

OPAL AGED CARE

TRAFFIC REPORT FOR  
PROPOSED RESIDENTIAL AGED  
CARE DEVELOPMENT,  
81 AND 105 STANLEY STREET,  
BATHURST

DECEMBER 2015

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## I. INTRODUCTION

- I.1 Colston Budd Rogers and Kafes Pty Ltd has been commissioned by Opal Aged Care to prepare a report examining the traffic implications of a proposed residential aged care development at 81 and 105 Stanley Street, Bathurst. The site location is shown in Figure I.
- I.2 The site is currently vacant. The proposed development is an aged care development of 164 beds, with vehicular access from Stanley Street. The application is being made under State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004.
- I.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 on the western side of Stanley Street at Bathurst, as shown in Figure 1. It is currently vacant. The Bathurst CBD is south of the site. There is a child care centre south-east of the site, on the corner of Stanley Street and Peel Street. The Macquarie River is north and east of the site. Other surrounding land use includes industrial, rural and residential uses.
- 2.2 The road network in the vicinity of the site includes Durham Street, Peel Street, Stanley Street and Hope Street. Durham Street is south-west of the site. South of Stewart Street, Durham Street forms part of the Great Western Highway. North of Stewart Street, Durham Street provides for one traffic lane and one parking lane in each direction, clear of intersections. It provides access to recreational areas, hospital and residential properties. It forms part of a bus route.
- 2.3 Peel Street intersects Durham Street at a four-way, unsignalised intersection, with Durham Street having priority. Peel Street provides an east-west connection through Bathurst. It generally provides for one traffic lane and one parking lane in each direction, clear of intersections.
- 2.4 Stanley Street provides access to residential properties and industrial uses. It provides for one traffic lane and one parking lane in each direction, clear of intersections. The intersection of Stanley Street with Peel Street is an unsignalised, four-way intersection, with Peel Street having priority.
- 2.5 Hope Street is north of the site. It provides access to a small number of properties. It is a dead end, east of Stanley Street.
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### Traffic Flows

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

- Durham Street/Peel Street; and
- Peel Street/Stanley Street.

2.7 The results of the surveys are shown in Figure 2 and summarised in Table 2.1.

<b>Table 2.1: Existing two-way (sum of both directions) weekday afternoon peak hour traffic flows</b>		
<b>Road</b>	<b>Location</b>	<b>Afternoon peak hour</b>
Durham Street	North of Peel Street	795
	South of Peel Street	755
Peel Street	West of Durham Street	85
	East of Durham Street	175
	West of Stanley Street	60
	East of Stanley Street	25
Stanley Street	North of Peel Street	40
	South of Peel Street	10

2.8 Table 2.1 shows that Durham Street carried some 750 to 800 vehicles per hour during the surveyed afternoon peak hour. Peel Street carried less than 200 vehicles per hour two-way and Stanley Street carried less than 50 vehicles per hour two-way.

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### Intersection Operations

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 intersections of Peel Street with Durham Street and Stanley Street have been analysed using the SIDRA program.

2.10 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:
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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 unsignalised intersection of Durham Street with Peel Street operates with average delays of less than 20 seconds per vehicle during peak periods. This represents level of service B, a reasonable level of intersection operation.
- 2.13 The unsignalised intersection of Peel Street with Stanley Street 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 intersection operation.
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### Public Transport

- 2.14 Local bus services are provided by Bathurst Buslines. As previously discussed, bus services operate along Durham Street, west of the site.
- 2.15 Route 523 operates along Durham Street between the city centre, Eglington and North Bathurst.
- 2.16 Other services operate from the city centre to other surrounding areas, including:
- route 520: West Bathurst and Windradyne;
  - route 521: Kelso and Laffing Waters;
  - route 522: South Bathurst and Gormans Hill;
  - route 524: Raglan via Blue Ridge and Kelso;
  - route 525: Kelso; and
  - route 526: university, TAFE and South Bathurst.
- 2.17 The site is therefore close to public transport services.
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### 3. IMPLICATIONS OF PROPOSED DEVELOPMENT

3.1 The proposed development is an aged care development of 164 beds, with vehicular access from Stanley Street. The application is being lodged under the Housing for Seniors SEPP. This chapter assesses the implications of the proposed development through the following sections:

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

#### Public Transport

3.2 As previously discussed, the site is close to bus services which operate along Durham Street. The site is therefore accessible by public transport.

3.3 The proposed development will increase residential densities close to existing public transport services. Increasing residential densities on the site is consistent with government objectives and the planning principles of:

- a) improving accessibility to housing 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 distances travelled, especially by car; and
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- d) supporting the efficient and viable operation of public transport services.

#### Parking Provision

- 3.4 The Housing for Seniors SEPP indicates that a development can not be refused on parking grounds if parking is provided at the following rates:
- one space per 15 dementia beds;
  - one space per 10 beds for other beds; plus
  - one space per two employees on duty at one time; and
  - one parking space for an ambulance.
- 3.5 The development proposes a total of 164 beds, including 19 dementia beds. Based on 43 employees, the proposed development would require 37 parking spaces. It is proposed to provide 46 spaces, which satisfies this requirement.
- 3.6 Provision for an ambulance is included on the site, in accordance with the SEPP.

#### Access, Servicing and Internal Layout

- 3.7 Vehicular access is proposed to be provided from Stanley Street via an entry/exit driveway towards the northern end of the site.
- 3.8 Within the at-grade car park, parking spaces will be a minimum of 2.5 metres wide and 5.4 metres long. Accessible car parking spaces will be a minimum of 2.4 metres wide, with an adjacent 2.4 metre wide area for wheelchairs. Spaces adjacent to obstructions will be 300mm wider to appropriately provide for doors to open. The minimum aisle width will be 5.8 metres. Dead end aisles will have a
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one metre extension for appropriate accessibility to end spaces. These dimensions are considered appropriate, being in accordance with the Australian Standard for Parking Facilities (Part 1: Off-Street Car Parking and Part 6: Off-Street Parking for People with Disabilities), AS 2890.1:2004 and AS 2890.6:2009.

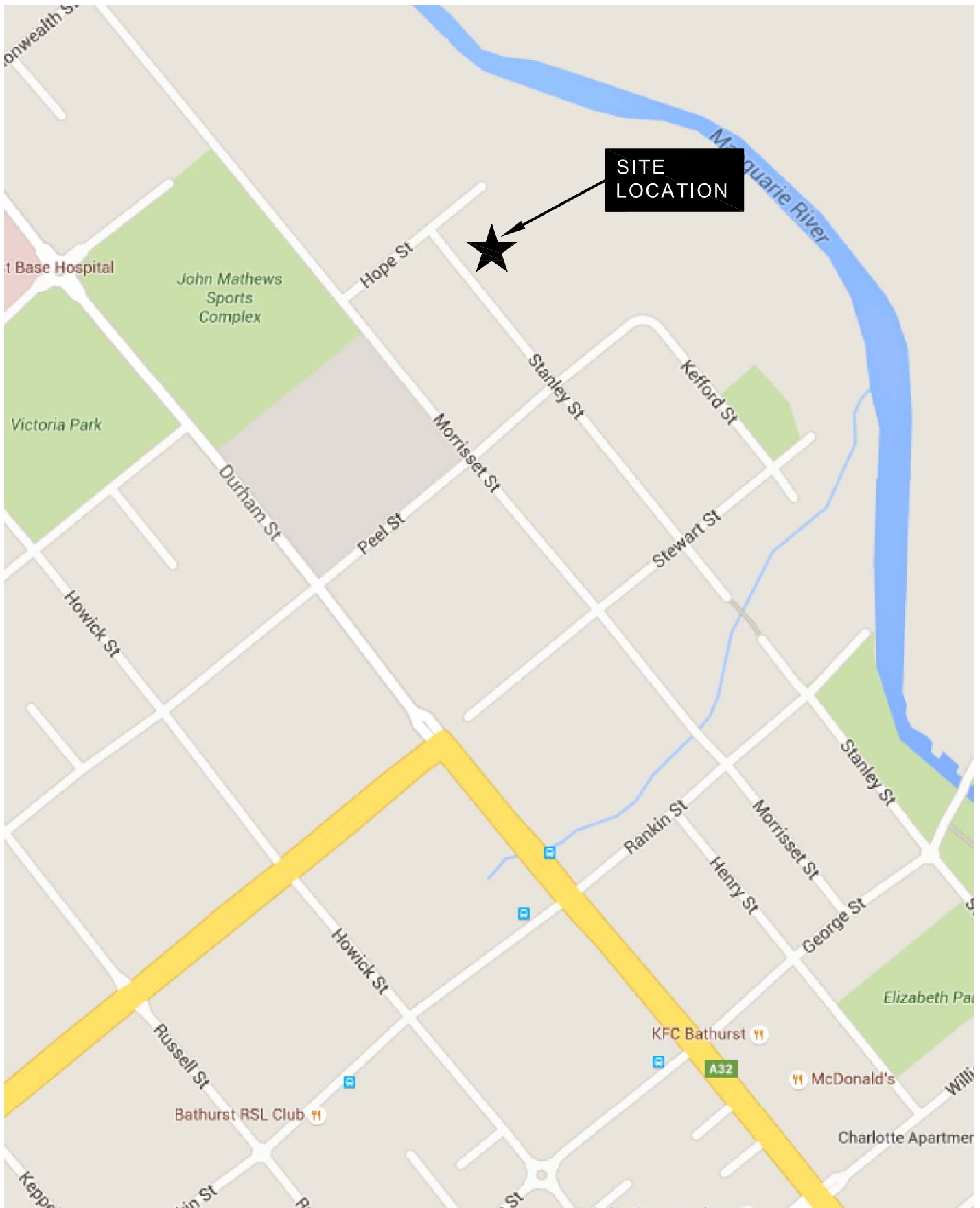
- 3.9 A loading bay will be provided for garbage collection and deliveries. The bay will accommodate vehicles ranging in size up to 8.8 metre medium rigid trucks. Service vehicles will be able to enter and exit the site in a forward direction.
- 3.10 Overall the proposed access arrangements, parking layout, internal circulation and service arrangements are considered appropriate.

#### Traffic Effects

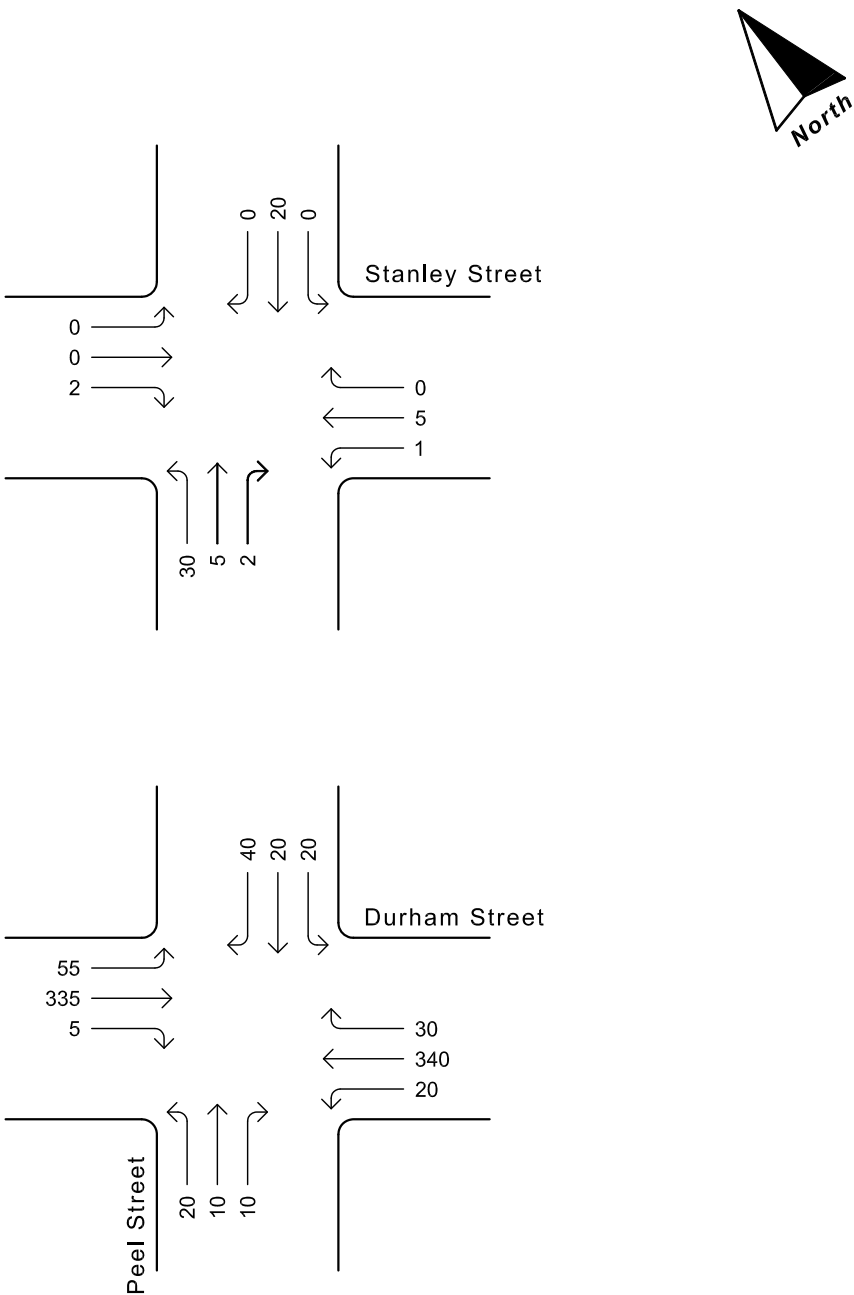
- 3.11 Traffic generated by the proposed development will have its greatest effects during weekday peak periods when it combines with other traffic on the surrounding road network. Surveys undertaken by RMS found that housing for aged and disabled persons generates 0.1 to 0.2 vehicles per hour per dwelling. We have assessed 0.2 vehicles per hour per bed.
  - 3.12 On this basis, the proposed development would generate some 30 to 35 vehicles per hour (two-way) during weekday peak periods. This is a low generation.
  - 3.13 Such a low generation would not have noticeable effects on the operation of the surrounding road network. The intersections of Peel Street with Durham Street and Stanley Street would continue to operate at satisfactory or better levels of service during peak periods, with similar average delays per vehicle.
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Summary

- 3.14 In summary, the main points relating to the traffic implications of the proposed development are:
- i) the proposed development would increase residential densities close to public transport services;
  - ii) the proposed parking provision is considered appropriate;
  - iii) access and internal layout will be provided in accordance with AS 2890.1:2004, AS 2890.2 – 2002 and AS2890.6:2009;
  - iv) the proposed development would have a low traffic generation, and
  - v) such a low generation would not have noticeable effects on the operation of the surrounding road network.



## Location Plan



**LEGEND**

100 - Existing Peak Hour Traffic Flows

**Existing weekday afternoon  
peak hour traffic flows**