix A.

3.18 Truck circulation within the distribution centre is primarily provided by a two-way circulation and manoeuvring zone located adjacent to the southern boundary of the site. This circulation and manoeuvring zone provides access to the existing receiving and dispatch docks for the distribution centre and service vehicle access to the proposed preform injection moulding plant.

3.19 A pantech and trailer parking area is located at the south-eastern corner of the site. In association with the proposed development, the pantech and trailer parking area will be relocated to the south-western corner of the site and will provide some 20 trailer parking bays and a truck wash.

3.20 Our assessment found that the proposed modified truck circulation and manoeuvring zone for the existing distribution centre and for the proposed preform injection moulding plant is considered appropriate to comfortably cater for the expected service vehicle activity, of up to five trucks per hour two-way at peak times.

3.21 With respect to on-site parking, the current parking arrangements will not be changed. Parking bay dimension are provided at 2.5 metres wide by 5.5 metres long, with corresponding aisle widths of some 6 to 8 metres. These arrangements

and dimensions are in accordance with the Australian Standard for Off-street car parking facilities (AS2890.1-2004).

Pedestrian Measures

3.22 There are good pedestrian links to and from the site provided by footpaths along Roussell Road and convenient connections between the car park and the existing warehouse operation. A security gatehouse is located at the main entrance to the site for visitor access and security gates are available for employees adjacent to the car park.

3.23 The existing facility incorporates a series of pedestrian walkways within the site. These walkways will be expanded to provide convenient pedestrian access to the proposed new preform injection moulding plant. The walkways will be signposted and linemarked, and will be made clearly visible for pedestrians and drivers.

3.24 The proposed pedestrian facilities will include a marked walkway linking the existing warehouse and administration facility to the new building. The walkway will be located adjacent to the eastern side of the warehouse, across the loading dock hardstand area and along the northern side of the new building.

Traffic Effects

3.25 Traffic generated by the proposed development will have its greatest effect during the morning and afternoon peak periods, when traffic from the proposed development combines with other industrial and commuter traffic on the surrounding road network. The proposed development is expected to generate some 15 to 20 vehicles per hour two-way during peak periods (comprising some 5 truck movements two-way and some 10 to 15 car movements two-way).

3.26 The additional development traffic has been assigned to the road network. Existing traffic flows plus traffic generated by the proposed development are shown on Figures 2 and 3, and summarised in Table 3.2.

Table 3.2: Existing Two-Way (Sum of Both Directions) Peak Hour Traffic Flows Plus Development Traffic

Road/Location	Morning (Vehicles /Hour)		Afternoon (Vehicles /Hour)	
	Existing	Plus Development	Existing	Plus Development
Wallgrove Road				
- north of Roussell Road	1875	+15	2080	+15
- south of Roussell Road	1835	+5	2000	+5
Roussell Road				
- west of Wallgrove Road	180	+20	200	+20
- west of Clay Place	70	+20	75	+20
Clay Place				
- north of Roussell Road	75	-	70	-
Shale Place				
- south of Roussell Road	55	-	70	-

3.27 Table 3.2 shows that traffic flow increases on Roussell Road, where access to the site is provided, would be some 20 vehicles per hour two-way during the morning and afternoon peak periods. Traffic flow increases on Wallgrove Road, away from the site, would be some 5 to 15 vehicles per hour two-way during peak periods.

3.28 These are small increases in traffic flows. Intersections previously analysed in Chapter 2 will continue to operate at the same levels of service with similar average delays compared to today.

Principles of Construction Traffic Management

3.29 The appointed builder will be responsible for the preparation of a construction traffic management plan, which will be prepared prior to the commencement of construction work, taking into account relevant consent conditions.

3.30 Construction of the development will commence with site preparation works and excavation. Construction access will be provided to/from Roussell Road, via a combined entry/exit driveway at the western end of Roussell Road. A temporary construction access road will be provided along the northern, western and southern boundary of the site, separating the construction activity from the existing site operation.

3.31 It is anticipated that on-site materials handling will occur at the southern end of the site and a works zone will be required adjacent to the construction activity. Mobile cranes will be used to transport material on the site.

3.32 Class A construction fencing will be erected around the perimeter of the construction zone. Openings in the construction fencing and the construction access driveway will be managed and controlled by traffic controllers. The movement of trucks entering and exiting the site will be managed and controlled by traffic marshals.

3.33 The overall principles of traffic management during construction are as follows:-

- provide a convenient and appropriate environment for pedestrians/workers;
- minimise effects on pedestrian movement and amenity;

- manage and control construction traffic on the adjacent road network and truck movements to and from the construction activity;

- construction work will commence with the construction of the temporary internal construction access roads and its connection onto Roussell Road;

- security gates and appropriate construction fencing will be located around the perimeter of the site;

- construction access will be controlled onto Roussell Road adjacent to the northern boundary of the site;

- construction vehicles to enter and exit the site in a forward direction;

- traffic capacity will be maintained at intersections and mid-block on the surrounding road network in the vicinity of the site;

- maintain safety for workers;

- restrict construction activity to designated truck routes through the area;

- work zones to be managed and controlled by qualified site personnel;

- provide appropriate parking adjacent to the construction compound for construction workers; and

- construction activity to be carried out in accordance with the approved hours of work.

3.34 The preparation of the construction traffic management plan, signage detail, traffic management measures, control of pedestrians and control and management of construction activity/vehicles in the vicinity of the site will be the responsibility of the appointed builder.

Director General's Requirements

3.35 The traffic report has been prepared to respond to the requirements of the Director General of Planning with respect to the Environmental Assessment of the project. These requirements included:-

- *details of the proposed access and parking arrangements on site;*

3.36 Matters relating to the proposed access arrangements are described in paragraph 3.15 and matters relating to parking are described in paragraphs 3.10 to 3.14.

- *details of the traffic volumes likely to be generated during construction and operation;*

3.37 Matters relating to traffic generation and its effects on the operation of the surrounding road network are discussed in paragraphs 3.25 to 3.28.

3.38 We note that the appointed builder will be responsible for the preparation of a construction traffic management plan, which will be prepared prior to the commencement of construction work. Matters relating to the principles of construction traffic management are described in paragraphs 3.29 to 3.34.

- *an assessment of the predicted impacts of this traffic on the safety and efficiency of the surrounding road network specifically the Roussell Road/Wallgrove Road intersection;*

3.39 Matters relating to the operation of the surrounding road network are discussed in paragraphs 3.25 to 3.28.

- *details of any proposed road upgrade works, the measures that would be implemented to ensure that the relevant road network is appropriately maintained during the life of the project;*

3.40 The proposed development will not result in any required road upgrading works.

- *an assessment of cumulative impacts.*

3.41 Matters relating to the traffic assessment of the proposed development are described in paragraphs 3.25 to 3.28.

3.42 In regards to traffic matters associated with the proposed development, we have consulted with the Roads and Traffic Authority. Matters raised and discussed with the authority included:-

- *transport measures to manage demand for car use and to increase the use of walking, cycling and public transport.*

3.43 This matter has been addressed in paragraphs 3.5 to 3.9.

- *daily and peak traffic movements likely to be generated by the proposed development including the impact on nearby intersections and the need/ associated funding for upgrading or road improvement works (if required).*

3.44 This matter has been described in paragraphs 3.25 to 3.28.

- *details of the accesses and the parking provisions associated with the proposed development including compliance with the requirements of the relevant Australian Standards.*

3.45 Matters relating to access and compliance with the Australian Standards are described in paragraphs 3.15 to 3.21 and matters relating to parking provision are described in paragraphs 3.10 to 3.14.

- *details of service vehicle movements.*

3.46 This matter is described in paragraphs 3.25 to 3.28.

- *encourage non-car travel modes (including public transport use, walking and cycling) and the potential to implement a location specific travel plan.*

3.47 The principles of a work place travel plan are described in Paragraphs 3.7 and 3.9.

Summary

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

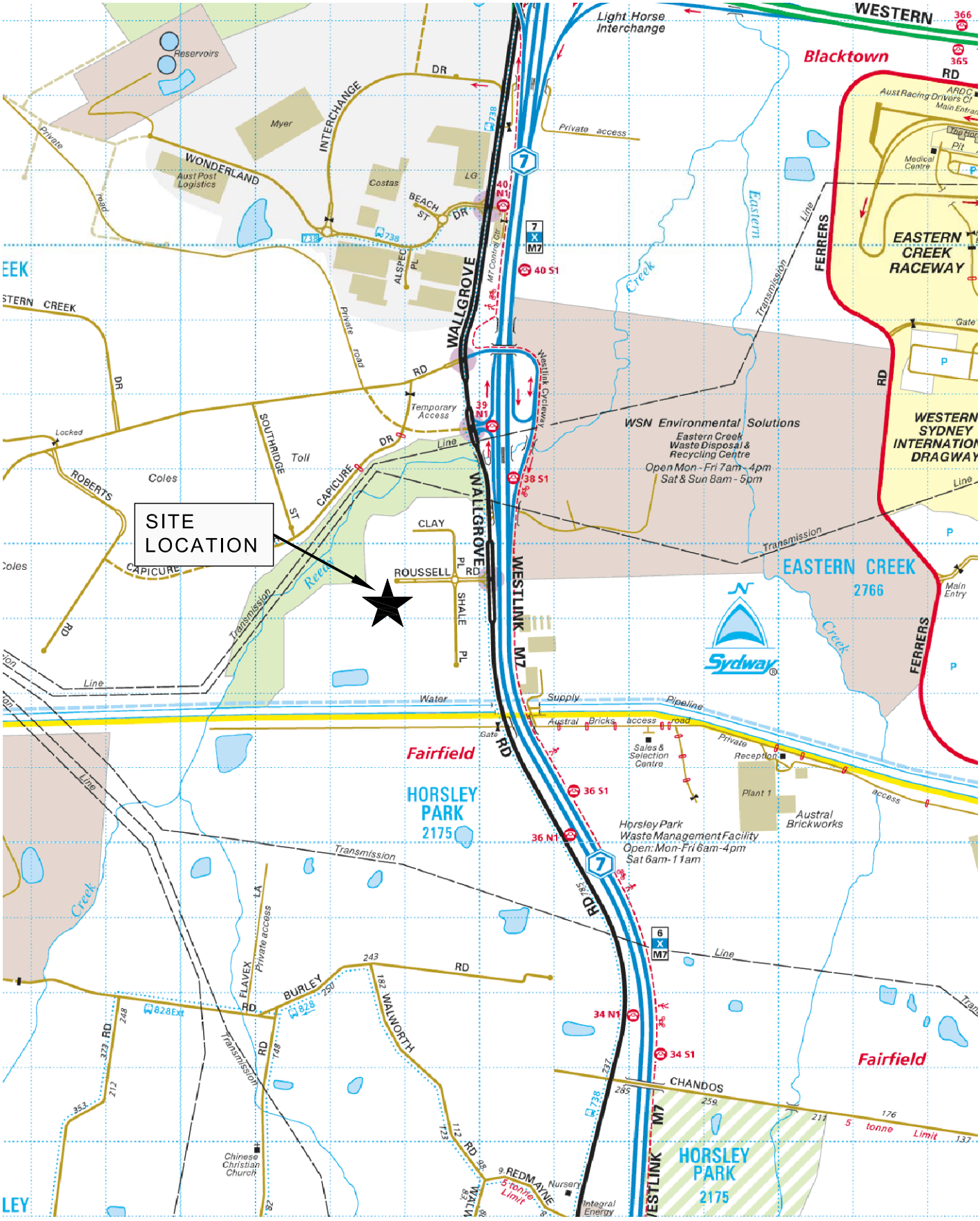
i) the parking provision is considered appropriate;

ii) the existing access arrangements are being retained;

iii) internal circulation and servicing arrangements are considered appropriate;

iv) the surrounding road network can cater for the traffic generated by the proposed development; and

v) the Director General's requirements and matters raised by the Roads and Traffic Authority are discussed in paragraphs 3.35 to 3.47.



Location Plan

Colston Budd Hunt & Kafes Pty Ltd

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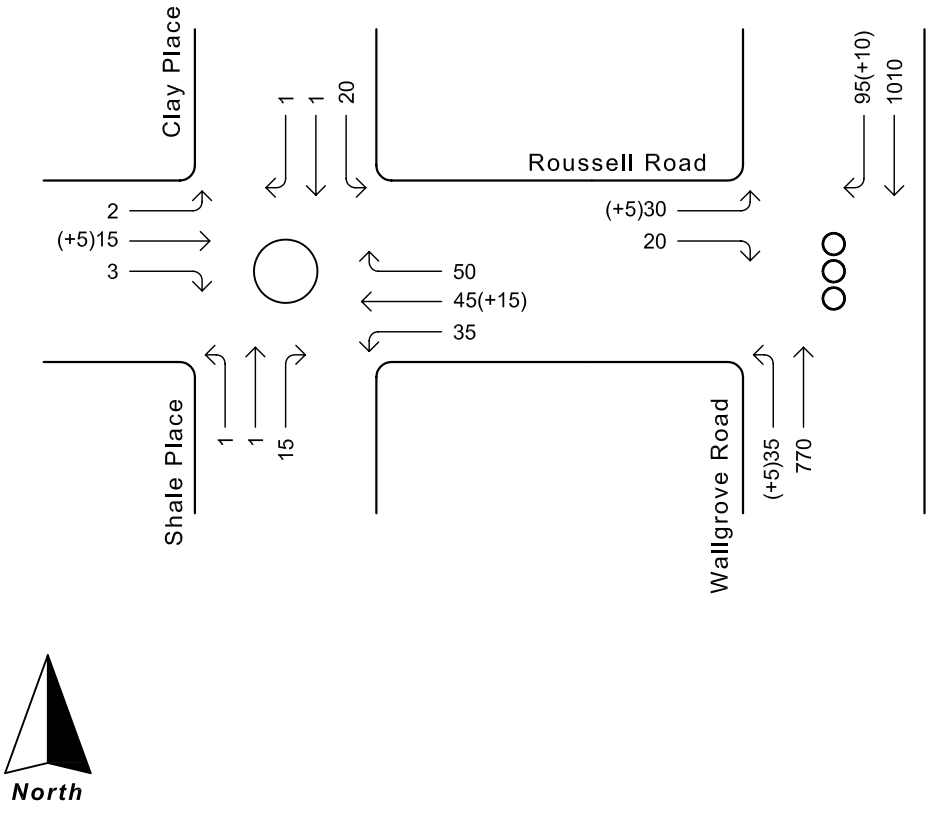
Figure 1



LEGEND

100 - Existing Peak Hour Traffic Flows
(+10) - Additional Development Traffic
- Traffic Signals
- Roundabout

Existing morning peak hour traffic flows plus development traffic

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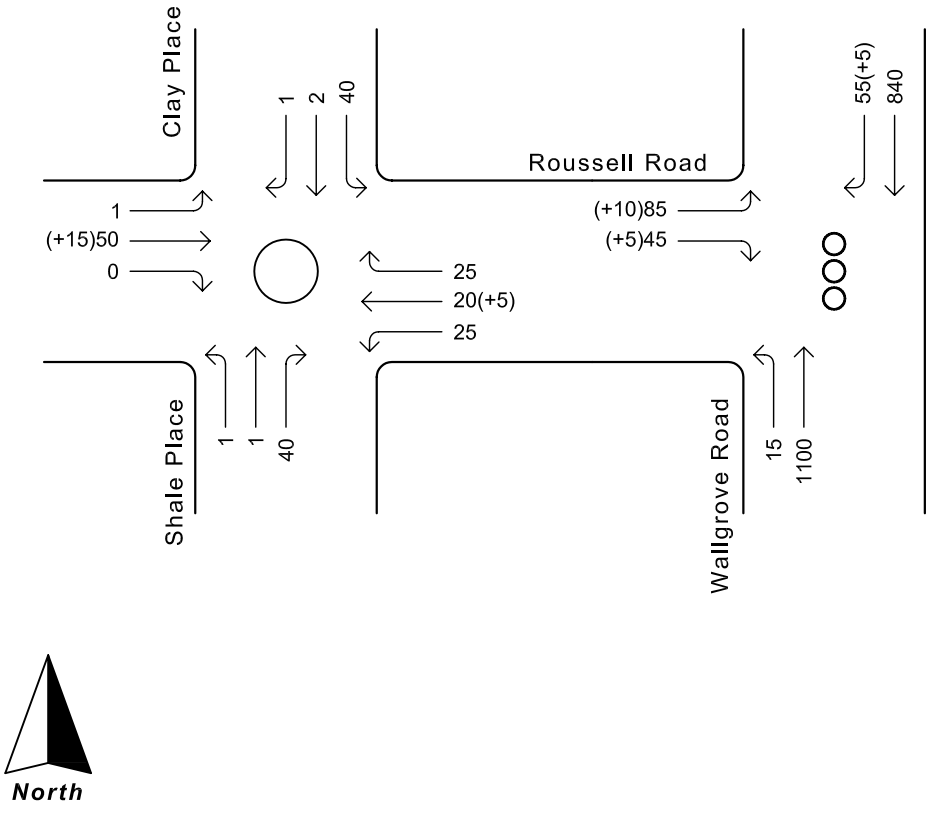
Figure 2



LEGEND

100 - Existing Peak Hour Traffic Flows
(+10) - Additional Development Traffic
- Traffic Signals
- Roundabout

Existing afternoon peak hour traffic flows plus development traffic

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Figure 3