



concept plan application for the former sunbeam site at charlotte street and harp street, clemton park

prepared on behalf of Parkview Sydney Developments by **traffix** traffic & transport planners
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TMAP report



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contents

1. introduction	3
2. location and site	4
3. existing traffic conditions	5
3.1 road hierarchy	5
3.2 Overview of existing traffic conditions	6
3.3 existing site generation	7
3.4 existing public transport services	7
3.5 existing intersection performances	8
4. description of proposed development	11
5. transport management and accessibility (TMAP)	13
5.1 introduction	13
5.2 bus services	13
5.3 rail services	15
5.4 pedestrian and bicycle linkages	15
5.5 pedestrian safety	16
5.6 taxi services	17
5.7 car share and car pool arrangements	17
5.8 servicing	17
5.9 perimeter road frontages	18
5.10 parking requirements	18
5.11 transport access guide	23
5.12 traffic impacts	24
6. conclusions	40
appendix 1: photographic record	
appendix 2: reduced plans	
appendix 3: sidra outputs	
appendix 4: swept path analysis	



executive summary

- This report follows upon a previous traffic report and a subsequent supplementary report that was prepared in support of a Concept Application which was an application made under Part 3A of the Environmental Planning and Assessment Act, 1979, following authorisation of the Concept Plan by the Minister;
- This TMAP report has been prepared in response to matters raised by Council, the RTA and the DoP during the consultation process. For completeness, the TMAP report incorporates much of the original reports and can be regarded as a stand-alone document, with aspects of the assessment updated;
- The Concept Application relates to the use and building envelopes comprising a total floor area of 87,056 square metres, together with an indicative number of apartments, height and building footprints, road layout and landscaping across the site;
- The proposed Concept Plan follows the principles and level of intensity foreshadowed in the Preliminary Environmental Assessment report;
- Traffic impacts have been assessed on the basis of the land use scenario outlined in this report and can be accommodated, subject to the public road system being developed as proposed and the improvements outlined in the report. This includes a comprehensive LATM (traffic calmed) solution to protect the amenity of the residential precinct to the south of the site, accessed via Alfred Street;
- Traffic conditions have been assessed on weekdays, Saturdays and Sundays and can be accommodated by the road system in terms of its capacity;
- The traffic impacts create no unacceptable environmental amenity concerns having regard for the predominant industrial character of the area. The volume increases in the locality are significantly higher than existing flows at peak times (with the site essentially dormant) and moderately higher than the previous industrial use of the site. As all road frontages are collector roads the volumes remain within acceptable limits;
- The overall parking provision (1,469 spaces) is about 4% less overall than Council's DCP requirement as assessed with reductions for sharing (1,533 spaces) and this accounts for the



synergy between the uses and the ability to share parking where peak demands do not overlap. The level of provision is also intended to promote alternate travel modes and is responsive to the Director General's Requirements;

- The key elements of this TMAP are in response to the specific matters that are required to be addressed under the Director General's Requirements. These include daily and peak traffic movements, modelling at the four key intersections identified, measures to promote public transport usage, measures to promote bicycle and pedestrian linkages, service vehicle movements, access, loading docks, car parking and measures to mitigate potential impacts on nearby residents during construction. All of these matters are addressed in this TMAP report.
- In the same way that construction impacts cannot be dealt with in any detail and must be dealt with by way of a condition of approval; it is considered that the further development of the TMAP to achieve public transport targets (resulting in a TMAP Agreement) can be the subject of more detailed initiatives and discussions in response to a suitable condition of consent. This could also include a requirement for further consultation with the RTA and this approach is supported.
- Discussions have been held with the STA in relation to improved bus services to the site. This has led to an agreement to consider diverted services to Campsie Station. Diversion of other private bus services is also proposed and will be subject to further discussions and assessment.
- The access and internal design arrangements will be able to comply with the requirements of AS 2890.1 and AS 2890.2, subject to further assessment in the staged Project Applications. The creation of five (5) lots will occur in four (4) stages, with Application 1 for Lots 1 and 3, Application 2 for Lot 2, Application 3 for Lot 5 and Application 4 for Lot 4
- On the basis of the analysis undertaken, the Concept Plan is supportable in traffic and transport planning terms.



1. introduction

Traffix was previously commissioned by Parkview Sydney Developments to undertake a traffic impact assessment of a proposed Concept Plan Application for the former Sunbeam site in Charlotte Street at Clemton Park. The report follows upon a previous report prepared in support of the Preliminary Environmental Assessment that was prepared by Planning Workshop Australia, which was an application made under Part 3A of the Environmental Planning and Assessment Act, 1979, following authorisation of the Concept Plan by the Minister. This TMAP study should therefore be read in conjunction with the overall Environmental Assessment, of which it forms a part. The Environmental Assessment was prepared by Planning Workshop Australia and deals with all relevant matters as identified under the in the Director General's Requirements.

This report documents the findings of our further investigations in response to Council's and the RTA's responses to the Concept Plan Application. It is also in response to the Director General's Requirements and subsequent discussions.

The Concept Application relates to the use and building envelopes comprising a total floor area of 87,332 square metres, together with an indicative number of apartments, height and building footprints, road layout and landscaping across the site.

The Project Application relates to the subdivision of the whole of the land into 5 allotments; the development of roads and services for subsequent staged construction (with the first stage of roads and services being completed prior to occupation of developments that are to occur on Lots 1 and 3).

The development of 26,343m² lettable floor area of bulky goods (relating to a total floor space of 30,117m²) and commercial uses with associated parking on Lot 1; and the development of a residential flat building for 58 units and a 75 place child care centre with ancilliary parking on Lot 3, are the subject of separate Project Applications which will also include the demolition and remediation of the site, following the granting of a Construction Certificate for such works.



2. location and site

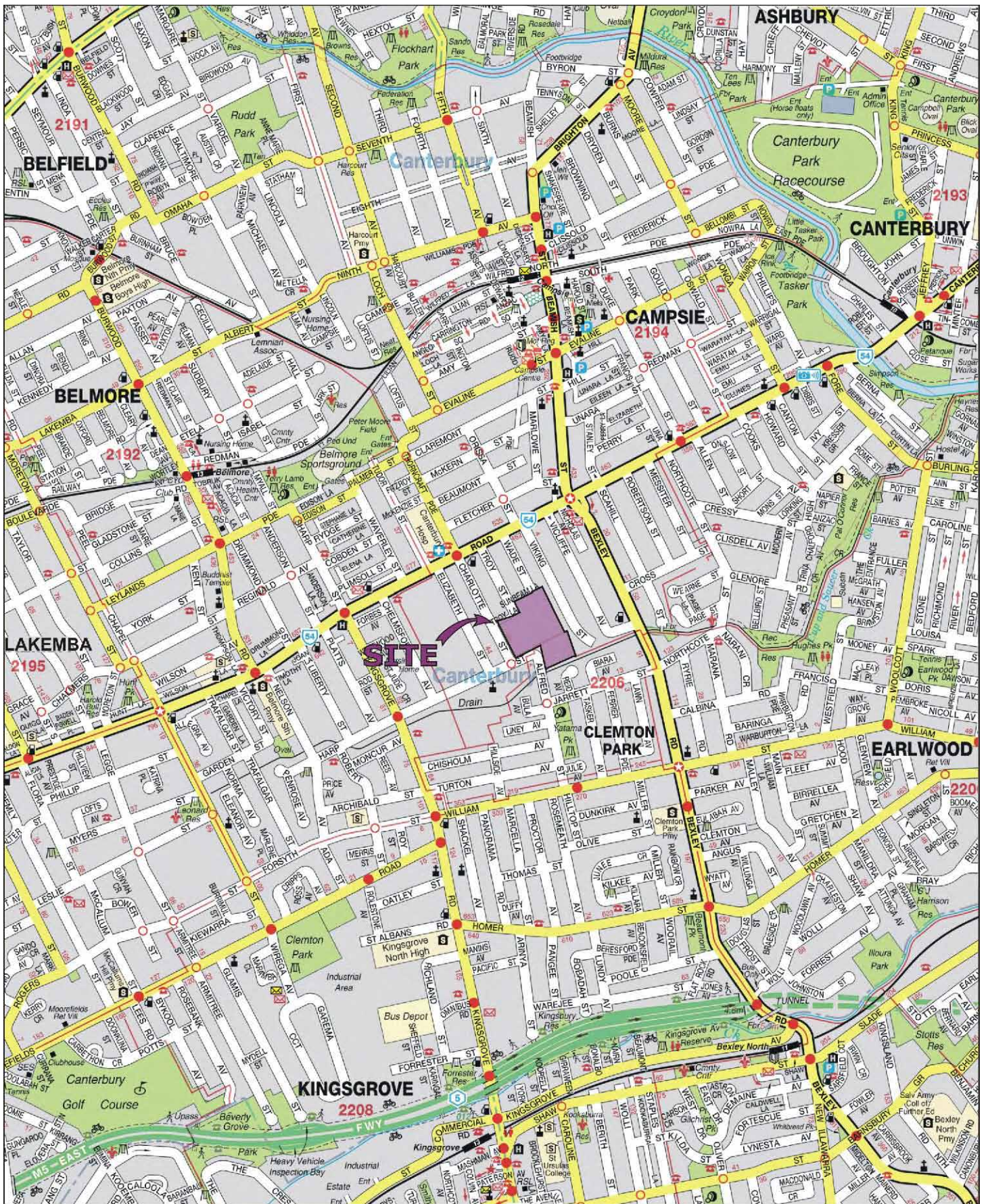
The site is situated at the former Sunbeam factory in Harp Street, about 300 metres south of Canterbury Road and about 100 metres west of Bexley Road, at Clemton Park. It lies within an established industrial precinct and is about 1.2 kilometres south of the existing Campsie town centre.

In a more local context, it has primary road frontages to Harp Street and Charlotte Street, while secondary accesses are also available at the southern end of Troy Street and Wade Street. These frontages have all been used historically for vehicular access to the site and continue to be used as significant site accesses. However, no use is proposed of Wade Street, while only very limited access is proposed to Troy Street and this acknowledges their residential status.

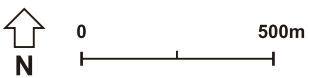
Most access will be available via Harp Street and Charlotte Street using a newly developed internal (public) road network. This provides maximum accessibility for vehicles as well as pedestrians. Harp Street in turn provides access to Kingsgrove Road to the west of the site, while Charlotte Street provides the main access to Canterbury Road. A minor access is also proposed to Troy Street which served Lot 3 (the 58 units and 75 place child care centre). The site is also within or adjacent to the Canterbury Road Enterprise Corridor identified in the Sydney Metropolitan Strategy 2005.

The site has an irregular configuration and currently comprises a number of large industrial buildings. The site has an area of 54,846m². The site is bounded by residential development on its northern and eastern sides, as well as on its southern side along Alfred Street.

A Location Plan is presented in **figure 1**, with a Site Plan presented in **figure 2**. Reference should also be made to the Photographic Record presented in **appendix 1**, which provides an appreciation of the general character of roads and other key attributes in proximity to the site.



Source: UBD 2008

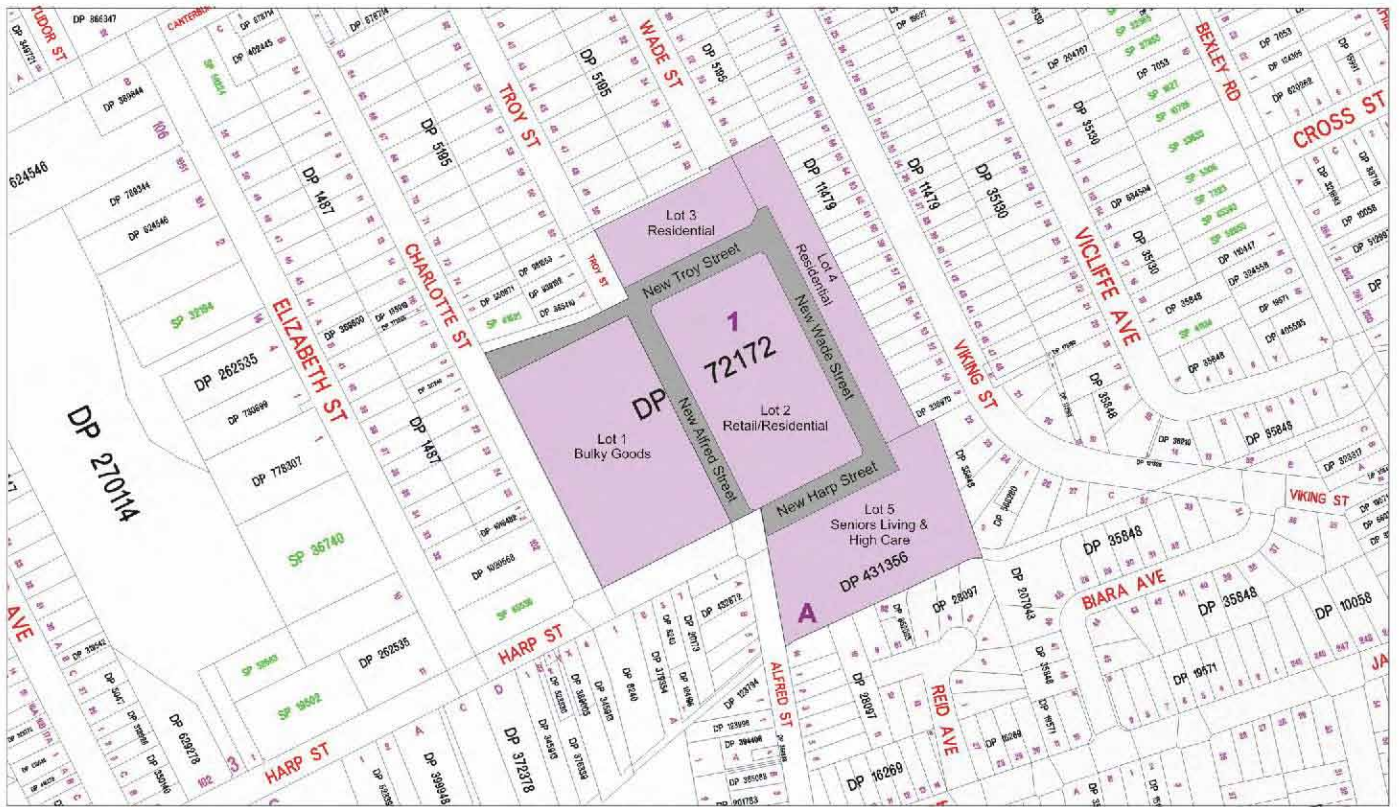


concept plan application: mixed use development
60 charlotte street, clemton park

figure 1
location



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cadastre plan

0 200m

aerial photograph: dated January 2007

0 100m

concept plan application: mixed use development
60 charlotte street, clemton park

figure 2
site



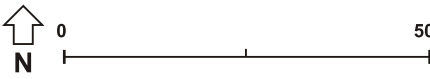
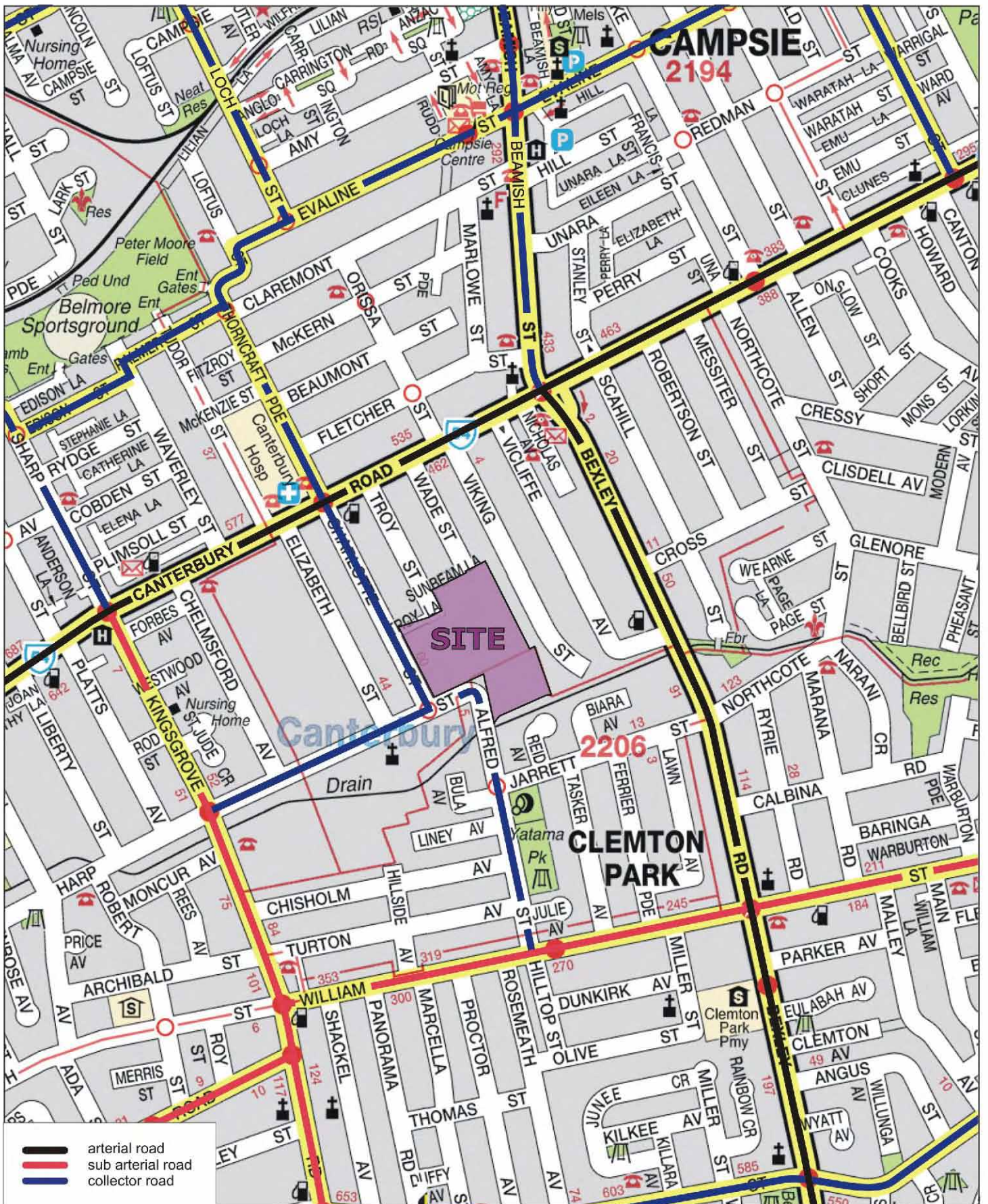


3. existing traffic conditions

3.1 road hierarchy

The road hierarchy in the vicinity of the site is shown in **figure 3** with the following roads of particular interest:

- **Canterbury Road:** is an important RTA State Road (MR 167) carrying some 43,000 vehicles per day in the vicinity of the site and serving as a east-west link between the Sydney CBD and the western suburbs;
- **M5 Motorway:** is an RTA State Road (MR 6005) and is one of Sydney's major links from the CBD to the south western suburbs. It lies to the south of the site and is accessed via Canterbury Road and King Georges Road;
- **Bexley Road:** is an RTA State Road (MR 169) and is a continuation of Beamish Street to the south of Canterbury Road. It is also a major north south link between Canterbury Road and the M5 motorway. It carries approximately 23,000 vpd in the vicinity of the site
- **Beamish Street:** is an RTA Regional Road (SR 2014) which acts as a north south link from Georges River Road in the north to Canterbury Road in the south and carries about 22,000 vpd in the vicinity of the site;
- **Kingsgrove Road:** is a regional road that connects Canterbury Road in the north with Stoney Creek Road in the south and carries about 12,000 vpd;
- **Harp Street:** is a local industrial collector road that connects Kingsgrove Road to the west of the site with William Street to the south of the site, via Albert Street. It runs generally east-west along the southern boundary of the site and carries about 7,000 vpd; and



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figure 3
road hierarchy

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➤ Charlotte Street is a local collector road that connects Canterbury Road to the north of the site with Harp Street to the south of the site. It runs north-south along the western site boundary and carries about 7,000 vpd;

It can be seen from figure 3 that the site is conveniently located with respect to the arterial road system serving the region, while local access is available using the above routes.

3.2 Overview of existing traffic conditions

Canterbury Road is constructed with a 12.8 metre wide carriageway, with 3.6 metre wide footpaths along both sides. It carries two through traffic lanes in each direction, with 'No Parking' and AM/PM 'Clearways' signposted on both sides.

Bexley Road and Beamish Street together form a four-way junction with Canterbury Road and this is a major intersection in the locality which is under traffic signal control. West of this intersection, Charlotte Street and Thorncraft Parade together form a four way junction with Canterbury Road and this intersection is also under traffic signal control. However, there is a right turn prohibition at this intersection for the movement from Canterbury Road into Charlotte Street (west to south). Accordingly, right turns from Canterbury Road occur at Kingsgrove Road, which is also under traffic signal control.

Harp Street forms a four way signal-controlled junction with Kingsgrove Road to the west of the site. A roundabout is provided at the intersection of Charlotte Street with Harp Street adjacent to the site, which provides single lane circulating traffic flow. To the east of this roundabout, Harp Street undertakes a sharp right bend into Alfred Street. This bend incorporates a short length of concrete median to provide channelisation of traffic. Although Harp street is classified as a local road by council, it currently accommodates in the order of 7,000 vpd which is consistent with volumes for a local collector road.

Further to the south along Alfred Street, local access routes are available onto Bexley Road via Jarrett Street and William Street. Jarrett Street is not a favourable route for traffic exiting the subject site due to the fact that all traffic must turn left from Jarrett Street into Bexley Road.



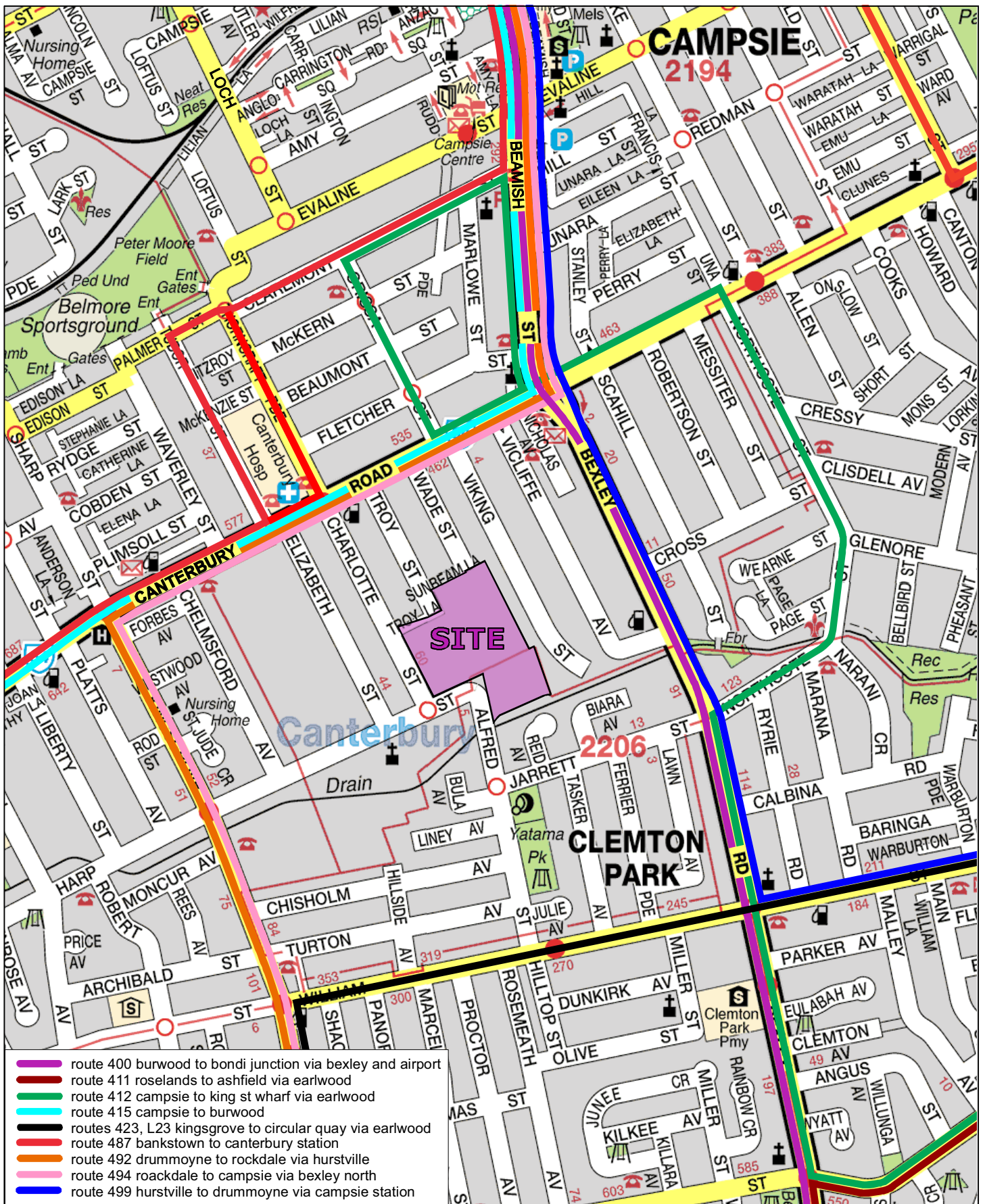
3.3 existing site generation

Access to the existing site is currently available via driveways onto Harp Street, Charlotte Street, Troy Street and Wade Street. The Wade Street access is to be closed under the Concept Plan, while Troy Street is to be relied upon for access to a small part of the site (for predominantly residential uses) to preserve and protect its environmental amenity.

It is noted that the former use of the site by Sunbeam has been previously assessed as being 480 veh/hr during peak periods. This is based upon an assumption that the site accommodated some 2,500 workers, with 640 parking spaces. This is considered a conservative assessment as it ignores on-street parking impacts. The Sunbeam operations are understood to have employed over 1,000 people during the main day shift and the vast majority would have driven to/from work, with full use of on site parking and with overflow parking onto residential streets, including Charlotte Street, Harp Street, Troy Street and Wade Street. Having regard for this, it is reasonable to conclude that the site would have generated over 600 veh/hr during peak periods (with more at shift changeover times) and this provides a context for the Environmental Assessment. In addition, significant activity also occurred on weekends and particularly on Saturdays.

3.4 existing public transport services

The site benefits from good access to bus services as shown in **figure 4**. These services are important for both the journey-to-work as well as shopping and other trips, with direct services provided to the Sydney CBD, Rockdale, Bondi Junction, Bankstown, Drummoyne and Five Dock. Existing bus stops are located on Canterbury Road and Bexley Road within a reasonable walking distance of the site. It is proposed that some of these services be diverted to achieve improved links to Campsie Railway station which is located about 1.6km to the north of the site. This is discussed further below.



0 500m **concept plan application: mixed use development**
60 charlotte street, clemton park

figure 4
transport routes

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3.5 existing intersection performances

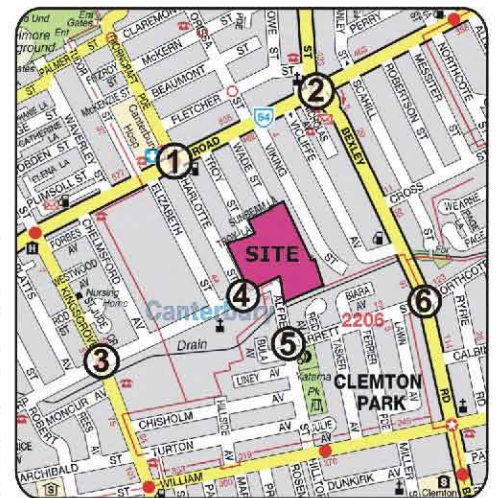
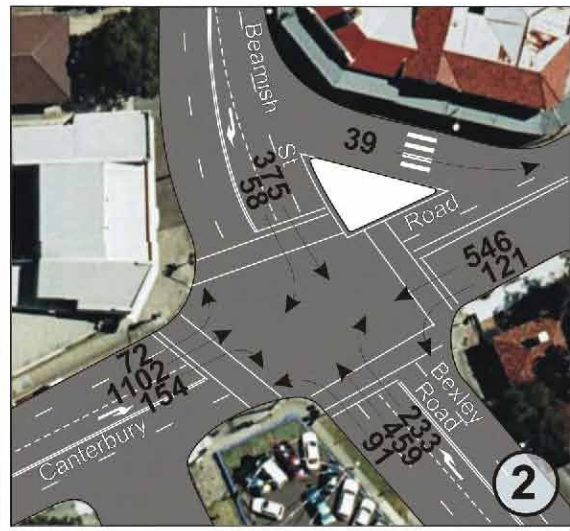
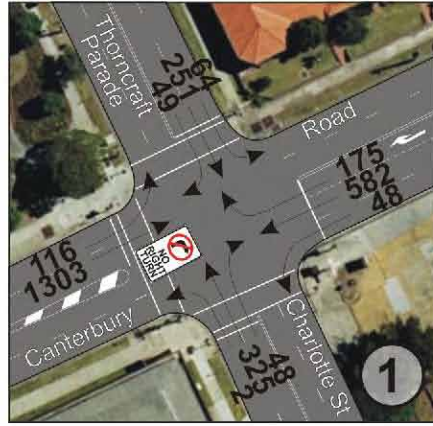
For the purposes of the assessment of traffic impacts of this development, surveys were undertaken to establish the performance of the existing road system during the AM and PM peak periods. These surveys confirmed that no change has occurred since the previous 2004 and 2006 traffic studies undertaken for this site, with no effective growth on the local road system. This is also supported by a review of traffic conditions at the RTA's nearby permanent count station (Station 24.213) which shows that the annual average daily traffic (AADT) has reduced from 47,778 on 1999 to 42,056 in 2005 (which is in fact less than traffic volumes that occurred in 1993) and this is largely attributable to the influence of the M5 Motorway. The key intersections in the locality that are of interest and were surveyed are as follows:

- The intersection of Charlotte Street with Canterbury Road
- The intersection of Bexley Road with Canterbury Road
- The intersection of Bexley Road with Jarrett Street
- The intersection of Jarrett Street with Alfred Street;
- The intersection of Harp Street with Charlottes Street
- The intersection of Kingsgrove Road with Canterbury Road, and
- The intersection of Harp Street with Kingsgrove Road

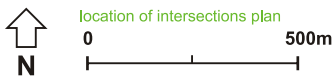
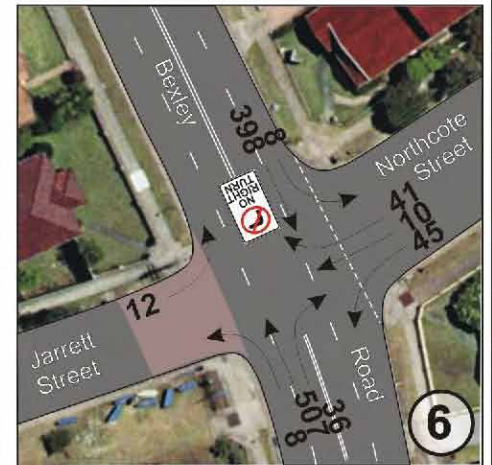
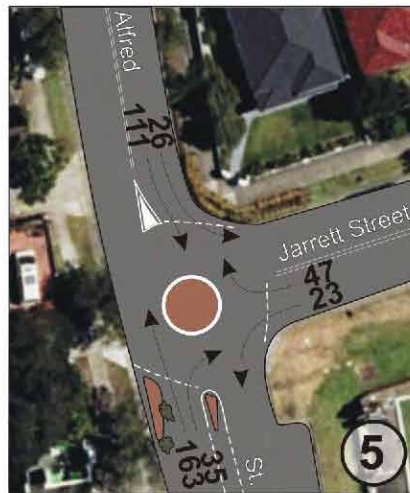
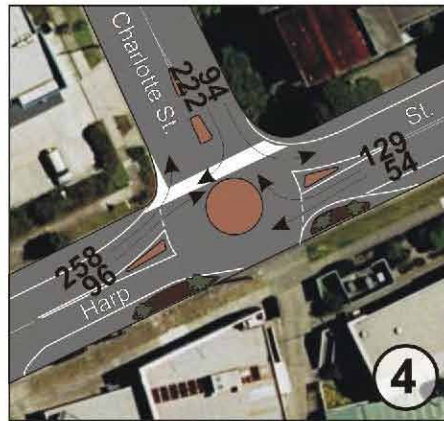
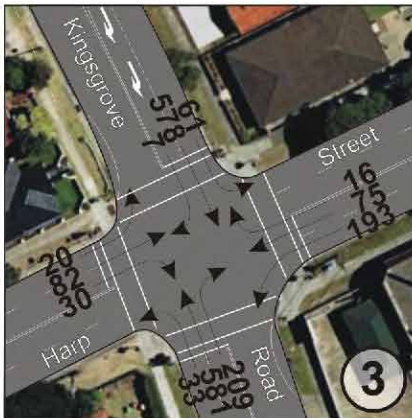
These intersections also include those requested to be assessed by the RTA. The results of the survey are presented in **figures 5 & 6**, which show the peak flows over the surveyed period for the AM and PM peaks respectively. Based on these survey results, the above intersections were analysed using the SIDRA computer program to determine their performance under existing traffic conditions.

The SIDRA model produces a range of outputs, the most useful of which are the Degree of Saturation (DOS) and Average Vehicle Delay per vehicle (AVD). The AVD is in turn related to a level of service (LOS) criteria. These performance measures can be interpreted using the following explanations:

DOS - the DOS is a measure of the operational performance of individual intersections. As both queue length and delay increase rapidly as DS approaches 1, it is usual to attempt to keep DS to less than 0.9. When DS exceeds 0.9 residual queues can be anticipated, as occurs at many major



location of intersections plan

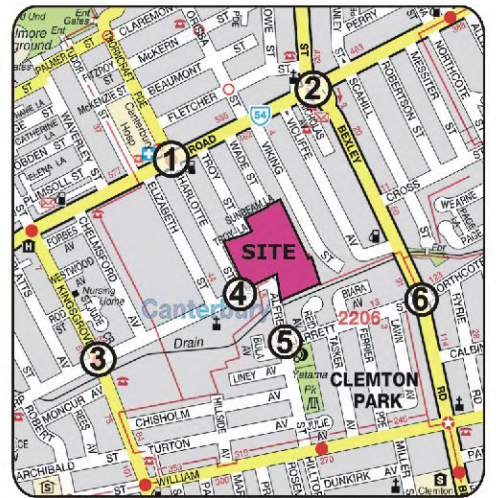
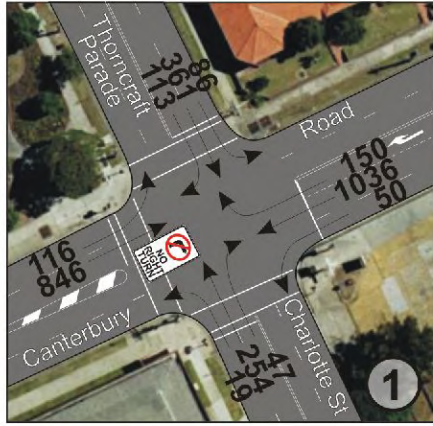


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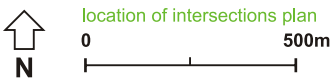
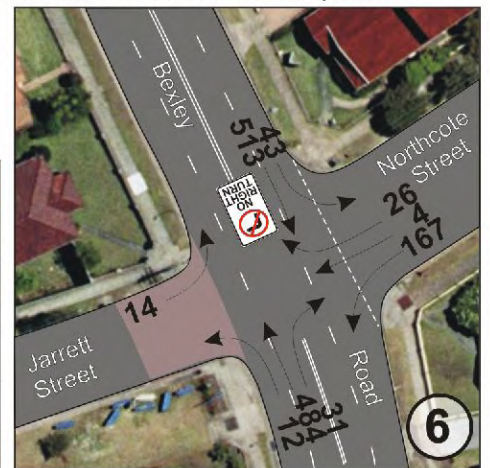
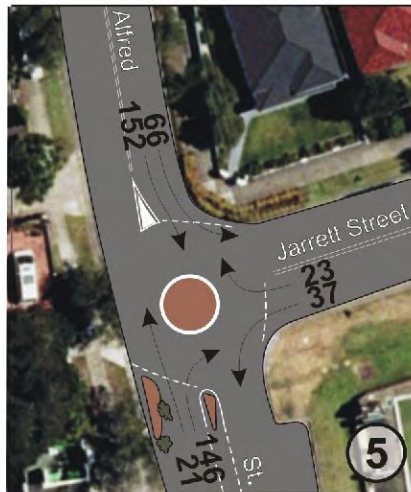
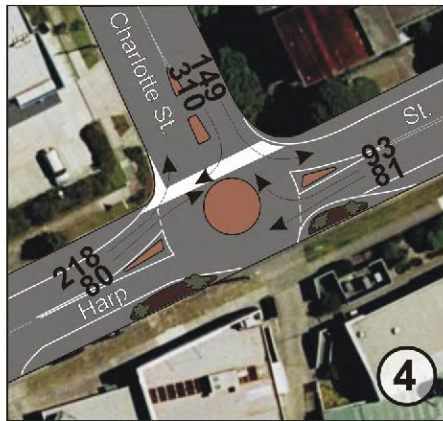
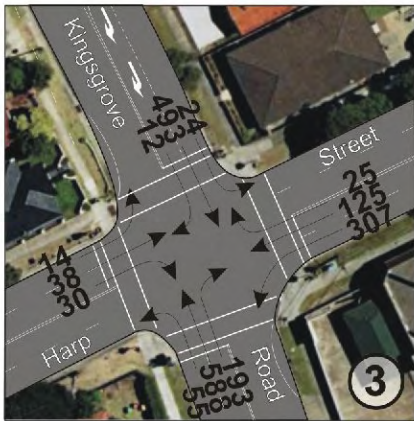
figure 5
existing am peak traffic volumes

prepared on behalf of parkview sydney developments
by traffic traffic & transport planners





location of intersections plan



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60 charlotte street, clemton park

figure 6
existing pm peak traffic volumes

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intersections throughout the metropolitan area during peak periods. In this regard, a practical limit at 1.1 can be assumed. For intersections controlled by roundabout or give way/stop control, satisfactory intersection operation is generally indicated by a DOS of 0.8 or less.

AVD - the AVD for individual intersections provides a measure of the operational performance of an intersection. In general, levels of acceptability of AVD for individual intersections depend on the time of day (motorists generally accept higher delays during peak commuter periods) and the road system being modelled (motorists are more likely to accept longer delays on side streets than on the main road system).

LOS - this is a comparative measure which provides an indication of the operating performance of an intersection as shown below:

Level of Service	Average Delay per Vehicle (secs/veh)	Traffic Signals, Roundabout	Give Way and Stop Signs
A	less than 14	Good operation	Good operation
B	15 to 28	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
C	29 to 42	Satisfactory	Satisfactory but accident study required
D	43 to 56	Operating near capacity	Near capacity and accident study required
E	57 to 70	At capacity; at signals incidents will cause excessive delays. Roundabouts require other control mode	At capacity and requires other control mode
F	More than 70	Unsatisfactory and requires additional capacity.	Unsatisfactory and requires other control mode or major treatment.

The results of the modelling for each intersection are summarised in table 1 for all approaches. It will be noted in this regard that conditions at all other times will be improved, with lower delays.



table 1: existing intersection performance during the am and pm peak periods

Intersection Description	Control	Time Period	Degree of Saturation	Intersection Delay (secs)	Level of Service
Charlotte/Canterbury	Signals	AM	0.77	31.9	C
		PM	0.62	31.5	C
Bexley/Canterbury	Signals	AM	0.97	33.3	C
		PM	1.00	38.1	C
Kingsgrove/Harp	Signals	AM	0.65	21.1	B
		PM	0.90	29.0	C
Charlotte/Harp	Roundabout	AM	0.19	10.5	A
		PM	0.19	11.1	A
Kingsgrove/Canterbury	Signals	AM	0.82	38.9	C
		PM	0.74	34.6	C
Alfred/Jarrett	Roundabout	AM	0.06	11.2	A
		PM	0.12	11.5	A
Jarrett/Bexley	Signals	AM	0.21	6.8	A
		PM	0.48	16.5	B

It is noted that the delays above relate to average delays in the case of traffic signals, and to the most disadvantaged movement in the case of roundabouts and priority-controlled intersections. With regard to the latter, these delays typically occur only with minor movements and overall performance is superior, with reduced delays. It can be seen from table 1 that all of the above intersections operate generally satisfactorily during both the AM and PM peak periods. Reference should be made to the SIDRA outputs provided in **appendix 3** which show the performance of individual approaches at these intersections.

In this regard, it is stressed that the most relevant use of this analysis is to compare the relative change in the performance parameters as a result of the proposed development. This is discussed further in the following sections.



4. description of proposed development

A detailed description of the Concept Plan application is provided in the Environmental Assessment report prepared by Project Planning Australia. In summary, the Concept Plan development for which approval is now sought relates to the establishment of uses and building envelopes, road layout and landscaping across the subject site. The proposal comprises the following components:

- Development of a road network to serve individual buildings, which will form part of the public road network;
- Creation of five (5) lots to be developed in four (4) stages as follows;
 - Application 1: Lot 1 (Bulky Goods) and Lot 3 (Residential and child care);
 - Application 2: Lot 2 (Retail/Residential);
 - Application 3: Lot 5 (Seniors Living); and
 - Application 4: Lot 4 (Residential).
- These developments will result in an indicative floor space yield of 87,056 square metres. This will include a range of other uses as discussed in the following sections
- The uses and yields are generally consistent with the development concept adopted for assessment in the Preliminary Environmental Assessment report prepared in April 2008
- The resulting overall yields include the following land use components (having regard for the different floor areas used in the parking and traffic assessment):
 - 17,995m² lettable area of bulky goods uses, including 3,165m² of trade bulky goods;
 - 5,960m² of commercial office floor area;
 - 2,500m² of lettable supermarket area (2,585m² of floor area);
 - 3,069m² of lettable specialty and convenience shops (4,005m² of floor area);
 - 3,719m² of medical centre floor area;
 - 1,248m² of gymnasium floor area;



- A 75 place childcare centre;
- 336 residential units;
- 50 high care seniors living units;
- 59 independent seniors living units; and
- Parking for a total of 1,469 spaces (subject to later application/s)

The parking and traffic impacts arising from the Concept Plan are discussed in the following sections. Reference should be made to the plans submitted separately to the Department of Planning, some of which are presented at reduced scale in **appendix 2** for ease of reference. It is emphasised that these plans are to be amended slightly to accommodate changes required for the Preferred Project.

It is emphasised that the above uses have a synergy so that parking and particularly traffic generation is reduced by virtue of linked trips (where patrons will divert from their existing trips) and multi-purpose trips (where one vehicle trip will involve visits to several uses). In addition, many people using the on-site facilities will be drawn from the on-site population, so that there will be a high proportion of walking trips, thereby containing external travel demand. Finally, the proposed use of car sharing will also reduce parking demands.