



# **Appendix F: Traffic Report – Colston Budd Rogers & Kafes Pty Ltd**

KUBIS ROSEBERY PTY LTD

TRANSPORT REVIEW FOR  
PLANNING PROPOSAL FOR  
RESIDENTIAL DEVELOPMENT  
AT 102-108 DUNNING AVENUE,  
ROSEBERY

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COLSTON BUDD ROGERS & KAFES PTY LTD  
ACN 002 334 296  
Level 18 Tower A  
Zenith Centre  
821 Pacific Highway  
CHATSWOOD NSW 2067

Telephone: (02) 9411 2411  
Facsimile: (02) 9411 2422  
Email: [cbrk@cbrk.com.au](mailto:cbrk@cbrk.com.au)

REF: 10317

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## I. INTRODUCTION

- I.1 Colston Budd Rogers & Kafes Pty Ltd has been retained by Kubis Rosebery Pty Ltd to review the transport aspects of a planning proposal for residential development at 102-108 Dunning Avenue, Rosebery. The site is located on the south-western corner of the intersection on Dunning Avenue and Morley Avenue, as shown on Figure 1.
- I.2 The site is occupied by warehouse development and associated office space. Access is provided from Morley Avenue and Dunning Avenue to at-grade parking.
- I.3 The planning proposal would provide for residential development of some 114 apartments.
- I.4 This report reviews the transport aspects of the planning proposal through the following chapters:
- Chapter 2 - describing the existing conditions; and
  - Chapter 3 - reviewing the transport aspects of the planning proposal.

## 2. EXISTING CONDITIONS

### Site Location and Road Network

- 2.1 The site is on the south western corner of the intersection of Morley Avenue and Dunning Avenue, as shown on Figure 1. It is occupied by warehouse development and associated office space. Access is provided from Morley Avenue and Dunning Avenue to at-grade parking. Surrounding land use is a mix of commercial, light industrial development and mixed use residential development.
- 2.2 The road network in the vicinity of the site includes Morley Avenue, Dunning Avenue and Jones Lane. Morley Avenue is located along the northern frontage of the site and travels in a west to east direction from Botany Road. It generally provides one traffic lane with kerb side parking.
- 2.3 Dunning Avenue is east of the site and runs in a north south direction. It generally provides one traffic lane with kerb side parking. The intersection of Dunning Avenue and Morley Avenue is controlled by a single lane roundabout. Dunning Avenue is designated as a bicycle route between Green Square and the city in the north and Mascot and Botany in the south.
- 2.4 Jones Lane is located along the western boundary of the site. It provides for two way traffic with kerb side parking permitted in some sections.

### Traffic Flows

- 2.5 Traffic generated by the proposed development will have its greatest effects during weekday morning and afternoon peak periods.
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- 2.6 In order to gauge traffic conditions, counts were undertaken during weekday morning and afternoon peak periods at the intersection of Dunning Avenue and Morley Avenue. The results of the surveys are shown in Figures 2 and 3, and summarised in Table 2.1.

<b>Road</b>	<b>Morning</b>	<b>Afternoon</b>
Morley Avenue – east of Dunning Avenue	400	395
– west of Dunning Avenue	340	365
Dunning Avenue – north of Morley Avenue	520	470
– south of Morley Avenue	505	455

- 2.7 Table 2.1 shows that flows on Dunning Avenue were some 450 to 550 vehicles per hour two-way during the surveyed peak hours. Flows on Morley Avenue were lower at some 350 to 400 vehicles per hour two-way.
- 2.8 The site was observed to generate some 22 and six vehicles per hour two-way during the surveyed morning and afternoon peak hours respectively.

### Intersection Operation

- 2.9 The capacity of the road network is largely determined by the capacity of its intersections to cater for peak period traffic flows. The intersection of Dunning Avenue with Morley Avenue has been analysed using the SIDRA computer program. SIDRA analyses intersections controlled by traffic signals, roundabouts and signs.
- 2.10 SIDRA provides a number of performance measures. The most useful measure provided is average delay per vehicle expressed in seconds per vehicle.

2.11 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

- 2.12 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.
- 2.13 The SIDRA analysis found that the roundabout at the intersection of Dunning Avenue and Morley Avenue operates with average delays of less than 15 seconds per vehicle during peak periods. This represents level of service A/B, a good level of service.

#### Public Transport

- 2.14 The site is some 15 minutes' walking distance from Green Square railway station. Green Square is on the Airport and East Hills Lines (Macarthur – City via Airport and Sydenham).
- 2.15 Services through Green Square operate on typical headways of five to 10 minutes in each direction during peak periods and 10 to 15 minutes in each direction outside peaks. Passengers can transfer to and from other parts of the rail system at various locations, notably at Central.
- 2.16 As previously noted, Dunning Avenue provides a bicycle connection to areas north and south of the site. Dunning Avenue also provides a 40 kilometre per hour speed limit, providing an environment conducive to walking and cycling.
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2.17 Sydney Buses operates bus services along Botany Road, just west of the site.

Services include:

- route X03: Sans Souci to City express via Dolls Point, Ramsgate, Kyeemagh and Surry Hills;
- route M20: Botany, Mascot, Victoria Park, City, North Sydney, St Leonards, Gore Hill;
- route 348: Wolli Creek to Bondi Junction via Tempe, Sydenham, St Peters, Alexandria, Rosebery, SupaCenta, UNSW, Randwick and Waverley.

2.18 The site therefore has good access to public transport services.

### 3. IMPLICATIONS OF PROPOSED DEVELOPMENT

3.1 The planning proposal would provide for residential development of some 114 apartments. Access would be provided from Dunning Avenue, Morley Avenue and/or Jones Lane. This chapter assesses the implications of the proposed development through the following sections:

- policy context;
- public transport, walking and cycling;
- travel access guide;
- parking provision;
- access and internal layout;
- traffic generation and effects; and
- summary.

#### Policy Context

3.2 There are a number of strategic state policies which are relevant to future development in the Sydney metropolitan area. The policies include NSW: Making It Happen, A Plan for Growing Sydney and The NSW Long Term Transport Master Plan. These policies are discussed below.

- NSW: Making It Happen

3.3 NSW: Making It Happen has 30 priorities, including:

- Strong budget and economy
  - make NSW the easiest state to start a business;
  - be the leading Australian state in business confidence;

- increase the proportion of people completing apprenticeships and traineeships to 65 per cent by 2019;
  - halve the time taken to assess planning applications for state significant developments;
  - maintain the AAA credit rating;
  - expenditure growth to be less than revenue growth;
  
  - **Building infrastructure**
    - 90 per cent of peak travel on key road routes is on time;
    - increase housing supply across NSW – deliver more than 50,000 approvals every year;
  
  - **Protecting the vulnerable**
    - successful implementation of the NDIS by 2018;
    - increase the number of households successfully transitioning out of social housing by five per cent over three years;
  
  - **Better services**
    - increase the proportion of Aboriginal and Torres Strait Islander students in the top two NAPLAN bands for reading and numeracy by 30 per cent;
    - 70 per cent of government transactions to be conducted via digital channels by 2019;
    - increase on-time admissions for planned surgery, in accordance with medical advice;
    - increase attendance at cultural venues and events in NSW by 15 per cent by 2019;
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- maintain or improve reliability of public transport services over the next four years;
- Safer communities
  - LGAs to have stable or falling reported violent crime rates by 2019;
  - reduce adult reoffending by five per cent by 2019;
  - reduce road fatalities by at least 30 per cent from 2011 levels by 2021;
- 12 premier's priorities
  - creating jobs;
  - building infrastructure;
  - reducing domestic violence;
  - improving service levels in hospitals;
  - tackling childhood obesity;
  - improving education results;
  - protecting our kids;
  - reducing youth homelessness;
  - driving public sector diversity;
  - keeping our environment clean;
  - faster housing approvals;
  - improving government services.
- A Plan for Growing Sydney

3.4 A Plan for Growing Sydney provides a strategic plan to accommodate an additional 1.6 million people, 664,000 houses and 689,000 jobs.

3.5 The plan includes the following goals and actions to achieve them:

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- Goal 1: a competitive economy with world class services and transport  
Actions:
    - grow a more internationally competitive Sydney CBD;
    - grow Greater Parramatta – Sydney’s second CBD;
    - establish a new priority growth area – Greater Parramatta to the Olympic Peninsula;
    - transform the productivity of western Sydney through growth and investment;
    - enhance capacity at Sydney’s gateways and freight networks;
    - expand the Global Economic Corridor;
    - grow strategic centres – providing more jobs closer to home;
    - enhance linkages to regional NSW;
    - support priority economic sectors;
    - plan for education and health services to meet Sydney’s growing needs; and
    - deliver infrastructure.
  
  - Goal 2: a city of housing choice, with homes that meet our needs and lifestyles  
Actions:
    - accelerate housing supply across Sydney;
    - accelerate urban renewal across Sydney – providing homes closer to jobs;
    - improve housing choice to suit different needs and lifestyles; and
    - deliver timely and well planned greenfield precincts and housing.
  
  - Goal 3: a great place to live with communities that are strong, healthy and well balanced
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Actions:

- revitalize existing suburbs;
- create a network of interlinked, multipurpose open and green spaces across Sydney;
- create built environments; and
- promote Sydney's heritage, arts and culture.

- Goal 4: a sustainable and resilient city that protects the natural environment and has a balanced approach to the use of land and resources

Actions:

- protect our natural environment and biodiversity;
- build Sydney's resilience to natural hazards; and
- manage the impacts of development on the environment.

- NSW Long Term Transport Master Plan

3.6 The NSW Long Term Transport Master Plan has been developed, in association with A Plan for Growing Sydney and State Infrastructure Strategy, to support NSW: Making It Happen. The key measures identified are as follows:

- providing a fully integrated transport system;
  - providing a modern railway system and increase capacity by 60 per cent;
  - providing a modern light rail system in the CBD;
  - providing a modern bus system to complement the rail networks;
  - connect the motorway network, including WestConnex, F3/M2 link and F6;
  - reduce congestion in the CBD, including removing the monorail, increasing light rail, improving pedestrian links, increasing ferry use, providing increased capacity on the rail system and improved walking and cycling infrastructure;
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- support the growth of new economic centres including the north west and south west rail links, new roads in growth areas and new bus infrastructure;
- connect regional communities through major highway upgrades, and improved rail, bus and air services;
- improve freight efficiency and productivity;
- improve access to Sydney Airport and Port Botany;
- boost walking, cycling and its integration with public transport; and
- preserve future transport corridors.

#### Public Transport, Walking and Cycling

- 3.7 As previously discussed, the site is within walking distance of Green Square railway station and is close to bus services which operate along Botany Road. These services connect the site with surrounding areas and offer alternatives to travel by modes other than car.
- 3.8 There are good pedestrian links between the site and surrounding areas, including to Green Square station, and other services and facilities. As noted in Chapter 2, Dunning Avenue is an identified cycle route. Appropriate bicycle parking will be provided within the development.
- 3.9 The proposed development would increase residential densities close to public transport services. The proposed development will therefore be readily accessible by public transport, walking and cycling.
- 3.10 The proposed development will therefore satisfy the objectives of NSW: Making It Happen, A Plan for Growing Sydney and the NSW Long Term Transport Master Plan policy package as follows:
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- enabling commuters and residents to readily access rail and buses close to the site;
- providing an appropriate level of on-site parking, with reference to appropriate council requirements, to encourage greater public transport use and increase the proportion of trips by public transport;
- providing increased residential density close to other services and facilities in the area to reduce the need for external travel;
- being located close to major employment centres (CBD and Sydney Airport); and
- providing for an increase in the proportion of the population living within 30 minutes by public transport of a major centre in the metropolitan area.

#### Travel Access Guide

- 3.11 To encourage travel modes other than private vehicle, consideration will be given to adopting a travel demand management approach, through a travel access guide to meet the specific needs of the site, future employees, residents and visitors. The specific requirements and needs of the future employees and residents and visitors, including access to major surrounding employment centres, would be incorporated in the travel access guide to support the objectives of encouraging the use of public transport.
- 3.12 The principles of a travel access guide, to be developed by the applicant in consultation with council, RMS, Sydney Buses and other stakeholders, would include the following:
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- encourage the use of public transport, including rail and bus services nearby;
- work with public transport providers to improve services;
- encourage public transport use by residents through the provision of information, maps and timetables;
- raise awareness of health benefits of walking (including maps showing walking routes);
- encourage cycling by providing safe and secure bicycle parking;
- provide appropriate on-site parking provision, consistent with the objective of reducing traffic generation.

3.13 A travel access guide would 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, and will be prepared by the developer prior to occupation of the building.

#### Parking Provision

3.1 The Sydney LEP 2012 includes the following maximum car parking requirements:

- 0.4 spaces per studio unit;
  - 0.5 spaces per one bedroom unit;
  - one space per two bedroom apartment;
  - 1.2 spaces per apartment with three or more bedrooms; and
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- six visitor spaces for the first 30 apartments plus five visitor spaces for the next 40 apartments plus one space per 15 apartments thereafter.

3.2 While the residential unit mix is yet to be determined, based on a mix of 40 per cent one bedroom, 50 per cent two bedroom and 10 per cent three bedroom apartments, the provision would be some 90 spaces. Parking for the development will be provided, consistent with the above rates. These rates would achieve the aim of reduced traffic generation.

3.14 Section 3.11 of the Sydney DCP 2012 indicates that bicycle parking should be provided at a rate of one space per dwelling for residents plus one space per 10 dwellings for visitors. Bicycle parking would be provided in the development to satisfy these requirements.

#### Access and Internal Layout

3.15 Vehicular access to the development would be provided from Dunning Avenue, Morley Avenue and/or Jones Lane. The access arrangements will be provided, at the development application stage, in accordance with the Australian Standard for Parking Facilities (Part 1: Off-street car parking), AS 2890.1:2004.

3.16 Within parking areas, parking space dimensions, aisle widths, ramp grades, transitions, column locations and height clearances would be provided in accordance with AS 2890.1:2004.

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Traffic Generation and Effects

- 3.17 Traffic generated by the proposed development will have its greatest effects during weekday morning and afternoon peak periods when it combines with other traffic on the surrounding road network.
- 3.18 Surveys undertaken by RMS include the following traffic generation rates for development:
- 0.19 and 0.15 vehicles per hour per apartment for high density residential apartments during weekday morning and afternoon peak hours respectively.
- 3.19 On this basis, the development would have a traffic generation of some 22 and 17 vehicles per hour two-way during morning and afternoon peak hours respectively. This is a low traffic generation.
- 3.20 As previously noted in Chapter 2, the existing site generated some 22 and six vehicles per hour two-way during the weekday morning and afternoon peak hours respectively. The proposed residential development would therefore have a similar traffic generation to the existing development in the morning. In the afternoon, the traffic increase would be some 10 to 15 vehicles per hour two-way.
- 3.21 Such a low increase would not have noticeable effects on the operation of the surrounding road network. The intersection of Dunning Avenue with Morley Avenue would continue to operate at its existing good level of service A/B, with similar average delays per vehicle.
- 3.22 Therefore, the road network will be able to cater for the traffic from the proposed development.
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Summary

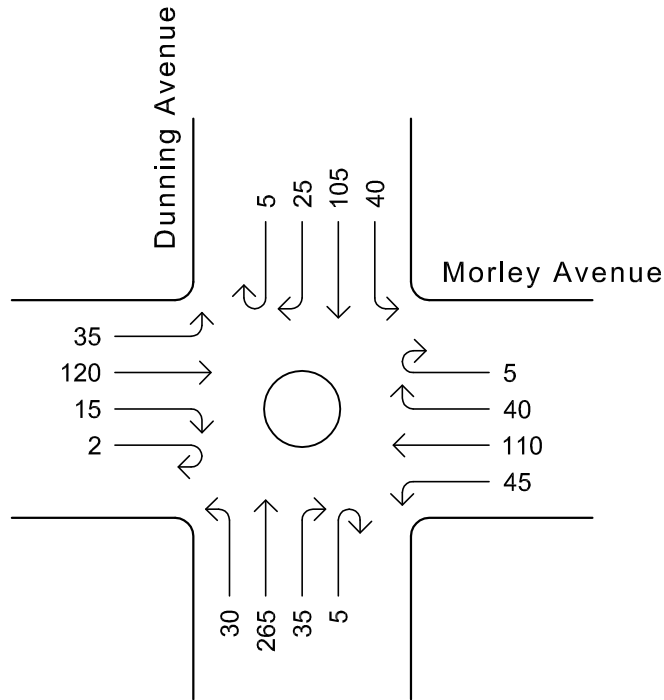
3.23 In summary, the main points relating to the transport implications of the planning proposal are as follows:

- i) the development would increase residential densities close to existing public transport services and is consistent with government objectives to reduce private car travel and encourage public transport use;
- ii) appropriate on-site parking for cars and bicycles will be provided, consistent with reduced parking provision for locations with good public transport access;
- iii) access, internal circulation and layout will be provided in accordance with Australian Standards;
- iv) the proposed development would result in a low additional traffic generation of some 10 to 15 vehicles per hour two-way at peak times; and
- v) such a low increase would not have noticeable effects on the operation of the surrounding road network.



# Location Plan

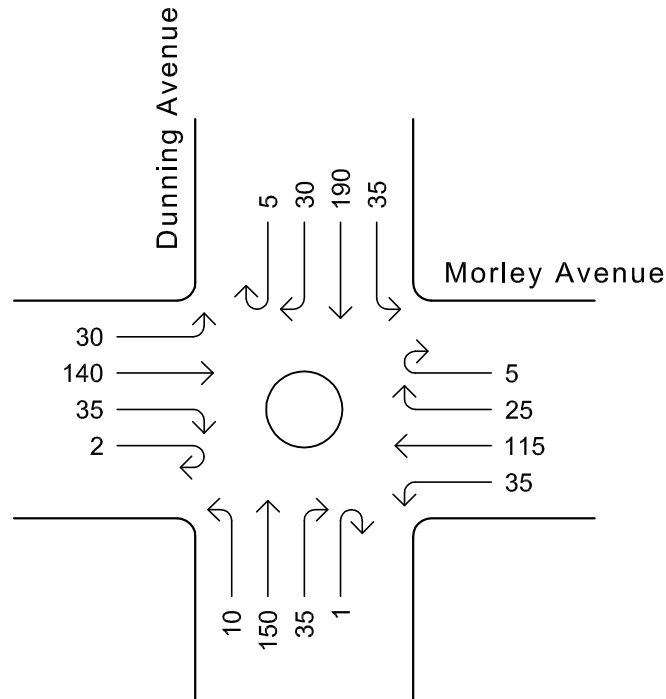
Figure 1



**LEGEND**

- 100 - Existing Peak Hour Traffic Flows
- - Roundabout

**Existing weekday morning peak hour traffic flows**



**LEGEND**

- 100 - Existing Peak Hour Traffic Flows
- - Roundabout

**Existing weekday afternoon  
peak hour traffic flows**