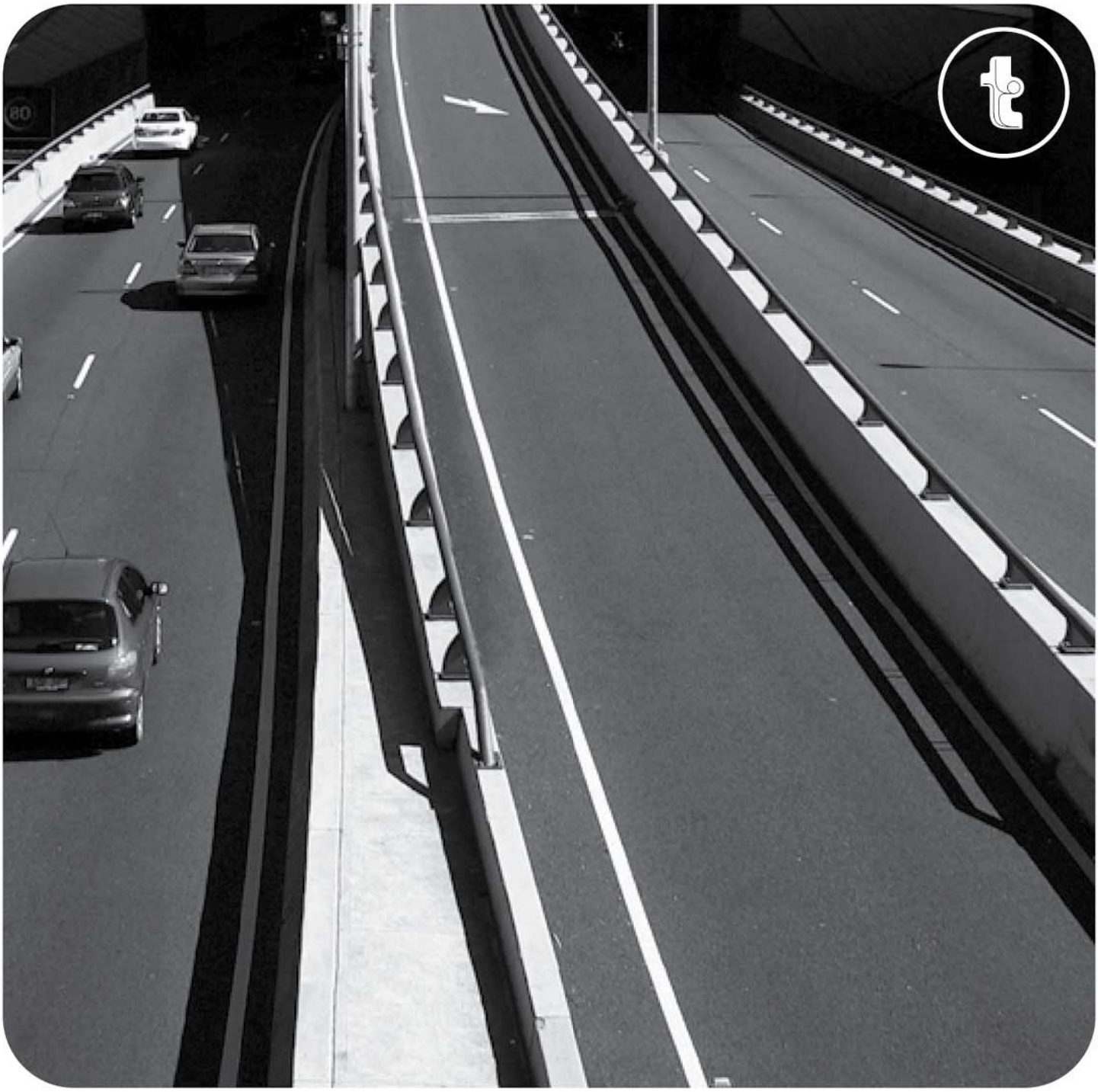

TMAP study

concept plan application for an existing industrial site at 78-90 canterbury road, lewisham

prepared on behalf of Lewisham estates by TRAFFIX traffic & transport planners
ref: 09141 report version 9, October 2010

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contents

1. introduction

Traffix has been commissioned by Lewisham Estates to undertake a Transport Management Accessibility Plan (TMAP) assessment of a proposed Concept Plan Application for the existing industrial site for a mixed retail and residential development at 78-90 Old Canterbury Road, Lewisham. The report follows upon a previous report prepared in support of the Preliminary Environmental Assessment that was prepared by Planning Ingenuity 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 deals all relevant matters as identified under 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 of the site for mixed use purposes.

The development concept intensity has been substantially informed by the limited capacity of the road system to accommodate future traffic volumes, so that every effort has been taken to moderate car travel. This includes the elimination of commercial uses on the site, with the predominant use being residential units, together with retail uses that are of a local nature and will involve extensive walking trips, including trips associated with the residents who reside within the site. The retail uses will also benefit from moderated trip rates due to the presence of multi-purpose and linked trips. For example the supermarket is proposed as a medium size supermarket that serves the local catchment (including residents and tenants of the subject site), many of whom will walk to the supermarket. It is emphasised that the subject site forms part of a larger area that includes the development site to its immediate south. The 800 units that result (400 units on the subject site and an estimated 400 on the adjoining site) will accommodate up to 1,800 residents and these will make use of the other uses on the site, reducing 'external' traffic impacts.

It should be noted that the subject site is immediately adjacent to the existing Lewisham Railway station, with a very good prospect that it will also have direct and convenient access to a future light rail service (the Dulwich Hill Light Rail extension) that is currently under investigation by the Ministry of

Transport. This presents a unique opportunity to reduce parking supply and suppress travel demand, particularly for the journey to work. Nevertheless, the benefits associated with this light rail extension (resulting in reduced trip rates) has not been claimed for the purpose of this report, so that it represents a worst case scenario in terms of external traffic impacts.

It is noteworthy that the development yields that are proposed under this Concept Plan application are higher than those implicit in the separate master plan prepared by Marrickville Council due to the higher FSR ratios now proposed.

Separate Project Applications will subsequently be submitted which will include the demolition of the site, following the granting of a Construction Certificate for such works. There will therefore be subsequent traffic impact assessment report that will provide more accurate details of impacts associated with individual development applications. That is, the level of investigations undertaken in this report are consistent with what would be expected based on a master plan.

2. location and site

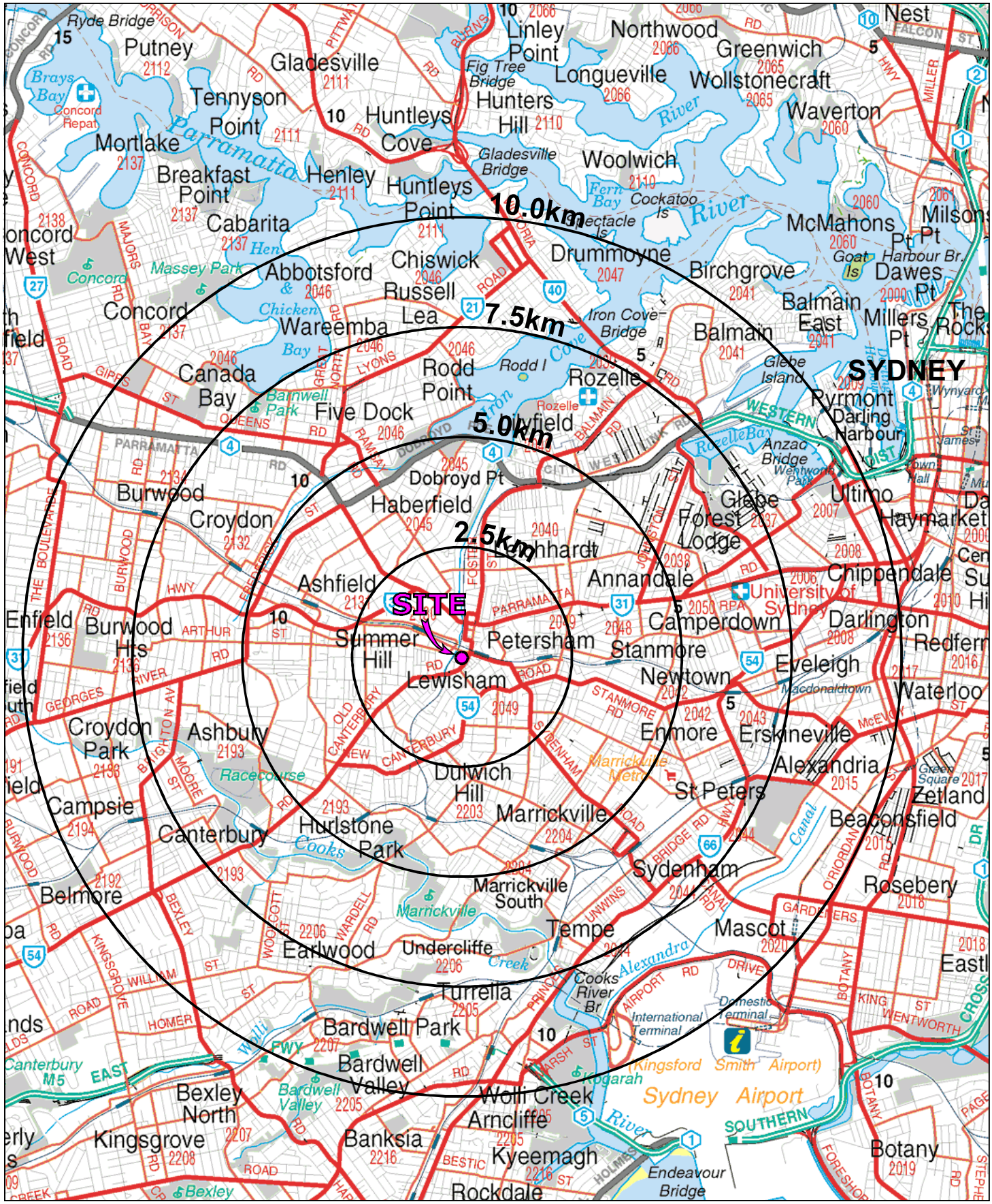
The site is situated about 12 kms to the south-west of the Sydney CBD at Lewisham. It lies within an established industrial precinct and is about 150 metres to the west of Lewisham Railway Station, with excellent access therefore to the metropolitan rail network. It lies about 1km south of Parramatta Road and has frontages to Old Canterbury Road (which forms the eastern and southern site boundaries) as well as to the Railway Terrace/Longport Road route that traverses immediately adjacent to the main western rail line on its southern side. The western site boundary is formed by the main southern railway corridor. The site is thus immediately adjacent to two rail corridors, as well as Old Canterbury Road, which is a unique situation that will maximise public transport accessibility.

In a more local context, the site has a primary road frontage to Old Canterbury Road which forms its eastern and southern boundaries; as well as to Longport Street that forms its northern boundary. These frontages have both been used historically for vehicular access to the site and will continue to be used for site access. This includes access to Old Canterbury Road via William Street, Hudson Street, and McGill Street. An access is also provided to Longport Street within the northern site boundary. No access is available to the west due to the railway corridor which forms the western site boundary.

The site has an irregular configuration and currently comprises a number of industrial buildings. The site has an area of 13,115m^2. The site is bounded by commercial/industrial development on its western and southern sides, with predominantly residential development on the eastern side of Old Canterbury Road, opposite the site.

The site itself is known as 78-90 Old Canterbury Road. It is bounded by Longport Street to the north, Old Canterbury Road to the east, Hudson Street to the south and a green corridor (redundant freight railway corridor) to the west. A few outbuildings are located within the green corridor to the west and are essentially attached to the main western boundary.

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

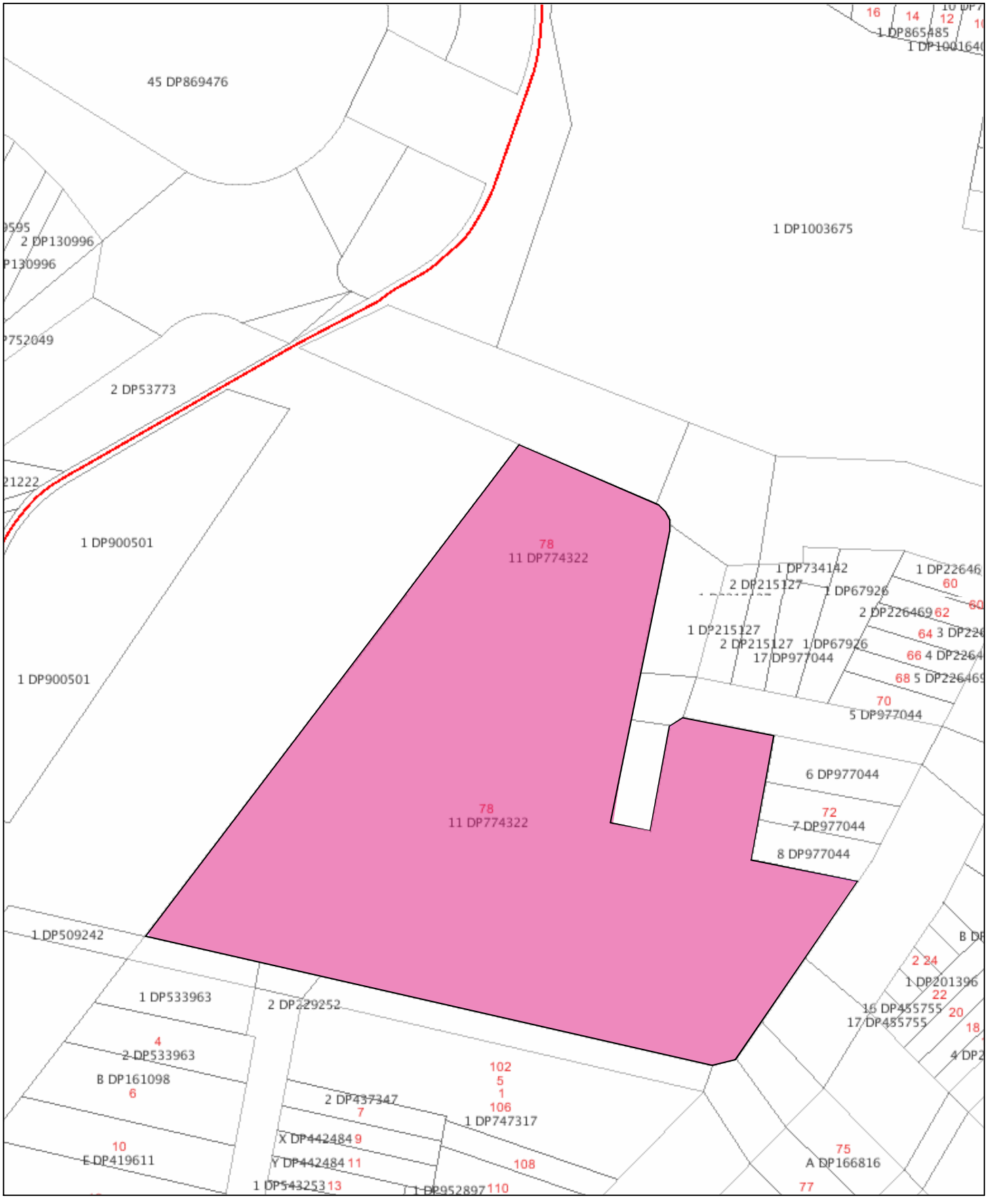
N

0 5km

impact assessment: mixed use development
78-90 old canterbury road, lewisham

figure 1
location

prepared on behalf of demian constructions
by **traffix traffic & transport planners**



N

0 50m

impact assessment: mixed use development
78-90 old canterbury road, lewisham

figure 2
site

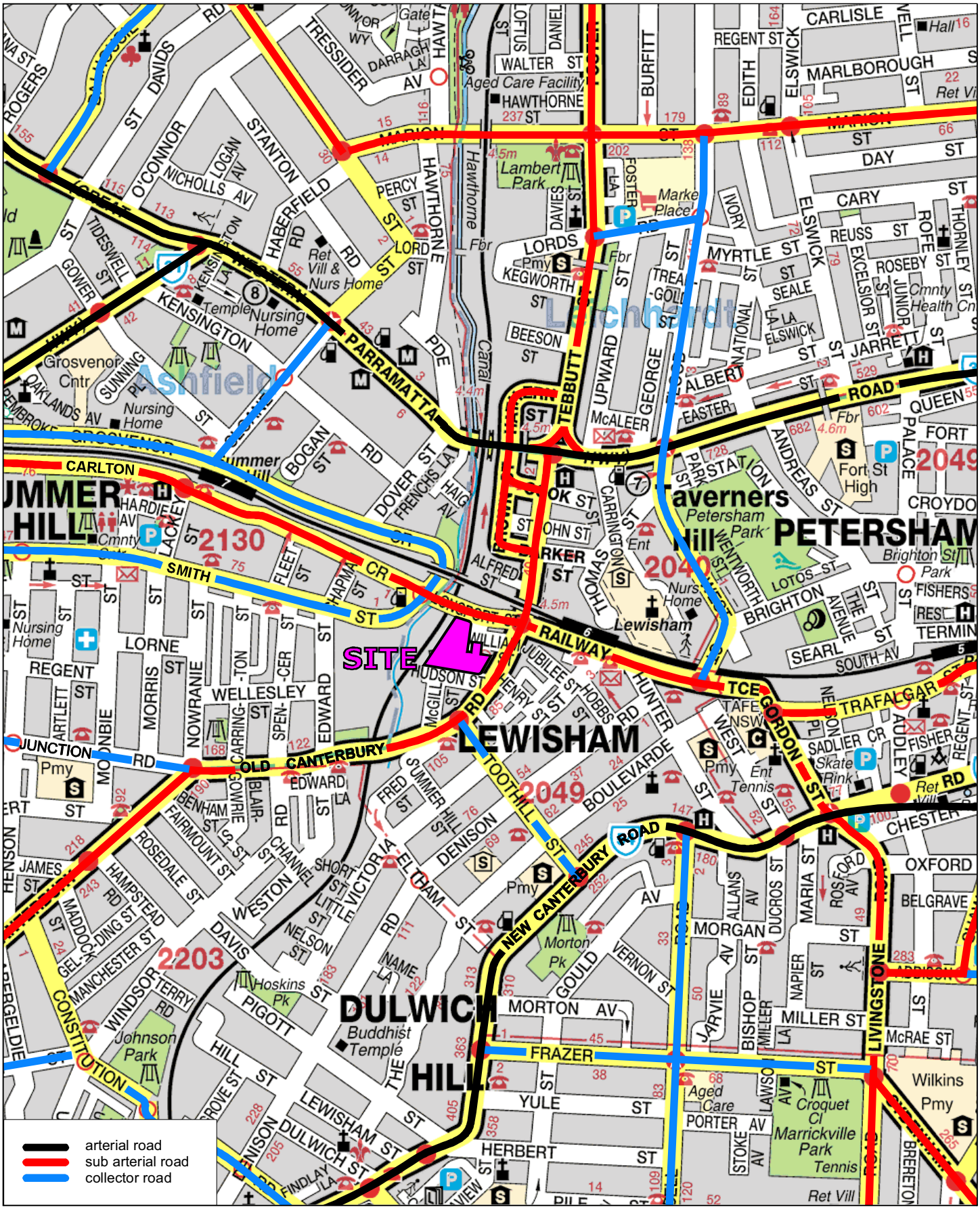
prepared on behalf of demian constructions
by **traffix traffic & transport planners**

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:

- Parramatta Road: is an important RTA State Road (SH 5) carrying some 60,000 veh/day in the vicinity of the site and serving as an important arterial connection to the CBD to the west and south, via Parramatta Road and the Hume Highway respectively;
- Old Canterbury Road: is an important RTA State Road (MR 652) carrying some 23,000 vehicles per day in the vicinity of the site and serving as a north-south link between Parramatta Road and Canterbury to the south;
- Railway Terrace: is an RTA State Road (MR 664) which commences at Old Canterbury Road and extends to the east to continue via Gordon Street. It traverses the southern side of the railway corridor and carries some 19,000 veh/day;
- Barker Street is an RTA State Road that carries one-way northbound flow (via Brown Street) across Parramatta Road to access Parramatta Road (eastbound) and Tebbutt Street. It carries some 11,000 veh/day;
- Cook Street: is an RTA State Road that carries one-way south flow (via Brown Street) across Parramatta Road between Tebbutt Street and Old Canterbury Road. It carries some 8,800 veh/day;
- Longport Street: is a Regional Road (RR 2028) and is a continuation of Railway Terrace that extends to the west to connect to Liverpool Road



N

0 500m

impact assessment: mixed use development
78-90 old canterbury road, lewisham

figure 3
road hierarchy

prepared on behalf of demian constructions
by **traffix traffic & transport planners**

(the Hume Highway). It forms the northern site boundary and carries approximately 11,000 vpd in the vicinity of the site;

- Toothill Street: is a Regional Road that extends between Old Canterbury Road and Stanmore Road which acts as an alternate route to Parramatta Road to access the CBD as well as to Marrickville and the Princes Highway. It carries about 9,000 vpd in the vicinity of the site;
- West Street is a Regional Road (RR 1084) that connects Parramatta Road with Railway Terrace)over the railway line) and carries some 12,000 veh/day;
- William Street: is a local industrial site access onto Longport Street where all movements into and out of the site are permitted;
- Hudson Street is a local industrial site access that connects to Old Canterbury Road at the northern part of the site, with left turn entries and exits only permitted during peak periods;
- McGill Street is a local industrial site access that connects to Old Canterbury Road at the southern part of the site, where all movements into and out of the site are permitted.

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. The site is only able to be accessed via Longport Street and Old Canterbury Road however, due to constraints imposed by the railway corridor.

3.2 general description of road environment

Old Canterbury Road is constructed with a 12.8 metre wide undivided carriageway along the majority of the site frontage, with four lanes (two in each direction). It permits parallel parking on both sides outside of peak periods, while parking is not permitted in the direction of peak flow during peak periods.

The intersection of Old Canterbury Road with Railway Terrace/Longport Street lies at the north-eastern corner of the site. This incorporates traffic signal control and the northern leg passes beneath the railway overpass and is constrained with only single lane northbound traffic flow (to access the Barker Street/Brown Street route to Tebbutt Street). The intersection prohibits all right turn movements on all approaches during both peak periods.

Toothill Street forms the stem of a signal controlled access with Canterbury Road in the general vicinity of the southern site boundary. This intersection facilitates right turn movements from Old Canterbury Road into Toothill Street via a separate phase, but with no turn bay provided.

The intersection of West Street with Railway Terrace is located to the east of the site and is also provided with traffic signal control. This also facilitates right turn movements from Railway Terrace into West Street (east to north) via a separate right turn phase.

The site is accessed via four local access roads. Brown Street forms a 'T' junction onto Longport Street where att turns are presently possible. Longport Street incorporates a generous taper which provides an effective deceleration lane for the left turn movement into Brown Street. William Street is the northernmost access onto Old Canterbury Road (located about 45 metres south of Railway Terrace), where only left turn entries and exits are permitted during peak periods. Hudson Street intersects Old Canterbury Road about 100 metres north of Toothill Street, with all movements permitted at this intersection. Finally, McGill Street forms the southernmost access and is located 60 metres south of Toothill Street, with all movements permitted.

The intersection of Longport Street with Smith Street lies to the immediate west of the site and is provided with roundabout control. This effectively provided a right turn exit movement from the site via

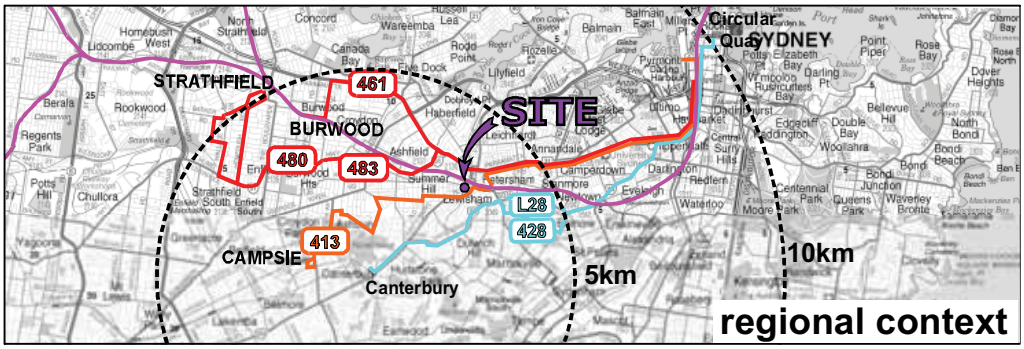
a “U’ turn manoeuvre, to travel east along Railway Terrace, as an alternative to Toothill Street. Smith Street also provides a local access route between Longport Street and Old Canterbury Road, on the western side of the north-south rail corridor.

3.3 public transport

The site already benefits from excellent access to bus services as shown in **figure 4**. These services are important for the journey-to-work as well as shopping and other trips, with direct services provided to the Sydney CBD, Strathfield, Burwood and Campsie. Route 413 in particular passes directly adjacent to the site and connects Campsie Station with King Street Wharf and the Sydney CBD. It is noted that services along Parramatta Road are located only 400 metres walking distance from the centroid of the site (350 metres from the northernmost part of the site). This is an acceptable walking distance for commuter trips in particular.

The site is also located only 140 metres from Lewisham Railway Station (or 250 metres from the centroid of the site) which clearly provides an excellent level of accessibility to the metropolitan rail network. In this regard, walking distances of up to 800 metres are generally accepted as being suitable for commuters accessing a railway station. Pedestrian linkages to the site are available along the southern side of Railway Terrace, with safe crossings provided under traffic signal control at its intersection with Old Canterbury Road.

Finally, while it is not relied upon for the purpose of this application, the adjacent site to the immediate west of the railway corridor (fronting Smith Street) is expected to be a candidate site for consideration of a new light rail station, associated with the possible extension of the light rail to Dulwich Hill. If this does eventuate, and it presently has political support, then this will significantly improve accessibility to the site by public transport, thereby further reducing vehicle trip rates. Nonetheless, even without this additional infrastructure, the site is considered to be uniquely placed to achieve significant use of alternate (non car) travel modes.



sta bus services

- 413 campsie station to king street wharf, city via ashbury
- L28 canterbury station to circulay quay
- 428 canterbury station to circulay quay (limited stops)
- 461 burwood to QVB, city
- 480 strathfield to QVB, city
- 483 strathfield to QVB, city

cityrail services

liverpool line (from lewisham station)

connections to other lines from burwood station

N

regional context
0 5km

local context
0 200m

impact assessment: mixed use development
78-90 old canterbury road, lewisham

figure 4
transport routes

prepared on behalf of demian constructions
by **traffix traffic & transport planners**

3.4 existing site generation

Access to the existing site is currently available via the abovementioned access routes (four public road intersections), together with an additional driveway crossing onto Old Canterbury Road. The floor area of the existing buildings is not known although it is estimated that there are up to 60 cars parked within the site and adjacent to the site on public roads. These would be expected to generate about 30 veh/hr during peak periods, with additional truck activity associated with the various tenancies. On this basis, it is considered reasonable to assume that the existing uses on the site generate some 50 veh/hr during peak periods.

3.5 existing intersection performances

For the purposes of the assessment of traffic impacts of this development and to establish a 'base case', surveys were undertaken to establish the performance of the existing road system during both the AM and PM peak periods. These surveys included all intersections requested by the RTA as referenced in the DGR's.

The key intersections in the locality that are of interest and were surveyed are as follows:

- The intersection of Old Canterbury Road with Parramatta Road
- The intersection of West Street/Flood Street with Parramatta Road
- The intersection of West Street with Railway Terrace
- The intersection of Railway Terrace with Old Canterbury Road
- The intersection of Toothill Street with Old Canterbury Road
- The intersection of Smith Street with Longport Street

These intersections also include those requested to be assessed by the RTA. The surveys showed that peak flows over the surveyed period for the AM and PM peaks respectively occurred at slightly different times. However, for the purpose of assessment, the individual peak at each intersection was adopted which represents a worst case scenario. 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 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 intersections based on their existing geometry and with no upgrading or altered parking controls to improve capacity. 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
Old Canterbury Rd/ Parramatta Rd	Priority (Stop)	AM	0.657	20.5	B
		PM	0.881	34.0	C
West St/ Flood St/ Parramatta Rd	Signals	AM	0.886	30.3	C
		PM	0.936	50.1	D
West St/ Railway Terrace	Signals	AM	1.466	162.5	F
		PM	1.264	160.0	F
Railway Tce/ Old Canterbury Rd	Signals	AM	1.143	124.4	F
		PM	1.177	132.0	F
Toothill St/ Old Canterbury Rd	Signals	AM	1.023	40.0	C
		PM	0.931	29.8	C
Smith St/ Longport Street	Roundabout	AM	0.702	16.5	B
		PM	0.902	16.1	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 some of the above intersections operate unsatisfactorily during both the AM and PM peak periods. Reference should be made to the SIDRA outputs provided in **appendix 3a** which show the performance of individual approaches at these intersections. This indicates that improvements are required now, without any account taken of the proposed development. The intersections of West Street and Old Canterbury Road with Railway

Terrace are the most critical and presently exhibit extended delays during both peaks. Opportunities to improve the operation of these intersections have therefore been considered and assessed. 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 for this Major Project application is provided in the Environmental Assessment report prepared by Planning Ingenuity. In summary, the Concept Plan development for which approval is now sought relates to the establishment of a mixed use development for residential, commercial and retail uses with associated car parking facilities and public domain improvements. The Concept Plan is for buildings ranging in height from 4 to 9 storeys with a maximum overall FSR of 3.5:1. The proposal comprises the following components:

- Development of an internal road network to serve individual buildings, which will form part of the public road network;
- Creation of individual sites to be developed in stages, with a resulting development yield as follows (based on the level of traffic generation that can be sustained on the road network as assessed) as follows;
  - A maximum of 400 residential units;
  - 3,218.5m^2 of general retail area;
  - 2,800m^2 local (neighbourhood) supermarket (including back-of-house); and
  - 287m^2 of commercial area.
- The uses and yields are generally consistent with the development concept adopted for assessment in the Preliminary Environmental Assessment report;
- Parking will be provided at reduced rates (compared with Council's requirements) to promote non-car travel modes and this will be the subject of later Project Applications. A total of 669 spaces are proposed, comprising 400 resident spaces, 100 visitor spaces and 169 non-residential spaces.

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 preliminary and will potentially be amended slightly to accommodate any changes that

may be required for the Preferred Project. However that minor changes to the above land use mix/yield would not be expected to alter the outcome of the investigations presented in this report.

It is also noted 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 retail facilities will be drawn from the on-site population and the surrounding neighbourhood, 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.

The site that is the subject of this Concept Application is bounded by a separate site to its immediate south, extending to Old Canterbury Road in the vicinity of McGill Street. This site was included in Council's separate Master Plan and accordingly, it has also been included in this assessment so that the cumulative impacts of both sites can be addressed in a comprehensive fashion.

5. transport management and accessibility

5.1 introduction

The traffic impact assessment undertaken in this report, as discussed in this section below, is premised upon a reduction in traffic generation of 10%, compared with the RTA's "unconstrained" trip rates, which reflect relatively poor access to public transport for many of the land use components under consideration. To achieve this target, various initiatives are proposed. These are discussed below and include improved bus services, provision of pedestrian and bicycle linkages (including end-user facilities), taxi services, a constrained parking supply, car sharing arrangements and the formulation of a Transport Access Guide.

These should be seen in the context where the site is expected to accommodate some 1,800 residents as well as additional employees.

5.2 bus services

Existing bus services are discussed in Section 3 and are extensive within a 400 metre walking distance, which includes services along Parramatta Road. At this time, no additional bus services are considered necessary. Nevertheless, discussions will be held with bus operators at Project Application stage to identify the potential for improved services, as well as improved facilities including bus shelters. At this stage, all weather shelters are considered essential along both sides of Old Canterbury Road.

These bus services operate regularly and will provide an alternative travel mode choice for residents, employees and visitors associated with the proposed development. The use of these services should be encouraged by residential strata managers and employers where possible. This may include the provision of current service timetable and route information within reception, foyer and/or other communal areas within the site.

5.3 rail services

Rail services provide access to the wider transport network serving the greater metropolitan area. The site is only 150 metres from Lewisham Station which is clearly very attractive for all trip purposes. The station will be accessed via the existing footpath and crossing facilities. However, there is an opportunity to provide a marked footcrossing in Railway Terrace directly opposite the railway station main access and this is recommended for adoption. This is a detailed matter that will require the requisite 'warrant' to be met, once the development becomes operational following later Project Application/s. Hence, at this stage, 'in principle' approval from Council's Traffic Committee would be regarded as a sufficient response.

The potential for access to the extended light rail system to Dulwich Hill is not relied upon by this report as the feasibility study commissioned by the Ministry of Transport has not yet been reported upon. Nevertheless, the adjacent corridor is an obvious candidate site for a light rail station and this would be connected to the subject site, with a station likely to be immediately adjacent to the site and within very close walking distance. This will also significantly further reduce traffic generation associated with the site.

5.4 pedestrian and bicycle linkages

Pedestrian and bicycle linkages will be provided within the site and these are presented in the architectural plans provided separately and to which reference should be made. An extensive footpath system will be provided on both sides of all internal roads. Connectivity to all footpath systems in the locality on all public roads will also be provided, with the ability to access bus and rail services (as well as light rail, should this eventuate). The entire internal road system will incorporates kerb blisters and landscaping to provide an attractive streetscape; and to slow traffic. Safe crossing opportunities will also be provided on all major desire-lines, with these assessed at Project Application stage.

It is expected that cyclists will use the internal road carriageways that are provided as a shared on road facility. This is considered appropriate as these roads do not form part of a through -cycle route, rather they are at a destination. In addition, shower facilities will be available within buildings and bicycle storage provision is to be made in accordance with Council's requirements. Further details

regarding the specific provision of the various components of the site will be provided within individual Project Application reports at a later stage.

The majority of the external cycle routes are via the shared road carriageways, with exclusive cycle lanes only provided along a short section of Longport Street. As such, the provision for shared on-road facilities within the site is consistent with the overall cycle plan of the surrounding area. The subject site does not specifically form part of the existing or proposed cycle network and it is considered sufficient to provide access to these established routes only. Therefore, dedicated cycle lanes within the site are not considered necessary.

5.5 pedestrian safety

The internal design and particularly vehicle access locations has taken due account of pedestrian safety. The overall pedestrian linkages will be developed at Project Application stage. All driveways will be designed as standard laybacks so that pedestrians have priority. All driveways will also be in accordance with AS 2890.1 and AS 2890.2, which includes the provision of appropriate sight lines.

5.6 taxi services

Taxi services will be able to access the site directly via the internal road system. It is recommended that a taxi bay be provided within the site as parallel parking spaces to be allocated and signposted. This is a matter that will also be finalised in consultation with Council's traffic committee.

5.7 car share and car pool arrangements

It is considered that car share arrangements will form an integral part of future Project Applications and this can be conditioned. This will be prepared having regard for relevant guidelines when available. In general, a parking system such as "GoGet" is contemplated which has potential application to all non-resident land uses and this will be effective in reducing retail and commercial tenant parking demands. In this regard, as a general proposition, one "GoGet" car is able to meet the needs of many users, substantially reducing the need for a 'designated' car and thereby reducing

parking demands. Based on the experience of “GoGet”, one shared space is equivalent to 5 ‘normal’ spaces. The implementation of a car share policy is a matter that can be conditioned having regard for relevant guidelines in association with individual applications.

In addition, it is recommended that one or two on-street spaces within the site be allocated as car share spaces, ensuring a high level of visibility to the principle retail frontage.

5.8 servicing

The road system has been developed to ensure safe and convenient access to all parts of the site, based on the required Design Vehicle. The largest commercial vehicle is a 12.5m HRV. This is similarly a matter for assessment during later Project Application/s and compliance with relevant standards is proposed.

Servicing of the residential component of the development will be accommodated on-street by Councils garbage services, which will be assessed for all relevant Project Applications.

5.9 parking requirements

5.9.1 parking rates and provision

The site is subject to the controls of Marrickville Council’s Parking DCP No. 19 (Parking Strategy), although regard needs also to be given to the requirements of the RTA’s Guideline as well as other survey-based assessments where these are of assistance. Specifically, the Director General’s requirements seek to reduce parking as far as possible while promoting other (non-car) travel modes. This however needs to be balanced against the practical reality that some car-dependent uses (notably supermarkets) are to a degree car-dependent (even to serve the local catchment) and need to provide sufficient parking to ensure that on-street demands do not occur, which would have amenity impacts. The required parking levels for each land use component are considered separately below.

- Specialty Retail and Other Shops

Council's DCP requires 30 spaces plus 1 space/20m^2 of floor area over 1,000m^2 which when applied to the overall 3,218m^2 GFA of general retail floor area results in a need for 141 parking spaces. This is equivalent to a rate of 1 space/22.8m^2 GFA which does not take account of the fact that the retail area will serve the residents and employees in the locality to a significant extent, with many of these people walking to the shops. Indeed, the RTA's Guideline (which reflects an unrestrained requirement) would only require 1 space/22m^2 of GLFA based on the secondary retail rate, which would equate to about 1 space/26m^2 GFA and result in a need for 124 spaces. In this circumstance, and to promote non-car modes in accordance with the DGR's, adoption of a rate of 1 space/35m^2 GFA is recommended. This results in a need for 92 spaces, which is a reduction of about 35% compared with Council's or 25% based on the RTA's requirements.

As mentioned, this approach is in accordance with the objectives of the DCP as well as the Director General's requirements and will reflect the high proportion of walking trips that are expected in this location, including many shoppers passing by on their way home from work as pedestrians from bus and rail services.

- Supermarket

Council's DCP requires 30 spaces plus 1 space/20m^2 of floor area over 1,000m^2 which when applied to the overall 2,800m^2 GFA of supermarket floor area results in a need for 120 parking spaces. This is an average rate of 1 space/23.3m^2 GFA. This may be compared with the rate of 1 space/24m^2 GLFA based on the RTA's Guideline for supermarkets, which would equate to about 1 space/28m2 GFA and would result in a need for 100 spaces. However, this is also the "unrestrained" demand for parking and reflects a car dependent supermarket "model." As with the general retail areas, in order to respond to the Director General's requirements to reduce parking; as well as the fact that the supermarket will to a significant extent serve the local residents and employees, a reduced rate of 1 space/35m^2 GFA is recommended, resulting in a need for 80 spaces.

This is supported by the Retail Impact Assessment, which identifies that even for a larger (4,000m^2) supermarket as assessed at that time, as much as 12.6% of the supermarket turnover will be associated with on-site residents. Clearly, with a smaller supermarket and a higher dwelling yield, this proportion will increase. Hence, the (effective) 33% reduction in parking based on the RTA's car-

dependent model is considered appropriate. This is sound transport planning and will also serve to reduce traffic generation, which is a key objective of this Concept Plan.

- Residential Units

Council's DCP requires one space per unit with additional visitor parking required at a rate of 1/4 units. The overall site that is the subject of this Concept Plan accommodates 400 units, with an unresolved mix at this stage, though the DCP is not sensitive to this mix. This results in a need for 500 spaces (400 resident spaces and 100 visitor spaces).

At the Department of Planning's discretion, it may be appropriate to reduce the visitor parking requirement to permit on-street parking to a limited extent within the internal road network, which will activate these roads. Notionally, this could be in the order of 50% which is the approach taken by Sydney City Council in Victoria Park in Zetland.

- Commercial Area

The 287m^2 of commercial area generates a need for 3 spaces/100m^2 for the first 1,000m^2 of area, which results in a need for 9 spaces.

- Summary of Parking Requirements

The above assessment results in the need for a total of 681 parking spaces, comprising 181 commercial/retail spaces and 500 residential spaces (including 100 visitor spaces) as follows:

92 spaces for specialty retail

80 spaces for supermarket

9 spaces for commercial

400 spaces residents

100 spaces residential visitors

With regard to the commercial/retail spaces, the proposed parking is for 181 spaces as shown below. The "unrestrained" demand for parking based on Council's DCP rate or the RTA's Guideline as appropriate is also shown (in brackets) for comparison:

Specialty retail	92	(141 unrestrained)
Supermarket	80	(120 unrestrained)
Commercial	9	(9 unrestrained)

Thus, for the non-residential uses, a total of 181 parking spaces is proposed compared with 270 spaces if the site were to provide an "unrestrained" parking supply, based generally on the RTA's Guideline or Council's DCP. This is a 33% reduction in parking which will suppress travel by non-car modes and readily achieve the DGR's target of a 10-15% reduction in private car travel. In the event that the light rail system is introduced, there may be some opportunity to further reduce parking requirements, particularly for the non-residential uses.

With regard to the residential component, it is considered that 400 resident spaces for 400 units is a moderate but sustainable level of provision that will also encourage low car usage. In this regard, even with a car provided, residents are expected to rely on public transport for the vast majority of journey to work trips. In this regard, 38% of work trips originating in the locality of the site (Zone 363) in the 2006 Travel Survey were by private car. The subject site, being proximate to excellent public transport services, will result in reduced car usage. In these circumstances, the car is likely to be left at home and not used for the journey to work; and a 10% reduction in travel demand for this site is considered to be readily achievable. The 100 visitor spaces are additional and are provided in full compliance.

5.9.2 disabled parking

This is a matter for assessment during later Project Application/s and compliance with relevant Australian standards is proposed.

5.10 transport access guide

The NSW Government State Plan (November 2006) includes the following transport targets:

- Increase the mode share of public transport trips to the Sydney CBD to 75%;
- Increase journeys to work within the Sydney metropolitan region by public transport to 25% by 2016;
- Consistently meet public transport reliability targets for all forms of public transport;
- Road fatalities continue to fall relative to distance travelled;
- Increase the number of people who live within 30 minutes of a city or major centre by public transport in metropolitan Sydney;
- Maintain current travel speeds along Sydney's major road corridors despite increase in travel volumes;

Generally the primary objective of Government behind establishing a Transport Access Guide for a major development is to reduce the reliance on private vehicle usage associated with the proposed development. Increasing the number of journey to work trips by public transport is considered the most relevant State target, identified above, with regard to the subject development. A reduced target of say 10-15% is arguably more realistic and appropriate when considering that the overall metropolitan target will be significantly influenced by mode shares associated with major centres including the Sydney CBD. In the subject case and having regard form the proposed uses, a target of 10% is considered readily achievable in relation to the journey to work trips, as discussed above. This is likely to be achieved through the reduced parking rates alone; with other initiatives further promoting the use of other travel modes including public transport, cycling and walking. These are also discussed above.

It is expected that the preparation of a Transport Access Guide will be included as a condition of consent.

5.11 traffic impacts

5.11.1 trip generation

It is usual practice to adopt trip rates published by the Roads and Traffic Authority for individual land use components, as set out in the document entitled "Guide to Traffic Generating Developments". While this is appropriate for some land uses, it is not appropriate for the proposed uses as parking demand in particular will be actively suppressed, to take advantage of the excellent public transport and the high proportion of local trips. The following trip rates are appropriate for individual land uses:

- The general retailing is provided with a reduced level of parking, which is 92 spaces compared with 124 spaces based on the RTA's Guideline. Accordingly, with parking reduced by 26%, trip rates will also reduce commensurately by 26%. The RTA's trip rate of 4.6 trips/100m^2 for secondary retail areas therefore reduces to 3.4 trips/100m^2 (during the critical PM peak). When applied to the 3,218m^2 of specialty (general) retail area proposed, this results in 110 veh/hr. This takes account of local walking trips (which require no parking) but does not take account of passing traffic (linked trips); or multi-purpose trips (both of which still require parking). These are not additional trips on the road network and the RTA's Guideline permits a discount of 25% in trip rates for these factors. If a 15% discount is assumed, which is considered conservative having regard to the location of the site adjacent to a busy arterial road, this results in about 94 veh/hr (47 in, 47 out).

- The supermarket is provided with a reduced level of parking, with 80 spaces compared with 100 spaces based on the RTA's Guideline; or 120 spaces based on Council's DCP. Accordingly, with parking reduced by 20%, trip rates will reduce commensurately by 20%. The RTA's trip rate of 15.5 trips/100m^2 GLFA for a supermarket is nonetheless considered high, as shopping patterns have altered significantly since the 1993 research that was undertaken in support of this rate. This arises from a significant increase in casual and part time worker participation levels. In this regard, the adoption of 12 trips/100m^2 GLFA is considered a more relevant 'base' rate and this is also consistent with more recent surveys undertaken by TRAFFIX, particularly the Aldi supermarket within the Canterbury Town Centre, which is a very similar supermarket to that being proposed. Specifically, it is adjacent to a busy arterial road (Canterbury Road) as well as being very close to a railway station. The existing Woolworths supermarket at Campsie is also comparable and this is associated with a PM peak hour trip rate of 11 trips/100m^2 GLFA These surveys were also undertaken in 2010 and are therefore considered valid for assessment purposes.

Application of the higher rate of 12 spaces/100m^2 to the 2,380m^2 GLFA supermarket (85% of GFA) as proposed results in a total of 286 veh/hr and this therefore takes account of local walking trips (that require no parking). With 80 parking spaces, this equates to an average of 3.575 trips/space/hr which is an average 'dwell' time of 34 minutes which is considered reasonable, though probably at the low end of the range that might be expected (that is, producing higher trip rates than are likely to occur in practice, so that the adopted 286 veh/hr is potentially overstated).

For the purpose of assessing impacts on the external road network, it does not however take account of passing traffic (linked trips). In this regard, the RTA's Guideline permits a discount of 25% in trip rates for this factor. However, more recent research undertaken in Queensland (Guidelines for Assessment of Road Impacts of developments - Queensland Department of Main Roads) indicates that linked trips can be as high as 50% adjacent to a main road. A 25% discount has been assumed, which again is conservative, and this results in about 214 veh/hr (107 in, 107 out) during the afternoon weekday peak period;

- The commercial component, with 9 spaces, is expected to generate 7 veh/hr during peak periods based on the RTA's Guideline.

- The 400 residential units will generate a maximum of 0.40 trips/unit/hr during peak periods which is higher than the RTA rate for a sub-regional centre. In this regard, the subject site is unique in that is has excellent access to both bus and rail services, with minimal parking, so that trip rates would probably be reduced below the 0.4 trips/unit/hr as assumed. The adoption of reduced parking in close proximity to excellent public transport services is also considered to be sound transport policy, aimed at reducing car travel, particularly for the journey to work. Adoption of this rate is therefore a worst-case scenario. This rate would be reduced to about 0.3 trips/unit/hr in the event that the light rail system is extended through this precinct, with a stop likely to be immediately adjacent to the site. However, this is not assumed for the purpose of the Concept Plan. Based on the adopted rate of 0.4 trips/unit/hr, the 400 units will generate 160 veh/hr during peak periods (30 in, 130 out in the AM peak, with these flows reversed in the PM peak).

  The resulting traffic generation from the overall site will be as shown in Table 2.

table 2: adopted trip rates and traffic generation for concept plan

Use	GFA (m^2)	Weekday AM Peak		Weekday PM Peak	
		IN	OUT	IN	OUT
Retail	3,218	20	0	47	47
Supermarket	2,800	15	5	107	107
Commercial	248	6	1	1	6
Residential	400 units	30	130	130	30
TOTAL		**71**	**136**	**285**	**190**
		207		**475**	

It can be seen from Table 2 that the development will result in moderate traffic volumes during the AM peak period, with peak demands occurring on a Thursday evening, when 475 veh/hr will be generated as shown. This is higher than the 287 veh/hr adopted in the traffic report prepared by ARUP based on a different dwelling yield and land use mix.

It is emphasised that these trips are not net increases. As discussed in Section 3, the existing development on the site generates an estimated 50 veh/hr; and this is entitled to be discounted. Notwithstanding this, to ensure a conservative approach, no account has been taken of these existing trips. This therefore takes account of any growth in general (background) traffic volumes that may occur in the region (though this would be against the trend); as well as any adjustment that may be considered necessary to the adopted trip rates, as discussed above.

5.11.2 traffic distributions

The impact of the above traffic generation and distribution onto the surrounding intersections is indicated by the future performance of the surrounding critical intersections. These intersections have been previously assessed under existing traffic conditions in Section 3. The above trips have been

assigned to the road network on the basis of the distributions that have taken into account the nature of the trip and available access opportunities. For example, the retail catchment in relation to retail trips results in a different distribution to journey to work trips. The route choices are also different for each peak period.

More importantly, the modelling has been based on higher trip levels that will occur in practice, as the assessment has been based on a previous land use mix that generated:

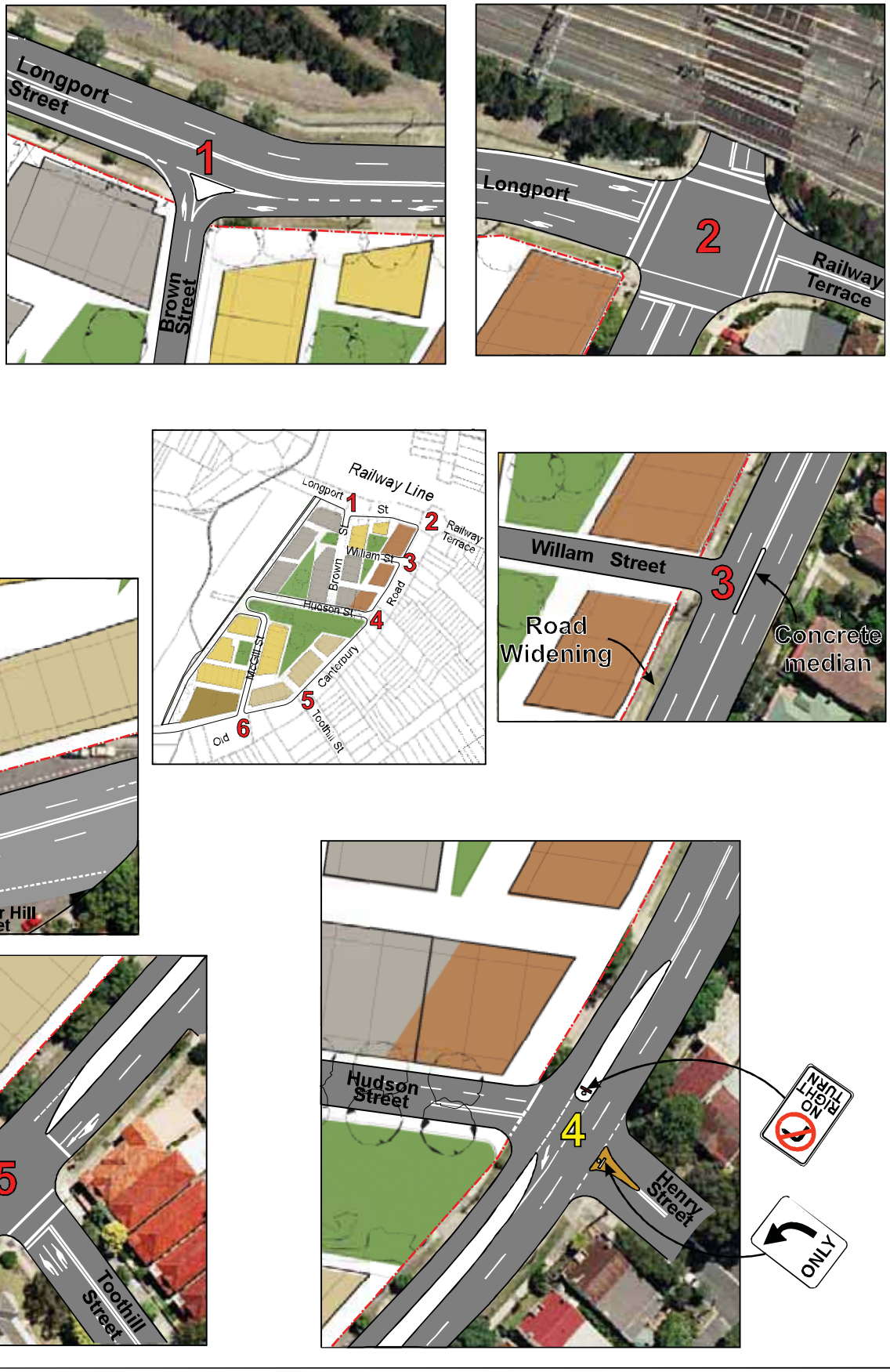
- 276 veh/hr in the AM peak (rather than 207 veh/hr as now proposed); and
- 516 veh/hr in the PM peak (rather than 475 veh/hr as now proposed).

This results in a 'safety margin' in terms of the traffic analysis. That is, as the road network operates satisfactorily overall based on these higher volumes (as discussed further below and subject to improvements), it will certainly operate satisfactorily based on the reduced volumes that are now proposed. Notwithstanding these lower traffic volumes, the access design and internal design arrangements are not expected to alter so that the overall design remains unchanged.

5.11.3 weekday peak period traffic impacts

As discussed in Section 3 the existing development generates in the order of 50 veh/hr during peak periods. These trips would normally be removed from the network prior to superimposing the development traffic onto the network. However, to assess a worst case scenario that would take account of any external growth, these existing trips have not been removed. That is, the 207 veh/hr in the AM peak and 475 veh/hr during the more critical PM peak have been added as a net increase, without this adjustment. Accordingly, the future intersection performances as assessed below are conservative.

With regard to the development of the subject site, the higher trips associated with the previous land use scenario (i.e. 276 veh/hr in the AM peak and 516 veh/hr in the PM peak) have been adopted and distributed on the basis of the site access arrangements shown in **figure 5**. The resulting trips at each access, as well as at external intersections as assessed in Section 3, are shown in the Sidra outputs presented in **appendix 3b**. The analysis assumes the following improvements, which have been



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impact assessment: mixed use development
78-90 old canterbury road, lewisham

figure 5
part 3A short term (interim) road network

prepared on behalf of demian constructions
by **traffix traffic & transport planners**

identified through an iterative process of analysis, involving testing of available options based on the higher than expected traffic volumes:

- The provision of a left-in/left-out arrangement at Brown Street at its intersection with Longport Street (Intersection 1) incorporating a left turn deceleration lane;
- The signposting of a dedicated left turn lane on the western (eastbound) approach of Longport Street to Old Canterbury Road (Intersection 2) as this lane is not currently used for through traffic movement;
- The provision of Clearway restrictions along both sides of Old Canterbury Road between Railway Terrace and McGill Street;
- The construction of a median in Old Canterbury Road opposite William Street to limit movements to left-in/left-out (Intersection 3);
- The provision of a single northbound traffic lane in Old Canterbury Road north of Toothill Street for a short distance. This acknowledges the fact that there is currently effectively only one northbound lane available in Old Canterbury Road on approach to Toothill Street, due to the heavy right turn volume from Canterbury Road into Toothill Street (Intersection 4) during peak periods. That is, the centre northbound lane is already effectively operating as a right turn lane. It is considered that this arrangement can be formalised, subject to RTA agreement, as an interim arrangement pending the implementation of the long term traffic solution as discussed further in Section 5.11.4. This provides an opportunity to provide a 'No Right Turn' restriction in Old Canterbury Road (southbound) into Hudson Street and the associated provision of a right turn median storage facility to facilitate right turn exits from the site via Hudson Street, as shown in Figure 5. It is emphasised that Old Canterbury Road in any case provides one lane northbound flow at the railway underpass to the immediate north, so that this arrangement is consistent with this restriction. The northbound approach of Old Canterbury Road at Railway Terrace still provides two lane capacity however. This arrangement can be assessed in further detail at Project Application stage. In the event that the RTA does not support this measure even on an interim basis, it would be expected that right turn exits from Hudson Street into Old Canterbury Road would need to be prohibited, with this traffic recirculating via Longport Street and with additional exit movements also from McGill Street onto Old Canterbury Road. This provides reduced flexibility in terms of site access but is unlikely to be fatal to the development and this can be explored further at Project Application stage. Traffic signal operation at the intersection of Hudson Street with Old Canterbury Road is not an option due to the proximity to existing

intersections. Southbound right turn movements along Old Canterbury Road are to be focussed at McGill Street as discussed with the RTA.

- Linemarking in Railway Terrace is proposed to create a dedicated left turn lane in Railway Terrace for the movement into West Street. This involves the loss of 4 parking spaces on the southern side Railway Terrace, immediately west of West Street.

It is noted that the above arrangements are 'interim' pending the redevelopment of the adjacent southern site (south of Hudson Street), at which time a long term traffic solution will be implemented with additional works, as discussed further below. This involves the construction of an additional 400 units on that site and this raised issues associated with the cumulative impacts on both sites.

The resulting performance of key intersections is provided in Table 3 for the interim traffic solution that is required to support the Part 3A Concept Application.

table 3: future (Part 3A) intersection performance during the am and pm peak periods

Intersection Description	Control	Time Period	Degree of Saturation	Intersection Delay (secs)	Level of Service
Old Canterbury Rd/ Parramatta Rd	Priority (Stop)	AM	0.752	23.6	B
		PM	0.926	39.4	C
West St/ Flood St/ Parramatta Rd	Signals	AM	0.886	30.3	C
		PM	0.936	50.1	D
West St/ Railway Terrace	Signals	AM	0.940	35.7	C
		PM	0.818	27.6	B
Railway Tce/ Old Canterbury Rd	Signals	AM	1.00	44.6	D
		PM	1.00	44.3	D
Toothill St/ Old Canterbury Rd	Signals	AM	0.753	21.1	B
		PM	0.881	31.4	C
Smith St/ Longport Street	Roundabout	AM	0.702	16.6	B
		PM	0.904	16.1	B
SITE ACCESSES					
Brown St/ Longport St	Left in/ out	AM	0.466	11.0	A
		PM	0.533	12.4	A
William St/ Old Canterbury Rd	Left in/ out	AM	0.439	21.0	B
		PM	0.246	12.4	A
Hudson St/ Old Canterbury Rd	Priority (Give Way)	AM	0.562	38.0	C
		PM	0.927	50.8	D
McGill St/ Old Canterbury Rd	Priority (Give Way)	AM	0.421	19.8	B
		PM	0.425	15.9	B

Based on the above improvements, traffic conditions remain moderately affected, with only slight increases in delays at all intersections examined and with no change in levels of service. This

outcome also reflects the fact that the RTA has agreed that no allowance needs to be made for growth in background traffic along Canterbury Road, based on its own strategic modelling and as mentioned previously, any growth that may occur would be offset by the fact that no account has been made for the existing site traffic generation which has been retained on the road network; as well as the fact that the adopted traffic volumes are significantly higher than will occur based on the proposed master plan.

5.11.4 long term (cumulative) traffic impacts

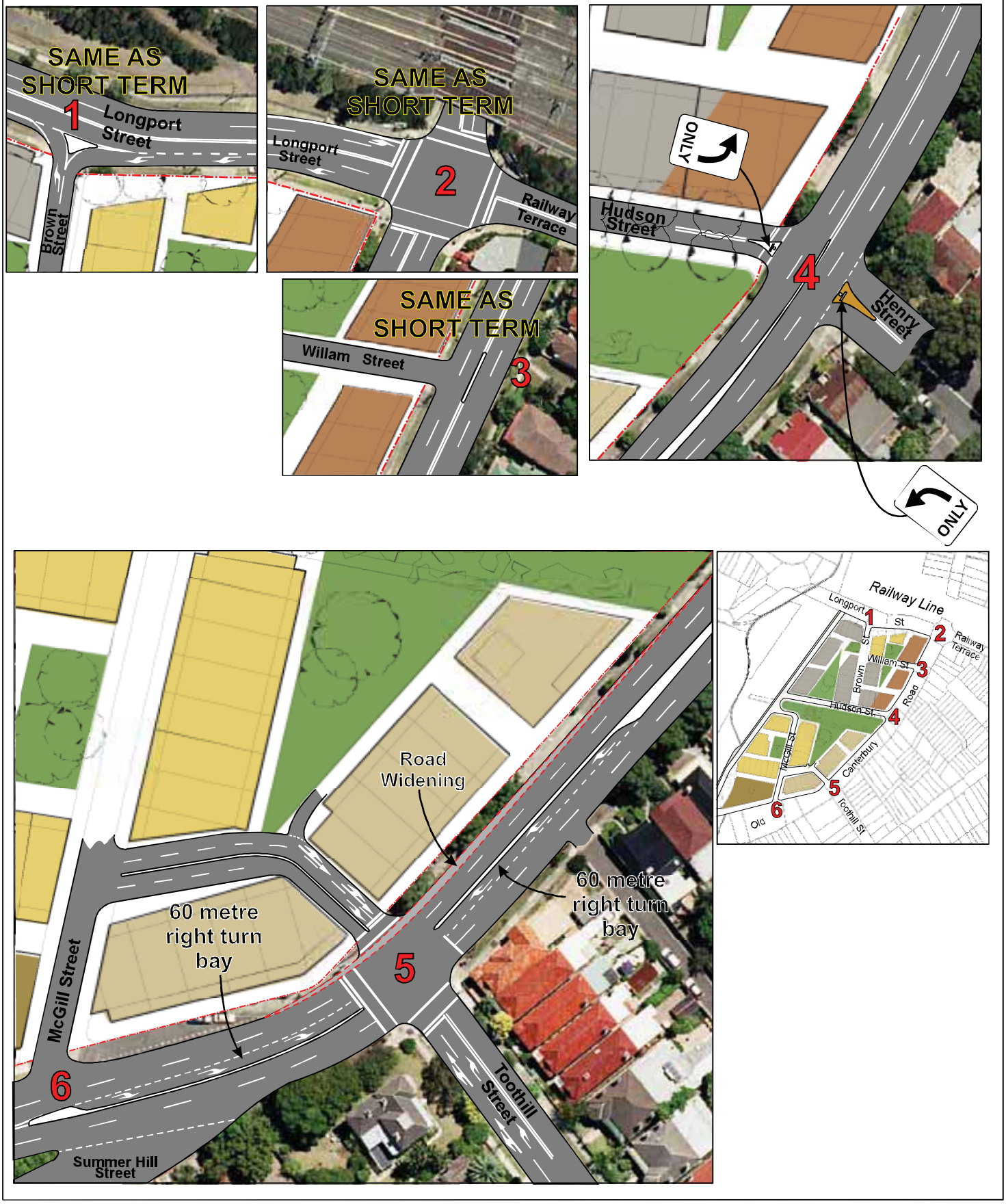
The site to the south of the subject site is anticipated to result in an additional (approximately) 400 units under the Master Plan, generating an additional 160 veh/hr during peak periods based on a trip rate of 0.4 trips/unit/hr. This has therefore also been included in the modelling and the opportunity has also been taken to improve site accessibility (to the combined sites), taking advantage of the additional land area that this site would provide for road widening. Specifically, the modelling has been based on a total (cumulative) trip generation of:

- 436 veh/hr in the AM peak (rather than 367 veh/hr as now predicted – 207+160); and
- 676 veh/hr in the PM peak (rather than 635 veh/hr as now predicted – 475+160)

The following access improvements would be available and have been assessed as one option that will accommodate the cumulative impacts associated with both sites. This includes the following additional road improvements:

- The construction of a 4-way signal controlled junction at the intersection of Toothill Street with Old Canterbury Road (i.e. the provision of a western approach to connect to the existing signals. This provides an opportunity to provide right turn lanes for both the northbound and southbound movements along Old Canterbury Road. This arrangement is also contemplated under the ARUP traffic assessment prepared on behalf of Marrickville Council; and
- The construction of a left turn slip lane in Old Canterbury Road on approach to Railway Terrace (which involves use of other land that is not part of the Part 3A site).

The above works would also enable the provision of a right turn storage bay in Old Canterbury Road for the right turn movement into Hudson Street. These improvements are shown in **figure 6**. They



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intersections 4, 5 and 6

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impact assessment: mixed use development

78-90 old canterbury road, lewisham

figure 6

long term network

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result in a significantly improved accessibility with the performance at these intersections as shown in Table 4, with the detailed Sidra outputs presented in **appendix 3c**.

table 4: future intersection performance during the am and pm peak periods based on additional (long term) road improvements

Intersection Description	Control	Time Period	Degree of Saturation	Intersection Delay (secs)	Level of Service
Toothill St/ Old Canterbury Rd	Signals	AM	0.835	22.5	B
		PM	0.892	39.4	C

5.11.5 construction traffic impacts

It is anticipated that detailed Construction Traffic Management Plans will be prepared as part of individual Project Applications, taking due account of proposed development stages, and in response to a condition of consent. As a general principle, the Plan will need to be prepared in consultation with the appointed builder. It will need to address requirements during each stage (site preparation, excavation, construction, fit-out and landscaping) and will need to include consideration of times of operation, truck access routes, site access, average truck frequencies, truck sizes, parking for construction workers, work zone requirements, pedestrian control, traffic management plans and any road occupancy applications. These are matters that cannot be addressed at this time although in principle, there are considered to be no obvious constraints to the preparation of a safe and efficient Management Plan as the overall site has multiple access opportunities.

5.11.6 site access arrangements

The development will make reliance on the developed road system as shown on the submitted Concept Plan documentation (refer to appendix 2). All accesses comply with relevant standards and will operate safely and efficiently.

The access arrangements for the Part 3A Concept Plan rely on existing intersections with localised improvements as discussed. These will be improved in the long term when the adjoining sites are redeveloped/.

Sight distances to/from the proposed driveways exceed the requirements of AS2890.1 and AS 2890.2 and the driveways will operate safely.

5.11.7 internal design & carriageway widths

The detailed access and internal design parameters will be assessed at later Project Application stage/s and compliance with AS 2890.1 and AS 2890.2 is expected to be achieved.

6. conclusions

In summary:

- The site is currently used for industrial purposes and is in need of redevelopment, with numerous old and dilapidated buildings. The proposed mixed use development represents a significant improvement in the locality that provides a range of local services and will result in an enhanced amenity and streetscape;
- The development yield associated with the site has been limited by the road capacity that is available within the locality, which is presently at capacity at critical intersections. This relates particularly to the moderate extent of retail floor area, which is intended to serve the local catchment;
- The resulting development yield provides an appropriate balance between available road capacity and the need to achieve planning objectives consistent with State Government Policy;
- The site is uniquely placed to take advantage of excellent public transport services. The adopted vehicle trip rates reflect reliance on these services which is consistent with State Government Policy. The preparation of a Transport Access Guide is also expected to be required in support of any Project Applications;
- The development is expected to need 681 parking spaces, comprising 181 commercial/retail spaces, 400 resident spaces and 100 visitor spaces;
- Parking for the non-residential component of the development has been effectively suppressed, with the specific intention of promoting alternate travel modes. Specifically, for the non-residential uses, a total of 181 parking spaces is proposed, which compares with 270 spaces if the site were to provide an "unrestrained" parking supply, based generally on the RTA's Guideline or Council's DCP. This is a 33% reduction in parking which will suppress travel by non-car modes and readily achieve the DGR's target of a 10-15% reduction in private car travel. In the event that the light rail system is introduced, there may be some opportunity to further reduce parking requirements, particularly for the non-residential uses;
- With regard to the residential component, it is considered that 500 spaces for 400 units (400 resident spaces and 100 visitor spaces) is a moderate but sustainable level of provision that will also encourage low car usage; but without the need to rely on on-street parking which may

introduce residential amenity issues Parking for the residents is based on one space per unit for residents which is a moderate level of provision having regard for the fact that 71.3% of units will be two bedroom units and 9.5% will be three bedroom units, which would normally attract a higher rate. This recognises the site's proximity to excellent public transport but should be regarded as the minimum level of provision, especially if the light rail is not implemented;

- Traffic conditions will be acceptable subject to the proposed short term and long term improvements that are recommended. These impacts are also mitigated by the low parking levels, which will actively encourage alternate travel modes;

- The potential benefits of a future light rail system will be substantial. However, the traffic analysis has not taken any account of this proposal so that it is based on a worst case assessment. The assessment is also very conservative in that it is based on higher traffic volumes that relate to a higher land use yield than is now proposed;

- The road network has been assessed with the Part 3A development and operates satisfactorily subject to implementation of the various improvements discussed in this report. The most significant recommendation relates to the transfer of the existing one-lane northbound flow in Old Canterbury Road (which occurs at the railway overbridge) slightly further to the south at Toothill Street. This essentially formalises what already occurs due to the heavy right turn volumes into Toothill Street which results in only a single northbound through lane in Old Canterbury Road. Nevertheless, this is an interim arrangement pending future construction of a four-way junction at Toothill Street to serve the subject site and the adjoining (southern) site under the previous Master Plan. This can be further assessed at Project Application stage;

- In addition, the cumulative impacts associated with the adjoining development site to the immediate south of the Part 3A site have also been assessed, also based on higher traffic volumes than are now predicted. This redevelopment will ultimately result in an improved operation of the road system adjacent to these two sites, through the provision of a new approach at the existing intersection of Toothill Street with Old Canterbury Road; and

- Construction issues will be dealt with in detail through the preparation of a Construction Traffic Management Plan and this will be in response to a suitable condition of consent on subsequent Project Applications.

It is therefore concluded that the proposed development concept envisaged under the Concept Plan is supportable on traffic planning grounds and the proposed development will operate satisfactorily.