

**planning proposal & vpa to rezone
3-7 east st & 2 railway st
lidcombe**



Prepared for
Automation Feeding Devices Pty Ltd

Mark Shanahan Planning Pty Ltd
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Cover image:

Sign outside No2 Railway St
Shanahan Planning, 20/08/15

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Attachments:

- 1. Council's previous assessment of proposal**
(Extract – Executive Manager Planning's Report 17/06/15)
- 2. Traffic Impact Assessment** by APEX Consulting Engineers
- 3. Stage 1 Environmental Site Assessment** by Environmental Investigation Services (Jeffrey & Katauskas Pty Ltd)
- 4. Review of consistency with strategic policy framework**

Executive Summary

This report presents a Planning Proposal for rezoning of 2 Railway St and 3-7 East St, Lidcombe (the site) from industrial to mixed use to enable its redevelopment for commercial, retail and multi-storey residential apartments.

The Planning Proposal is submitted to Cumberland Council under Section 55 of the *Environmental Planning & Assessment Act 1979* (the Act) and has been prepared in accordance with the State government guidelines for planning proposals.¹

Section 1 - Introduction

Section 1 of the report introduces the site and its recent planning history. It notes that the site is presently part of a larger, mostly industrial area (the Marsden Street Precinct) adjoining the eastern side of Lidcombe town centre, one of the major centres of the former Auburn City local government area.² Much of this precinct was rezoned from industrial to mixed use in September 2015 to provide for an extension of the town centre.

The current planning proposal is also introduced in Section 1. In general terms, it seeks to apply to the site the same planning controls that were recently applied to the adjacent part of the Marsden Street Precinct: zoning B4 - Mixed Use; maximum floor space ratio (FSR) of 5:1, and maximum building height of 32m (10 storeys).

The proposal also includes the offer of a voluntary planning agreement (VPA) whereby the owner will dedicate to Council the southernmost part of the site which has already been rezoned from industrial to Public Recreation as part of the Marsden Street Precinct initiative. Developed and proposed in accordance with Council's *Voluntary Planning Agreements Policy*, the VPA will enable the early realisation of Council's plan for a corridor of parkland running through the town centre to East Street and to Rookwood Cemetery parklands on the opposite side of East Street.

Section 2 – Existing situation

In Section 2 of this report, the site is described in more detail, together with the planning framework which currently applies to the site under Auburn Local Environmental Plan 2010 and Auburn Development Control Plan 2010.

A key point discussed in Section 2 is that the initial rezoning study for the Marsden Street Precinct by Council's independent planning consultants had recommended that the Mixed Use rezoning extend across the site to East St, a logical eastern boundary for the town centre. However Council officers developed an alternative scheme which retained a strip of industrial development along East St (including the site), ostensibly as a buffer between the town centre and Rookwood Cemetery on the other side of the road.

Section 3 - Objectives and intended outcomes

This section of the report outlines the objectives and intended outcomes of the proposed rezoning. The primary strategic objective is to utilise the potential of the site to provide additional employment and housing in a town centre location well serviced by public transport and close to a wide range of services and facilities.

A number of secondary, site-specific objectives are also outlined in Section 3.

Section 4 – Explanation of the provisions

In Section 4 of the report, the planning proposal is outlined in greater detail, including the specific changes proposed to be made to Auburn LEP 2010 and DCP.

¹ *A Guide to Preparing Planning Proposals*, NSW Department of Planning & Infrastructure, October 2012

² On 12/05/16, parts of the former Auburn, Parramatta and Holroyd City Councils were amalgamated to form Cumberland Council. Unless otherwise indicated, references to "the Council" in this report mean Cumberland Council.

As requested by Council's strategic planning team, the proposal is accompanied by:

- a concept development scheme to illustrate the potential form of mixed use development on the site;
- a traffic study to identify the potential impact of the proposal on the road network and any required upgrading works;
- a Phase 1 investigation to identify potential sources of soil contamination.

The concept development scheme illustrates how the site could be developed with a two-storey podium base containing 3,860m² of retail/commercial floorspace and 144 apartments in two 8-storey towers above. Basement parking is provided in accordance with Council's standards.

The general terms of the VPA by which the future parkland is proposed to be dedicated to Council are also outlined in this section of the report. It is intended that in exchange for dedicating the park, future development on No3-7 East St (which is in the same ownership as the park) will be exempted from the requirement to pay Section 94 and Section 94A development contributions.

This provides a substantial net benefit to the community, as the value of the park is estimated to exceed the value of development contributions. Independent valuation of the park will be undertaken in accordance with the procedures set out in Council's VPA Policy and the *Land Acquisition (Just Terms Compensation) Act*.

If this planning proposal is supported by Council and receives gateway approval to go to formal exhibition, the VPA instrument will be drafted so that it can be included in the formal exhibition.

Section 5 - Justification

The justification for the proposal is detailed in Section 5 of this report. This includes a comprehensive review of State and local planning strategies including *A Plan for Growing Sydney*, the West Central Draft Subregional Strategy, the Auburn Employment Lands Strategy, the Marsden Street Precinct Zoning Review, the Auburn City Residential Development Strategy, the Auburn City Community Strategic Plan and all relevant State Environmental Planning Policies (SEPPs) and planning directions issued under Section 117 of the Act.

The potential environmental impacts of the proposal and its consistency with State and Commonwealth interests are also reviewed in Section 5.

Section 5 analyses the reasons why the former Auburn Council did not support rezoning of the site in the manner originally recommended by AECOM. This analysis shows that those reasons were of little weight or have now been overcome by the proposal.

From this review, Section 5 concludes that the proposal has both strong strategic planning merit and site-specific planning merit which justifies its support.

The primary strategic merit is providing additional employment and housing in a town centre location well serviced by public transport and a wide range of services and facilities.

The site specific merits are consistent with the site-specific objectives of the proposal:

- To enhance the presentation of Lidcombe Town Centre from the railway line and principal eastern and southern road approaches (Railway St & East St) by providing for a form and quality of development consistent with the rest of the Marsden St precinct and appropriate for a key gateway site;
- To provide opportunity for a large floorplate supermarket (currently not provided in Lidcombe Town Centre);

- To improve the amenity of future adjoining residential development by enabling the cost-effective replacement of ageing industrial structures and eliminating adverse amenity impacts associated with their form and use;
- To capitalise on the site's proximity to Rookwood Cemetery parklands and the Cemetery Trust's strategy to promote community use of the parklands, by increasing the number of residents living in close proximity to the parklands and by facilitating pedestrian access to the parklands by town centre residents and workers;
- To enhance and activate the public domain of Railway St, Raphael St, East St, the Town Centre laneway network, the Jewish Reserve and the proposed park;
- To provide for future road widening of Raphael St and Davey St to enhance local traffic safety and efficiency;
- To provide for an upgraded cycleway along East St by providing a building setback that can accommodate future road widening;
- To negate the potentially adverse impacts that the large telecommunications tower on the western part of the site could have on future development of the precinct.

Section 6 – Mapping

Section 6 summarises the mapping provided throughout the report in support of the proposal.

Section 7 – Community consultation

This section of the report addresses community consultation requirements.

Conclusion

This planning proposal will enable redevelopment of a key gateway site in a manner consistent with future development planned for the adjoining Marsden Street Precinct. This will ensure that the town centre will achieve a cohesive, contemporary, high quality presentation to its major approaches by rail and road, thereby supporting the vision of the Marsden Street Precinct strategy for the revitalisation of Lidcombe.

1. Introduction

1.1 Background

This Planning Proposal relates to 2 Railway St and 3-7 East St, Lidcombe (the site). Presently zoned industrial and public recreation under *Auburn Local Environmental Plan 2010* (ALEP2010), the site is within an area adjacent to Lidcombe Town Centre which for planning purposes, is known as the Marsden Street Precinct (**Figure 1**).

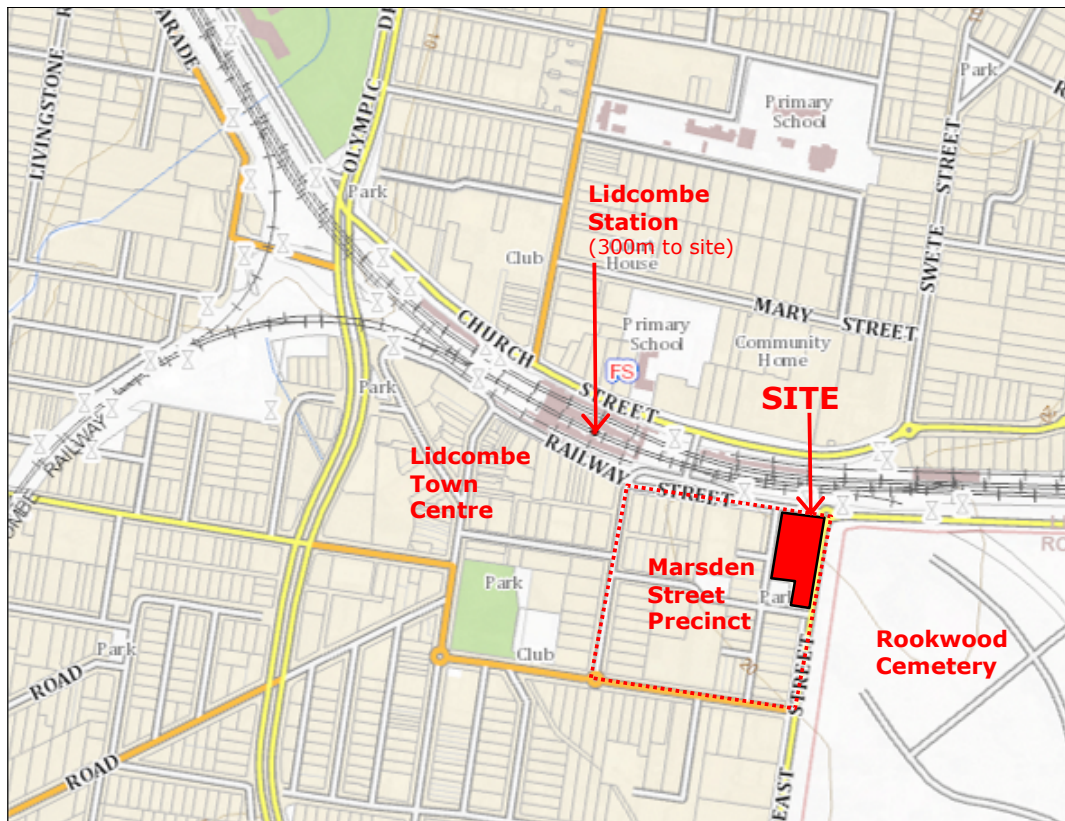


Figure 1: Locality plan

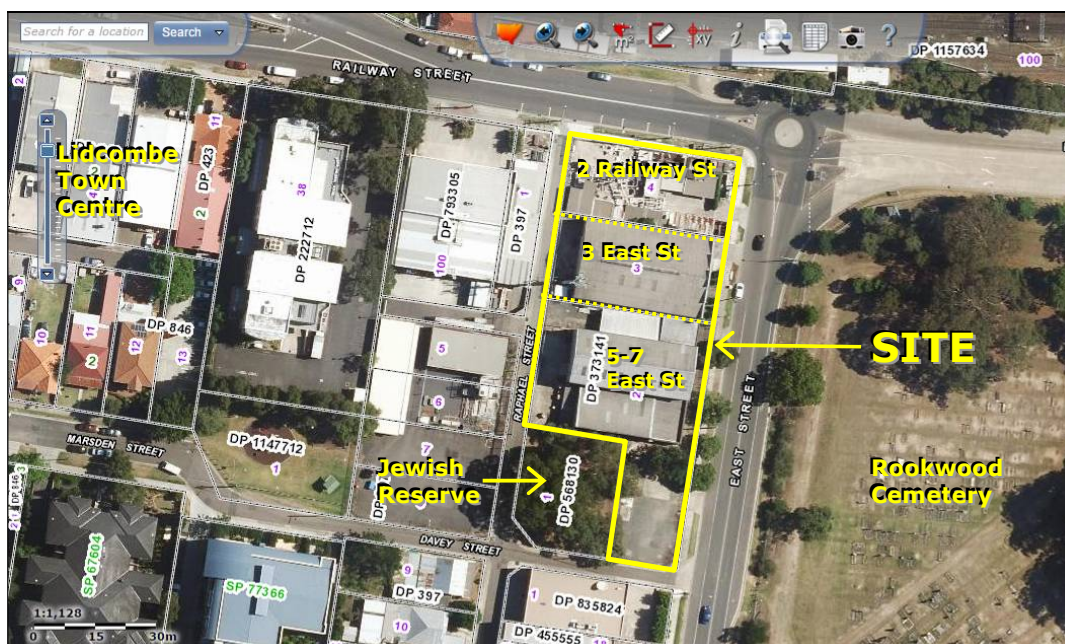


Figure 2: The site (SIX Maps, 20/05/15)

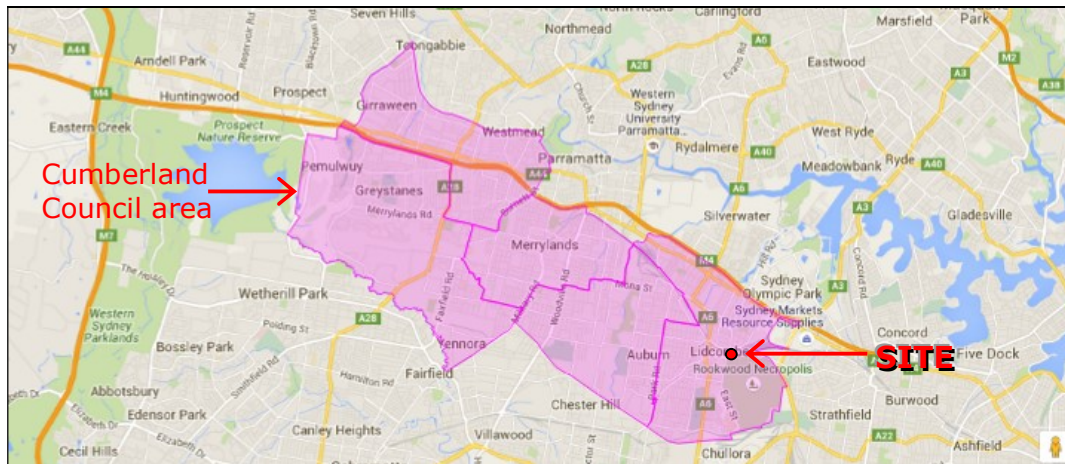


Figure 3: Regional context

In September 2015, the former Auburn City Council³ exhibited and adopted a planning proposal to rezone the majority of the Marsden Street Precinct from industrial to multi storey mixed use development to provide for growth of the adjacent Lidcombe Town Centre.

This rezoning came into effect on 18/09/15 with the commencement of ALEP2010 Amendment No14. It rezoned the southern part of the site from industrial to public recreation but retained the industrial zoning of the remainder of the site.

The site had been identified by Auburn Council's planning consultants (AECOM) as suitable for rezoning to B4 – Mixed Use and RE1 – Public Recreation on strategic planning grounds. However, Auburn Council developed and exhibited a modified zoning scheme which retained industrial zoning for the site and other properties along East St (apart from the southernmost part of the site to be rezoned to public recreation).

On behalf of the owners of 3-7 East St, Shanahan Planning made a submission during the exhibition of the Marsden Street Precinct Planning Proposal seeking the full implementation of AECOM's preferred option (in so far as it related to the site).

That request was not supported by the former Councillors. However in subsequent discussions with Council's strategic planning team, it was indicated that the submission had planning merit and could be considered by Council as a separate planning proposal (this submission).

The rationale for retaining a strip of industrial development along East St (including the site) is unclear. It was sometimes described as a "buffer" between the expanded town centre and Rookwood Cemetery on the other side of East Street. Why a buffer would be required or how it would work was not clear.

Other documents referred to the benefit of preserving an association between the monumental stonemason business on the site (No2 Railway St, corner East St) and Rookwood Cemetery opposite. For reasons set out later in this report, that is also considered to be no basis for retaining the industrial zoning.

1.2 Current proposal

This Planning Proposal seeks rezoning of the remainder of the site in a manner consistent with the rest of the Marsden Street Precinct: zoning B4 – Mixed Use, floor space ratio of 5:1 and maximum building height of 32m.

³ On 12/05/16, parts of the former Holroyd, Parramatta and Auburn City Councils were amalgamated to form the new Cumberland Council. Unless otherwise indicated, references to "the Council" in this report mean Cumberland Council.

Accompanying with submission is a concept development scheme prepared by Prescott Architects illustrating a possible development of the site in accordance with these proposed controls. The concept scheme indicates that a development could achieve an estimated 144 dwellings and 3,860m² of retail/commercial floorspace.

The proposal has significant strategic benefit in terms of more effective utilisation of the site's excellent access to public transport and Lidcombe town centre, providing more housing and jobs close to transport and facilities.

It also has major site-specific benefits, including a substantial improvement in the presentation of the town centre from the train line and the principal eastern and southern road approaches of Railway St and East St.

The site-specific benefits of the proposal also include:

- the early provision of new parkland in place of an existing industrial carpark;
- improvement in the amenity of future residential apartments on adjacent sites (which were recently rezoned to B4 – Mixed Use);
- the large site area provides opportunity for development of a supermarket, the absence of which has long been recognised as a serious limitation on the competitiveness of the Lidcombe town centre;
- improved presentation to, and activation of, the site's park and street frontages;
- relocation of a large telecommunications tower on the site which may otherwise inhibit development in the locality;
- potential improvements in traffic safety and efficiency through early implementation of planned widening of surrounding streets and lanes.

As part of this planning proposal, it is proposed that the part of the site zoned RE1 – Public Recreation will be dedicated to Cumberland Council as public parkland through the mechanism of a voluntary planning agreement (VPA). This planning proposal sets out the general terms of the VPA, including that Section 94 and Section 94A of the Act will not apply to future development on 3-7 East St.

Should this planning proposal and the general VPA terms be acceptable to Council, it is intended that the VPA be prepared and publicly exhibited in the statutory exhibition of the proposed instrument change, in accordance with Council's *Voluntary Planning Agreements Policy* adopted 21 July 2010.

This Planning Proposal is submitted under Section 55 of the *Environmental Planning & Assessment Act 1979* (the Act) and has been prepared in accordance with *A guide to preparing planning proposals*, NSW Department of Planning & Infrastructure, October 2012 ('the Guide'). Following a description of the site and local planning framework in Section 2, this Planning Proposal addresses the matters identified in Section 55(2) of the Act and the Guide as follows:

- Section 3: A statement of the objectives and intended outcomes of the proposed instrument;
- Section 4: An explanation of the provisions that are to be included in the proposed instrument (including general terms of the VPA);
- Section 5: The justification for those objectives, outcomes and the process for their implementation;
- Section 6: Maps, where relevant, to identify the intent of the planning proposal and the area to which it applies;
- Section 7: Details of the community consultation that is to be undertaken on the planning proposal.

The proposed rezoning has clear strategic and site specific planning merit and together with the VPA, will enable Council to realise an important and beneficial element of the Marsden Street Precinct scheme in a timely manner at no upfront cost to the community.

2. Existing situation

2.1 The site

The site is identified in **Figure 2** and comprises the following properties:

Address	Legal identification	Owner	Area (approx)
2 Railway St	Lot 4, DP373141	Larcombe Memorials P/L	798m ²
3 East St	Lot 3, DP373141	Automation Feeding Devices P/L	882m ²
5-7 East St	Lot 2, DP373141	Automation Feeding Devices P/L	1,866m ²
TOTAL			3,546m ²

The southern section of No5-7 Railway St (an area of 522m²) is zoned RE1 – Public Recreation. The remainder of the site (3,024m²) is zoned IN2 – Light Industrial.

No2 Railway St has several small scale buildings occupied by a monumental stonemason, Larcombe Memorials.

The combined area of No3-7 East St was identified in the Marsden Street Precinct Zoning Review⁴ as the second largest landholding in single ownership in the Precinct.

The southern part of the site is a paved employee carparking area fronting Davey St. Apart from service yards fronting Raphael St and minor setbacks to East St, most of No3-7 East St is occupied by large metal framed and brick/metal/asbestos clad industrial buildings. Identified by AECOM as “buildings old or in disrepair” (AECOM Figure 10, pg18), these are presently used for the production and printing of plastic food & drink container seals and associated storage, a highly mechanised operation run by a handful of employees.

Also on the site, near the south-western corner of Lot 3, is a large telecommunications tower approximately 25m in height supporting an active array of communications equipment. The tower lease is in force to 2025.

Adjoining the site to the south-west, on the corner of Davey St and Raphael St, is parkland owned by Council that was established as a private Jewish burial ground and is known as the Jewish Reserve.



1. Site viewed from roundabout cnr East St & Railway St (Nearmap 18/08/15)

⁴ Marsden Street Precinct Lidcombe Zoning Review, AECOM, May 2014 (Figure 9, pg17).



2. Site viewed from Railway St corner Raphael St (Nearmap 18/08/15)



3. Site viewed from cnr East St & Davey St (Nearmap 18/08/15)



4. Jewish Reserve cnr Raphael St & Davey St (Nearmap 18/08/15)



5. Site viewed from Raphael St near Jewish Reserve boundary (*Nearmap* 18/08/15)

2.2 Statutory planning framework

Prior to September 2015 (when ALEP2010 Amendment No14 commenced and implemented the Marsden Street Precinct planning proposal), the whole of the site was zoned IN2 – Light Industrial with a maximum Floor Space Ratio (FSR) of 1:1. No maximum building height was specified (**Figure 4**).

In 2014, planning consultants AECOM were engaged by the former Auburn Council to undertake a zoning review of the Marsden Street Precinct as a possible extension to accommodate growth of the Lidcombe Town Centre.

AECOM's Preferred Scenario F (**Figure 5**) proposed that the majority of the site be rezoned to B4 – Mixed Use with a height limit of 32m and Floor Space Ratio (FSR) of 5:1. This would enable development of a ground level retail/commercial podium with 8 levels of residential above.

Following review of the AECOM report, an alternative Scenario G was prepared by Council officers and presented to Council. This scenario was similar to AECOM's preferred Scenario F but retained the zoning of most of this site as IN2 – Light Industrial. Following gateway approval, Scenario G was publicly exhibited in May 2015, was adopted by Council on 17/06/15 (with a minor amendment) and commenced on 18/09/15 as ALEP2010 - Amendment No14 (**Figure 6**).

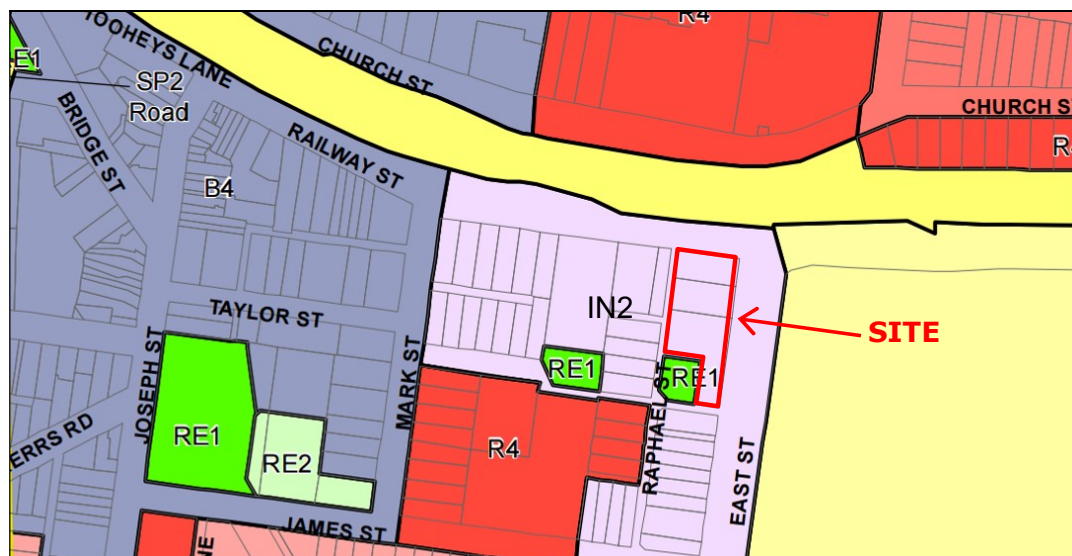
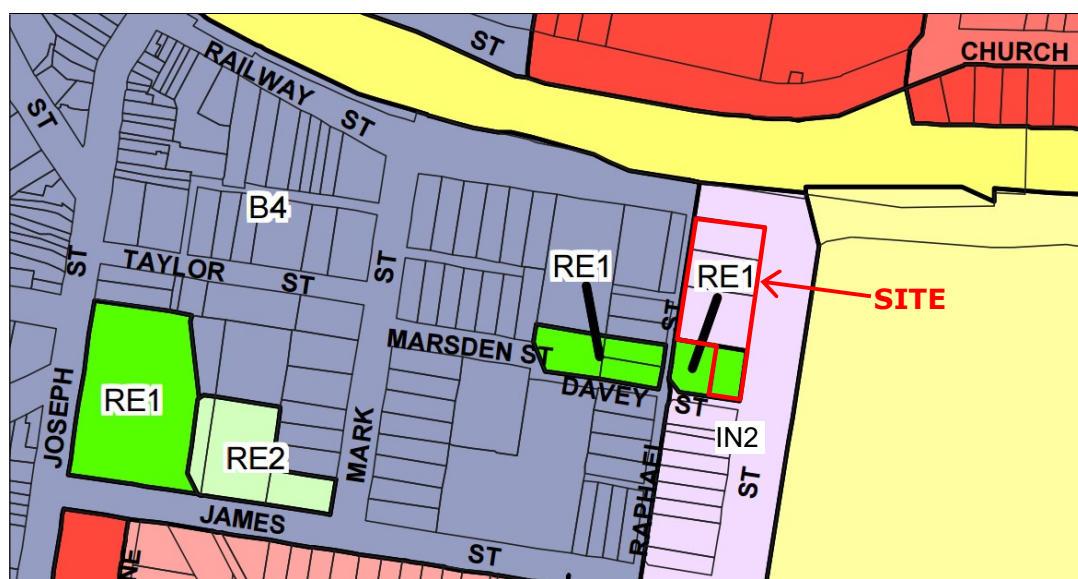


Figure 4: Zoning prior to Marsden Street Precinct rezoning (ALEP 2010 Amendment 14)



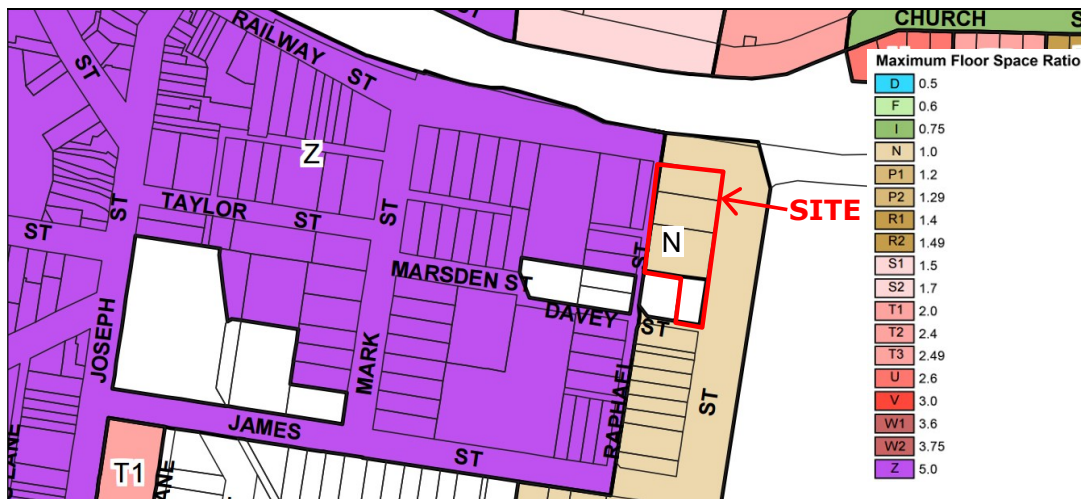


Figure 7: Current Floor Space Ratio Map (FSR_007)

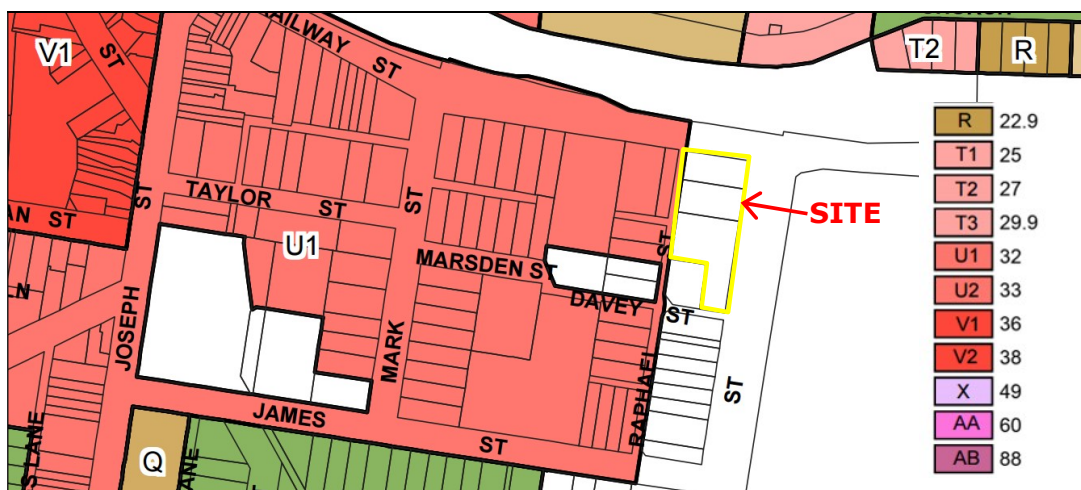


Figure 8: Current Height of Building Map (HOB_007)

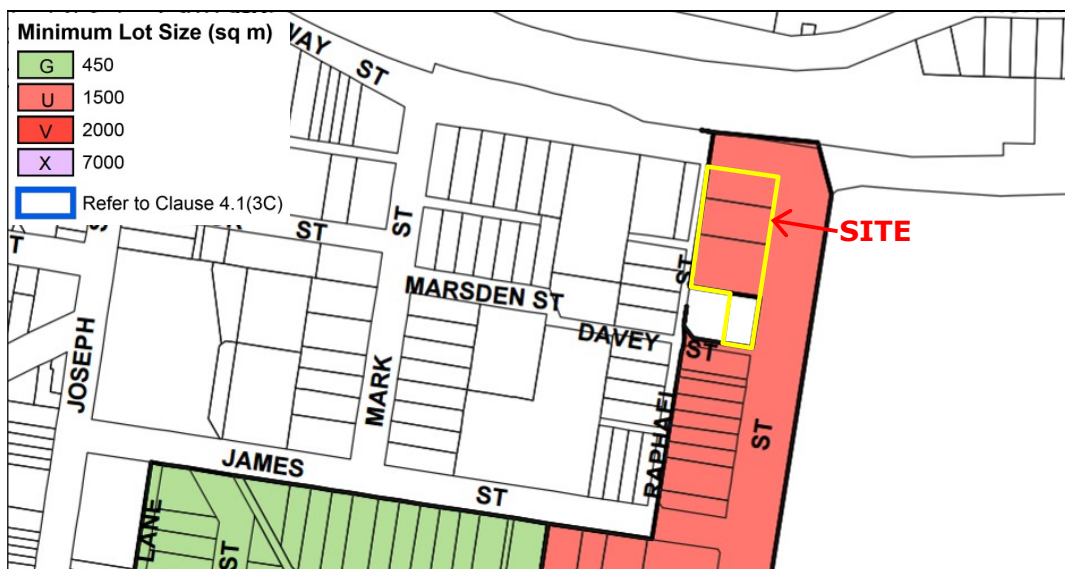


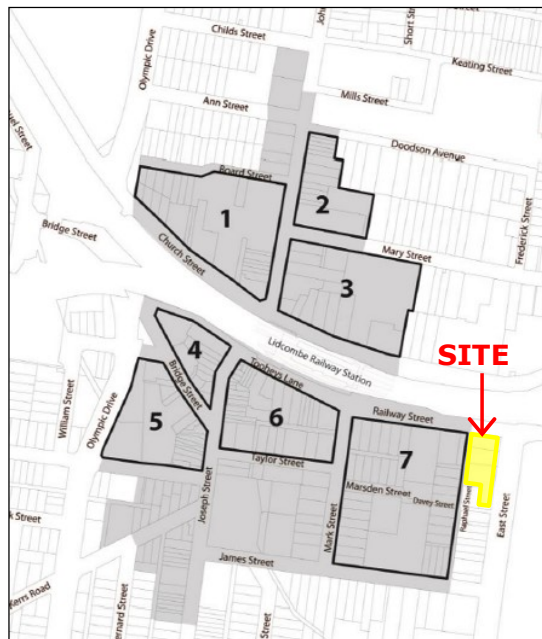
Figure 9: Current Minimum Lot Size Map (LSZ_007)

2.3 Auburn Development Control Plan 2010

The Auburn Development Control Plan 2010 (the DCP) has been amended to apply to the Marsden Street Precinct a range of controls appropriate to multi storey mixed use development.

The DCP has general objectives and controls applying to all centres in the former LGA, as well as specific objectives and controls for each of the seven key sites making up Lidcombe Town Centre (shown right).

The principal urban design controls specified in the DCP for this part of Lidcombe town centre are described below.



Boundary setbacks

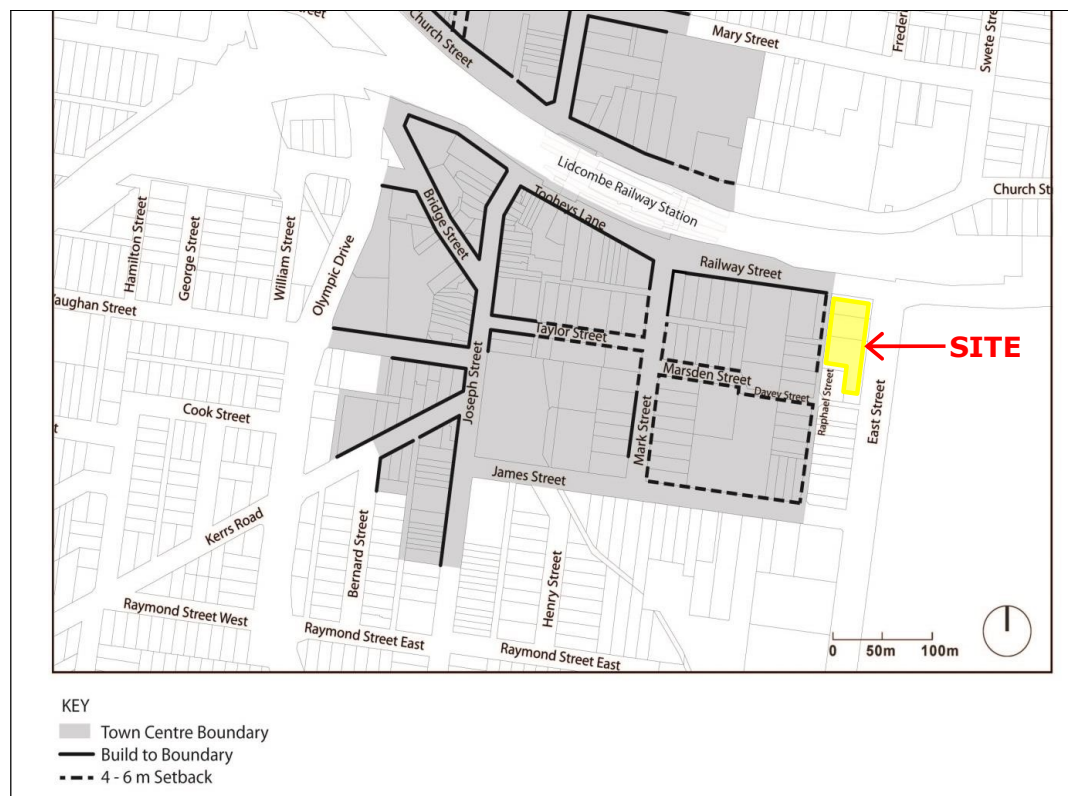


Figure 10 – Building setbacks within Lidcombe Town Centre (DCP Figure 7)

Council's strategic planners have advised that for the purposes of this planning proposal, the nil setback prescribed for Railway St should be applied to the site and a the 4-6m setback also provided to the site's boundary with Raphael St. The setback to East St should allow for planned provision of an upgraded cycleway (which is notionally within the parking lane of the road at present).

Active Street Frontages

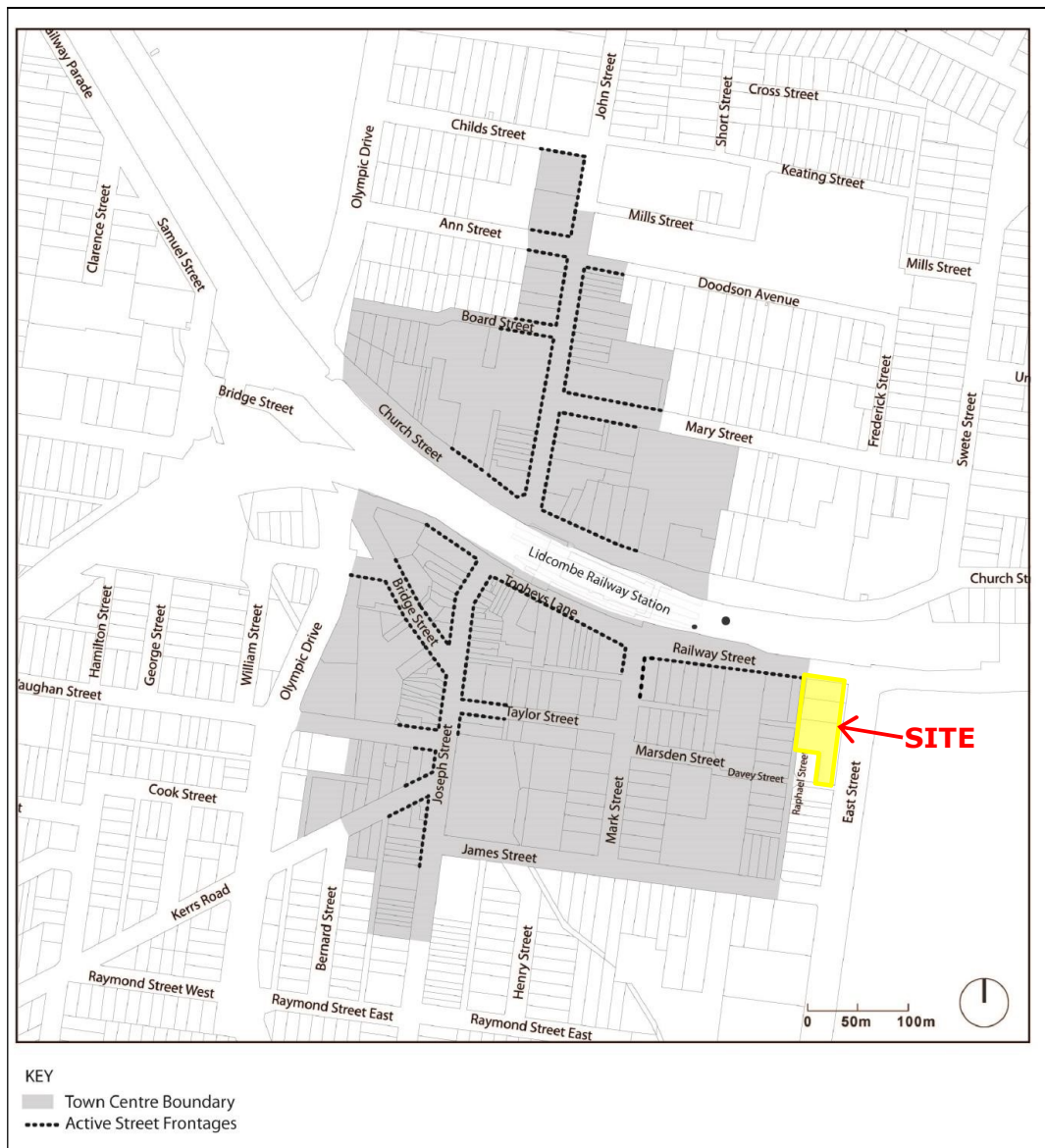


Figure 11 – Active Street Frontages within Lidcombe Town Centre (DCP Figure 8)

Council’s strategic planners have advised that for the purposes of this planning proposal, active street frontages should be extended along Railway St and returned at least partway down East St. Active frontage to the parkland at the southern end of the site was also recommended.

It is considered beneficial to provide continuous active frontage along the full length of East St to help activate the cycleway and take advantage of the high level of amenity provided by the Rookwood Cemetery parklands.

This activation will also support a planned revitalisation of the Cemetery which aims to include more active community usage, including a recreational walkway and cycleway around the Cemetery’s perimeter (discussed later in this report).

Laneways

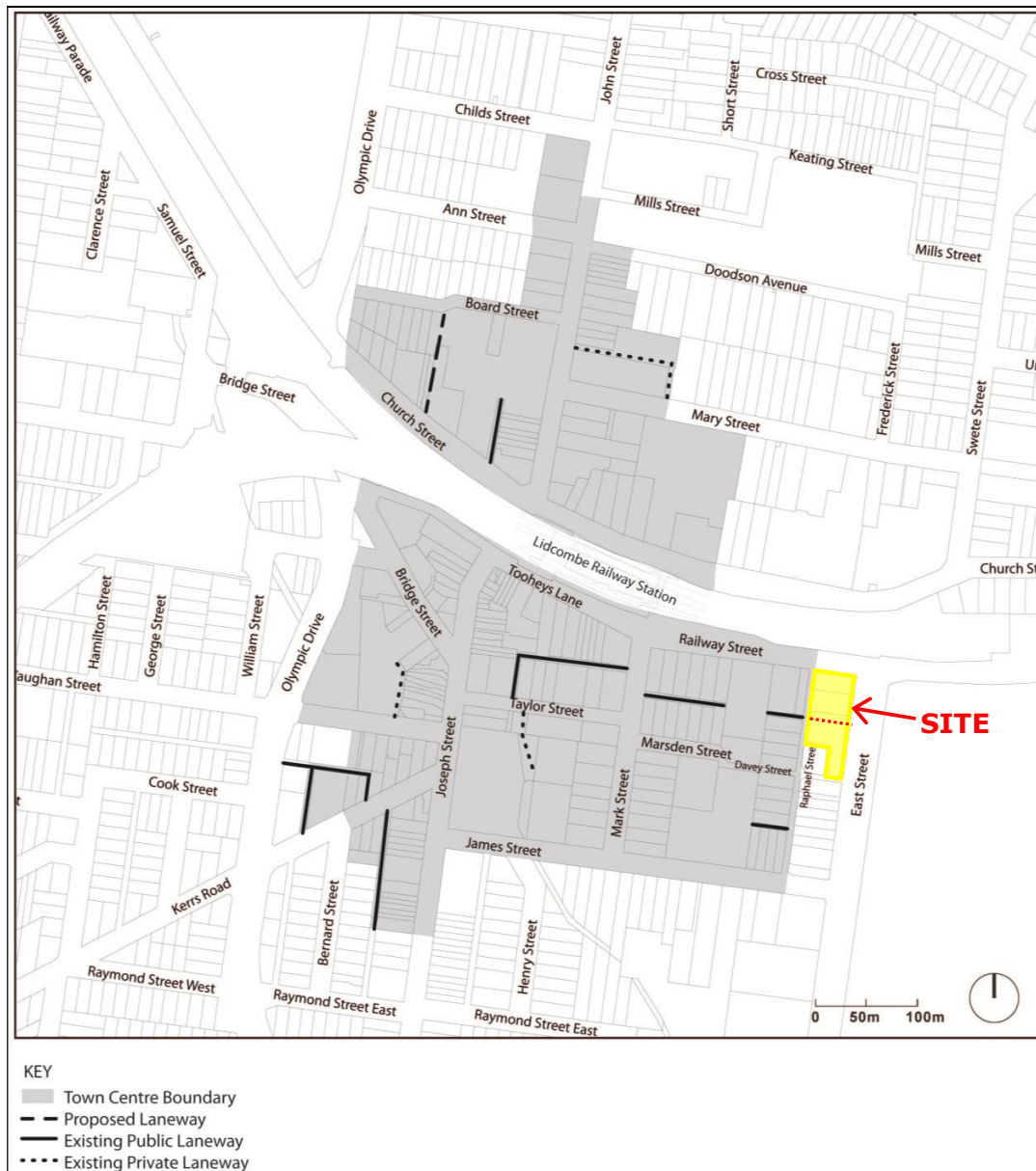


Figure 12 – Laneways proposed within Lidcombe Town Centre (DCP Figure 9)

The existing lane on the western side of Raphael St provides an opportunity for pedestrian access to be extended through the site to provide for increased permeability, active frontages and improved access to the East St cycleway and Rookwood Cemetery parklands.

The concept development scheme accompanying this report provides for this potential laneway extension.

Specific Controls for Marsden Street Precinct

The DCP applies the following specific controls to Site 7 (Marsden Street precinct):

15.12 Site 7 – Marsden Street

Objectives

- a. To ensure architectural design recognises:
 - the strategic significance of the site within the Lidcombe Town Centre; and
 - the visual prominence of the site from public areas including Lidcombe train station and Railway Street / Church Street railway bridge.
- b. To provide an appropriate transition to the industrial area to the east of the site.
- c. To improve pedestrian access and circulation within the town centre, by upgrading and widening Davey and Raphael Street to improve their amenity and safety.
- d. To ensure development is sensitive in scale and character to all public open space in the precinct, including Friends Park and the Jewish Reserve.
- e. To enhance the public domain, and increase accessibility and safety to public open space.

Development controls

- D1 Development shall be designed to address Railway, Mark, James, Marsden, Davey and Raphael Streets.
- D2 Vehicular access to new developments shall not be permitted to or from Davey Street, to permit the pedestrianisation of the street.
- D3 Development along Davey Streets shall dedicate to Council sufficient land of a minimum width of 2m to provide a pedestrian footpath on the south side of the street.
- D4 Development along Raphael Streets shall dedicate to Council sufficient land of a minimum width of 2.5m to provide a pedestrian footpath and widened carriageway on the west side of the street.
- D5 New buildings are to be setback a minimum of 4m from all open space uses and the new boundaries of Davey Street and Raphael Street created after the dedication described in control D2 and D3 above.
- D6 New buildings to the north of the central open spaces shall be designed to minimise the loss of solar access to the open spaces.
- D7 Outdoor dining and active uses shall be encouraged facing onto the proposed park on the corner of Railway and Mark Streets, to provide casual surveillance of the park and improve safety.
- D8 Development adjacent to the existing and proposed public open spaces shall be designed to provide overlooking and casual surveillance of the park spaces to improve safety.

If this Planning Proposal is supported, Objective b. would no longer be required but otherwise, these controls would remain relevant and applicable. Additional controls would also need to be introduced for development fronting East St.

3. Objectives or intended outcomes of proposal

3.1 Strategic objectives

The primary strategic objective of this planning proposal is to capitalise on the potential of the site to provide additional employment and housing in a highly accessible location that is close to a wide range of town centre facilities and is serviced by high-frequency public transport, including Lidcombe Station 300m level walk to the north-west and the M92 Parramatta-Sutherland Metrobus (Figure 13).

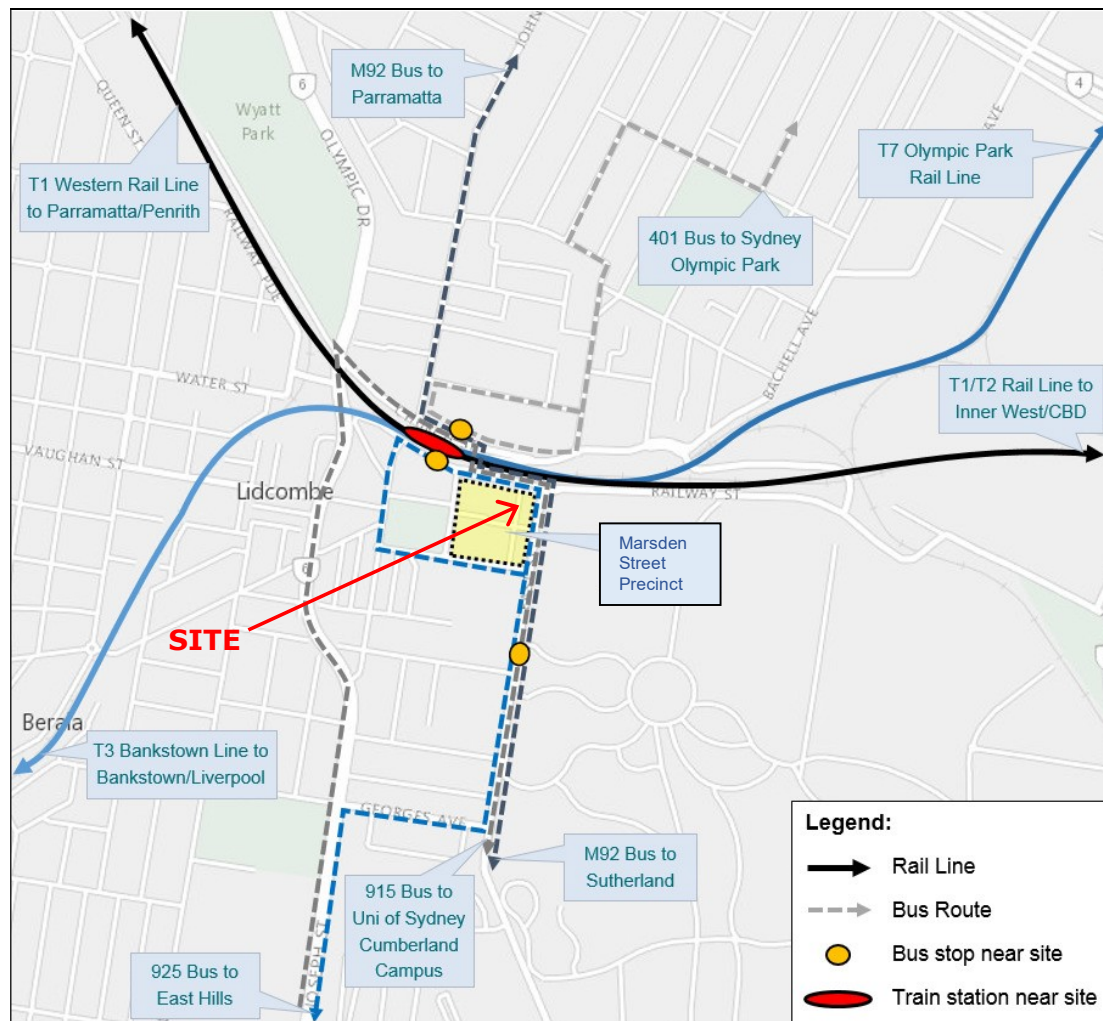


Figure 13: Public transport network⁵ (Adapted from Hyder 2015: Figure 2-6)

To achieve this, it is proposed that the site be redeveloped as an extension of Lidcombe Town Centre, generally as proposed in Scenario F recommended by AECOM to the former Auburn City Council (Figure 5).

Specifically, the part of the site currently zoned IN2 – Light Industrial is proposed to be rezoned to B4 – Mixed Use to enable redevelopment:

- for a mixture of uses including retail, commercial and residential;
- at a maximum floor space ratio of 5:1;
- to a maximum building height of 32 metres.

⁵ Hyder Consulting Pty Ltd *Marsden Street Precinct, Lidcombe—Traffic, transport and accessibility study*, 24 April 2015 (Hyder 2015)

It is intended that the southernmost part of the site adjacent to the Jewish Reserve be dedicated to Council as public parkland, consistent with its RE1 – Public Recreation zoning, through the mechanism of a VPA.

3.2 Site specific objectives

The following site specific objectives have been adopted for this proposal:

- To enhance the presentation of Lidcombe Town Centre from the railway line and principal eastern and southern road approaches (Railway St & East St) by providing for a form and quality of development consistent with the rest of the Marsden St precinct and appropriate for a key gateway site;
- To provide opportunity for a large floorplate supermarket (currently not provided in Lidcombe Town Centre);
- To improve the amenity of future adjoining residential development by enabling the cost-effective replacement of ageing industrial structures and eliminating adverse amenity impacts associated with their form and use;
- To capitalise on the site's proximity to Rookwood Cemetery parklands (and the Cemetery Trust's strategy to promote community use of the parklands) by increasing the number of residents living in close proximity to the parklands and by facilitating pedestrian movement to the parklands by town centre residents and workers;
- To enhance and activate the public domain of Railway St, Raphael St, East St, the Town Centre laneway network, the Jewish Reserve and the proposed park;
- To provide for future road widening of Raphael St and Davey St to enhance traffic safety and efficiency;
- To provide for an upgraded cycleway along East St by providing a setback that can accommodate future road widening;
- To negate the potentially adverse impacts of the large telecommunications tower on the western part of the site on future development of the precinct.

This proposal does not fully implement AECOM's preferred Scenario F in that it retains industrial zoning of the existing industrial strip along East St between Davey St and James St (which AECOM recommended to be rezoned R4 – High Density Residential). This is not included as part of this Planning Proposal because:

- That area has been redeveloped in relatively recent years as modern industrial/commercial units. The issue confronting the subject site (market reluctance to invest in redevelopment of ageing factory buildings due to proximity to high density residential) therefore does not arise as the existing buildings are fit-for-purpose and will remain so for many years.
- It is further from the station and main town centre.
- It has a direct relationship to industrial land to the south - in contrast to the site which is isolated from other industrial development by a park and a road.
- It is not at the gateway to the town centre and its appearance does not detract from the presentation and image of the town centre.
- The Marsden Street Precinct, together with the subject site, will release a substantial amount of land for development. Further investigation may be required to establish the need for additional residential development.

3.3 Concept development scheme

The mix of uses and form of development envisaged to deliver the above objectives are illustrated in the following concept drawings by Prescott Architects (July 2016):

- 00 SITE ANALYSIS
- 01 EXISTING SITE PLAN
- 2.0 SITE PLAN OPTION 1

- 2.1 SITE PLAN OPTION 2
- 03 PODIUM LEVEL
- 04 TYPICAL LAYOUT OPTION 1
- 5.0 BASEMENT PARKING OPTION 1
- 5.1 BASEMENT PARKING OPTION 2
- 06 PERSPECTIVE
- 07 SHADOW STUDIES
- 08 SHADOW STUDIES
- 09 SHADOW STUDIES

The concept scheme has been designed to comply with the maximum FSR of 5:1 and maximum building height of 32m proposed in this Planning Proposal.

It also complies with provisions of Auburn Development Control Plan 2010 that currently apply to the adjacent section of the Marsden Street Precinct (including the specific controls for Lidcombe Town Centre Site 7 set out in Local Centres - Section 15 of the DCP).

Several residential layout options were investigated. The suggested option provides the best outcomes in relation to the design principles of *SEPP65 – Design Quality of Residential Apartment Development* and the *Apartment Design Guide*.

The proposal envisages:

- public parkland extending from the Jewish Reserve through to East St;
- retail/commercial speciality outlets over the whole of the ground floor level with active frontages to all streets, the Jewish Reserve and the new parkland;
- an active pedestrian arcade passing through the site to connect to East St the existing laneway off Raphael St;
- ground level setbacks that will accommodate planned road widening of Raphael St and an upgraded cycleway along East St;
- early opportunity to implement the planned widening of Davey St;
- potential for a supermarket at first floor level (subject to market interest);
- ground level loading bays with service vehicle access from Raphael St;
- 4 levels of basement parking with access from either Raphael St or East St;
- 8 floors of residential with a mix of one, two and three bedroom units to a maximum building height of 32m.

As the site is in two ownerships, the concept scheme has been designed to allow development of No2 Railway St independently from the remainder of the site.

It is noted that "Roads" are a purpose permitted with consent in the RE1 – Public Recreation zone. Dedication of the park will therefore enable early implementation of the planned widening of Davey Street proposed by clause 15.12c of the DCP.

Two options for vehicle access to the basement parking are provided – Option 1 via Raphael St (2.0 SITE PLAN) or Option 2 via East St (2.1 SITE PLAN). Council's traffic planning for this part of Lidcombe town centre is still underway. As the intended form and function of Raphael St and Davey St is not fully resolved at this stage, the proposed options provide flexibility to either minimise traffic using Raphael St to enhance its pedestrian environment or to avoid direct vehicle movements to East St (which is not a classified road but is identified as a secondary arterial road⁶).

The accompanying Traffic Impact Assessment by APEX Engineers (APEX 2016) includes an analysis of both of these access options. It is expected that Council's

⁶ Hyder 2015, Table 2-1.

traffic planning for the precinct will be sufficiently resolved to enable the preferred option to be identified by the time a development application for the site is prepared.

3.4 Potential development yields

The total area of the site is 3,546m². The developable area (excluding the parkland) is 3,024m². Based on the concept scheme by Prescott Architects, the site has an estimated yield of:

- 3,860m² gross floor area (GFA) retail/commercial floorspace (potentially including a supermarket of 2,000m²);
- 10,590m² of residential floorspace accommodating 144 units.

The amount of parking proposed is consistent with the parking rates specified in the DCP for residential and commercial development.

1 BED	64 UNITS
2 BED	48 UNITS
3 BED	32 UNITS
TOTAL	144 UNITS
SITE AREA	3024M²
GFA	14,450M²
FSR	4.8:1
CARPARKS REQUIRED	
RESIDENTIAL	196 PARKS
COMMERCIAL	107 PARKS
TOTAL PARKS	303 PARKS

(From 04 TYPICAL LAYOUT OPTION 1
Prescott Architects, July 2016)

4. Explanation of the provisions

4.1 Proposed amendment of Auburn LEP 2010

The following amendments to Auburn LEP 2010 are proposed to achieve the intended outcome for this site:

- amend the Land Zoning Map in force under Clause 2.2 of ALEP2010 to rezone the industrial-zoned part of the site (and adjacent roads) to B4 – Mixed Use (**Figure 14**);
- amend the Height of Buildings Map in force under Clause 4.3 of ALEP2010 to specify a maximum building height of 32 metres over the part of the site proposed to be rezoned B4 – Mixed Use (**Figure 15**);
- amend the Floor Space Ratio Map in force under Clause 4.4 of ALEP2010 to identify a maximum floor space ratio of 5:1 for the part of the site intended to be rezoned B4 – Mixed Use (**Figure 16**);
- amend the Lot Size Map in force under Clause 4.1 of ALEP2010 to remove lot size controls from the site and adjacent roads (**Figure 17**).

No change is proposed to other maps or provisions of ALEP2012.

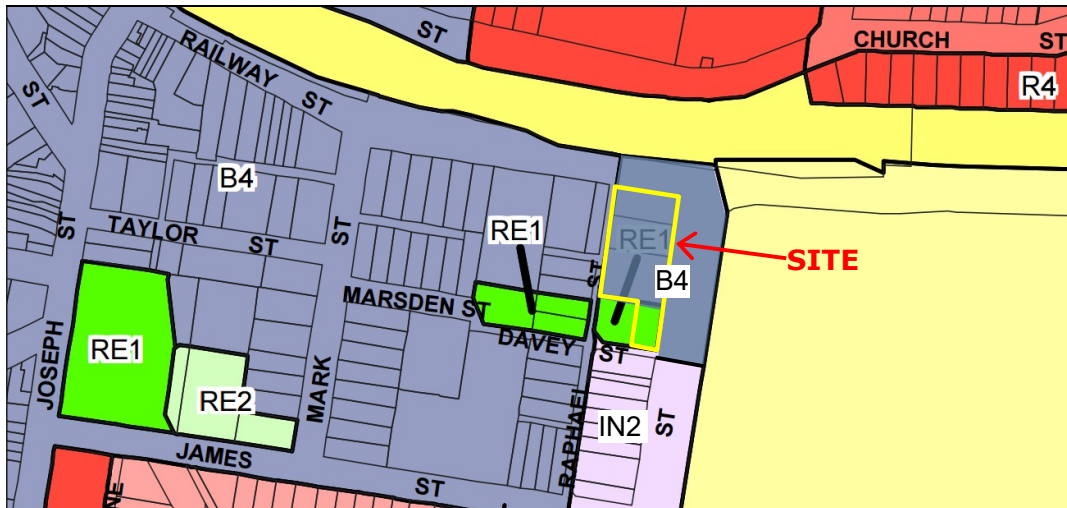


Figure 14: Proposed Zoning Map (indicative only)

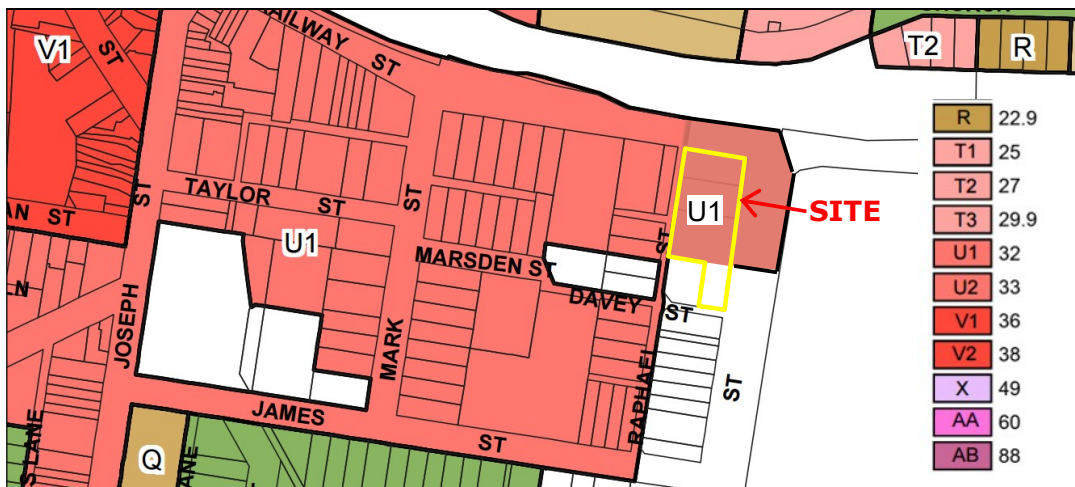


Figure 15: Proposed Building Height Map (indicative only)

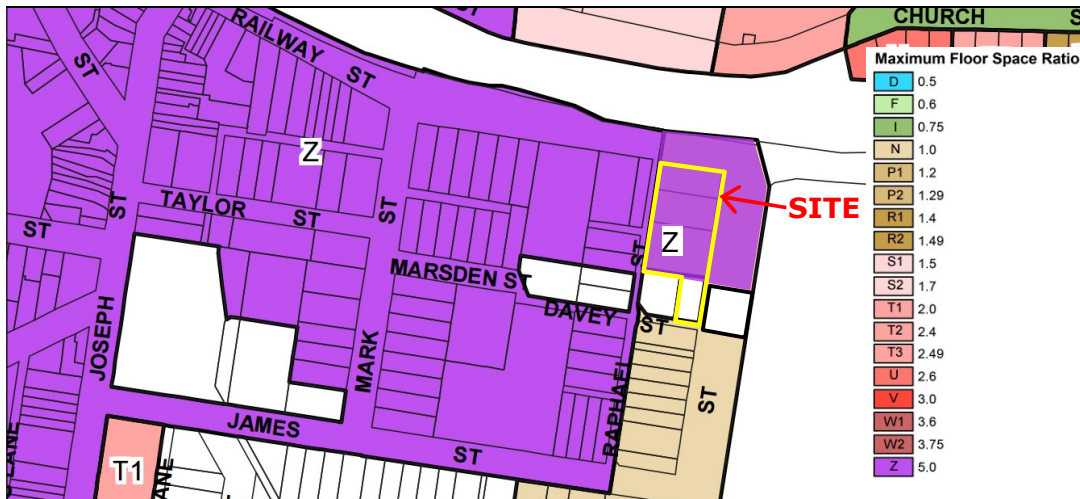


Figure 16: Proposed Floor Space Ratio Map (indicative only)

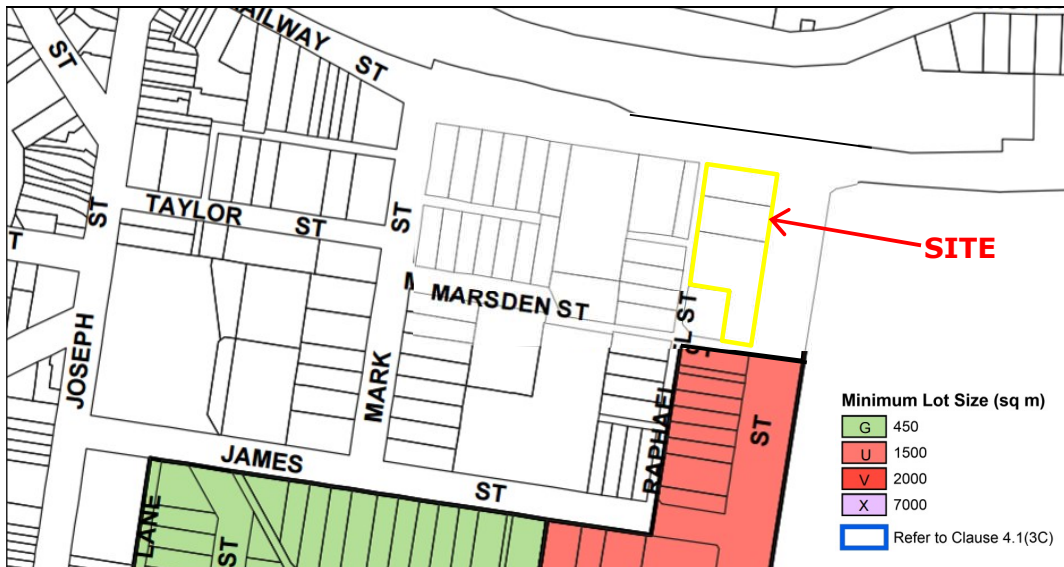


Figure 17: Proposed Minimum Lot Size Map (indicative only)

4.2 Proposed Voluntary Planning Agreement

Should the amendments to ALEP2010 proposed above be supported by Council, the owner of Lot 2, DP373141 ("the developer") would be willing to enter into negotiations with Council regarding a planning agreement made in accordance with Section 93F(1)(a) of the Act and Council's Voluntary Planning Agreement Policy adopted 21/07/10 ("VPA Policy").

The following VPA parameters are proposed for discussion with Council:

- In accordance with the procedures set out in the VPA Policy, the developer will obtain a professional valuation of that part of Lot 2, DP373141 which is zoned RE1 – Public Recreation ("the parkland");
- The market value of the parkland will be determined in accordance with the *Land Acquisition (Just Terms Compensation) Act 1991*;
- The developer will at its cost arrange for a Stage 1 – Preliminary Investigation of the parkland in accordance with the guidelines in force under SEPP55 – Remediation of Land and will provide copy of the investigation report to Council but will have no liability for any further investigations or for

remediation of any contamination of the parkland prior to or after the parkland being dedicated;

- In accordance with the VPA Policy, the developer will dedicate the parkland at no cost to Council as soon as practicable after the first development consent that takes effect on Lot 2, DP373141 or Lot 3, DP373141 after the proposed amendment of ALEP2010 comes into force;
- The area of the parkland shall be included in calculating the compliance of a development on Lot 2 & 3 DP373141 with development controls relating to deep soil area, landscaped area and communal open space;
- Section 94 and Section 94A shall not apply to any development application for development on Lot 2, DP373141 or Lot 3, DP373141 that is lodged after the proposed amendment of ALEP2010 comes into force;
- Preliminary calculations indicate that the value of the parkland is likely to substantially exceed the value of Section 94 & 94A contributions. However the developer will not seek any further development benefit in compensation for any "surplus value" within the meaning of Council's VPA Policy.

5. Justification

The matters to be considered when demonstrating the justification for a planning proposal are presented as a series of 11 questions in Section 2.3 of the Guide.⁷ Those matters are addressed below.

5.1 Need for the planning proposal (strategic merit)

Q1. Is the planning proposal a result of any strategic study or report?

The proposal implements recommendations of the following strategic studies:

- *Auburn Employment Lands Strategy*, AEC Group, June 2015;
- *Marsden Street Precinct Lidcombe Zoning Review*, AECOM, May 2014.

Auburn Employment Lands Strategy (AELS2015)

AELS2015 was prepared for the former Auburn City Council by AEC Group and finalised on 03/07/15. It provides a strategic review of employment lands in the former Auburn City including business zoned land and industrial zoned land. It supersedes the Auburn Employment Lands Strategy 2008 which was included in the package of documents exhibited with the Marsden Street Precinct planning proposal.

The Strategy divides the employment areas into precincts and then reviews the viability of ongoing industrial use in the industrial precincts having regard to their ability to:⁸

- Be directly accessed off major arterial roads and highways;
- Operate in a conflict-free environment;
- Cluster with other businesses & industry.

AELS2015 notes that traditional industrial employment is declining and the amount of industrial floorspace will continue to decline to 2031, while demand for commercial floorspace will increase over that period. It further notes that fragmented industrial precincts that abut residential will struggle to attract new occupiers.

The site is located within Precinct 2 – Lidcombe South (**Figure 18**). As noted in AELS2015, this area is not identified in the draft West Central Subregional Strategy as an area with strategic value.⁹

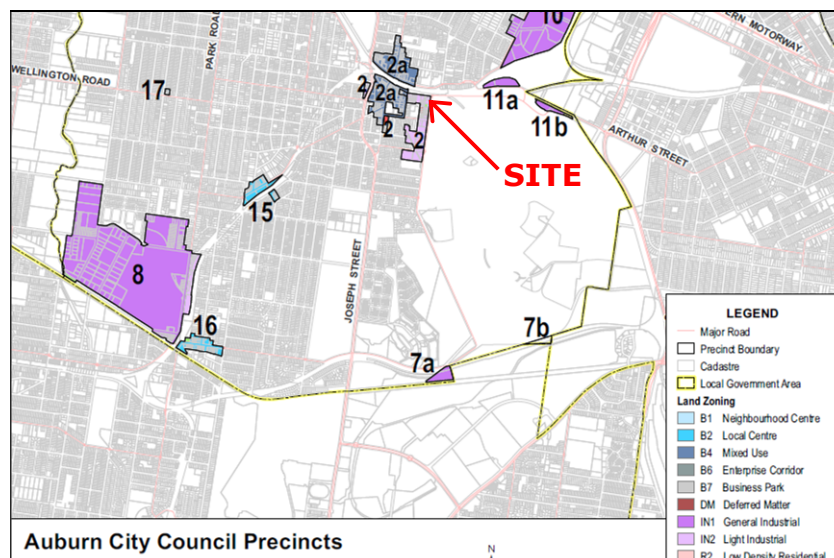


Figure 18: Auburn City employment precincts (AELS2015, Fig 2.2, pg5)

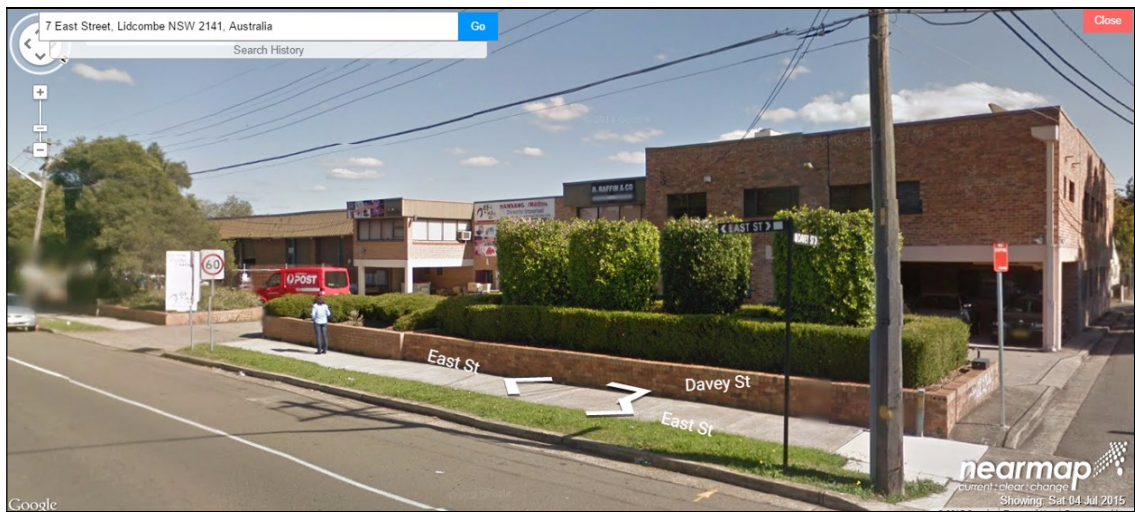
⁷ A guide to preparing planning proposals, NSW Department of Planning & Infrastructure, October 2012.

⁸ AELS2015, pg63.

⁹ AELS2015, pg65.

The AELS2015 noted that the northern part of Precinct 2 was the subject of a planning proposal (Marsden Street Precinct) and that the section south of James St was generally performing well. It therefore recommended that IN2 – Light Industrial zoning be retained south of James St. The proposal is consistent with this recommendation. For reasons discussed previously, it does not propose any change to the IN2 – Light Industrial zoning of properties along East St between Davey St and James St. It was previously noted that these existing industrial properties are of relatively recent masonry construction and have been designed to meet modern business needs with a greater commercial component rather than open factory floor. Their potential impact on proposed high density residential development on the western side of Raphael St is reasonably low.

By contrast, the structures on the subject site are large, ageing factory buildings. They have potentially much greater impact on adjoining residential development by virtue of their poor appearance, exposed rear service yards and loading docks and their lightweight wall and roof cladding (which does not attenuate noise).



6. East St modern industrial properties south of Davey St (Nearmap 19/08/15)



7. Rear of above properties viewing south down Raphael St (Nearmap 19/08/15)

As a result of the Marsden Street Precinct planning proposal, the subject site has become isolated and is now adjacent to retail/commercial and high density residential (separated only by a narrow road, Raphael St) and separated from other industry by parkland and a road (Davey St). The parkland has been rezoned to provide additional open space for residents and workers of the town centre and a

visual and pedestrian corridor through to East St, potentially linking with the Rookwood Cemetery parklands. Its day-to-day use will therefore be as part of the town centre, resulting in the effective isolation of the site from industrial lands to the south.

The site does not enjoy the requisite features identified in AELS2015 for ongoing viability (arterial road access, a conflict-free environment and clustered with other businesses & industry). Importantly, the proximity of high density residential will deter investment in redevelopment of the site for industrial purposes.

AELS2015 also noted that Lidcombe Town Centre has opportunities to extend further east into the Marsden Street Precinct (including the site). At pg76 it stated that *"This will generate more life, activity and employment opportunities....[and] stimulate more economic activity in what is a highly accessible centre with great potential for growth and renewal."* That view is supported by this Planning Proposal.

The AELS2015 promotes a flexible centres hierarchy, with centres able to move up the hierarchy as opportunities for redevelopment and growth are presented. The Marsden Street Precinct was supported as such an opportunity for Lidcombe town centre and the subject planning proposal will further support the planned revitalisation of the centre.

No3-7 East St (which makes up the majority of the site) was identified in the Marsden Street Precinct Zoning Review as one of two large sites in single ownership suitable for development of a large format supermarket or discount department store which is currently lacking in the Town Centre.

The other site is No12 Railway St which has been rezoned to B4. However much of that site is occupied by a modern, three-storey office building occupied as the headquarters and training centre of the CFMEU and therefore is unlikely to be redeveloped in the short term. It is also desirable from a competition viewpoint that there be more than one opportunity for a supermarket and discount department store in Lidcombe. The absence of a supermarket has long been recognised as a deficiency of Lidcombe town centre. It contributes to pressure for out-of-centre facilities which detract from the overall competitiveness and functionality of the Town Centre.¹⁰

The proposed rezoning of the site to B4 – Mixed Use is therefore consistent with the recommendations of AELS2015 relating to both industrial precincts and to business centres.

Marsden Street Precinct Zoning Review 2014

The preferred zoning scenario recommended by the Marsden Precinct Zoning Review (AECOM 2014) envisaged that the site would be rezoned to B4 – Mixed Use and the southern portion to RE1 – Public Recreation. This planning proposal seeks to implement that recommended outcome.

The AECOM Zoning Review provided a comprehensive analysis of the constraints and opportunities of the Precinct and the metropolitan and local strategic planning context. Rigorous testing of six different land use zoning scenarios was undertaken in concluding that the scenario involving rezoning of the subject site to B4 – Mixed Use was the preferred option. Council's strategic planning team supervised the Zoning Review and signed off the draft. The final was signed off by Norma Shankie-Williams who in a previous role at the Department of Planning was the executive director of Metropolitan Planning.

The grounds for Council formulating a hybrid option which retains the IN2 – Light Industrial zoning of the site rather than the option recommended by AECOM were set out in Council's Planning Proposal Report 153/14. These grounds were addressed in a submission on the Marsden Street Precinct planning proposal by Shanahan Planning on behalf of the owner of 3-7 East St.

¹⁰ AELS2015: pp vii, ix & 74.

The points raised in our submission were addressed in the Executive Manager Planning's Report to Council's meeting of 17/06/15 (at which it was resolved to nonetheless proceed with the hybrid zoning option for Marsden Street Precinct).

The advantages and disadvantages of rezoning the site to B4 were summarised in Table 2 of the Executive Manager Planning's Report (extract is at **Attachment 1**).

The advantages of rezoning identified in that table were:

- *Permits the development of additional dwellings within 400m of the Lidcombe Railway Station and adjacent to the Lidcombe Town Centre.*
- *The large single ownership at 3 and 5-7 East Street offers the opportunity to develop a retail tenancy with a large floorplate requirement, such as a supermarket.*
- *Increased opportunity to create additional retail/commercial jobs within a commercial component of mixed use development.
(Note: residential flat buildings without a commercial component are permissible in the B4 Mixed Use zone).*
- *Opportunity to create a more active street frontage along East Street.*
- *Opportunity to minimise land use conflict between the proposed B4 Mixed Use zone and existing IN2 Light Industrial zone.*

These are strong grounds supporting rezoning of the site and are reflected in the objectives for this Planning Proposal. Additional grounds supporting rezoning have also been identified in Section 3.1 of this Planning Proposal:

- To enhance the presentation of Lidcombe Town Centre from the railway line and principal eastern and southern road approaches (Railway St & East St) by providing for a form and quality of development consistent with the rest of the precinct and appropriate for a key gateway site;
- To capitalise on the site's proximity to Rookwood Cemetery parklands and provide opportunity for town centre residents and workers to benefit from the Cemetery Trust's strategy to expand community use of the parklands;
- To enhance and activate the public domain of Railway St, Raphael St, East St, the Town Centre laneway network, the Jewish Reserve and the proposed park;
- To provide for future road widening of Raphael St and Davey St to enhance traffic safety and efficiency;
- To provide for a high quality cycleway along East St;
- To negate the potentially adverse impacts of the large telecommunications tower on the western part of the site on future development of the precinct.

In addition to the advantages of rezoning discussed above, the Executive Manager Planning's Report identified the following disadvantages. For the reasons discussed below, it is considered that these are not well founded and did not establish a sound basis for Council's decision to reject the rezoning.

- *The IN2 Light Industrial zone will be further reduced, and eventually reduce the industrial jobs in the precinct.*

Comment:

Implementation of the Marsden Street planning proposal has resulted in the site becoming an isolated industrial island with commercial/retail and high density residential to the west and parkland that will be used in association with the town centre to the south and east.

As previously noted, the site does not enjoy the attributes of a viable industrial location that are identified in the *Auburn Employment Lands Strategy 2015*

(AELS2015). Its redevelopment for modern industrial purposes is now deterred by the proximity of high rise residential, due to the perceived risk of complaint against industrial operations.

AELS2015 notes that the demand for industrial land for manufacturing will decline to 2031 and demand for commercial floorspace will increase. There is scope for modern redevelopment of redundant factory buildings in more suitable locations elsewhere in the industrial zones to cater for this expected demand.

If IN2 zoning were to remain, the most likely outcome is that the current buildings would be retained. These lend themselves to manufacturing which is in declining demand and is employing fewer workers due to increasing mechanisation. The existing container seal printing business carried out in 3-7 East St is highly mechanised and employs only a few people. There are many traditional style premises in better locations from which it could operate.

It is also noted that some recent rezoning decisions have actually increased the amount of industrial-zoned land in Auburn.

The Council-initiated planning proposal PP-05/2012 resulted in 5,600m² of R2 low density residential land at 2-10 Jenkins St and 344-362 Park Rd being rezoned to IN2 – Light Industrial. On 03/02/15, Planning Proposal PP-08/2013 seeking rezoning of those properties to B4 – Mixed Use was denied gateway approval by the Department of Planning. The context of those properties – an isolated island of residential use surrounded on all sides by industrial development – is the converse of the subject site which will soon become an isolated pocket of industrial adjoining high rise residential.

PP-05/2012 and PP-08/2013 are notable here for two reasons:

- The additional area of industrial land they created (5,600m²) exceeds the industrial-zoned area of the subject site (3,024m²);
 - They reinforce the concept noted in AELS2015 that residential use inhibits the ongoing viability of industrial use, a fundamental point supporting this planning proposal.
- *Loss of the opportunity to negotiate a Voluntary Planning Agreement with the owner of 3 and 5-7 East Street for parkland adjacent to the Jewish Reserve, assuming a re-exhibition for this purpose.*

Comment:

While the provision of the parkland is well supported on planning grounds, the loss of an opportunity for a VPA is not a valid planning reason affecting a zoning decision. In any event, a VPA offer now forms part of this Planning Proposal which overcomes this as a basis for rejection.

A VPA can also be negotiated as part of a DA. As noted above, it is considered unlikely that the existing buildings on site would be redeveloped in the near future (if at any time) for the reasons outlined in AELS2015. This planning proposal and VPA offer therefore provides a unique opportunity to secure the dedication of the parkland in a reasonable time and at no upfront cost to ratepayers.

If the site was to be redeveloped for industrial purposes, contributions would be payable under Section 94A at the rate of 1% of capital investment value. At the applicable FSR of 1:1, the developable area of Lot 2 could accommodate some 1,300m² of industrial floorspace. At an average construction cost¹¹ of \$1,290/m², the capital investment value of this would be in the order of \$2M. The Section 94A contribution would be in the order of \$20,000 which is obviously well below the market value of the parkland. A VPA therefore would not be an attractive option for an industrial developer.

¹¹ Average construction cost from www.bmtgs.com.au.

The alternative would be for Council to compulsorily acquire the parkland at market value whether or not a DA is lodged. As the parkland is used for car parking, this would compromise the ongoing operation of the existing industrial use and would therefore be inconsistent with the position that industrial use needs to be preserved.

- *May increase the overshadowing impact of future development on the Jewish Reserve and the proposed adjoining park area.*

The shadows already cast on the Jewish Reserve and proposed adjoining park by the existing industrial buildings are considerable, as shown in the shadow studies included with the concept scheme (drawings 07, 08 & 09). The drawings also show the shadow from potential multi storey mixed use development of the site. These indicate that in midwinter, the potential development would result in:

- minimal additional overshadowing at 9am;
- some additional overshadowing at 10am and 11am (but still reasonable areas in open sunlight);
- availability of substantial sunlit areas from 12 noon – 2pm during the peak usage lunchtime period;
- no additional overshadowing of the parkland by 3pm when it is likely to be in greatest usage (after school hours).

The additional overshadowing caused by the potential development in midwinter is therefore considered to be reasonable and would be even less during the equinox and summer months when greater usage of the park would be expected.

There is scope for the residential development to be stepped to further reduce the overshadowing impact. This is appropriately dealt with at DA stage and is not a basis to inhibit rezoning.

As noted above, if this planning proposal does not proceed, it is unlikely that the parkland could be achieved in the foreseeable future. A park with some overshadowing is preferable to no park at all and would still provide valuable visual, recreational, environmental and connectivity benefits.

- *High rise development along East Street will create a visual impact from Rockwood Cemetery.*

Comment:

Rookwood Cemetery is vast. With an average width (east-west) of 1.8km, length (north-south) of 2km, a perimeter of over 13km and area of over 300 Ha, it is the largest cemetery in the southern hemisphere.

The *Rookwood Visual Significance Study*¹² identifies key views within Rookwood cemetery (**Figure 19**). These include internal views of landmarks within the cemetery and long distance views out of the Cemetery. It is noted that the long distance views are predominantly to the south-west, south and south-east and are not affected by development of the site. Views of internal landmarks are also not affected.

The 10 storey development that has been enabled by the Marsden Street Precinct rezoning is visible from nearby parts of the Cemetery, as illustrated by **Figure 20**. But from more distant parts of the Cemetery, this development will become a more minor element of the visual landscape, often obscured by the Cemetery's existing and planned tree canopy. Rezoning of the site would bring multi storey development some 47m closer to the Cemetery but given the scale of the Cemetery and the location of the site off its far north-western corner, the overall visual impact on the Cemetery is not considered to be significant or adverse.

¹² *Rookwood Visual Significance Study*, DEM, August 2010 (DEM 2010).

In 2015, the Rookwood General Cemeteries Reserve Trust commenced implementation of a five-year masterplan which includes improvements to roads and paths, new landscaping, cycleways and recreational walkways, a community hub with a genealogy research centre, new cafe and florist, as well as an activities and events program to encourage community use such as cycle races, children's activities and a sculpture show.

The new masterplan is designed to make the Cemetery a place of vitality and life, repositioning it as a tourist destination like the Pere Lachaise Cemetery in Paris and Arlington in USA.¹³

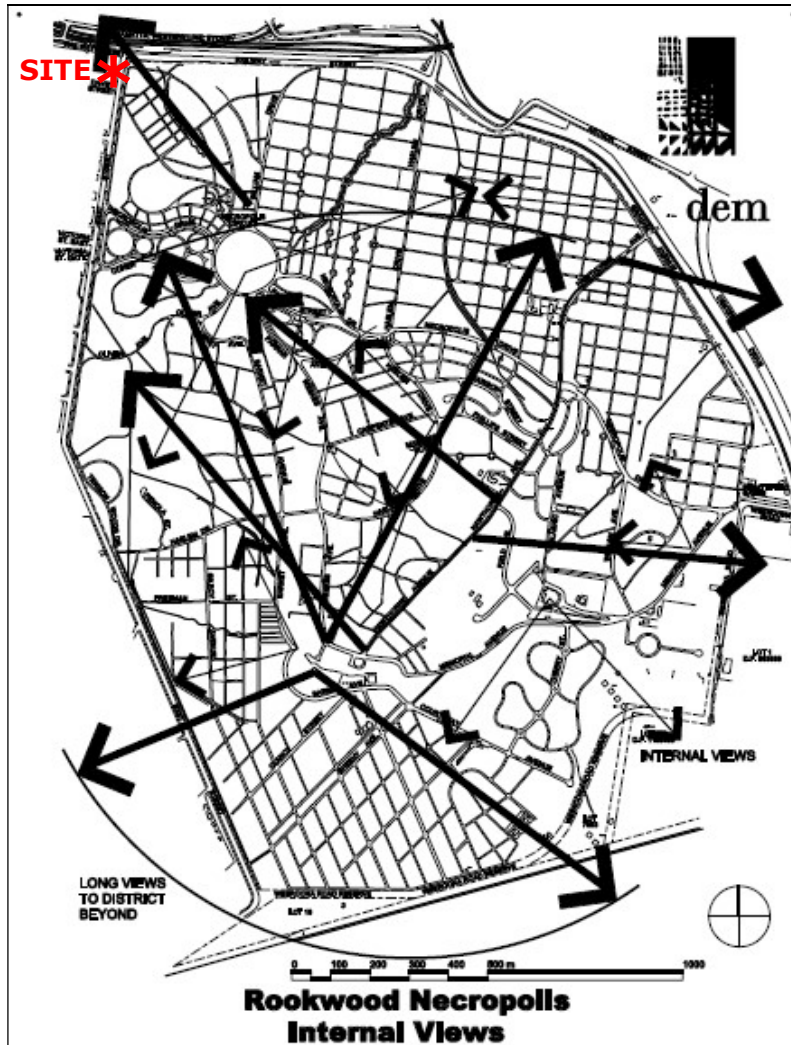


Figure 19: Rookwood Necropolis View Analysis (DEM 2010)

The proximity and visibility of apartments and active retail uses would support rather than detract from this vision to integrate the Cemetery into everyday community life. Many cemeteries adjoin residential development and this does not inhibit their function as places of reflection and remembrance.

Within the vicinity of the site, the Trust is proposing a cycleway for community use around the perimeter of the Cemetery adjacent to East St (**Figure 21**). The Planning Proposal includes active uses fronting East St, as well as improved pedestrian access from the town centre through the site to East St. These measures will support the objectives of the Trust's cycleway proposal.

¹³ *The cycle of life – Rookwood Cemetery gets a retread* Sydney Morning Herald, 06/03/15:
www.smh.com.au/action/printArticle?id=67002399

The cycleway design includes avenue tree planting which will soften the built form of the town centre when viewed from the Cemetery.

The Cemetery has also from time to time experienced serious vandalism.¹⁴ Residential development along East St will increase casual surveillance of the Cemetery and deter vandalism, as well as improving the safety of the cycleway and increased community usage within the Cemetery proposed by Trust's masterplan.

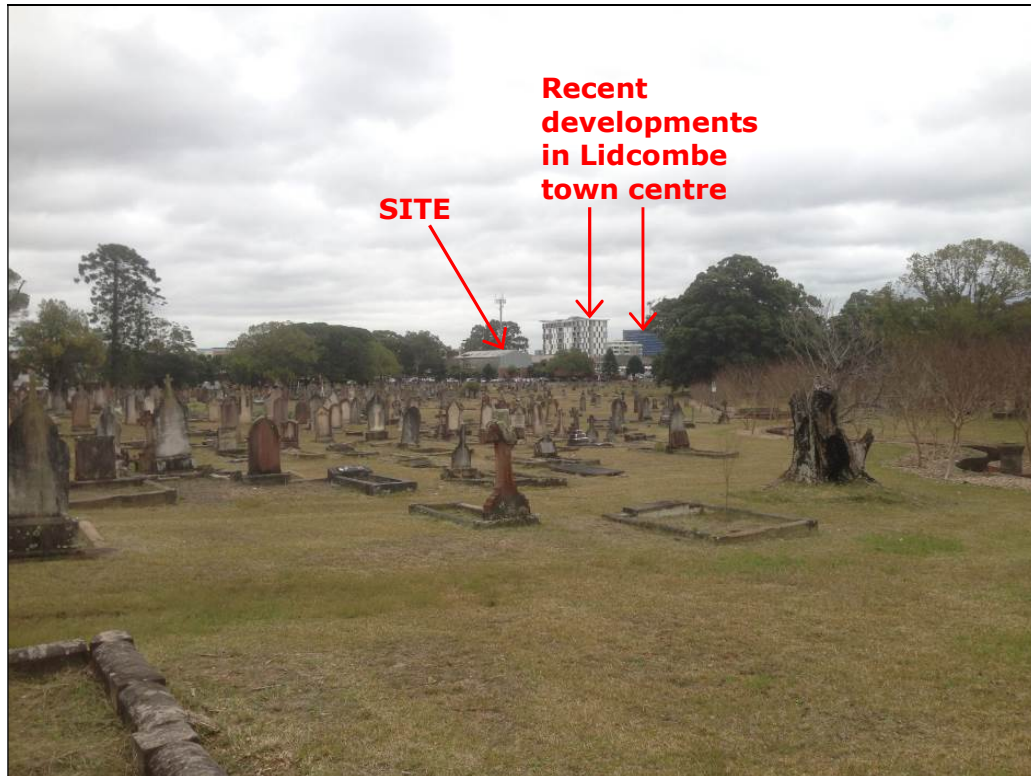


Figure 20: Site from Cemetery view line indicated in Figure 19

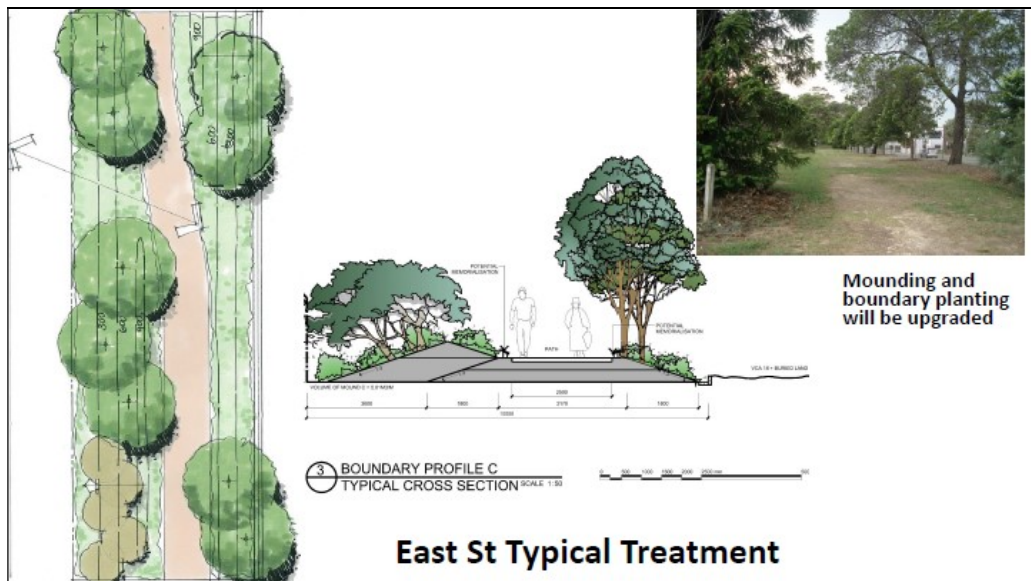


Figure 21: Proposed cycleway in Rookwood Cemetery adjacent to East Street ¹⁵

¹⁴ Grave attack devastates The Torch, 15/12/14: www.localnewsplus.com.au/story.php?ID=69564

¹⁵ From presentation to Auburn City Council by Rookwood Necropolis Trust, 02/12/15.

- *High density development along East Street may create excessive activity and noise impacts to the cemetery, which many people use as a place of quiet and reflection.*

Comment:

Multi-storey residential development over a retail/commercial podium is unlikely to generate substantial noise levels. East St is a busy sub arterial road and bus route which dominates the acoustic environment in this locality. The operation of machinery, fork lift trucks, waste collection and heavy vehicle movements associated with industrial use of the site has greater potential to affect the amenity of the Cemetery than mixed use retail/commercial and residential development.

The concept scheme for the site proposes an internal loading dock accessed from Raphael St. This will ensure that loading and waste collection operations do not adversely affect the amenity of surrounding land uses, particularly the Cemetery which is on the other side of the building.

Activity at street level would consist of greater pedestrian movement and social interaction which is unlikely to adversely impact the Cemetery - and potentially would support the intention of the new masterplan to revitalise the Cemetery and encourage greater community use.

- *High density development along East Street will create a traffic and car parking impact on Railway, East and Raphael Streets.*

Comment:

A Traffic Impact Assessment has been prepared for this planning proposal by APEX consulting engineers (**Attachment 2**). The APEX traffic report considers the traffic volumes expected to be generated by the Marsden Street Precinct planning proposal, as reported in the *Marsden Street Precinct Traffic, Transport and Accessibility Study* prepared for Council in April 2015 by Hyder Consulting Pty Ltd.

APEX have modelled the impact of the additional traffic generated by rezoning the site to B4 – Mixed Use using the same development yield assumptions that were used by Hyder.

APEX have found that the proposed rezoning will notionally lead to two nearby intersections reaching their design capacity. However, APEX note that the traffic assessment for the Marsden Street Precinct Planning Proposal by Hyder appears to have over-estimated the traffic levels generated by that proposal. As the Hyder figures were used as the base case for their assessment, APEX suggest that intersection capacity may not in fact be exceeded by the proposal.

It is understood that Council will soon be undertaking further traffic modelling for the Lidcombe town centre to identify the need for new traffic management initiatives.

The Marsden Street Precinct initiative has resulted in the rezoning of approximately 15,000m² of industrial land to high density mixed use, as well as more than doubling the development potential of approximately 13,000m² of residential land. In this context, the current proposal to rezone a further 3,000m² of industrial land would make a modest contribution to traffic levels in and around the centre. This may affect the design of some traffic management initiatives but would not be of such an extent that should inhibit the rezoning.

East St is already used for parking by commuters due to its proximity to the railway station. The concept scheme for mixed use redevelopment of the site provides basement parking for residents, visitors, workers and shoppers in accordance with the parking rates specified in the DCP. There is no reason to expect that development will lead to additional on-street parking or that this would be a significant issue if it did occur.

- *An additional traffic, transport and accessibility investigation is likely to be required.*

Comment:

A Traffic Impact Assessment has been submitted with this proposal (**Attachment 2**) and is addressed above.

- *An additional contamination investigation is likely to be required.*

Comment:

A Stage 1 Desktop Environmental Assessment has been undertaken for this proposal by Environmental Investigation Services Pty Ltd (**Attachment 3**). The assessment notes three potential sources of contamination – fill material (if any) used in the original construction; leachate from underground fuel storage tanks from a former motor garage at 6 Railway St, and asbestos building materials in the existing structures.

The assessment states that potential contamination from these sources represents a low to moderate risk. It concludes that the site can be made suitable for mixed use development by carrying out a Stage 2 investigation; classifying waste for off-site disposal of excavated material, and investigating the need for an acid sulfate soils management plan. These recommendations would appropriately be addressed at DA stage and do not inhibit the proposed rezoning.

- *The variation conflicts with Council's resolution to maintain cemetery-related uses within this Marsden Street precinct.*

Comment:

Maintaining the zoning as IN2 does not guarantee that the existing monumental stonemason will remain in operation or that others will establish there in future. There is no logical basis for cemetery-related uses to be continued in this particular section of industrial land.

There are three cemetery-related uses at present in the Marsden Street Precinct – Larcombe Memorials at 2 Railway St (within the site); Globe Memorial at 4 Railway St cnr Raphael St, and Peacock Monumentals at 22 Railway St.

Only Larcombe is within the IN2 zoned area. The other two have already been rezoned to B4 – Mixed Use. No concern regarding their potential loss was raised in Council's consideration of that rezoning. There is ample opportunity for this type of use to be re-established within the South Lidcombe Industrial area south of James St which has more than 350m frontage to Rookwood Cemetery.

These premises were established many decades ago where they could cater for customers accessing the cemetery by train. As most would now travel by car, there is no planning benefit in this particular location.

Several other memorial masons are located elsewhere in the former Auburn LGA including National Granite at 73 Jellicoe St Lidcombe; Dimarco Monuments at 8 Rose Cres Regents Park; Dynasty Stone Art at 371 Park Rd Regents Park and Stonemason Fine Art at 16-18 Alexander St Auburn. Several more are located in other LGAs adjoining the cemetery.

Retaining this whole street block as IN2 to preserve a single, small scale and low capital-intensity operation is misguided and unnecessary. It is also undesirable as it gives a poor presentation to the Town Centre's eastern gateway (refer cover photograph) and foregoes the opportunity to provide a high quality landmark development in this strategic location.

- *The DP&E may require re-exhibition of the Planning Proposal, which would delay the process of making the proposal.*

Comment:

As the Marsden Street Planning Proposal has now been implemented, this is no longer an issue.

In conclusion, it is considered that none of the points previously raised by Council as disadvantages of rezoning of the site to B4 – Mixed Use are significant impediments. They clearly do not outweigh the substantial advantages of rezoning that were identified by AECOM's initial zoning review, were reiterated in the Executive Manager Planning's Report to Council and have been expanded in this Planning Proposal.

Q2. Is the planning proposal the best means of achieving the objectives or intended outcomes, or is there a better way?

The planning proposal is considered the best way to achieve the objectives and intended outcomes because it incorporates the same principal planning controls which now apply in the adjoining section of the Marsden Street Precinct. This will ensure that the town centre presents a cohesive, high quality presentation to its major approaches by road and rail.

As discussed above, the proposed VPA is considered the best (and perhaps only) means to secure the parkland in a reasonable timeframe without a large upfront cost to ratepayers. It also enables road widening along Raphael, Davey and East Streets to be obtained at an early stage which will facilitate development of the Precinct as a whole.

5.2 Relationship to strategic planning framework

Q3. Is the planning proposal consistent with the objectives and actions of the applicable regional or sub-regional strategy (including the Plan for Growing Sydney and exhibited draft strategies)?

The proposal is consistent with regional and sub-regional planning strategy, as discussed below.

A Plan for Growing Sydney 2014

The proposal is consistent with the following elements of *A Plan for Growing Sydney*:

Action 2.1.1: Accelerate housing supply and local housing choices:

- *target locations which deliver homes closer to jobs*

The most suitable areas for significant urban renewal are those areas best connected to employment and include:

- *in and around centres that are close to jobs and are serviced by public transport services that are frequent and capable of moving large numbers of people*

The proposal increases housing supply and employment in close proximity to high-capacity public transport (rail and Metrobus) and existing jobs within Lidcombe town centre and the South Lidcombe industrial area.

Direction 2.2: Accelerate urban renewal across Sydney – providing homes closer to jobs

The Government will:

- *support council-led urban infill and support local efforts to lift housing production around local centres, transport corridors and public transport access points*

Well-planned and well-designed infill development can improve the feel of a place, its vitality and sense of community. It can make the local environment more attractive and improve services.

The Marsden Street precinct was a council-led initiative to lift housing production and employment around Lidcombe town centre and rail station. The proposal will support this initiative by further increasing jobs and housing close to transport.

By replacing ageing industrial buildings on a key gateway site with high quality development consistent with new development elsewhere in the centre, the proposal will enhance the presentation and image of the town centre from its major road and rail approaches.

Direction 3.1: Revitalise existing suburbs

By putting more housing in or near centres on the public transport network, residents can take advantage of the shops, cinemas, cafes, restaurants, and health and education services that are already available.

Action 3.1.1: Support urban renewal by directing local infrastructure to centres where there is growth

Delivering the infrastructure that is needed means responding to growth. In areas that are growing, it will be most efficient to focus investment in local infrastructure in centres – the most accessible place for the local community.

The proposal supports the growth of Lidcombe town centre and in so doing, will improve the viability of local infrastructure improvements.

Direction 3.3: Create healthy built environments

The built environment can encourage healthy communities by:

- *creating mixed-use centres that provide a convenient focus for daily activities...*
- *linking open spaces to encourage recreational walking and cycling, and support cross-regional trips to centres and other destinations*

The proposal contributes to Lidcombe becoming a healthier built environment by:

- Providing more housing within easy walking and cycling distance to public transport, jobs and services;
- Making provision for an upgraded cycle route along East Street;
- Supporting bus patronage along Railway St & East St;
- Creating new parkland that will expand outdoor recreational opportunities for local residents and workers;
- Promoting recreational walking and cycling by linking with East St cycleway and Rookwood Cemetery parklands;
- Providing a rare opportunity for a large format supermarket or discount department store which is currently lacking in Lidcombe, thus reducing the need for local residents and workers to drive to supermarkets outside the centre.

West Central Draft Subregional Strategy

The Subregional Strategy was issued in 2007 to implement the previous Metropolitan Strategy for Sydney. The Metropolitan Strategy was replaced in 2014 with *A Plan for Growing Sydney* (discussed above).

The Greater Sydney Commission is now preparing District Plans that will replace the draft Subregional Strategies. Until this work is complete, the Subregional Strategies remain the sub-regional expression of the Government's overall strategy for Sydney.

The West Central Draft Subregional Strategy was considered by several local planning strategies recently commissioned by the former Auburn Council (and discussed in detail below) - the *Auburn Employment Lands Strategy 2015*, the *Auburn City Residential Development Strategy 2015* and the *Marsden Street Precinct Lidcombe Zoning Review*.

A key point in the Subregional Strategy which has been noted in each of those local strategies is that the Lidcombe South industrial precinct in which the site is located is not identified as a strategically significant industrial area that should be retained. The Subregional Strategy noted: ¹⁶

Within Lidcombe there is an opportunity for some redevelopment of this Employment Lands precinct. While operating viably in most cases, it was rezoned from residential to industrial only a decade or so ago. There may be opportunity in part to redevelop to allow for a wider range of employment uses and a component of residential, to support nearby Lidcombe Town Centre.

The site is a logical example of such an opportunity, being adjacent to the town centre and separated from the rest of the industrial area by parkland and a road. The proposed rezoning will increase employment on the site and provide a component of residential that will support Lidcombe town centre.

Lidcombe is identified in the Subregional Strategy as a town centre. These are characterised as having *one or two supermarkets, community facilities, medical centre, schools, etc. Contain between 4,500 and 9,500 dwellings. Usually a residential origin than employment destination.*

Lidcombe presently does not have a supermarket. Local shoppers therefore need to travel to out-of-centre supermarkets in the surrounding area. Typically this would involve travel by car. The large area of the site in single ownership provides a rare opportunity to provide a supermarket in Lidcombe, thus supporting its status and function as a town centre.

Q4. Is the planning proposal consistent with a council's local strategy or other local strategic plan?

As previously discussed, the proposal implements recommendations of the following local strategic studies:

- *Auburn Employment Lands Strategy*, AEC Group, June 2015;
- *Marsden Street Precinct Lidcombe Zoning Review*, AECOM, May 2014.

It is also consistent with the *Auburn City Residential Development Strategy 2015* and the *Auburn Community Strategic Plan*, as discussed below.

Auburn City Residential Development Strategy 2015 (RDS)

The Auburn RDS was prepared for the former Auburn City Council by AECOM in March 2015 to guide planning for future housing needs in Auburn City over the next 20 years.

The RDS reviewed regional planning targets for housing in the LGA and analysed housing demand and supply. It also reviewed current planning proposals and major

¹⁶ *West Central Draft Subregional Strategy*, Department of Planning 2007, pg37.

development applications. The Marsden Street Planning Proposal was noted at pg63-69 and at that time included rezoning of the site to B4 (northern part) and RE1 (southern part).

The RDS proposes that housing demand primarily be met within and adjacent to the existing main centres of Auburn, Lidcombe, Berala and Regents Park. The capacity for each of these centres to meet demand was then analysed.

The Marsden Street Precinct (including the site) was identified as an area within 800m of the station warranting further consideration for rezoning.

From this analysis, a set of recommendations were provided which relevantly include:

- *Council's main focus on new housing growth should be within the walking catchment of a town, village or neighbourhood centre.*
- *While facilitating higher densities in centre locations, Council should ensure that amended planning controls also recognise the need to balance the retention of a level of employment lands in these areas, to provide local services and employment for residents.*
- *Open space with good pedestrian and cycle connections should be provided to service the population, in centres where new residential growth is planned.*

This Planning Proposal is consistent with each of these recommendations in that:

- It is adjacent to Lidcombe town centre and within walking distance (300m) of the railway station. In fact it is closer by a significant margin than any of the other six potential residential expansion areas for Lidcombe identified in the RDS.¹⁷
- The Lidcombe South industrial area in which the site is located was not identified as strategically important in the AELS2015 or the *West Central Draft Subregional Strategy*. The existing industrial activities on the site do not directly service the local population and could be just as effectively located in any industrial area. The proposal provides for an estimated 3,860m² of additional commercial floorspace which will significantly boost the employment capacity of the site. This includes potential for a large floorplate supermarket which is a service (and an employment opportunity) currently not available in the town centre.
- The proposal enables the early delivery of additional public open space and improved pedestrian and cycle connections.

Auburn City Community Strategic Plan 2013-2023

The CSP was prepared to guide the growth of the former Auburn City LGA over a 10 year period to 2023. It aims to ensure greater social, environmental and economically equitable outcomes for the community.

The key challenges identified in the CSP include accommodating the considerable population growth anticipated over the next 10 years. The CSP anticipates that home purchase and rental prices will continue to rise due to the LGA's strategic location between the major CBDs of Sydney and Parramatta and on the railway line. It supports higher density development around town centres to maximise access to transport, services and shops.

The proposal will help to address these major challenges in that it is adjacent to an existing town centre that is forecast to experience significant growth. The additional commercial floorspace generated by the proposal will support local employment and provide additional local services, while the supply of additional housing will help meet population demand and exert downward pressure on housing prices.

¹⁷ Auburn City Residential Development Strategy, AECOM 2015, Figure 33, pg97.

Q5. Is the planning proposal consistent with applicable State Environmental Planning Policies?

and

Q6. Is the planning proposal consistent with applicable Ministerial Directions (s.117 directions)?

A review of the consistency of the Planning Proposal with SEPPs, Deemed SEPPs and Section 117 Directions is provided at **Attachment 4** to this planning proposal.

The review confirms that the proposal exhibits a high degree of consistency with the direction proposed by the strategic planning framework. The following summary observations are made.

SEPPs

Many SEPPs are not relevant to the former Auburn LGA generally or to Lidcombe town centre in particular. Of those that are relevant, most are appropriately addressed at DA stage.

Deemed SEPPs

All deemed SEPPs are non-applicable other than Sydney Harbour Catchment REP 2005. The proposal is consistent with that deemed SEPP.

Section 117 Directions

The proposal is consistent with all applicable Section 117 Directions. Those of particular relevance to this planning proposal are addressed in more detail below.

- *Direction 1.1 – Business and Industrial Lands*

This planning proposal seeks the rezoning of 3,000m² of industrial land to B4 – Mixed Use. The Marsden Street Precinct rezoning that was supported by Council involved the loss of over four times this area of industrial land. This loss was justified by Council planners in the following terms:

The Precinct's rezoning would result in a loss of employment lands for IN2 light Industrial zoned lands. These lands are not considered to be strategically significant employment lands as identified within the Department's West Central Subregion Draft Subregional Strategy and is considered to be more suitable for a wider range of recreational, business, light industrial and residential uses associated within the Lidcombe Town Centre.

The Council's Auburn ELS (June 2008) in p.97 – identifies this area as 'Precinct 2 – Lidcombe South' and recommends that the precinct be rezoned to complement the Lidcombe Town Centre (p.99).

The proposal would result in increasing the permissibility of a range of current uses that are permissible within the precinct to revitalise, improve and enhance the economic viability of the Lidcombe Town Centre. The precincts proposed B4 Mixed Use zoning would also compensate for the loss of IN2 zoned employment lands by generating more floor space for employment uses, related public services and residential in business zones.

The above assessment is agreed and applies equally to the relatively small loss of industrial land envisaged in this planning proposal. The recent implementation of the Marsden Street Precinct initiative has strengthened the case for this planning proposal, as it has further diminished the viability of industrial development on the site by introducing high density residential development in close proximity. It has also isolated the site from other industrial areas by introducing a corridor of parkland that will visually and functionally be part of the town centre.

- *Direction 3.1 – Residential Zones*

Council's review of the Marsden Street Precinct proposal noted that:

The proposal introduces the B4 Mixed use zone providing more opportunity to encourage and increase the provision of housing in addition to commercial uses within the Lidcombe Town Centre.

This planning proposal provides for an additional estimated 3,860m² of retail/commercial floorspace and 144 dwellings in Lidcombe town centre, and therefore further promotes the objective of this Direction.

- *Direction 3.4 - Integrating Land Use and Transport*

Council's review of the Marsden Street precinct noted as follows:

The subject precinct to which the proposal applies is located within 400 metre walking distance (5-10 minutes) from the Lidcombe Railway Station under Auburn LGA's Lidcombe Town Centre.

The proposal seeks to increase the development intensity (through B4 zoned land and respective FSR and HoB of that zoning) in the established Lidcombe Town Centre to further extend the existing commercial area between Marsden and East Streets.

The proposal is broadly consistent with the objectives and principles of the mentioned DP&E's policies. Council will undertake a traffic and transport study to address concerns relating to transport, traffic generation and accessibility once DP&E issues s.56 Gateway Determination to proceed with the proposal.

The site is in close proximity to established Town Centre businesses and within 400m walking distance of the Railway Station. Bus services, including the high-frequency Metrobus service between Sutherland & Parramatta via Bankstown, also travel along Railway St and East St adjacent to the site.

It is noted that subsequent to the above remarks, Council commissioned the traffic and transport study prepared by Hyder. In preparing this planning proposal, a further traffic assessment has been prepared by APEX. It notes that traffic levels predicted by Hyder for some nearby intersections are close to the capacity threshold, and the additional traffic generated by the proposal would result in the capacity of two nearby intersections being notionally exceeded. However APEX also found that the traffic levels predicted by Hyder appear to have been over-estimated, in which case the proposal may not result in capacity thresholds being reached.

It is understood that Council will soon be undertaking further traffic modelling to identify appropriate traffic management arrangements and intersection treatments in Lidcombe town centre.

The additional traffic generated by the proposal is relatively modest in relation to that generated by the broader Marsden Street Precinct initiative and can be factored into Council's modelling.

The concept scheme provides alternative options to access the basement carpark via East St or Raphael St. APEX have confirmed that both options are viable and have presented the traffic implications of both. This provides flexibility to accommodate a variety of traffic movement scenarios that may be developed by Council in its detailed traffic planning of the town centre.

The proposed VPA enables the early realisation of parkland at the southern end of the site. This will facilitate pedestrian movement by providing for a safe, attractive, high quality pedestrian connection from the Town Centre to East St and the Rookwood Cemetery parklands.

It was previously noted that a new masterplan now being implemented at Rookwood intends to transform it into a more active recreational space and a cultural resource for the community. The linkage provided by the proposed parkland at the southern end of the site therefore potentially has strategic significance in assisting the revitalisation of Rookwood and in turn, enabling

the local community to obtain maximum benefit from that revitalisation. This will be of benefit to residents and workers of the whole town centre, not just the site. APEX have suggested that consideration be given to a pedestrian crossing to improve the safety of accessing the Cemetery parklands and the existing bus stop on the far side of East St.

- *Direction 7.1 - Implementation of A Plan for Growing Sydney*

The proposal is consistent with *A Plan for Growing Sydney*, as noted in the preceding response to Question 3 of the Guide.

It is concluded that the proposal is consistent with metropolitan and local strategic policy direction and has significant strategic merit.

5.3 Environmental, social and economic impact

Q7. Is there any likelihood that critical habitat or threatened species, populations or ecological communities, or their habitats, will be adversely affected as a result of the proposal?

No – apart from one isolated juvenile Norfolk Island Pine tree and a few small trees and shrubs near the East St carpark, the site is devoid of vegetation and is covered with hardstand and buildings used for industrial purposes.

Q8. Are there any other likely environmental effects as a result of the planning proposal and how are they proposed to be managed?

The existing industrial development on the site has very poor visual qualities which detract from the image of the Town Centre, particularly in view of its location on the principal road entries to the Town Centre and its visibility from the railway station and from trains.

As previously noted, it is considered unlikely that the existing development would be redeveloped for modern industrial purposes because of the proximity of future high rise residential on the remainder of the Marsden Street Precinct and the perceived risk this would pose to such investment.

The proposal provides opportunity for high quality, contemporary redevelopment of the site, including a landmark building at the gateway to the Town Centre.

The existing industrial development also has potentially adverse impacts on the planned residential development by way of noise, vibration and exhaust from machinery and forklifts operating on site, and trucks accessing the open utility yard, skip bins and loading bays off Raphael St. The existing buildings are primarily clad with thin metal, plastic and asbestos sheeting which provides minimal noise attenuation. Redevelopment provides opportunity to remove these visual and amenity impacts.

The existing telecommunications tower on site has potential to adversely impact future residential development on neighbouring properties through its high visual impact and concerns regarding exposure to electromagnetic radiation (EMR). Redevelopment of the site provides opportunity to rationalise the communications equipment and integrate it into the design of the development to minimise its visual and EMR impacts.

The proposed VPA will enable the timely realisation of Council's intention for the southern part of the site to be converted to parkland. This will have significant environmental benefits in terms of visual quality, connectivity, natural habitat and management of runoff. The proposal will also enable active retail uses fronting the parkland rather than the existing unsightly industrial development. These will improve the safety, vitality and amenity of the parkland.

The proposed residential development of up to 32m in height has some additional overshadowing impact on the Jewish Reserve and proposed parkland to the south.

However as noted previously, this is considered reasonable and can be further mitigated by detailed design at DA stage. The shadow diagrams confirm that the proposal has minimal overshadowing impact on the B4-zoned property to the west and Rookwood Cemetery to the east.

There are two heritage items identified by Auburn LEP 2010 in the vicinity of the site: Rookwood Cemetery (A00718 – State significance) and Lidcombe Signal Box (A56 – local significance). The development enabled by this planning proposal will be visible from Rookwood Cemetery but does not have any direct impact such as overshadowing or physical disturbance of heritage fabric.

The visual impact was considered previously in this report and is considered to be acceptable and in some respects positive (by improving casual surveillance and hence safety, and by helping the Cemetery achieve its long term strategy to integrate more actively with the local community).

The proposal would have no appreciable impact on the heritage significance of the Lidcombe Signal Box.

Overall, this planning proposal is considered to have significant positive environmental impacts and no significant adverse impacts have been identified.

Q9. Has the planning proposal adequately addressed any social and economic effects?

The positive social and economic impacts of the proposal include:

- The provision of more commercial floorspace will assist in meeting the growing demand predicted by AELS2015.
- Increased commercial floorspace will reduce the need for local residents to commute to distant areas to access employment in growing sectors of the economy.
- The provision of additional housing will assist in meeting the accommodation needs of a growing population. This increased supply will in turn exert downward pressure on housing prices at a time of serious housing unaffordability.
- The provision of additional housing within the town centre and in close proximity to rail and bus transport will assist in promoting the transport mode shift supported by the former Auburn Council's *Residential Development Strategy*.¹⁸ This has positive social and economic impacts by promoting more active, healthier lifestyles through increased walking and cycling, and reduced reliance on private car transport and its associated traffic delays, accidents and vehicle emissions.
- Redevelopment of the site will substantially improve the presentation and image of Lidcombe Town Centre at one of its principal gateways, thereby supporting the broader social and economic objectives of the Marsden Street Precinct initiative.
- Early realisation of the parkland will provide additional open space to help meet the recreational needs of the local community. It will also improve connectivity to Rookwood, thereby supporting Rookwood's planned revitalisation while improving local access to new cultural programs and facilities being established there.

The proposed loss of 2,967m² of industrial-zoned land is not considered a significant negative impact, as demand for traditional manufacturing space is forecast to continue declining and the Marsden Street planning proposal has already inhibited investment in modern industrial redevelopment of the site. The existing industrial operations on site will be able to continue under existing use rights.

¹⁸ Auburn City Residential Development Strategy, pg108.

5.4 State and Commonwealth interests

Q10. Is there adequate public infrastructure for the planning proposal?

The site is adjacent to a town centre within a long established urban area of metropolitan Sydney. All utility services are available and connected to the site, including electricity sufficient for industrial operations.

All utility authorities were consulted by the former Auburn Council in its consideration of the Marsden Street Precinct rezoning proposal, as required by the Gateway determination. No infrastructure deficiencies or concerns were raised by the authorities in the submissions received. Further consultation with authorities would be required if this Planning Proposal is supported.

The proposal provides opportunity to better utilise existing transport and utility infrastructure and will expand the provision of public open space.

The traffic assessment previously undertaken for the former Auburn Council by Hyder found that the Marsden Street Planning Proposal would result in some nearby intersections experiencing traffic levels close to the threshold of their design capacity. The APEX traffic report submitted with this planning proposal indicates that the proposal may result in two of these intersections reaching capacity. However it also notes that the traffic levels predicted by Hyder may be overestimated, in which case the proposal may not have this result.

In any event, the proposal makes a relatively modest contribution to the traffic levels that will arise from the Marsden Street Precinct initiative and general background increase. Additional modelling is to be undertaken by Cumberland Council to identify specific traffic management treatments and the traffic resulting from the proposal will be factored into their design to ensure safe and efficient traffic movement through the centre.

Q11. What are the views of state and Commonwealth public authorities consulted in accordance with the Gateway determination?

This planning proposal is at pre-gateway stage. No consultation has been undertaken other than preliminary discussions with Council's strategic planning team.

Appropriate arrangements for consultation with agencies and public exhibition would be specified in the gateway determination.

6. Mapping

Relevant mapping and figures have been provided throughout this report, including:

- Figure 1: Locality Plan pg4
- Figure 2: The site pg4
- Figure 3: Regional Context pg5
- Figure 4: Zoning prior to Marsden Street Precinct Planning Proposal (ALEP2010 Amendment No14); pg9
- Figure 5: AECOM Preferred Zoning Scenario pg10
- Figure 6: Current Zoning Map pg10
- Figure 7: Current Floor Space Ratio Map pg11
- Figure 8: Current Height of Building Map pg11
- Figure 9: Current Minimum Lot Size Map pg11
- Figure 10: DCP building setbacks pg12
- Figure 11: DCP Active street frontages pg13
- Figure 12: DCP Proposed laneways pg14
- Figure 13: Public transport network pg16
- Figure 14: Proposed Zoning Map pg20
- Figure 15: Proposed Height of Building Map pg20
- Figure 16: Proposed Floor Space Ratio Map pg21
- Figure 17: Proposed Minimum Lot Size Map pg21
- Figure 18: Auburn City employment precincts pg23
- Figure 19: Rookwood Necropolis view analysis pg29
- Figure 20: Site from Cemetery view line pg30
- Figure 21: Proposed cycleway in Rookwood Cemetery pg30

7. Community consultation

In accordance with Council policy, it is understood that this Planning Proposal will be informally exhibited by Council for 28 days prior to it being considered for submission to the Department of Planning & Environment for gateway approval.

Requirements for further consultation with the community and relevant agencies will be specified in the gateway determination.

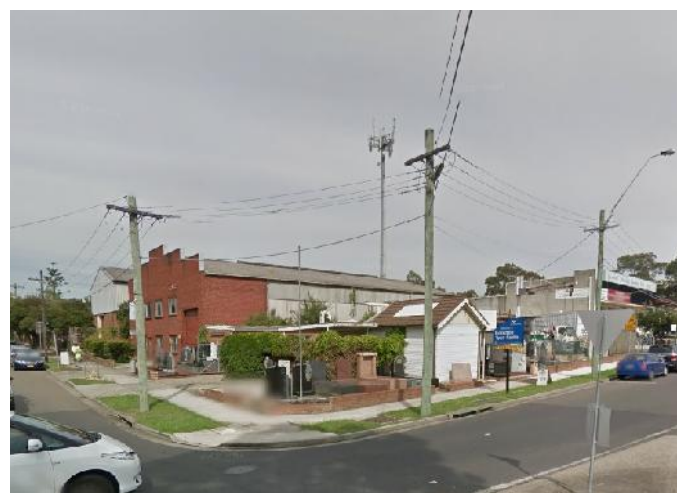
As noted in Council's VPA Policy, Section 93G(1) of the Act requires the draft VPA to be publicly notified for a period of not less than 28 days.

If the planning proposal is supported and is granted gateway approval, a draft VPA will be prepared for exhibition concurrently with the planning proposal in accordance with Clause 25D(1A) of the Regulation.

The applicant welcomes the opportunity to discuss with Council any issues raised during exhibition of the Planning Proposal.

The map shows a residential area in Sydney, Australia, with a red-outlined building and yellow dashed lines representing signal paths. The map includes labels for streets (Railway St, Marsden St, James St, East St, Chapel St), buildings (Hotel Lidcombe, Italian Monuments, Metro Petrol, Globe Memorial Co PTY Ltd, Hansang Trading, General Auto Instruments, Presbyterian Church in NSW), and various data points (time, azimuth, altitude) for signal reception. A red dot is located on the red-outlined building.

Time	Azimuth	Altitude
1PM DEC 22	103.93°	79.43°
12PM JUN 21	97.11°	32.57°
11AM JUN 21	81.03°	30.96°
10AM JUN 21	66.33°	26.19°
9AM JUN 21	53.74°	18.83°
12PM DEC 22	44.13°	74.18°
11AM DEC 22	21.58°	63.01°
10AM DEC 22	21.58°	63.01°
9AM DEC 22	21.58°	63.01°
1PM JUN 21	113.10°	30.57°
2PM JUN 21	127.58°	25.47°
3PM JUN 21	139.92°	17.87°
1PM DEC 22	173.91°	17.87°



SUBJECT PROPERTY FROM EAST ST



SITE ANALYSIS

LIDCOMBE



JANUARY 2017 JOB NO. 2_16_10

00

SCALE 1:500 @ A3

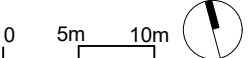


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EXISTING SITE PLAN

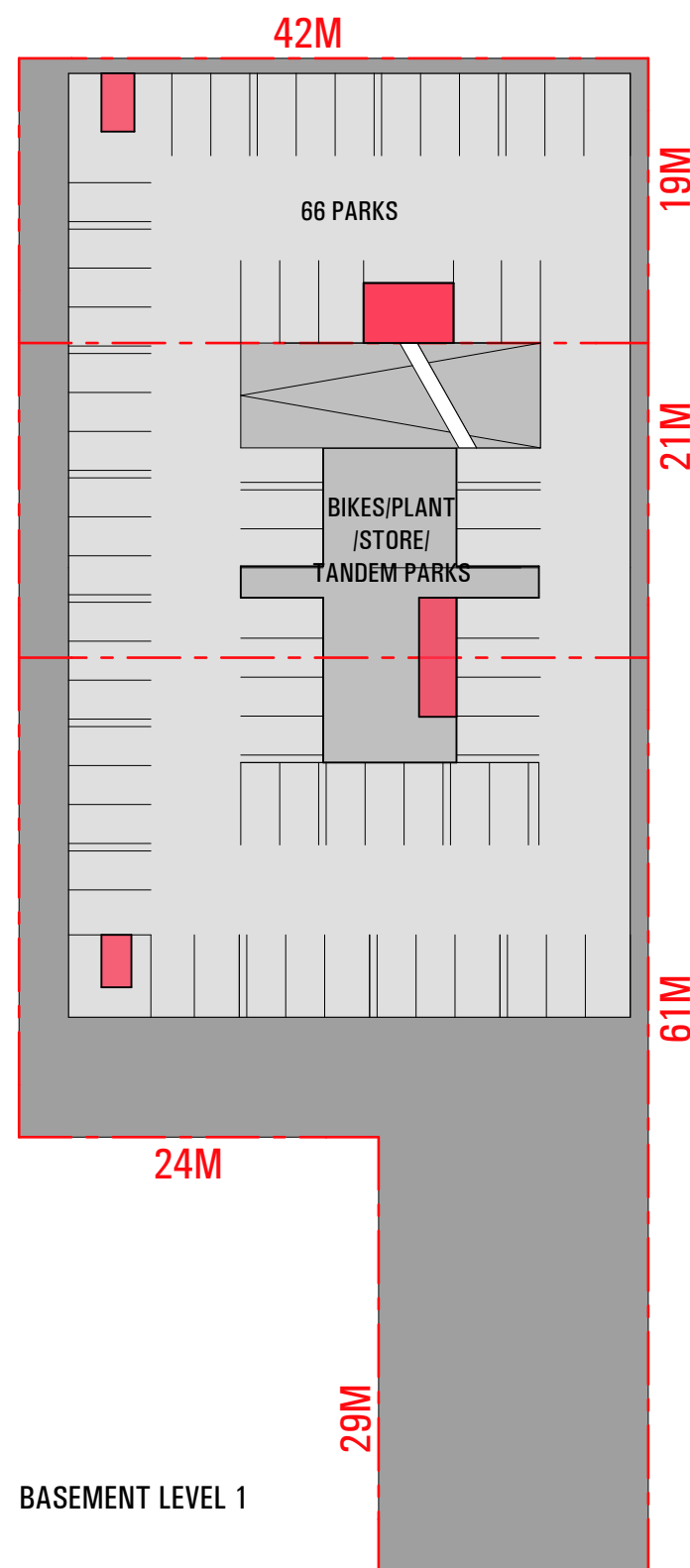
LIDCOMBE

01

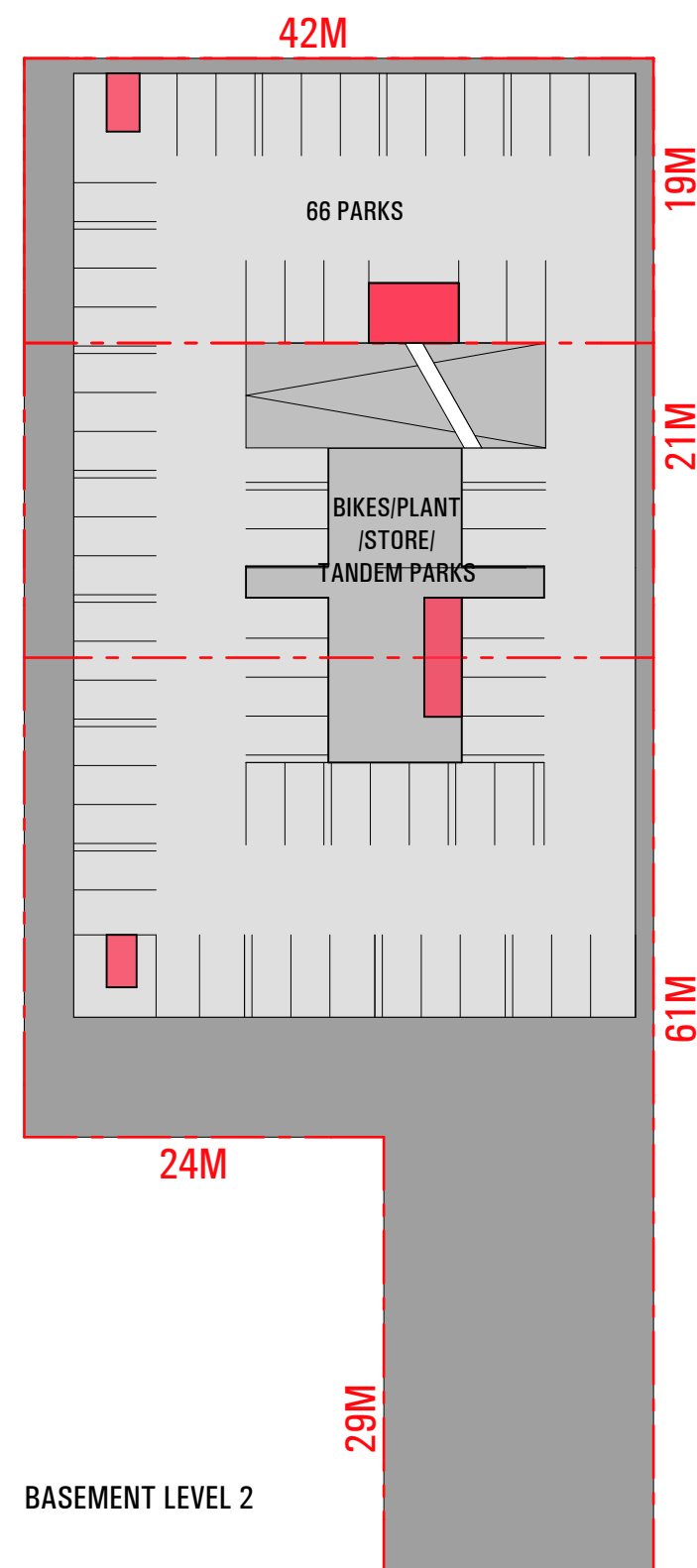


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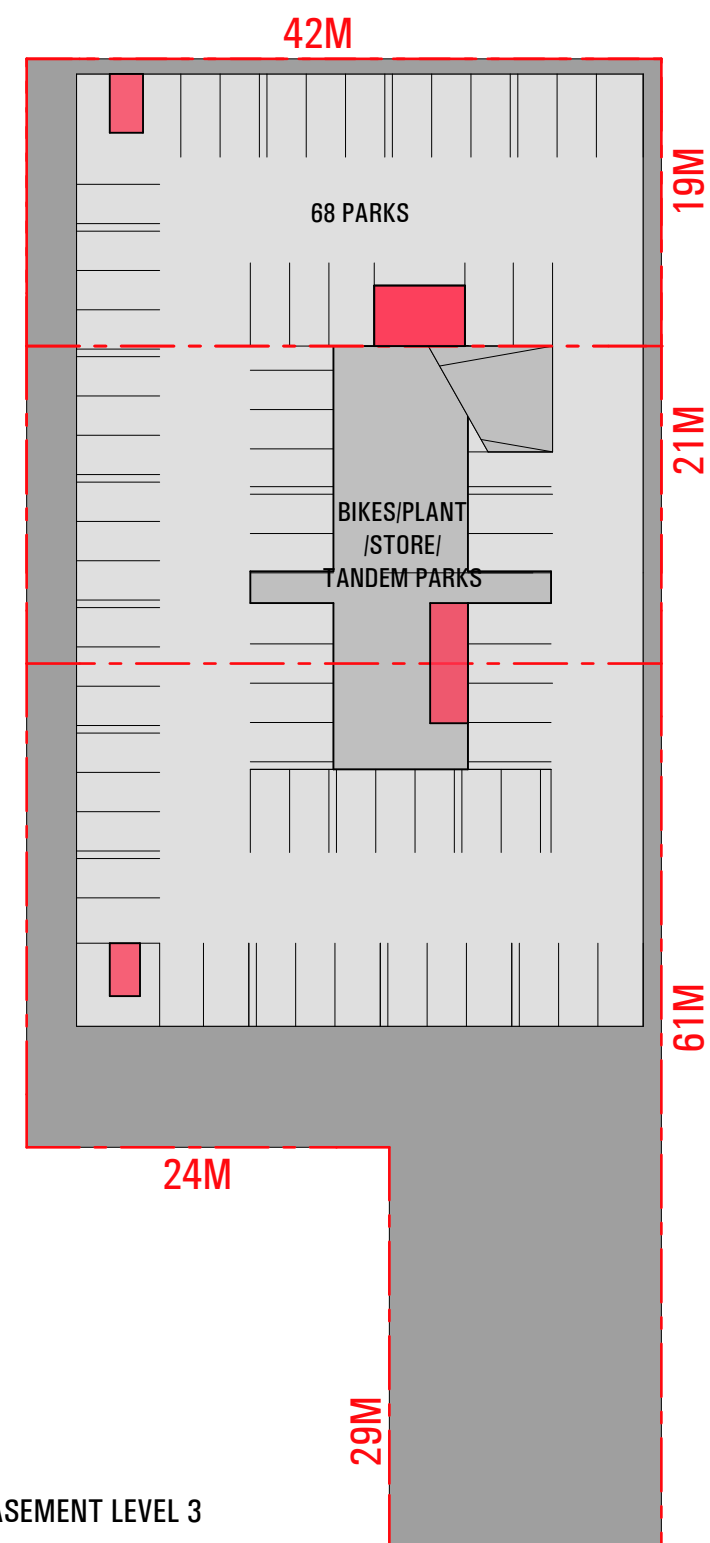
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BASEMENT LEVEL 1



BASEMENT LEVEL 2

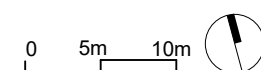


BASEMENT LEVEL 3

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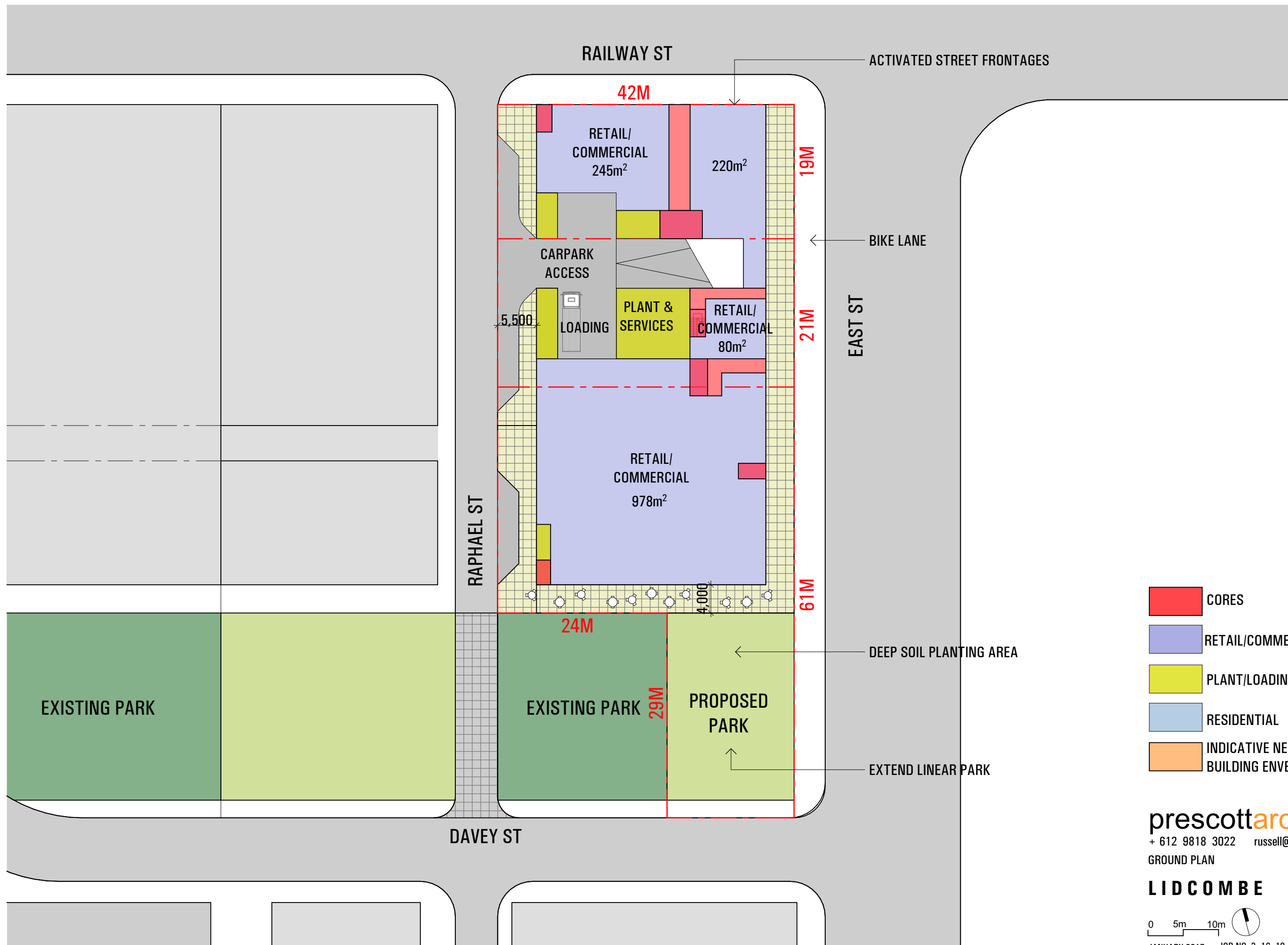
BASEMENT PARKING LEVELS

LIDCOMBE



JANUARY 2017 JOB NO. 2_16_10 SCALE 1:500 @ A3

02



- CORES
- RETAIL/COMMERCIAL AREA
- PLANT/LOADING/SERVICES
- RESIDENTIAL
- INDICATIVE NEIGHBOURING BUILDING ENVELOPES

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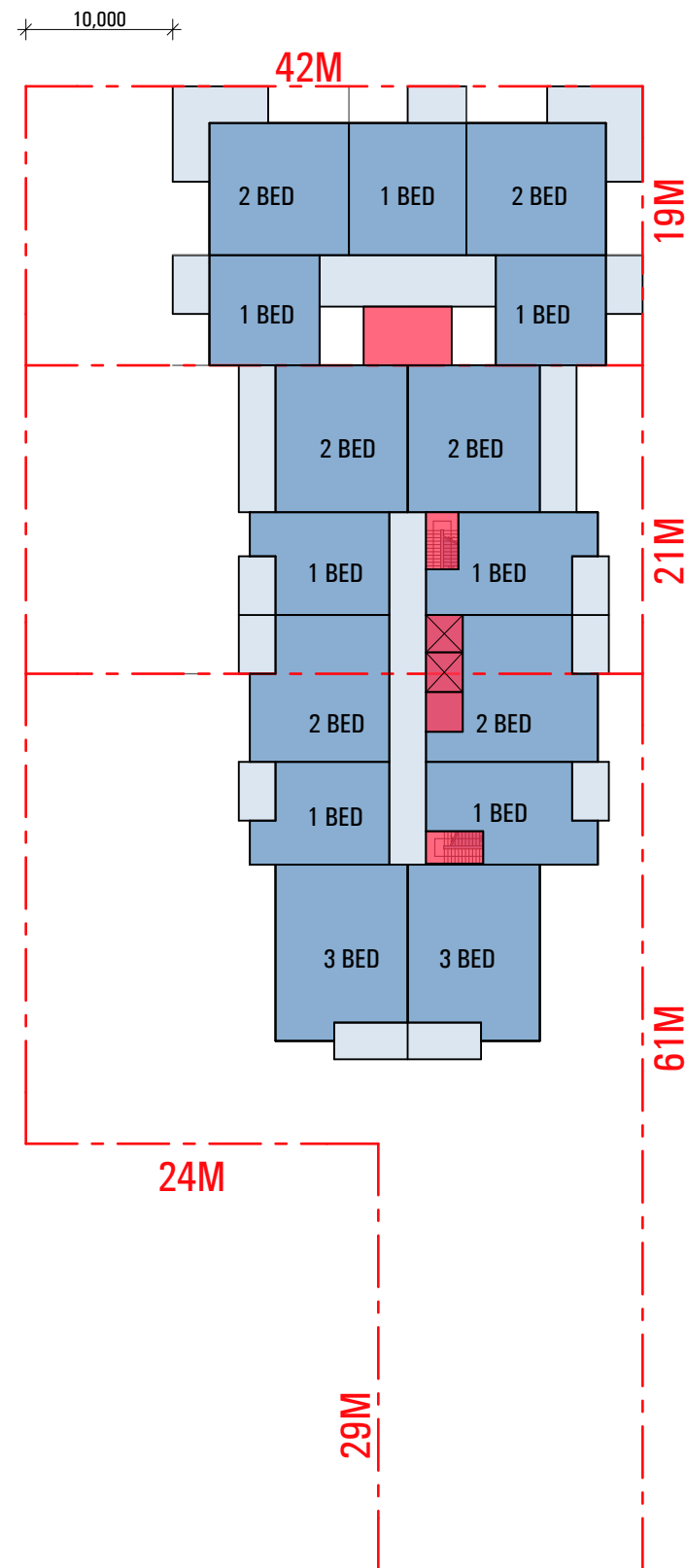
GROUND PLAN

LIDCOMBE

03

0 5m 10m

JANUARY 2017 JOB NO. 2_16_10 SCALE 1:500 @ A3



OPTION 1

1 BED	63 UNITS (46%)
2 BED	54 UNITS (40%)
3 BED	18 UNITS (14%)
TOTAL	135 UNITS

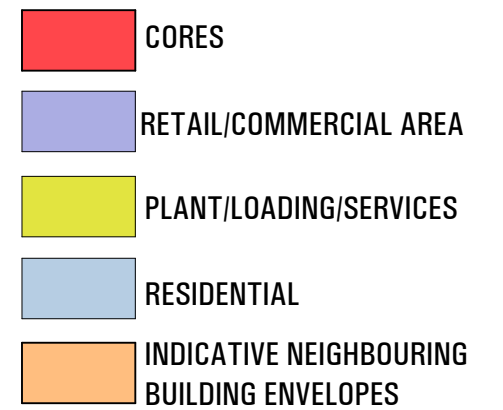
SITE AREA 3024M²

GFA

RESIDENTIAL	10512M ²
COMMERCIAL	1523M ²
TOTAL	12035M²
FSR	4.0:1

CARPARKS REQUIRED

RESIDENTIAL	140 PARKS
COMMERCIAL	60 PARKS
TOTAL PARKS	200 PARKS



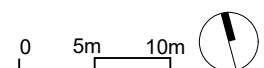
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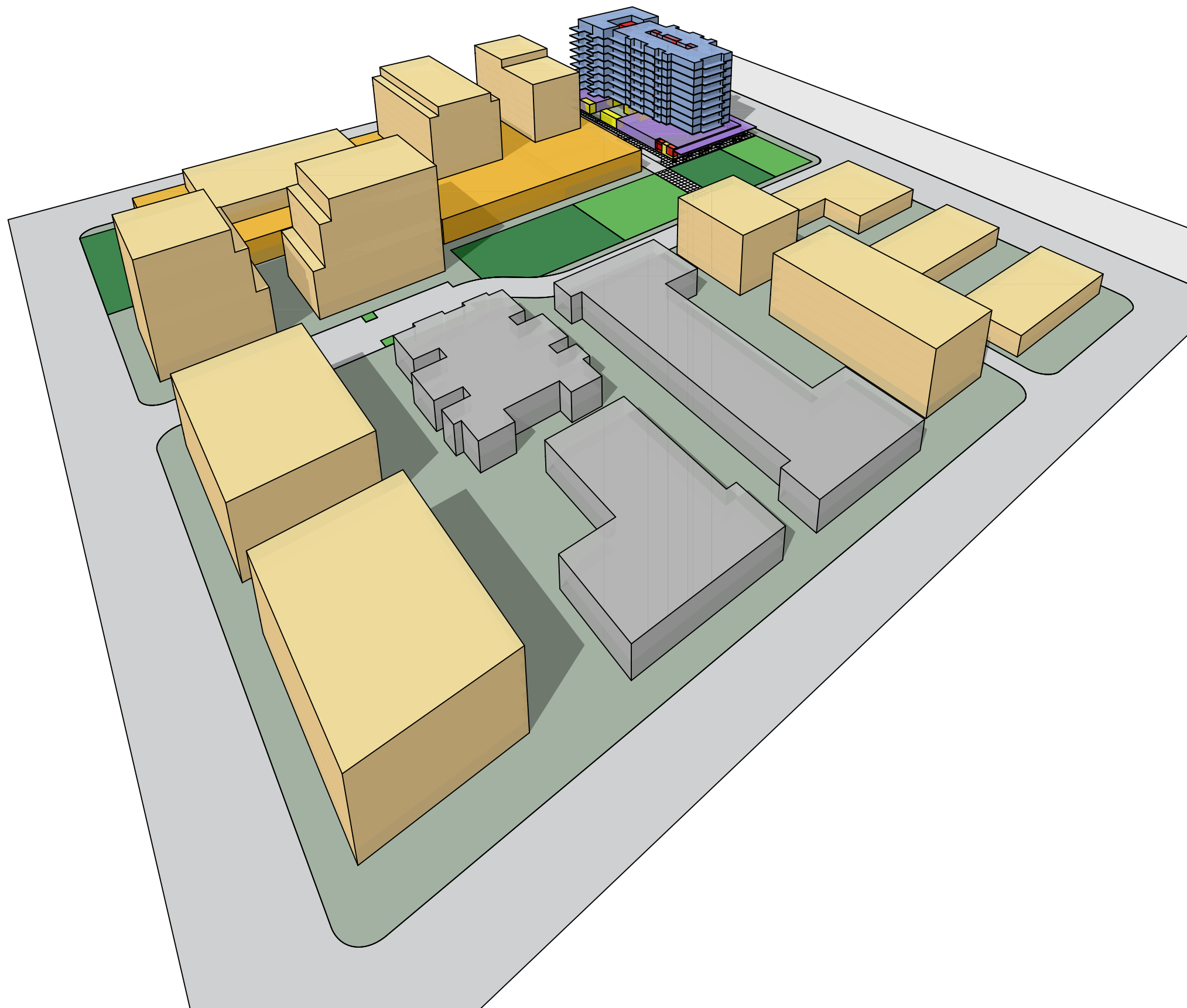
TYPICAL LAYOUT

LIDCOMBE

04



JANUARY 2017 JOB NO. 2_16_10 SCALE 1:500 @ A3



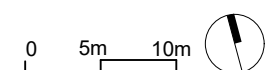
- CORES
- RETAIL/COMMERCIAL AREA
- PLANT/LOADING/SERVICES
- RESIDENTIAL
- INDICATIVE NEIGHBOURING BUILDING ENVELOPES

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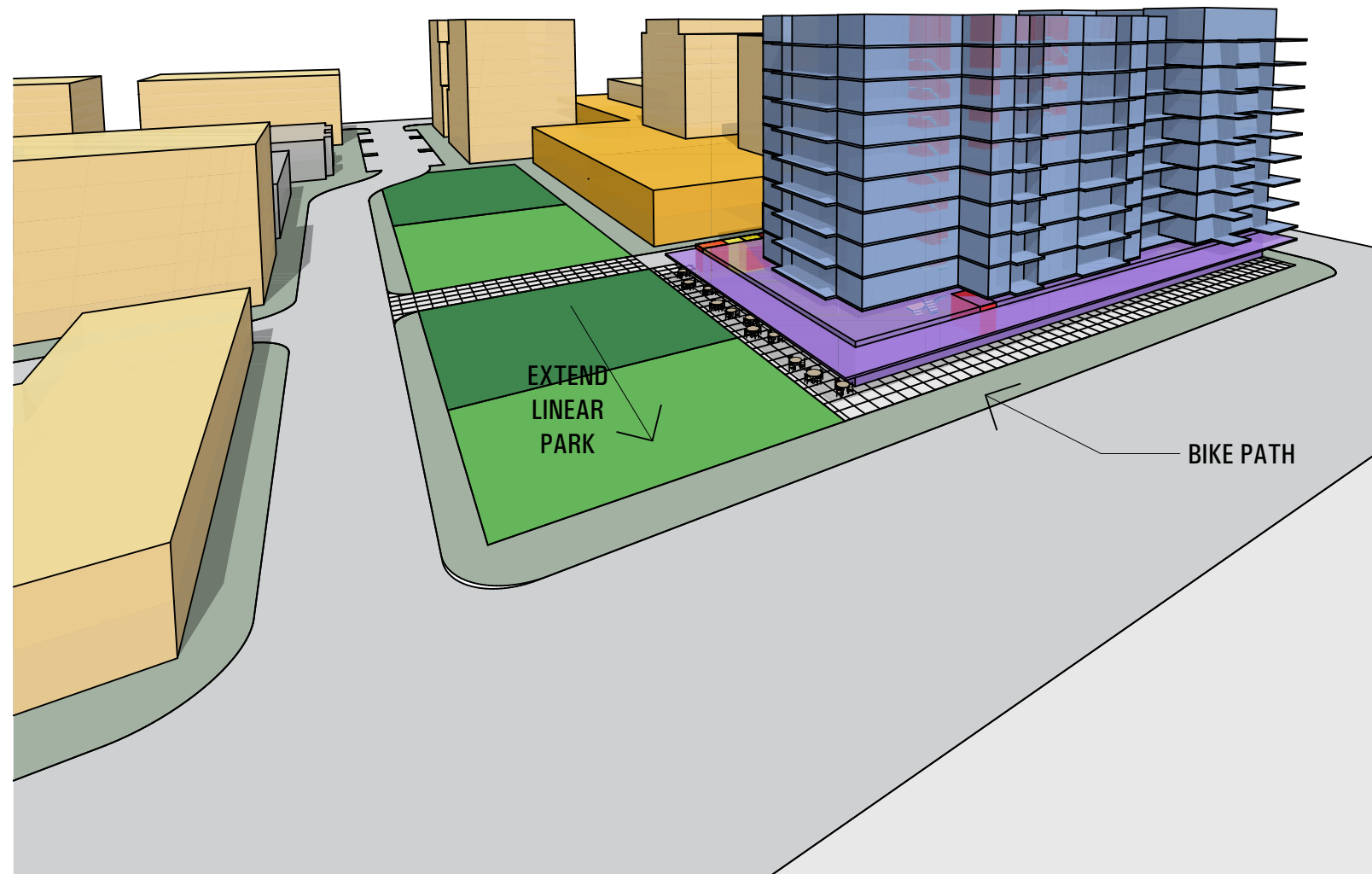
PERSPECTIVE

LIDCOMBE

05



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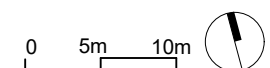
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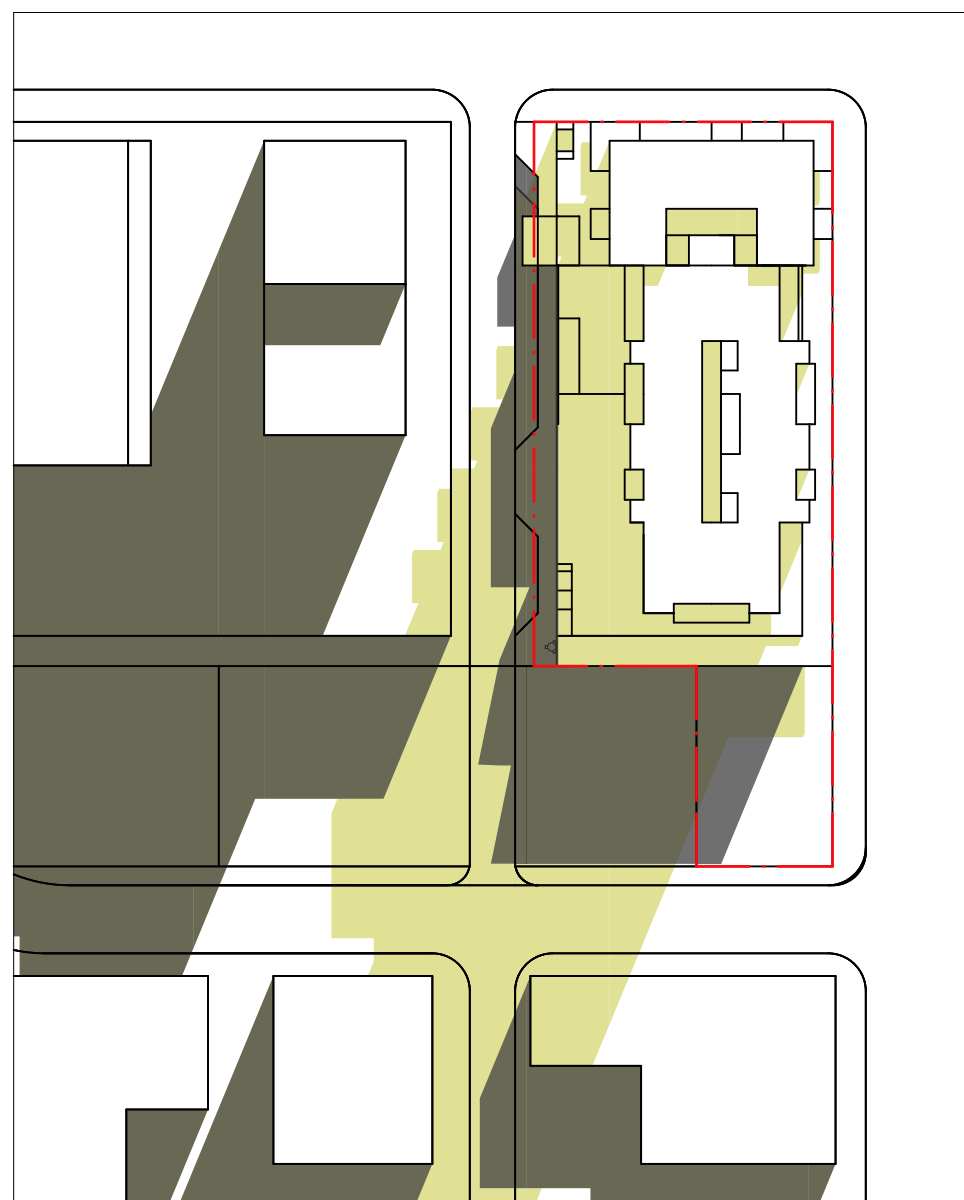
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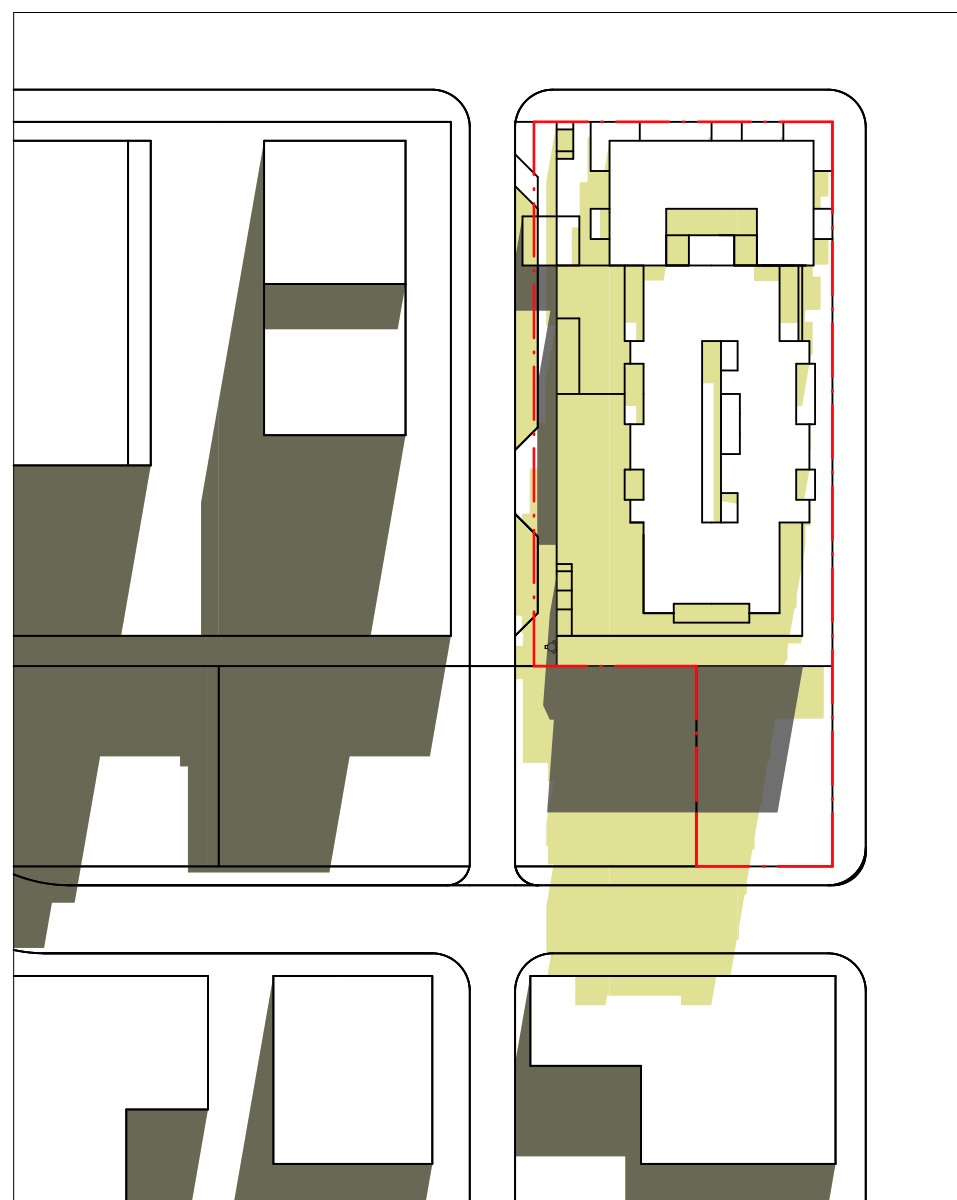
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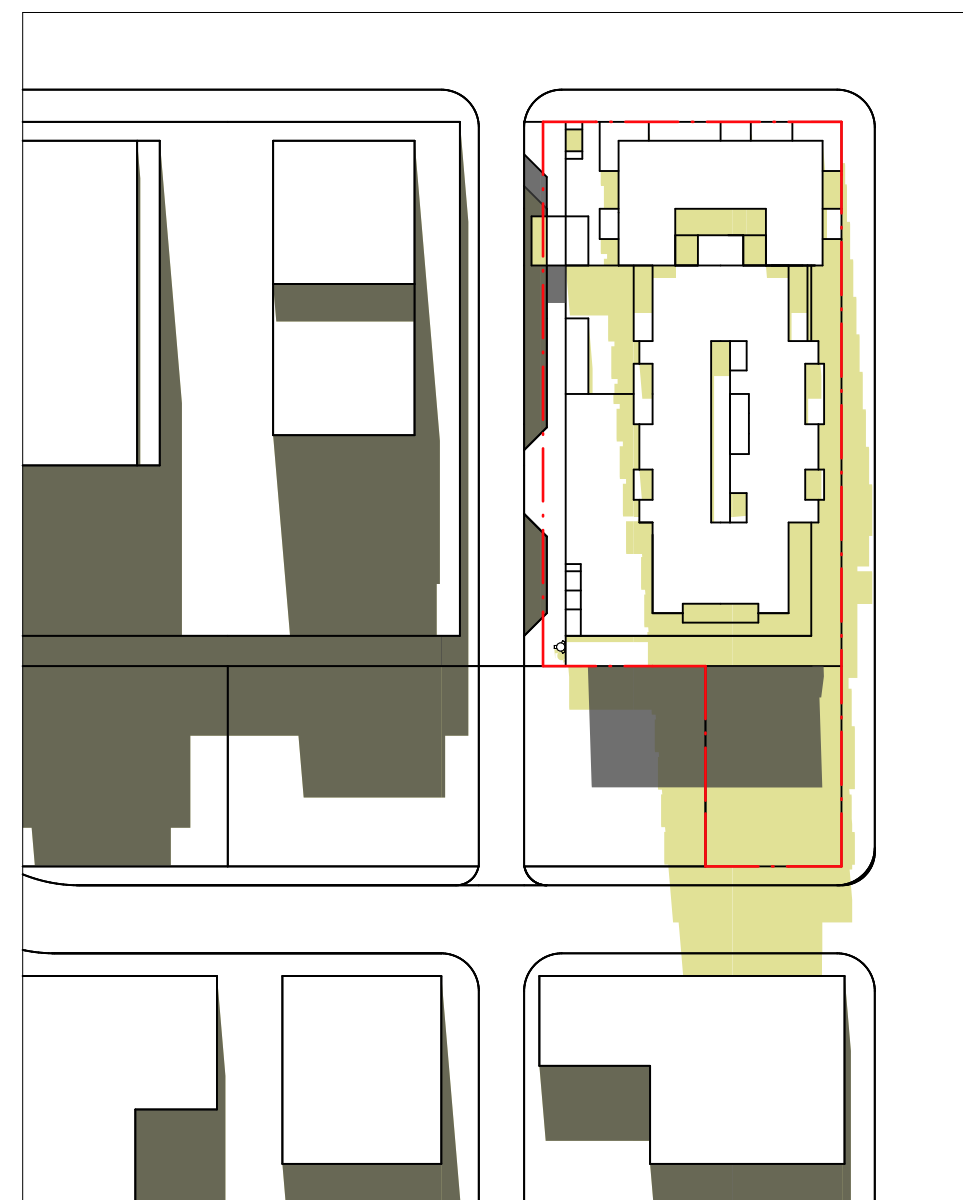
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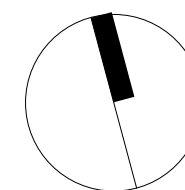
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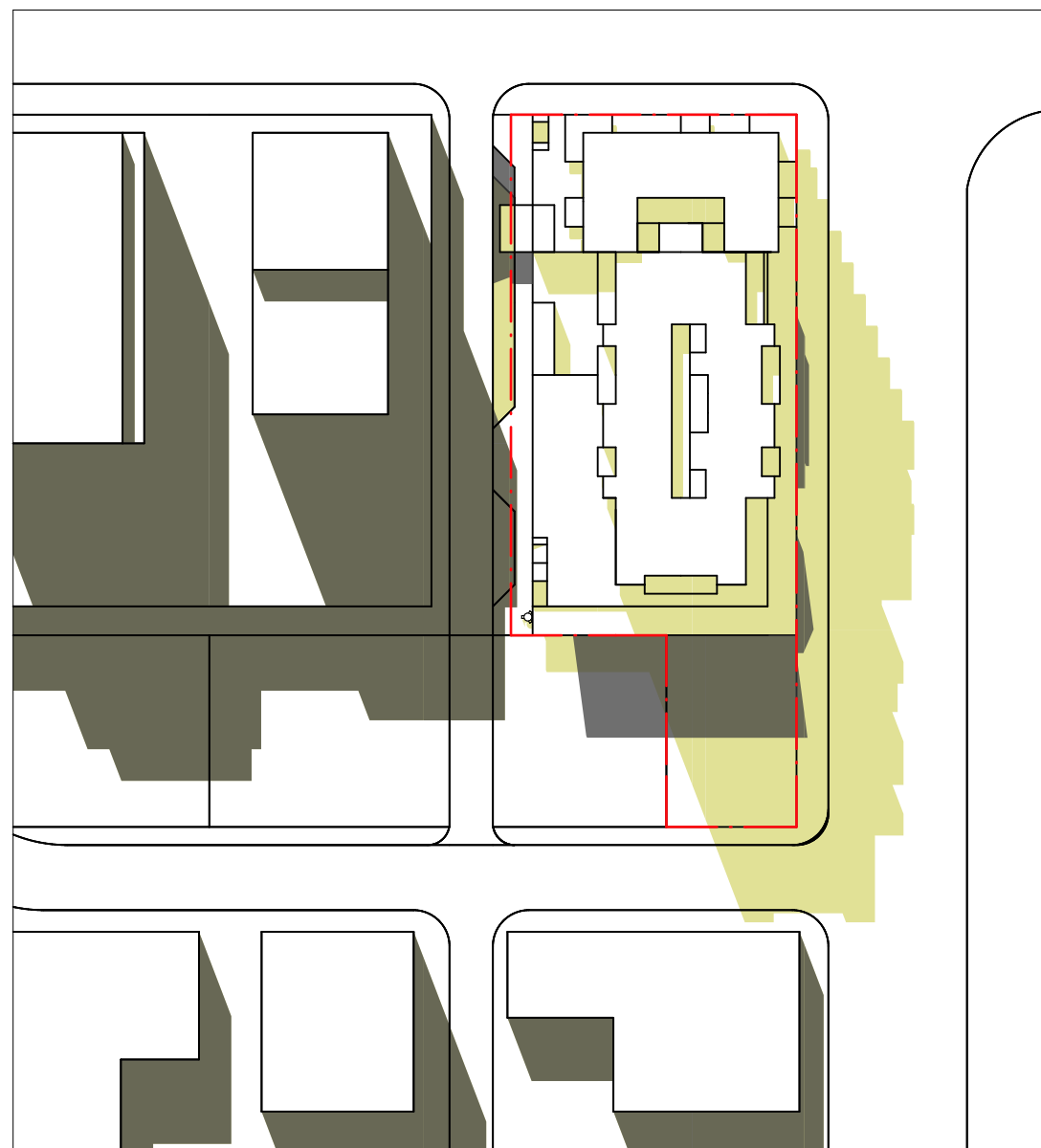
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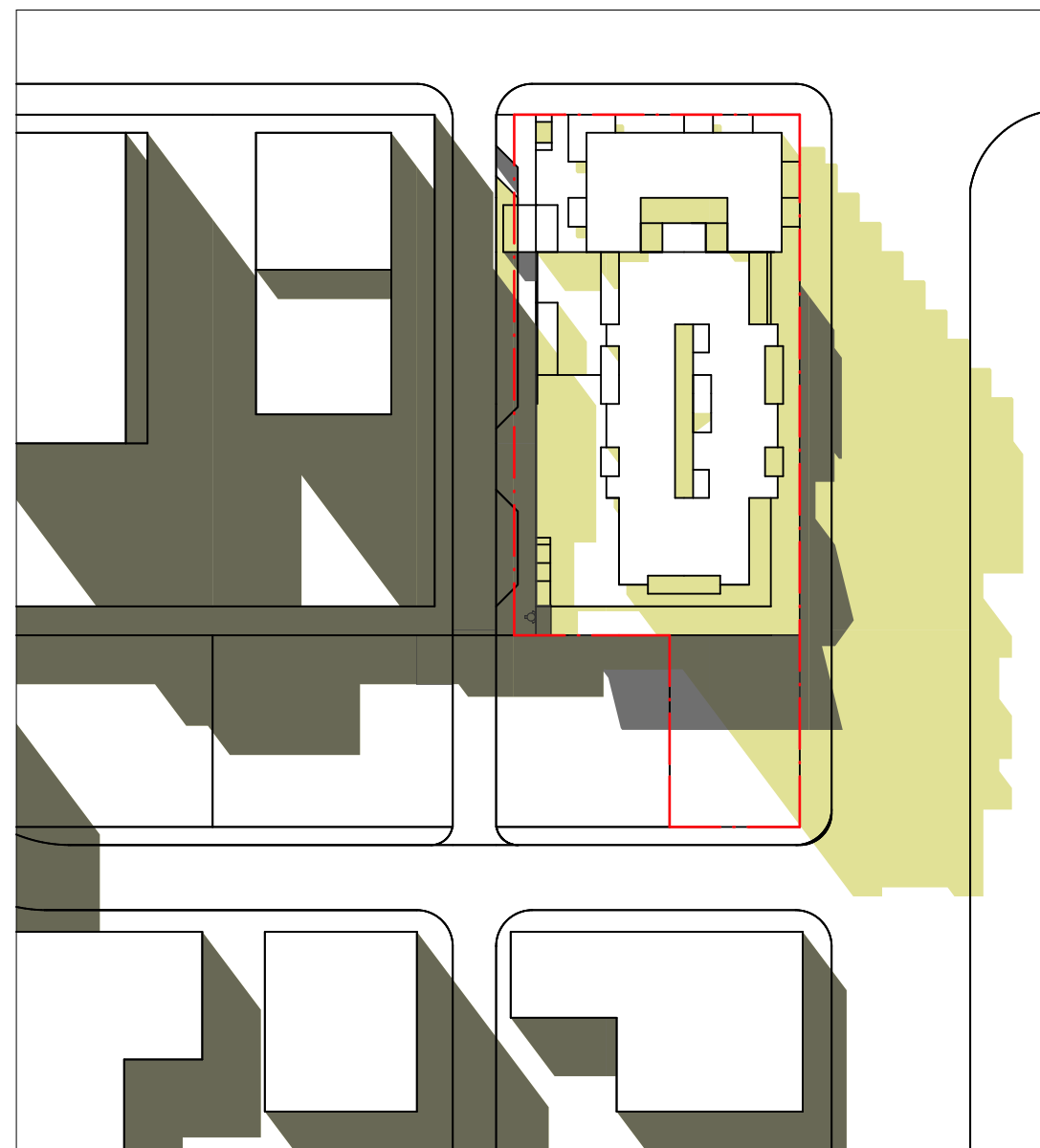
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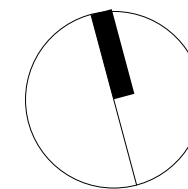
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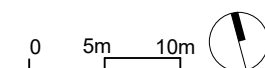
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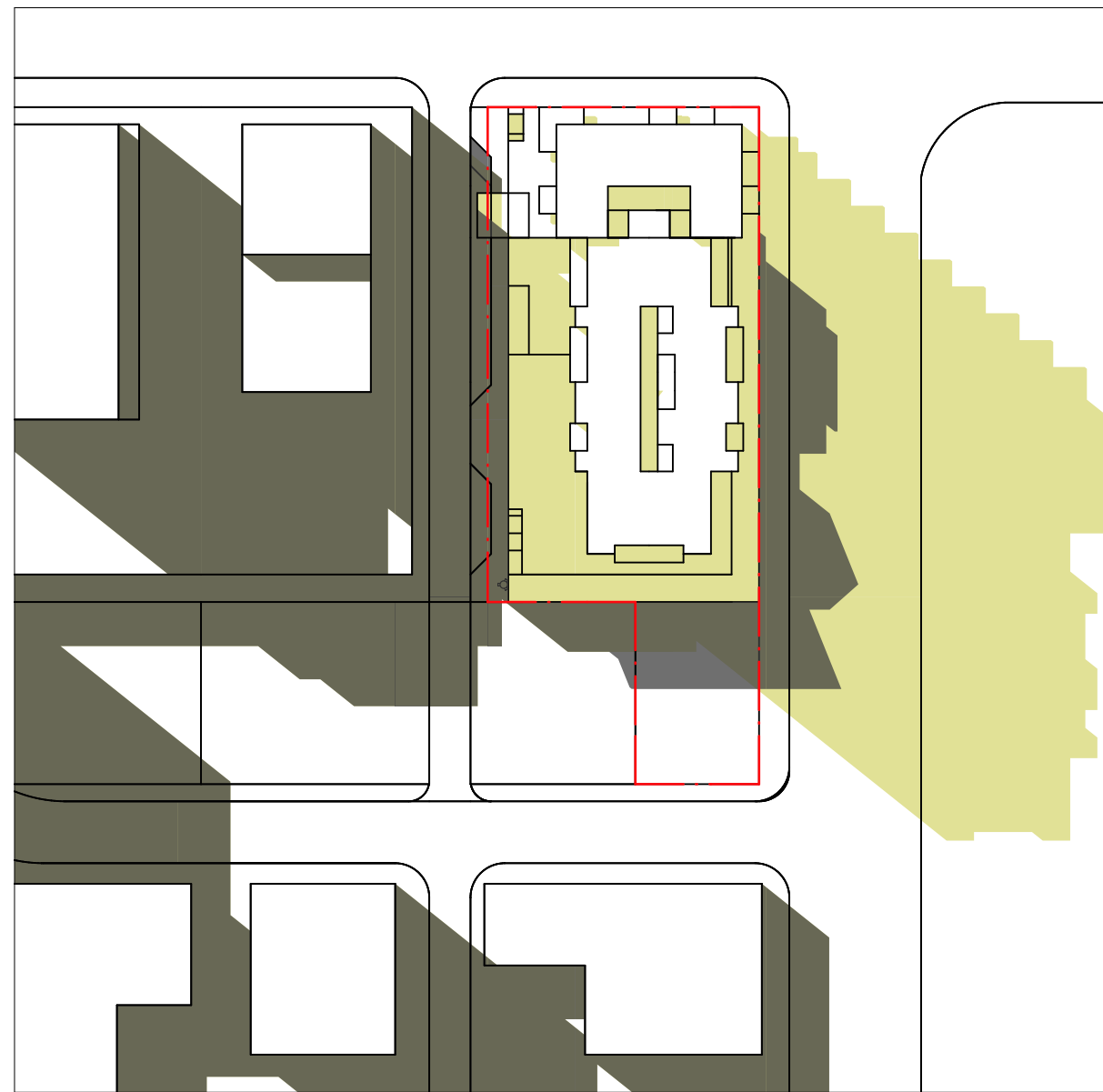
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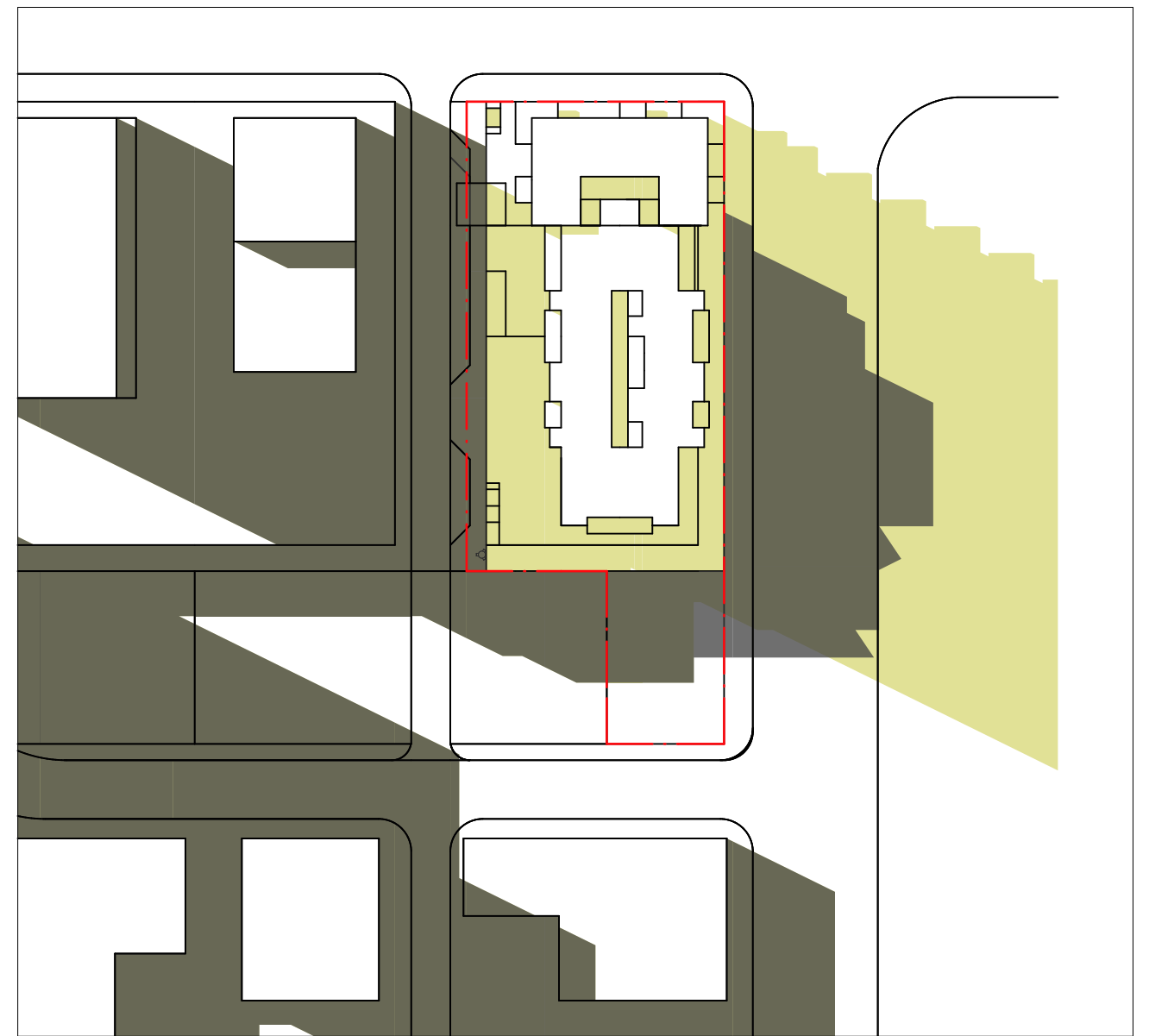
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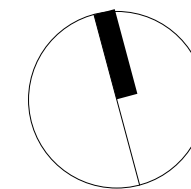
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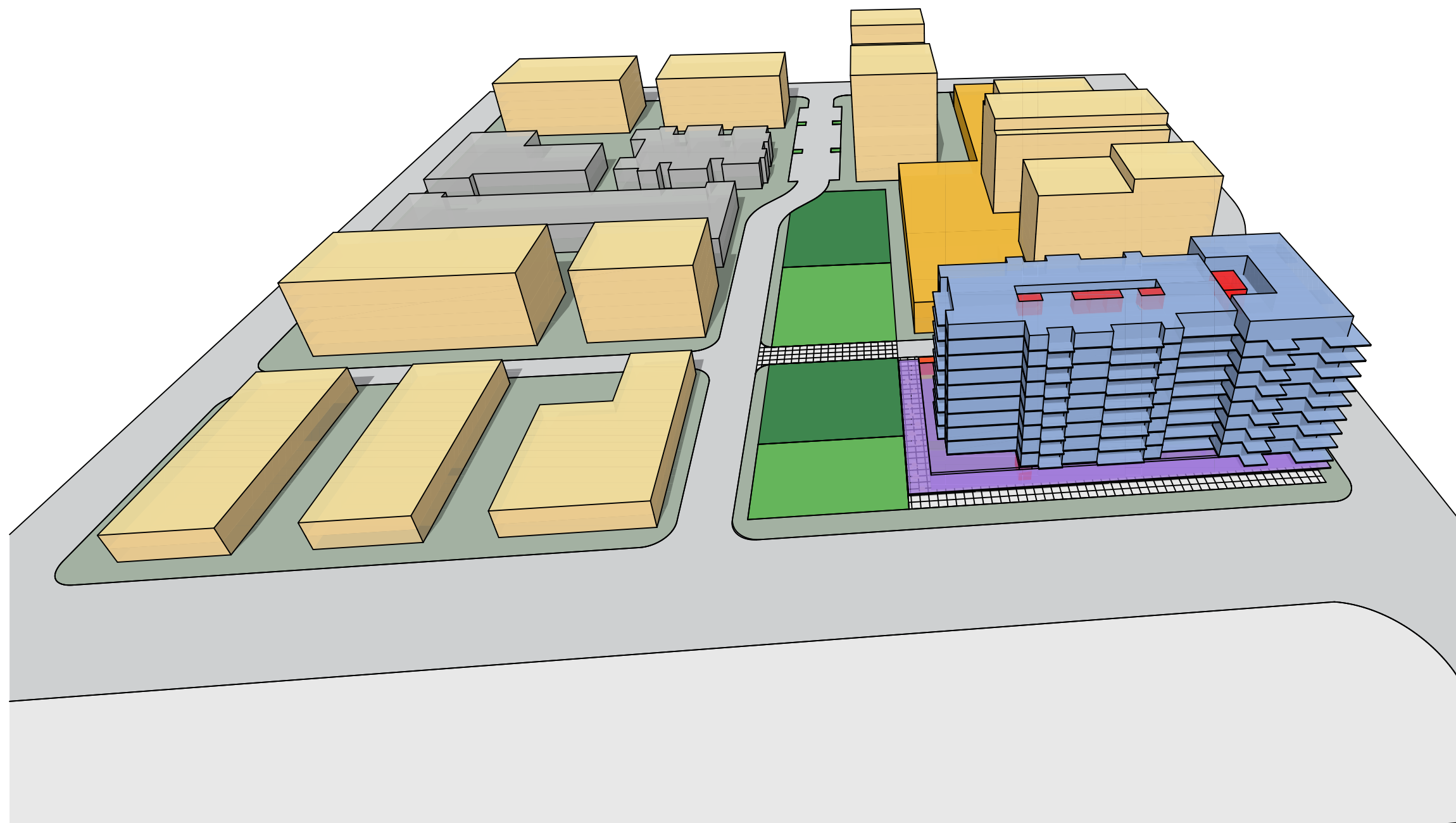
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SHADOW STUDIES

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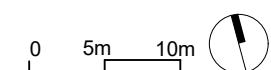
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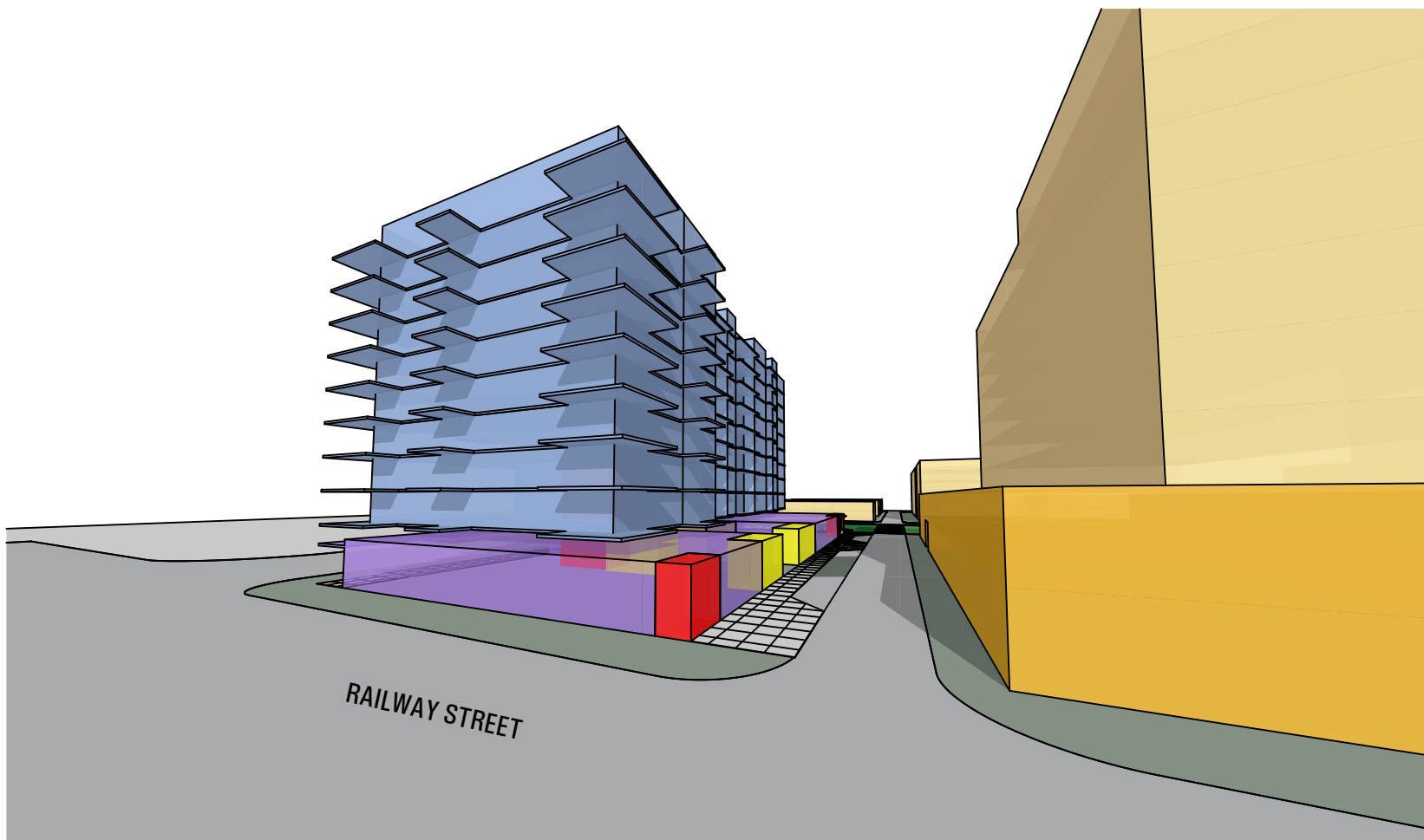
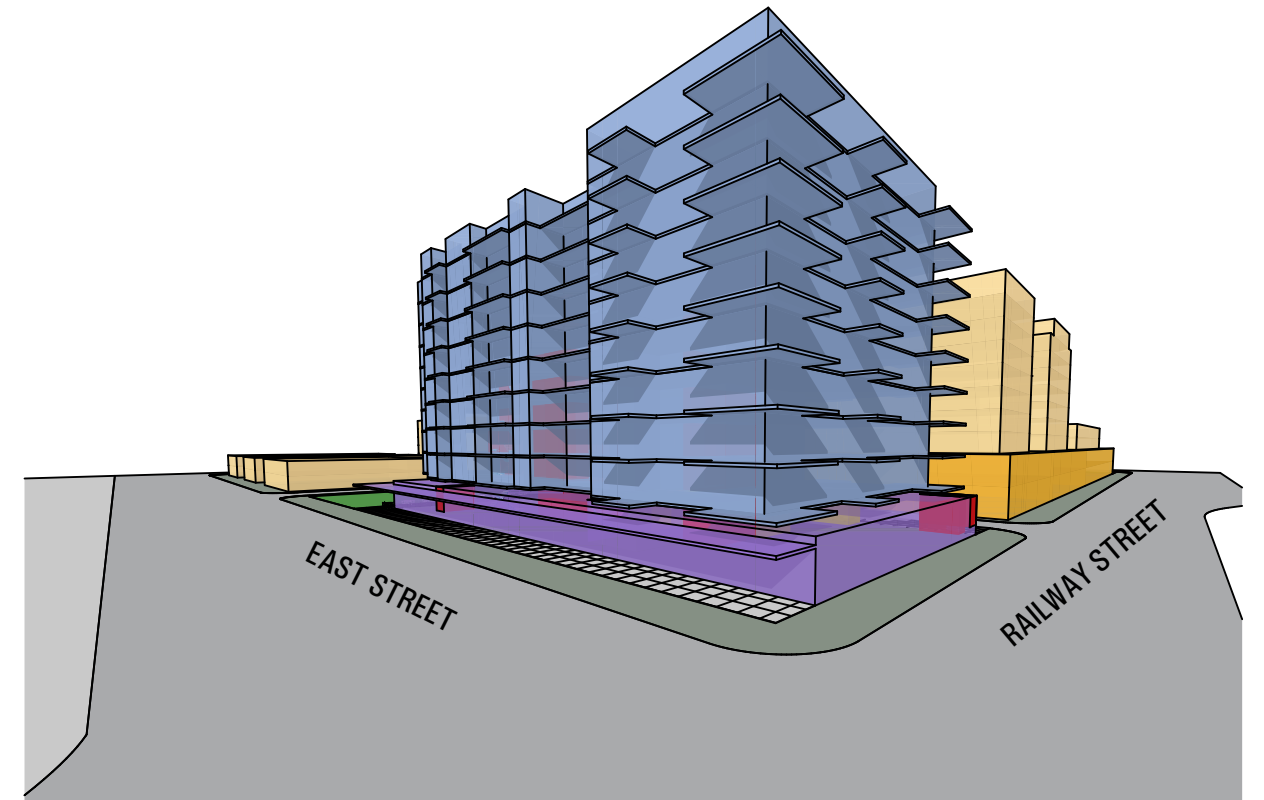
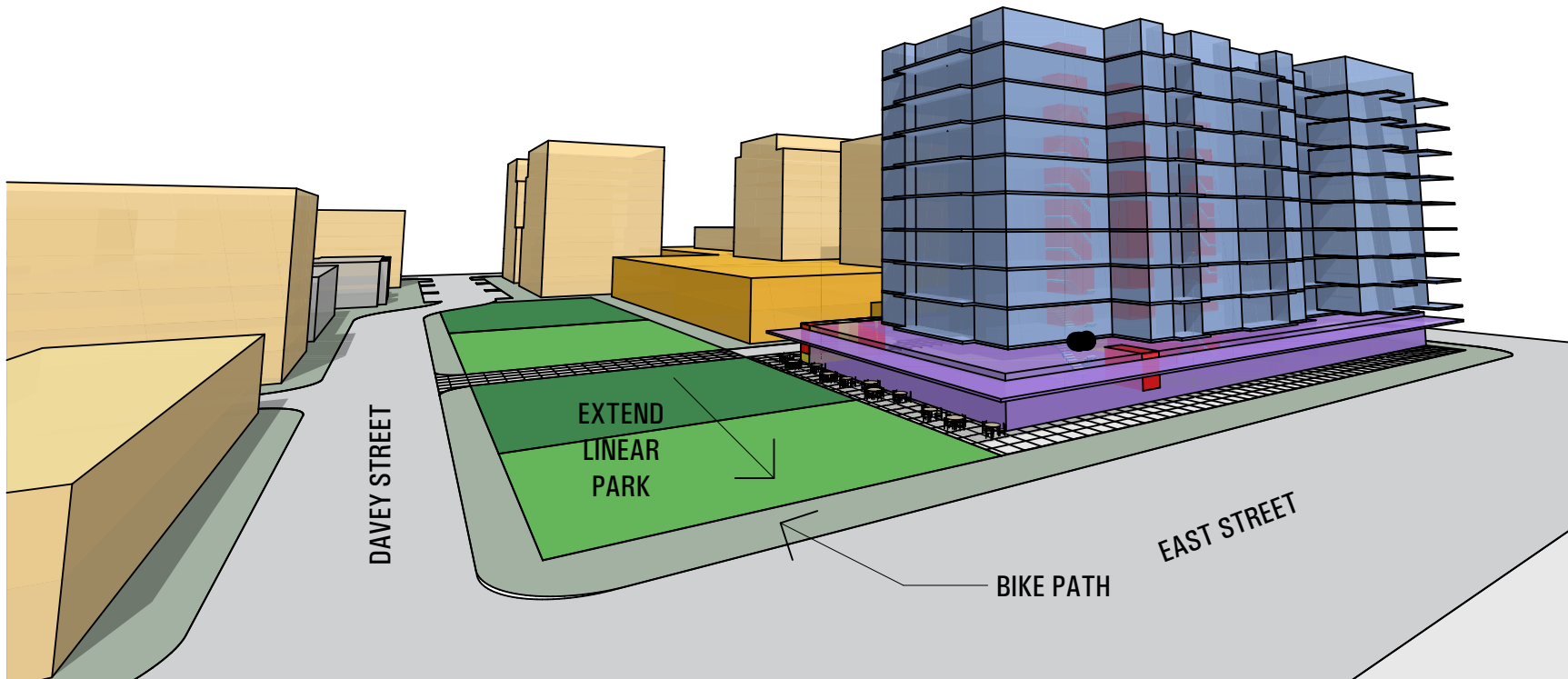
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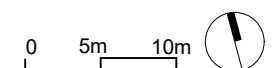
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06



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Economic Impact Assessment

3-7 East Street and 2 Railway Street Lidcombe

Prepared by

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Director | Consultancy*

*Robert Baker Turley
Economic Analyst | Consultancy*

December 2017

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EXECUTIVE SUMMARY

Colliers International have been commissioned by Shanahan Planning to prepare an economic impact assessment (EIA) to support a planning proposal for 3-7 East Street and 2 Railway Street, Lidcombe (referred to as the “subject site”). The objective of the EIA is to assess the potential economic impacts the proposed mixed used development may have on existing businesses in the Lidcombe Town Centre (LTC).

Overall, the planning proposal seeks to change the subject site’s current zoning from IN2 Light Industrial to that of B4 Mixed Use, and essentially match the land use zone of adjoining lots to the west. This assessment supports the case for change in respect to land use zoning, from an economic and market perspective.

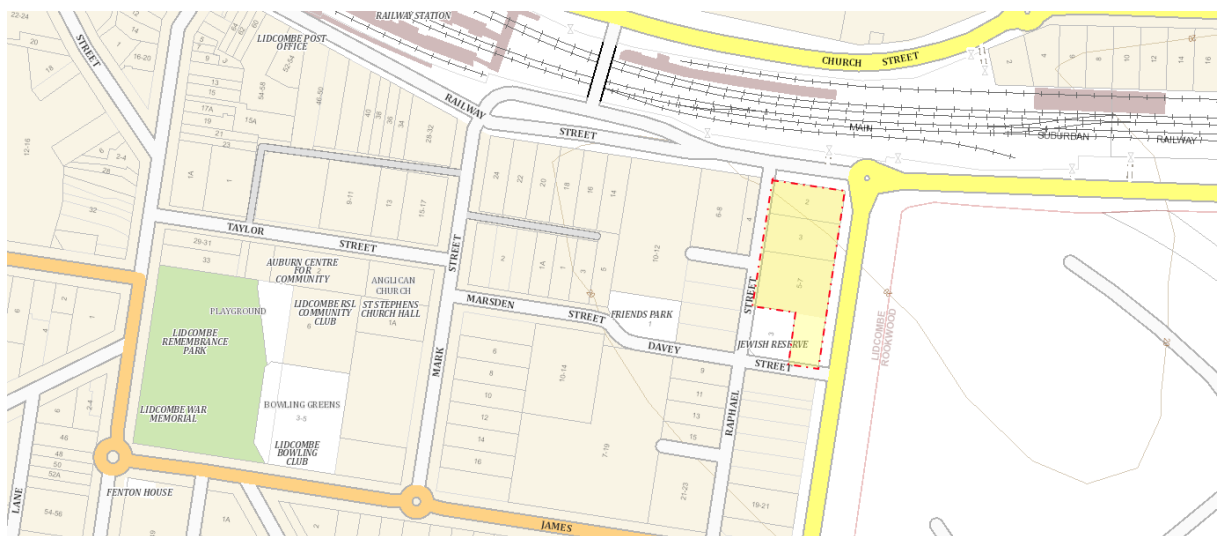
In presenting this case, we have:

- Reviewed the subject site, having regard for its attributes, location and overall setting;
- Considered the government policy and strategy stance;
- Undertaken socio-demographic profiling and analysis to understand the profile of future residents;
- Assessed the impact on the LTC from the proposed development, as well as new development within and around the LTC; and
- Addressed the statutory requirements pertaining to change in land use (from an industrial land use).

SUBJECT SITE AND PROPOSED DEVELOPMENT

Encompassing an area of 2684.5m², the subject site with street address 3-7 East Street and 2 Railway Street Lidcombe and legal description Lots 2 and 3 of DP 373141 is located on the northern periphery of the Lidcombe Station Industrial Precinct, and is within the Cumberland Council boundary. It is positioned approximately 6.3km south-east of Parramatta CBD and around 14.5 km west of Sydney CBD.

3-7 East Street and 2 Railway Street, Lidcombe (Subject Site)



Source: Six Maps (NSW Government)

The proposed development (following the amendment to the subject site's land use zoning) will comprise a total 115 apartments, 1,505m² of commercial/retail provision and 200 car spaces.

GOVERNMENT AND PLANNING CONTEXT

In order to obtain an understanding of the government vision, objectives and goals (i.e. government and planning context) for the subject site and the Cumberland LGA, the following relevant plans and strategies have been reviewed:

- S117 Ministerial Directions;
- Sydney Metropolitan Plan – 'A Plan for Growing Sydney';
- West Central District Plan;
- Auburn Residential Development Strategy (2015); and
- Draft Auburn and Lidcombe Town Centre Strategy (2016).

A summary of these relevant plans and strategies has been provided in Appendix 1.

SOCIO-DEMOGRAPHIC PROFILING

Colliers International has compared the current socio-demographic profile of the Lidcombe SA2 region with Greater Sydney to assess the expenditure habits of locals around the LTC. Notably, local residents represent an integral source of retail floorspace demand.

Key observations pertinent to the socio-demographic profile of Lidcombe (and therefore expenditure capacity) include:

- Population growth has been exceptionally high in Lidcombe between 2006 and 2016 – 3.4% per annum compared to just 1.7% per annum for Greater Sydney;
- The overall age profile of Lidcombe is younger, as evidenced by a lower median age, higher representation amongst child and young adult cohorts and a definitive skew to young families with and without children;
- Ethnicity is more pronounced in Lidcombe relative to Greater Sydney (70% vs. 43% respectively);
- Income earning capacity is significantly lower in Lidcombe;

There have been some early signs that the socio-demographic profile of the study area is evolving. Major observed changes to date include:

- Population growth is earmarked to remain solid, owing to a large pipeline of new apartment projects;
- Higher growth rates have been observed amongst mature age groups, which will underpin ageing and the expenditure habits of the local population;

- Between 2006 and 2016, new household additions in the study area has been dominated by couple families with children (43.6% of new additions) and couple family with no children (33.5% of new additions).;
- Shift in housing tenure is anticipated as a sustained deterioration in housing affordability continues to coerce aspiring home owners to western Sydney; and
- A rise in the number of residents employed within a professional, manager and business service capacity is expected to underscore income growth in the study area, combined with higher wage growth amongst existing local residents – there has already been evidence of rising earning capacity, with the median household and family income increasing at a faster rate in Lidcombe relative to Greater Sydney.

Based on the above, it is expected that the overall profile of future residents will be more favourable from a retail expenditure perspective, meaning that the overall level of supportable floorspace should rise in the study area.

IMPACT ASSESSMENT

Colliers International has examined the potential impacts the proposed development may have on the LTC and have arrived to the conclusion that any adverse impacts will be negligible. Supporting our findings are the following key facts:

- The 1,505m² of retail/commercial floorspace proposed for 3-7 East Street and 2 Railway Street, Lidcombe represents just 1.1% of existing and planned provision within and immediately around the LTC. As such, it is minor in comparison and will not alter the current balance of the LTC;
- The proposed commercial/retail allocation is small in comparison to the LTC and does not trigger critical mass thresholds required to amass a new centre. In a suburban location, this level of critical mass is achieved at around 5,000m², and at this size, must include a major supermarket presence or discount department store and accompanying small retailers or specialties;
- At an average household size of 3.2 persons (as prescribed in Census 2016), it is estimated that 1,435 new dwellings (1,320 plus the 115 dwellings from redevelopment of the subject site) will provide a home for 4,592 new residents). It is estimated that the future residents will underpin around 5,140m² of retail provision. While smaller in magnitude, workers on-site will also provide another valuable source of demand for the LTC, which when combined with resident-based demand is expected to increase supportable demand to 5,250m²;
- The proposed development is anticipated to accommodate 60 operational jobs, which far exceeds the current workforce, which comprises of just 12 workers;
- The repositioning of 3-7 East Street and 2 Railway Street, Lidcombe will enable Lidcombe and the Cumberland LGA to capitalise on broader industry trends through the delivery of commercial/retail floorspace. If built to the right specification, the proposed development will permit the introduction of higher-order service-orientated tenants to the area, which will provide jobs for locals and improve the resilience of the Lidcombe economy via a reduction in reliance on manufacturing, which is deteriorating at a rapid pace in Greater Sydney

Other benefits associated with the proposed development include:

- Proposed retail/commercial provision is significantly below thresholds required to achieve sufficient critical mass to alter the balance of the LTC;
- The proposed development does not include a supermarket, which we believe would shift the epicentre of the LTC towards the southern segment; and
- The proposed allocation may incorporate tenants which do not draw from the same catchment as existing businesses in the LTC i.e. there may be some businesses which trade to other businesses or a much wider catchment.

NET COMMUNITY BENEFITS

The proposed development of 3-7 East Street and 2 Railway Street, Lidcombe is expected to render the following economic benefits for Lidcombe, Cumberland LGA, Central City District and Greater Sydney:

- Generate an additional source of trade for existing businesses in the Lidcombe Town Centre;
- Undertake the repositioning of a site to mixed use purposes which will inevitably lose its employment and operational relevance as an industrial going concern;
- Through population growth and greater household diversity, generate more expenditure and support investment and jobs growth amongst local businesses;
- Support various professional service industries during the planning and design phase of the project e.g. consulting, architecture, engineering, planning and so forth;
- Supplement a diverse range of trade, professional and construction-based businesses during the construction phase e.g. construction managers, labourers, bricklayers, surveyors as well as plumbers, electricians, heating and ventilation trades;
- The delivery of homes closer to jobs and in a highly accessible location i.e. Parramatta CBD and Sydney CBD – promote self-containment and alleviate road congestion through greater utilisation of public transport;
- An increase in tax revenue (rates, stamp duty, contributions) for local and state government, supporting increased and improved services and amenity within the Cumberland Council;
- The provision of necessary residential infrastructure to meet the needs of a growing population and changing socio-demographic profile in the Cumberland LGA, West Central City District and Greater Sydney area; and
- Provide much needed housing supply and diversity in a location which is proximate to an existing heavy rail station and major bus interchange.

Overall, through redevelopment of the subject site, the positive economic impacts will be significant. The proposed development will support economic growth within the immediate locality, but also support the broader Cumberland Council, a notion endorsed in the Sydney Metropolitan Strategy (2014). We have also demonstrated that the planning proposal is consistent with Section 117 Direction 1.1 Business and Industrial Zones.

CONCLUSION

The proposed repositioning of the subject site is congruent with prevailing, emerging and future market forces, in both the industrial and residential markets. The subject site's relevance as an industrial going-concern is expected to diminish over time. Moreover, given the site's proximity to the heavy rail station (within 290 metres), and therefore superb connectivity to both Sydney CBD and Parramatta CBD, it is paramount that this advantageous feature is utilised in the form of mixed use development. Finally, the requested B4 Mixed Use zoning is coherent with surrounding residential uses to the west of the site and more importantly, complies with the needs of residents and broader area in terms of providing accelerated housing provision and greater choice or diversity in housing.

The proposed development incorporates 1,505m² of commercial and retail floorspace, which is minute in comparison to existing and future retail/commercial offer in the LTC (equivalent to just 1.1% of total stock). Given its relative insignificance, it is not expected that the proposed new development will undermine existing businesses in the LTC.

We have extended our review to measure the impact from development within and immediately surrounding the LTC. Based on the delivery of 1,320 new dwellings, it is expected that the 4,592 new residents will provide sufficient demand to support the 5,000m² of commercial/retail provision in the pipeline. Finally, the proposed development is anticipated to render a larger employment outcome, which is more congruent with prevailing industry forces and trends. Evidently, the case for the planning proposal and redevelopment of the subject site for mixed-use purposes is compelling.

INTRODUCTION

OBJECTIVE OF RESEARCH

Colliers International have been commissioned by Shanahan Planning to prepare an economic impact assessment (EIA) to support a planning proposal for 3-7 East Street and 2 Railway Street, Lidcombe (referred to as the "subject site"). The objective of the EIA is to assess the potential economic impacts the proposed mixed used development may have on existing businesses in the Lidcombe Town Centre (LTC).

Overall, the planning proposal seeks to change the subject site's current zoning from IN2 Light Industrial to B4 Mixed Use, and essentially match the land use zone of adjoining lots to the west. The proposed development is proposed to comprise 115 residential apartments, 1,505m² of commercial/retail floorspace and approximately 200 car spaces.

In presenting this case, we have:

- Reviewed the subject site, having regard for its attributes, location and overall setting;
- Considered the government policy and strategy stance;
- Undertaken socio-demographic profiling and analysis to understand the profile of future residents;
- Assessed the impact on the LTC from the proposed development, as well as new development within and around the LTC; and
- Addressed the statutory requirements pertaining to change in land use (from an industrial land use).

This report is presented in five main sections as follows:

- **Section 1** provides a review of the subject site and proposed development.
- **Section 2** entails socio-demographic profiling and analysis of the current and future resident profile in Lidcombe.
- **Section 3** examines the impact the proposed development will have on the LTC in the future. The overall impact from new development in the pipeline has also been assessed.
- **Section 4** presents the economic impacts expected to be derived from the proposed development.
- **Section 5** addresses Section 117 Ministerial Directions relevant to the subject site, Direction 1.1: Business and Industrial Zones.
- **Appendix Item I** comprises a summary of key planning strategy documents relevant to the proposed development and LTC.

SECTION 1: REVIEW OF SUBJECT SITE AND PROPOSED DEVELOPMENT

In this section of the report we have reviewed the subject site being 3-7 East Street and 2 Railway Street, Lidcombe and provided an overview on the proposed development. Finally, Colliers International lists the government planning policy documents which have been reviewed as part of this investigation.

SUBJECT SITE

Encompassing an area of 2684.5m², the subject site with street address 3-7 East Street and 2 Railway Street, Lidcombe and legal description Lots 2 and 3 of DP 373141 is located on the northern periphery of the Lidcombe Station Industrial Precinct, and is within the Cumberland Council boundary. It is positioned approximately 6.3km south-east of Parramatta CBD and around 14.5 km west of Sydney CBD.

In its entirety, the subject site is enclosed by:

- A cemetery to the east;
- Commercial premises and the railway line to the north;
- Industrial premises to the west; and
- Industrial premises and park to the south.

3-7 East Street and 2 Railway Street, Lidcombe (Subject Site)



Source: Six Maps (NSW Government)

PROPOSED DEVELOPMENT

Various concept development schemes prepared by Prescott Architects have been submitted to Council to provide an indication of possible development outcomes for the site under the proposed B4 zoning. The concept scheme has been evolving in consultation with Council, but in broad terms provides 1,505m² of commercial/retail provision at ground level, 115 apartments in 9 levels above, and 200 basement car parking spaces.

GOVERNMENT POLICY, PLANS AND STRATEGY ACKNOWLEDGEMENT

To obtain an understanding of the government vision, objectives and goals (i.e. government and planning context) for the site and the Cumberland LGA, Colliers International has reviewed the following relevant plans and strategies:

- S117 Ministerial Directions;
- Sydney Metropolitan Plan – ‘A Plan for Growing Sydney’;
- West Central District Plan;
- Auburn Residential Development Strategy (2015); and
- Draft Auburn and Lidcombe Town Centre Strategy (2016).

A summary of these relevant plans and strategies has been provided in Appendix 1.

SECTION 2: SOCIO-DEMOGRAPHIC PROFILING

In this section, we examine the current socio-demographic profile of Lidcombe, and more importantly, identify the fundamental drivers and changes which are expected to influence the local profile (and therefore expenditure habits) of future residents living immediately around the LTC.

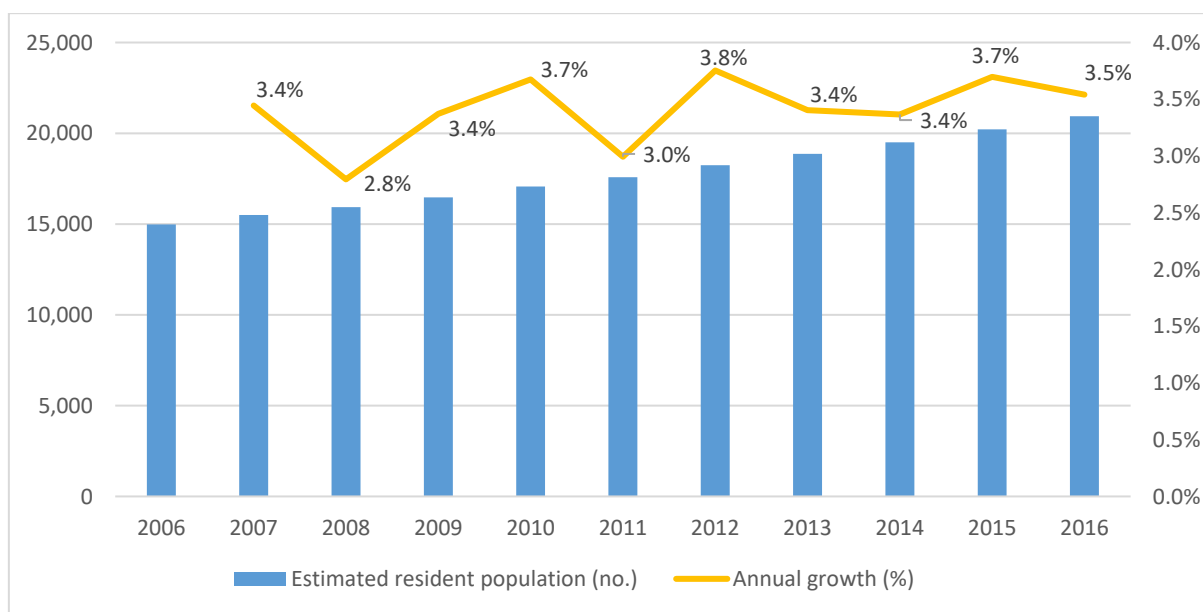
CURRENT SOCIO-DEMOGRAPHIC PROFILE

We have examined the socio-demographic profile for the Lidcombe SA2 region (i.e. study area) and compared it with Greater Sydney. This examination has relied on data released by the Australian Bureau of Statistics in the form of 2016 Census of Population and Housing and other periodic releases such as 3218.0 Regional Population Growth. The key metrics analysed include population growth, age composition, household composition, place of origin (birthplace), income and housing tenure.

Population growth

The resident population of the study area stood at 20,936 residents as at June 2016, comprising just 0.4% of Greater Sydney's population base (5.03 million persons). According to ABS data, the resident population of the study area surged by 3.4% per annum between 2006 and 2016, which is significant higher than that observed across Greater Sydney during the corresponding period (1.7% per annum)

Population Growth, Lidcombe (2006-2016)



Source: 3218.0 – Regional Population Growth, Australia

Age composition

According to 2016 Census data, the median age for the study area was 33.2 years, which is significantly lower than the Sydney equivalent (35.8 years).

Age Composition, Study area and Greater Sydney

Age cohort	Lidcombe		Greater Sydney	
	Number	% of total	Number	% of total
0-19	4,239	20%	1,243,595	25%
20-34	6,980	33%	1,206,587	24%
35-49	4,032	19%	1,047,420	21%
50-64	3,643	17%	849,955	17%
65+	2,042	10%	682,211	14%
Total	20,936	100%	5,029,768	100%

Source: 3235.0 Population by Age and Sex

A younger age profile is consistent with population by age data for the study area, which exhibits significantly higher representation in age cohorts below the age of 50 years relative to Greater Sydney. The dominant age cohorts in the study area are 0-19 and 20-34 years, making up over 53% of the study area's population. In contrast, these age cohorts account for 49% of Greater Sydney's total population. Notably, the degree of senior residents in the study area is less pronounced than in Sydney, with just 10% of the population above the age of 65 years in the study area (compared to 14% in Greater Sydney).

Household composition

As at Census 2016, there were 6,172 households residing in the study area, accounting for 0.36% of the Greater Sydney total (1,719,680 households).

Household composition, Lidcombe and Greater Sydney (2016)

Household type	Lidcombe		Greater Sydney	
	Number	% of total	Number	% of total
Couple family with no children	1,335	22%	385,859	22%
Couple family with children	2,461	40%	607,343	35%
One parent family	654	11%	179,463	10%
Other family	158	3%	22,993	1%
Lone person households	814	13%	351,423	20%
Group households	442	7%	76,795	4%
Other households	308	5%	95,804	6%
Total	6,172	100%	1,719,680	100%

Source: Census 2016

As presented in the table above, it is evident that families with dependent children is the dominant household structure in the study area (40%), followed by couple families with no children (22%) and lone persons households (13%). This composition is comparable to that of Sydney's, which also exhibits a skew to family households, both with and without children.

Ethnicity

Representation amongst residents born overseas is significantly higher in the study area relative to Greater Sydney. According to Census 2016 data, approximately 70% of the 20,936 residents in the study area were born overseas, compared to just 42.9% for Greater Sydney. In Lidcombe, China, England, India, New Zealand and Vietnam presents as the five most popular overseas birthplace locations.

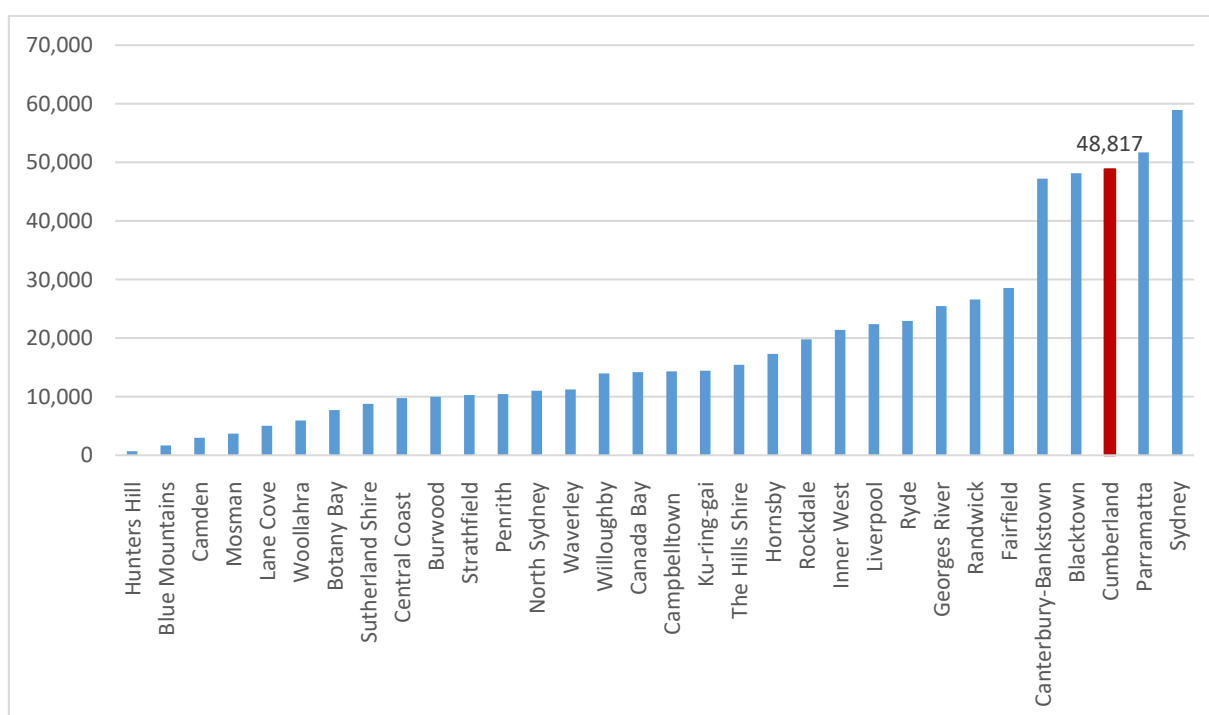
Local versus born overseas metrics, Lidcombe and Greater Sydney (2016)

Metric	Lidcombe		Greater Sydney	
	Number	% of total	Number	% of total
Born in Australia	5,999	30.0%	2,752,119	57.1%
Born overseas	13,998	70.0%	2,067,704	42.9%

Source: Census 2016

As shown in the next chart, the Cumberland is Sydney's third most popular LGA destination for people who have relocated from overseas and settled in Sydney since 2006 – after Parramatta and Sydney LGAs.

Number of overseas arrivals by LGA, Greater Sydney (2006-2016)



Source: Census 2016

Income

Earning capacity in the study area is significantly lower relative to the Greater Sydney. According to Census, median household, family and individual income levels were \$81,484, \$77,376 and \$27,040 respectively in the study area. Across all three income measures, the Greater Sydney average was far superior, exceeding the study area's equivalent metric by \$9,300 across households, \$26,000 for families and \$10,350 on an individual basis.

Median income levels, Lidcombe and Greater Sydney (2016)

	Lidcombe	Greater Sydney	Difference (\$)
Household	\$81,484	\$90,792	-\$9,308
Family	\$77,376	\$103,376	-\$26,000
Individual	\$27,040	\$37,388	-\$10,348

Source: Census 2016

Housing tenure

As at Census 2016, of the 6,178 private occupied dwellings in the study area 53.3% were owned, either outright (24.1%) or via a mortgage (29.2%), meaning that 37.6% were occupied by renters. This profile is comparable to Greater Sydney's, except that there is slightly lower representation amongst owner-occupiers (relative to Sydney).

Housing tenure, Study area and Greater Sydney (2016)

Tenure arrangement	Lidcombe		Greater Sydney	
	Number	% of total	Number	% of total
Owned outright	1,489	24.1%	472,635	29.1%
Own with mortgage	1,803	29.2%	539,917	33.2%
Renting	2,325	37.6%	553,249	34.1%
Other tenure	561	9.1%	58,082	3.6%
Total	6,178	100.0%	1,623,883	100.0%

Source: Census 2016

EMERGING CHANGES AND TRENDS

There have been some early signs that the socio-demographic profile of the study area is evolving. Major observed changes to date include:

- Population growth is earmarked to remain solid in the area, owing to a solid pipeline of new apartment projects;
- Higher growth rates have been observed for mature age groups (the number of residents aged 50-years increased by 4.7% per annum between 2006 and 2016), which will underpin ageing and ultimately, the expenditure habits of the local population;
- Between 2006 and 2016, new household additions in the study area has been dominated by couple families with children (43.6% of new additions) and couple family with no children (33.5% of new additions). Notably, the contribution from one family, lone person and group households was significantly lower;
- Shift in housing tenure is anticipated as a sustained deterioration in housing affordability continues to coerce aspiring home owners (who have been priced out of inner and middle ring suburbs) to western Sydney; and
- A rise in the number of residents employed within a professional, manager and business service capacity is expected to underscore income growth in the study area, combined with higher wage growth amongst existing local residents – there has already been evidence of rising earning capacity, with the median household and family income increasing at a faster rate in Lidcombe relative to Greater Sydney.

Based on the above, it is expected that the overall profile of future residents will be more favourable from a retail expenditure perspective, meaning that the overall level of supportable floorspace should rise in the study area.

SECTION 3: IMPACT ASSESSMENT

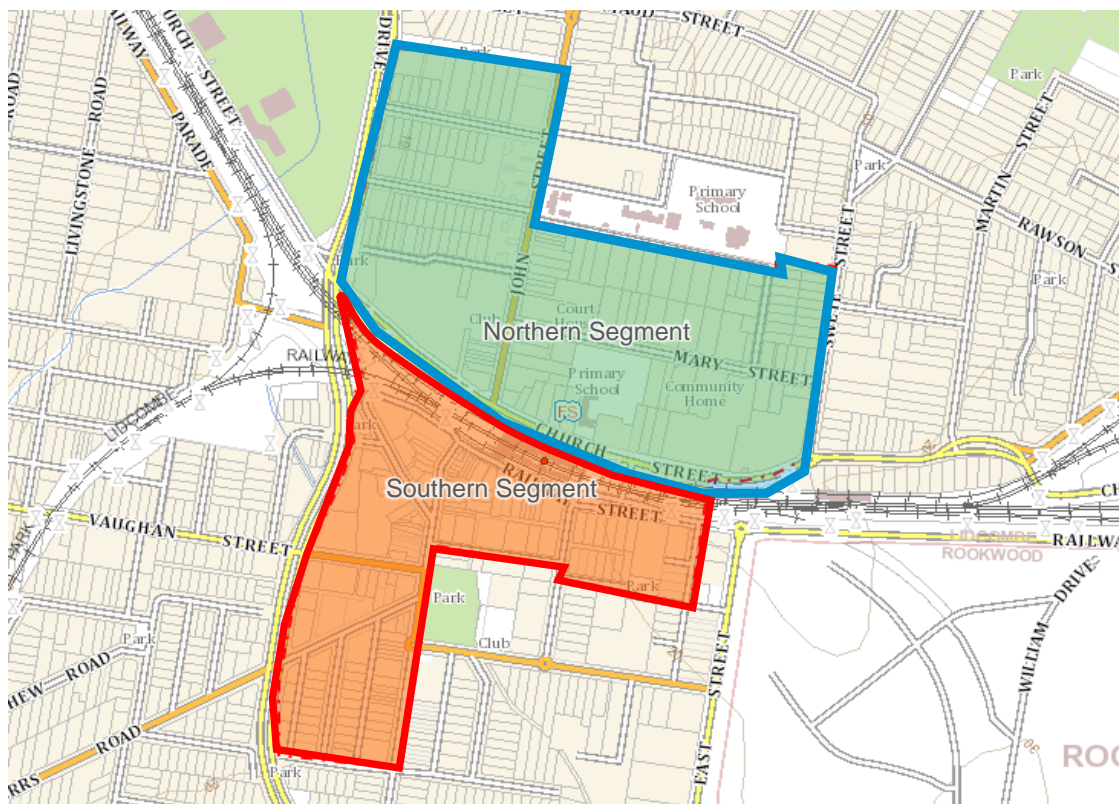
Colliers International has examined potential impacts the proposed development may have on the LTC. In order to arrive our conclusion of negligible impact, we have demonstrated that the proposed retail allocation is minor in comparison to existing and future retail provision in the Lidcombe Town Centre. Finally, we demonstrate that there will be sufficient demand from new residents to support the estimated 5,000m² of retail/commercial floorspace expected to be delivered within and immediately around the LTC.

PROPOSED ALLOCATION IS MINOR IN COMPARISON TO EXISTING AND FUTURE PLANNED FOR THE LTC

Existing retail provision in the Lidcombe Town Centre

The Lidcombe Town Centre (LTC) is located on the eastern periphery of the Cumberland LGA. The rail line dissects the LTC into two segments (north and south). In its totality, the town centre is bordered by Olympic Drive and Wyatt Park to the west, the subject site and Rookwood Cemetery to the east, industrial and local residential areas to the north and residential areas, Lidcombe TAFE and Sydney University Campus to the south.

Lidcombe Town Centre



Source: SIX Maps

The LTC comprises a mix of commercial and retail uses, situated predominantly in street-strip premises with some shop-top housing or standalone buildings along John or Church Streets in the north, and food catering establishments and other local businesses along Railway Street in the southern segment.

Based on a high-level desktop review, the northern segment comprises circa 70,000m² of existing retail and commercial provision. The types of businesses operating in this segment include financial institutions, cafés, restaurants, religious associations, local service providers and traditional retailers i.e. pharmacy, optometrist, medical centre, etc. Specific tenants and floorspace estimates for the northern segment are provided in the next table.

Major businesses in the northern segment of Lidcombe Town Centre

Business name	Estimated floorspace
Dooleys Catholic Club	16,890m ²
Lidcombe Hotel	1,640m ²
Ukrainian Youth Centre	1,389m ²
Commonwealth Bank	720m ²
Subway	720m ²

Source: Colliers International; Various sources

The business profile of the southern segment is somewhat different relative to the northern component. The size of businesses operating is typically much smaller, with most operating from shop-front premises with 100-250m² of operating floorspace. Dominated by cuisine and food catering businesses, the southern segment is estimated to comprise of between 59,000m² of retail provision in total.

Business directory for southern segment of Lidcombe Town Centre

Business name	Estimated floorspace
Renaissance Westella	3,700m ²
Royal Oak Hotel	2,000m ²
McDonald's Lidcombe	560m ²
Australia Post	390m ²
MQ Realty	327m ²

Source: Colliers International; Various sources

Notably, there is no major supermarket in the LTC, with the nearest outlet being Woolworths in Berala, which is located approximately 1km straight-line from Lidcombe station.

Identified future provision and potential capacity

Colliers International has identified potential sources of future retail provision for the LTC (as prescribed in the next table). Notably, the quantum and information on potential future supply has been amassed from multiple sources, including Cordell Connect, planning proposals and DAs, as well as from our internal database. In total, it is estimated that there is around 4,500m² of retail provision in the development pipeline for the LTC, including a 2,500m² supermarket in the northern segment.

With respect to potential capacity, it is apparent that a significant amount of retail provision could be delivered within the LTC under current planning settings. In addition to rejuvenating existing retail uses, there are large sites within the LTC which are underutilised (relative to zoned capacity) from a built form perspective. One such example is the Dooleys Catholic Club site, which currently utilises just 45-50% of the site (estimated at over 1.8 hectares). The consolidation of car parking through a multi-level structure or underground parking, could make available a large portion of the site for redevelopment. Based on the current planning setting (B4 Mixed Use, FSR of 5.0), there is sufficient capacity on this site to deliver a full-line supermarket and a range of accompanying specialties on the ground floor alone. Given its advantageous location in the northern segment and the ability to deliver immediate car parking for visitors, there is potential for this site to deliver more retail/commercial provision relative to other sites in the LTC.

Relativity

It is evident that the 1,505m² of retail provision proposed at 3-7 East Street Lidcombe is minute in comparison to existing and identified future retail floorspace in the Lidcombe Town Centre. Based on our high-level survey, the proposed development allocation is anticipated to represent just 1.1% of existing and planned/future LTC provision. Moreover, there are large sites such as the Dooleys Catholic Club site within the LTC which have the potential to deliver a significant amount of retail provision in the immediate future (i.e. already zoned). The redevelopment of underutilised sites would accentuate the insignificance of the 1,505m² of retail/commercial floorspace proposed under the redevelopment of the subject site. Finally, the overall accessibility of the subject site being on the corner of two major local roads (i.e. East Street and Railway Street), may attract a different sub-set of potential retail or commercial tenants from that currently operating in the LTC. This 'point of difference' is expected to limit competition between the LTC and the proposed development.

NEW DEVELOPMENT CREATING RETAIL ADDITIONAL SOURCE OF DEMAND

It is anticipated that new development within and immediately surrounding the LTC will render a net positive outcome for existing businesses in the LTC. In addition to the 129,000m² of commercial/retail floorspace currently in circulation, a further 5,000m² of retail/commercial floorspace has been identified (including the 1,505m² proposed at the subject site). Notably, this includes a small-to-medium sized supermarket, which will assist in retaining more retail expenditure in the LTC given the current gap. If anything, the introduction of a supermarket and accompanying retail floorspace will only reinforce the status of LTC.

A solid supply of new apartments in the Lidcombe area will provide an additional source of retail expenditure for existing and future businesses in the LTC. In all, it is estimated that there around 1,320 dwellings have progressed beyond the Development Application stage, suggesting that delivery will of these dwellings will most likely occur in the next 3-6 years (assuming current market conditions are maintained). A list of major projects and dwelling yields are summarised in the next table.

Identified residential pipeline, Lidcombe (as at 2017)

Project title	Address	No. of dwellings	Stage or status
John St Mixed Development	13-15 & 19-21 John St	103	Development Application
The Pave	21-23 James St & 15 Raphael St	90	Contract Let
Ann St Units	22-26 Ann St	33	Construction
Taylor St Units	3-7 Taylor St	90	Contract Let
Parkside	5 Olympic Dr & 14, 22-24 Childs St	85	Contract Let
John Street Mixed Development	23-25 John St	80	Development Approval
Taylor St Apartments	13-17 Taylor St	97	Development Approval
Kee	18-24 Railway St (Lots 1-3 DP846)	147	Development Application
Joseph Street Mixed Development	54-56 Joseph St	53	Development Application
Joseph Street Mixed Use Development	32 Joseph St & 1 Vaughan St	94	Development Application
Raphael Street Apartments	9-15 Raphael St	117	Development Application
Mark Street Mixed Use Development	4-14 Mark St	180	Development Application
Mark & Marsden Streets Mixed Use Development	2 Mark St & 1-3 Marsden St	151	Development Application
Total		1,320	

Source: Cordell Connect, Colliers International

At an average household size of 3.2 persons (as prescribed in Census 2016), it is estimated that 1,435 new dwellings (1,320 plus the 115 dwellings from redevelopment of the subject site) will provide a home for 4,592 new residents. While a resident usually supports around 2.2m² of retail floorspace on average, representation across all retail categories is unlikely to be achieved at the TLC. The entire bulky goods allocation (0.65m²) and a portion of discount department store (0.15m²) has been omitted from our calculation of supportable demand. Notably, the supermarket allocation is being retained in our calculation, given that there is a supermarket earmarked for the northern segment. As such, it is estimated that each new resident will support around 1.4m² of retail floorspace.

Retail Floorspace Benchmarks per Capita (2017)

Type of retail	Floorspace (m ²)
<u>Food retailing</u>	
Supermarket	0.35
Food specialties	0.15
Food catering	0.25
Total food (a)	0.75
<u>Non-food retailing</u>	
Discount department store	0.30
Non-food specialties	0.35
Bulky goods and alike	0.65
Total non-food (b)	1.30
Retail services (c)	0.15
Total Retail Floorspace (a)+(b)+(c)	2.20

Source: Colliers International

Notably, a portion of new resident expenditure will be spent at other retail destinations and centres. However, there would also be an additional source of retail expenditure for the LTC from the 170-odd future workers (at an average employee density of 30m² per employee) engaged in the 5,000m² of retail/commercial floorspace in the LTC. Overall, it has been assumed that 80% of resident retail expenditure will be retained by the future LTC.

Worker retail expenditure benchmarks (2017)

Type of retail	Weekly expenditure (\$)	Annual expenditure (\$)
Supermarket items	\$15-20	\$15-20
Food catering	\$20-25	\$20-25
Non-food convenience	\$10-15	\$520-780

Source: Colliers International

It is estimated that the future residents will underpin around 5,140m² of retail provision. While smaller in magnitude, workers on-site will also provide another source of demand for the LTC, which when combined with resident-based demand is expected to increase supportable demand to 5,250m². On this basis, it is expected that the new retail supply from the future development (which includes the 1,505m² proposed for 3-7 East Street Lidcombe) will have negligible impact on existing businesses in the LTC.

EMPLOYMENT AND INDUSTRY BASED BENEFITS

There are employment and industry based benefits that are expected to be derived from the proposed development, including:

- Delivers a larger employment outcome
- Better diversity in the industry mix and aligned with prevailing market forces

Delivering a larger employment outcome

Colliers International has been informed that the subject site currently accommodates 12 operational workers across three businesses (itemised breakdown is provided in the table below). Given that the site incorporates around 1,500m² of operational floorspace, the employment density of 125m² per employee is extremely low and typical of industrial operations/businesses.

Estimated current employment yield (2017)

Business name	Estimated number of operational workers
Micropak Pty Ltd	4
Micro Packaging Pty Ltd	2
Monumental Mason	6
Total	12

Source: Colliers International

In contrast to an IN2 Light Industrial setting, permissible land uses in a B4 Mixed Use zoning usually occupy smaller floorplates, but are however more **labour intensive**. For example, at approximately 140-200 m² per worker, the average floorspace allocation for a warehouse function is significantly higher than for retail on a per worker basis, which ranges between 20 and 30m² per employee. Average employment densities applicable to western Sydney are presented in the next table.

Indicative employee densities by land use type (2017)

Land use type	Average GFA per employee
Food eatery (restaurant, café)	10-20
Gymnasium	40-50
Medical centre	25-40
Food and drink	10-20
Indicative range	15-30

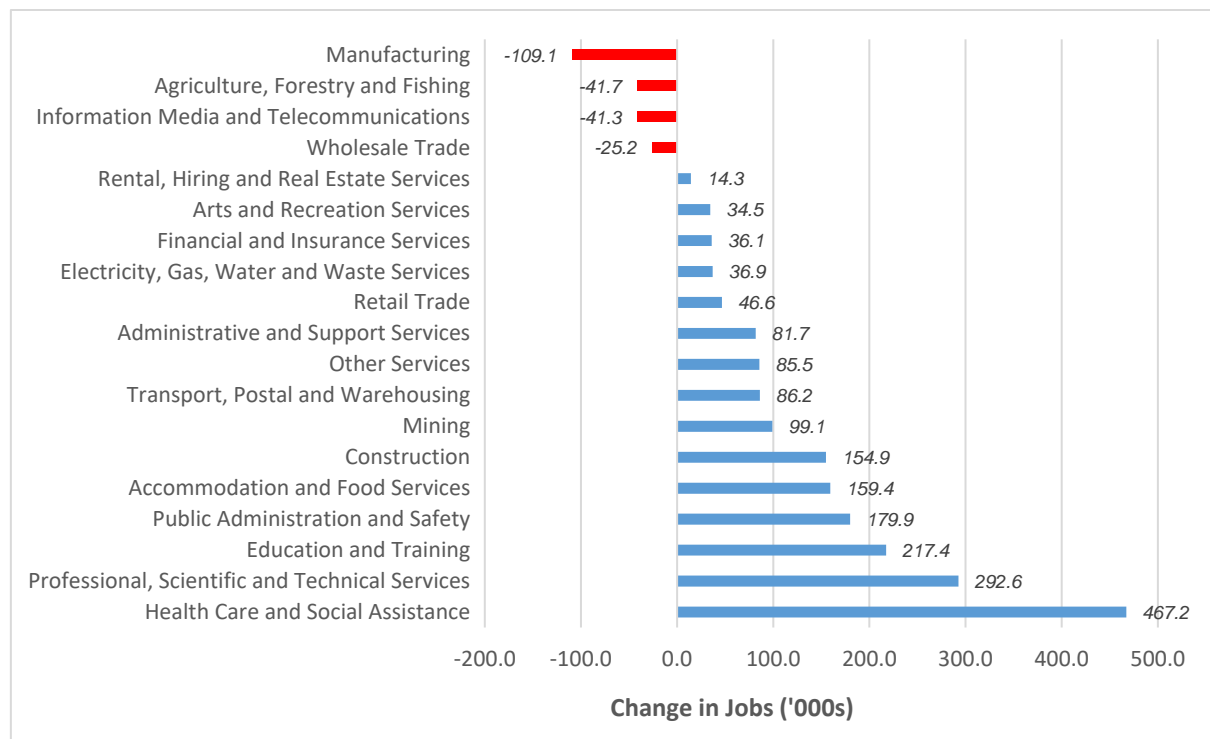
Source: Colliers International

Having regard for average floorplate sizes typically occupied by potential land uses for the subject site, an identical operational employment outcome can be achieved with far less floorspace under the requested B4 Mixed Use zoning. However, despite a comparable amount of floorspace (1,505m²), it is presumed that a total employment outcome of 60 operational workers can be achieved upon redevelopment of the subject site. The employment outcome in this circumstance far exceeds that currently yielded on the subject site.

Better diversity in the industry mix and aligned with prevailing market forces

In addition to achieving a higher employment outcome, the potential land uses that could be incorporated into the proposed development are generally more compatible with prevailing market forces apparent in Greater Sydney. Moreover, these land uses would also improve industry diversity in Lidcombe and Cumberland LGA.

Change in Employment by Industry, Greater Sydney (February 2007-2017)



Source: ABS

The Greater Sydney industry mix is evolving, with service based industries dominating traditional industries with respect to growth. As denoted in ABS labour force data, the industries which have gained the most traction over the past decade include health care and social assistance (+467,200 workers), professional, scientific and technical services (+292,600 workers) and education and training (+217,400 workers). In contrast, traditional industries such as manufacturing (-109,100 jobs) and agriculture, forestry and fishing (-41,700 jobs) have contracted over the past ten years.

Sydney is also undergoing transformation from a spatial standpoint, in that:

- Users of commercial space are reverting to major commercial destinations such as Parramatta CBD and Sydney CBD. It is understood that businesses believe that the benefits outweigh the costs associated with being located in a designated commercial destination. However, there are some exceptions to this rule, with smaller local businesses still favouring suburban office nodes to be close to their target market.
- There has also been outflow of industrial tenants from inner and middle ring locations to Western Sydney. A spate in rezoning activity in established inner suburbs has coerced many industrial businesses to relocate to Western Sydney. Significant rental escalation as the competition for remaining industrial premises rises (in an environment of diminishing supply) has also pushed industrial businesses to locations such as Wetherill Park, Eastern Creek, Hoxton Park, Smeaton Grange, etc. An infrastructure binge has also facilitated an outflow to Western Sydney, and will continue to do so especially given the types of infrastructure items in the pipeline i.e. Badgerys Creek Airport, M9 Outer Orbital Road.

The proposed development provides an opportunity for Lidcombe and the Cumberland LGA to capitalise on these broader trends through its commercial/retail allocation. If built to the right specification, the proposed development will permit the introduction of higher-order service-orientated tenants to the area, which will provide jobs for locals and improve the resilience of the Lidcombe economy through a repositioning away from manufacturing, which is deteriorating at a rapid pace throughout Greater Sydney.

OTHER CONSIDERATIONS AND BENEFITS

There are a host of other relevant considerations and benefits that are expected to be derived from the proposed development, including:

- Proposed retail/commercial provision is significantly below thresholds required to achieve sufficient critical mass to alter the balance of the LTC;
- The proposed development does not include a supermarket, which we believe would shift the epicentre of the LTC towards the southern segment; and
- The proposed allocation may incorporate tenants which do not draw from the same catchment as existing businesses in the LTC i.e. there may be some businesses which trade to other businesses or a much wider catchment.

CONCLUDING REMARKS

Overall, the proposed format, being B4 Mixed Use, enables a feasible development outcome through an integrated format, including commercial, retail and residential uses.

The proposed commercial/retail allocation is not anticipated to undermine the LTC. Consisting of 1,505m², new provision from the proposed development will represent just 1.1% of existing LTC floorspace provision i.e. it is minor in comparison. Notably, redevelopment of major sites which are presently underutilised (e.g. Dooleys Catholic Club) could render a considerable commercial/retail outcome for the LTC, which would only reinforce the insignificance of floorspace proposed through the redevelopment of 3-7 East Street and 2 Railway Street, Lidcombe.

It has also been demonstrated that the quantum of demand coming from new housing in the general vicinity of the LTC will sufficiently cover identified future retail and commercial provision (including that proposed at the subject site). In total, it is estimated that there will be 1,435 new dwellings delivered in and around the LTC over the next decade (including the proposed development), equating to 4,592 persons (at an average household size of 3.2 persons). Based on the current demand benchmarks and including expenditure from the 170-odd additional workers, we estimate that there will be sufficient demand to support 5,250m² of retail floorspace in the LTC. This allocation is significantly higher than that identified in the pipeline, which implies that the net impact from new development will be positive for the LTC. Additionally, there are other considerations such as diversifying the industry base (and therefore resilience of the local economy) that support the case for change.

STATEMENT OF ECONOMIC BENEFITS

The proposed development of 3-7 East Street and 2 Railway Street, Lidcombe is expected to render the following economic benefits for Lidcombe, Cumberland LGA, Central City District and Greater Sydney:

- Generate an additional source of trade for existing businesses in the Lidcombe Town Centre;
- Undertake the repositioning of a site to mixed use purposes which will inevitably lose its employment and operational relevance as an industrial going concern;
- Through population growth and greater household diversity, generate more expenditure and support investment and jobs growth amongst local businesses;
- Support various professional service industries during the planning and design phase of the project e.g. consulting, architecture, engineering, planning and so forth;
- Supplement a diverse range of trade, professional and construction-based businesses during the construction phase e.g. construction managers, labourers, bricklayers, surveyors as well as plumbers, electricians, heating and ventilation trades;
- The delivery of homes closer to jobs and in a highly accessible location i.e. Parramatta CBD and Sydney CBD – promote self-containment and alleviate road congestion through greater utilisation of public transport;
- An increase in tax revenue (rates, stamp duty, contributions) for local and state government, supporting increased and improved services and amenity within the Cumberland Council;
- The provision of necessary residential infrastructure to meet the needs of a growing population and changing socio-demographic profile in the Cumberland LGA, West Central City District and Greater Sydney area; and
- Provide much needed housing supply and diversity in a location which is proximate to an existing heavy rail station and major bus interchange.

Overall, through redevelopment of the subject site, the positive economic impacts will be vast and varied. The proposed development will support economic growth within the immediate locality, but also support the broader Cumberland Council, a notion endorsed in the Sydney Metropolitan Strategy (2014).

ADDRESSING DIRECTION 1.1

In this section, we confirm that the planning proposal for 3-7 East Street Lidcombe is consistent with Section 117 Directions, having regard for the Sydney Metropolitan Strategy (2014). Specifically, we assess the planning proposal against Direction 1.1: Business and Industrial Zones.

DIRECTION 1.1 - BUSINESS AND INDUSTRIAL ZONES

The objectives of Direction 1.1 - Business and Industrial Zones include:

1. encourage employment growth in suitable locations;
2. protect employment land in business and industrial zones; and
3. support the viability of identified strategic centres.

At present, there is just limited employment at the subject site, estimated at around 12 full-time positions. Owing to the B4 Mixed Use zoning to the west of the site, it has become an isolated tract of IN2 Light Industrial land.

The proposed repositioning of the subject site will render a large employment outcome for the site. Assuming a conservative employment density of between 20-30m² per employee, the proposed 1,505m² of employment floorspace is capable of accommodating around 60 jobs. Importantly, the proposed redevelopment presents an opportunity to diversify the industry base of Cumberland LGA, providing a broader selection of jobs for local workers, while also making the local economy more resilient to external industry-specific shocks.

Furthermore, it is envisaged that the impact on the Lidcombe Town Centre from the proposed development will be positive. The proposed development will generate a new source of trade from its future residents and workers, supporting the viability of the Lidcombe Town Centre – adhering with the Sydney Metropolitan Plan. Finally, through a multiple-dwelling format (i.e. apartments), the proposed development will preserve other less isolated employment-generating sites (in particular industrial zoned land) in the broader area Cumberland LGA.

CONCLUDING REMARKS

The proposed development will render a superior employment outcome, and importantly one that will not impair the LTC. In total, the 1,505m² of mixed-use floorspace, is expected to accommodate around 60 jobs once fully occupied. The employment-based allocation does not include a supermarket nor is it sufficiently large to amass a new centre or retail destination that may compromise the LTC. The proposed mixed-use zoning provides a favourable and positive environmental and economic outcome for the Cumberland Council region relative to the current obsolete environmental and economic outcomes rendered from the site. Evidently, the case for the planning proposal and redevelopment of the subject site for mixed-use purposes is compelling.

APPENDIX ITEM 1: GOVERNMENT POLICY REVIEW

SECTION 117 MINISTERIAL DIRECTIONS

The purpose of this report is to fulfil the requirements of S117, specifically 1.1 - Business and Industrial Zones, 3.1 - Residential Zones and 7.1 - Implementation of a Plan for Growing Sydney.

The objectives, application (where and when), requirements and consistency considerations for each relevant direction are summarised in the schedule below.

Element	Description
1.1 Business and Industrial Zones	
Objective	<p>The objectives of this directions are to:</p> <ol style="list-style-type: none"> Encourage employment growth in suitable locations; Protect employment land in business and industrial zones; and Support the viability of identified strategic centres.
Where and when it applies	<p>This direction applies to all relevant planning authorities.</p> <p>This direction applies when a relevant planning authority prepares a planning proposal that will affect land within an existing or proposed business or industrial zone (including the alteration of any existing business or industrial zone boundary).</p>
Requirements	<p>A planning proposal must:</p> <ol style="list-style-type: none"> Give effect to the objectives of this direction, Retain the areas and locations of existing business and industrial zones, Not reduce the total potential floor space area for employment uses and related public services in business zones, Not reduce the total potential floor space area for industrial uses in industrial zones, and Ensure that the proposed new employment areas are in accordance with a strategy that is approved by the Director-General of the Department of Planning.
Consistency	<p>A planning proposal may be inconsistent with the terms of this direction only if the relevant planning authority can satisfy the Director-General of the Department of Planning (or an officer of the Department nominated by the Director-General) that the provisions of the planning proposal that are inconsistent are:</p> <p>Justified by a strategy which:</p> <ol style="list-style-type: none"> which gives consideration to the objective of this direction, and <ol style="list-style-type: none"> identifies the land which is the subject of the planning proposal (if the planning proposal relates to a particular site or sites), and is approved by the Director-General of the Department of Planning, or justified by a study (prepared in support of the planning proposal) which gives consideration to the objective of this direction, or in accordance with the relevant Regional Strategy or Sub-Regional Strategy pre-pared by the Department of Planning which gives consideration to the objective of this direction, or of minor significance.

3.1 Residential Zones

Objective	<p>The objectives of this directions are to:</p> <ol style="list-style-type: none"> to encourage a variety and choice of housing types to provide for existing and future housing needs, to make efficient use of existing infrastructure and services and ensure that new housing has appropriate access to infrastructure and services, and to minimise the impact of residential development on the environment and resource lands.
Where and when it applies	<p>This direction applies to all relevant planning authorities.</p> <p>This direction applies when a relevant planning authority prepares a planning proposal that will affect land within:</p> <ol style="list-style-type: none"> an existing or proposed residential zone (including the alteration of any existing residential zone boundary), any other zone in which significant residential development is permitted or proposed to be permitted.
Requirements	<p>A planning proposal must include provisions that encourage the provision of housing that will:</p> <ol style="list-style-type: none"> broaden the choice of building types and locations available in the housing market, and make more efficient use of existing infrastructure and services, and reduce the consumption of land for housing and associated urban development on the urban fringe, and be of good design. <p>A planning proposal must, in relation to land to which this direction applies:</p> <ol style="list-style-type: none"> contain a requirement that residential development is not permitted until land is adequately serviced (or arrangements satisfactory to the council, or other appropriate authority, have been made to service it), and not contain provisions which will reduce the permissible residential density of land.
Consistency	<p>A planning proposal may be inconsistent with the terms of this direction only if the relevant planning authority can satisfy the Director-General of the Department of Planning (or an officer of the Department nominated by the Director-General) that the provisions of the planning proposal that are inconsistent are:</p> <p>justified by a strategy which:</p> <ol style="list-style-type: none"> gives consideration to the objective of this direction, and <ol style="list-style-type: none"> identifies the land which is the subject of the planning proposal (if the planning proposal relates to a particular site or sites), and is approved by the Director-General of the Department of Planning, or justified by a study prepared in support of the planning proposal which gives consideration to the objective of this direction, or in accordance with the relevant Regional Strategy or Sub-Regional Strategy prepared by the Department of Planning which gives consideration to the objective of this direction, or of minor significance.

7.1 Implementation of A Plan for Growing Sydney

Objective	The objective of this direction is to give legal effect to the planning principles; directions; and priorities for sub-regions, strategic centres and transport gateways contained in A Plan for Growing Sydney.
Where and when it applies	This direction applies to land comprising of the following local government areas: Ashfield, Auburn , Bankstown, Blacktown, Blue Mountains, Botany Bay, Burwood, Camden, Campbelltown, Canada Bay, Canterbury, City of Sydney, Fairfield, Hawkesbury, Holroyd, Hornsby, Hunters Hill, Hurstville, Kogarah, Ku-ring-gai, Lane Cove, Leichhardt, Liverpool, Manly, Marrickville, Mosman, North Sydney, Parramatta, Penrith, Pittwater, Randwick, Rockdale, Ryde, Strathfield, Sutherland, The Hills, Warringah, Waverley, Willoughby, Wollondilly and Woollahra. This direction applies when a Relevant Planning Authority prepares a planning proposal.
Requirements	Planning proposals shall be consistent with: <ul style="list-style-type: none"> a. the NSW Government's A Plan for Growing Sydney published in December 2014.
Consistency	A planning proposal may be inconsistent with the terms of this direction only if the Relevant Planning Authority can satisfy the Secretary of the Department of Planning & Environment (or an officer of the Department nominated by the Secretary), that the extent of inconsistency with A Plan for Growing Sydney: <ul style="list-style-type: none"> a. is of minor significance, and b. the planning proposal achieves the overall intent of the Plan and does not undermine the achievement of its planning principles; directions; and priorities for sub-regions, strategic centres and transport gateways.

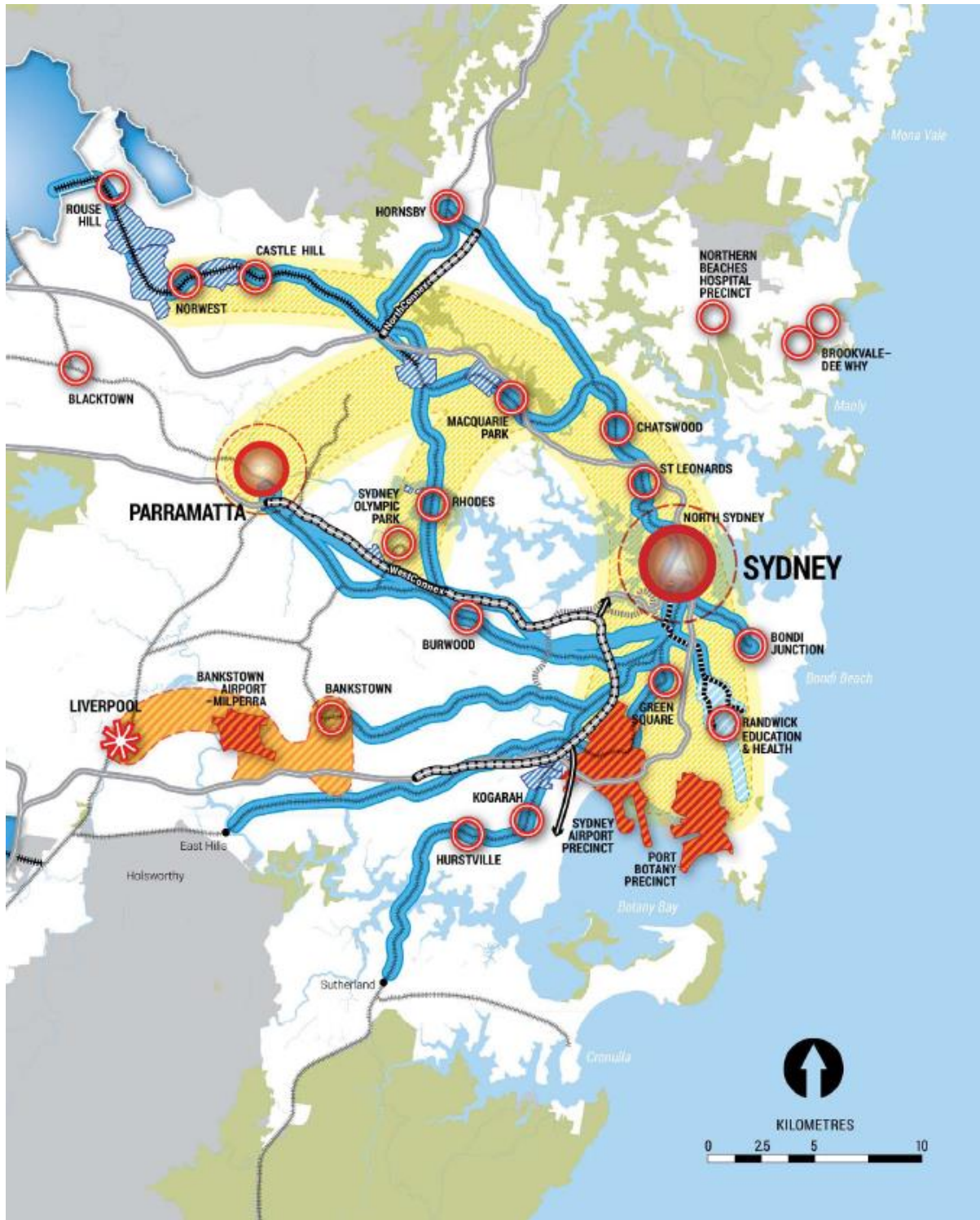
This review of the subject site gives consideration to Section 117 Ministerial Directions, specifically 1.1 - Business and Industrial Zones, 3.1 - Residential Zones and 7.1 - Implementation of a Plan for Growing Sydney.

A specific review of s117 Ministerial Directions is provided in the final section of this report.

SYDNEY METROPOLITAN STRATEGY TO 2031 – 'A PLAN FOR GROWING SYDNEY' (2014)

Released in December 2014, 'A Plan for Growing Sydney' is the cornerstone reference for land-use planning in Sydney. It provides guidance in relation to where people will live and work, and how we move around the city. It presents an overarching strategy for accommodating Sydney's future growth. It balances the need for more housing, but also facilitates the creation of resilient communities within a highly-liveable city context, whilst protecting the environment and natural biodiversity.

A Vision for Sydney – ‘A plan for Growing Sydney’



Source: DP&E (2014)

It states that new housing will be located close to jobs, public transport, community facilities and services, and acknowledges the need to for housing choice in regards to location, size and typologies to suit a range of lifestyles and budgets. Most importantly, more intensive housing development across the city will be matched with infrastructure and service provision, open space and renewed bushland to support healthy lifestyles and community life.

A Plan for Growing Sydney also provide a framework for strengthening the global competitiveness of Sydney, to accommodate investment and jobs growth. It considers infrastructure projects and improvements to public transport, freight routes and other key assets such as airports.

More broadly, the strategy outlines a number of related directions, including:

- Direction 2.1: Accelerate housing supply across Sydney;
- Direction 2.2: Accelerate urban renewal across Sydney – providing homes closer to jobs; and
- Direction 2.3: Improve housing choice to suit different needs and lifestyles.

This planning proposal is congruent with the directions outlined above. Through the delivery of 105 apartments, the proposed development will accelerate housing supply, encourage urban renewal, provide homes closer to jobs and improve the housing composition in the Cumberland Council.

AUBURN CITY RESIDENTIAL DEVELOPMENT STRATEGY (2015)

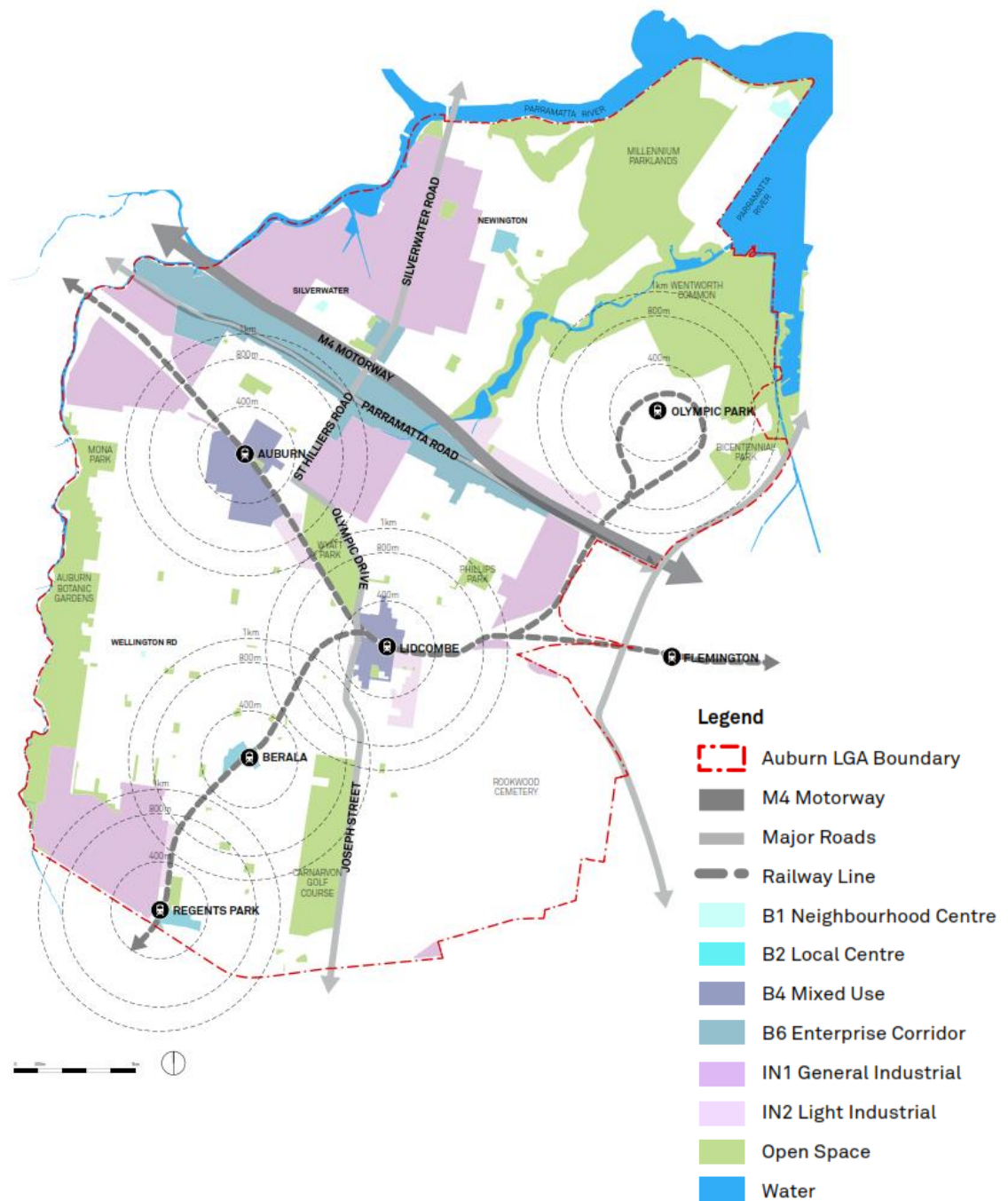
The Auburn Residential Strategy 2015 seeks to provide a guide for planning for future housing needs in Auburn City (the former Auburn local government area). The strategy considers the type and location of future residential development over the next 20 years.

The strategy utilises the existing planning context, housing supply and housing demand of Auburn City in order to derive a suitable baseline to describe the potential of Auburn City to meet its future growth projections and targets over the next 20 years. The strategy also seeks to examine potential growth locations and propose planning amendments to both assist and apply for ongoing growth and market demand.

- The Strategy details various factors that will influence residential development, including:
- The broader planning context of Auburn City, including analysis of the existing strategic and statutory framework;
- Existing development constraints, including flood-prone land, strata titled land, heritage items and conservation areas, open space, land zoned for employment use, schools and places of public worship;
- Current and projected demographic composition traits;
- Current supply and demand for housing;
- Projected growth rates for population and housing supply;
- Recent history of dwelling approvals, construction and uptake in Auburn City; and

- Planned and proposed development both within and outside of Auburn City, including major developments such as Sydney Olympic Park, Wentworth Point and Carter Street Urban Activation Precincts.

Centres, corridors and employment areas



Source: Auburn City Residential Development Strategy (2015)

DRAFT AUBURN AND LIDCOMBE TOWN CENTRE STRATEGY (DEC 2016)

In the early stages of 2017, Auburn City Council released its Draft Auburn and Lidcombe Town Centre Strategy, which was in part informed by the consultant study 'Auburn and Lidcombe Town Centres: Investigation into height of building controls and zoning' completed by JBA, also taking into consideration state, regional and local strategies and directions, best practice urban design principles, and a comparison of heights in other centres and existing conditions. The purpose of the Strategy is to enable improved built form and quality design outcomes while also addressing the skyline, economic vitality and street life of any new centres.

The strategy sought to examine the existing controls across Auburn Town Centre (22 precincts) and Lidcombe (17 precincts). The outcomes derived from this study seek to:

- Build on strategic and urban design work undertaken by or for Council.
- Enable improved built form and quality design outcomes that facilitate the achievement of the objectives of SEPP 65 Design Quality of Residential Apartment Development.
- Facilitate a diversity of built form including a more diverse skyline.
- Facilitate improved connectivity through the town centres and the provision of new open space along with the development.
- Support an innovation ecosystem in Lidcombe in line with opportunities identified through the district planning process and the Greater Sydney Commission's vision for the GPOP Greater Parramatta and Olympic Peninsula (2016).
- Support economic vitality and street life in these centres.
- Protect features of the town centres that have significant value to the community.
- Study precincts in the Auburn and Lidcombe town centres



Source: Draft Auburn and Lidcombe Town Centre Strategy (Dec 2016)

REVISED DRAFT CENTRAL CITY DISTRICT PLAN (NOV 2017) – FORMERLY THE WEST CENTRAL DISTRICT PLAN

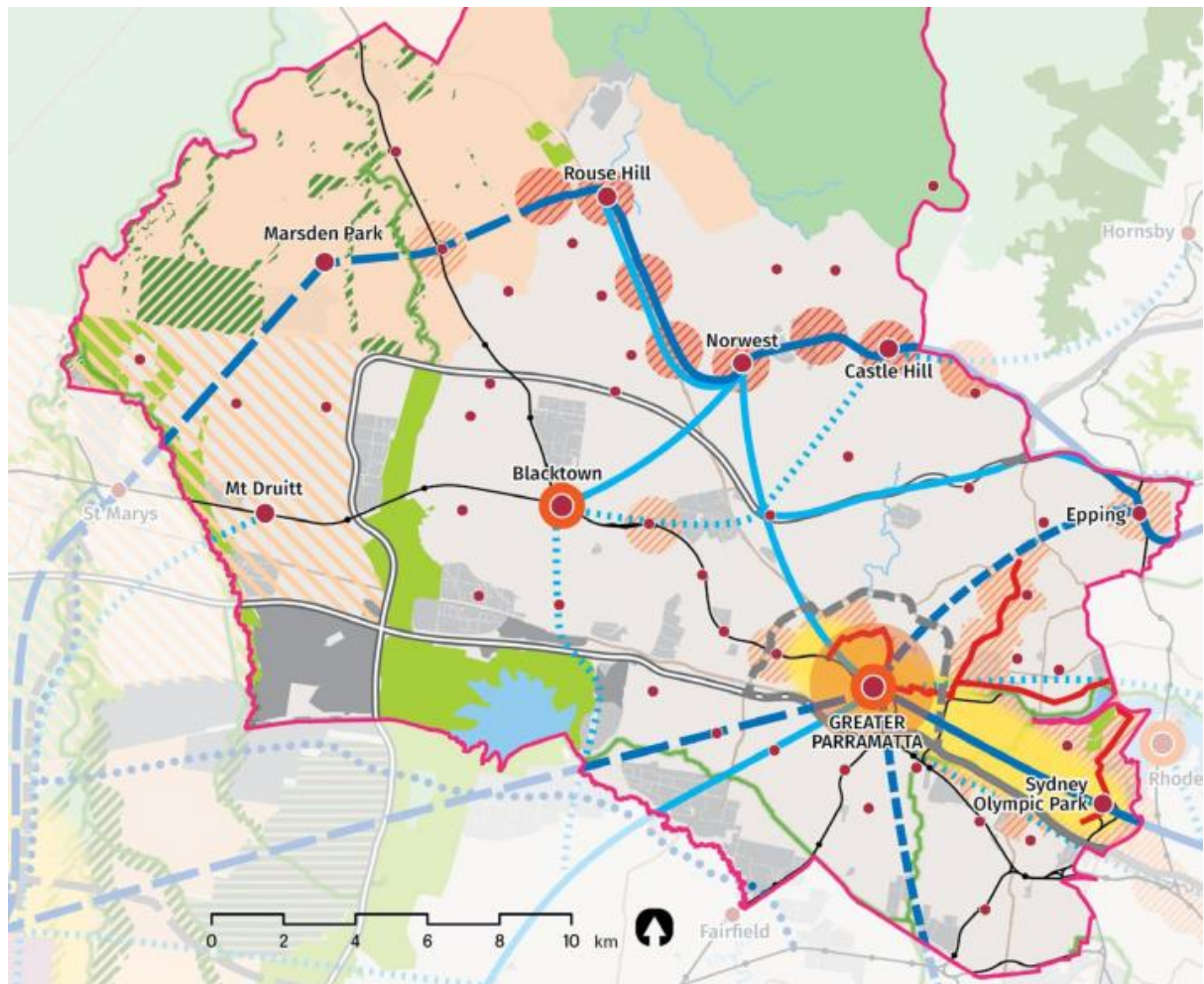
The revised draft Central City District Plan provides a 20-year plan to manage growth and achieve the 40-year vision, while enhancing Greater Sydney's liveability, productivity and sustainability into the future. It is a guide for implementing the draft Greater Sydney Region Plan at a District level and is a bridge between regional and local planning.

The draft District Plans contain four key themes of infrastructure and collaboration, liveability, productivity and sustainability. Loosely, these relate to:

- Underscoring the alignment of local environmental plans, transport programs and agency programs;
- Interfacing state government investment initiatives (such as transport interchanges) alongside local infrastructure planned by councils (such as public domain improvements);
- Detailing housing typology, infrastructure and services required to meet the needs of the changing population;
- Detailing improvements to connectivity and efficiency in supply chains, reducing business costs, increasing access to markets, enhancing access between businesses and skilled workers, and enhancing business-to-business interactions; and
- Managing and maintaining green infrastructure, including incorporating natural landscape features into the urban environment, protecting and managing natural systems, cooling the urban environment, innovative and efficient use and re-use of energy, water and waste resources, and building the resilience of communities to natural and urban hazards, shocks and stresses.

The revised draft was on public display until 15th December 2017.

Central Sydney District Structure Plan 2036



	Metropolitan City Centre		Transit Oriented Development		Waterways		On Street Rapid Transit
	Health and Education Precinct		Urban Renewal Area		Train Station		Rapid bus
	Strategic Centre		Priority Growth Area Investigation		Committed Train Link		Freight Rail Investigation
	Local Centre		Urban Area		Train Link/Mass Transit Investigation 0-10 years		Motorway
	Economic Corridor		Protected Natural Area		Train Link/Mass Transit Investigation 10-20 years		Committed Motorway
	Western Sydney Employment Area		Metropolitan Rural Area		Light Rail		Road Investigation 10-20 years
	Industrial Area		Major Urban Parkland and Reserve				Green Grid Priority Project
	Land Release Area		Visionary Parkland and Reserve				

Source: Revised Draft Central City District plan – October 2017

Accelerating success.





ENVIRONMENTAL INVESTIGATION SERVICES

REPORT

TO

AUTOMATION FEEDING DEVICES PTY LTD

ON

STAGE 1 DESKTOP ENVIRONMENTAL SITE ASSESSMENT

FOR

PROPOSED MIXED USE DEVELOPMENT

AT

2 RAILWAY STREET AND 3-7 EAST STREET, LIDCOMBE

21 JUNE 2016

REF: E29427Krpt



Postal Address: PO Box 976, North Ryde BC NSW 1670

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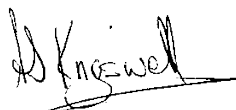
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EXECUTIVE SUMMARY

Automation Feeding Devices Pty Ltd ('the client') commissioned Environmental Investigation Services (EIS)¹ to undertake a Preliminary Stage 1 Environmental Site Assessment (PESA) for the proposed mixed use development at 2 Railway Street and 3-7 East Street, Lidcombe NSW.

Based on information supplied by the client the site is currently zoned as light industrial but is proposed to be changed to mixed use. The development will comprise some commercial premises with residential properties over one level of basement.

The site is located in a predominantly residential area of Lidcombe. The site is bounded by Railway Street to the north, East Street to the east, Davey Street to the south and Raphael Street to the west.

The scope of work included the following:

- Review of site information including background and site history information;
- A site inspection to identify AEC;
- Preparation of a PCSM; and
- Preparation of a report presenting the results of the assessment.

The Areas of Environmental Concern (AEC) identified are based on a review of the site and site history information outlined in this report. The AEC can either be a point source or widespread areas impacted by current or historical activities. AEC include;

- Fill Material

The site appears to have been historically filled to achieve existing levels. The fill may have been imported from various sources and can contain elevated concentrations of contaminants.

- Hazardous Building Material

The buildings on the site have been constructed prior to 1990's. Hazardous building materials were used for construction purposes during this period. The material can pose a potential contamination source during demolition/development.

- Fuel Storage Facilities

Historical businesses at 6 Railway Street have previously been listed as a Motor Garage & or Engineer. Leakage and spillage of petroleum hydrocarbons could have resulted in site contamination.

The conclusions and recommendations should be read in conjunction with the limitations presented in the body of the report.

¹ Environmental consulting division of Jeffery & Katauskas Pty Ltd (J&K)

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Figure 1: Site Location Plan

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Appendix A: Site Information

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ABBREVIATIONS

Asbestos Containing Material	ACM
Area of Environmental Concern	AEC
Australian Height Datum	AHD
Acid Sulfate Soil	ASS
Above Ground Storage Tank	AST
Below Ground Level	BGL
Bureau of Meteorology	BOM
Benzene, Toluene, Ethylbenzene, Xylene, Naphthalene	BTEXN
Cation Exchange Capacity	CEC
Contaminated Land Management	CLM
Conceptual Site Model	CSM
Environmental Protection Agency	EPA
Environmental Site Assessment	ESA
International Organisation of Standardisation	ISO
Light Non-Aqueous Phase Liquid	LNAPL
Local Government Authority	LGA
Map Grid of Australia	MGA
National Association of Testing Authorities	NATA
National Environmental Protection Measure	NEPM
Organochlorine Pesticides	OCP
Organophosphate Pesticides	OPP
Polycyclic Aromatic Hydrocarbons	PAH
Potential Contaminants of Concern	PCC
Remediation Action Plan	RAP
Sampling, Analysis and Quality Plan	SAQP
Site Audit Statement	SAS
Site Audit Report	SAR
Semi-Volatile Organic Compounds	sVOC
Standard Water Level	SWL
Total Recoverable Hydrocarbons	TRH
United States Environmental Protection Agency	USEPA
Underground Storage Tank	UST
Volatile Organic Compounds	VOC
Volatile Organic Chlorinated Compound	VOCC
Workplace, Health and Safety	WHS

1 INTRODUCTION

Automation Feeding Devices Pty Ltd ('the client') commissioned Environmental Investigation Services (EIS)² to undertake a Preliminary Stage 1 Environmental Site Assessment (PESA) for the proposed mixed use development at 2 Railway Street and 3-7 East Street, Lidcombe NSW.

The site location and the assessment was confined to the site boundaries as shown on the attached Figure 1. The proposed development area is referred to as 'the site' in this report.

This report has been prepared to support the lodgement of a Development Application (DA) for the proposed mixed use development.

1.1 Proposed Development Details

EIS understands the development is at a conceptual stage. Based on information supplied by the client the site is currently zoned as light industrial but is proposed to be changed to mixed use. The development will comprise some commercial premises with residential properties over one level of basement.

1.2 Objectives

The assessment objectives were to:

- Identify the areas of environmental concern (AEC);
- Prepare a preliminary conceptual site model (PCSM);
- Establish whether an intrusive (Stage 2) investigation is required; and
- Comment on the suitability of the site for the proposed development.

1.3 Scope of Work

The assessment was undertaken generally in accordance with an EIS proposal (Ref: EP9933Krev1) of 12/05/2016 and written acceptance from the client of 18/05/2016.

The scope of work included the following:

- Review of site information including background and site history information;
- A site inspection to identify AEC;
- Preparation of a PCSM; and
- Preparation of a report presenting the results of the assessment.

The report was prepared with reference to regulations/guidelines outlined in the table below. Individual guidelines are also referenced within the text of the report.

² Environmental consulting division of Jeffery & Katauskas Pty Ltd (J&K)

Table 1-1: Guidelines

Guidelines/Regulations/Documents
Contaminated Land Management Act (1997 ³)
State Environmental Planning Policy No.55 – Remediation of Land (1998 ⁴)
Guidelines for Consultants Reporting on Contaminated Sites (2011 ⁵)
Guidelines for the NSW Site Auditor Scheme, 2nd Edition (2006 ⁶)
National Environmental Protection (Assessment of Site Contamination) Amendment Measure (2013 ⁷)

³ NSW Government Legislation, (1997), *Contaminated Land Management Amendment Act*. (referred to as CLM Act 1997)

⁴ NSW Government, (1998), *State Environmental Planning Policy No. 55 – Remediation of Land*. (referred to as SEPP55)

⁵ NSW Office of Environment and Heritage (OEH), (2011), *Guidelines for Consultants Reporting on Contaminated Sites*. (referred to as Reporting Guidelines 2011)

⁶ NSW DEC, (2006), *Guidelines for the NSW Site Auditor Scheme, 2nd ed.* (referred to as Site Auditor Guidelines 2006)

⁷ National Environment Protection Council (NEPC), (2013), *National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No.1)*. (referred to as NEPM 2013)

2 SITE INFORMATION

2.1 Site Identification

Table 2-1: Site Identification

Current Site Owner:	Automation Feeding Devices Pty Ltd (Lot 2 and Lot 3) Larcombe Memorials Pty Ltd (Lot 4)
Site Address:	2 Railway Street and 3-7 East Street, Lidcombe NSW
Lot & Deposited Plan:	Lot 2,3 and 4 of DP 373141
Current Land Use:	Light Industrial
Proposed Land Use:	Mixed Use
Local Government Authority (LGA):	Cumberland
Current Zoning:	Light Industrial (IN2)
Site Area (m ²):	3473m ²
RL (AHD in m) (approx.):	24m AHD
Geographical Location (MGA) (approx.):	N: 6251094.814 E: 319399.731
Site Location Plan:	Figure 1

2.2 Site Location and Regional Setting

The site is located in a predominantly residential area of Lidcombe. The site is bounded by Railway Street to the north, East Street to the east, Davey Street to the south and Raphael Street to the west. The site is located approximately 4.4km to the south-west of Homebush Bay.

2.3 Topography

The regional topography is undulating, with a gentle fall to the north east. The topography of the site is situated on the 24m AHD contour, within a 1000m radius the highest elevation is 38m AHD approximately 700m south east, the lowest elevation is 8m AHD approximately 700m north west.

2.4 Site Inspection

A walkover inspection of the site was undertaken by EIS on 31 May 2016. The inspection was limited to accessible areas of the site and immediate surrounds. An internal inspection of buildings was not undertaken. Selected site photographs obtained during the inspection are attached in the appendices.

2.4.1 2 Railway Street, Lidcombe.

At the time of the inspection the site was operating as a stone masonry business, the site included a small office building with external bathroom and small open air sheds for the stone masonry work. The site was all concreted with access driveways off Railway Street and East Street, all concreted surfaces were observed to be in good condition with no staining or obvious damage.

The site was concrete surfaced, the assumed direction of the surface water runoff was assumed to be in a westerly direction towards East Street.

The western side of the site was raised approximately 0.5m higher than the rest of the site with step traversing the centre of the site, from north to south. Minimal vegetation was observed on site, one hedge was growing on the East Street entrance, the hedge was seen to be in good condition with no obvious stress or die back.

No signs or indications of USTs were seen on site.

2.4.2 3-7 East Street, Lidcombe.

At the time of the inspection the site was operating as a printing facility, the site consisted of three (3) large multi storey warehouse buildings.

The external area of the buildings had a concrete paved footpath around the perimeter with a rear loading dock on the western side of the building, and carpark on the southern side. The concrete was in a moderate condition with numerous small cracks present. The southern carpark was approximately half exposed soil, and half concrete surface.

The rear (western) loading dock had a concrete surface with a concrete patch area approximately 5m x 3m and a potential filling point in the centre. This was considered to be indicative of an underground storage tank (UST). In the western loading dock there were six 44 gallon drums stored on wooden pallets, these observed drums displayed the dangerous goods labels for flammable liquid and corrosive liquid. The drums were observed to be in good condition with no cracks or spilling evident, the surrounding concrete area had no signs of staining when the inspection was carried out.

Large trees, approximately 10m in height, lined the East Street side of the site, numerous other shrubs were seen around the perimeter of the site. These shrubs and trees appeared to be in good health with no observable signs of stress or dieback.

2.5 Surrounding Land Use

The immediate surrounds included the following land uses:

- North – Railway Line then commercial shops and residential houses
- South – Commercial
- East – Rookwood Cemetery
- West – Commercial and residential zones

2.6 Underground Services

The 'Dial Before You Dig' (DBYD) plans were reviewed for the assessment. Major services which could pose a potential migratory pathway were not identified at the site.

2.7 Regional Geology

A review of the regional geological map of Sydney (1983⁸) indicates that the site is underlain by Ashfield Shale of the Wianamatta Group, which typically consists of black to dark grey shale and laminite

2.8 Acid Sulfate Soil (ASS) Risk

The site is not located in an ASS risk area.

2.9 Hydrogeology

A review of groundwater bore records available on the NSW Office of Water⁹ (NOW) online database was undertaken on 24 May 2016. The search was limited to registered bores located within a radius of approximately 1km of the site.

The search indicated 1 registered bore within the search area. Copies of the records are attached in the appendices. A brief summary of relevant information is presented below:

Table 2-2: Summary of Groundwater Bores

Reference	Distance from Site (m) (approx.)	Direction & Gradient from Site	Final Depth (m)	Standing Water Level (SWL) (m)	Registered Purpose
GW111940	419	West	6.10	2.7	Monitoring

A review of the regional geology and groundwater bore information indicates that the subsurface condition at the site is expected to consist of residual soils overlying relatively shallow bedrock. The occurrence of groundwater that could be utilised as a resource for beneficial use is considered to be relatively low under such conditions. A perched aquifer in the subsurface may be present.

⁸ Department of Mineral Resources, (1983), *1:100,000 Geological Map of Sydney (Series 9130)*.

⁹ <http://www.waterinfo.nsw.gov.au/gw/>

2.10 Groundwater Management/Embargo Zone

The site is not located within the Botany Sands Beds Groundwater Embargo Area declared by the Department of Natural Resources (2006¹⁰).

2.11 Receiving Water Bodies

Surface water bodies were not identified in the immediate vicinity of the site. The closest surface water body is Home Bush Bay located approximately 4.5km to the north-east of the site.

2.12 Local Meteorology

Sydney has an oceanic climate with warm summers and mild winters. The weather is moderated by proximity to the ocean. Rainfall is spread throughout the year and is generally heavier from January through to June.

The meteorological data for Sydney Observatory weather station available on the Bureau of Meteorology (BOM¹¹) website has been summarised in the table below. This data is considered to be most representative for this site.

Table 2-3: Summary of Local Meteorology

Category	Low	High
Mean Maximum Temperatures (°C)	16.3	25.9
Mean Minimum Temperature (°C)	8.1	18.8
Rainfall (mm)	68.4	131.9

¹⁰ Embargo Area was gazetted under the *Water Act 1912* by the NSW Department of Natural Resources on 22 August 2003


¹¹ http://www.bom.gov.au/climate/averages/tables/cw_066062.shtml visited on 07/06/2016.

3 SITE HISTORY INFORMATION


3.1 Review of Historical Aerial Photographs

Historical aerial photographs available at the NSW Department of Lands were reviewed for the assessment. Copies of selected photographs are attached in the appendices. A summary of the relevant information is presented in the following table:

Table 3-1: Summary of Historical Aerial Photos

Year	Details
1943 ¹²	 <p>Site: Some buildings were located in the north section of the site. These may have been in the process of construction.</p> <p>Surrounds: The surrounding area comprised of residential houses to the west and south, Rookwood cemetery* was to the west of the site, to the north of the site the Sydney Trains western line was located. **</p> <p>*Rookwood cemetery was established in 1868. **This section of train line was established circa 1890</p>

¹² <https://six.maps.nsw.gov.au/wps/portal/SIXViewer>, visited on 07/06/2016

Year	Details
1951	<div></div> <p>Site: Construction of the buildings in the northern section of the site appeared to have been completed. The remainder of the site appears to be vacant land.</p> <p>Surrounds: The surrounding area appears the same as the 1943 photograph.</p>


Year	Details
1961	<div></div> <p>Site: The appearance of the buildings in the north section of the site had changed. They may have been in the process of demolition. A large warehouse type building had been constructed in the central section of the site. The south section of the site may have been a storage yard.</p> <p>Surrounds: The surrounding area appears to be the same as the 1951 photograph.</p>

Year	Details
1965	<div></div> <p>Site: A second warehouse building appeared to have been constructed to the north of the previous warehouse.</p> <p>Surrounds: The surrounding area appears to be the same as the 1961 photograph.</p>

Year	Details
1970	<div></div> <p>Site: The northern section of the site appeared to show a work yard and small building, Title records indicate this area of the site was leased to 'A. Larcombe and Co. Pty Ltd' a stone masonry company. The central section of the site is occupied by three large warehouse buildings.</p> <p>Surrounds: The surrounding area appears to be the same as the 1965 photograph.</p>

Year	Details
1982	<div></div> <p>Site: Northern section of the site appears to have three to four small buildings or sheds build on site with what appears to be a work yard for the stone masonry business registered in the land title records. The remaining section of the site is comprised of three large warehouse buildings.</p> <p>Surrounds: Some of the residential buildings on the western and south of the site have been replaced with commercial warehouse style buildings.</p>

Year	Details
1991	<div></div> <p>Site: Southernmost section of the site appears to have been concreted over, the remainder of the site appeared to be the same as the 1982 photograph.</p> <p>Surrounds: Further development of the commercial buildings to the west and south of the site has occurred, construction of a road along the north of Rookwood Cemetery joining the intersection of East Street and Railway Street has occurred.</p>

Year	Details
2003	<div></div> <p>Site: The site appears to be the same as the 1991 photograph.</p> <p>Surrounds: Further commercial development has occurred to the west of the site, road widening has occurred and a roundabout has been constructed on the intersection of East and Railway Streets.</p>

Year	Details
2007	 <p>Site and surrounds appear to be the same as the 2003 photograph.</p>

Year	Details
2014 (SIX Maps)	 <p>Site and surrounds appear to be the same as the 2007 photograph.</p>

3.2 Review of Land Title Records

Land title records were reviewed for the assessment. The record search was undertaken by Advance Legal Searchers Pty Ltd. Copies of the title records are attached in the appendices.

The land title records did not identify any particular land uses which could have resulted in significant contamination, apart from the stonemasons. Historically some stonemasons used lead based abrasives powders to polish marble.

3.3 Review of Auburn City Council Information

3.3.1 Publicly Accessible Information

Council records available under the access to public information were reviewed for the assessment. Copies of relevant documents are attached in the appendices.

A search of council records is currently underway. The results will be summarised in a separate letter when received.

3.3.2 Section 149 Planning Certificate

The s149 (2 and 5) planning certificates were reviewed for the assessment. Copies of the certificates are attached in the appendices.

A summary of the relevant information is outlined below:

- a) The site is not located in an area of ecological significance.
- b) The site is not deemed to be:
 - significantly contaminated;
 - subject to a management order;
 - subject of an approved voluntary management proposal; or
 - subject to an on-going management order under the provisions of the CLM Act 1997;
- c) The site is not subject to a Site Audit Statement (SAS);
- d) The site is not located within a Class 1 or 2 ASS risk area; and
- e) The site is not located in a heritage conservation area.

3.4 SafeWork NSW Records

SafeWork NSW records were reviewed for the assessment. Copies of relevant documents are attached in the appendices.

The search did not identify any licences to store dangerous goods including underground fuel storage tanks (USTs) or above ground storage tanks (ASTs) at the site.

3.5 NSW EPA Records

The NSW EPA records available online were reviewed for the assessment. Copies of relevant documents are attached in the appendices. A summary of the relevant information is provided in the following table:

Table 3-2: Summary of NSW EPA Online Records

Source	Details
CLM Act 1997 ¹³	There were no notices for the site under Section 58 of the Act.
NSW EPA List of Contaminated Sites ¹⁴	The site is not listed on the NSW EPA register.
POEO Register ¹⁵	There were no notices for the site on the POEO register.

¹³ <http://www.epa.nsw.gov.au/prclmapp/searchregister.aspx>, visited on 08 June 2016

¹⁴ <http://www.epa.nsw.gov.au/clm/publiclist.htm>, visited on 08 June 2016

¹⁵ <http://www.epa.nsw.gov.au/prpoeoapp/>, visited on 08 June 2016

3.6 Historical Business Directory

The historical business directory indicated the following:

- The site and surrounding area has been associated with commercial industrial land use since at least 1950;
- A farrier/blacksmith was located on the adjacent site to west in 1950;
- A car repair business was located on the adjacent site to the west in 1970; and
- An asbestos removal contractor was located approximately 27m to the south in 1991.

3.7 Summary of Site History Information

A summary of the historical land uses is presented in the table below. The land uses and time periods listed in the table are based on a weight of evidence assessment of the site history documentation and observations made during the site inspection.

Table 3-3: Summary of Historical Land Uses

Lot 4 DP 373141 (2 Railway Street, Lidcombe)

Year(s)	Potential Land Use	Supporting Evidence
1921-1951	Stone masonry	Land Title records indicated that the site was leased to Walter Alfred Dunkley and George William Larcombe, both monumental masons. Aerial photos of this period show buildings on site and what appears to be a work yard.
1951- 2016	Stone Masonry	Aerial photos of this period indicate small buildings and a work yard that are indicative of the title record search which designate various businesses operating as memorial monument manufacturers.

Lots 2 and 3 DP 373141 (3-7 East Street, Lidcombe)

Year(s)	Potential Land Use	Supporting Evidence
1921-1951	Stone Masonry	Land Title records indicated that the site was leased to Walter Alfred Dunkley and George William Larcombe, both monumental masons. Aerial photographs show this area of the site to be vacant, however Lot 4 shows signs of business activity that supports these records.
1951- present	Commercial factory	Land Title records indicate that during this time numerous businesses have owned this site, the longest and most current business is Automation Feeding Devices Pty Ltd which operates as a printing facility.

3.8 Integrity of Site History Information

The majority of the site history information has been obtained from government organisations as outlined above. The veracity of the information from these sources is considered to be relatively high.

4 **PRELIMINARY CONCEPTUAL SITE MODEL (PCSM)**

The AEC identified below are based on a review of the site and site history information outlined previously in this report. The AEC can either be a point source or widespread areas impacted by current or historical activities.

Table 4-1: PCSM

AEC / Extent	PCC	Potential Exposure Pathway and Media	Potential Receptors
<u>Fill Material</u> – Entire Site The site may have been historically filled to achieve existing levels. The fill may have been imported from various sources and can contain elevated concentrations of contaminants.	Heavy metals, TRH, BTEXN, PAHs, OCPs, OPPs, PCB, VOCs and asbestos	<u>Direct Contact</u> – dermal contact; ingestion; and inhalation of dust, vapours and fibres. <u>Media</u> - soil, groundwater and vapour.	<u>Human Receptors</u> – Site occupants; visitors; development and maintenance workers; and off-site occupants. <u>Environmental Receptors</u> – Flora and fauna at the site and immediate surrounds; receiving water bodies; others identified in the above sections.
<u>Fuel Storage Facilities</u> – The business at 6 Railway Street has previous been listed as a Motor Garage & or Engineer in 1970. Leakage and spillage of petroleum hydrocarbons could have resulted in site contamination.	Lead, TRH, BTEXN, PAHs and VOCs	<u>Direct Contact</u> – dermal contact; ingestion; and inhalation of dust and vapours. <u>Media</u> - soil, groundwater and vapour.	<u>Human Receptors</u> – As Above <u>Environmental Receptors</u> – As Above
<u>Hazardous Building Material</u> – The buildings on the site have been constructed prior to 1990's. Hazardous building materials were used for construction purposes during this period. The material can pose a potential contamination source during demolition/development.	Asbestos, lead and PCBs	<u>Direct Contact</u> – dermal contact; ingestion; and inhalation of dust and fibres. <u>Media</u> – soil and air.	<u>Human Receptors</u> – As Above <u>Environmental Receptors</u> – As Above

5 CONCLUSION

EIS consider that the assessment objectives outlined in **Section 1.2** have been addressed.

5.1 Potential for Site Contamination

Based on the scope of work undertaken, EIS provide the following conclusions:

- EIS consider that the AEC identified at the site (see **Section 4**) pose a potential contamination risk. Based on the limited information, EIS assess the risk to be low to moderate; and
- The potential risk to the site receptors cannot be ruled out without undertaking an intrusive (preliminary Stage 2) investigation.

5.2 Recommendations

EIS consider the site can be made suitable for the mixed use development provided the following additional work is undertaken to better assess the risks:

1. Undertake a Stage 2 ESA to meet the sampling density outlined in the NSW EPA Contaminated Sites Sampling Design Guidelines (1995¹⁶);
2. Undertake a waste classification assessment for the off-site disposal of material excavated for the proposed development; and
3. Undertake an ASS assessment to establish if an ASS management plan (ASSMP) is required for the proposed development.

¹⁶ NSW EPA, (1995), *Contaminated Sites Sampling Design Guidelines*. (Referred to as EPA Sampling Design Guidelines 1995)

6 LIMITATIONS

Table 6-1: Report Limitations

-
- EIS accepts no responsibility for any unidentified contamination issues at the site. Any unexpected problems/subsurface features that may be encountered during development works should be inspected by an environmental consultant as soon as possible;
 - Previous use of this site may have involved excavation for the foundations of buildings, services, and similar facilities. In addition, unrecorded excavation and burial of material may have occurred on the site. Backfilling of excavations could have been undertaken with potentially contaminated material that may be discovered in discrete, isolated locations across the site during construction work;
 - This report has been prepared based on site conditions which existed at the time of the investigation; scope of work and limitation outlined in the EIS proposal; and terms of contract between EIS and the client (as applicable);
 - The conclusions presented in this report are based on investigation of conditions at specific locations, chosen to be as representative as possible under the given circumstances, visual observations of the site and immediate surrounds and documents reviewed as described in the report;
 - The preparation of this report have been undertaken in accordance with accepted practice for environmental consultants, with reference to applicable environmental regulatory authority and industry standards, guidelines and the assessment criteria outlined in the report;
 - Where information has been provided by third parties, EIS has not undertaken any verification process, except where specifically stated in the report;
 - EIS has not undertaken any assessment of off-site areas that may be potential contamination sources or may have been impacted by site contamination, except where specifically stated in the report;
 - EIS accept no responsibility for potentially asbestos containing materials that may exist at the site. These materials may be associated with demolition of pre-1990 constructed buildings or fill material at the site;
 - EIS have not and will not make any determination regarding finances associated with the site;
 - Additional investigation work may be required in the event of changes to the proposed development or landuse. EIS should be contacted immediately in such circumstances;
 - Material considered to be suitable from a geotechnical point of view may be unsatisfactory from a soil contamination viewpoint, and vice versa; and
 - This report has been prepared for the particular project described and no responsibility is accepted for the use of any part of this report in any other context or for any other purpose.
-

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IMPORTANT INFORMATION ABOUT THIS REPORT

These notes have been prepared by EIS to assist with the assessment and interpretation of this report.

The Report is based on a Unique Set of Project Specific Factors:

This report has been prepared in response to specific project requirements as stated in the EIS proposal document which may have been limited by instructions from the client. This report should be reviewed, and if necessary, revised if any of the following occur:

- The proposed land use is altered;
- The defined subject site is increased or sub-divided;
- The proposed development details including size, configuration, location, orientation of the structures or landscaped areas are modified;
- The proposed development levels are altered, eg addition of basement levels; or
- Ownership of the site changes.

EIS/J&K will not accept any responsibility whatsoever for situations where one or more of the above factors have changed since completion of the assessment. If the subject site is sold, ownership of the assessment report should be transferred by EIS to the new site owners who will be informed of the conditions and limitations under which the assessment was undertaken. No person should apply an assessment for any purpose other than that originally intended without first conferring with the consultant.

Changes in Subsurface Conditions:

Subsurface conditions are influenced by natural geological and hydrogeological process and human activities. Groundwater conditions are likely to vary over time with changes in climatic conditions and human activities within the catchment (e.g. water extraction for irrigation or industrial uses, subsurface waste water disposal, construction related dewatering). Soil and groundwater contaminant concentrations may also vary over time through contaminant migration, natural attenuation of organic contaminants, ongoing contaminating activities and placement or removal of fill material. The conclusions of an assessment report may have been affected by the above factors if a significant period of time has elapsed prior to commencement of the proposed development.

This Report is based on Professional Interpretations of Factual Data:

Site assessments identify actual subsurface conditions at the actual sampling locations at the time of the investigation. Data obtained from the sampling and subsequent laboratory analyses, available site history information and published regional information is interpreted by geologists, engineers or environmental scientists and opinions are drawn about the overall subsurface conditions, the nature and extent of contamination, the likely impact on the proposed development and appropriate remediation measures.

Actual conditions may differ from those inferred, because no professional, no matter how qualified, and no subsurface exploration program, no matter how comprehensive, can reveal what is hidden by earth, rock and time. The actual interface between materials may be far more gradual or abrupt than an assessment indicates. Actual conditions in areas not sampled may differ from predictions. Nothing can be done to prevent the unanticipated, but steps can be taken to help minimise the impact. For this reason, site owners should retain the services of their consultants throughout the development stage of the project, to identify variances, conduct additional tests which may be needed, and to recommend solutions to problems encountered on site.

Assessment Limitations:

Although information provided by a site assessment can reduce exposure to the risk of the presence of contamination, no environmental site assessment can eliminate the risk. Even a rigorous professional assessment may not detect all contamination on a site. Contaminants may be present in areas that were not surveyed or sampled, or may migrate to areas which showed no signs of contamination when sampled. Contaminant analysis cannot possibly cover every type of contaminant which may occur; only the most likely contaminants are screened.

Misinterpretation of Site Assessments by Design Professionals:

Costly problems can occur when other design professionals develop plans based on misinterpretation of an assessment report. To minimise problems associated with misinterpretations, the environmental consultant should be retained to work with appropriate professionals to explain relevant findings and to review the adequacy of plans and specifications relevant to contamination issues.

Logs Should not be Separated from the Assessment Report:

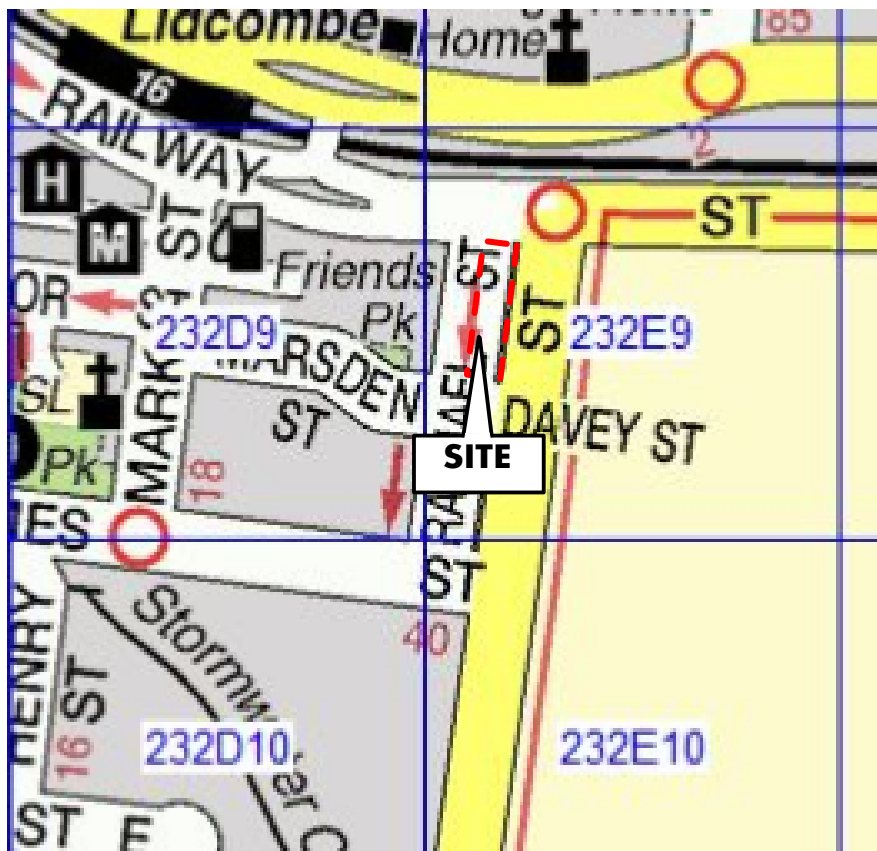
Borehole and test pit logs are prepared by environmental scientists, engineers or geologists based upon interpretation of field conditions and laboratory evaluation of field samples. Logs are normally provided in our reports and these should not be re-drawn for inclusion in site remediation or other design drawings, as subtle but significant drafting errors or omissions may occur in the transfer process. Photographic reproduction can eliminate this problem, however contractors can still misinterpret the logs during bid preparation if separated from the text of the assessment. If this occurs, delays, disputes and unanticipated costs may result. In all cases it is necessary to refer to the rest of the report to obtain a proper understanding of the assessment. Please note that logs with the 'Environmental Log' header are not suitable for geotechnical purposes as they have not been peer reviewed by a Senior Geotechnical Engineer.

To reduce the likelihood of borehole and test pit log misinterpretation, the complete assessment should be available to persons or organisations involved in the project, such as contractors, for their use. Denial of such access and disclaiming responsibility for the accuracy of subsurface information does not insulate an owner from the attendant liability. It is critical that the site owner provides all available site information to persons and organisations such as contractors.

Read Responsibility Clauses Closely:

Because an environmental site assessment is based extensively on judgement and opinion, it is necessarily less exact than other disciplines. This situation has resulted in wholly unwarranted claims being lodged against consultants. To help prevent this problem, model clauses have been developed for use in written transmittals. These are definitive clauses designed to indicate consultant responsibility. Their use helps all parties involved recognise individual responsibilities and formulate appropriate action. Some of these definitive clauses are likely to appear in the environmental site assessment, and you are encouraged to read them closely. Your consultant will be pleased to give full and frank answers to any questions.

REPORT FIGURES



NOTES:
Figure has been recreated from UBD on disc (version 7.1)

Figure is not to scale. UBD Map ref: 232E9

This plan should be read in conjunction with
the EIS report.

EIS
ENVIRONMENTAL
INVESTIGATION
SERVICES
www.jkgroup.net.au

SITE LOCATION PLAN

2 Railway Street & 3-7 East Street
Lidcombe NSW.

PROJECT ID: E29427K

F1

REPORT APPENDICES

Appendix A: Site Information

**Selected Site Photos of 2 Railway Street and 3-7 East Street
Lidcombe, NSW.**



Figure 1 Rear loading dock of East Street uilding showing potential underground storage tank location.



Figure 2 Rear loading dock area of East Street building.



Figure 3 Drums of liquid stored at rear loading dock.



Figure 4 Rear loading dock of East Street building, drums from Fig 3 seen on right hand side against the wall.



Figure 5 East side of East street building looking north.



Figure 6 Rear workshop area of Railway Street building.



Figure 7 Western side of Railway Street site, looking east.

Selected Services Plans

Reading Ausgrid Plans

COMN0119

1 Property Lines

"property line" (PL), sometimes referred to as **"building line" (BL)**, is the standard dimensioning reference point on all Ausgrid plans and represents property boundaries.

Typically the PL is the boundary between private property and local council's footpath area or nature reserve. Most residential fences and office blocks are erected along the PL.

"kerb line" (KL) is less frequently referred to on Ausgrid plans, and where used will be identified clearly as KL.

Numbers listed within property boundaries should correspond to recognised "street numbers". (refer to figure 1)



Figure 1

2 Datum References

"datum references" identify distances (in metres) from significant features (such as corners of property boundaries) to reference points such as Ausgrid assets (eg: **"conduits"**, **"cables"**, **"joints"**). (refer to figure 2)

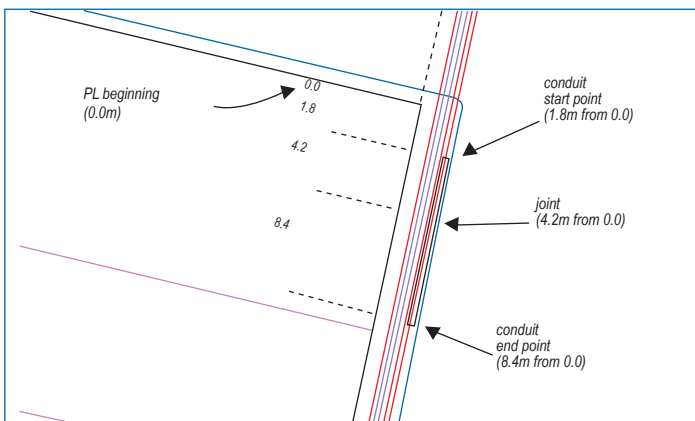


Figure 2

3 Cross Sections

"cross sections" displayed on Ausgrid plans detail information relating to the relative position (ie: distance from the **"property line"**, and the depth of **"cover"**) of Ausgrid assets.

"cover" is a term used to refer to the depth of cables underground.

A **"cross section"** leader line will be drawn indicating the location of the displayed **"cable"** or **"conduit"** information on Ausgrid plans.

The distance from **"property line"** (in metres) and depth of **"cover"** (in metres) references are displayed as; ie: 0.6 metres from PL and 0.5 metres underground).

Where distance and cover are not recorded, they will be clearly marked as **"NR"**.

NOTE: Distance and cover where indicated may be different to the actual position of the cables (eg: fill may have been placed at site that has changed the ground level).

"PL" distance shown in cross sections is an indicative measure to the centre of the trench allocation from the adjacent property line.

On some plans the **"cross sections"** may also be shown with a specific number (eg: HR1). This number will match with a cross-section detail found in the border of the plot or on a separate plot page. (refer to figures 3 and 4)

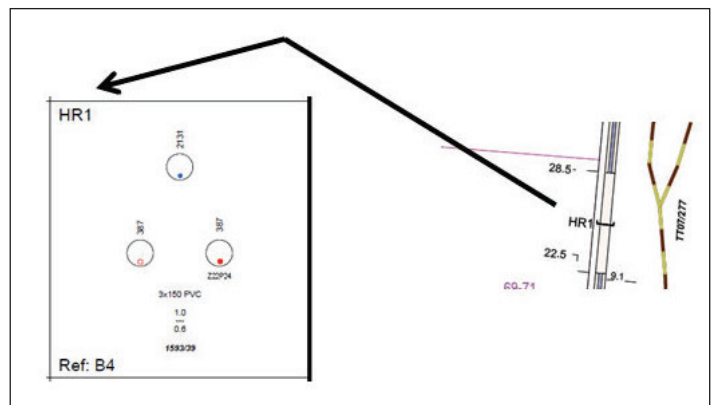


Figure 3

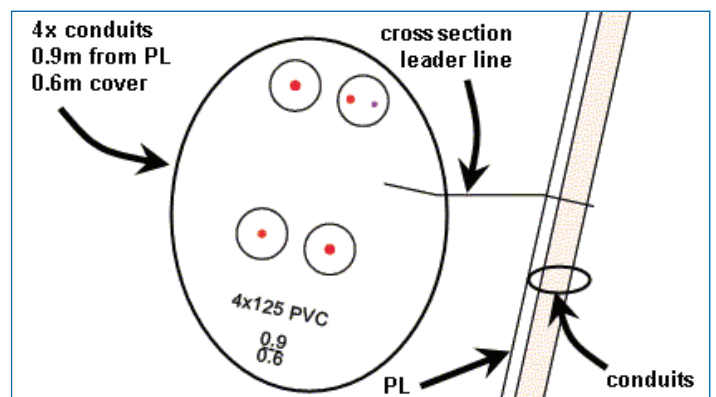


Figure 4

4 Cable Joints and Joint Reports

"cable joints" (numbered individually) and "joint reports" (attached to Ausgrid plans) can provide information relating to the relative position of Ausgrid assets, distance from the "property line" (in metres), and the depth of "cover" (in metres). (refer to figures 5 and 6)

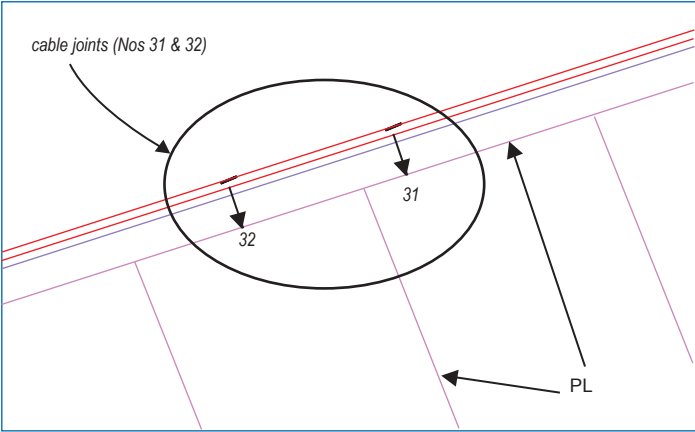


Figure 5

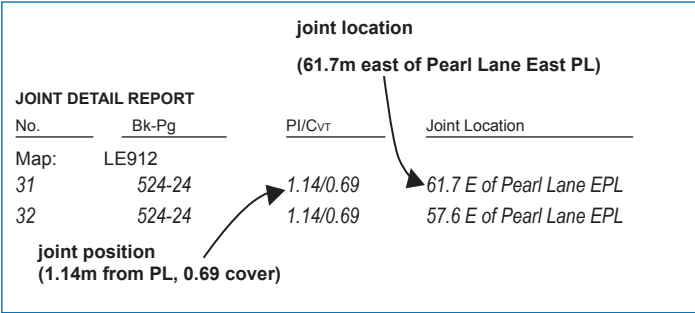


Figure 6

5 Cross Section Detail Boxes

"cross section" detail boxes on the sides of an Ausgrid plan are used when there is insufficient room to display "cable" and/or "conduit" information on the Ausgrid plan.

Ausgrid plans (refer to figure 7) are bordered by numeric identifiers along the top and bottom borders and alpha identifiers along the side borders.

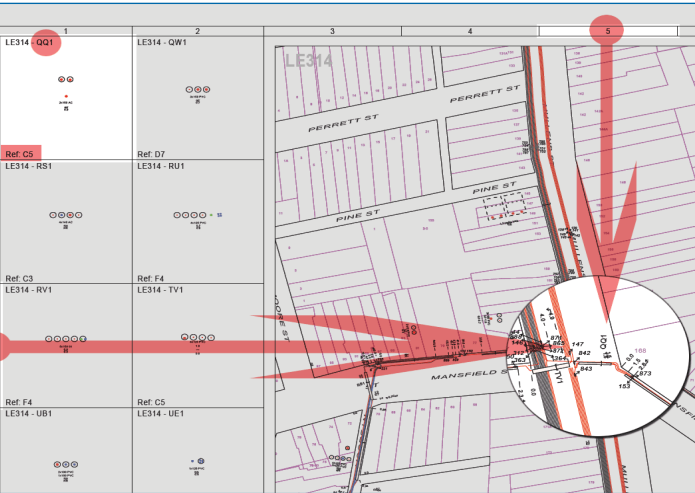


Figure 7

A "cross section" leader line and annotation is drawn on the Ausgrid plan for a reference to "cable" and/or "conduit" information in the "cross section" detail boxes.

6 Pits

Underground "pits" are numbered on Ausgrid plans, positioned relative to the "property line" (PL), and can be found on either the footpath (nature strip) or the road (see figure 8).

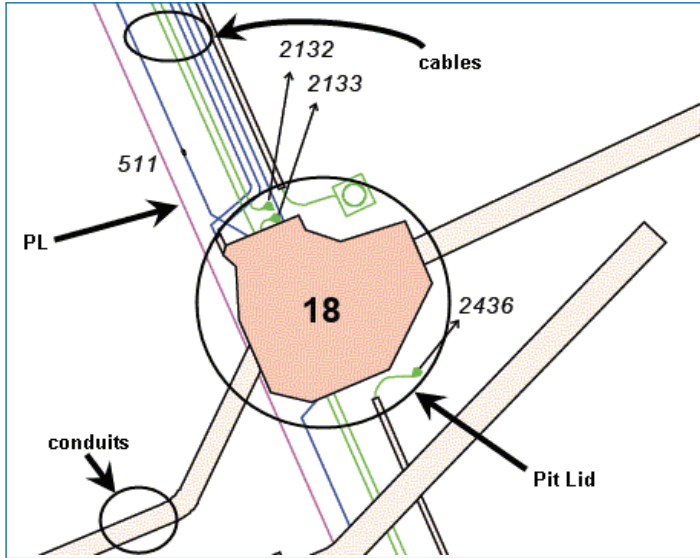


Figure 8

7 Proposal Areas

There are areas where underground work may have been issued for construction by Ausgrid, but details are not yet completely displayed on Ausgrid plans. In such cases a shaded "proposal area" is displayed on the Ausgrid plan, indicating underground work may have commenced in the vicinity but is not yet complete.

In some instances cables and other assets within the shaded "proposal area" will be shown in a bright magenta colour, indicating that the proposed new work displayed within the shaded area is based on initial planning documentation. (refer to figure 9)

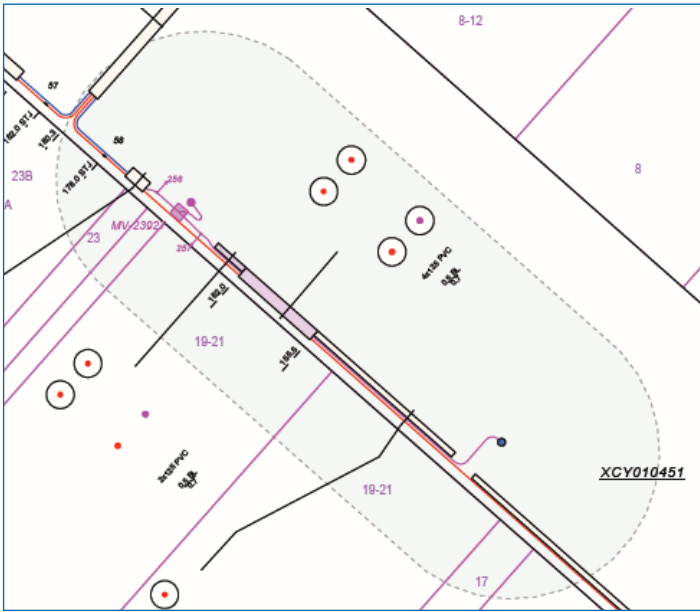


Figure 9

In other instances the shaded “**proposal area**” itself may be shown as a **blue** colour, indicating that the new work displayed within the shaded area on the Ausgrid plan is yet to include details regarding final depths and dimensioning. (refer to figure 10)

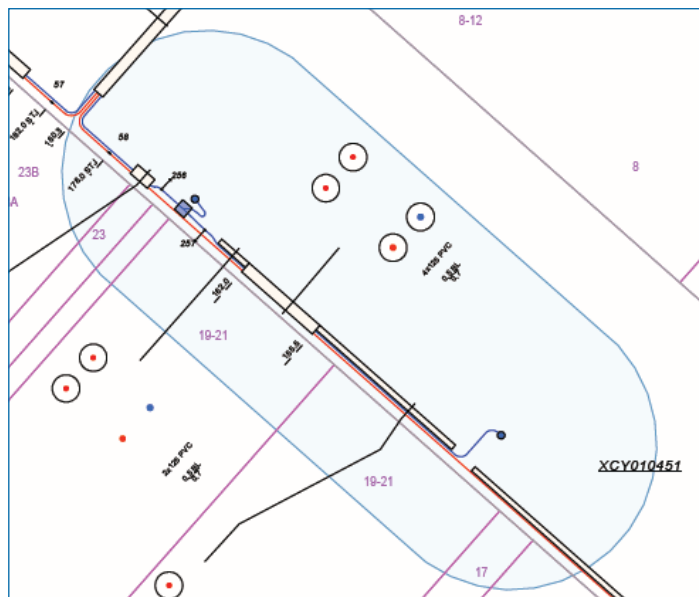


Figure 10

NOTE: In cases where these shaded “**proposal areas**” are displayed on Ausgrid plans.

“Ausgrid’s design plans showing the proposed position of its underground cables, overhead lines and structures have been prepared solely for Ausgrid’s own planning use. They show the proposed position of such underground cables, overhead lines and structures as proposed at the time of planning and have not necessarily been corrected to take into account any changes to road widths, road levels, fences and buildings subsequent to proposed installation.

Actual installations may vary from proposed installations as it may be necessary to take account of unforeseen above ground or subterranean constructions. Therefore, Ausgrid does not hold out that the design plans show more than the proposed presence or absence of its underground cables, overhead lines and structures in the street and will accept no liability for inaccuracies in the information shown on such design plans from any cause whatsoever.”

Any further information regarding information displayed for “**proposal areas**” can be obtained by contacting the Ausgrid DBYD office at the number indicated on the response to your DBYD enquiry for further information.

8 Ausgrid (ISG) Map Grid

The pale grey line indicates the **1:1000 Ausgrid (ISG) map grid border**.

The pale grey annotation located in the corners of the Ausgrid plan window, indicates the 1:1000 Ausgrid (ISG) map grid reference.

The **1:1000 Ausgrid (ISG) map grid border and reference** on Ausgrid plans should be used when reading the “**joint report**” (see part 4 of this document for more detail) to accurately locate underground cables.

The buffer area shown on the plan should relate to the area requested on the original Dial Before you Dig request.

The **grid index box** can be used for reference where necessary (located in the bottom right corner of the Ausgrid plans), and will also indicate the buffer area shown on the plan.

9 Ausgrid “Distribution” and “Transmission” Plans

The Ausgrid plans supplied may identify both “**distribution**” and “**transmission**” voltage assets for the area defined in the DBYD request. (refer to figure 11)

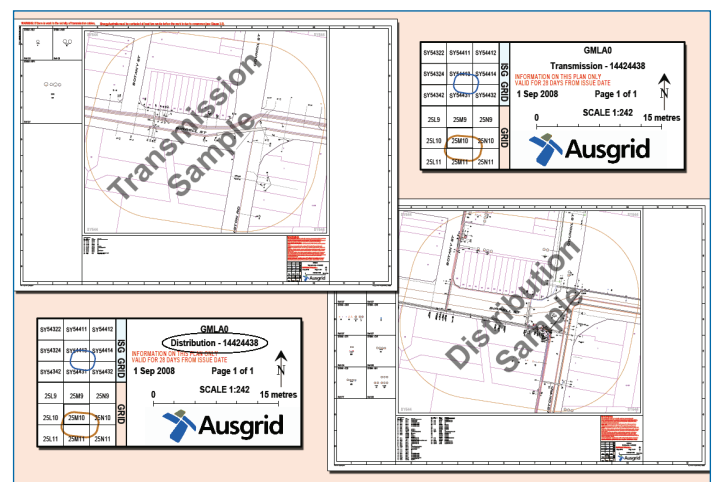


Figure 11

In the Sydney region, the Ausgrid plans are separately labelled as “**Distribution – nnnnnnn**” and “**Transmission – nnnnnnn**”, where “**nnnnnnn**” refers to the DBYD sequence number quoted.

In the Hunter region, the Ausgrid plans show combined “**distribution**” and “**transmission**” voltage assets, and are clearly labelled as “**Distr + Trans – nnnnnnn**” where “**nnnnnnn**” refers to the DBYD sequence number.

In the Hunter region, some DBYD requests are covered by PENGUIN grid references. In such cases, the Ausgrid Plans show the grid quoted with a cross-reference to a corresponding Ausgrid (ISG) map grid (eg: PENGUIN 136B3 – DP711, where DP711 is the Ausgrid (ISG) grid) to optimise the legibility of plans due to PENGUIN grid scale.

Some Hunter plans may have transmission cables in the area, when these cables are present there will be a warning printed at the top of the plan supplied:

WARNING: If there is work in the vicinity of transmission cables, Ausgrid must be contacted at least two weeks before the work is due to commence.

10 “Shifting Land Base” on Ausgrid Distribution and Transmission Plans

In some instances, the plans supplied may indicate road or property outlines that appear to have shifted in relation to the Ausgrid assets displayed. (refer to figure 12)

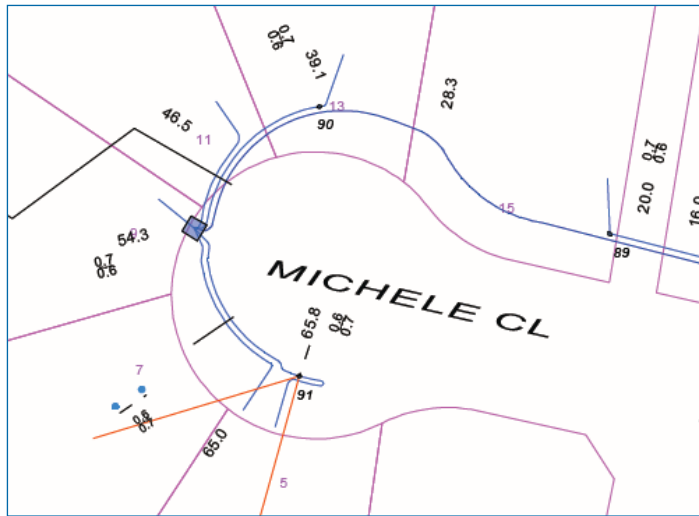


Figure 12

In such instances, always refer to the “**property line**” (in metres) and depth of “**cover**” (in metres) references displayed on the nearest relevant “**cross sections**” to obtain Ausgrid asset location information (see Reading Ausgrid Plans, clause 3, Cross Sections for more detail).

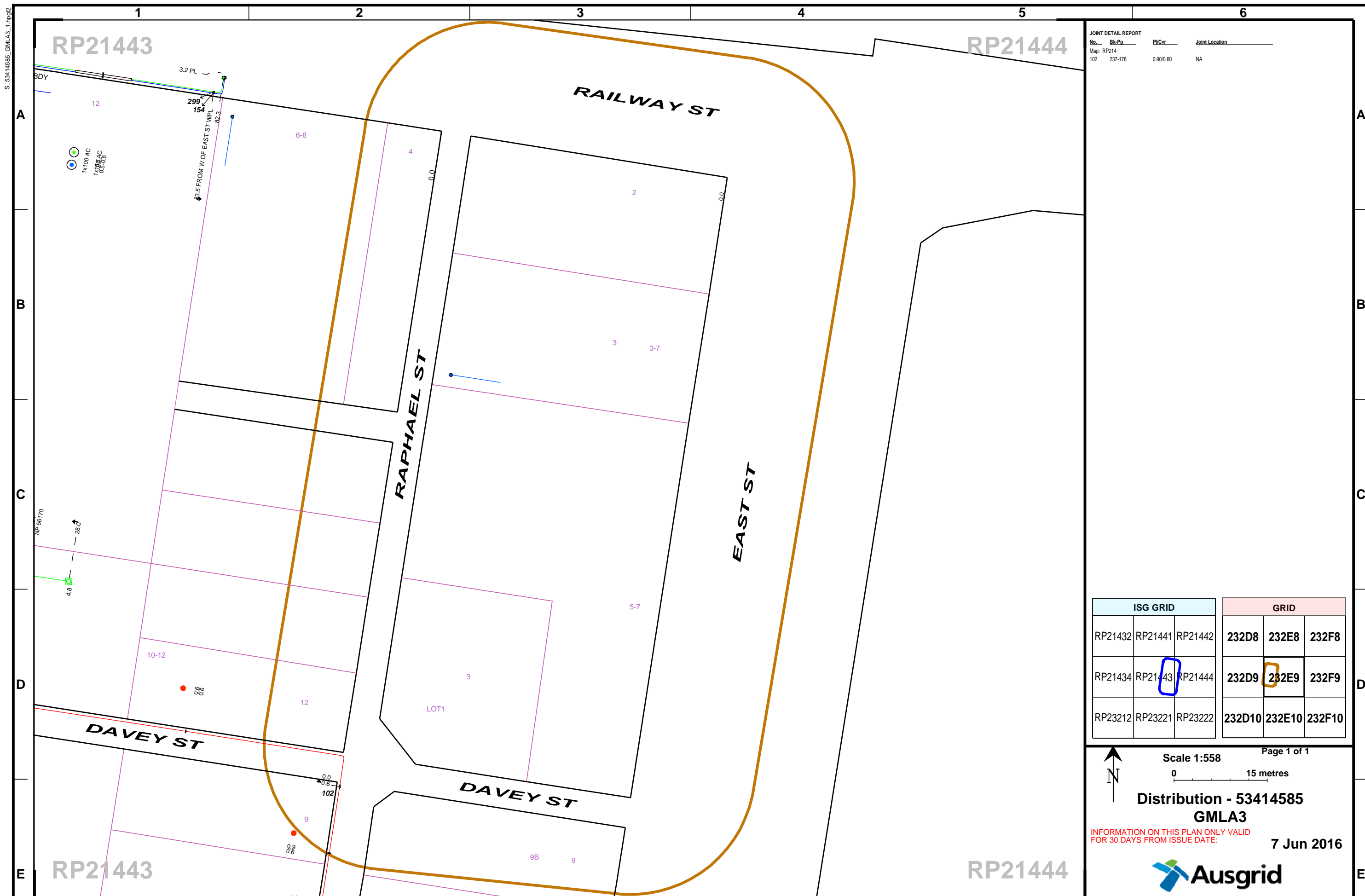
11 “Underground Earthing Infrastructure”

In some instances, the plans supplied may also indicate the presence of underground earthing infrastructure associated with underground and/or overhead Ausgrid assets.

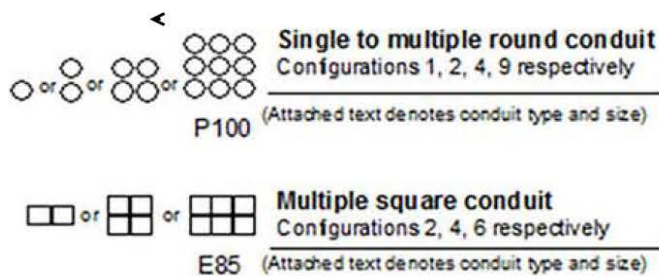
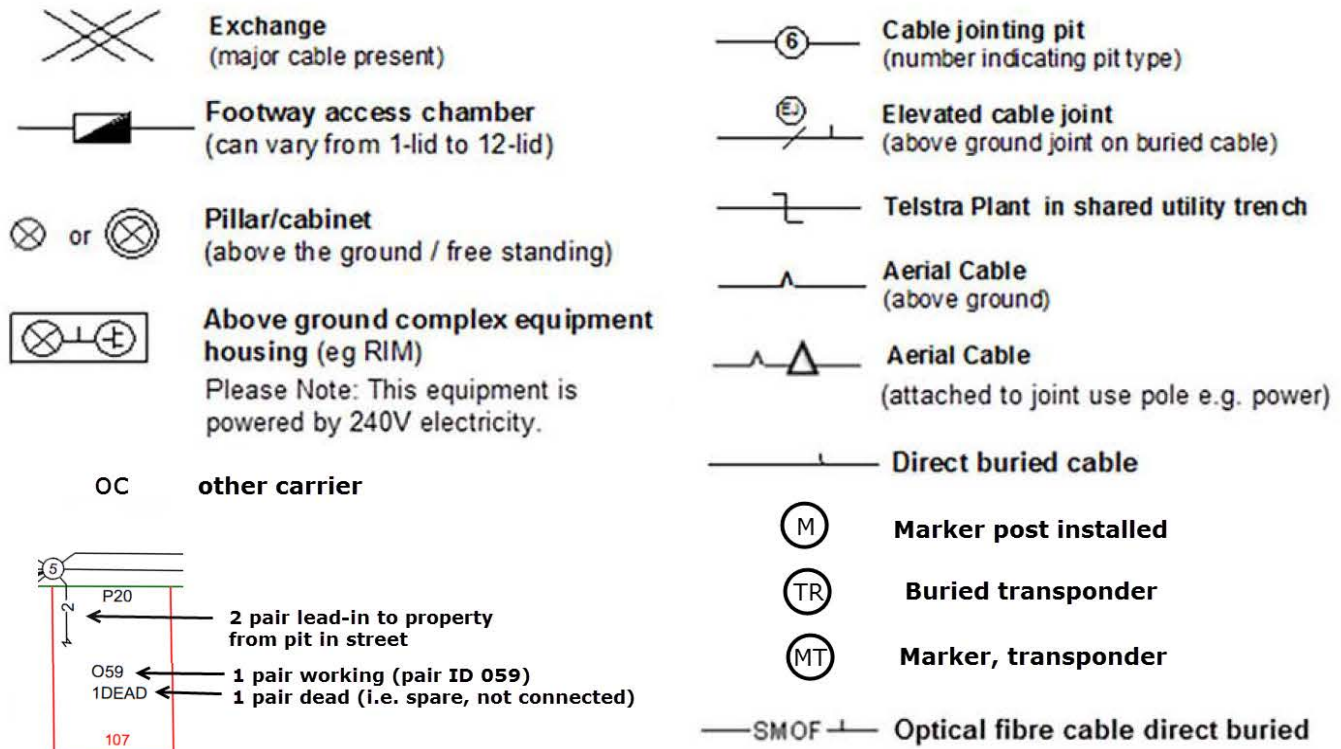
The “Earth Point” symbol (refer to figure 13) will be shown on plans to minimize risk of disturbance or damage to any Ausgrid underground earthing infrastructure in the vicinity.



Figure 13



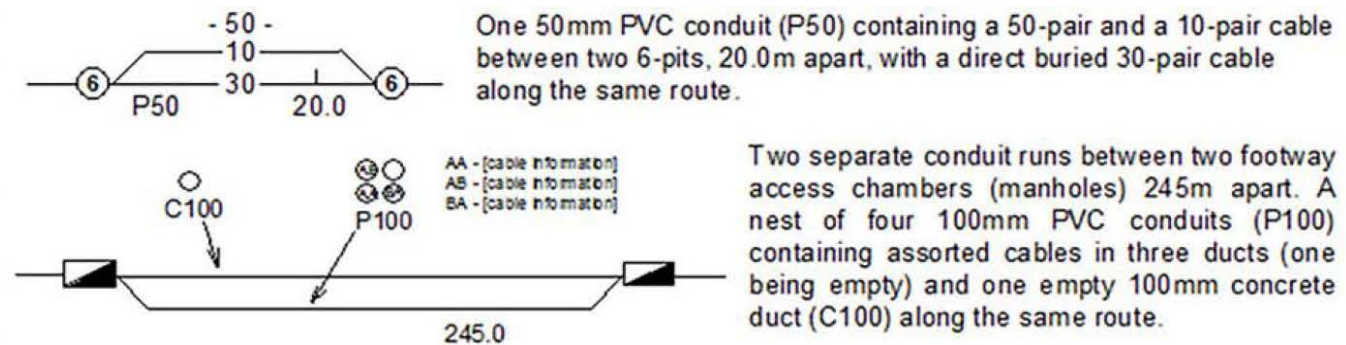
WARNING : Ausgrid's plans show the position of assets at the time of installation and may not account for subsequent changes to road alignments, fences or buildings. The plans show no more than the presence or absence of Ausgrid assets in the street. Persons working near electricity networks must exercise care and will be held responsible for any damage caused. You must excavate by hand or use vacuum excavation to establish the location of Ausgrid underground cables and associated assets. Underground: Working near a cable may result in electric shock even if no contact is made. Any work in the vicinity of any cable should only be performed using safe work methods developed in accordance with the recommendations included in WorkCover Code of Practice for Excavation and WorkCover Guide for Work Near Underground Assets as well as recommendations of Ausgrid's Network Standard NS156. Overhead: Do not excavate near poles or towers until the stability of the foundation has been assessed by Ausgrid. Cables or earth conductors may be present close to substations, poles or towers. Workers must maintain safe approach distances and follow applicable WorkCover Codes of Practice. NOTE: 1. You must keep Ausgrid plans on site during excavation works. If the people actually performing the excavation works do not know how to read and interpret Ausgrid's plans, then the work must be directed by a person who knows how to read and interpret the plans. 2. This information includes data from the NSW Digital Cadastral Database by Land and Property Information (c) 2016, used under Creative Commons licence version 4.0.



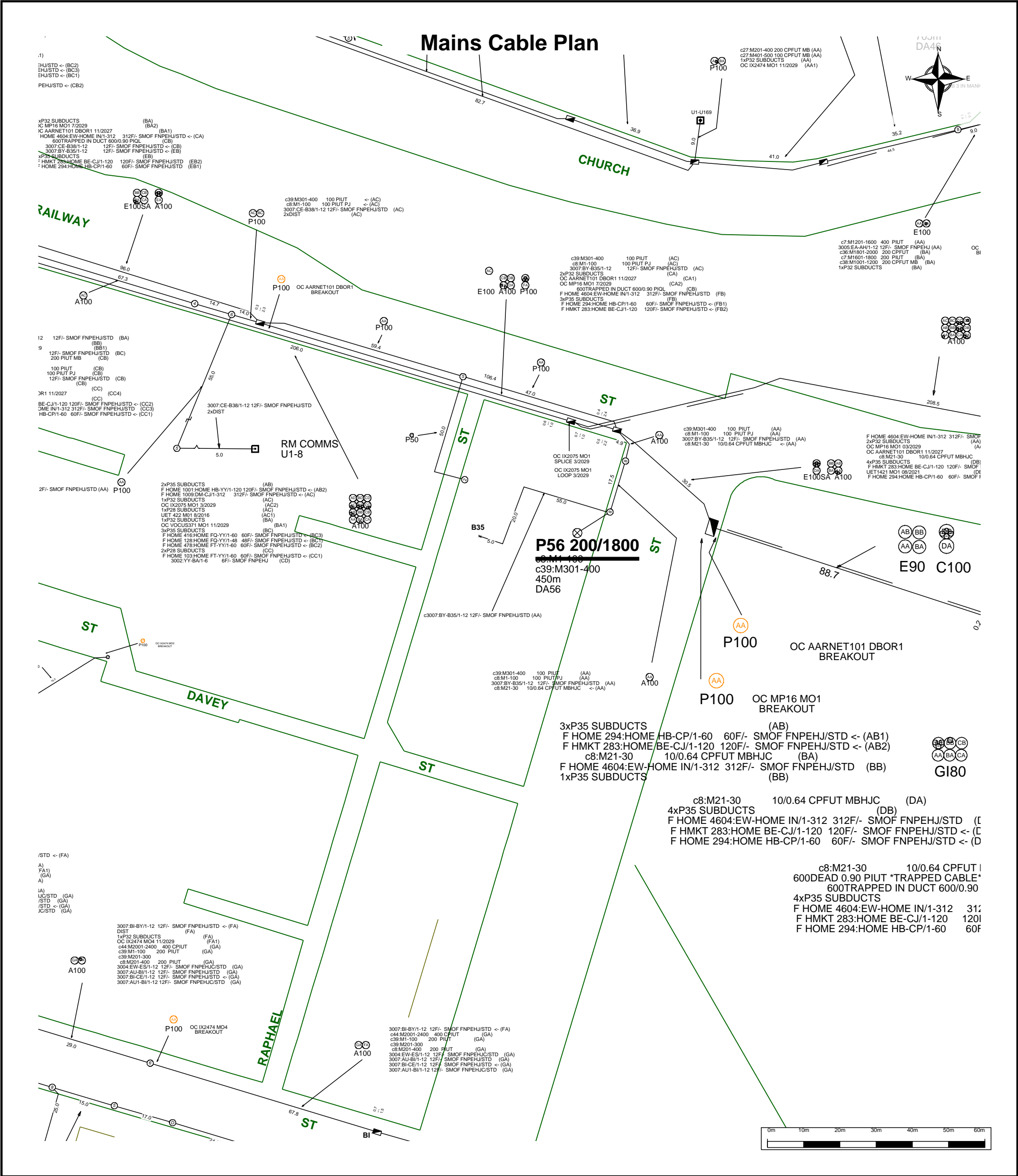
Some examples of conduit type and size:
A - Asbestos cement, P - PVC / plastic, C - Concrete, GI - Galvanised iron, E - Earthenware.
Conduit sizes *nominally* range from 20mm to 100mm.


P50	50mm PVC conduit
P100	100mm PVC conduit
A100	100mm asbestos cement conduit
E 85	85mm square earthenware conduit

Some examples of how to read Telstra plans:



WARNING: Telstra plans and location information conform to Quality Level 'D' of the Australian Standard AS 5488 - Classification of Subsurface Utility Information. As such, Telstra supplied location information is indicative only. Spatial accuracy is not applicable to Quality Level D. Refer to AS 5488 for further details. Telstra does not warrant or hold out that its plans are accurate and accepts no responsibility for any inaccuracy shown on the plans. FURTHER ON SITE INVESTIGATION IS REQUIRED TO VALIDATE THE EXACT LOCATION OF TELSTRA PLANT PRIOR TO COMMENCING CONSTRUCTION WORK. A plant location service is an essential part of the process to validate the exact location of Telstra assets and to ensure the asset is protected during construction works. The exact position of Telstra assets can only be validated by physically exposing it. Telstra will seek compensation for damages caused to its property and losses caused to Telstra and its customers.



	For all Telstra DBYD plan enquiries - email - Telstra.Plans@team.telstra.com For urgent onsite contact only - ph 1800 653 935 (bus hrs)	Sequence Number: 53414586
	TELSTRA CORPORATION LIMITED A.C.N. 051 775 556 Generated On 07/06/2016 15:39:21	CAUTION: Fibre optic and/ or major network present in plot area. Please read the Duty of Care and contact Telstra Plan Services should you require any assistance.

WARNING - Due to the nature of Telstra underground plant and the age of some cables and records, it is impossible to ascertain the precise location of all Telstra plant from Telstra's plans. The accuracy and/or completeness of the information supplied can not be guaranteed as property boundaries, depths and other natural landscape features may change over time, and accordingly the plans are indicative only. Telstra does not warrant or hold out that its plans are accurate and accepts no responsibility for any inaccuracy shown on the plans.


It is your responsibility to locate Telstra's underground plant by careful hand pot-holing prior to any excavation in the vicinity and to exercise due care during that excavation.

Please read and understand the information supplied in the duty of care statement attached with the Telstra plans. TELSTRA WILL SEEK COMPENSATION FOR LOSS CAUSED BY DAMAGE TO ITS PLANT.

Telstra plans and information supplied are valid for 60 days from the date of issue. If this timeframe has elapsed, please reapply for plans.



To: Mr Adam Smith
Phone: 0424256951
Fax: Not Supplied
Email: Asmith@jkgroup.net.au

Dial before you dig		 DIAL BEFORE YOU DIG www.1100.com.au Some impact. No onsite action required.
Job #:	10798406	
Sequence #	53414591	
Issue Date:	06/07/2016	
Location:	Railway Street,Lidcombe,NSW-2141	

Location of Underground Telecommunications

We thank you for your enquiry. In relation to your enquiry at the above address:

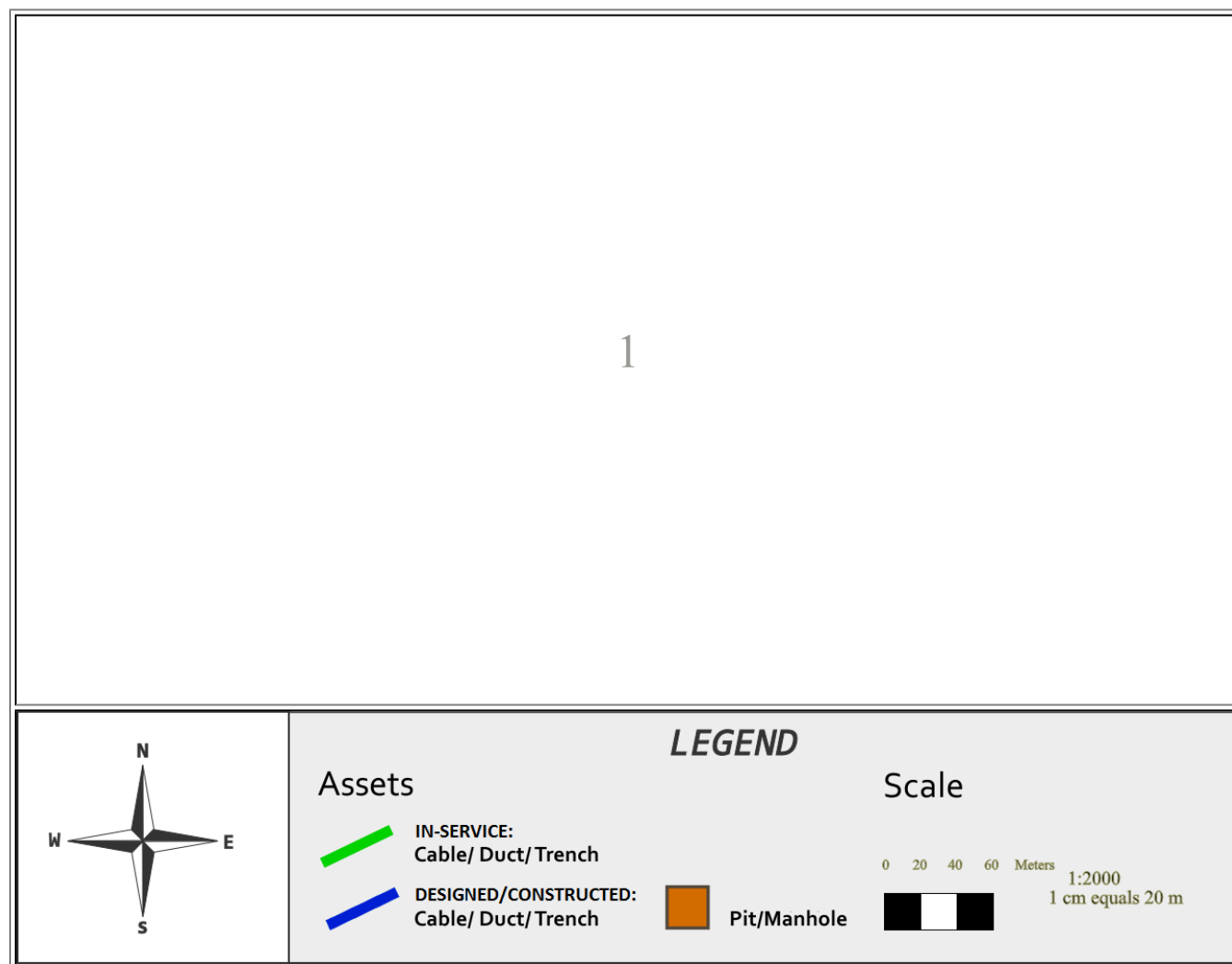
- **nbn's** records indicate that there **MAY BE** underground fibre optic/telecommunications facility/facilities (owned or controlled by **nbn**) in the vicinity of the location identified above ("Location").
- **nbn** indicative plan/s are attached with this notice ("Indicative Plans").
- The Indicative Plan/s show general depth and alignment information only and are not an exact scale or accurate depiction of the location, depth and alignment of the fibre optic/telecommunications facilities shown on the Indicative Plan/s.
- In particular, the fact that the Indicative Plans show that a facility is installed in a straight line, or at uniform depth along its length cannot be relied upon as evidence that the facility is, in fact, installed in a straight line or at uniform depth.
- You should read the Indicative Plans in conjunction with this notice and in particular, the notes below.
- The information contained in the Indicative Plans is valid for 28 days from the date of issue set out above. You are expected to make your own inquiries and perform your own investigations (including engaging appropriately qualified plant locators at your cost to locate **nbn**™ telecommunications facilities during any activities you carry out on site).

We thank you for your enquiry and appreciate your continued use of the Dial Before You Dig Service. If you are planning to excavate or require further information, please contact **nbn** on 1800 626 762. For any enquiries related to moving assets or Planning and Design activities, please email **nbn** at RelocationWorks@nbnco.com.au.

Notes:

1. You are now aware that there are items of telecommunications and/or power facilities in the vicinity of the above property that could be damaged as a result activities carried out (or proposed to be carried out) by you in the vicinity of the Location.
2. You should have regard to section 474.6 and 474.7 of the *Criminal Code Act 1995* (Cth) which deals with the consequences of interfering or tampering with a telecommunications facility. Only persons authorised by **nbn** can interact with **nbn's** network facilities.
3. Any information provided is valid only for **28 days** from the date of issue set out above.

Indicative Plans





Referral Conditions

The following are conditions on which **nbn** provides you with the Indicative Plans. By receiving, accepting or relying upon the plans (including the Indicative Plans), you are agreeing to these conditions. These conditions are in addition to (and not in replacement of) any duties and obligations you have under applicable law.

1. **nbn** does not accept any responsibility for any inaccuracies of its plans including the Indicative Plans. You are expected to make your own inquiries and perform your own investigations (including engaging appropriately qualified plant locators at your cost to locate **nbn** telecommunications facilities during any activities you carry out on site).
2. You should not assume that **nbn** cables and assets follow straight lines or are installed at uniformed depths along their lengths, even if they are indicated on plans provided to you. Careful onsite investigations are essential to locate the exact position of cables.
3. In carrying out any works in the vicinity of **nbn** facilities, you must maintain the following minimum clearances:
 - 300mm when laying assets inline, horizontally or vertically
 - 500mm when operating vibrating equipment, for example: jackhammers or vibrating plates;and
 - 1000mm when operating mechanical excavators.
 - Adherence to clearances as directed by other asset owner's instructions
4. You are aware that there are inherent risks and dangers associated with carrying out work in the vicinity of underground facilities (such as **nbn** fibre optic, copper and coaxial cables, to **nbn** assets). Damage to underground electric cables may result in:



- Injury from electric shock or severe burns, with the possibility of death.
 - Interruption of the electricity supply to wide areas of the city.
 - Damage to your excavating plant.
 - Responsibility for the cost of repairs.
5. You must take all reasonable precautions to avoid damaging **nbn** facilities. These precautions may include ,but not limited to, the following:
- All excavation sites should be examined for underground cables by careful hand excavation. Cable cover slabs if present must not be disturbed. Hand excavation needs to be undertaken with extreme care to minimise the likelihood of damage to the cable, for example, the blades of hand equipment should be aligned parallel to the line of the cable rather than digging across the cable.
 - If any undisclosed underground cables are located, notify **nbn** immediately.
 - All personnel must be properly briefed, particularly those associated with the use of earth-moving equipment, trenching, boring and pneumatic equipment.
 - The safety of the public and other workers must be ensured.
 - All excavations must be undertaken in accordance with all relevant legislation and regulations.
6. You will be responsible for all damage to **nbn** facilities that are connected whether directly, or indirectly with work you carry out (or work that is carried out for you or on your behalf) at the Location. This will include,without limitation, all losses expenses incurred by **nbn** as a result of any such damage.
7. You must immediately report any damage to **nbn**TMnetwork that you are/become aware of. Notification may be by telephone - 1800 626 762.
8. Except to the extent that liability may not be capable of lawful exclusion, **nbn** and its servants and agents and the related bodies corporate of **nbn** and their servants and agents shall be under no liability whatsoever to any person for any loss or damage (including indirect or consequential loss or damage) however caused (including, without limitation, breach of contract negligence and/or breach of statute) which may be suffered or incurred from or in connection with this information sheet or any Plans attached hereto. Except as expressly provided to the contrary in this information sheet or the attached Indicative Plans, all terms, conditions, warranties, undertakings or representations (whether expressed or implied) are excluded to the fullest extent permitted by law.

All works undertaken shall be in accordance with all relevant legislations, acts and regulations applicable to the particular state or territory of the Location. The following table lists all relevant documents that shall be considered and adhered to.

State/Territory	Documents
National	Work Health and Safety Act 2011
	Work Health and Safety Regulations 2011
	Safe Work Australia - Working in the Vicinity of Overhead and Underground Electric Lines (Draft)
	Occupational Health and Safety Act 1991
NSW	Electricity Supply Act 1995



	Work Cover NSW - Work Near Underground Assets Guide
	Work Cover NSW - Excavation Work: Code of Practice
VIC	Electricity Safety Act 1998
	Electricity Safety (Network Asset) Regulations 1999
QLD	Electrical Safety Act 2002
	Code of Practice for Working Near Exposed Live Parts
SA	Electricity Act 1996
TAS	Tasmanian Electricity Supply Industry Act 1995
WA	Electricity Act 1945
	Electricity Regulations 1947
NT	Electricity Reform Act 2005
	Electricity Reform (Safety and Technical) Regulations 2005
ACT	Electricity Act 1971

Thank You,

Network Operations Centre - Assurance

Date: 06/07/2016

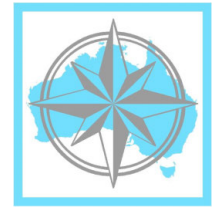
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Appendix B: Site History Information

LotSearch Report

Lotsearch



Environmental Risk and Planning Report

2 Railway Street and 3-7 East Street, Lidcombe, NSW 2141

Report Buffer: 1000m

Report Date: 24 May 2016 10:59:07

Disclaimer:

The purpose of this report is to provide an overview of some of the site history, environmental risk and planning information available, affecting an individual address or geographical area in which the property is located. It is not a substitute for an on-site inspection or review of other available reports and records. It is not intended to be, and should not be taken to be, a rating or assessment of the desirability or market value of the property or its features. You should obtain independent advice before you make any decision based on the information within the report. The detailed terms applicable to use of this report are set out at the end of this report.

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Location Confidences

Where Lotsearch has had to georeference features from supplied addresses, a location confidence has been assigned to the data record. This indicates a confidence to the positional accuracy of the feature. Where applicable, a code is given under the field heading LC. These codes lookup to the following location confidences:

LC Code	Location Confidence
1	Geocoded to the site location / premise or part of site
2	Geocoded with the confidence of the general/wider area
3	Geocoded to the road or rail
4	Geocoded to the road intersection
5	Feature is a buffered point
6	Land adjacent to Geocoded Site
7	Geocoded to a network of features

Dataset Listing

Datasets contained within this report, detailing their source and data currency:

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	No. Features Onsite	No. Features within 100m	No. Features within Buffer
Cadastre Boundaries	Land and Property Information	24/05/2016	24/05/2016	Daily	-	-	-
Topographic Data	Land and Property Information	10/04/2015	01/04/2015	As required	-	-	-
List of NSW contaminated sites notified to EPA	Environment Protection Authority	20/05/2016	14/04/2016	Monthly	0	0	0
Contaminated Land: Records of Notice	Environment Protection Authority	26/04/2016	26/04/2016	Monthly	0	0	0
Former Gasworks	Environment Protection Authority	26/04/2016	10/05/2013	Monthly	0	0	0
National Waste Management Site Database	Geoscience Australia	11/04/2016	15/11/2012	Quarterly	0	0	0
Licensed Activities under the POEO Act 1997	Environment Protection Authority	16/05/2016	16/05/2016	Monthly	0	1	1
Delicensed POEO Activities still Regulated by the EPA	Environment Protection Authority	16/05/2016	16/05/2016	Monthly	0	0	3
Former POEO Licenced Activities now revoked or surrendered	Environment Protection Authority	16/05/2016	16/05/2016	Monthly	0	0	5
UPSS Environmentally Sensitive Zones	Department of Environment, Climate Change and Water (NSW)	14/04/2015	12/01/2010	As required	0	0	0
UBD Business to Business Directory 1991	Hardie Grant			Not required	1	26	36
UBD Business Directory 1991 Motor Garages/Service Stations	Hardie Grant			Not required	0	0	1
UBD Business Directory 1970	Hardie Grant			Not required	8	22	25
UBD Business Directory 1970 Drycleaners & Motor Garages/Service Stations	Hardie Grant			Not required	0	1	8
UBD Business Directory 1950	Hardie Grant			Not required	2	22	30
UBD Business Directory 1950 Drycleaners & Motor Garages/Service Stations	Hardie Grant			Not required	0	0	12
Points of Interest	Land and Property Information	10/04/2015	01/04/2015	Annually	0	2	56
Tanks (Areas)	Land and Property Information	10/04/2015	01/04/2015	Annually	0	0	0
Tanks (Points)	Land and Property Information	10/04/2015	01/04/2015	Annually	0	0	0
Easements	Land and Property Information	08/10/2014	08/10/2014	As required	0	0	1
State Forest	Land and Property Information	11/04/2016	23/01/2015	As required	0	0	0
NSW National Parks and Wildlife Service Reserves	NSW Office of Environment and Heritage	11/04/2016	31/12/2015	Annually	0	0	0
Hydrogeology Map of Australia	Commonwealth of Australia (Geoscience Australia)	08/10/2014	17/03/2000	As required	1	1	1
Groundwater Boreholes	NSW Department of Primary Industries - Office of Water / Water Administration Ministerial Corporation; Commonwealth of Australia (Bureau of Meteorology) 2015	21/03/2016	01/12/2015	Quarterly	0	0	1
Geological Units 1:100,000	NSW Department of Industry, Resources & Energy	20/08/2014		None planned	1	-	3
Geological Structures 1:100,000	NSW Department of Industry, Resources & Energy	20/08/2014		None planned	0	-	0
Soil Landscapes	NSW Office of Environment and Heritage	12/08/2014		None planned	1	-	3
Acid Sulfate Soils	NSW Planning and Environment	04/01/2016	19/09/2008	As required	1	-	-
Dryland Salinity Assessment	National Land and Water Resources Audit	18/07/2014	12/05/2013	None planned	0	0	0
Mining Subsidence Districts	Land and Property Information	24/05/2016	24/05/2016	As required	0	0	0
SEPP 14 - Coastal Wetlands	NSW Planning and Environment	17/12/2015	24/10/2008	Annually	0	0	0
SEPP 26 - Littoral Rainforest	NSW Planning and Environment	17/12/2015	05/02/1988	Annually	0	0	0

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	No. Features Onsite	No. Features within 100m	No. Features within Buffer
SEPP 71 - Coastal Protection	NSW Planning and Environment	17/12/2015	01/08/2003	Annually	0	0	0
SEPP Major Developments 2005	NSW Planning and Environment	09/03/2013	25/05/2005	Under Review	0	0	0
SEPP Strategic Land Use Areas	NSW Planning and Environment	04/05/2015	01/05/2015	Annually	0	0	0
Local Environmental Plan - Land Zoning	NSW Planning and Environment	16/05/2016	17/04/2016	Quarterly	2	9	51
Local Environmental Plan - Minimum Subdivision Lot Size	NSW Planning and Environment	16/05/2016	17/04/2016	Quarterly	1	-	-
Local Environmental Plan - Height of Building	NSW Planning and Environment	16/05/2016	17/04/2016	Quarterly	0	-	-
Local Environmental Plan - Floor Space Ratio	NSW Planning and Environment	16/05/2016	17/04/2016	Quarterly	1	-	-
Local Environmental Plan - Land Application	NSW Planning and Environment	16/05/2016	17/04/2016	Quarterly	1	-	-
Local Environmental Plan - Land Reservation Acquisition	NSW Planning and Environment	16/05/2016	17/04/2016	Quarterly	1	-	-
State Heritage Items	NSW Planning and Environment	16/05/2016	12/03/2015	Quarterly	0	0	1
Local Heritage Items	NSW Planning and Environment	16/05/2016	17/04/2016	Quarterly	0	2	18
Bushfire Prone Land	NSW Rural Fire Service	04/01/2016	11/12/2015	Quarterly	0	0	0
Native Vegetation of the Sydney Metropolitan Area	NSW Office of Environment and Heritage	08/10/2014	11/10/2013	As required	0	1	6
RAMSAR Wetlands	Commonwealth of Australia Department of the Environment	08/10/2014	24/06/2011	As required	0	0	0
ATLAS of NSW Wildlife	NSW Office of Environment and Heritage	24/05/2016	24/05/2016	Daily	-	-	-

Aerial Imagery 2015

2 Railway Street & 3-7 East Street, Lidcombe, NSW 2141



Legend

- Site Boundary
- Buffer 150m

Scale:
0 25 50 100
Meters

Data Sources: Aerial Imagery © 2016 Google Inc,
used with permission. Google and the Google logo are
registered trademarks of Google Inc.

Coordinate System:
GDA 1994 MGA Zone 56

Date: 23May 2016

Contaminated Land & Waste Management Facilities

2 Railway Street and 3-7 East Street, Lidcombe, NSW 2141

List of NSW contaminated sites notified to EPA

Records from the NSW EPA Contaminated Land list within the report buffer:

Map Id	Site	Address	Suburb	Activity	EPA site management class	Status	Dist	Direction	LC
N/A	No records in buffer								

The values within the EPA site management class in the table above, are given more detailed explanations in the table below:

EPA site management class	Explanation
Contamination being managed via the planning process (EP&A Act)	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation. The contamination of this site is managed by the consent authority under the Environmental Planning and Assessment Act 1979 (EP&A Act) planning approval process, with EPA involvement as necessary to ensure significant contamination is adequately addressed. The consent authority is typically a local council or the Department of Planning and Environment.
Contamination currently regulated under CLM Act	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation under the Contaminated Land Management Act 1997 (CLM Act). Management of the contamination is regulated by the EPA under the CLM Act. Regulatory notices are available on the EPA's Contaminated Land Public Record of Notices.
Contamination currently regulated under POEO Act	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation. Management of the contamination is regulated under the Protection of the Environment Operations Act 1997 (POEO Act). The EPA's regulatory actions under the POEO Act are available on the POEO public register.
Contamination formerly regulated under the CLM Act	The EPA has determined that the contamination is no longer significant enough to warrant regulation under the Contaminated Land Management Act 1997 (CLM Act). The contamination was addressed under the CLM Act.
Contamination formerly regulated under the POEO Act	The EPA has determined that the contamination is no longer significant enough to warrant regulation. The contamination was addressed under the Protection of the Environment Operations Act 1997 (POEO Act).
Contamination was addressed via the planning process (EP&A Act)	The EPA has determined that the contamination is no longer significant enough to warrant regulation. The contamination was addressed by the appropriate consent authority via the planning process under the Environmental Planning and Assessment Act 1979 (EP&A Act).
Ongoing maintenance required to manage residual contamination (CLM Act)	The EPA has determined that ongoing maintenance, under the Contaminated Land Management Act 1997 (CLM Act), is required to manage the residual contamination. Regulatory notices under the CLM Act are available on the EPA's Contaminated Land Public Record of Notices.
Regulation being finalised	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation under the Contaminated Land Management Act 1997. A regulatory approach is being finalised.
Regulation under the CLM Act not required	The EPA has completed an assessment of the contamination and decided that regulation under the Contaminated Land Management Act 1997 is not required.
Under assessment	The contamination is being assessed by the EPA to determine whether regulation is required. The EPA may require further information to complete the assessment. For example, the completion of management actions regulated under the planning process or Protection of the Environment Operations Act 1997. Alternatively, the EPA may require information via a notice issued under s77 of the Contaminated Land Management Act 1997 or issue a Preliminary Investigation Order.

NSW EPA Contaminated Land List Data Source: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

Contaminated Land & Waste Management Facilities

2 Railway Street and 3-7 East Street, Lidcombe, NSW 2141

Contaminated Land: Records of Notice

Record of Notices within the report buffer:

Map Id	Area No	Name	Address	Suburb	Notices	Distance	Direction	LC
N/A	No records in buffer							

Contaminated Land Records of Notice Data Source: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority
Terms of use and disclaimer for Contaminated Land: Record of Notices, please visit
<http://www.epa.nsw.gov.au/clm/clmdisclaimer.htm>

Former Gasworks

Former Gasworks within the report buffer:

Map Id	Location	Council	Further Info	Distance	Direction	LC
N/A	No records in buffer					

Former Gasworks Data Source: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

National Waste Management Site Database

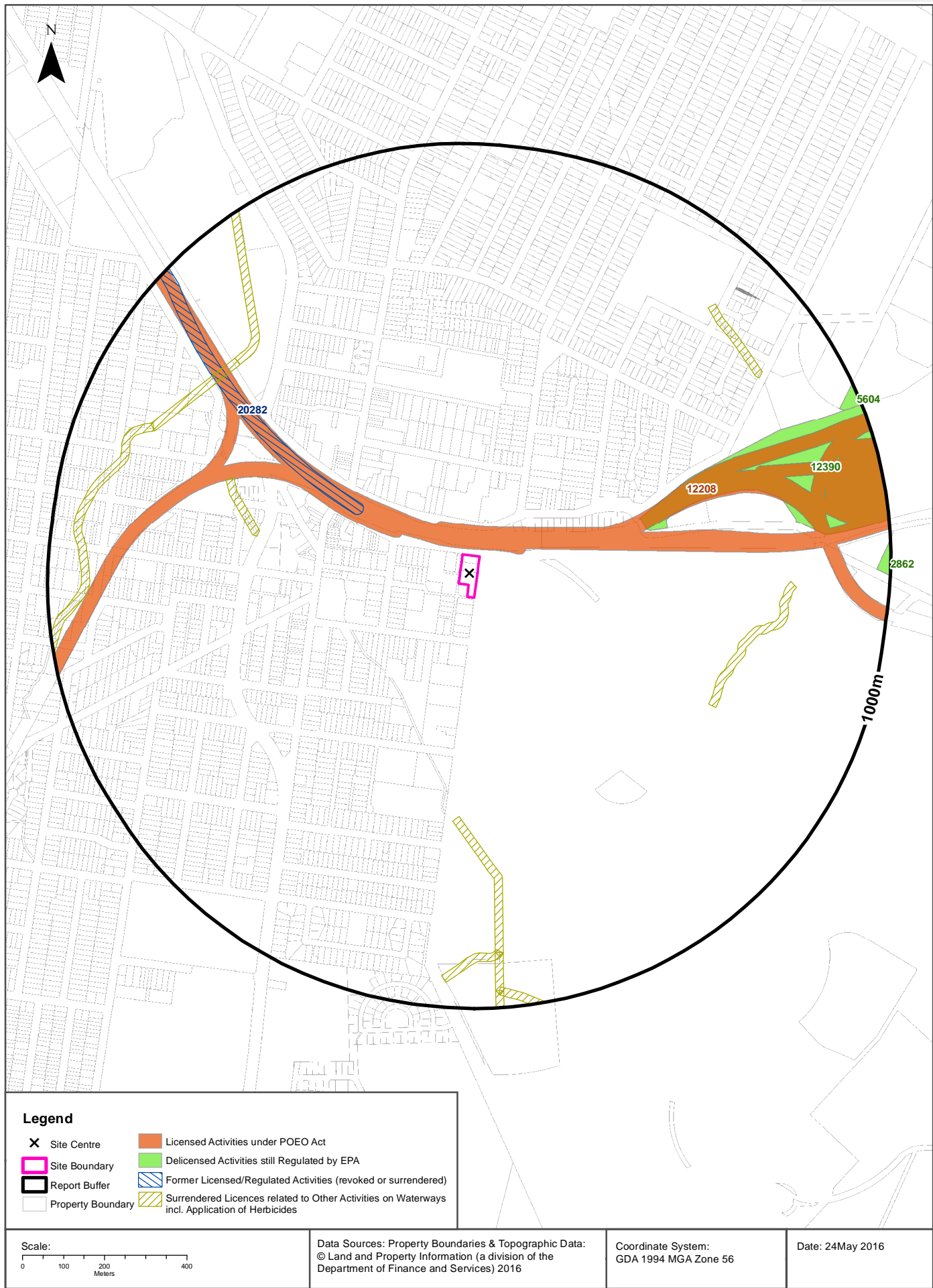
Sites on the National Waste Management Site Database within the report buffer:

Site Id	Owner	Name	Address	Suburb	Postcode	Landfill	Reprocess	Transfer	Distance	Direction	LC
N/A	No records in buffer										

Waste Management Facilities Data Source: Australian Government Geoscience Australia
Creative Commons 3.0 © Commonwealth of Australia <http://creativecommons.org/licenses/by/3.0/au/deed.en>

EPA Activities

2 Railway Street and 3-7 East Street, Lidcombe, NSW 2141



EPA Activities

2 Railway Street and 3-7 East Street, Lidcombe, NSW 2141

Licensed Activities under the POEO Act 1997

Licensed activities under the Protection of the Environment Operations Act 1997, within the report buffer:

EPL	Organisation	Name	Address	Suburb	Activity	Loc Conf	Distance	Direction
12208	SYDNEY TRAINS		Sydney Trains (RailCorp) network		Railway systems activities	3	14m	South West

POEO Licence Data Source: Environment Protection Authority

© State of New South Wales through the Environment Protection Authority

Delicensed Activities still regulated by the EPA

Delicensed activities still regulated by the EPA, within the report buffer:

Licence No	Organisation	Name	Address	Suburb	Activity	Loc Conf	Distance	Direction
12390	RAIL CORPORATION NEW SOUTH WALES	Flemington Passenger Fleet Maintenance Centre	Bachell Avenue	LIDCOMBE	Hazardous, Industrial or Group A Waste Generation or Storage	1	397m	East
5604	HOLCIM (AUSTRALIA) PTY LTD	LIDCOMBE CONCRETE	LOT 2 BIRNIE AVENUE	LIDCOMBE	Concrete works	1	945m	North East
2862	FLETCHER INSULATION (VIC) PTY LTD	INSULATION SOLUTIONS	161 ARTHUR STREET	HOME BUSH	Hazardous, Industrial or Group A Waste Generation or Storage	1	964m	East

Delicensed Activities Data Source: Environment Protection Authority

© State of New South Wales through the Environment Protection Authority

EPA Activities

2 Railway Street and 3-7 East Street, Lidcombe, NSW 2141

Former Licensed Activities under the POEO Act 1997, now revoked or surrendered

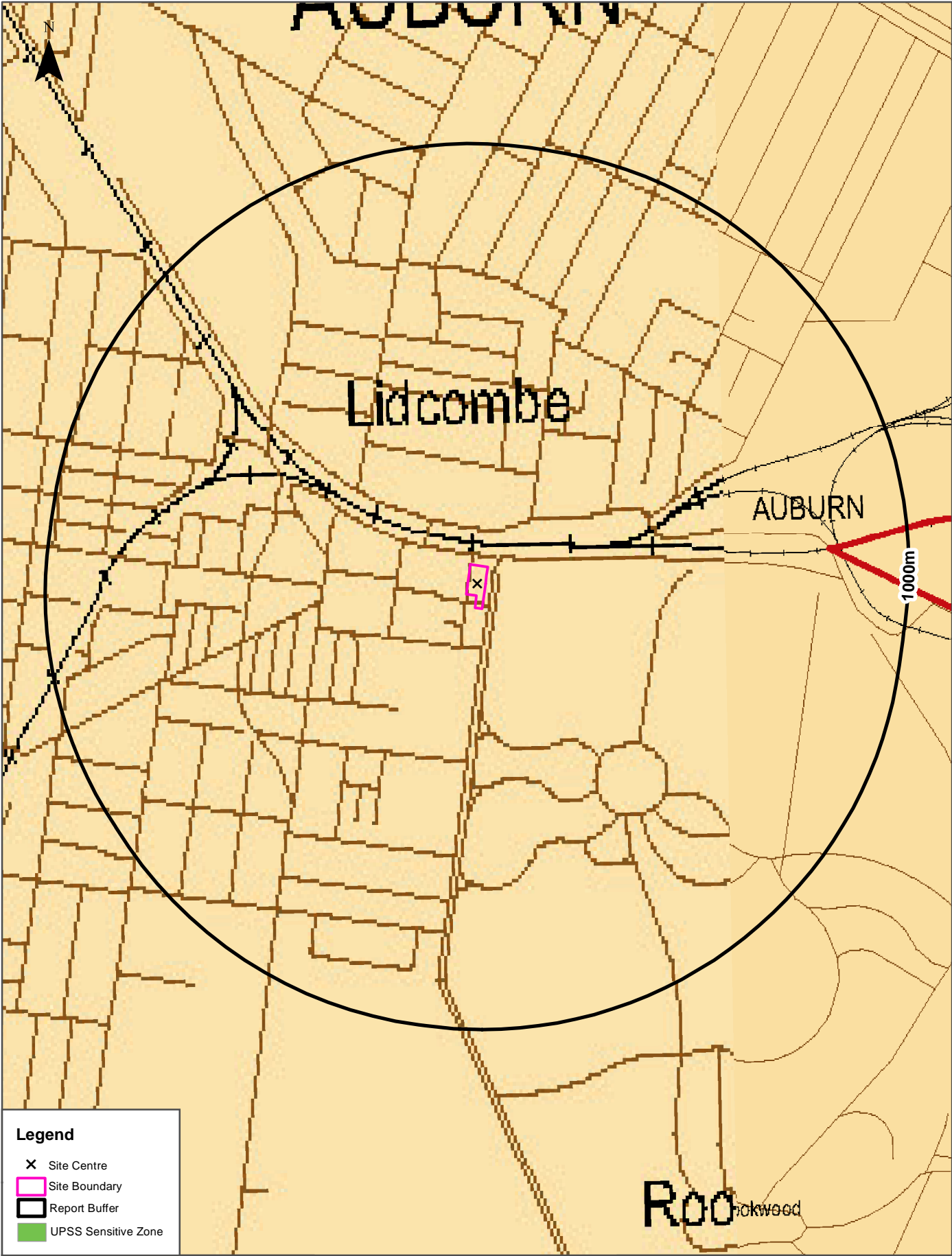
Former Licensed activities under the Protection of the Environment Operations Act 1997, now revoked or surrendered, within the report buffer:

Licence No	Organisation	Location	Status	Issued Date	Activity	Loc Conf	Distance	Direction
20282	Laing O'Rourke Australia Construction Pty Ltd	Auburn Junction Rail Infrastructure Works, East of Lidcombe Station to west of Granville Station, AUBURN	Surrendered	26/06/2013	Railway systems activities	3	265m	North West
4653	LUHRMANN ENVIRONMENT MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW	Surrendered		Other Activities / Non Scheduled Activity - Application of Herbicides	7	497m	-
4838	Robert Orchard	Various Waterways throughout New South Wales - SYDNEY NSW 2000	Surrendered		Other Activities / Non Scheduled Activity - Application of Herbicides	7	497m	-
6630	SYDNEY WEED & PEST MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW - PROSPECT, NSW, 2148	Surrendered		Other Activities / Non Scheduled Activity - Application of Herbicides	7	497m	-
7414	AUBURN COUNCIL	AUBURN MUNICIPAL COUNCIL, AUBURN, NSW 2144	Surrendered	06/09/2000	Other Activities - Application of Herbicide(s)	7	497m	-

Former Licensed Activities Data Source: Environment Protection Authority
© State of New South Wales through the Environment Protection Authority

UPSS Sensitive Zones

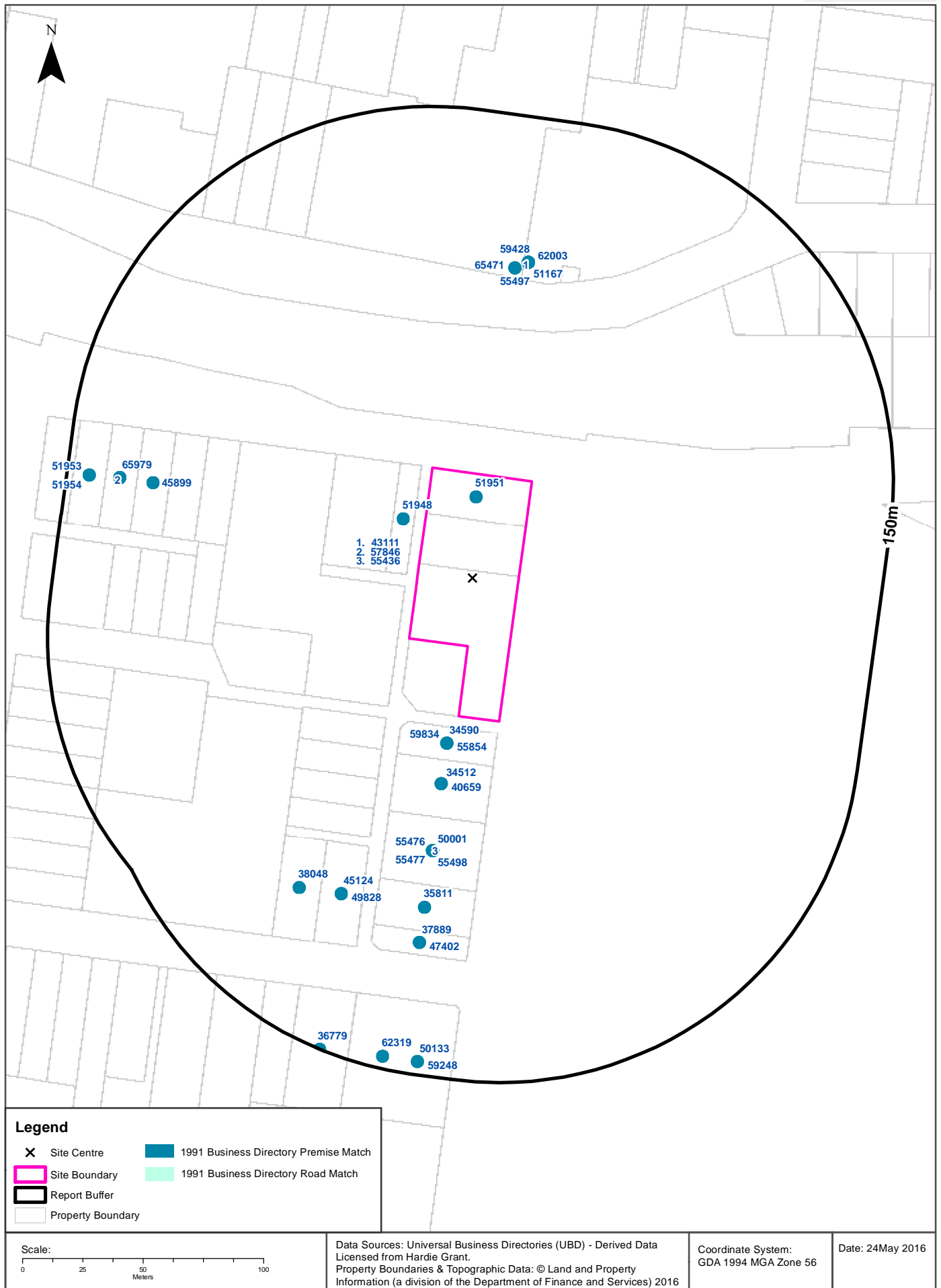
2 Railway Street and 3-7 East Street, Lidcombe, NSW 2141



<p>Scale:</p>	<p>UPSS Data Source: Environment Protection Authority © Dept of Environment, Climate Change & Water (NSW)</p>	<p>Coordinate System: GDA 1994 MGA Zone 56</p>	<p>Date: 24May 2016</p>
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1991 Historical Business Directory Records

2 Railway Street and 3-7 East Street, Lidcombe, NSW 2141



Historical Business Directories

2 Railway Street and 3-7 East Street, Lidcombe, NSW 2141

1991 Business to Business Directory Records

Records from the 1991 UBD Business to Business Directory within 150m of the site:

Business Activity	Organisation	Address	Ref No.	Location Confidence	Distance	Direction
Monumental Mansons	Larcombe A	2 Railway St Lidcombe 2141	51951	Building Match	0m	Onsite
Monumental Mansons	Globe Memorial Co Pty Ltd	4 Railway St Lidcombe 2141	51948	Building Match	7m	North West
Publishers	Greyhound Recorder	9 East St Lidcombe 2141	59834	Building Match	10m	South
Newspapers, Journals &/or Periodicals	Greyhound Recorder	9 East St., Lidcombe 2141	55854	Building Match	10m	South
Associations Employers Industrial &/or Professional	N.S.W. National Coursing Association	9 East St, Lidcombe 2141	34590	Building Match	10m	South
Asbestos Removal Contractors	Guardian Asbestos Removals & Industrial Services Pty Ltd	11 East St, Lidcombe 2141	34512	Building Match	27m	South
Concreting Contractors	Raffinn, D. & Co. Pty. Ltd.	11 East St, Lidcombe. 2141	40659	Building Match	27m	South
Motor Trimmers	Expert Motor Trimming	1/15 East St Lidcombe 2141	55436	Building Match	55m	South
Joinery Manufacturers &/or Merchants	Lidcombe Joinery Pty. Ltd.	3/15 East St., Lidcombe. 2141	50001	Building Match	55m	South
Motor Trimmers	Siba Moulded Car Carpet & Dashboard	2/15 East St Lidcombe 2141	55476	Building Match	55m	South
Motor Trimmers Supplies	Siba Moulded Car Carpet & Dashboard	2/15 East St Lidcombe 2141	55498	Building Match	55m	South
Motor Trimmers	Siba Moulder Car Carpets & Dash Boards	Factory 2 15-17 East Street Lidcombe 2141	55477	Building Match	55m	South
Bearings &/or Bush Mfrs &/or Imps &/or Dists	Anthony Bearings Pty Ltd	19 East St, Lidcombe 2141	35811	Building Match	79m	South
Upholsterers	Seymour K G & A Pty Ltd	65 Church St Lidcombe 2141	65471	Building Match	85m	North
Motor Trimmers Supplies	Seymour KG & A Pty Ltd	65 Church St Lidcombe 2141	55497	Building Match	85m	North
Exporters	G.D.B. Industries Pty Ltd	23 James St Lidcombe 2141	45124	Building Match	86m	South West
Island Merchants &/or Traders	G.D.B. Industries Pty. Ltd.	23 James St, Lidcombe. 2141	49828	Building Match	86m	South West
Printers Supplies & Services	Cutting & Creasing Services Pty Ltd	7/67 Church St Lidcombe 2141	59428	Building Match	88m	North
Gift Shop Supplies Mfrs &/or W/salers	East Coast Giftware Pty Ltd	58/67 Church St Lidcombe 2141	47622	Building Match	88m	North
Manchester Goods Mfrs &/or W/salers	Frank Lee & Co	4C/67 Church St Lidcombe 2141	51167	Building Match	88m	North
Embroidery Mfrs &/or Specialists	Frank Lee & Co.,	4C/67 Church St. Lidcombe. 2141	43111	Building Match	88m	North
Sewing Machine Domestic Mfrs &/or Imps &/or Dists	Sewing Machine Exchang Pty Ltd	1/67 Church St Lidcombe 2141	62003	Building Match	88m	North
Footwear Boot & Shoe Mfrs & Dists	Sunrise Shoes	5A/67 Church St Lidcombe 2141	46267	Building Match	88m	North
Furniture Repairers &/or Remodellers	Rancan G	23 East St Lidcombe 2141	47402	Building Match	93m	South
Cabinet Makers	Rancan, G	23 East St, Lidcombe. 2141	37889	Building Match	93m	South
Canvas Goods Mfrs &/or Dists	Paice G Pty Ltd	21 James St Lidcombe 2141	38048	Building Match	95m	South West
Floor Covering Industrial Specialists	Kelley Peter Flooring Pty Ltd	18 Railway St Lidcombe 2141	45899	Building Match	112m	West
Waterproofing Contractors	April Plastics	20 Railway St Lidcombe 2141	65979	Building Match	126m	West
Plastic Fabricators	April Plastics	20 Railway St Lidcombe 2141	57846	Building Match	126m	West
Monumental Mansons	Peacock Memorials Co	22 Railway St Lidcombe 2141	51953	Building Match	139m	West

Business Activity	Organisation	Address	Ref No.	Location Confidence	Distance	Direction
Monumental Mansons	Star Memorial Co	22 Railway St Lidcombe 2141	51954	Building Match	139m	West
Kitchen Units Mfrs &/or Dists &/or Installers	Coleman & Sons Pty. Ltd.	38 James St., Lidcombe. 2141	50133	Building Match	142m	South
Printers Lithographic (Offset)	Number 19 Graphic Productions Pty. Ltd.,	38 James St., Lidcombe. 2141. Ph: 643 2388	59248	Building Match	142m	South
Shop &/or Office Fitters	Coleman & Sons Pty Ltd	36 James St Lidcombe 2141	62319	Building Match	143m	South
Builders &/or Building Contractors	Coleman, M.A.,	32 James St., Lidcombe. 2141	36779	Building Match	148m	South
Joinery Manufacturers &/or Merchants	Coleman. M. A. Joinery Co. Pty. Ltd	32 James St.ÂÂ Lidcombe. 2141	49945	Building Match	148m	South

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

1991 Business Directory Motor Garages & Service Stations

Motor Garages & Service Stations from the 1991 UBD Business Directory within 1km of the site:

Business Activity	Organisation	Address	Ref No.	Location Confidence	Distance	Direction
Motor Garages & Service Stations	Shore Petroleum Station	24 Railway St., Lidcombe	53888	Building Match	151m	West

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

1970 Historical Business Directory Records

2 Railway Street and 3-7 East Street, Lidcombe, NSW 2141



Historical Business Directories

2 Railway Street and 3-7 East Street, Lidcombe, NSW 2141

1970 Business Directory Records

Records from the 1970 UBD Business Directory within 150m of the site:

Business Activity	Organisation & Premise	Ref No.	Location Confidence	Distance	Direction
ARTISTS' SUPPLIES - RETAIL (A540)	Creak & Ford Pty. Ltd., 5 East St., Lidcombe	262390	Building Match	0m	Onsite
ABRASIVE DISTRIBUTORS &/ORMERCHANTS (A020)	Creak & Ford Pty. Ltd., 5 East St., Lidcombe	258369	Building Match	0m	Onsite
IMPORTERS (I200)	Creak & Ford Pty. Ltd., 5 East St., Lidcombe	318205	Building Match	0m	Onsite
MARBLE/GRANITE MERCH. (M120)	Creak & Ford Pty. Ltd., 5 East St., Lidcombe	325466	Building Match	0m	Onsite
TERRAZZO SPECIALISTS (T215)	Creak & Ford Pty. Ltd., 5 East St., Lidcombe	367855	Building Match	0m	Onsite
TERRAZZO WORKERS' SUPPLIERS (T220)	Creak & Ford Pty. Ltd., 5 East St., Lidcombe	367872	Building Match	0m	Onsite
MONUMENTAL MASONS (M428)	Larcombe, A. & Co. Pty. Ltd., 2 Railway St., Lidcombe, 2141. 4	334318	Building Match	0m	Onsite
MONUMENTAL MASONS (M428)	Pages, L. Pty. Ltd., 2 Railway St., Lidcombe, 2141	334323	Building Match	0m	Onsite
PRODUCE MERCHANTS-GRAIN & SEED-RETAIL (P854)	Leane, W., 17 Davey Ave., Lidcombe	353023	Road Match	0m	South West
STONE MASONS (S769)	Globe Memorial Co., 4 Railway St., Lidcombe	366162	Building Match	7m	North West
MONUMENTAL MASONS (M428)	Globe Memorial Co., 4 Railway St., Lidcombe.	334314	Building Match	7m	North West
MONUMENTAL MASONS (M428)	Andrews, T. & Sons, 6 Railway St., Lidcombe	334305	Building Match	25m	North West
MOTOR GARAGES & ENGINEERS (M6S6)	Calnan, Don Auto Repairs, 6 Railway St., Lidcombe, 2141	337496	Building Match	25m	North West
PLUMBERS, GASFITTERS/DRAINLAYER S(P608)	Calnan, R. L., 6 Railway St. LIDCOMBE	350469	Building Match	25m	North West
ENGINEERS-SANITARY (E750)	Calnan, R.L., 6 Railway St., Lidcombe	300933	Building Match	25m	North West
ENGINEERS-HOT WATER, VENTILATING (E640)	Calnan, R.L., 6 Railway St., Lidcombe	299867	Building Match	25m	North West
MONUMENTAL MASONS (M428)	Smith, F. & Ring Memorial Co., 14 Railway St., Lidcombe, 2141	334327	Building Match	85m	West
STONE MASONS (S769)	Smith, F. & Ring Memorial Co., 14 Railway St., Lidcombe, 2141	366171	Building Match	85m	West
TEXTILE MANUFACTURERS (T255)	Combe, D. Pty. Ltd., 67 Church St., Lidcombe	368191	Building Match	88m	North
WOOLLEN/WORSTED MFRS. (W520)	Combe, David Pty. Ltd., 67 Church St., Lidcombe	375399	Building Match	88m	North
JOINERY MANUFACTURERS (J240)	Gould Marshall Pty. Ltd., 21 James St., Lidcombe	321813	Building Match	95m	South West
FURNITURE-KITCHEN UNITS & CABINETS-MANUFACTURERS&/OR WHOLESALEERS (F745)	Gould, Marshall Pty. Ltd., 21 James St., Lidcombe	309662	Building Match	95m	South West
PLASTIC GOODS MFRS. (P564)	Snaith Agencies Pty. Ltd., cnr. James & East St., Lidcombe	349738	Road Intersection	108m	South
STONE MASONS (S769)	Star Memorial Co., 22 Railway St., Lidcombe	366172	Building Match	139m	West
MONUMENTAL MASONS (M428)	Star Memorial Co., 22 Railway St., Lidcombe	334328	Building Match	139m	West

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

1970 Business Directory Drycleaners & Service Stations

Drycleaners, Motor Garages & Service Stations from the 1970 UBD Business Directory within 1km of the site:

Business Activity	Organisation & Premise	Ref No.	Location Confidence	Distance	Direction
MOTOR GARAGES & ENGINEERS (M6S6)	Calnan,Don Auto Repairs,6 Railway St.,Lidcombe,2141	337496	Building Match	25m	North West
DRY CLEANERS,PRESSERS/DYERS (D710)	Reliable Dry Cleaners,2 John St.,Lidcombe	292471	Building Match	357m	North West
DRY CLEANERS,PRESSERS/DYERS (D710)	Roosevelt Dry Cleaners & Dyers Pty.Ltd.,12 Joseph St.,Lidcombe	292481	Building Match	372m	West
DRY CLEANERS,PRESSERS/DYERS (D710)	Town & Country Dry Clean,4 Vaughan St.,Lidcombe	292551	Building Match	399m	West
MOTOR GARAGES & ENGINEERS (M6S6)	Kerr's Road Motors Pty. Ltd.,8 Kerr's Rd.Lidcombe	338096	Building Match	425m	West
MOTOR GARAGES & ENGINEERS (M6S6)	Littlejohn Garage Pty. Ltd.,24 Bridge St.Lidcombe	338162	Building Match	434m	West
MOTOR SERVICE STATIONS-PETROL,OIL,Etc. (M716)	Lidcombe Service Station,110 Joseph St.LIDCOMBE	341278	Building Match	674m	South West
MOTOR GARAGES & ENGINEERS (M6S6)	Mobtoll (Aust.) Pty. Ltd.,112 Joseph St.Lidcombe	338273	Building Match	677m	South West

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

1950 Historical Business Directory Records

2 Railway Street and 3-7 East Street, Lidcombe, NSW 2141



Historical Business Directories

2 Railway Street and 3-7 East Street, Lidcombe, NSW 2141

1950 Business Directory Records

Records from the 1950 UBD Business Directory within 150m of the site:

Business Activity	Organisation & Premise	Ref No.	Location Confidence	Distance	Direction
MONUMENTAL MASONS	Jago, A. C., 3 East St., Lidcombe	81394	Building Match	0m	Onsite
MONUMENTAL MASONS	Star Memorial Co. (A. C. Jago), 3 East St., Lidcombe	81423	Building Match	0m	Onsite
BANKS	Bank of N.S.W, Railway St. Lidcombe	5739	Road Match	0m	North West
MONUMENTAL MASONS	Coles Bros., East St., Lidcombe	81382	Road Match	0m	South
PAPER (WRAPPING) MERCHANTS	Deropa Pty. Ltd., East St., Lidcombe	90945	Road Match	0m	South
MONUMENTAL MASONS	Kutcher, A. J., East St., Lidcombe	81404	Road Match	0m	South
PRODUCE MERCHANTS-GRAIN & SEED-RETAIL	Leane, W., 17 Davey Ave., Lidcombe	95566	Road Match	0m	South West
STONE MASONS	State Monumental Co. Pty. Ltd., East St., Lidcombe	105776	Road Match	0m	South
MONUMENTAL MASONS	Walsh, J. and Co., East St., Lidcombe	81430	Road Match	0m	South
FARRIERS	Lloyd, Frank, 4 Railway St., Lidcombe	43553	Building Match	7m	North West
BLACKSMITHS	Lloyd, Frank, 4 Railway St., Lidcombe	8336	Building Match	7m	North West
MONUMENTAL MASONS	Andrews, T. & Sons, 6 Railway St., Lidcombe	81374	Building Match	26m	North West
MONUMENTAL MASONS	Andrews, T. and Sons, 6 Railway St., Lidcombe	81375	Building Match	26m	North West
PISTON RING MFRS. &/OR DISTRIBUTORS	Harrington, W. A. Pty. Ltd., 15 East St., Lidcombe	93154	Building Match	46m	South
ENGINEERS-GENERAL &/OR MANUFACTURING &/OR MECHANICAL	Harrington, W. A. Pty. Ltd., 15 East St., Lidcombe	40793	Building Match	46m	South
MONUMENTAL MASONS	Pages, L., 10 Railway St., Lidcombe	81413	Building Match	57m	West
WOOLLENS & WORSTED MANUFACTURERS	Combe, David Pty. Ltd., Church St., Lidcombe	114580	Road Match	60m	North
MONUMENTAL MASONS	Smith, F., 14 Railway St., Lidcombe	81422	Building Match	85m	West
HANDLE MANUFACTURERS &/OR WHOLESALERS	McCullough and Barr (Broom and Rake), Office, Works, Rear 23 James St., Lidcombe	60798	Building Match	86m	South West
FIBRE & FIBRE GOODS MANUFACTURERS S/OR DISTRIBUTORS	McCullough and Barr, Works, Rear 23 James St., Lidcombe	43829	Building Match	86m	South West
BROOM & BRUSH MANUFACTURERS' SUPPLIES	McCullough and Barr, Works, Rear 23 James St., Lidcombe	11462	Building Match	86m	South West
FUNERAL DIRECTORS	Duncan, R. P., 16 Railway St., Lidcombe	51992	Building Match	98m	West
MONUMENTAL MASONS	Jones, F., 18 Railway St., Lidcombe	81403	Building Match	112m	West
ENGINEERS-GENERAL &/OR MANUFACTURING &/OR MECHANICAL	Randell, W. J, 14 Marsden St., Lidcombe	41172	Building Match	112m	South West
ENGINEERS-STRUCTURAL	Randell, W. J., 14 Marsden St., Lidcombe	42489	Building Match	112m	South West
WELDERS-ELECTRIC &/OR OXY	Randell, W. J., 14 Marsden St., Lidcombe	113029	Building Match	112m	South West
BOILERMAKERS	Randell, W. J., 14a Marsden St., Lidcombe	9119	Building Match	112m	South West
MONUMENTAL MASONS	Andrews, E., 22 Railway St., Lidcombe	81373	Building Match	139m	West
MONUMENTAL MASONS	Jago, A. C., 22 Railway St., Lidcombe	81395	Building Match	139m	West
MONUMENTAL MASONS	Star Memorial Co. (A. C. Jago), 22 Railway St., Lidcombe	81424	Building Match	139m	West

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

1950 Business Directory Drycleaners & Service Stations

Drycleaners, Motor Garages & Service Stations from the 1950 UBD Business Directory within 1km of the site:

Activity	Organisation & Premise	Ref No.	Location Confidence	Distance	Direction
MOTOR GARAGES &/OR ENGINEERS	Lidcombe Auto and Engineering Works, 39 Church St., Lidcombe	84002	Building Match	231m	North West
MOTOR SERVICE STATIONS-PETROL, Etc.	Lidcombe Auto and Engineering Works, 39 Church St., Lidcombe	86138	Building Match	231m	North West
DRY CLEANERS, PRESSERS & DYERS	Comber, T., 11 Joseph St., Lidcombe	35161	Building Match	318m	West
MOTOR GARAGES &/OR ENGINEERS	McVicar, A. R., 35 Joseph St., Lidcombe	84077	Building Match	352m	West
DRY CLEANERS, PRESSERS & DYERS	Reliable Dry Cleaners, 2 John St., Lidcombe	35639	Building Match	354m	North West
DRY CLEANERS, PRESSERS & DYERS	Boomerang Library (Mrs. M. Swanston), 1 Vaughan St., Lidcombe	35135	Building Match	381m	West
DRY CLEANERS, PRESSERS & DYERS	Heaths Men's Wear (H. D. Keighley) (Agent), 52b Joseph St., Lidcombe	35282	Building Match	403m	West
MOTOR GARAGES &/OR ENGINEERS	Kerr's Road Motors (Rose and Faux), 8 Kerrs Rd., Lidcombe	83950	Building Match	425m	West
MOTOR GARAGES &/OR ENGINEERS	Littlejohn, J. E., 24 Bridge St., Lidcombe	84012	Building Match	436m	West
MOTOR SERVICE STATIONS-PETROL, Etc.	Littlejohn, J. E., 24-26 Bridge St., Lidcombe	86151	Building Match	436m	West
DRY CLEANERS, PRESSERS & DYERS	Roosevelt Dry Cleaner and Dyers Pty. Ltd., 28 Bridge St., Lidcombe	35669	Building Match	458m	West
MOTOR GARAGES &/OR ENGINEERS	Clancy's Garage, 5a Church St., Lidcombe	83590	Building Match	490m	North West

Business Directory Content Derived from Universal Business Directories (UBD) - Licensed from Hardie Grant

Aerial Imagery 2014

2 Railway Street & 3-7 East Street, Lidcombe, NSW 2141

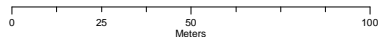


Legend

- Site Boundary
- Buffer 150m

© Land and Property Information 2015

Scale:



Data Sources: Historical Aerials: © Land and Property Information (a division of the Department of Finance and Services)

Coordinate System:
GDA 1994 MGA Zone 56

Date: 23May 2016

Aerial Imagery 2007

2 Railway Street & 3-7 East Street, Lidcombe, NSW 2141



Aerial Imagery 2003

2 Railway Street & 3-7 East Street, Lidcombe, NSW 2141



Aerial Imagery 1991

2 Railway Street & 3-7 East Street, Lidcombe, NSW 2141



Legend

Site Boundary

Buffer 150m

<p>Scale:</p> <p>0 25 50 100</p> <p>Meters</p>	<p>Data Sources: Historical Aerials: © Land and Property Information (a division of the Department of Finance and Services)</p>	<p>Coordinate System: GDA 1994 MGA Zone 56</p>	<p>Date: 23May 2016</p>
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Aerial Imagery 1982

2 Railway Street & 3-7 East Street, Lidcombe, NSW 2141



Scale: 0 25 50 100 Meters	Data Sources: Historical Aerials: © Land and Property Information (a division of the Department of Finance and Services)	Coordinate System: GDA 1994 MGA Zone 56	Date: 23May 2016
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Aerial Imagery 1970

2 Railway Street & 3-7 East Street, Lidcombe, NSW 2141



Legend

Site Boundary

Buffer 150m

<p>Scale:</p> <p>0 25 50 100</p> <p>Meters</p>	<p>Data Sources: Historical Aerials: © Land and Property Information (a division of the Department of Finance and Services)</p>	<p>Coordinate System: GDA 1994 MGA Zone 56</p>	<p>Date: 23May 2016</p>
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Aerial Imagery 1965

2 Railway Street & 3-7 East Street, Lidcombe, NSW 2141



Legend

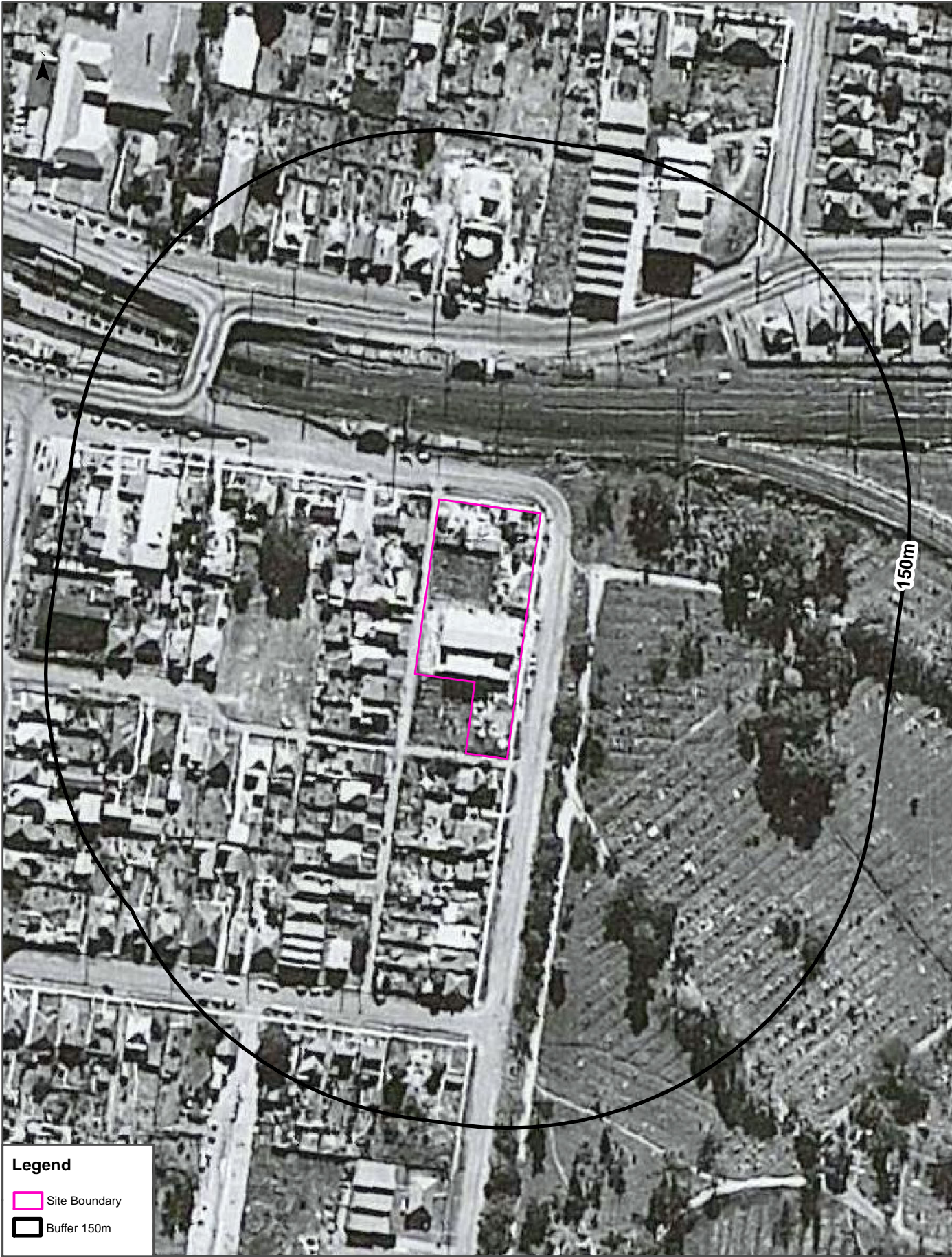
Site Boundary

Buffer 150m

Scale: 0 25 50 100 Meters	Data Sources: Historical Aerials: © Land and Property Information (a division of the Department of Finance and Services)	Coordinate System: GDA 1994 MGA Zone 56	Date: 24May 2016
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Aerial Imagery 1961

2 Railway Street & 3-7 East Street, Lidcombe, NSW 2141



Legend

Site Boundary

Buffer 150m

Scale:

0 25 50 100
Meters

Data Sources: Historical Aerials: © Land and Property Information (a division of the Department of Finance and Services)

Coordinate System:
GDA 1994 MGA Zone 56

Date: 23May 2016

Aerial Imagery 1951

2 Railway Street & 3-7 East Street, Lidcombe, NSW 2141



Legend

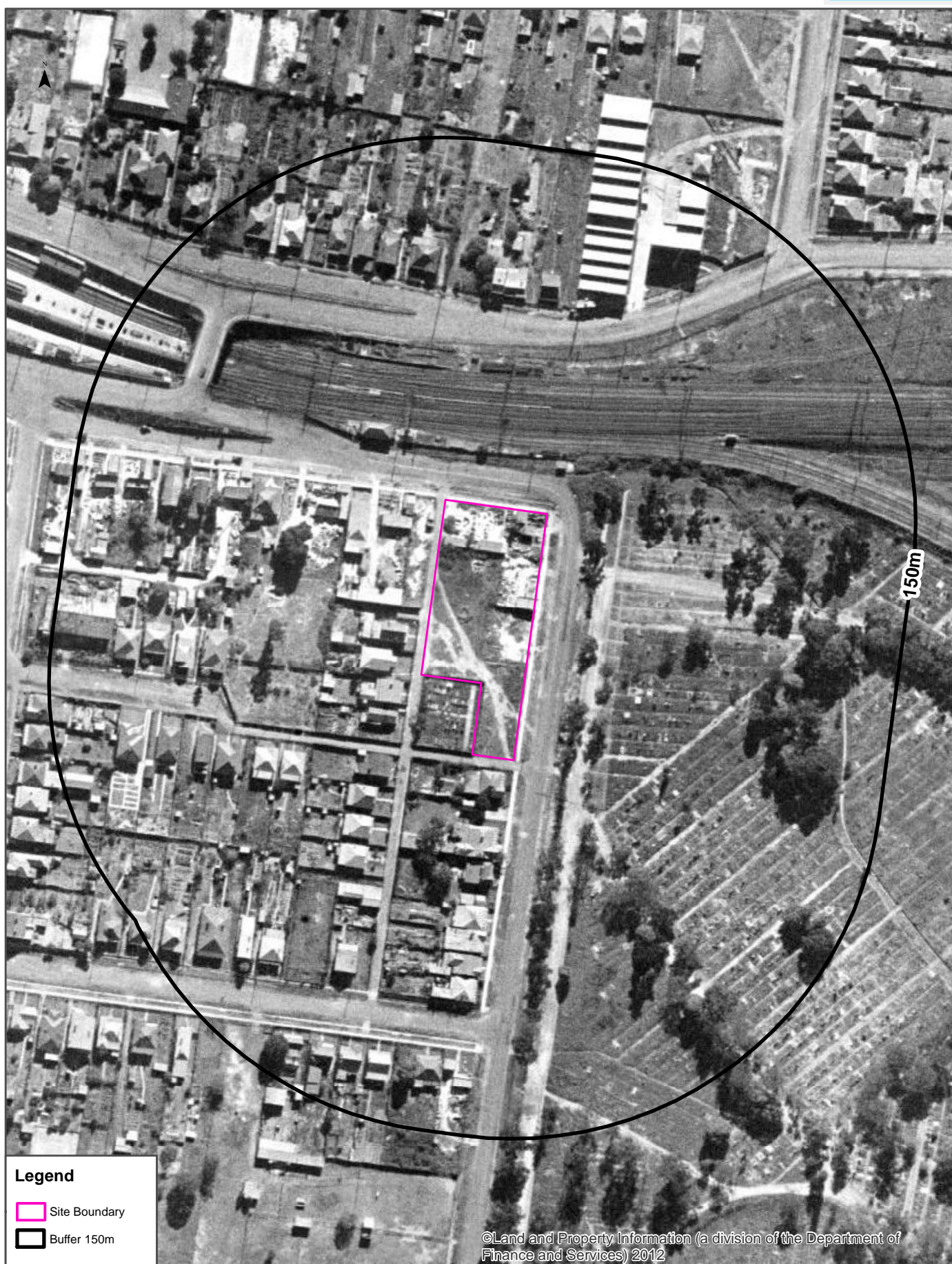
Site Boundary

Buffer 150m

<p>Scale:</p> <p>0 25 50 100</p> <p>Meters</p>	<p>Data Sources: Historical Aerials: © Land and Property Information (a division of the Department of Finance and Services)</p>	<p>Coordinate System: GDA 1994 MGA Zone 56</p>	<p>Date: 23May 2016</p>
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Aerial Imagery 1943

2 Railway Street & 3-7 East Street, Lidcombe, NSW 2141



Legend

- Site Boundary
- Buffer 150m

©Land and Property Information (a division of the Department of Finance and Services) 2012

Scale:

0 25 50 100
Meters

Data Sources: Historical Aerials: © Land and Property Information (a division of the Department of Finance and Services)

Coordinate System:
GDA 1994 MGA Zone 56

Date: 23May 2016

Topographic Features

2 Railway Street and 3-7 East Street, Lidcombe, NSW 2141



Topographic Features

2 Railway Street and 3-7 East Street, Lidcombe, NSW 2141

Points of Interest

What Points of Interest exist within the report buffer?

Map Id	Feature Type	Label	Distance	Direction
171229	Park	JEWISH RESERVE	11m	South
171289	Park	FRIENDS PARK	63m	West
171162	Place Of Worship	UKRAINIAN CATHOLIC CHURCH	115m	North
163178	Community Home	CANBERRA NURSING HOME	183m	North
60278	Place Of Worship	ANGLICAN CHURCH	203m	West
7183	Community Facility	ST STEPHENS CHURCH HALL	204m	West
166260	Railway Station	LIDCOMBE RAILWAY STATION	222m	North West
9553	Fire Station	LIDCOMBE FIRE STATION	234m	North West
151325	Primary School	ST JOACHIM'S CATHOLIC PRIMARY SCHOOL	240m	North West
160677	Community Facility	LIDCOMBE RSL COMMUNITY CLUB	241m	West
171136	Community Facility	AUBURN CENTRE FOR COMMUNITY	255m	West
99634	Sports Field	BOWLING GREENS	260m	West
3837	Club	LIDCOMBE BOWLING CLUB	270m	West
132701	Post Office	LIDCOMBE POST OFFICE	281m	West
171299	Park	PLAYGROUND	290m	West
171263	Park	LIDCOMBE REMEMBRANCE PARK	315m	West
61836	Place Of Worship	CATHOLIC CHURCH	322m	North West
9067	Court House	LIDCOMBE CHILDRENS COURT	330m	North West
171246	Monument	LIDCOMBE REMEMBRANCE PARK	331m	West
171228	Monument	LIDCOMBE WAR MEMORIAL	333m	West
171178	Historic Site	FENTON HOUSE	360m	West
115208	Suburb	LIDCOMBE	377m	North
143273	Library	LIDCOMBE LIBRARY	391m	West
171140	Community Facility	LIDCOMBE COMMUNITY CENTRE	391m	West
160097	Club	DOOLEYS LIDCOMBE CATHOLIC CLUB	398m	North West
142070	Primary School	LIDCOMBE PUBLIC SCHOOL	446m	North
171244	Park	BRIDGE STREET GARDENS	463m	West
171143	Place Of Worship	SYDNEY GRACE CHURCH	467m	South West
61881	Place Of Worship	CATHOLIC CHURCH	513m	North
171179	Park	SWETE ST RESERVE	529m	North
171144	Place Of Worship	SAINT EPHRAIM SYRIAN ORTHODOX CHURCH	532m	South West
171187	Park	ERIC CRESCENT RESERVE	537m	North East
171230	Historic Site	ROOKWOOD CEMETERY AND NECROPOLIS	541m	South East

Map Id	Feature Type	Label	Distance	Direction
171185	Park	APEX RESERVE	578m	North West
171287	Park	OLYMPIC DRIVE RESERVE	583m	South West
171286	Park	OLYMPIC DRIVE RESERVE	585m	South West
61744	Place Of Worship	BAPTIST CHURCH	589m	West
81220	Cemetery	ROOKWOOD CEMETERY	660m	South East
171180	Park	PLAYGROUND	666m	North
90582	Park	CHADWICK RESERVE	706m	North West
171177	Park	CARROLL STREET RESERVE	720m	West
59487	Place Of Worship	UNITING CHURCH	726m	North East
171188	Park	PLAYGROUND	728m	North East
171159	Swimming Pool	RUTH EVERUSS AQUATIC CENTRE	793m	North West
58816	Place Of Worship	PRESBYTERIAN CHURCH	806m	North
171182	Sports Court	TENNIS COURTS	825m	North West
171163	Place Of Worship	FULL GOSPEL LIFE CHURCH	851m	West
171264	Sports Field	PHILLIPS PARK	853m	North East
171288	Park	GRANDIN PARK	854m	South
97331	Sports Court	TENNIS COURTS	863m	North West
171189	Sports Court	CRICKET NETS	892m	North East
171176	Park	EAST STREET RESERVE	921m	South
171152	Community Facility	YOUTH CENTRE	930m	North West
171190	Park	PLAYGROUND	932m	North East
171173	Sports Court	CRICKET NETS	957m	South West
86035	Park	WYATT PARK	979m	North West

Topographic Data Source: © Land and Property Information (2015)

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Tanks (Areas)

What are the Tank Areas located within the report buffer?

Map Id	Tank Type	Status	Name	Capture Method	Feature Currency	Distance	Direction
N/A	No records in buffer						

Tanks (Points)

What are the Tank Points located within the report buffer?

Map Id	Tank Type	Status	Name	Capture Method	Feature Currency	Distance	Direction
N/A	No records in buffer						

Tanks Data Source: © Land and Property Information (2015)

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Topographic Features

2 Railway Street and 3-7 East Street, Lidcombe, NSW 2141

Easements

What Easements exist within the report buffer?

Map Id	Easement Class	Easement Type	Easement Width	Distance	Direction
120110285	Primary	Undefined		755m	South West

Easements Data Source: © Land and Property Information (2015)

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State Forest

What State Forest exist within the report buffer?

State Forest Number	State Forest Name	Distance	Direction
N/A	No records in buffer		

State Forest Data Source: © Land and Property Information (2015)

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National Parks and Wildlife Service Reserves

What NPWS Reserves exist within the report buffer?

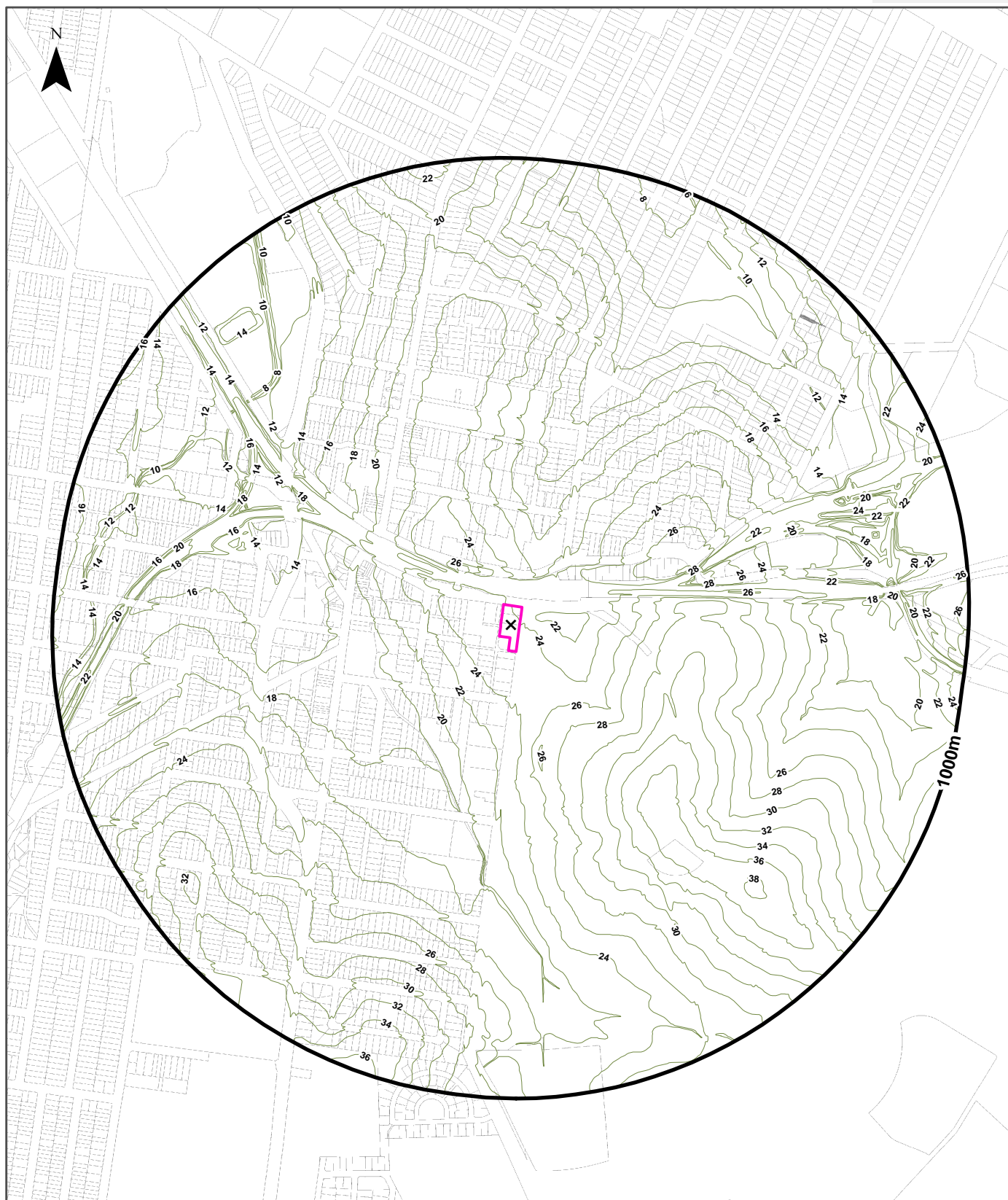
Reserve Number	Reserve Type	Reserve Name	Gazetted Date	Distance	Direction
N/A	No records in buffer				

NPWS Data Source: © Land and Property Information (2015)

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Elevation Contours (m AHD)

2 Railway Street and 3-7 East Street, Lidcombe, NSW 2141



Legend

- ✕ Site Centre
- Elevation Contour (m AHD)
- Site Boundary
- Report Buffer
- Property Boundary

Accuracy & Currency: This contour data can be up to 0.4 of the contour interval out in height and must therefore not be used for any design or engineering works, but only as a general guide to topography. Gaps may occur along contour lines due to vertical topography, obscured topography in the source photography such as buildings, dense vegetation or dead ground, or the fact that original buildings have been replaced in the intervening thirty years since the original contour capture.

Scale:
0 100 200 400
Meters

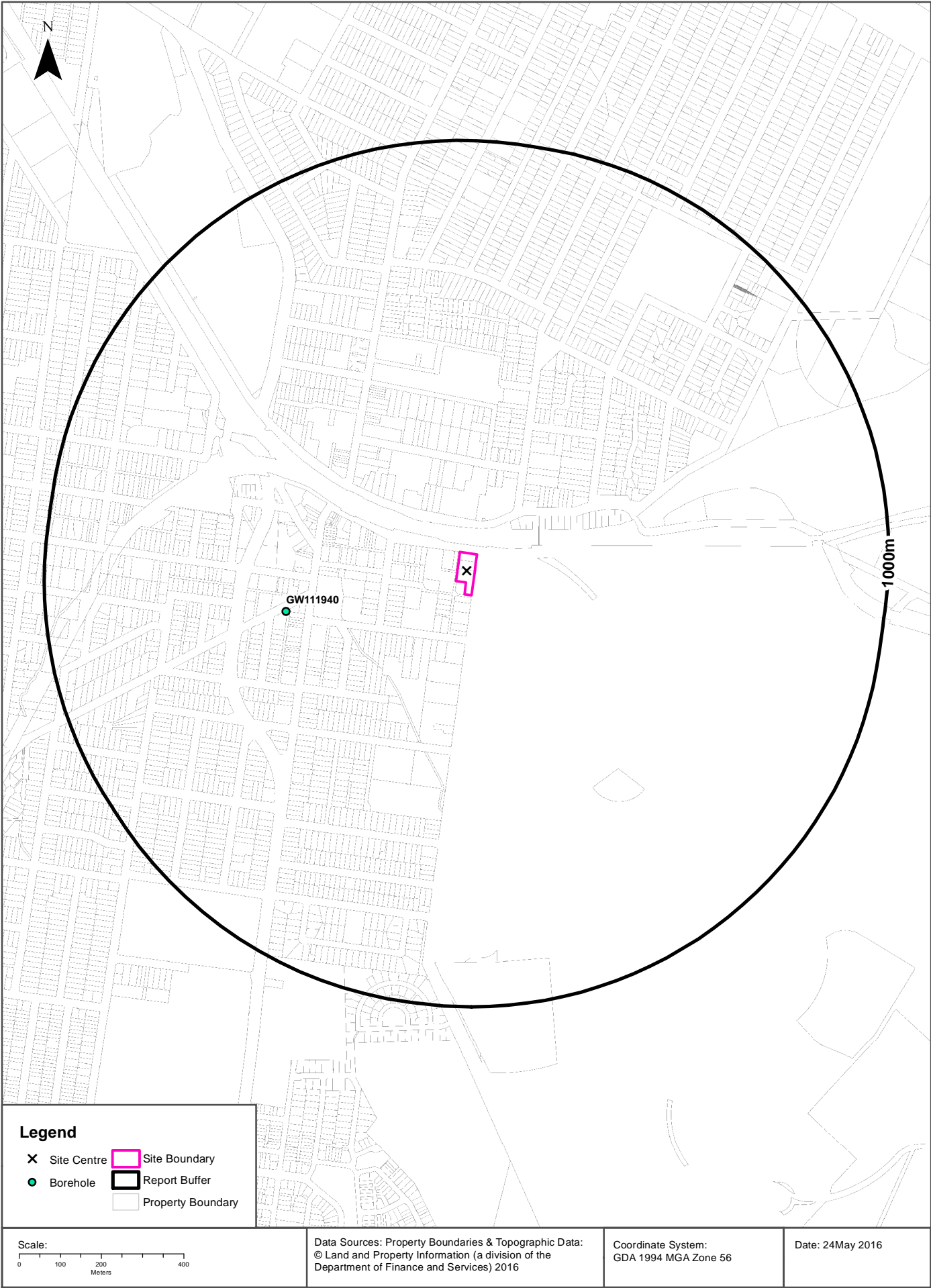
Data Sources: Property Boundaries & Topographic Data:
© Land and Property Information (a division of the
Department of Finance and Services) 2016

Coordinate System:
GDA 1994 MGA Zone 56

Date: 24 May 2016

Groundwater Boreholes

2 Railway Street and 3-7 East Street, Lidcombe, NSW 2141



Hydrogeology & Groundwater

2 Railway Street and 3-7 East Street, Lidcombe, NSW 2141

Hydrogeology

Description of aquifers on-site:

Description
Porous, extensive aquifers of low to moderate productivity

Description of aquifers within the report buffer:

Description
Porous, extensive aquifers of low to moderate productivity

Hydrogeology Map of Australia : Commonwealth of Australia (Geoscience Australia)

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Groundwater Boreholes

Boreholes within the report buffer:

GW No.	Licence No	Work Type	Owner Type	Purpose	Contractor	Complete Date	Final Depth	Drilled Depth	Salinity	SWL	Yield	Elev	Dist	Dir
GW111940	10BL605200	Bore	Private	Monitoring		28/06/2012	6.10	6.10		2.7			419m	West

Borehole Data Source : NSW Department of Primary Industries - Office of Water / Water Administration Ministerial Corporation for all bores prefixed with GW. All other bores © Commonwealth of Australia (Bureau of Meteorology) 2015. Creative Commons 3.0 © Commonwealth of Australia <http://creativecommons.org/licenses/by/3.0/au/deed.en>

Driller's Logs

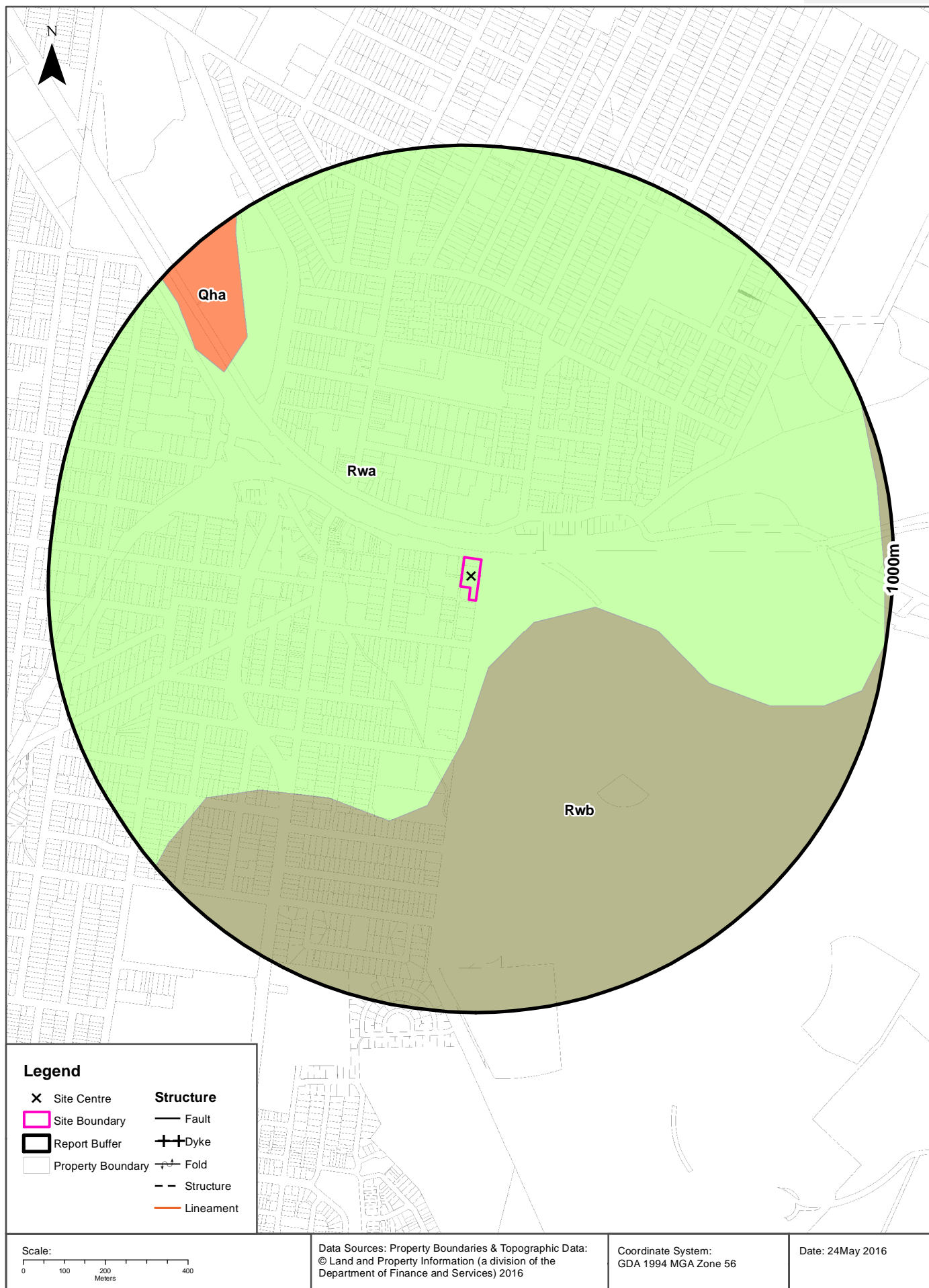
Drill log data relevant to the boreholes within the report buffer:

Groundwater No	Drillers Log	Distance	Direction
GW111940	0.00m-0.15m CONCRETE 0.15m-0.20m SAND BROWN, FILLING 0.20m-0.50m SILTY CLAY GREY SOFT 0.50m-1.30m CLAY STIFF,MOTTLED RED AND GREY 1.30m-5.50m CLAY SOFT TO FIRM,MOTTLED 5.50m-6.10m SHALE, LOW STRENGTH ,GREY,SHALE	419m	West

Drill Log Data Source: NSW Department of Primary Industries - Office of Water / Water Administration Ministerial Corp
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Geology 1:100,000

2 Railway Street and 3-7 East Street, Lidcombe, NSW 2141



Geology

2 Railway Street and 3-7 East Street, Lidcombe, NSW 2141

Geological Units

What are the Geological Units onsite?

Symbol	Description	Unit Name	Group	Sub Group	Age	Dom Lith	Map Sheet	Dataset
Rwa	Black to dark grey shale and laminate	Ashfield Shale	Wianamatta Group		Triassic		Sydney	1:100,000

What are the Geological Units within the report buffer?

Symbol	Description	Unit Name	Group	Sub Group	Age	Dom Lith	Map Sheet	Dataset
Qha	Silty to peaty quartz sand, silt, and clay. Ferruginous and humic cementation in places. Common shell layers				Quaternary		Sydney	1:100,000
Rwa	Black to dark grey shale and laminate	Ashfield Shale	Wianamatta Group		Triassic		Sydney	1:100,000
Rwb	Shale, carbonaceous claystone, laminate, fine to medium-grained lithic sandstone, rare coal	Bringelly Shale	Wianamatta Group		Triassic		Sydney	1:100,000

Geological Structures

What are the Geological Structures onsite?

Feature	Name	Description	Map Sheet	Dataset
No features				1:100,000

What are the Geological Structures within the report buffer?

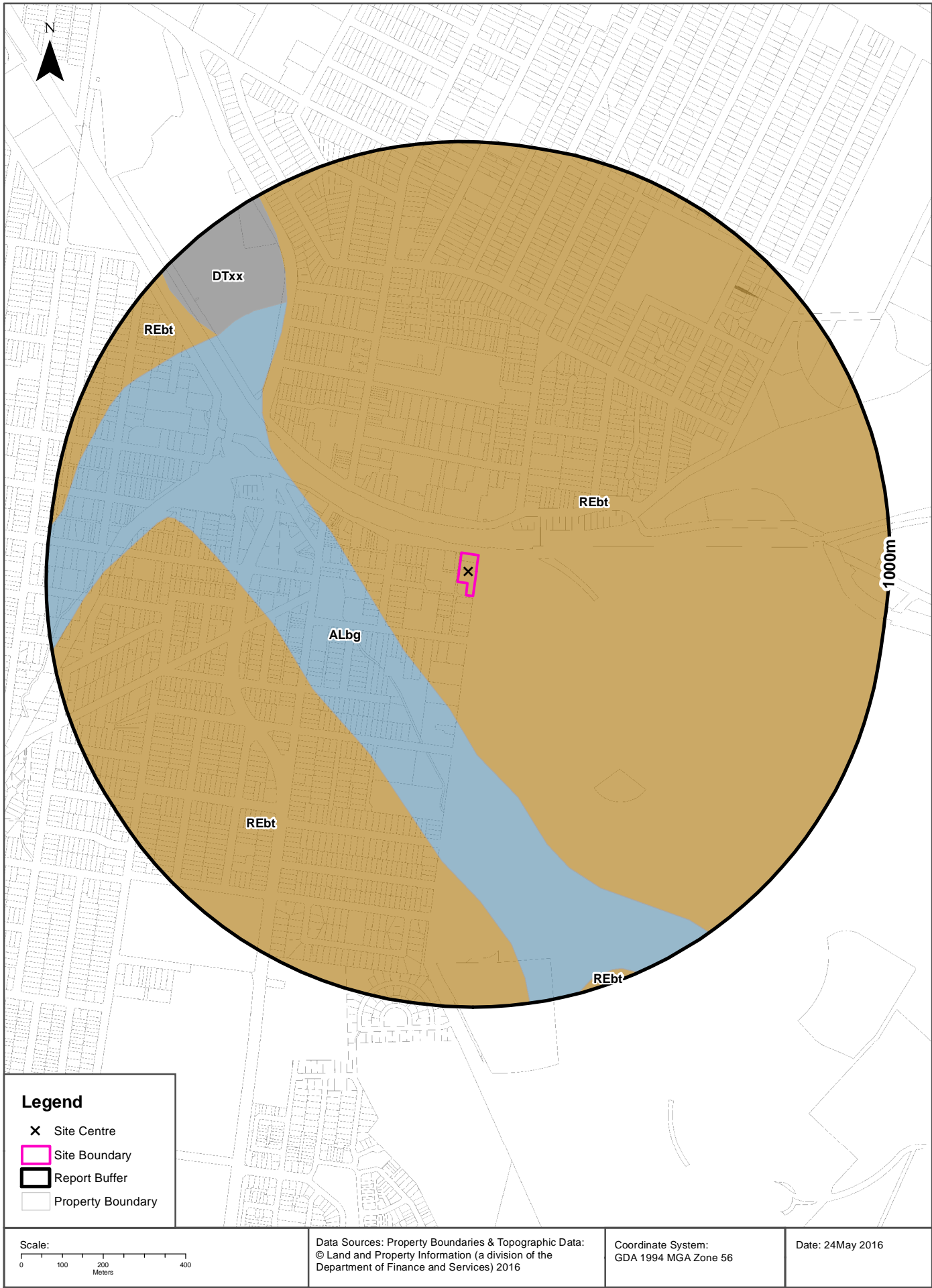
Feature	Name	Description	Map Sheet	Dataset
No features				1:100,000

Geological Data Source : NSW Department of Industry, Resources & Energy

© State of New South Wales through the NSW Department of Industry, Resources & Energy

Soil Landscapes

2 Railway Street and 3-7 East Street, Lidcombe, NSW 2141



Soils

2 Railway Street and 3-7 East Street, Lidcombe, NSW 2141

Soil Landscapes

What are the onsite Soil Landscapes?

Soil Code	Name	Group	Process	Map Sheet	Scale
REbt	BLACKTOWN		RESIDUAL	Sydney	1:100,000

What are the Soil Landscapes within the report buffer?

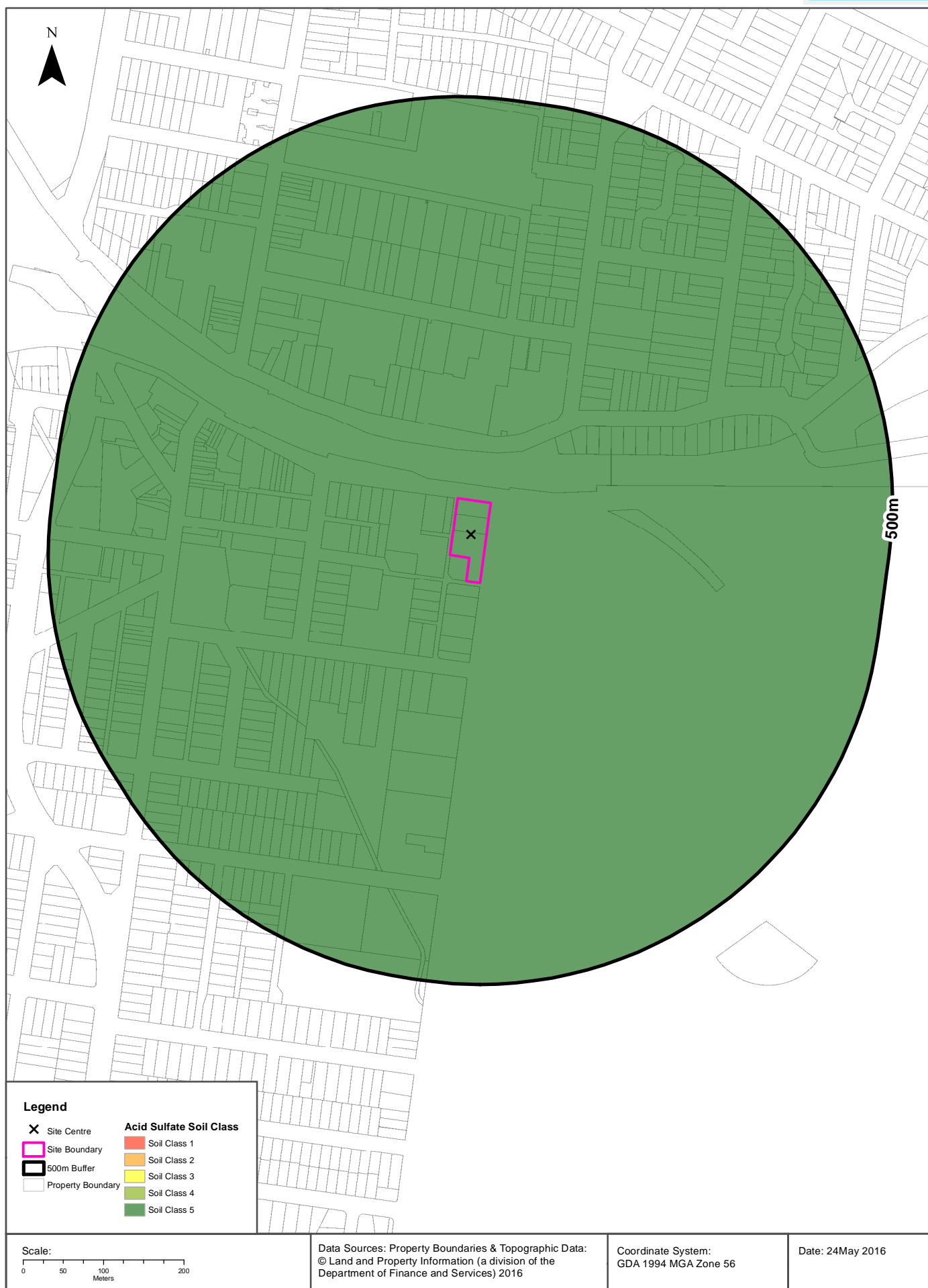
Soil Code	Name	Group	Process	Map Sheet	Scale
ALbg	BIRONG		ALLUVIAL	Sydney	1:100,000
DTxx	DISTURBED TERRAIN		DISTURBED TERRAIN	Sydney	1:100,000
REbt	BLACKTOWN		RESIDUAL	Sydney	1:100,000

Soils Landscapes Data Source : NSW Office of Environment and Heritage

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Acid Sulfate Soils

2 Railway Street and 3-7 East Street, Lidcombe, NSW 2141



Acid Sulfate Soils

2 Railway Street and 3-7 East Street, Lidcombe, NSW 2141

Acid Sulfate Soils

What is the on-site Acid Sulfate Soil Plan Class that presents the largest environmental risk?

Soil Class	Description
5	Works within 500 metres of adjacent Class 1, 2, 3, or 4 land which are likely to lower the watertable below 1 metre AHD on adjacent Class 1, 2, 3 or 4 land, present an environmental risk

If the on-site Soil Class is 5, what other soil classes exist within 500m?

Soil Class	Description	Distance	Direction
None			

Acid Sulfate Data Source Accessed 03/06/2015: NSW Crown Copyright - Planning and Environment
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Dryland Salinity

2 Railway Street and 3-7 East Street, Lidcombe, NSW 2141

Dryland Salinity

Is there Dryland Salinity data onsite?

No

Is there Dryland Salinity data within the report buffer?

No

What Dryland Salinity assessments are given?

Assessment 2000	Assessment 2020	Assessment 2050	Distance	Direction
N/A	N/A	N/A	N/A	N/A

Dryland Salinity Data Source : National Land and Water Resources Audit

The Commonwealth and all suppliers of source data used to derive the maps of "Australia, Forecast Areas Containing Land of High Hazard or Risk of Dryland Salinity from 2000 to 2050" do not warrant the accuracy or completeness of information in this product. Any person using or relying upon such information does so on the basis that the Commonwealth and data suppliers shall bear no responsibility or liability whatsoever for any errors, faults, defects or omissions in the information. Any persons using this information do so at their own risk.

In many cases where a high risk is indicated, less than 100% of the area will have a high hazard or risk.

Mining Subsidence Districts

2 Railway Street and 3-7 East Street, Lidcombe, NSW 2141

Mining Subsidence Districts

Mining Subsidence Districts within the report buffer?

District	Distance	Direction
There are no Mining Subsidence Districts within the report buffer		

Mining Subsidence District Data Source: © Land and Property Information (2015)
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Environmental Zoning

2 Railway Street and 3-7 East Street, Lidcombe, NSW 2141

State Environmental Planning Policy Protected Areas

Are there any State Environmental Planning Policy Protected Areas onsite or within the report buffer?

Dataset	Onsite	Within Site Buffer	Distance
SEPP14 - Coastal Wetlands	No	No	N/A
SEPP26 - Littoral Rainforests	No	No	N/A
SEPP71 - Coastal Protection Zone	No	No	N/A

SEPP Protected Areas Data Source: NSW Department of Planning & Environment

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State Environmental Planning Policy Major Developments (2005)

State Environmental Planning Policy Major Developments within the report buffer?

Map Id	Feature	Effective Date	Distance	Direction
N/A	No records within buffer			

SEPP Major Development Data Source: NSW Department of Planning & Environment

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State Environmental Planning Policy Strategic Land Use Areas

State Environmental Planning Policy Strategic Land Use Areas onsite or within the report buffer?

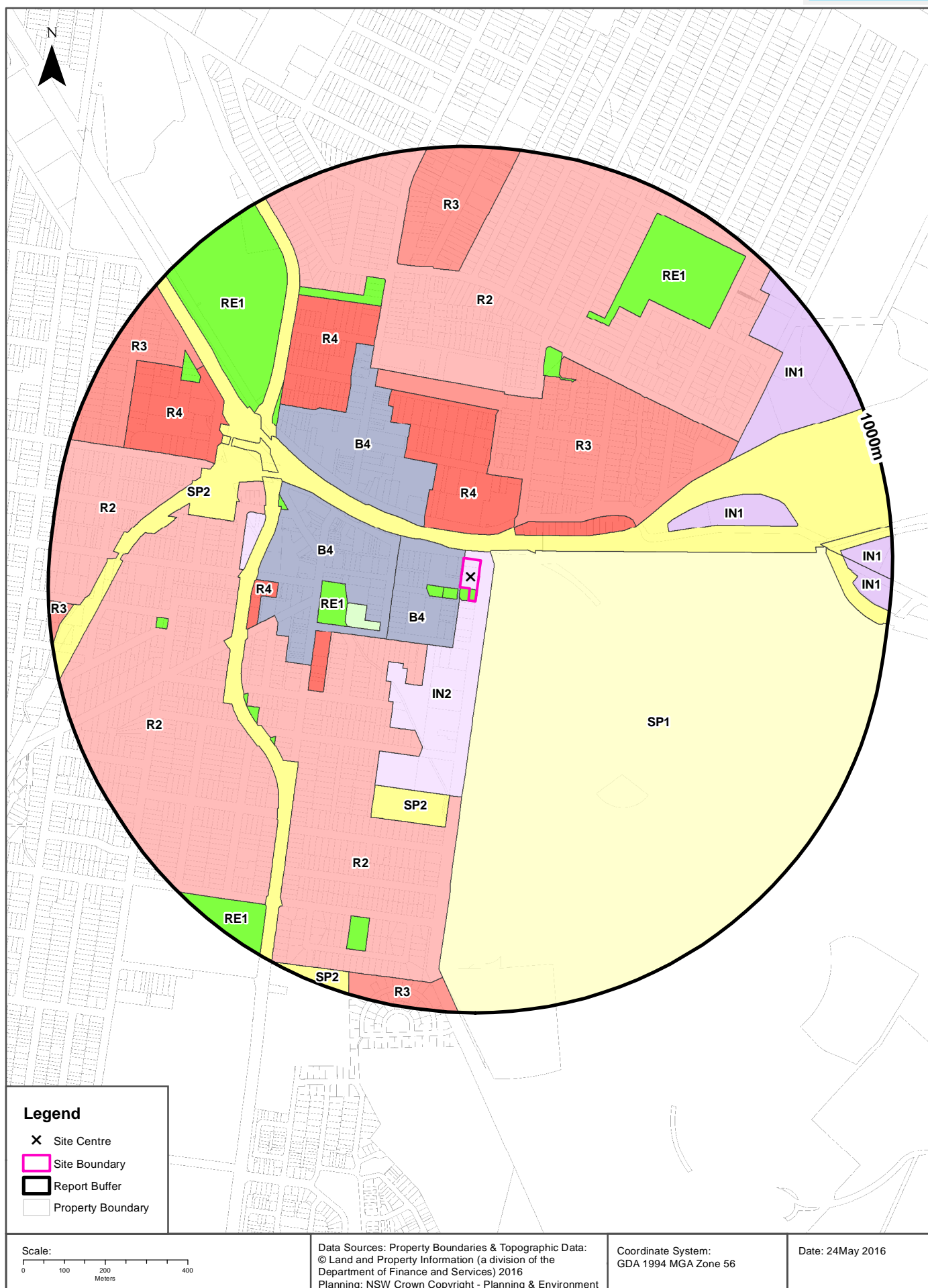
Strategic Land Use	SEPPNo	Effective Date	Amendment	Amendment Year	Distance	Direction
No records within buffer						

SEPP Strategic Land Use Data Source: NSW Department of Planning & Environment

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LEP Planning Zones

2 Railway Street and 3-7 East Street, Lidcombe, NSW 2141



Local Environmental Plan

2 Railway Street and 3-7 East Street, Lidcombe, NSW 2141

Land Zoning

What Local Environmental Plan Land Zones exist within the report buffer?

Zone	Description	Purpose	LEP or SEPP	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
IN2	Light Industrial		Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	18/09/2015		0m	Onsite
RE1	Public Recreation		Auburn Local Environmental Plan 2010	18/09/2015	18/09/2015	18/09/2015	Amendment No 14	0m	Onsite
B4	Mixed Use		Auburn Local Environmental Plan 2010	18/09/2015	18/09/2015	18/09/2015	Amendment No 14	0m	West
RE1	Public Recreation		Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	18/09/2015		0m	South
RE1	Public Recreation		Auburn Local Environmental Plan 2010	18/09/2015	18/09/2015	18/09/2015	Amendment No 14	6m	South West
SP2	Infrastructure	Railway	Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	18/09/2015		20m	North West
SP1	Special Activities	Cemetery	Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	18/09/2015		27m	South East
RE1	Public Recreation		Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	18/09/2015		40m	West
R4	High Density Residential		Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	18/09/2015		60m	North
R3	Medium Density Residential		Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	18/09/2015		113m	North East
B4	Mixed Use		Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	18/09/2015		125m	North West
R2	Low Density Residential		Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	18/09/2015		147m	South West
B4	Mixed Use		Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	18/09/2015		161m	West
RE2	Private Recreation		Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	18/09/2015		211m	West
RE1	Public Recreation		Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	18/09/2015		276m	West
R4	High Density Residential		Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	18/09/2015		331m	South West
R2	Low Density Residential		Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	18/09/2015		409m	North
R4	High Density Residential		Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	18/09/2015		442m	West
RE1	Public Recreation		Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	18/09/2015		444m	West
R4	High Density Residential		Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	18/09/2015		457m	North West
IN1	General Industrial		Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	18/09/2015		460m	East
SP2	Infrastructure	Road	Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	18/09/2015		461m	South West
RE1	Public Recreation		Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	18/09/2015		475m	North
SP2	Infrastructure	Defence Land	Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	18/09/2015		475m	South
IN2	Light Industrial		Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	18/09/2015		492m	West
R2	Low Density Residential		Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	18/09/2015		496m	South West
SP2	Infrastructure	Road	Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	18/09/2015		497m	North West
SP2	Infrastructure	Road	Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	18/09/2015		544m	North West
RE1	Public Recreation		Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	18/09/2015		558m	North West
RE1	Public Recreation		Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	18/09/2015		569m	South West

Zone	Description	Purpose	LEP or SEPP	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
RE1	Public Recreation		Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	18/09/2015		573m	South West
RE1	Public Recreation		Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	18/09/2015		575m	South West
RE1	Public Recreation		Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	18/09/2015		619m	North West
SP2	Infrastructure	Road	Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	18/09/2015		635m	North West
RE1	Public Recreation		Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	18/09/2015		646m	North East
IN1	General Industrial		Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	18/09/2015		648m	North East
R2	Low Density Residential		Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	18/09/2015		648m	West
R4	High Density Residential		Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	18/09/2015		648m	North West
R3	Medium Density Residential		Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	18/09/2015		698m	North
RE1	Public Recreation		Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	18/09/2015		713m	West
RE1	Public Recreation		Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	18/09/2015		772m	North West
R3	Medium Density Residential		Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	18/09/2015		787m	North West
RE1	Public Recreation		Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	18/09/2015		809m	South
SP2	Infrastructure	Rail Infrastructure	Strathfield Local Environmental Plan 2012	15/03/2013	29/03/2013	21/11/2014		824m	East
SP2	Infrastructure	Railway	Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	18/09/2015		837m	East
IN1	General Industrial		Strathfield Local Environmental Plan 2012	15/03/2013	29/03/2013	21/11/2014		872m	East
IN1	General Industrial		Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	18/09/2015		877m	East
RE1	Public Recreation		Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	18/09/2015		889m	South West
R3	Medium Density Residential		Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	18/09/2015		917m	South
R3	Medium Density Residential		Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	18/09/2015		939m	West
SP2	Infrastructure	Hospital	Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	18/09/2015		948m	South

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Local Environmental Plan

2 Railway Street and 3-7 East Street, Lidcombe, NSW 2141

Minimum Subdivision Lot Size

What are the onsite Local Environmental Plan Minimum Subdivision Lot Sizes?

Symbol	Minimum Lot Size	LEP or SEPP	Published Date	Commenced Date	Currency Date	Amendment	Percentage of Site Area
U	1500 m2	Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	18/09/2015		85.61

Maximum Height of Building

What are the onsite Local Environmental Plan Maximum Height of Buildings?

Symbol	Maximum Height of Building	LEP or SEPP	Published Date	Commenced Date	Currency Date	Amendment	Percentage of Site Area
No Data							

Floor Space Ratio

What are the onsite Local Environmental Plan Floor Space Ratios?

Symbol	Floor Space Ratio	LEP or SEPP	Published Date	Commenced Date	Currency Date	Amendment	Percentage of Site Area
N	1.00	LEP	29/10/2010	29/10/2010	18/09/2015		85.5

Land Application

What are the onsite Local Environmental Plan Land Applications?

Application Type	LEP or SEPP	Published Date	Commenced Date	Currency Date	Amendment	Percentage of Site Area
Included	Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	04/07/2014		100

Land Reservation Acquisition

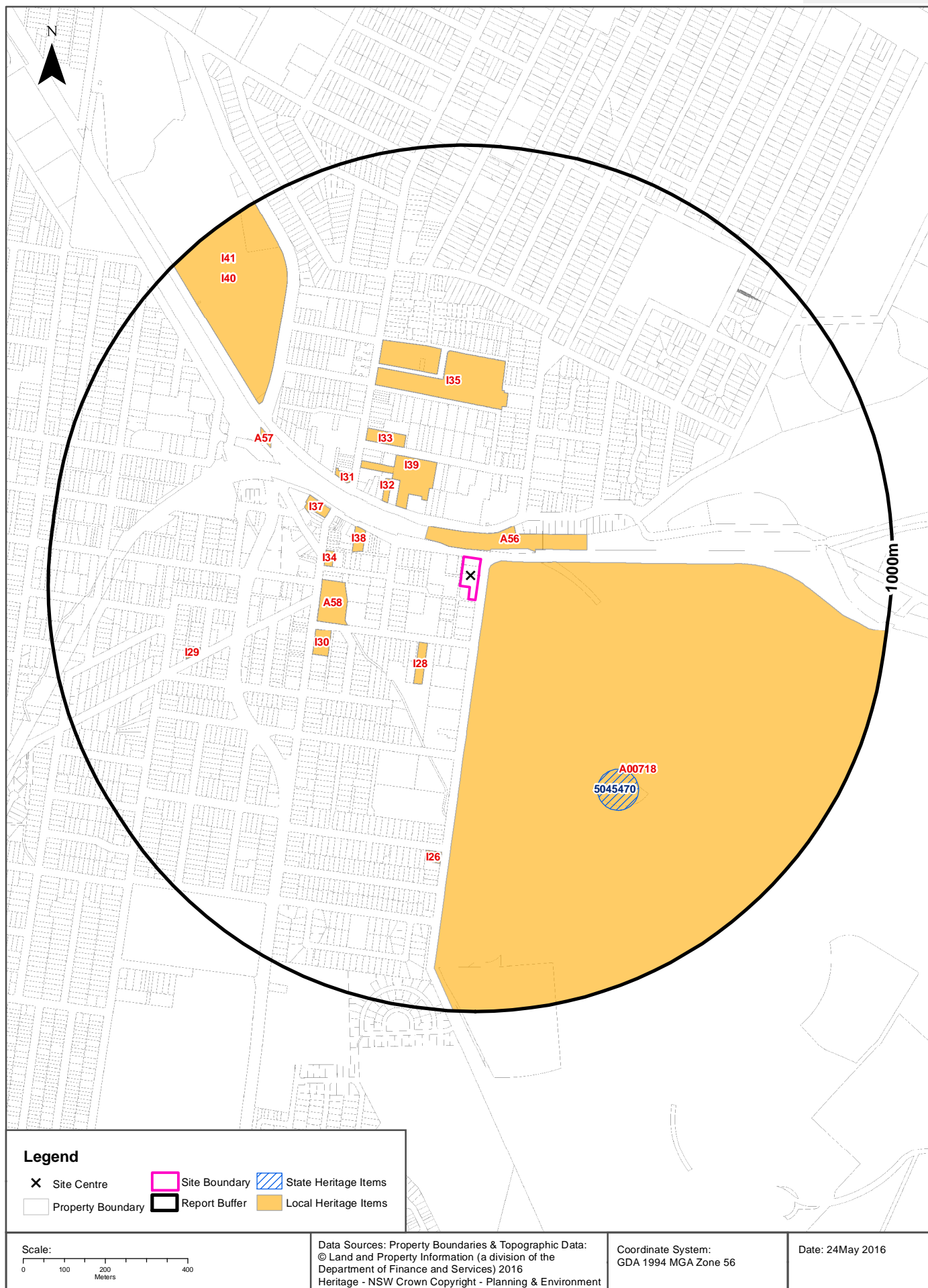
What are the onsite Local Environmental Plan Land Reservation Acquisitions?

Reservation	LEP	Published Date	Commenced Date	Currency Date	Amendment	Comments	Percentage of Site Area
Public Recreation	Auburn Local Environmental Plan 2010	18/09/2015	18/09/2015	18/09/2015	Amendment No 14		14.4

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Heritage Items

2 Railway Street and 3-7 East Street, Lidcombe, NSW 2141



Heritage

2 Railway Street and 3-7 East Street, Lidcombe, NSW 2141

State Heritage Items

What are the State Heritage Items located within the report buffer?

Map Id	Name	Address	LGA	Listing Date	Listing No	Plan No	Distance	Direction
5045470	Rookwood Cemetery and Necropolis		Auburn		00718	1770	527m	South East

Heritage Data Source: NSW Crown Copyright - Planning & Environment

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Local Heritage Items

What are the Local Heritage Items located within the report buffer?

Map Id	Name	Classification	Significance	LEP or Act	Published Date	Commenced Date	Currency Date	Distance	Direction
A56	Lidcombe Signal Box	Item - Archaeological	Local	Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	29/10/2010	20m	North East
A00718	Rookwood Cemetery or Necropolis	Item - Archaeological	State	Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	29/10/2010	22m	South East
I28	Dwelling	Item - General	Local	Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	29/10/2010	147m	South West
I39	St Joachims Catholic Church, Parish Hall and School	Item - General	Local	Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	29/10/2010	164m	North
I32	Lidcombe Fire Station	Item - General	Local	Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	29/10/2010	228m	North West
I38	Royal Oak Hotel	Item - General	Local	Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	29/10/2010	246m	West
A58	Lidcombe War Memorial Statue	Item - Archaeological	Local	Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	29/10/2010	276m	West
I33	Lidcombe Police Station	Item - General	Local	Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	29/10/2010	303m	North West
I34	Lidcombe Post Office	Item - General	Local	Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	29/10/2010	315m	West
I30	Fenton House	Item - General	Local	Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	29/10/2010	331m	South West
I31	Hotel Lidcombe	Item - General	Local	Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	29/10/2010	332m	North West
I37	Railway Hotel	Item - General	Local	Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	29/10/2010	346m	North West
I35	Lidcombe Public School and Infants Department	Item - General	Local	Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	29/10/2010	368m	North
A57	Railway overpass over Olympic Drive	Item - Archaeological	Local	Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	29/10/2010	540m	North West
I26	The Gables	Item - General	Local	Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	29/10/2010	618m	South

Map Id	Name	Classification	Significance	LEP or Act	Published Date	Commenced Date	Currency Date	Distance	Direction
I40	Wyatt Park, Haslams Creek, Lidcombe Pool, Lidcombe Oval, Stormwater Drain	Item - General	Local	Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	29/10/2010	619m	North West
I41	Stand of Eucalyptus microcorys	Item - General	Local	Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	29/10/2010	619m	North West
I29	Dwelling	Item - General	Local	Auburn Local Environmental Plan 2010	29/10/2010	29/10/2010	29/10/2010	649m	West

Heritage Data Source: NSW Crown Copyright - Planning & Environment

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Natural Hazards

2 Railway Street and 3-7 East Street, Lidcombe, NSW 2141

Bushfire Prone Land

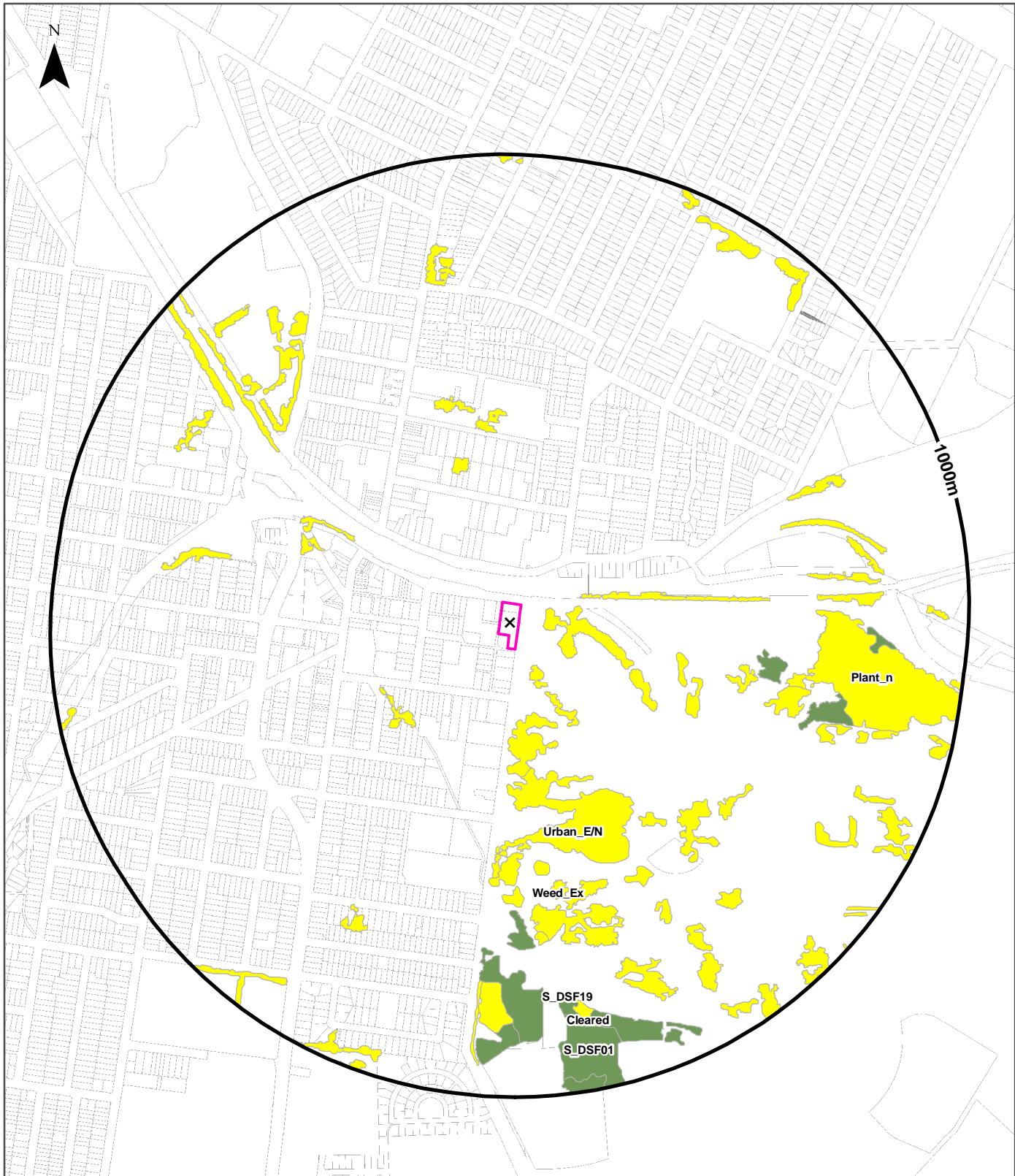
What are the nearest Bushfire Prone Land Categories that exist within the report buffer?

Bushfire Prone Land Category	Date Certified	Distance	Direction
No records within buffer			

Bushfire Prone Land Data Reference - NSW RFS GIS Data Set

Ecological Constraints - Native Vegetation & RAMSAR Wetlands

2 Railway Street and 3-7 East Street, Lidcombe, NSW 2141



Legend

- X Site Centre
- Site Boundary
- Report Buffer
- Property Boundary

- Rainforest
- Wet Sclerophyll Forests
- Dry Sclerophyll Forests

- Forested Wetlands
- Grassy Woodlands
- Heathlands

- Grasslands
- Freshwater Wetlands
- Saline Wetlands

- Artificial Wetlands
- Water
- Other

- RAMSAR Wetlands

Scale:

Data Sources: Property Boundaries & Topographic Data:
© Land and Property Information (a division of the
Department of Finance and Services) 2016

Coordinate System:
GDA 1994 MGA Zone 56

Date: 24May 2016

Ecological Constraints

2 Railway Street and 3-7 East Street, Lidcombe, NSW 2141

Native Vegetation

What native vegetation exists within the report buffer?

Map ID	Map Unit Name	Threatened Ecological Community NSW	Threatened Ecological Community EPBC Act	Understorey	Disturbance	Disturbance Index	Dominant Species	Dist	Direction
Urban_E/N	Urban_E/N: Urban Exotic/Native			00: Not assessed	00: Not assessed	0: Not assessed	Urban Exotic/ Native	49m	South East
Plant_n	Plant_n: Plantation (native and/or exotic)			00: Not assessed	00: Not assessed	0: Not assessed	Native or Exotic Plantations	450m	South
Weed_Ex	Weed_Ex: Weeds and Exotics			00: Not assessed	00: Not assessed	0: Not assessed	Exotic Species >90%cover	521m	South
S_DSF01	S_DSF01: Castlereagh Ironbark Forest	Castlereagh/ Cooks River Ironbark Forest		13: Dry shrubs and grasses	31: Parkland open understorey	4: Very high	E.fibrosa/ E.molucanna/ M.decora/ +/- E.longifolia	532m	East
Cleared	Cleared			00: Not assessed	00: Not assessed	0: Not assessed	Derived Grassland (Native/ Exotic)	775m	South
S_DSF19	S_DSF19: Castlereagh Scribbly Gum Woodland	Castlereagh Scribbly Gum Woodland		30: Melaleuca dominant	13: Weeds	2: Moderate	E.sclerophylla/ E.parramattensis/ A.bakeri	776m	South

Native Vegetation of the Sydney Metropolitan Area : NSW Office of Environment and Heritage
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RAMSAR Wetlands

What RAMSAR Wetland areas exist within the report buffer?

Map Id	RAMSAR Name	Wetland Name	Designation Date	Source	Distance	Direction
N/A	No records in buffer					

RAMSAR Wetlands Data Source: © Commonwealth of Australia - Department of Environment

Ecological Constraints

2 Railway Street and 3-7 East Street, Lidcombe, NSW 2141

ATLAS of NSW Wildlife

Endangered & Vulnerable Species on the ATLAS of NSW Wildlife database, within 10km of the site?

Class	Family	Scientific	Common	Exotic	NSW Status	Commonwealth Status
Amphibia	Hylidae	<i>Litoria aurea</i>	Green and Golden Bell Frog	No	Endangered, Protected	Vulnerable
Aves	Accipitridae	<i>Circus assimilis</i>	Spotted Harrier	No	Vulnerable, Protected	
Aves	Accipitridae	<i>Hieraaetus morphnoides</i>	Little Eagle	No	Vulnerable, Protected	
Aves	Accipitridae	<i>Pandion cristatus</i>	Eastern Osprey	No	Vulnerable, Protected, Category 3 Sensitive Species	
Aves	Anatidae	<i>Stictonetta naevosa</i>	Freckled Duck	No	Vulnerable, Protected	
Aves	Ardeidae	<i>Botaurus poiciloptilus</i>	Australasian Bittern	No	Endangered, Protected	Endangered
Aves	Ardeidae	<i>Ixobrychus flavicollis</i>	Black Bittern	No	Vulnerable, Protected	
Aves	Burhinidae	<i>Burhinus grallarius</i>	Bush Stone-curlew	No	Endangered, Protected	
Aves	Charadriidae	<i>Charadrius leschenaultii</i>	Greater Sand-plover	No	Vulnerable, Protected	CAMBA, JAMBA, ROKAMBA
Aves	Columbidae	<i>Ptilinopus superbus</i>	Superb Fruit-Dove	No	Vulnerable, Protected	
Aves	Falconidae	<i>Falco subniger</i>	Black Falcon	No	Vulnerable, Protected	
Aves	Laridae	<i>Sternula albifrons</i>	Little Tern	No	Endangered, Protected	CAMBA, JAMBA, ROKAMBA
Aves	Meliphagidae	<i>Anthochaera phrygia</i>	Regent Honeyeater	No	Critically Endangered Species, Protected	Critically Endangered
Aves	Meliphagidae	<i>Epthianura albifrons</i>	White-fronted Chat	No	Vulnerable, Protected	
Aves	Meliphagidae	<i>Epthianura albifrons</i>	White-fronted Chat population in the Sydney Metropolitan Catchment Management Area	No	Endangered Population, Vulnerable, Protected	
Aves	Meliphagidae	<i>Melithreptus gularis gularis</i>	Black-chinned Honeyeater (eastern subspecies)	No	Vulnerable, Protected	
Aves	Neosittidae	<i>Daphoenositta chrysoptera</i>	Varied Sittella	No	Vulnerable, Protected	
Aves	Petroicidae	<i>Petroica boodang</i>	Scarlet Robin	No	Vulnerable, Protected	
Aves	Petroicidae	<i>Petroica phoenicea</i>	Flame Robin	No	Vulnerable, Protected	
Aves	Psittacidae	<i>Glossopsitta pusilla</i>	Little Lorikeet	No	Vulnerable, Protected	
Aves	Psittacidae	<i>Lathamus discolor</i>	Swift Parrot	No	Endangered, Protected, Category 3 Sensitive Species	Endangered
Aves	Psittacidae	<i>Neophema pulchella</i>	Turquoise Parrot	No	Vulnerable, Protected, Category 3 Sensitive Species	
Aves	Rostratulidae	<i>Rostratula australis</i>	Australian Painted Snipe	No	Endangered, Protected	Endangered
Aves	Scolopacidae	<i>Calidris ferruginea</i>	Curlew Sandpiper	No	Endangered, Protected	CE,C,J,K
Aves	Scolopacidae	<i>Calidris tenuirostris</i>	Great Knot	No	Vulnerable, Protected	CAMBA, JAMBA, ROKAMBA
Aves	Scolopacidae	<i>Limicola falcinellus</i>	Broad-billed Sandpiper	No	Vulnerable, Protected	CAMBA, JAMBA, ROKAMBA
Aves	Scolopacidae	<i>Limosa limosa</i>	Black-tailed Godwit	No	Vulnerable, Protected	CAMBA, JAMBA, ROKAMBA
Aves	Scolopacidae	<i>Xenus cinereus</i>	Terek Sandpiper	No	Vulnerable, Protected	CAMBA, JAMBA, ROKAMBA
Aves	Strigidae	<i>Ninox connivens</i>	Barking Owl	No	Vulnerable, Protected, Category 3 Sensitive Species	

Class	Family	Scientific	Common	Exotic	NSW Status	Commonwealth Status
Aves	Strigidae	Ninox strenua	Powerful Owl	No	Vulnerable, Protected, Category 3 Sensitive Species	
Aves	Tytonidae	Tyto longimembris	Eastern Grass Owl	No	Vulnerable, Protected, Category 3 Sensitive Species	
Aves	Tytonidae	Tyto novaehollandiae	Masked Owl	No	Vulnerable, Protected, Category 3 Sensitive Species	
Gastropoda	Camaenidae	Meridolum corneovirens	Cumberland Plain Land Snail	No	Endangered	
Mammalia	Burramyidae	Cercartetus nanus	Eastern Pygmy-possum	No	Vulnerable, Protected	
Mammalia	Dasyuridae	Dasyurus maculatus	Spotted-tailed Quoll	No	Vulnerable, Protected	Endangered
Mammalia	Dasyuridae	Dasyurus viverrinus	Eastern Quoll	No	Endangered, Protected	Critically Endangered
Mammalia	Emballonuridae	Saccolaimus flaviventris	Yellow-bellied Sheath-tail-bat	No	Vulnerable, Protected	
Mammalia	Molossidae	Mormopterus norfolkensis	Eastern Freetail-bat	No	Vulnerable, Protected	
Mammalia	Peramelidae	Perameles nasuta	Long-nosed Bandicoot population in inner western Sydney	No	Endangered Population, Protected	
Mammalia	Pteropodidae	Pteropus poliocephalus	Grey-headed Flying-fox	No	Vulnerable, Protected	Vulnerable
Mammalia	Vespertilionidae	Falsistrellus tasmaniensis	Eastern False Pipistrelle	No	Vulnerable, Protected	
Mammalia	Vespertilionidae	Miniopterus schreibersii oceanensis	Eastern Bentwing-bat	No	Vulnerable, Protected	
Mammalia	Vespertilionidae	Myotis macropus	Southern Myotis	No	Vulnerable, Protected	
Mammalia	Vespertilionidae	Scoteanax rueppellii	Greater Broad-nosed Bat	No	Vulnerable, Protected	
Flora	Apocynaceae	Marsdenia viridiflora subsp. viridiflora	Marsdenia viridiflora R. Br. subsp. viridiflora population in the Bankstown, Blacktown, Camden, Campbelltown, Fairfield, Holroyd, Liverpool and Penrith local government areas	No	Endangered Population	
Flora	Campanulaceae	Wahlenbergia multicaulis	Tadgell's Bluebell in the local government areas of Auburn, Bankstown, Baulkham Hills, Canterbury, Hornsby, Parramatta and Strathfield	No	Endangered Population	
Flora	Convolvulaceae	Wilsonia backhousei	Narrow-leafed Wilsonia	No	Vulnerable, Protected	
Flora	Dilleniaceae	Hibbertia sp. Bankstown		No	Critically Endangered Species, Protected	Critically Endangered
Flora	Elaeocarpaceae	Tetratheca glandulosa		No	Vulnerable, Protected	
Flora	Elaeocarpaceae	Tetratheca juncea	Black-eyed Susan	No	Vulnerable, Protected	Vulnerable
Flora	Ericaceae	Epacris purpurascens var. purpurascens		No	Vulnerable, Protected	
Flora	Fabaceae (Faboideae)	Dillwynia tenuifolia		No	Vulnerable, Protected	
Flora	Fabaceae (Faboideae)	Pultenaea parviflora		No	Endangered, Protected	Vulnerable
Flora	Fabaceae (Faboideae)	Pultenaea pedunculata	Matted Bush-pea	No	Endangered, Protected	
Flora	Fabaceae (Mimosoideae)	Acacia bynoeana	Bynoe's Wattle	No	Endangered, Protected	Vulnerable
Flora	Fabaceae (Mimosoideae)	Acacia clunies-rossiae	Kanangra Wattle	No	Vulnerable, Protected	
Flora	Fabaceae (Mimosoideae)	Acacia prominens	Gosford Wattle, Hurstville and Kogarah Local Government Areas	No	Endangered Population	
Flora	Fabaceae (Mimosoideae)	Acacia pubescens	Downy Wattle	No	Vulnerable, Protected	Vulnerable
Flora	Grammitidaceae	Grammitis stenophylla	Narrow-leaf Finger Fern	No	Endangered, Protected, Category 3 Sensitive Species	
Flora	Lobeliaceae	Hypsela sessiliflora		No	Endangered, Protected, Category 3 Sensitive Species	Extinct
Flora	Myrtaceae	Callistemon linearifolius	Netted Bottle Brush	No	Vulnerable, Protected, Category 3 Sensitive Species	

Class	Family	Scientific	Common	Exotic	NSW Status	Commonwealth Status
Flora	Myrtaceae	Darwinia biflora		No	Vulnerable, Protected	Vulnerable
Flora	Myrtaceae	Eucalyptus camfieldii	Camfield's Stringybark	No	Vulnerable, Protected	Vulnerable
Flora	Myrtaceae	Eucalyptus nicholii	Narrow-leaved Black Peppermint	No	Vulnerable, Protected	Vulnerable
Flora	Myrtaceae	Eucalyptus scoparia	Wallangarra White Gum	No	Endangered, Protected	Vulnerable
Flora	Myrtaceae	Leptospermum deanei		No	Vulnerable, Protected	Vulnerable
Flora	Myrtaceae	Melaleuca deanei	Deane's Paperbark	No	Vulnerable, Protected	Vulnerable
Flora	Myrtaceae	Syzygium paniculatum	Magenta Lilly Pilly	No	Endangered, Protected	Vulnerable
Flora	Myrtaceae	Triplarina imbricata	Creek Triplarina	No	Endangered, Protected	Endangered
Flora	Orchidaceae	Caladenia tessellata	Thick Lip Spider Orchid	No	Endangered, Protected, Category 2 Sensitive Species	Vulnerable
Flora	Orchidaceae	Genoplesium baueri	Bauer's Midge Orchid	No	Endangered, Protected, Category 2 Sensitive Species	Endangered
Flora	Orchidaceae	Pterostylis saxicola	Sydney Plains Greenhood	No	Endangered, Protected, Category 2 Sensitive Species	Endangered
Flora	Poaceae	Deyeuxia appressa		No	Endangered, Protected	Endangered
Flora	Proteaceae	Grevillea beadleana	Beadle's Grevillea	No	Endangered, Protected, Category 3 Sensitive Species	Endangered
Flora	Proteaceae	Persoonia hirsuta	Hairy Geebung	No	Endangered, Protected, Category 3 Sensitive Species	Endangered
Flora	Proteaceae	Persoonia nutans	Nodding Geebung	No	Endangered, Protected	Endangered
Flora	Rhamnaceae	Pomaderris prunifolia	P. prunifolia in the Parramatta, Auburn, Strathfield and Bankstown Local Government Areas	No	Endangered Population	
Flora	Thymelaeaceae	Pimelea curviflora var. curviflora		No	Vulnerable, Protected	Vulnerable
Flora	Thymelaeaceae	Pimelea spicata	Spiked Rice-flower	No	Endangered, Protected	Endangered
Flora	Zannichelliaceae	Zannichellia palustris		No	Endangered, Protected	

Data does not include records not defined as either endangered or vulnerable, and category 1 sensitive species are also excluded. NSW Office of Environment and Heritage's Atlas of NSW Wildlife, which holds data from a number of custodians. Data obtained 20/05/2016

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 - (h) the Report should not be relied upon for determining saleability or value or making any other decisions in relation to the Property and in particular should not be taken to be a rating or assessment of the desirability or market value of the property or its features; and
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Land Title Records

ADVANCE LEGAL SEARCHERS PTY LTD

(ACN 147 943 842)
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27th May, 2016

ENVIRONMENTAL INVESTIGATION SERVICES
PO BOX 976,
NORTH RYDE BC NSW 1670

Attention: Adam Smith,

RE:

**2 Railway Street,
and 3-7 East Street,
Lidcombe
Job No. E29427K**

Note 1:	Lot 2	DP 373141	(page 2)
Note 2:	Lot 3	DP 373141	(page 4)
Note 3:	Lot 4	DP 373141	(page 6)

Note 1:

Current Search

Folio Identifier 2/373141 (attached)

DP 373141 (attached)

Dated 24th May, 2016

Registered Proprietor:

AUTOMATION FEEDING DEVICES PTY LIMITED

Title Tree
Lot 2 DP 373141

Folio Identifier 2/373141

Certificate of Title Volume 6369 Folio 123

Certificate of Title Volume 1261 Folio 125

Summary of Proprietor(s) Lot 2 DP 373141

Year	Proprietor
------	------------

	(Lot 2 DP 373141)
1989 – todate	Automation Feeding Devices Pty Limited
	(Lot 2 DP 373141 – Area 1 Rood 31 ¼ Perches – CTVol 6369 Fol 123)
1988 – 1989	Automation Feeding Devices Pty Limited
1961 – 1988	David Holliet, company director
1951 – 1961	Creak & Ford Pty. Limited
	(Lot A DP 397 – Area 1 Acre 0 Roods 4 ¾ Perches – CTVol 1261 Fol 125)
1931 – 1951	The Great Synagogue, Sydney
<i>(1931 – 1951)</i>	<i>(lease to Henry John Larcombe, monumental mason and Annie Larcombe, widow, shown on CTVol 1261 Fol 125)</i>
1927 – 1931	George Judah Cohen, merchant Orwell Phillips, company manager John Jacob Cohen, district court judge
1927 – 1927	George Judah Cohen, merchant Orwell Phillips, company manager
1921 – 1927	George Judah Cohen, merchant Moritz Gotthelf, merchant Orwell Phillips, company manager
<i>(1922 – 1951)</i>	<i>(lease to Walter Alfred Dunkley, of part, monumental mason shown on CTVol 1261 Fol 125)</i>
<i>(1921 – 1951)</i>	<i>(lease to George William Larcombe, of part, monumental mason shown on CTVol 1261 Fol 125)</i>
1921 – 1921	George Judah Cohen, merchant Moritz Gotthelf, merchant
1898 – 1921	George Judah Cohen, merchant Louis Phillips, merchant Moritz Gotthelf, merchant

Note 2:

Current Search

Folio Identifier 3/373141 (title attached)
DP 373141 (plan attached)
Dated 24th May, 2016
Registered Proprietor:
AUTOMATION FEEDING DEVICES PTY LTD

Title Tree
Lot 3 DP 373141

Folio Identifier 3/373141

Certificate of Title Volume 6369 Folio 124

Certificate of Title Volume 1261 Folio 125

Summary of Proprietor(s) Lot 3 DP 373141

Year

Proprietor

	(Lot 3 DP 373141)
1989 – todate	Automation Feeding Devices Pty Ltd
(1989 – todate)	<i>(current leases to Crown Castle Australia Pty Limited shown on Folio Identifier 3/373141)</i>
(2002 – 2006)	<i>(leases shown on Historical Folio 3/373141)</i>
	(Lot 3 DP 373141 – Area 34 ½ Perches – CTVol 6369 Fol 124)
1977 – 1989	Automation Feeding Devices Pty Ltd
(1973 – 1989)	<i>(lease to Dangar Gedye and Malloch Pty Limited, shown on CTVol 6369 Fol 124))</i>
1963 – 1977	Lindsay George Petherbridge, business manager
1951 – 1963	A. Larcombe & Co. Pty. Limited
	(Lot A DP 397 – Area 1 Acre 0 Roods 4 ¾ Perches – CTVol 1261 Fol 125)
1931 – 1951	The Great Synagogue, Sydney
(1931 – 1951)	<i>(lease to Henry John Larcombe, monumental mason and Annie Larcombe, widow shown on CTVol 1261 Fol 125)</i>
1927 – 1931	George Judah Cohen, merchant Orwell Phillips, company manager John Jacob Cohen, district court judge
1927 – 1927	George Judah Cohen, merchant Orwell Phillips, company manager
1921 – 1927	George Judah Cohen, merchant Moritz Gotthelf, merchant Orwell Phillips, company manager
(1922 – 1951)	<i>(lease to Walter Alfred Dunkley, of part, monumental mason shown on CTVol 1261 Fol 125)</i>
(1921 – 1951)	<i>(lease to George William Larcombe, of part, monumental mason shown on CTVol 1261 Fol 125)</i>
1921 – 1921	George Judah Cohen, merchant Moritz Gotthelf, merchant
1898 – 1921	George Judah Cohen, merchant Louis Phillips, merchant Moritz Gotthelf, merchant

Note 3:

Current Search

Folio Identifier 4/373141 (title attached)
DP 373141 (plan attached)
Dated 24th May, 2016
Registered Proprietor:
LARCOMBE MEMORIALS PTY LTD

Title Tree
Lot 4 DP 373141

Folio Identifier 4/373141

Certificate of Title Volume 6380 Folio 5

Certificate of Title Volume 1261 Folio 125

Summary of Proprietor(s) Lot 4 DP 373141

Year	Proprietor
-------------	-------------------

	(Lot 4 DP 373141)
2004 – todate	Larcombe Memorials Pty Ltd
1989 – 2004	Petiolule Pty Limited
	(Lot 4 DP 373141 – Area 30 ½ Perches – CTVol 6380 Fol 5)
1980 – 1989	Petiolule Pty Limited
1951 – 1980	A. Larcombe & Co. Pty. Limited
	(Lot A DP 397 – Area 1 Acre 0 Roods 4 ¾ Perches – CTVol 1261 Fol 125)
1931 – 1951	The Great Synagogue, Sydney
<i>(1931 – 1951)</i>	<i>(lease to Henry John Larcombe, monumental mason and Annie Larcombe, widow shown on CTVol 1261 Fol 125)</i>
1927 – 1931	George Judah Cohen, merchant Orwell Phillips, company manager John Jacob Cohen, district court judge
1927 – 1927	George Judah Cohen, merchant Orwell Phillips, company manager
1921 – 1927	George Judah Cohen, merchant Moritz Gotthelf, merchant Orwell Phillips, company manager
<i>(1922 – 1951)</i>	<i>(lease to Walter Alfred Dunkley, of part, monumental mason shown on CTVol 1261 Fol 125)</i>
<i>(1921 – 1951)</i>	<i>(lease to George William Larcombe, of part, monumental mason shown on CTVol 1261 Fol 125)</i>
1921 – 1921	George Judah Cohen, merchant Moritz Gotthelf, merchant
1898 – 1921	George Judah Cohen, merchant Louis Phillips, merchant Moritz Gotthelf, merchant

Local Council Information

Cumberland Council

16 Memorial Avenue (PO Box 42)
MERRYLANDS NSW 2160
T 02 9840 9840 | F 02 9840 9734
www.cumberland.nsw.gov.au
DX 25408 MERRYLANDS
TTY 02 9840 9988
ABN 22 798 563 329

Auburn Branch

1 Susan Street, Auburn NSW 2144
PO Box 118, AUBURN NSW 1835
T 02 9735 1222 | F 02 9643 1120

Our Reference: C-10-06/11
Contact: Development Assessment

JK Group EIS
PO Box 976
NORTH RYDE BC NSW 1670

PLANNING CERTIFICATE

Issued under Section 149(2) of the
Environmental Planning and Assessment Act, 1979

Certificate No: 26012
Receipt No: 1059484
Date: 25 May 2016
Your Reference: E29427K AS:19417

Property Details

Address: 2 Railway Street, LIDCOMBE NSW 2141

Legal Description: Lot 4 DP 373141

Owner(s) Name (as recorded by Council):

Larcombe Memorials Pty Limited
2 Railway Street
LIDCOMBE NSW 2141

In accordance with the requirements of Section 149(2) of the *Environmental Planning and Assessment Act, 1979* (as amended), the following prescribed matters relate to the land at the date of this certificate.

Note: The information contained in Planning Certificates issued for a lot within Strata-Titled development relates to the land the development is situated on.

1. Names of Relevant Planning Instruments and DCPs

The name of:

- (a) *each environmental planning instrument that applies to the carrying out of development on the land.*
- (b) *each proposed environmental planning instrument that will apply to the carrying out of development on the land and that is or has been the subject of community consultation or on public exhibition under the Act (unless the Secretary has notified the council that the making of the proposed instrument has been deferred indefinitely or has not been approved).*
- (c) *each development control plan that applies to the carrying out of development on the land.*

In this clause, proposed environmental planning instrument includes a planning proposal for a LEP or a draft environmental planning instrument.

- 1(a) Auburn Local Environmental Plan 2010.
Sydney Regional Environmental Plan
State Environmental Planning Policy

(Sydney Harbour Catchment) 2005.
(Infrastructure) 2007

State Environmental Planning Policy	(Exempt and Complying Development Codes) 2008
State Environmental Planning Policy	(Affordable Rental Housing) 2009
State Environmental Planning Policy No. 62	Sustainable Aquaculture.
State Environmental Planning Policy	(State and Regional Development) 2011
State Environmental Planning Policy (Miscellaneous Consent Provisions)	2007.
State Environmental Planning Policy No. 19	Bushland in Urban Areas.
State Environmental Planning Policy No. 21	Caravan Parks.
State Environmental Planning Policy No. 30	Intensive Agriculture.
State Environmental Planning Policy No. 32	Urban Consolidation (Redevelopment of Urban Land).
State Environmental Planning Policy No. 33	Hazardous and Offensive Development.
State Environmental Planning Policy No. 50	Canal Estate Development.
State Environmental Planning Policy No. 55	Remediation of Land.
State Environmental Planning Policy No. 64	Advertising and Signage.
State Environmental Planning Policy No. 65	Design Quality of Residential Flat Development (Amendment 3).
State Environmental Planning Policy No. 70	Affordable Housing (Revised Schemes).
State Environmental Planning Policy	Building Sustainability Index: BASIX 2004
State Environmental Planning Policy	(State Significant Precincts) 2005
State Environmental Planning Policy	(Mining, Petroleum Production and Extractive Industries) 2007

1(b) Draft State Environmental Planning Policy (Competition) 2010

1(c) Auburn Development Control Plan 2010.

2. Zoning and Land Use under relevant LEPs

For each environmental planning instrument or proposed instrument referred to in clause 1 (other than a SEPP or proposed SEPP) that includes the land in any zone (however described):

- (a) *the identity of the zone, whether by reference to a name (such as “Residential Zone” or “Heritage Area”) or by reference to a number (such as “Zone No. 2(a))”,*
- (b) *the purpose for which the plan or instrument provides that development may be carried out within the zone without the need for development consent,*
- (c) *the purposes for which the plan or instrument provides that development may not be carried out within the zone except with development consent,*
- (d) *the purposes for which the plan or instrument provides that development is prohibited within the zone,*
- (e) *whether any development standards applying to the land fix minimum land dimensions for the erection of a dwelling-house on the land and, if so, the minimum land dimensions so fixed,*
- (f) *whether the land includes or comprises critical habitat,*
- (g) *whether the land is in a conservation area (however described),*
- (h) *whether an item of environmental heritage (however described) is situated on the land.*

(a) Zone IN2 - Light Industrial (Auburn Local Environmental Plan 2010)

(b) Under the provisions of the Auburn Local Environmental Plan 2010, development for the purpose of the following may be carried out within the zone WITHOUT DEVELOPMENT CONSENT:

- the provisions specified under Part 2 Permitted or Prohibited Development of the Auburn Local Environmental Plan 2010, there may be certain provisions carried out without development consent.

- the provisions specified under uses permitted without consent under the Land Use Table - Zone IN2 Light Industrial of the Auburn Local Environmental Plan 2010.
- the provisions listed under exempt development which satisfies the criteria for exempt development relevant to the applicable zone under Part 3 Exempt and Complying Development of the Auburn Local Environmental Plan 2010.
- the provisions specified under Part 5 Miscellaneous Provisions of the Auburn Local Environmental Plan 2010, there may be certain provisions carried out without development consent.
- the provisions specified under Part 6 Additional Local Provisions of the Auburn Local Environmental Plan 2010, there may be certain provisions carried out without development consent.

NOTE: The certificate provides zoning information for the land that is the subject of this certificate only. The applicant must refer to the Auburn Local Environmental Plan 2010 and associated maps in order to determine detailed provisions for above when carrying out development without consent under the applicable zone. The Auburn Local Environmental Plan 2010 written instrument and maps are available on the New South Wales legislation website at www.legislation.nsw.gov.au.

(c) Under the provisions of the Auburn Local Environmental Plan 2010, development for the purpose of the following may be carried out within the zone WITH DEVELOPMENT CONSENT:

- the provisions specified under Part 2 Permitted or Prohibited Development of the Auburn Local Environmental Plan 2010, there may be certain provisions which may be carried out with development consent.
- the provisions specified under objectives of the zone of the Land Use Table - Zone IN2 Light Industrial of the Auburn Local Environmental Plan 2010, the consent authority may not grant development consent to the carrying out of development within the applicable zone unless the consent authority is of the opinion that the carrying out of the development is consistent with the objectives of the zone.
- the provisions listed under uses permitted with consent in the Land Use Table - Zone IN2 Light Industrial of the Auburn Local Environmental Plan 2010.
- the provisions listed under complying development which satisfies the criteria for complying development relevant to the applicable zone under Part 3 Exempt and Complying Development of the Auburn Local Environmental Plan 2010.
- the provisions specified under Part 5 Miscellaneous Provisions of the Auburn Local Environmental Plan 2010, there may be certain provisions carried out with development consent.
- the provisions specified under Part 6 Additional Local Provisions of the Auburn Local Environmental Plan 2010, there may be certain provisions carried out with development consent.

NOTE: The certificate provides zoning information for the land that is the subject of this certificate only. The applicant must refer to the Auburn Local Environmental Plan 2010 and associated maps in order to determine detailed provisions for above when carrying out development with consent under the applicable zone. The Auburn Local Environmental Plan 2010 written instrument and maps are available on the New South Wales legislation website at www.legislation.nsw.gov.au.

- (d) Development for a purpose that is listed as being 'Prohibited' for the applicable zone is currently included under Part 2 Permitted or Prohibited Development and the Land Use Table of the Auburn Local Environmental Plan 2010.

NOTE: The certificate provides zoning information for the land that is the subject of this certificate only. The applicant must refer to the Auburn Local Environmental Plan 2010 and associated maps in order to determine detailed provisions for prohibited development under the applicable zone. The Auburn Local Environmental Plan 2010 written instrument and maps are available on the New South Wales legislation website at www.legislation.nsw.gov.au.

- (e) There are no development standards applying to this land that fix a minimum land dimension for the erection of a dwelling-house.
- (f) The land does not include or comprise critical habitat.
- (g) The land is not located within a heritage conservation area under the provisions of Auburn Local Environmental Plan 2010.
- (h) The land has not been identified as containing an item of environmental heritage significance under the Auburn Local Environmental Plan 2010.

3. Complying Development

- (1) *The extent to which the land is land on which complying development may be carried out under each of the codes for complying development because of the provisions of clauses 1.17A (1) (c) to (e), (2), (3) and (4), 1.18 (1) (c3) and 1.19 of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.*
- (2) *The extent to which complying development may not be carried out on that land because of the provisions of clauses 1.17A (1) (c) to (e), (2), (3) and (4), 1.18 (1) (c3) and 1.19 of that Policy and the reasons why it may not be carried out under those clauses.*

General Housing Code

- (1) or (2) The land is not excluded from State Environmental Planning Policy (Exempt and Complying Development Codes) 2008 under the clauses 1.17A (1), (c) to (e), (2), (3), (4), 1.18 (1) (c3) and 1.19. Complying development may be carried out on the land if the land is in an applicable land use zone and it meets the relevant land based requirements for complying development under this SEPP.

Rural Housing Code

- (1) or (2) The land is not affected by the Rural Housing code.

Housing Alterations Code and Industrial Alterations Code

- (1) or (2) The land is not excluded from State Environmental Planning Policy (Exempt and Complying Development Codes) 2008 under the clauses 1.17A (1), (c) to (e), (2), (3), (4), 1.18 (1) (c3) and 1.19. Complying development may be carried out on the land if the land is in an applicable land use zone and it meets the relevant land based requirements for complying development under this SEPP.

General Development Code

- (1) or (2) The land is not excluded from State Environmental Planning Policy (Exempt and Complying Development Codes) 2008 under the clauses 1.17A (1), (c) to (e), (2), (3), (4), 1.18 (1) (c3) and 1.19. Complying development may be carried out on the land if the land is in an applicable land use zone and it meets the relevant land based requirements for complying development under this SEPP.

Commercial and Industrial (New Buildings and Additions) Code

- (1) or (2) The land is not excluded from State Environmental Planning Policy (Exempt and Complying Development Codes) 2008 under the clauses 1.17A (1), (c) to (e), (2), (3), (4), 1.18 (1) (c3) and 1.19. Complying development may be carried out on the land if the land is in an applicable land use zone and it meets the relevant land based requirements for complying development under this SEPP.

Subdivisions Code

- (1) or (2) The land is not excluded from State Environmental Planning Policy (Exempt and Complying Development Codes) 2008 under the clauses 1.17A (1), (c) to (e), (2), (3), (4), 1.18 (1) (c3) and 1.19. Complying development may be carried out on the land if the land is in an applicable land use zone and it meets the relevant land based requirements for complying development under this SEPP.

Demolition Code

- (1) or (2) The land is not excluded from State Environmental Planning Policy (Exempt and Complying Development Codes) 2008 under the clauses 1.17A (1), (c) to (e), (2), (3), (4), 1.18 (1) (c3) and 1.19. Complying development may be carried out on the land if the land is in an applicable land use zone and it meets the relevant land based requirements for complying development under this SEPP.

Fire Services Code

- (1) or (2) The land is not excluded from State Environmental Planning Policy (Exempt and Complying Development Codes) 2008 under the clauses 1.17A (1), (c) to (e), (2), (3), (4), 1.18 (1) (c3) and 1.19. Complying development may be carried out on the land if the land is in an applicable land use zone and it meets the relevant land based requirements for complying development under this SEPP.
- (3) *If the council does not have sufficient information to ascertain the extent to which complying development may or may not be carried out on the land, a statement that a restriction applies to the land, but it may not apply to all of the land, and that council does not have sufficient information to ascertain the extent to which complying development may or may not be carried out on the land.*
- (3) Council does not have sufficient information to ascertain the extent to which complying development may or may not be carried out on the land when a land based restriction applies to the land, but it may not apply to all of the land.

4. Coastal Protection

Whether or not the land is affected by the operation of section 38 or 39 of the Coastal Protection Act 1979, but only to the extent that the council has been so notified by the Department of Finance, Services and Innovation.

Council has not been notified by the Department of Public Works that the land is affected by the operation of Section 38 or 39 of the Coastal Protection Act, 1979.

4a Certain information relating to beaches and coasts

- (1) *In relation to a coastal council—whether an order has been made under Part 4D of the Coastal Protection Act 1979 in relation to temporary coastal protection works (within the meaning of that Act) on the land (or on public land adjacent to that land), except where the council is satisfied that such an order has been fully complied with.*
- (2) *In relation to a Coastal Council:*
 - (a) *whether the council has been notified under section 55X of the Coastal Protection Act 1979 that temporary coastal protection works (within the meaning of that Act) have been placed on the land (or on public land adjacent to that land), and*
 - (b) *if works have been so placed—whether the council is satisfied that the works have been removed and the land restored in accordance with that Act.*
- (3) *(Repealed)*

4a The land is currently not affected by provisions included under this part.

4b Annual charges under *Local Government Act 1993* for coastal protection services that relate to existing coastal protection works

In relation to a coastal council—whether the owner (or any previous owner) of the land has consented in writing to the land being subject to annual charges under section 496B of the Local Government Act 1993 for coastal protection services that relate to existing coastal protection works (within the meaning of section 553B of that Act).

Note. *“Existing coastal protection works” are works to reduce the impact of coastal hazards on land (such as sea walls, revetments, groynes and beach nourishment) that existed before the commencement of section 553B of the Local Government Act 1993.*

4b The land is currently not affected by provisions included under this part.

5. Mine Subsidence

Whether or not the land is proclaimed to be a mine subsidence district within the meaning of Section 15 of the Mine Subsidence Compensation Act, 1961.

The land is not located in an area proclaimed to be a mine subsidence district within the meaning of Section 15 of the Mine Subsidence Compensation Act, 1961.

6. Road Widening and Road Realignment

Whether or not the land is affected by any road widening or road realignment under:

- (a) Division 2 of Part 3 of the Roads Act, 1993, or*
- (b) Any Environmental Planning Instrument, or*
- (c) Any resolution of the Council.*

- (a) The land is not affected by any road widening or road realignment under Division 2 of Part 3 of the Roads Act 1993.
- (b) The land is not affected by any road widening or road realignment under any Environmental Planning Instrument.
- (c) The land is not affected by any road widening or road realignment under a Council resolution.

7. Council and other public authority policies on Hazard Risk Restriction

Whether or not the land is affected by a policy:

- (a) adopted by the Council, or*
- (b) adopted by any other public authority and notified to the Council for the express purpose of its adoption by that authority being referred to in planning certificates issued by the Council.*

that restricts the development of the land because of the likelihood of land slip, bushfire, tidal inundation, subsidence, acid sulphate soils or any other risk (other than flooding).

- (a) Land is affected by relevant acid sulphate soil classes 1 to 5 (high to low probability of acid sulphate soils being present) under Auburn Local Environmental Plan 2010. To determine the relevant acid sulphate soils class for the land, the applicant should refer to Council's Acid Sulphate Soils Map - Auburn Local Environmental Plan 2010 which is available on the New South Wales legislation website at www.legislation.nsw.gov.au. The land is not affected by a flood control lot under the Auburn Local Environmental Plan 2010.
- (b) Council has been notified by Parramatta City Council that the following Flood Management Studies have been carried out and adopted. They are:-
 - 1. Duck River Flood Study Parramatta City Council – Final Flood Study Report (September 2006).
 - 2. Lower Parramatta River Flood Plain Risk Management Study – Draft February 2003.

For more detailed information and enquiries regarding the above flood studies and affected areas please contact Council's Works and Services Department, Engineering Division.

Council has been notified that the Department of Planning has adopted the *New South Wales Coastal Planning Guideline: Adapting to Sea Level Rise (August 2010)*. The guideline can be viewed at www.planning.nsw.gov.au.

The applicant should also refer to projected sea level rise low, medium and high scenario maps on http://www.ozcoasts.org.au/climate/Map_images/Sydney/mapLevel2.jsp for further information.

7a Flood related Development Controls Information

- (1) *Whether or not the development on that land or part of the land for the purposes of dwellings, dual occupancies, multi dwelling housing or residential flat buildings (not including development for the purposes of group homes or seniors housing) is subject to flood related development controls.*

If development on the land or part of the land for above purposes is affected by a flood control lot under Auburn Local Environmental Plan 2010, the applicant should refer to Council's Stormwater Drainage Part - Auburn Development Control Plan 2010 on the New South Wales legislation website at www.legislation.nsw.gov.au.

- (2) *Whether or not development on that land or part of the land for any other purpose is subject to flood related development controls.*

If development on the land or part of the land under Auburn Local Environmental Plan 2010 for any other purposes is subject to flood related development controls, the applicant should refer to Council's Stormwater Drainage Part of the Auburn Development Control Plan 2010 available on the New South Wales legislation website at www.legislation.nsw.gov.au.

- (3) *Words and expressions in this clause have the same meanings as in the standard instrument set out in the Standard Instrument (Local Environmental Plans) Order 2006.*

Words and expressions in this clause have the same meanings as in the instrument set out in the Schedule to the Standard Instrument (Local Environmental Plans) Order 2006.

8. Land Reserved for Acquisition

Whether or not any environmental planning instrument or proposed environmental planning instrument referred to in clause 1 makes provision in relation to the acquisition of the land by a public authority, as referred to in section 27 of the Act.

The land is not affected by the Auburn Local Environmental Plan 2010 - Land Reservation Acquisition Map for the purposes of acquisition under the Act.

9. Contributions Plans

The name of each Contributions Plan applying to the land:

Auburn Development Contributions Plan 2007.

9A Biodiversity Certified Land

If the land is biodiversity certified land (within the meaning of Part 7A A of the Threatened Species Conservation Act 1995), a statement to that effect.

The land is not biodiversity certified land within the meaning of the above Act.

10. Biobanking Agreements

If the land is land to which a biobanking agreement under Part 7A of the Threatened Species Conservation Act 1995 relates, a statement to that effect (but only if the council has been notified of the existence of the agreement by the Chief Executive of the Office of Environment and Heritage).

The land is not affected by a Bio-banking agreement under the Act.

11. Bush Fire Prone Land

If any of the land is bush fire prone land (as defined in the Act), a statement that all or, as the case may be, some of the land is bush fire prone land. If none of the land is bush fire prone land, a statement to that effect.

The land is not located within an area that is bush fire prone as defined by the Environmental Planning and Assessment Act, 1979.

12. Property Vegetation Plans

If the land is land to which a Property Vegetation Plan under the Native Vegetation Act, 2003 applies, a statement to that effect (but only if the council has been notified of the existence of the plan by the person or body that approved the plan under that Act).

The land is not affected by a Property Vegetation Plan under the *Native Vegetation Act, 2003*.

13. Orders under the Trees (Disputes Between Neighbours) Act 2006

Whether an order has been made under the Trees (Disputes Between Neighbours) Act, 2006 to carry out work in relation to a tree on the land (but only if the Council has been notified of the order).

The land is not affected by an order issued under the Trees (Disputes between Neighbours) Act 2006.

14. Directions under Part 3A (Environmental Planning and Assessment Act 1979)

If there is a direction by the Minister in force under section 75P (2) (c1) of the Act that a provision of an environmental planning instrument prohibiting or restricting the carrying out of a project or a stage of a project on the land under Part 4 of the Act does not have effect, a statement to that effect identifying the provision that does not have effect.

There are no ministerial directions in force under section 75P (2) (c1) of the Environmental Planning and Assessment Act 1979.

15. Site compatibility certificates and conditions for seniors housing

If the land is land to which State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 applies:

- (a) *a statement of whether there is a current site compatibility certificate (seniors housing), of which the Council is aware, in respect of proposed development on the land and, if there is a certificate, the statement is to include:*
 - (i) *the period for which the certificate is current, and*
 - (ii) *that a copy may be obtained from the head office of the Department, and*
- (b) *a statement setting out any terms of a kind referred to in clause 18 (2) of that Policy that have been imposed as a condition of consent to a development application granted after 11 October 2007 in respect of the land.*

- (a) & (b) The State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 does not apply to this land.

16. Site Compatibility Certificates for Infrastructure

A statement of whether there is a valid site compatibility certificate (infrastructure), of which the council is aware, in respect of proposed development on the land and, if there is a certificate, the statement is to include:

- (a) *the period for which the certificate is valid, and*
- (b) *that a copy may be obtained from the head office of the Department.*

(a) & (b) There is no site compatibility certificate issued under the State Environmental Planning Policy (Infrastructure 2007) in respect of the land.

17. Site Compatibility Certificates and Conditions for Affordable Rental Housing

- (1) *A statement of whether there is a current site compatibility certificate (affordable rental housing), of which the council is aware, in respect of proposed development on the land and, if there is a certificate, the statement is to include:*

- (a) *the period of which the certificate is current, and*
- (b) *that a copy may be obtained from the head office of the Department.*

- (2) *A statement setting out any terms of a kind referred to in clause 17 (1) or 38 (1) of State Environmental Planning Policy (Affordable Rental Housing) 2009 that have been imposed as a condition of consent to a development application in respect of the land.*

(1) & (2) There is no current site compatibility certificate (affordable rental housing) of which council is aware or a statement setting out any terms of a kind referred to in clause 17(1) or 38(1) of State Environmental Planning Policy (Affordable Rental Housing) 2009 that has been imposed as a condition of consent to a development application for the land.

18. Paper Subdivision Information

- (1) *The name of any development plan adopted by a relevant authority that applies to the land or that is proposed to be subject to a consent ballot.*
- (2) *The date of any subdivision order that applies to the land.*
- (3) *Words and expressions used in this clause have the same meaning as they have in Part 16C of this Regulation.*

(1), (2) & (3) The land is not affected by a proposed or adopted development plan by Council or a subdivision order.

19. Site Verification Certificates

A statement of whether there is a current site verification certificate, of which the council is aware, in respect of the land and, if there is a certificate, the statement is to include:

- (a) *the matter certified by the certificate, and*
Note. A site verification certificate sets out the Director-General's opinion as to whether the land concerned is or is not biophysical strategic agricultural land or critical industry cluster land—see Division 3 of Part 4AA of State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007.

- (b) *the date on which the certificate ceases to be current (if any), and*
- (c) *that a copy may be obtained from the head office of the Department.*

(a), (b) & (c) There is no site verification certificate on the land.

Note:

Section 59(2) of the Contaminated Lands Management Act 1997 prescribes the following matters that are to be specified in a Planning Certificate:

- a) *That the land to which the certificate relates is significantly contaminated land within the meaning of that Act – if the land (or part of the land) is significantly contaminated land at the date when the certificate is issued,*
 - b) *That the land to which the certificate relates is subject to a management order within the meaning of that Act – if it is subject to such an order at the date when the certificate is issued,*
 - c) *That the land to which the certificate relates is the subject of an approved voluntary management proposal within the meaning of that Act - if it is the subject of such an approved proposal at the date when the certificate is issued,*
 - d) *That the land to which the certificate relates is subject to an ongoing maintenance order within the meaning of that Act – if it is subject to such an order at the date when the certificate is issued,*
 - e) *That the land to which the certificate relates is the subject of a site audit statement within the meaning of that Act – if a copy of such a statement has been provided any time to the local authority issuing the certificate.*
-
- (a) The land is not significantly contaminated land (or part of the land) within the meaning of the *Contaminated Lands Management Act 1997* at the date when the certificate is issued.
 - (b) The land is not subject to a management order within the meaning of the *Contaminated Lands Management Act 1997* at the date when the certificate is issued.
 - (c) The land is not the subject of an approved voluntary management proposal within the meaning of the *Contaminated Lands Management Act 1997* at the date when the certificate is issued.
 - (d) The land is not subject to an ongoing maintenance order within the meaning of the *Contaminated Lands Management Act 1997* at the date when the certificate is issued.
 - (e) The land is not subject to a site audit statement within the meaning of the *Contaminated Lands Management Act 1997*.

Section 149(5) Information

In accordance with the requirements of Section 149(5) of the *Environmental Planning and Assessment Act, 1979* (as amended), the following additional information is provided about the land to which this certificate applies.

Note: In accordance with Section 149(6) of the *Environmental Planning and Assessment Act, 1979* (as amended), Council will not incur any liability for the following additional information, which is provided in good faith. The absence of any matter affecting the land does not imply that the land is not affected by any matter not referred to in this Certificate.

The NSW Scientific Committee, established by the Threatened Species Conservation Act, 1995 has made a Preliminary Determination to support a proposal to list the Cumberland Plain Woodland in the Sydney Basin Bioregion as a Critically Endangered Ecological Community on Part 2 of Schedule 1A of the Act and to omit reference to Cumberland Plain Woodland from Part 3 of Schedule 1 (Endangered Ecological Communities) of the Act.



MERV ISMAY
INTERIM GENERAL MANAGER

Per: Karl OKorn
Manager, Development Assessment

SafeWork NSW Information



SafeWork NSW

16 JUN 2016

SafeWork NSW

92-100 Donnison Street, Gosford, NSW, 2250

Locked Bag 2906, Lisarow, NSW, 2252 |

Customer Service Centre 13 10 50

licensing@safework.nsw.gov.au | www.safework.nsw.gov.au

Our Ref: D16/603782

Your ref: Adam Smith

10 June 2016

Attention: Adam Smith
Environmental Investigation Services
PO BOX 976
North Ryde BC NSW 1670

Dear Mr Smith,

RE SITE: 3-7 East St Lidcombe NSW

I refer to your site search request received by SafeWork NSW on 31 May 2016 requesting information on Storage of Hazardous Chemicals for the above site.

A search of the records held by SafeWork NSW has not located any records pertaining to the above mentioned premises.

For further information or if you have any questions, please call our Customer Service Centre on 13 10 50 or email licensing@safework.nsw.gov.au

Yours sincerely,


Brent Jones
Customer Service Officer
Customer Service Centre - Operations
SafeWork NSW

AS

11 6 JUN 2016



SafeWork NSW

SafeWork NSW

92-100 Donnison Street, Gosford, NSW, 2250

Locked Bag 2906, Lisarow, NSW, 2252 |

Customer Service Centre 13 10 50

licensing@safework.nsw.gov.au | www.safework.nsw.gov.au

Our Ref: D16/603696

Your ref: Adam Smith

7 June 2016

Attention: Adam Smith
Environmental Investigation Services
PO BOX 976
North Ryde BC NSW 1670

Dear Mr Smith,

RE SITE: 2 Railway St Lidcombe NSW

I refer to your site search request received by SafeWork NSW on 25 May 2016 requesting information on Storage of Hazardous Chemicals for the above site.

A search of the records held by SafeWork NSW has not located any records pertaining to the above mentioned premises.

For further information or if you have any questions, please call our Customer Service Centre on 13 10 50 or email licensing@safework.nsw.gov.au

Yours sincerely,

Brent Jones
Customer Service Officer
Customer Service Centre - Operations
SafeWork NSW

NSW EPA Information

POEO Public Register of Environmental Protection Licences - Lidcombe

Number	Name	Location	Type	Status	Issued date
6203	A1 HARD CHROME PTY LTD	14 WETHERILL STREET, LIDCOMBE, NSW 2141	POEO licence	No longer in force	19-Jan-00
1044571	A1 HARD CHROME PTY LTD	14 WETHERILL STREET, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	16-Feb-05
5604	HOLCIM (AUSTRALIA) PTY LTD	LOT 2 BIRNIE AVENUE, LIDCOMBE, NSW 2141	POEO licence	No longer in force	8-Dec-99
1008890	HOLCIM (AUSTRALIA) PTY LTD	LOT 2 BIRNIE AVENUE, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	6-Aug-01
1912	OFFSET ALPINE PRINTING PTY LIMITED	42 BOOREA STREET, LIDCOMBE, NSW 2141	POEO licence	No longer in force	10-Jan-00
1027990	OFFSET ALPINE PRINTING PTY LIMITED	42 BOOREA STREET, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	17-Jun-03
1044784	OFFSET ALPINE PRINTING PTY LIMITED	42 BOOREA STREET, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	2-Apr-05
1059552	OFFSET ALPINE PRINTING PTY LIMITED	42 BOOREA STREET, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	23-May-06
1067232	OFFSET ALPINE PRINTING PTY LIMITED	42 BOOREA STREET, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	22-Dec-06
308577384	PARMALAT AUSTRALIA PTY LTD	LOT 1 BIRNIE AVE, LIDCOMBE, NSW 2141	Penalty Notice	Withdrawn	
2108	PARMALAT AUSTRALIA PTY LTD	LOT 1 BIRNIE AVE, LIDCOMBE, NSW 2141	POEO licence	Issued	13-Mar-00
1011452	PARMALAT AUSTRALIA PTY LTD	LOT 1 BIRNIE AVE, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	2-Nov-01
1021604	PARMALAT AUSTRALIA PTY LTD	LOT 1 BIRNIE AVE, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	9-Apr-03
1089935	PARMALAT AUSTRALIA PTY LTD	LOT 1 BIRNIE AVE, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	3-Sep-08
3085768043	PARMALAT AUSTRALIA PTY LTD	LOT 1 BIRNIE AVE, LIDCOMBE, NSW 2141	Penalty Notice	Issued	19-Feb-13
1517203	PARMALAT AUSTRALIA PTY LTD	LOT 1 BIRNIE AVE, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	3-Oct-13
1525448	PARMALAT AUSTRALIA PTY LTD	LOT 1 BIRNIE AVE, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	8-Oct-14
1525545	PARMALAT AUSTRALIA PTY LTD	LOT 1 BIRNIE AVE, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	13-Oct-14
1529985	PARMALAT AUSTRALIA PTY LTD	LOT 1 BIRNIE AVE, LIDCOMBE, NSW 2141	s.96 Prevention Notice	Issued	23-Apr-15
1530304	PARMALAT AUSTRALIA PTY LTD	LOT 1 BIRNIE AVE, LIDCOMBE, NSW 2141	s.110 Variation of Prevention Notice	Issued	30-Apr-15
3085777393	PARMALAT AUSTRALIA PTY LTD	LOT 1 BIRNIE AVE, LIDCOMBE, NSW 2141	Penalty Notice	Issued	21-Aug-15
3085777411	PARMALAT AUSTRALIA PTY LTD	LOT 1 BIRNIE AVE, LIDCOMBE, NSW 2141	Penalty Notice	Issued	21-Aug-15
1534044	PARMALAT AUSTRALIA PTY LTD	LOT 1 BIRNIE AVE, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	2-Dec-15
1537446	PARMALAT AUSTRALIA PTY LTD	LOT 1 BIRNIE AVE, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	25-Jan-16
12390	RAIL CORPORATION NEW SOUTH WALES	Bachell Avenue, LIDCOMBE, NSW 2141	POEO licence	No longer in force	15-Dec-05
1058873	RAIL CORPORATION NEW SOUTH WALES	Bachell Avenue, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	9-May-06
2179	SAINT-GOBAIN ABRASIVES PTY LTD	25 NYRANG STREET, LIDCOMBE, NSW 2141	POEO licence	No longer in force	17-Jan-00
1044018	SAINT-GOBAIN ABRASIVES PTY LTD	25 NYRANG STREET, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	27-Jan-05
1167	TOOHEYS PTY LIMITED	29 NYRANG STREET, LIDCOMBE, NSW 2141	POEO licence	Issued	9-May-00
1021928	TOOHEYS PTY LIMITED	29 NYRANG STREET, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	14-Apr-03
1036773	TOOHEYS PTY LIMITED	29 NYRANG STREET, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	12-Jul-04
1097961	TOOHEYS PTY LIMITED	29 NYRANG STREET, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	4-Mar-09
1099023	TOOHEYS PTY LIMITED	29 NYRANG STREET, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	30-Mar-09
1502501	TOOHEYS PTY LIMITED	29 NYRANG STREET, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	7-Dec-11
1503601	TOOHEYS PTY LIMITED	29 NYRANG STREET, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	6-Feb-12
1510817	TOOHEYS PTY LIMITED	29 NYRANG STREET, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	16-Apr-13
1520031	TOOHEYS PTY LIMITED	29 NYRANG STREET, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	24-Feb-14
1529741	TOOHEYS PTY LIMITED	29 NYRANG STREET, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	23-Apr-15
1537162	TOOHEYS PTY LIMITED	29 NYRANG STREET, LIDCOMBE, NSW 2141	s.58 Licence Variation	Issued	15-Jan-16

Lidcombe Rezoning Precinct

Traffic Management Plan - Railway Street

80017052

Prepared for
Automation Feeding Devices Pty Ltd.

24 January 2018



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Appendices

Appendix A: Sidra Intersection Analysis Baseline

Appendix B: Sidra Results (With Development)

1 Introduction

1.1 Project Background

Cardno has been engaged to provide traffic advice for the zone changing from industrial use to mixed use (commercial/ retail and residential) of the subject site (3-7 East Street and 2 Railway Street, Lidcombe). The study area has previously been assessed in various studies as noted below:

In 2015, Arcadis (formerly Hyder) completed a Traffic, Transport and Accessibility Study for the Marsden Street Precinct which covers a project boundary surrounded by East Street, James Street, Mark Street and Railway Street. This Study was for a planning proposal for the potential development of commercial and residential land uses within this area, including up to 866 apartments, and retention of industrial land uses on 3-7 East Street and 2 Railway Street. That planning proposal has since been approved and came into effect on 18/09/15 with the commencement of Auburn LEP 2010 Amendment No14.

In 2016, APEX undertook a Traffic Impact Assessment for 3-7 East Street and 2 Railway Street which considered the traffic implications of a proposed change of zoning of the subject site from light industrial to mixed use (retail/commercial and residential with an expected FSR of 4.8:1).

Following discussion with Council and a preliminary review by the Cumberland Independent Hearing & Assessment Panel, the proposal was revised to an overall FSR of 4.0:1 which is generally consistent with the restriction of height to 32m.

1.2 Scope of Works

The assessment will consist of the following:

- > Revision of background documentation
- > Liaison with Councils' representative for traffic engineering enquiries
- > Update the Marsden Street Precinct traffic generation and distribution from Appendix B – Land Parcels Traffic Distribution from the Hyder Report April 2015. Split Traffic distribution from the grouped land parcels (Group 4)
- > Estimate traffic generation and distribution to / from the study area incorporating the change of land use from industrial to commercial / retail for opening year and ten year post construction
- > Obtain traffic counts surveys commissioned by Hyder on 19 February 2015
- > Prepare a spreadsheet model for the AM and PM peak periods based on traffic surveys to be provided by the project representative and revised traffic generation and distribution
- > Prepare Sidra intersection analysis for the following key intersections:
 - James Street / Mark Street
 - James Street / East Street
 - Railway Street / East Street;
 - Railway Street / Railway overpass
 - Railway Street / Mark Street
 - Church Street / Railway overpass
 - Mark Street / Marsden Street.

The Sidra intersection assessments will be undertaken for the following scenarios:

- Existing conditions
 - 2017 Base + dev
 - Design year (opening year)
 - Design year (10 years post construction)
 - Design year (10 years without development).
- > Assessment for up to two (2) additional access / egress arrangement scenarios
 - > Assessment of proposed land use. This proposal allows for up to two (2) iterations of land use changes
 - > Qualitative desktop review of the precinct concept designs, i.e. parking layouts, accesses, construction area (m²), etc.
 - > Turning path assessment for up to three (3) design vehicles at three (3) key locations including main access to the project precinct
 - > Review traffic impacts and intersections performance based on a redistribution of traffic and proposed new accesses configuration
 - > Prepare a Draft Traffic and Transport Assessment. A final report would be issued upon receiving one (1) set of consolidated comments from the project representative.

1.3 Exclusions and Assumptions

- > Average annual grow was calculated using the AADT permanent counters stations at 4 sites around the study area.
- > Traffic surveys used were from the Marsden Street Precinct Traffic and Transport Accessibility Study completed in 2015.
- > The existing internal road network within the Marsden Street Master Plan Precinct is assumed as the baseline road network in this assessment in all years' scenarios.
- > Trip distribution used BST data from journey to work information;
- > Existing traffic generated from industrial estates are as follows:
 - AM Peak: 0.52 vehicle trips per 100m² of GFA;
 - PM Peak: 0.56 vehicle trips per 100m² of GFA;
- > Residential (High density residential flat buildings)
 - Trip generation values are taken from the RMS Guide to Traffic Generating Development (TDT 2013/04a).
 - Directional distribution valued were taken from An ITE Informational Report Edition 8, Mid-rise apartment.
- > Commercial (Office Blocks)
 - Trip generation values are taken from the RMS Guide to Traffic Generating Development (TDT 2013/04a).
 - Directional distribution valued were taken from An ITE Informational Report Edition 8, General office building.

- > Retail (Shopping Centres)
 - AM Peak Trip generation values are taken from Appendix F3 of RMS Guide to Traffic Generating Development (TDT 2013/ 04a). An average of the Thursday Peak Network Hour Vehicle Trips (AM Peak) within Sydney is used.
 - Retail GFA was converted into GLFA at a ratio of 1:0.75 as stated on the RMS Guide to Traffic Generating Developments October 2002.
- > Opening year of develop is assumed to be 2022

1.4 Reference Documents

The following documents have been considered as part of this assessment:

- > Australian Standards AS2890.1-2009 – Off street parking
- > RMS Guide to Traffic Generating Developments 2002
- > Traffic, Transport and Accessibility Study – Marsden Street Precinct, Lidcombe (Hyder Report April 2015)
- > Traffic Impact Assessment – 3-7 East Street and 2 Railways Street, Lidcombe (Apex Engineers August 2016)
- > Yield Study – Marsden Street Precinct Lidcombe (AECOM February 2015)
- > Cumberland Council, DCP (former Auburn DCP 2010).

2 Existing Conditions

2.1 Site Location

The subject site is located on 3-7 East Street and 2 Railway Street, Lidcombe. It is located approximately 4km from Sydney Olympic Park, 6km from Bankstown and 7km from Parramatta.

Key land uses located close to site include University of Sydney Cumberland Campus and Rockwood Cemetery.

This site falls under the jurisdiction of Cumberland Council.

The site is bound by the following roads:

- > East Street
- > Railway Street
- > Raphael Street
- > Davey Street.

The characteristics of these roads will be detailed in **Section 2.4**.

For the local context map, see **Figure 2-1**.

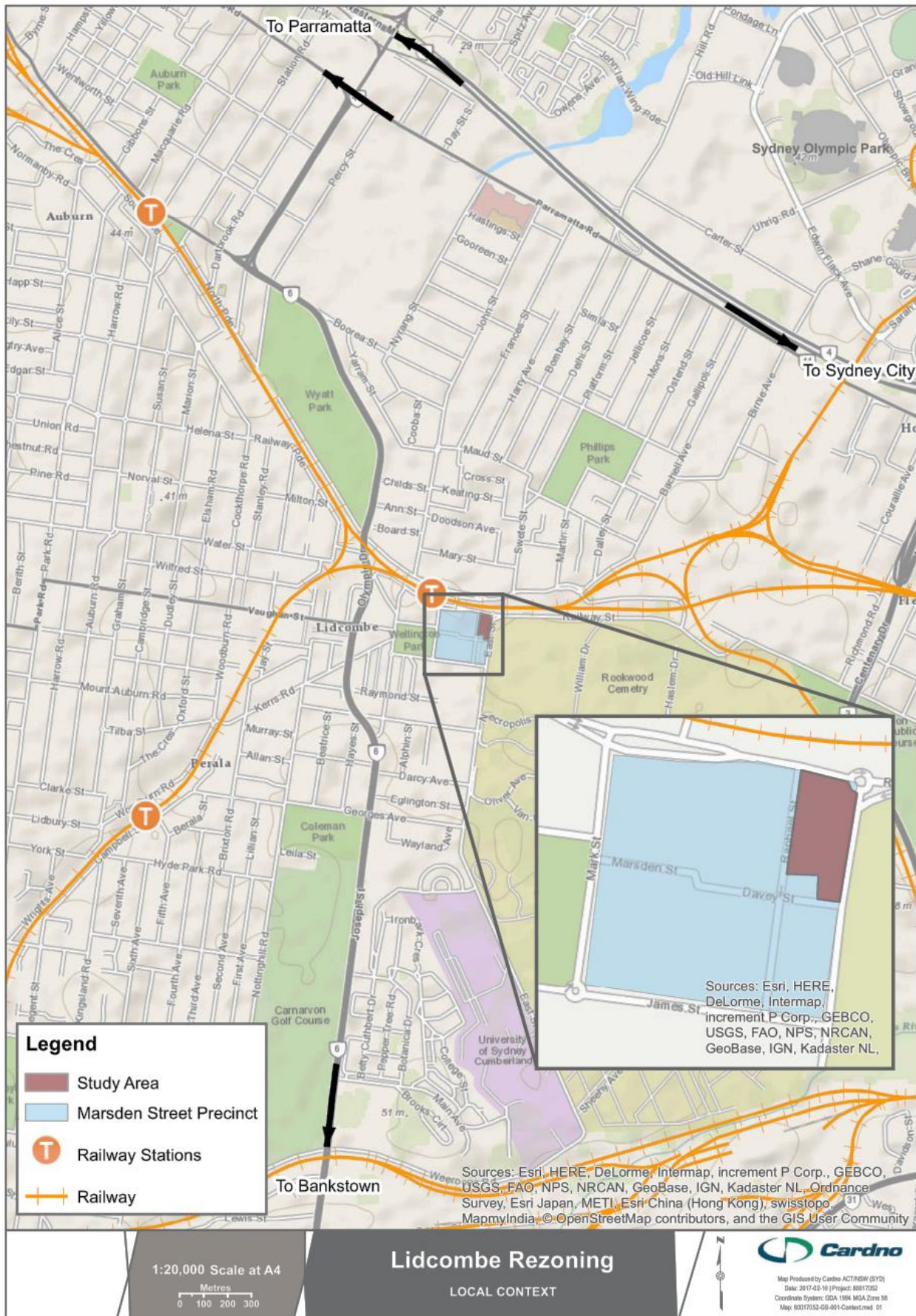


Figure 2-1 Local Context

2.2 Subject Area

The subject area comprises the property lots 2, 3 and 4 located on East Street and Railway Street. It has direct access to East Street, Railway Street, Raphael Street and Davey Street.

The site is currently used for light industrial purposes, which include businesses Larcombe Memorials and MicroPak. The site consists of warehouses, offices and car parks. **Figure 2-2** provides a close up aerial of the site area, including lot numbers.

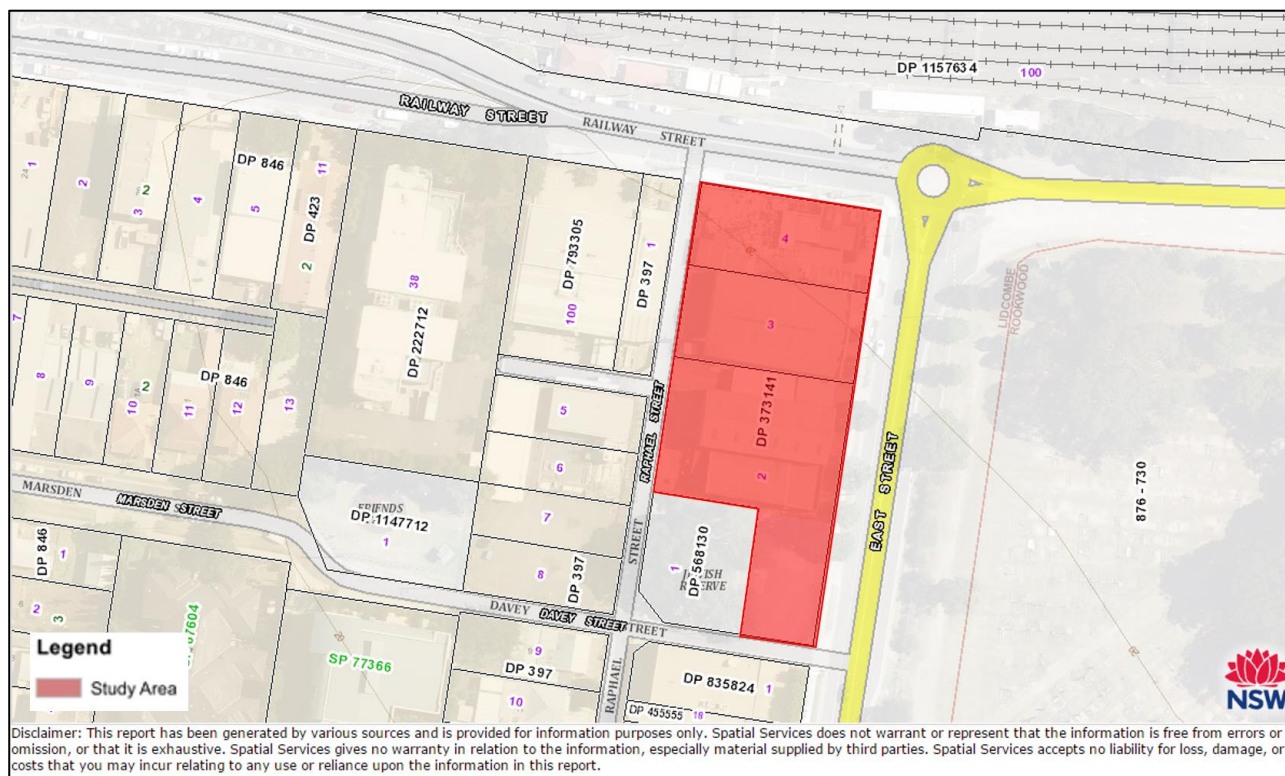


Figure 2-2 Subject Area (Background image: Sixmaps)

2.3 Functional Classification of Roads

Roads are commonly classified under two road classification systems, the Roads and Maritime Services (RMS) administration classification system and the Growth Centres Development Code (2006) road hierarchy classification system. The RMS classifies roads as State Roads, Regional Roads or Local Roads. The road hierarchy system classifies roads as Arterial, Sub-Arterial, Collector or Local roads.

A State Road, as classified by RMS, is wholly under the care and control of the RMS. Regional roads are under the care and control of Council but may receive maintenance funding from the RMS. Local roads are wholly under the care and control of the Council.

Roads are classified under the road hierarchy based on their functional role within the road network. This is used to determine the design standards and access to the road and adjacent properties along the road. The road classifications stipulated in the Growth Centres Development Code (2006), as shown in **Table 2-1** have been adopted in this study and are broadly consistent with the RMS classifications.

Table 2-1 Functional Classification of Roads

Road Classification	AADT (Annual average daily traffic)	Functions	Speed Limit
Arterial / Freeway	35,000+	Connects large urban areas	80 km/hr or higher
Boulevard	30,000-35,000	Located close to centres Pedestrian friendly environment	60-80 km/hr
Sub-Arterial	10,000-35,000	Arterial road to town centres Carries major bus routes	Up to 70 km/hr
Collector	3,000-10,000	Connects neighbourhoods Can accommodate public transport	Up to 60 km/hr
Local	1,000-3,000	Priority to pedestrians and cyclists Designed for slow residential traffic	Up to 50 km/hr

Source: Growth Centres Development Code, October 2006

2.4 Road Network

The key roads located within the study area are described below.

2.4.1 East Street

East Street runs in the north-south orientation on the eastern side of the study area. East Street is a collector road under the jurisdictions of the RMS. The posted speed limit is 60km/h and is single lane in each direction. Unrestricted on-street parking is provided on either side of the road. No on-road bicycle facilities are provided on this road.

2.4.2 Railway Street

Railway Street runs in the east-west orientation, parallel to the railway line on the northern boundary of the site. Lidcombe Station is located on this road. The posted speed limit is 60km/hr and is single lane in each direction. Unrestricted parking is provided on the railway line side of the road, and 2P parking the southern side of the road. No on-road bicycle facilities are provided on this road.

2.4.3 Raphael Street

Raphael Street runs north-south of the project area, along the western boundary of the site. It is currently a laneway, with no marked speed limit. No parking is permitted on this street. This lane way is one-way, travelling south only.

2.4.4 Davey Street

Davey Street runs in the east-west orientation along the southern boundary of the site. It is currently a laneway with no marked speed limit. The no parking is permitted on this street. Between Raphael Street and East Street, the width of the carriageway is approximately 4.0m width, only one car can fit, however no one-way signage is provided.

2.4.5 James Street

James Street runs parallel to Davey Street, in the east-west orientation. The posted speed limit is 50km/hr and is single lane in each direction. Unrestricted parking is provided on both sides of the road. No on-road bicycle facilities are provided.

2.4.6 Olympic Drive/ Joseph Street

Olympic Drive/ Joseph Streets is an arterial road that runs in the north-south orientation and provides a link from Bankstown to Northern Sydney, additionally providing links to the M4 and Parramatta Road. This road has a speed limit of 70km/hr and is 3 lanes in each direction. No parking is permitted along this road.

2.5 Existing Traffic Volumes

Traffic intersection survey counts from the Marsden Street Precinct, Lidcombe – Traffic, transport and accessibility study (Hyder) are reproduced in this report.

Traffic surveys were conducted on Thursday 19 February 2015 at seven (7) key intersections:

1. James Street/ Mark Street (roundabout)
2. East Street/ James Street (roundabout)
3. Railway Street/ East Street (roundabout)
4. Railway Street/ Bridge Street (priority)
5. Church Street/ Bridge Street (priority)
6. Railway Street/ Mark Street (priority)
7. Mark Street/ Marsden Street/ Taylor Street (priority)

These key intersection are shown in **Figure 2-3**.



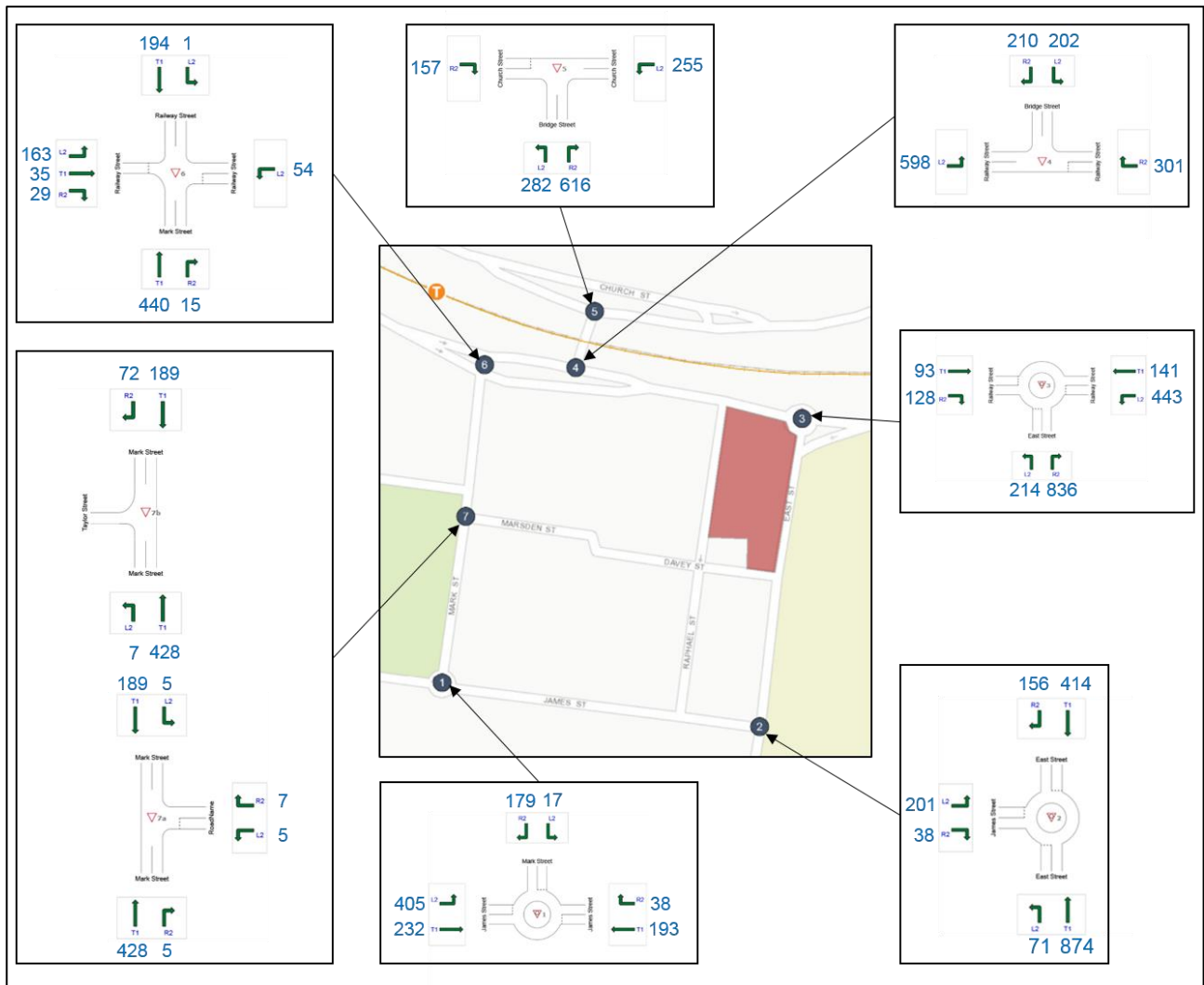


Figure 2-4 One Hour Peak Traffic Volumes 2015 AM Peak

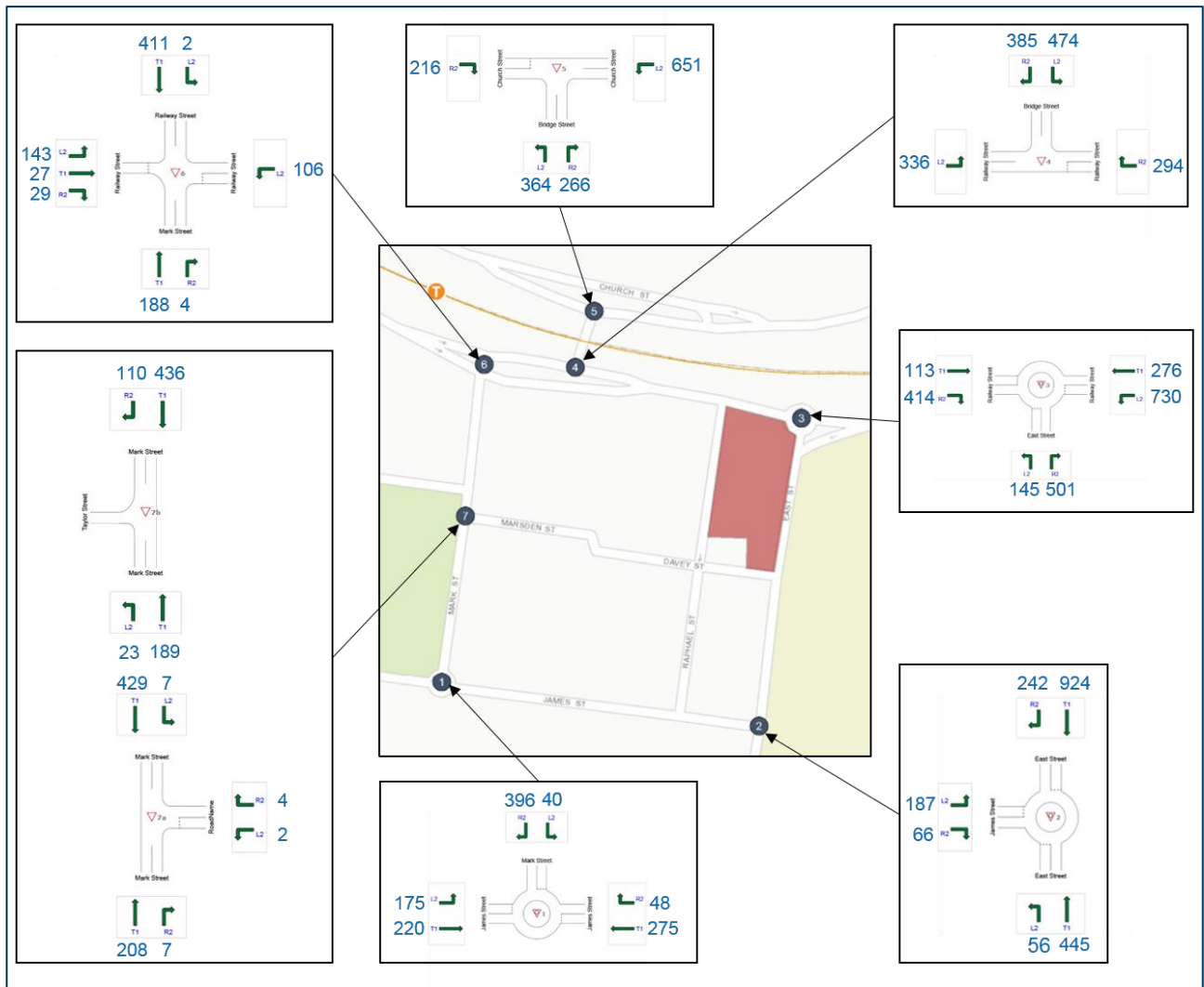


Figure 2-5 One Hour Peak Traffic Volumes 2015 PM Peak

2.6 Existing Public Transport Services

2.6.1 Train Services

The development site is located in close proximity (350m) to Lidcombe Railway Station and transport interchange. From the Lidcombe Railway Station commuters have access to trains and buses at frequent intervals to travel to all areas of Sydney. The railway lines provide access to the following services.

Table 2-2 Train routes and frequency of services at Lidcombe Station

Train Route	Service	Weekday frequency		
		AM Peak	PM Peak	Off Peak
T1 Western Line	Emu Plains to City	15 minutes	8 minutes	8 minutes
	City to Emu Plains	9 minutes	15 minutes	10 minutes
T2 Inner West & South Line	Campbelltown to City	9 minutes	15 minutes	15 minutes
	City to Campbelltown	13 minutes	9 minutes	15 minutes
T3 Bankstown Line	Liverpool/ Lidcombe to City	13 minutes	15 minutes	30 minutes
	City to Lidcombe/ Liverpool	15 minutes	15 minutes	30 minutes
T7 Olympic Park Line	Lidcombe to Olympic Park	10 minutes	10 minutes	10 minutes
	Olympic Park to Lidcombe	10 minutes	10 minutes	10 minutes

**It was assumed that AM peak is from 7-9am and PM peak from 4-6pm.*

Source: Sydney Trains

2.6.2 Bus Services

TransDEV and Sydney Buses operate the local bus services within the study area. A summary of the bus routes within the area are as shown in **Table 2-3**.

Table 2-3 Bus routes and frequency of services accessible from study area

Bus Route	Service	Weekday Frequency		
		AM Peak	PM Peak	Off Peak
M92	Sutherland to Parramatta	10 minutes	10 minutes	15 minutes
	Parramatta to Sutherland	10 minutes	10 minutes	15 minutes
401	Lidcombe to Sydney Olympic Park	20 minutes	20 minutes	40 minutes
	Sydney Olympic Park to Lidcombe	20 minutes	20 minutes	40 minutes
915	Lidcombe to University of Sydney	12 minutes	60 minutes	N/A
	University of Sydney to Lidcombe	12 minutes	60 minutes	N/A
925	East Hills to Lidcombe	30 minutes	30 minutes	60 minutes
	Lidcombe to East Hills	30 minutes	30 minutes	60 minutes

Source: Sydney Buses

A summary of the bus and train routes within the study area is provided in **Figure 2-7**.

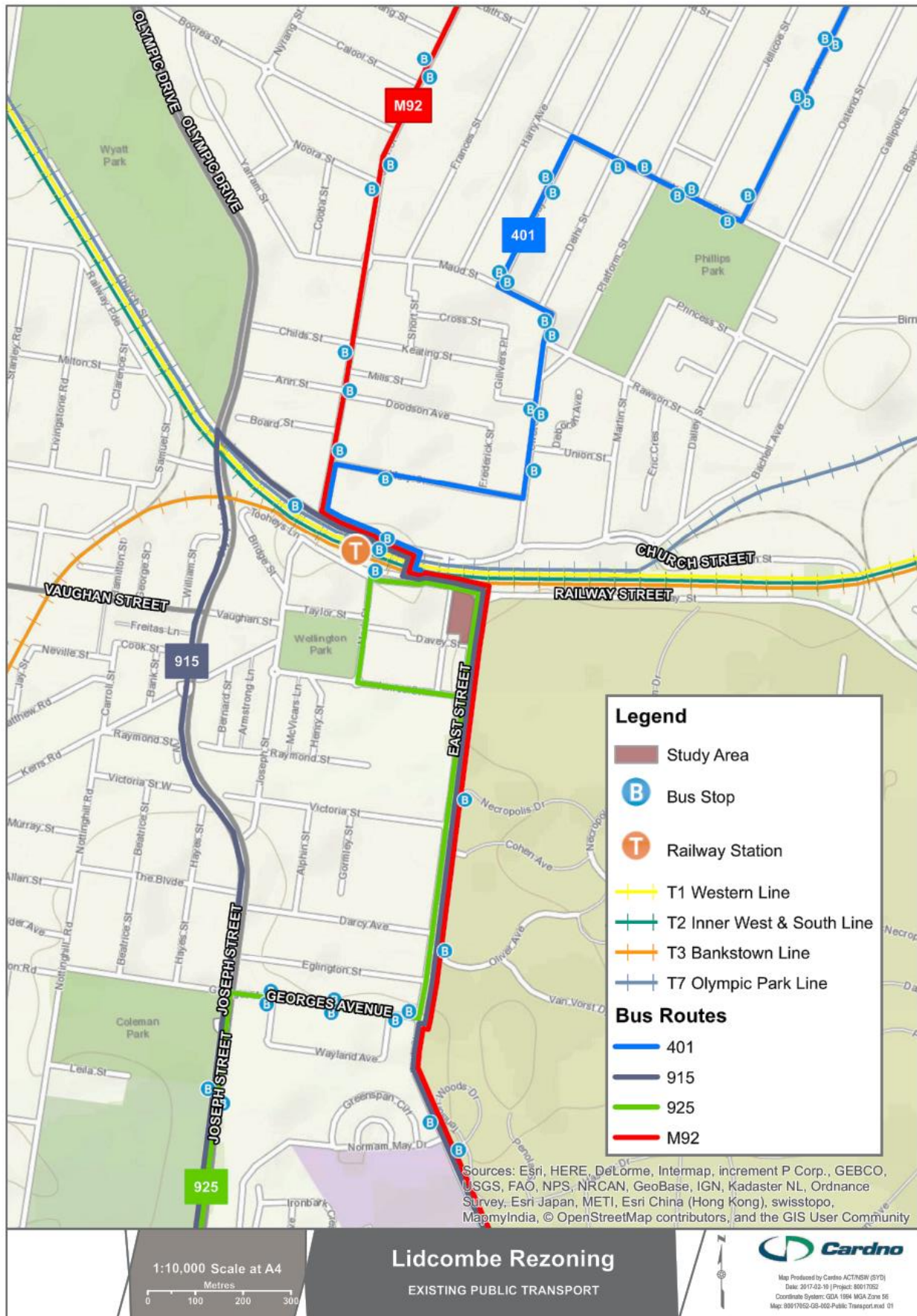


Figure 2-7 Existing Public Transport

2.7.2 Bike Paths

The 2004 Auburn Council Cycleway map provides on-road bicycle facilities along East Road, Railway Road and Church Street. Some directional bicycle signage was present as well as warning signage for vehicle drivers to watch for cyclists. No off-road cycle facilities were found within the 400m radius of the study area.

Bicycle logos were found to be faded to non-existent on some of these routes.

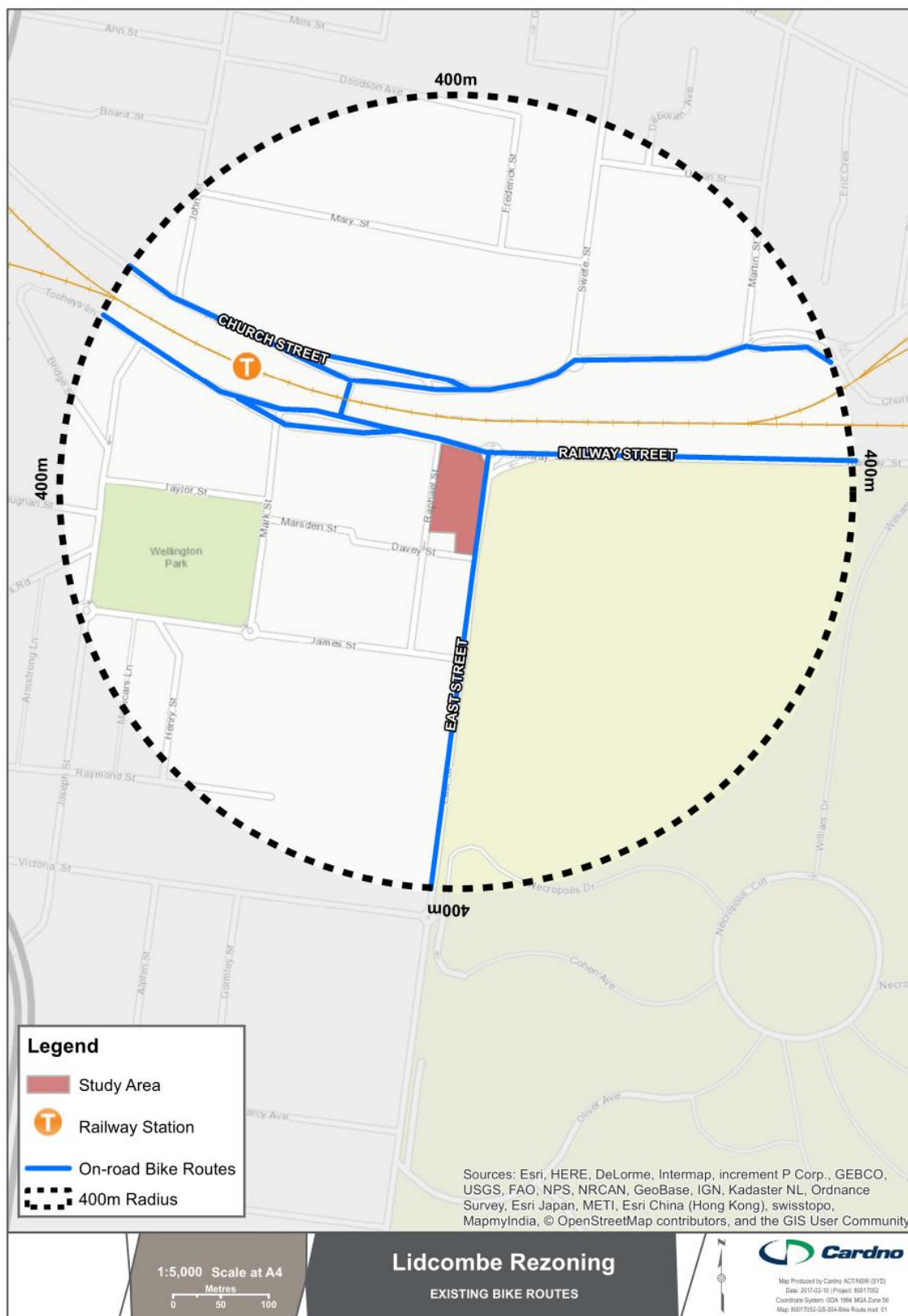


Figure 2-9 Existing Bike Routes

3 Future Transport Network

3.1 Future Road Network

There are no identified road projects in the immediate study area that will have a major impact on the study area. Looking at the wider area, there are two major state government initiatives that may have an effect on the road network:

- > Westconnex
- > Parramatta Road Urban Renewal

3.1.1 Westconnex

The Westconnex project which began construction in 2015 is the upgrade and construction of the M4 East, M4-M5 link and New M5 motorways which will link the M4 to the M5, via the Sydney Airport. The construction of this project will slash travel times for trips between the Sydney CBD and western Sydney. It will also provide a direction connection for residents of Western Sydney to the airport.

It is likely that the construction of Westconnex will change how the regional road network behaves. However, effects on the study area likely to be minimal.

3.1.2 Parramatta Road Urban Renewal

As part of Westconnex, the NSW Government is committed to the Urban Renewal of Parramatta Road through the reduction of vehicles along Parramatta Road. It aims to change the land uses along this corridor to accommodate 27,000 new homes and 50,000 new jobs. This development is expected within the next 30 years, and includes priority precincts such as Carter Street, Lidcombe.

Due to the time frames, it is unlikely that the Parramatta Road Urban Renewal will significantly affect the local traffic network.

3.2 Future Public Transport

The NSW State Government has put a strong emphasis of developing a strong and reliable rail network to meet the capacity of the future. Through this initiative, the government is rolling out metro lines around Sydney. The Sydenham to Bankstown Metro is likely to have the greatest impact on the study area, which will see the existing Bankstown Line converted to metro standards. This will connect to the City, Southwest and North West metros, with completion of these lines by 2024.

As a result of this conversion, commuters from Lidcombe to the Sydney CBD via the T3 Bankstown Line will be unable to take a direct train, and will have to change at Bankstown.

3.3 Future Active Transport

The Long Term Transport Master Plan (LTTMP) has proposed for the design and development of a cycleway from Lidcombe to Strathfield. No details have since been released on the route alignment and integration with the existing cycle network.

In addition to the LTTMP, Cumberland Council is currently developing a new Bike Plan, which has not been updated since 1995.

4 Planning Proposal

4.1 Zoning

As discussed in the project background, the original TIA completed by Apex Engineers considered the study area to be zoned for light industrial and mixed use land zoning.

The planning proposal seeks approval for rezoning of the current land use zoned IN2 – Light Industrial to B4 – Mixed Use of the subject area describe in **Section 2.2**.

The site area covers an area of 3,024m², with a proposed FSR of 4.0:1. The planned composition of the site will consist of a mix of commercial and residential zones. Current conservative numbers are provided in **Table 4.1**.

A summary of the existing Auburn Council LEP 2010 is presented in **Figure 4-1**. The development proposal is to provide mixed use land zoning for the whole study area, which can be seen in **Figure 4-2**.

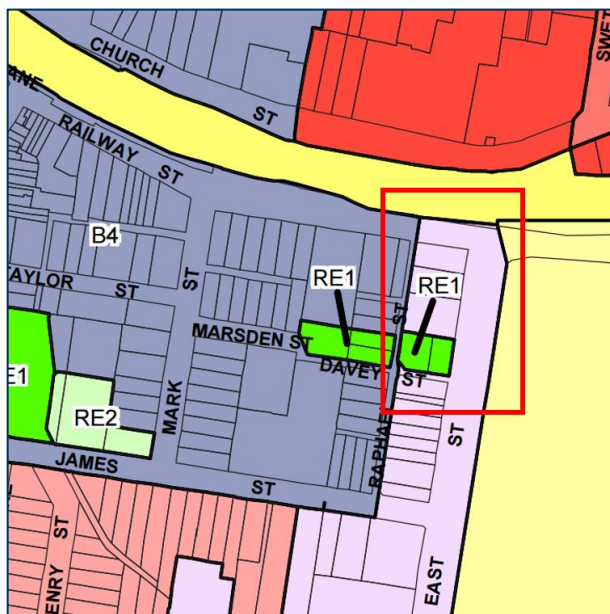


Figure 4-1 Auburn Council LEP 2010

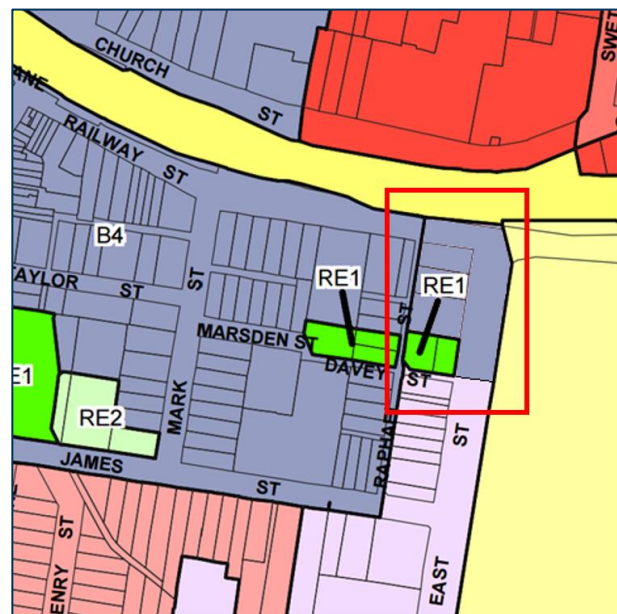


Figure 4-2 Proposed Auburn Council LEP
(Modification to the Auburn Council LEP 2010)

B4	Mixed Use
B6	Enterprise Corridor
B7	Business Park
E2	Environmental Conservation
IN1	General Industrial
IN2	Light Industrial
R2	Low Density Residential
R3	Medium Density Residential
R4	High Density Residential
RE1	Public Recreation
RE2	Private Recreation
SP1	Special Activities
SP2	Infrastructure

Figure 4-3 Auburn Council LEP 2010 Legend

4.2 Development Proposal

Concept design plans showing the ground plan of the proposed development were completed by Prescott Architects. **Figure 4-4** illustrates the development proposal layout.

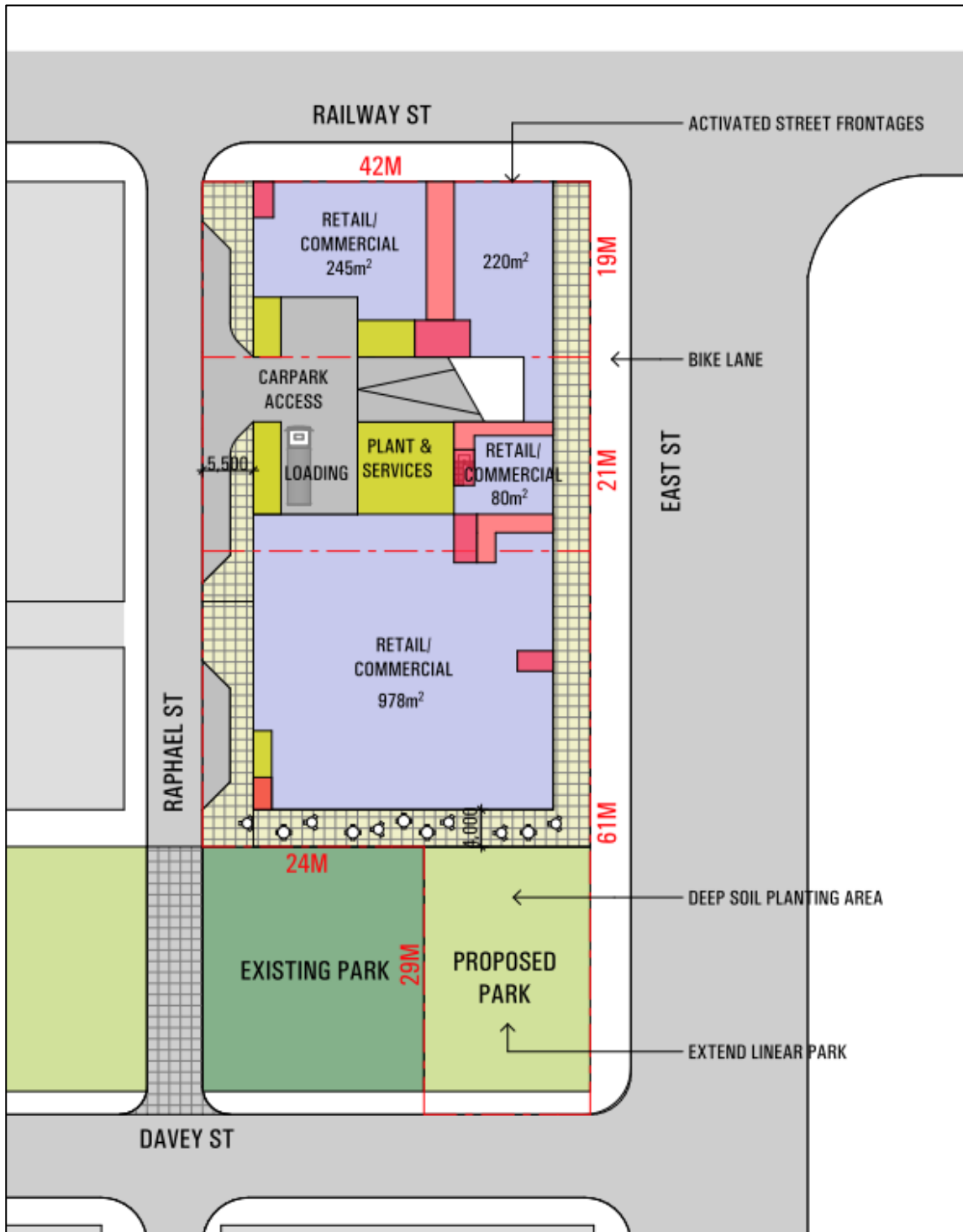


Figure 4-4 Concept Plan for the Ground Plan of study area

In addition to the retail and commercial land zoning, residential apartments are proposed above this core. These will consist of one, two and three bedroom apartments.

4.2.2 Land Use Yield

For the purpose of this assessment a range of yields and land uses were analysed to ensure the most efficient use of the subject area with acceptable impacts to the local area.

Table 4-1 below provides details of the proposed land use yield.

Table 4-1 Land Use Yield

Land Zoning	Gross Floor Area	Bedrooms	No. of Units
Residential	10,512m ²	1	63 units
		2	54 units
		3	18 units
Commercial	762m ²	-	-
Retail	762m ²	-	-
Parks / Green Area	522 m ²	-	-
Total	12,035m²	-	135 units

It is noted that the proposed development land use yield represents approximate development yields subject to planning controls, on-street parking, off-street parking, loading areas, setbacks, building design, accesses design, generation rates reductions based on mix-use complex and proximity to public transport.

4.2.3 Benefits of the Proposal

There are many benefits providing mixed use land zoning for the study area, which include:

- > Close proximity to public transport will provide a more efficient use of the road network infrastructure.
- > The construction of a small commercial/ retail area on the study area will provide locals with stores close by, reducing the requirement for private vehicles for small shopping trips.
- > Providing mixed use zoning will increase the passive surveillance in the area, increasing the public perception of safety.
- > The rezoning will promote revitalisation of the area, providing a greater connection to the Lidcombe town centre.
- > The proposed bike path along East Street will connect to the existing regional bike network, encouraging cycling activity in the area.

4.3 Proposed Site Accesses

Proposed site access is to be along Raphael Street.

- > Raphael Street is currently one way, with entry from Railway Street.
- > All vehicles exiting the development will be required to exit to Davey Street.

4.4 Proposed Parking

Parking requires must be provided to conform to the Auburn Council DCP rates. **Table 4-2** provides minimum and maximum values for parking to be provided for this development. Auburn Council has provided these parking values based on Development in the B4 Mixed Use and B2 Local Centre zones within 1,000m of a railway station in Town Centres (Lidcombe).

It was noted that disabled parking requirements have not been set out by council. However, there is a requirement to provide DDA compliant parking to Building Code of Australia Standards. The code states that disabled parking spaces must be provided for every 1 in 50 retail parking spaces. In a commercial building 1 in 100 car parks must consists of a disabled space.

Table 4-2 Development parking requirements

Land zone type	Size	Vehicle Type	Parking Rate	Minimum No. of spaces	Maximum No. of spaces	Required Parking
Residential	One bedroom	Vehicle	1.0	63	63	<ul style="list-style-type: none"> Minimum 167 vehicle parking 27 bicycle parking
	Two bedroom		1.2 – 3.0	65	162	
	Three bedroom		1.5 – 4.0	27	108	
	Visitor Spaces		12 – 55 spaces for units complex's between 101 to 250 units	12	55	
	-		1 bicycle space/ 5 units	27	-	
Commercial/ Retail	1,523 m ²	Vehicle	1 vehicle space/ 60m ² GFA TO 4 vehicle/ 40m ² GFA	26	152	<ul style="list-style-type: none"> Minimum 26 vehicle parking
		Disabled Parking Bay	1 disabled space/ 50 parking spaces	1	-	<ul style="list-style-type: none"> 1 disabled parking
		Bicycle	1 bicycle space/ 40m ² GFA	38	-	<ul style="list-style-type: none"> 38 bicycle parking

Source: Auburn Council DCP rates

Due to the developments close proximity to a major transport interchange, the maximum park rates were found to be excessive, and would only encourage residents to drive than take public transport.

4.4.2 Car Parking Design and Compliance with Standards

Car parking is subject to detailed design, consent of conditions and certification. All parking shall be provided in accordance to the AS 2890.1 – Off Street car parking standards.

4.5 Servicing and Loading Zone

Due to the retail and commercial land zoning, a loading zone must be provided. The number of spaces in the loading zone is as shown in **Table 4-3**.

Table 4-3 Loading zone requirements

Land zoning	Space	Rates	Loading zone spaces
Commercial	762 m ²	1 space/ 4000m ²	1
Retail	762 m ²	1 space/ 400m ²	2

Source: Auburn Council DCP rates

4.6 Development Timeline

The earliest potential completion date of the development would be 2022, based on the following 'best case' timeline. The timeline is as follows:

- > May 2017: Rezoning supported by Cumberland Council Independent Hearing and Assessment Panel (CIHAP)

- > May 2017 – March 2018: Negotiation of Voluntary Planning Agreements (VPA) terms; gateway approval by Department of Planning; formal exhibition of Planning Proposal & VPA; review by Council, CIHAP & Department; approval by Minister; gazettal of Local Environment Plan (LEP) amendment
- > March 2018 – December 2018: Design phase - preparation of (Development Application) DA, Statement of Environmental Effects & specialist reports; lodgement of DA
- > December 2018 – December 2019: Assessment of DA by Council & CIHAP; determination of DA by Joint Regional Planning Panels (JRPP)
- > January 2020 – June 2020: Finalise dedication of parkland to Council; documentation & issue of Construction Certificate
- > June 2020 – December 2021: Construction phase
- > December 2021 – March 2022: Final construction reports; issue of Occupation Certificate

5 Traffic Assessment

5.1 Traffic Generation

5.1.1 Existing Traffic Generation

As discussed in Section 3, the existing use of the study area is for light industrial uses. It should be noted that as a result of this development, traffic as a result of previous land uses of the site will cease. It is important to gain an understanding of the traffic that will be removed from the site, to actually understand the extra number of trips generated from the site.

According to the RMS Guide to Traffic Generating Development (TDT 2013/ 04a), traffic generated from industrial estates are as follows:

- > AM Peak: 0.52 vehicle trips per 100m² of GFA;
- > PM Peak: 0.56 vehicle trips per 100m² of GFA.

As the whole site area is 3,024m², and assuming the number of floors varies between 1 and 2 stories, the GFA of the site is 4,536m².

As a result, the existing traffic generated during the AM and PM peak hours is:

- > AM Peak: 24 vehicle trips
- > PM Peak: 25 vehicle trips

Using the ITE Informational Report Edition 8, General Light Industry value, the entry and exits to the site were calculated, shown in **Table 5-1**.

Table 5-1 Existing AM and PM entry and exits

Existing Land Zoning	AM In	Trips	AM Out	Trips	PM In	Trips	PM Out	Trips
Light Industrial	88%	21	12%	3	12%	3	88%	22

Source: ITE Informational Report Edition 8

It should also be noted that it is likely that the majority of vehicle trip generated were not from light vehicles, but from small trucks and vans.

- PM Peak Trip generation values are taken from the RMS Guide to Traffic Generating Development (TDT 2013/ 04a).
- Directional distribution valued were taken from An ITE Informational Report Edition 8, Convenience Market (Open 15-16 hours)
- > Parks
 - Due to the small nature of the park, it is assumed that no peak hour vehicle trips will be generated by the park.

5.1.2 Trip Generation Calculations

Table 5-2 summarises the different land uses the associated traffic generation rate (based on “RMS Guide to Traffic Generating Development” and “Trip Generation, An ITE Informational Report Edition 8”) and the resulting vehicle trips generated.

Table 5-2 Traffic generation of the development

Proposed Land Zoning	Proposed amount	Peak Period	Trip Generation Rate	Trips Generated
Residential	135	AM	0.19 per dwelling	26
		PM	0.15 per dwelling	20
Commercial	762m ²	AM	1.6 per 100m ² GFA	12
		PM	1.2 per 100m ² GFA	9
Retail	761m ²	AM	2.1 per 100m ² GFA	12
		PM	12.3 per 100m ² GFA	70
Parks	522m ²	AM	-	-
		PM	-	-
Total	-	AM	-	50
		PM	-	99

Source: RMS Guide to Traffic Generating Developments (2002), RMS Guide to Traffic Generating Development (TDT 2013/ 04a) and ITE Informational Report Edition 8

During the AM and PM peak periods, the Lidcombe site will generate 50 vehicle trips and 99 vehicle trips respectively.

Each type of development generates different trip patterns throughout the day. For example, residential development generates majority outbound trips in the AM peak and the reverse in the PM peak, while commercial development generally generates the opposite tidal movement. **Table 5-3** shows the assumed direction of traffic generation in the AM and PM peaks, which are based on the “RMS Guide to Traffic Generating Developments (2002)” and “Trip Generation, AN ITE Informational Report”.

5.1.3 Trip Generation – Mix-Use and Modal Shift

It should be noted that traffic generation for commercial and retail areas is very conservative as is estimated that some trips are generated from the same project development, (residential area) that may use the commercial and retail areas in the same project, without requiring a vehicle trip to/from residential commercial.

The RMS rates do not specify project developments (complex buildings) with a mix used of commercial / retail / residential, therefore the assessment has assumed the land uses separately increasing vehicles trips that would not occur as the residents on the project development are likely to use the commercial premises within the project.

A trip generation rate reduction shall be considered in further assessments of the project stages due to the nature of the project; mix-use and close proximity to a main public transport interchange.

This traffic analysis has considered a very conservative approach assuming the land uses separately.

Table 5-3 AM and PM entry and exits

Proposed Land Zoning	AM In	Trips	AM Out	Trips	PM In	Trips	PM Out	Trips
Residential	31%	8	69%	18	58%	12	42%	9
Commercial	88%	11	12%	1	17%	2	83%	8
Retail	50%	6	50%	6	49%	34	51%	36
Total	-	25	-	25	-	48	-	52

Source: RMS Guide to Traffic Generating Developments (2002), RMS Guide to Traffic Generating Development (TDT 2013/ 04a) and ITE Informational Report Edition 8

Table 5-4 Total New AM and PM entry and exits

Land Zoning	AM IN Trips	AM OUT Trips	PM IN Trips	PM OUT Trips
Existing	21	3	3	22
Proposed	25	25	48	52
New Total Trips	4	22	45	30

5.1.4 Assumptions

The assumptions used when calculating the traffic generation are as follows:

- > Residential (High density residential flat buildings)
 - Trip generation values are taken from the RMS Guide to Traffic Generating Development (TDT 2013/ 04a).
 - Directional distribution valued were taken from An ITE Informational Report Edition 8, Mid-rise apartment.
- > Commercial (Office Blocks)
 - Trip generation values are taken from the RMS Guide to Traffic Generating Development (TDT 2013/ 04a).
 - Directional distribution valued were taken from An ITE Informational Report Edition 8, General office building
- > Retail (Shopping Centres)
 - AM Peak Trip generation values are taken from Appendix F3 of RMS Guide to Traffic Generating Development (TDT 2013/ 04a). An average of the Thursday Peak Network Hour Vehicle Trips (AM Peak) within Sydney is used.
 - Retail GFA was converted into GLFA at a ratio of 1:0.75 as stated on the RMS Guide to Traffic Generating Developments October 2002.

5.2 Key Intersections

The key intersections assessed are discussed in **Section 2**. These are:

1. James Street/ Mark Street (roundabout)
2. East Street/ James Street (roundabout)
3. Railway Street/ East Street (roundabout)
4. Railway Street/ Bridge Street (priority)
5. Church Street/ Bridge Street (priority)
6. Railway Street/ Mark Street (priority)
7. Mark Street/ Marsden Street/ Taylor Street (priority)

5.3 Trip Distribution

The trip distribution of the proposed development is based on a review of the Journey to Work Data and traffic flow proportions from the traffic surveys. **Table 5-5** outlines the trip distribution of the development, scale trip distribution and the direction of entry / exit from the site.

Table 5-5 Trip distribution of the proposed development (AM Peak out/ PM Peak in)

Place of work	Residents from Lidcombe Study Area Travel Zone	Scaled (out of 100%)	Direction of travel
Sydney Inner City	26%	40%	East
Auburn	17%	26%	West
Strathfield - Burwood - Ashfield	7%	11%	East
Parramatta	5%	8%	North-West
Ryde - Hunters Hill	4%	6%	North-East
Botany	3%	5%	South-West
North Sydney - Mosman	3%	5%	East

Source: Transport for NSW, Performance and Analytics (Bureau of Traffic Statistics)

Table 5-6 Trip distribution of the proposed development (AM Peak in/ PM Peak out)

Place of Residence	Workers to Lidcombe Study Area Travel Zone	Scaled (out of 100%)	Direction of travel
Auburn	20%	38%	West
Merrylands-Guildford	8%	15%	West
Strathfield - Burwood - Ashfield	6%	11%	East
Bankstown	5%	9%	South
Parramatta	5%	9%	North-West
Fairfield	5%	9%	West
Carlingford	4%	8%	North

Source: Transport for NSW, Performance and Analytics (Bureau of Traffic Statistics)

5.3.2 Assumptions

- > The assumed travel directions of vehicles is as shown in **Figure 5-1**.
- > Place of work (residents of Lidcombe Study Area who travel to work) will be used as the trip distribution for outbound trips from the Lidcombe development.
- > Place of residence (person commuting to Lidcombe Study Area for work) will be used as the trip distribution for in-bound trips to the Lidcombe development.

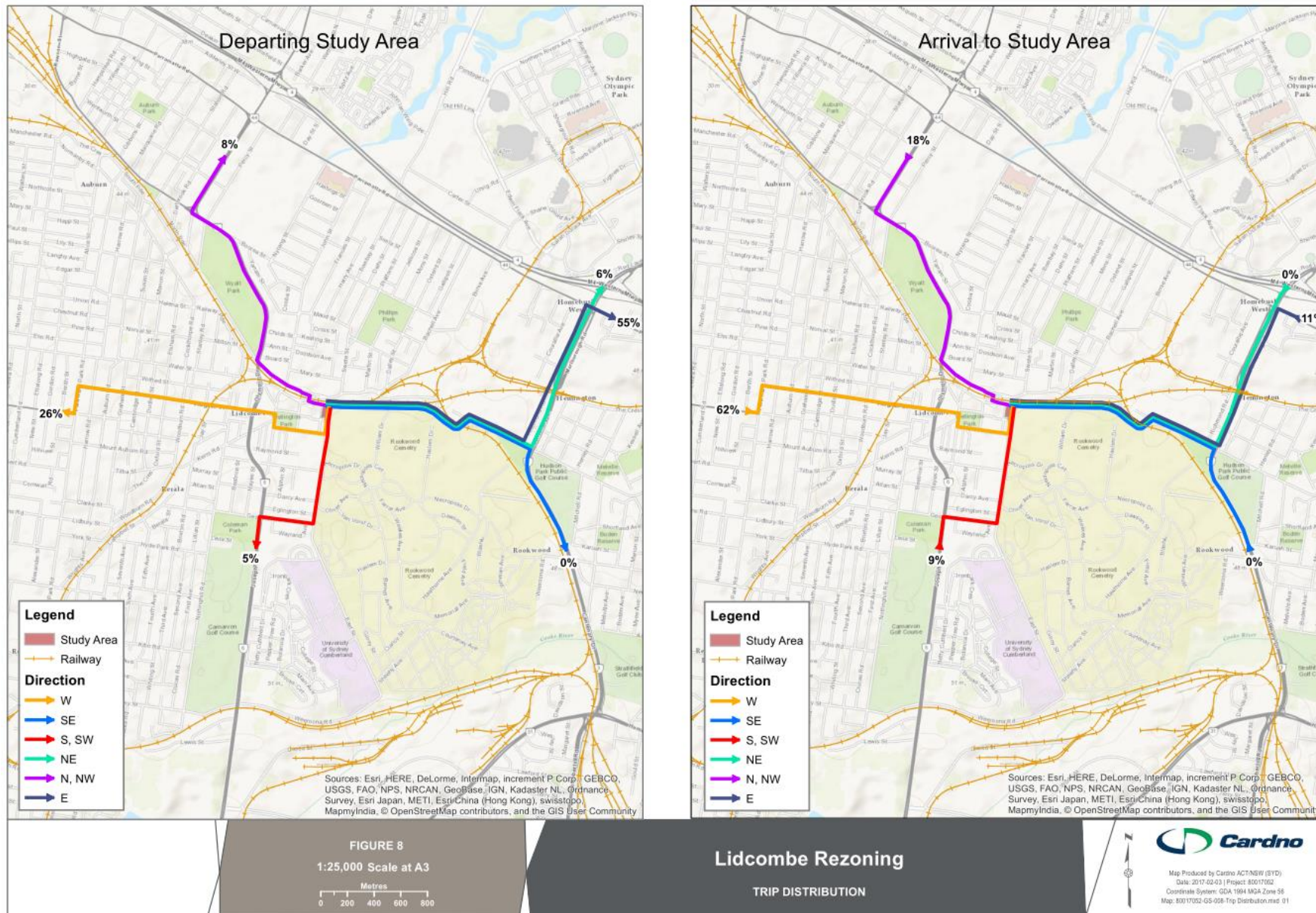


Figure 5-1 Trip Distribution (AM Out/ PM In)

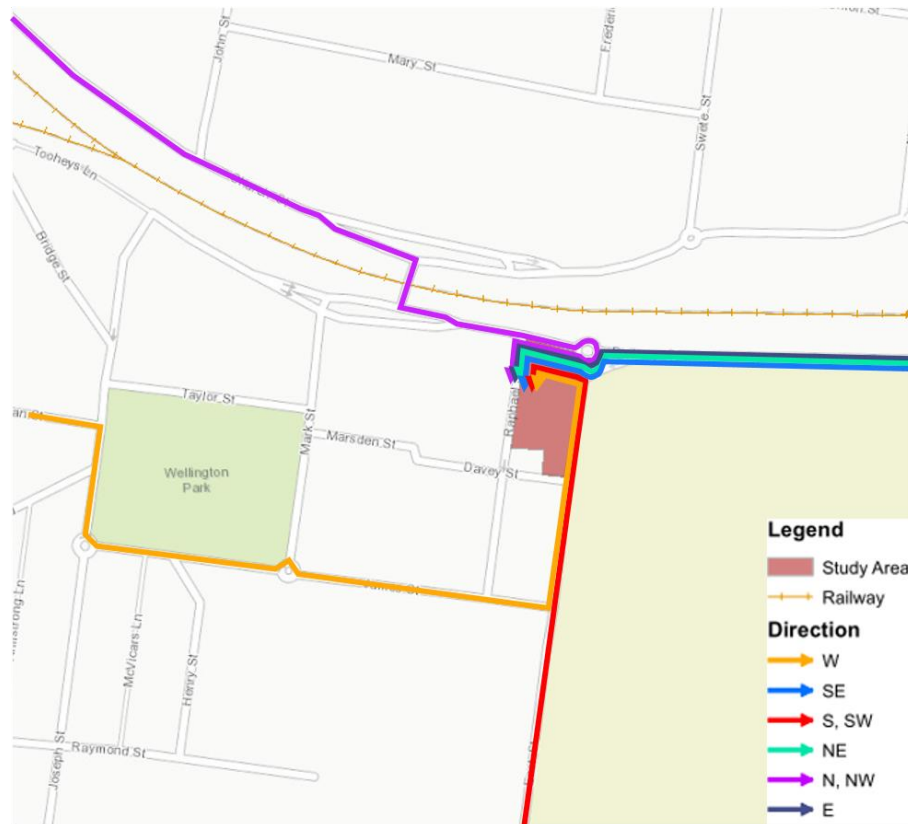


Figure 5-2 Inbound Trip Distribution

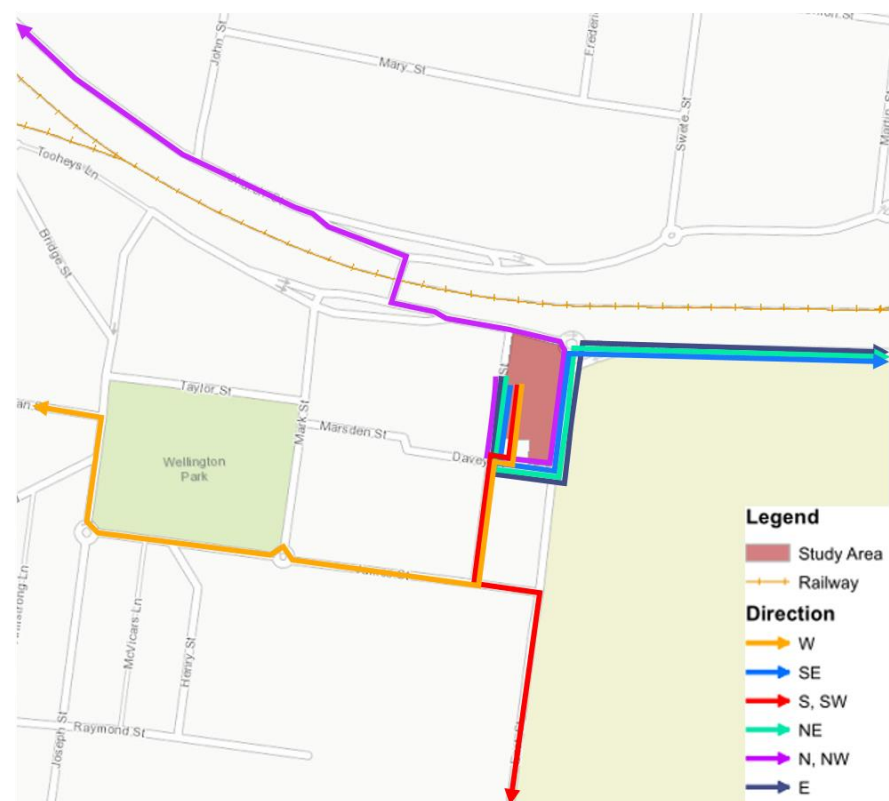


Figure 5-3 Outbound Trip Distribution

5.4 Baseline Traffic Assessment 2017

Using the traffic surveys undertaken in 2015 (shown in **Section 2.5**), the average annual traffic growth is required to calculate the 2017 traffic volumes.

5.4.1 Average annual growth

To account for the growth in traffic volumes in the past two years since the survey counts, the average annual growth in was calculated using a weighted average of the historical Annual Average Daily Traffic Volumes (AADT) from four roads, in close proximity to the site, shown in **Figure 5-4**.

The roads were chosen as they provide a summary of the road movements along the major roads north, east, south and west of the site. These stations also provide five years of traffic data. For a summary of the traffic growth, see **Table 5-7**.

Table 5-7 Annual Traffic Growth

Station ID	Location	2011	2016	Difference	% Increase	%/ yr
28009	200m North of Hume Highway, Strathfield 2135	65,875	81,677	15,802	19%	4%
27143	80m West of Telopea Avenue , Homebush West 2140	35,351	44,069	8,718	20%	4%
43216	10m South of Lewis Street, Regents Park 2143	58,309	61,811	3,502	6%	1%
43239	70m East of Stacey Street, Greenacre 2190	57,074	44,157	-12,917	-29%	-6%
TOTAL		216,609	231,714	15,105	7%	1%

Overall, there has been a 1% total increase per year on the road network surrounding the study area.

It is noted in the Hyder Traffic, Transport and Accessibility Study for Marsden Precinct that a 0.5% growth rate was used based off 'previous Auburn traffic studies of Auburn LGA'. From the Bureau of Transport Statistics, it was found the projected population growth to be between 1.0-1.5% per annum.

In the absence of evidence from the Hyder Traffic, Transport and Accessibility Study for Marsden Precinct, a conservative approach for the background traffic growth outlined in **Table 5-6** was assumed in this report.

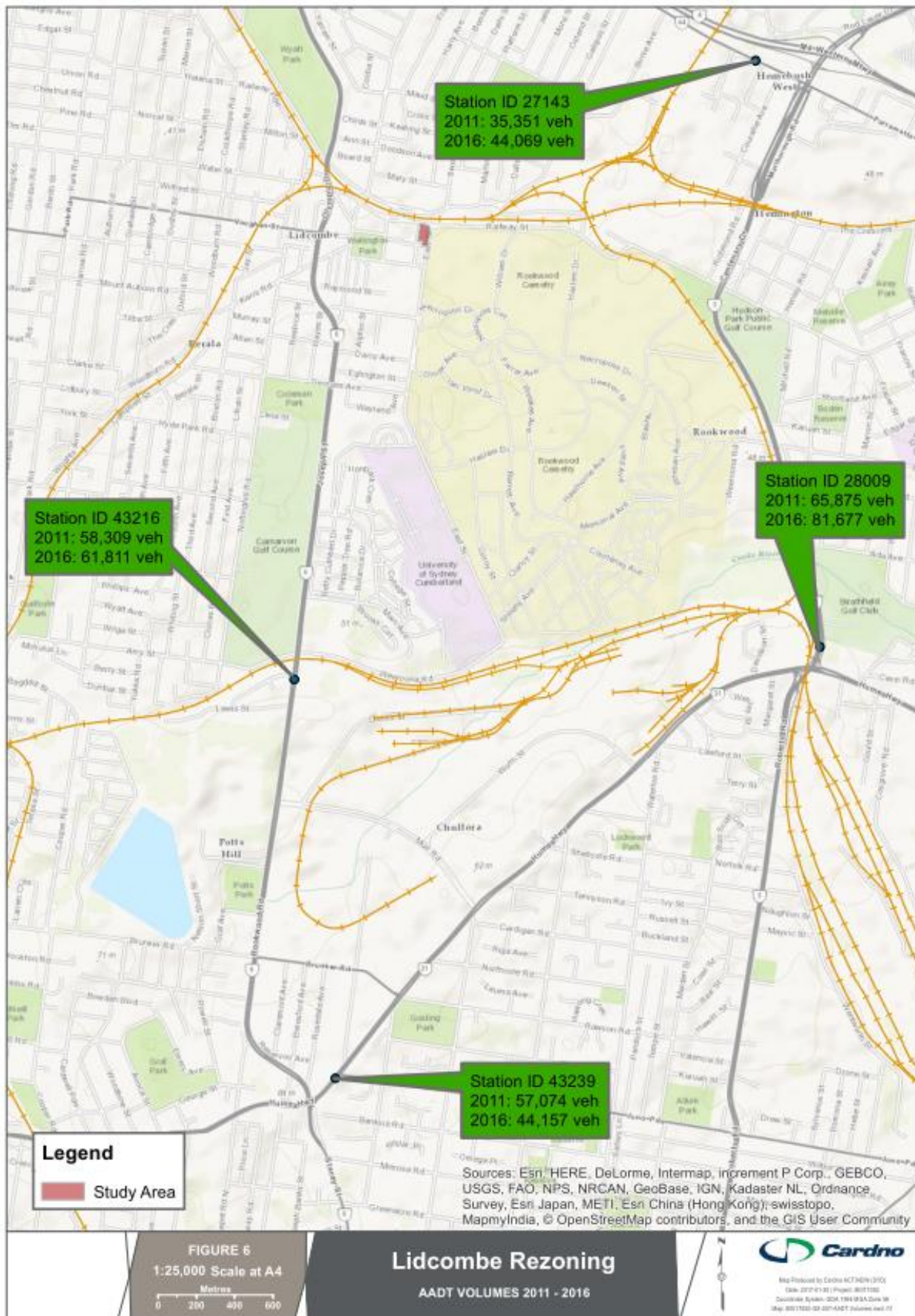


Figure 5-4 Historical AADT traffic locations

Using the annual traffic growth of 1% linearly, the following traffic volumes were calculated in 2017 AM and PM Peaks, without the study area development.

5.4.2 Baseline Traffic Flows (2017)

The baseline traffic flows are the precinct are shown in **Figure 5-5** and **Figure 5-6**.

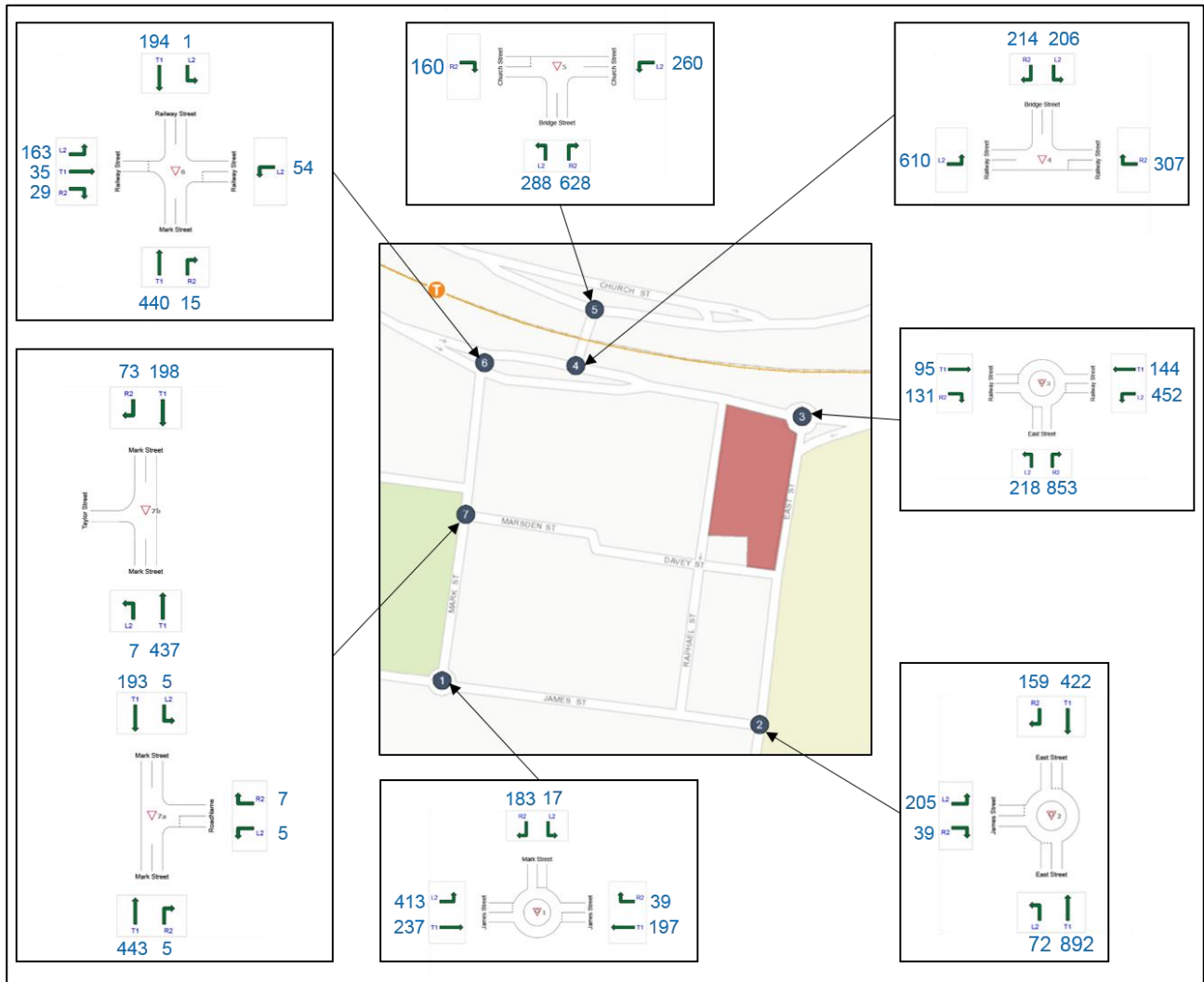


Figure 5-5 One Hour Peak Traffic Volumes 2017 AM Peak

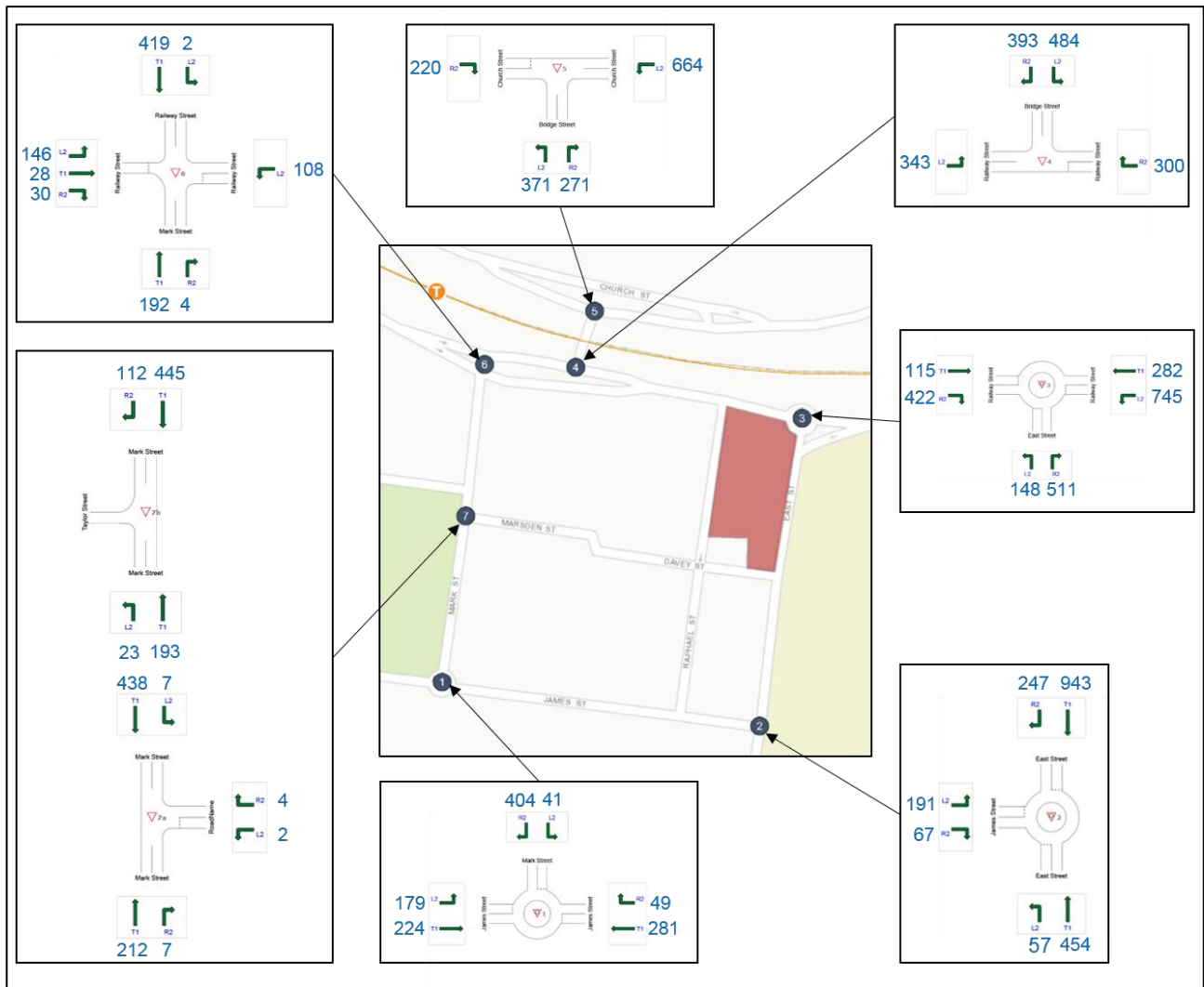


Figure 5-6 One Hour Peak Traffic Volumes 2017 PM Peak

5.4.3 Baseline Traffic Flows (2017) + dev

The baseline traffic flows for 2017 with development are shown in 38Figure 5-7 and Figure 5-8.

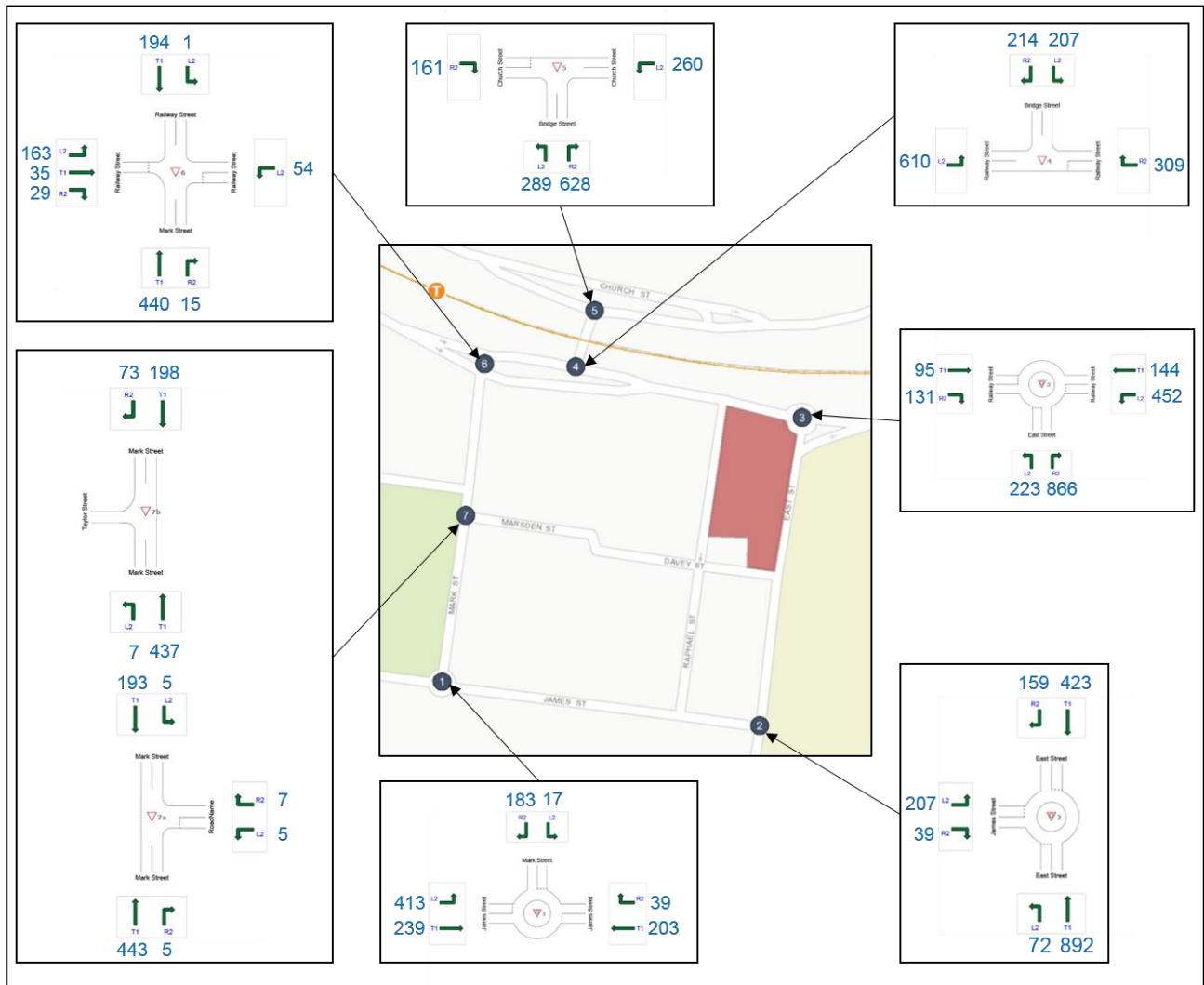


Figure 5-7 One Hour Peak Traffic Volumes 2017 AM Peak + DEV

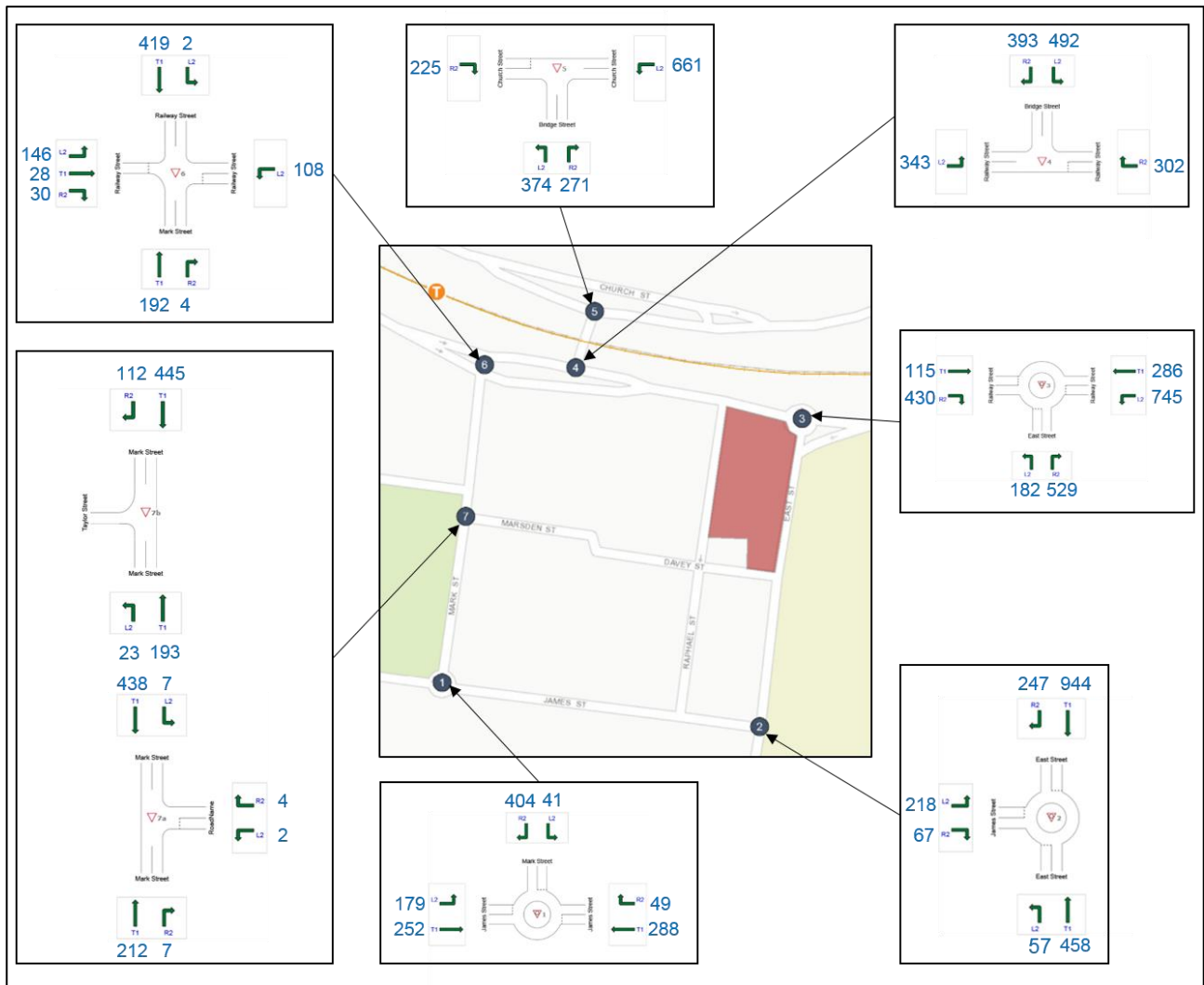


Figure 5-8 One Hour Peak Traffic Volumes 2017 PM Peak + DEV

5.4.4 Baseline Traffic Flows (2022)

The baseline flows for 2022, as discussed above have been calculated using 1% linear growth rate per annum. **Figure 5-9** and **Figure 5-10** provide the baseline traffic flows estimated for 2022 (without development traffic).

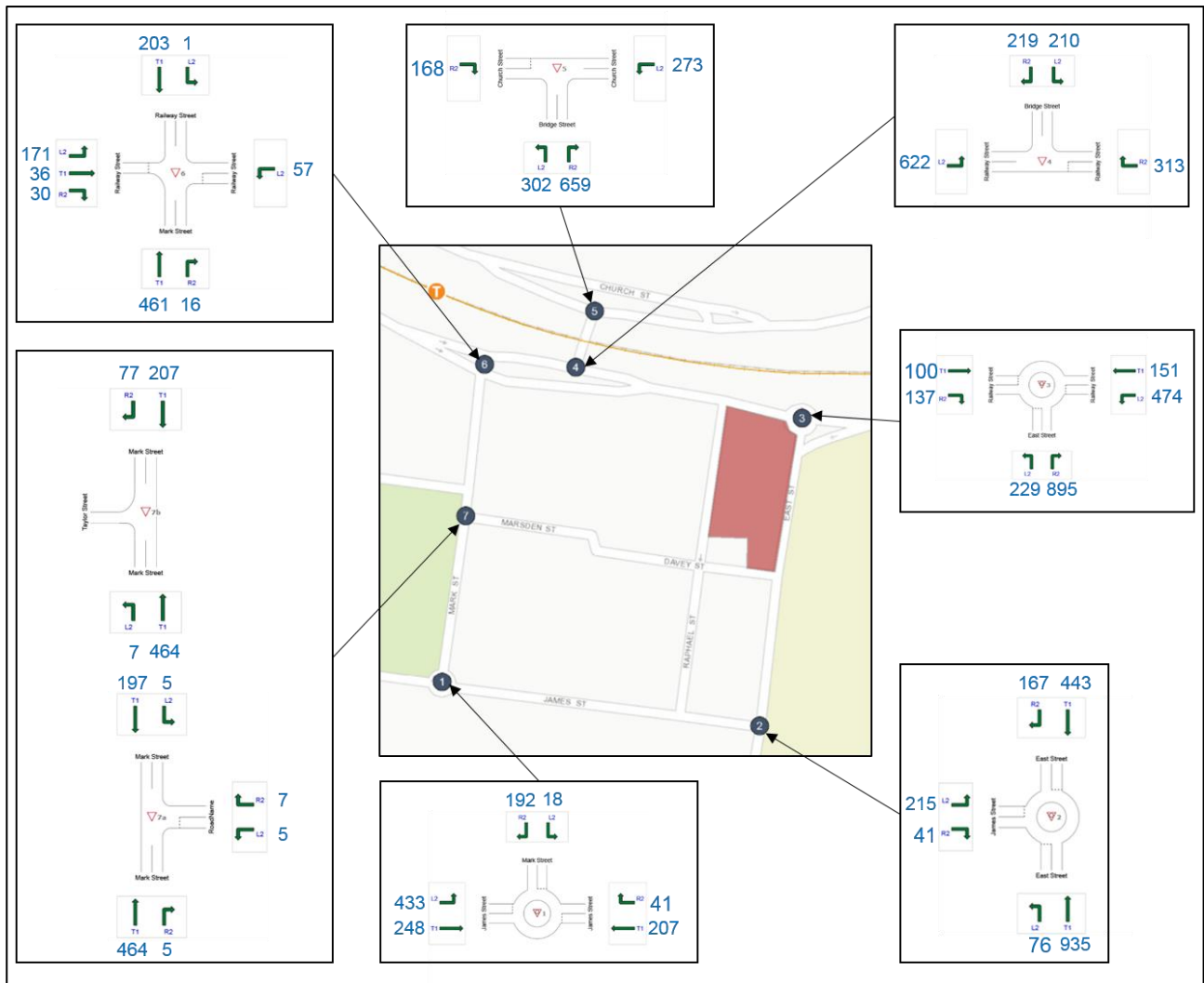


Figure 5-9 One Hour Peak Traffic Volumes 2022 AM Peak

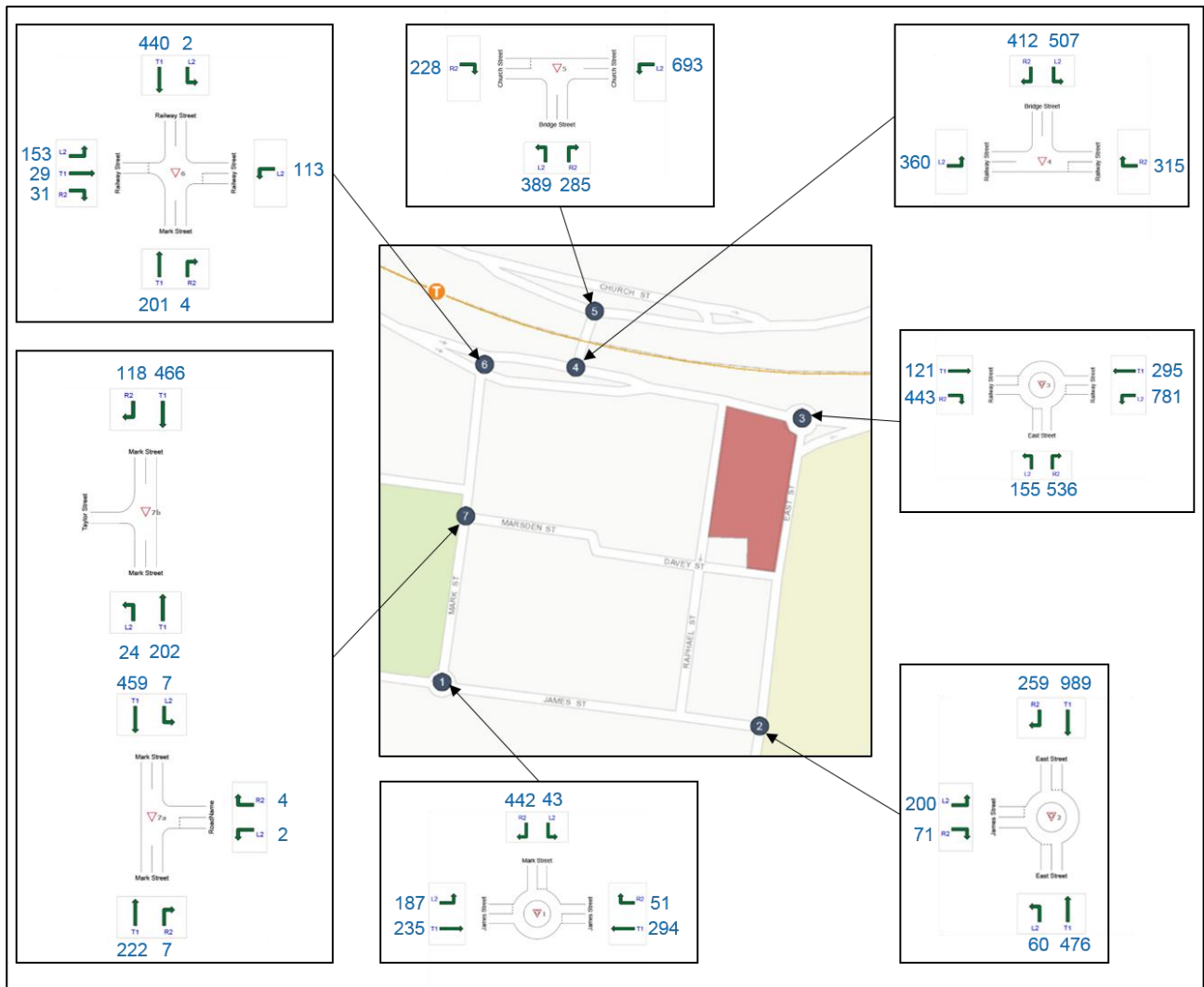


Figure 5-10 One Hour Peak Traffic Volumes 2022 PM Peak

5.4.5 Baseline Traffic Flows (2032)

The baseline traffic flows for 2032 are provided in **Figure 5-11** and **Figure 5-12**, also estimated assuming a linear 1.0% growth rate per annum.

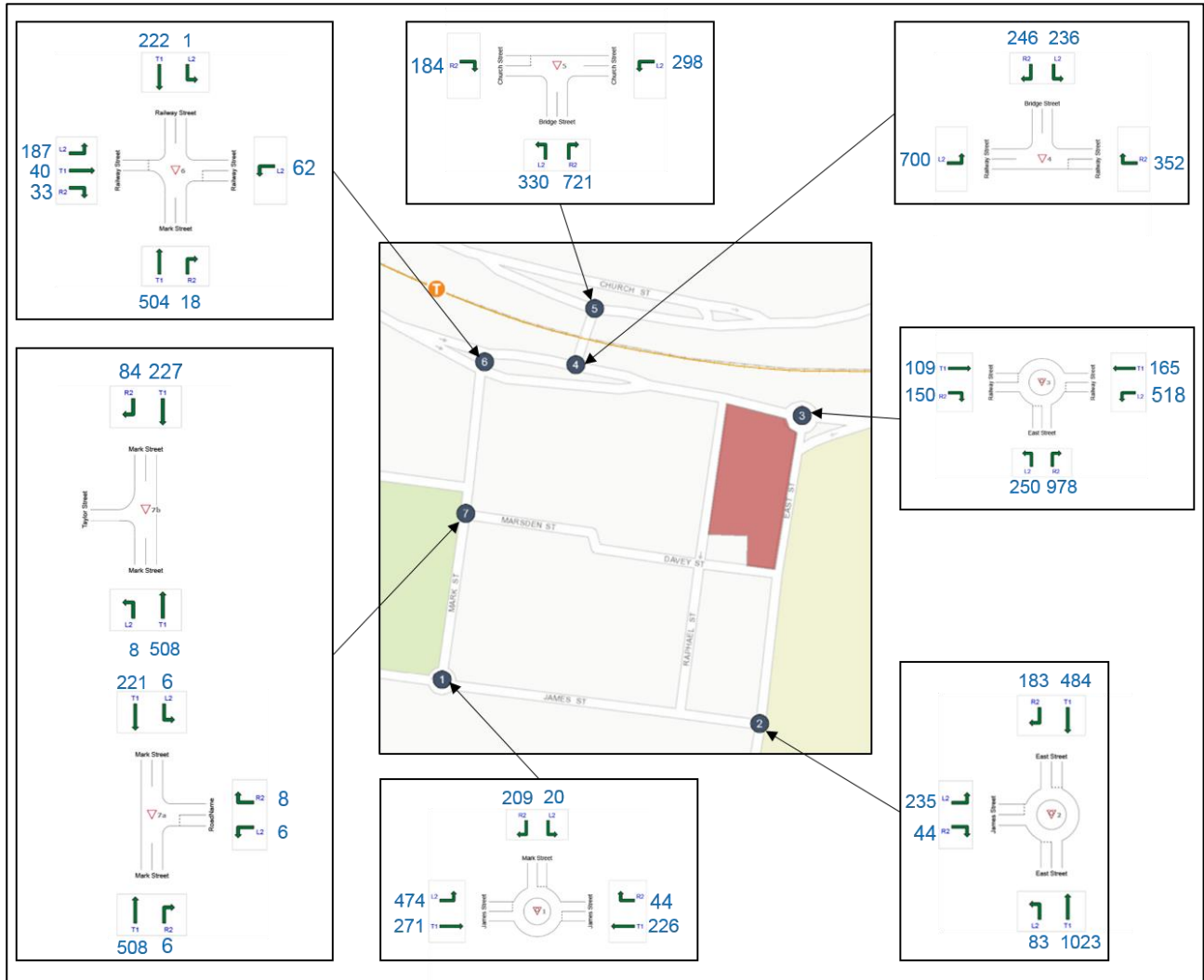


Figure 5-11 One Hour Peak Traffic Volumes 2032 AM Peak

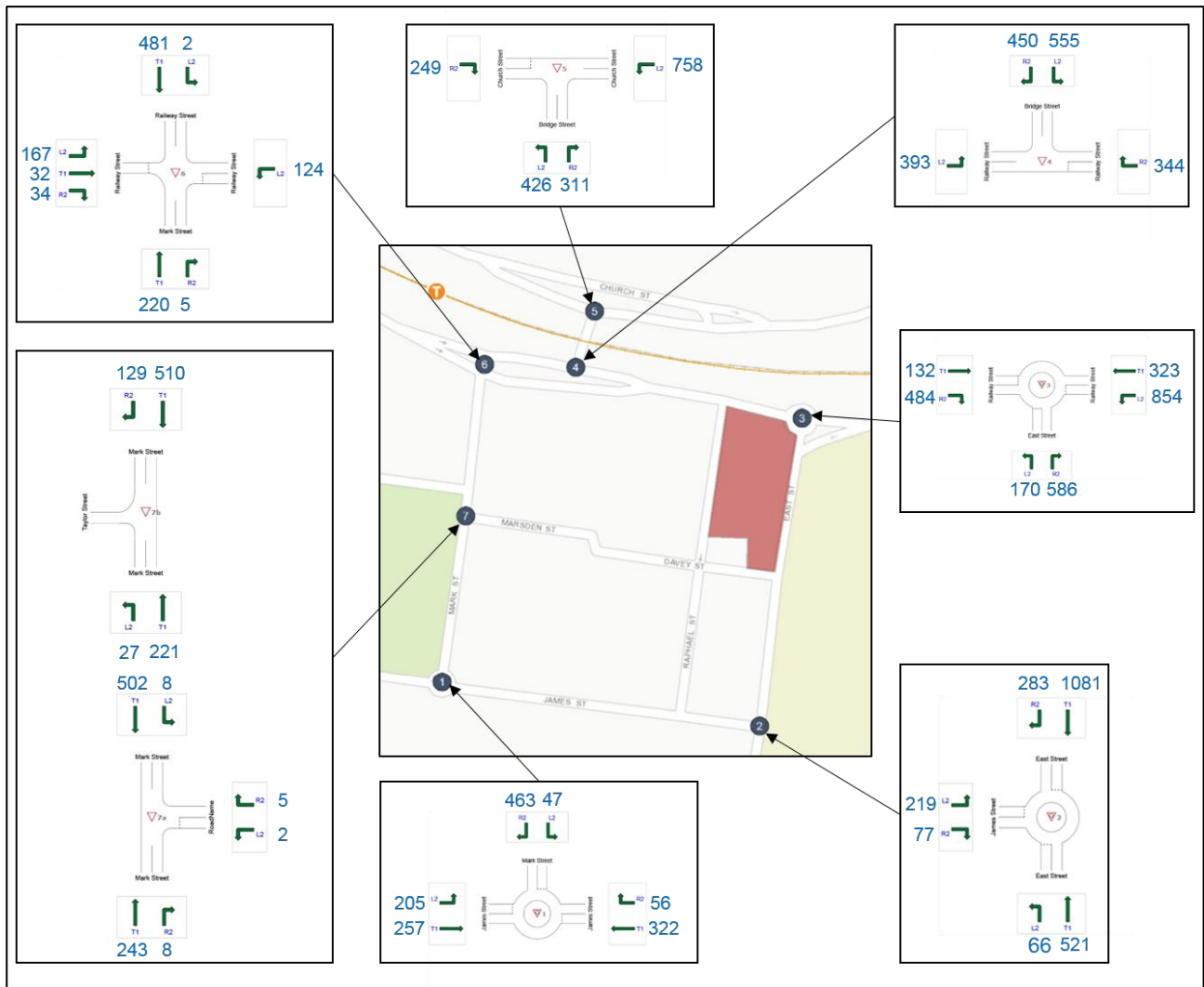


Figure 5-12 One Hour Peak Traffic Volumes 2032 PM Peak

5.5 Development Traffic Assessment

The development traffic estimates were completed by using the traffic generation (**Section 5.1**) and the trip distribution (**Section 5.3**) to estimate the direction and volume of traffic during the AM and PM peak periods. The traffic flows were then added to the baseline traffic shown in **Section 0**, with the results being shown in **Section 5.5.1** and **Section 5.5.2**.

It should be noted that traffic volumes from the existing light industrial zoning of the sites have been not been included in the development traffic volumes.

5.5.1 Development Traffic Flows (2022)

The 2022 development plus baseline traffic flows are shown in **Figure 5-13** and **Figure 5-14**.

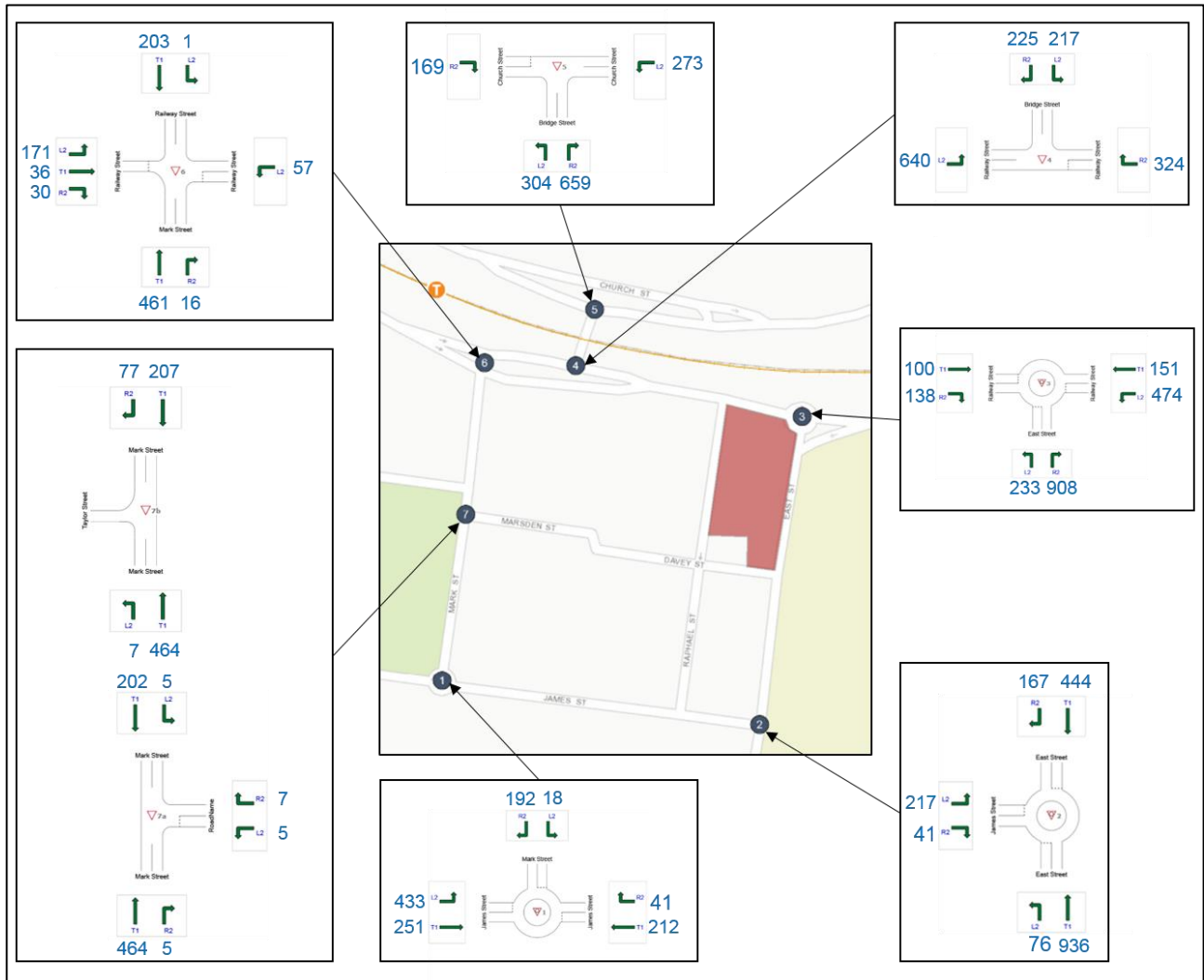


Figure 5-13 One Hour Peak Traffic Volumes 2022 AM Peak + Development

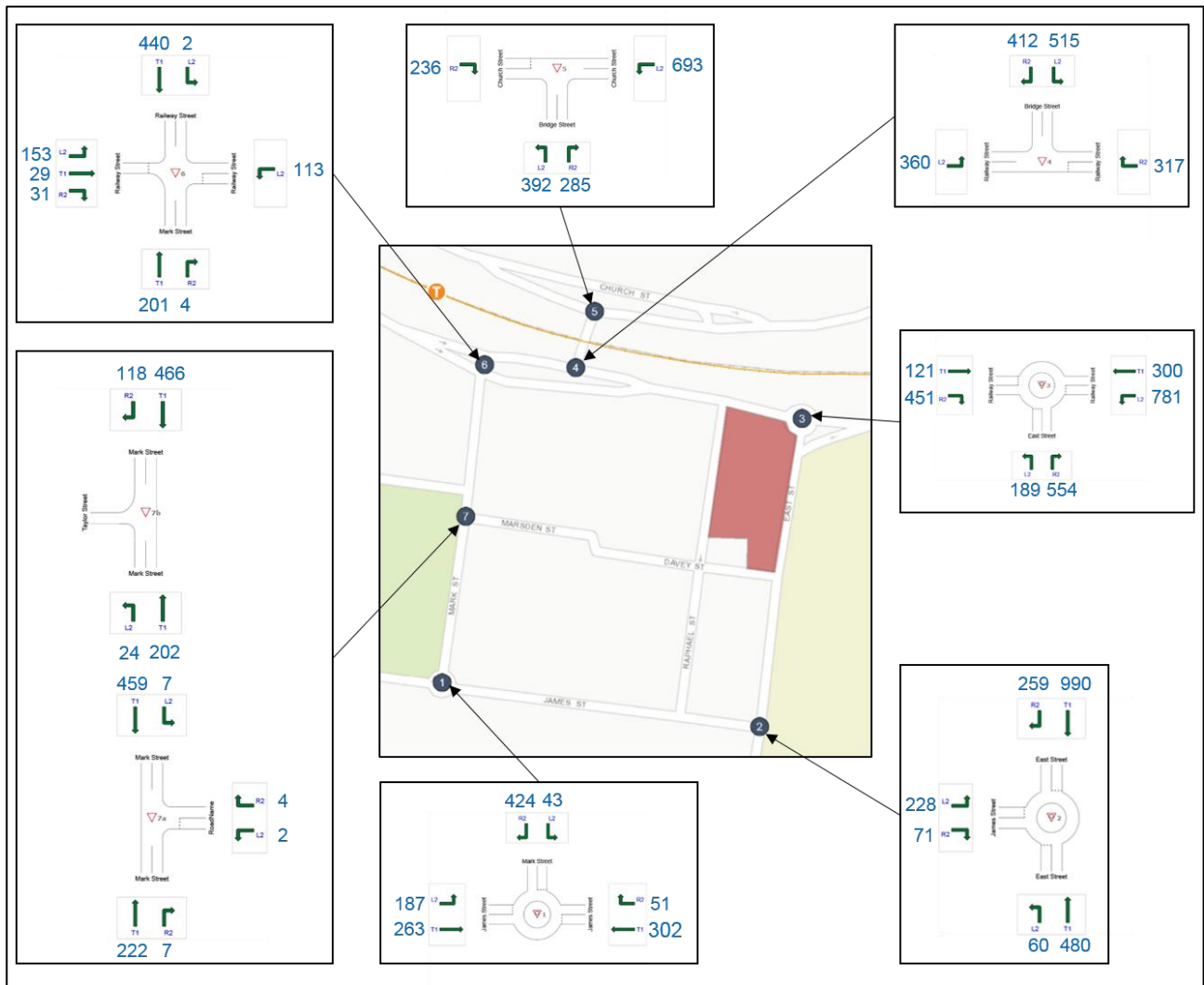


Figure 5-14 One Hour Peak Traffic Volumes 2022 PM Peak + Development

5.5.2 Development Traffic Flows (2032)

The 2032 development plus baseline traffic flows are shown in **Figure 5-15** and **Figure 5-16**.

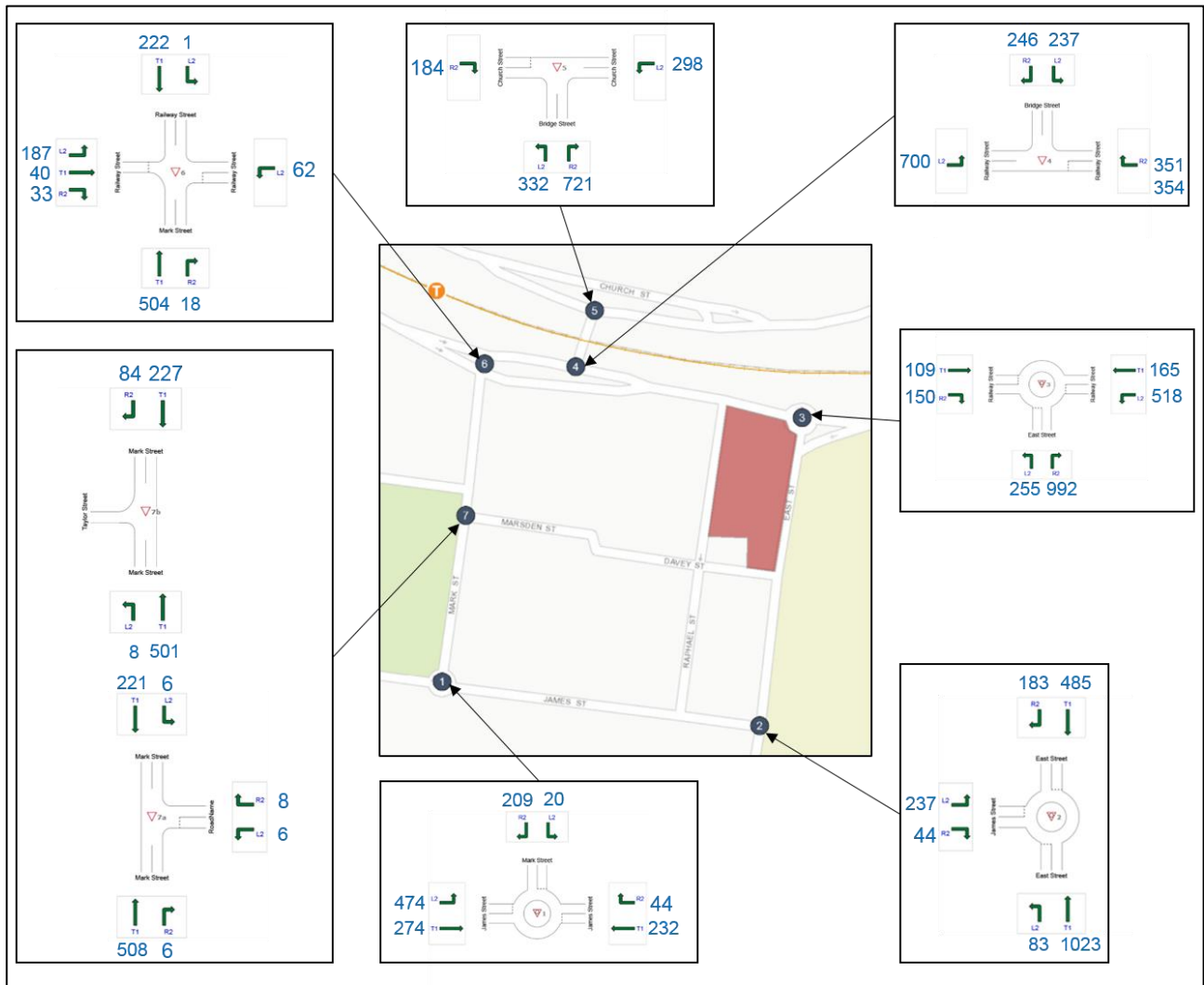


Figure 5-15 One Hour Peak Traffic Volumes 2032 AM Peak + Development

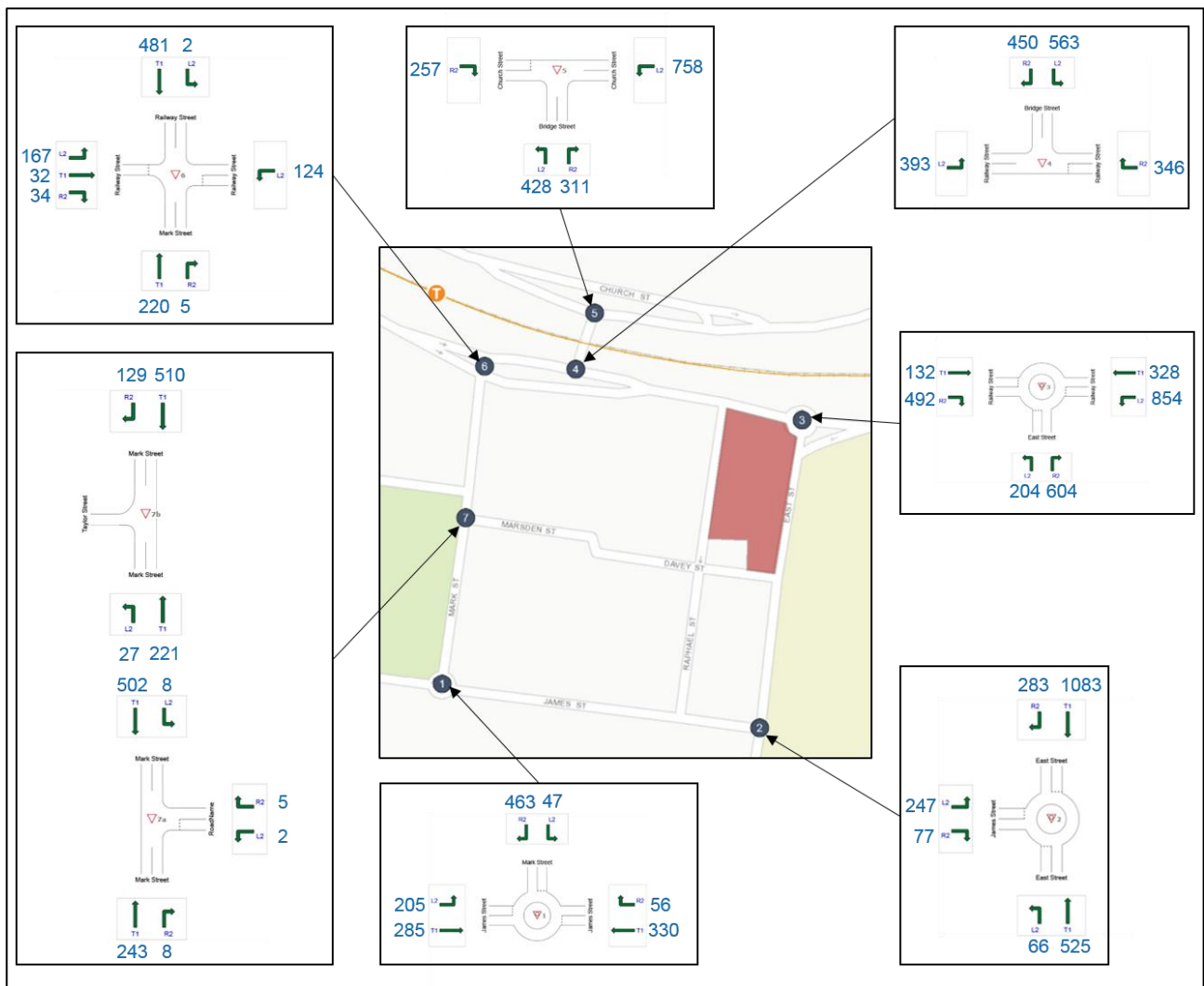


Figure 5-16 One Hour Peak Traffic Volumes 2032 PM Peak + Development

5.6 Intersection Performance

In an urban area the capacity of a road network is largely determined by the capacity of the controlling intersections. The intersection operating performance was assessed using the SIDRA software package to determine the Degree of Saturation (DOS), Average Delay (AVD in seconds) and Level of Service (LOS) at each intersection. The key indicator of intersection performance is Level of Service, where results are placed on a continuum from 'A' to 'F', as shown in **Table 5-8**.

Table 5-8 Intersection Level of Service

LoS	Traffic Signal / Roundabout	Giveway/ Stop Sign/ T - Junction
A	Good Operation	Good Operation
B	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
C	Satisfactory	Satisfactory, but accident study required
D	Operating near capacity	Near capacity & accident study required
E	At Capacity, at signals incidents will cause excessive delays	At capacity, requires other control mode
F	Unsatisfactory and requires additional capacity. Roundabouts require other control mode	Unsatisfactory and requires additional capacity

The Average Vehicle Delay (AVD) provides a measure of the operational performance of an intersection as indicated below in **Table 5-9** which relates AVD to LOS. The AVDs should be taken as a guide only as longer delays could be tolerated in some locations (i.e. inner city conditions) and on some roads (i.e. minor side street intersecting with a major arterial route). For traffic signals, the average delay over all movements should be taken. For roundabouts and priority control intersections (sign control) the critical movement for level of service assessment should be that movement with the highest average delay.

Table 5-9 Intersection Average Delay (AVD)

LoS	Average Delay per Vehicle (seconds/vehicle)
A	Less than 14
B	15 to 28
C	29 to 42
D	43 to 56
E	57 to 70
F	>70

The Degree of Saturation (DOS) is another measure of the operational performance of individual intersections. For intersections controlled by traffic signals both queue length and delay increase rapidly as DOS approaches 1. It is usual to attempt to keep DOS to less than 0.9. When DOS exceeds 0.9 queues can be expected. DOS in the order of 0.7 generally represent satisfactory intersection operation.

At the request of Council, intersection performance modelling has also included a “2017 Base + Development” scenario. As noted in **Section 4.6** of this report, the earliest possible completion date of the project would be 2022. The 2017 Base + Development scenario is therefore a theoretical value only, and its inclusion does not reflect common practice in a traffic assessment for a rezoning proposal.

5.6.2 James Street/ Mark Street (roundabout) Intersection Performance

The James/ Mark Street roundabout was analysed using SIDRA intersection software. This analysis was based on the AM and PM peak network volumes and the development traffic volumes. **Table 5-10** represents key performance indicators for each of the scenarios assessed in SIDRA. Detailed SIDRA outputs are presented in **Appendix A**.

Table 5-10 James Street/ Mark Street intersection performance

Scenario	AM Peak				PM Peak			
	DoS	Delay (sec)	LoS	95 th ile Queue (m)	DoS	Delay (sec)	LoS	95 th ile Queue (m)
2015 Base	0.234	8.8	A	1.6	0.423	11.4	A	3.1
2017 Base	0.239	8.9	A	1.6	0.436	11.5	A	3.2
2017 Base + development	0.246	8.9	A	1.7	0.446	11.6	A	3.4
2022 Base	0.254	9.0	A	1.7	0.469	12.3	A	3.7
2022 Base + development	0.260	9.0	A	1.8	0.480	12.4	A	3.9
2032 Base	0.284	9.2	A	2.0	0.541	14.2	A	5.0
2032 Base + development	0.290	9.2	A	2.0	0.553	14.4	A	5.2

Based on the assumptions of 1.0% background traffic growth per annum, the intersection of James Street and Mark Street will continue to operate at a LoS A in 2032, with the development.

5.6.3 East Street/ James Street (roundabout) Intersection Performance

The East Street / James Street roundabout was analysed using SIDRA intersection software. This analysis was based on the AM and PM peak network volumes and the development traffic volumes. **Table 5-11** represents key performance indicators for each of the scenarios assessed in SIDRA. Detailed SIDRA outputs are presented in **Appendix A**.

Table 5-11 East Street / James Street intersection performance

Scenario	AM Peak				PM Peak			
	DoS	Delay (sec)	LoS	95 th ile Queue (m)	DoS	Delay (sec)	LoS	95 th ile Queue (m)
2015 Base	0.783	46.1	D	9.3	0.386	12.6	A	2.8
2017 Base	0.826	55.4	D	10.8	0.408	12.8	A	3.0
2017 Base + development	0.831	56.4	D	11.0	0.452	13.5	A	3.6
2022 Base	0.945	108.9	F	18.7	0.433	13.4	A	3.3
2022 Base + development	0.953	114.1	F	19.7	0.978	15.3	B	45.5
2032 Base	1.097	277.5	F	49.4	1.066	135.0	F	162.9
2032 Base + development	1.103	286.6	F	51.1	1.079	159.1	F	180.5

It is evident that by 2022, this intersection would be failing without the new development traffic volumes during the AM Peak, and in 2032 will fail during both AM and PM peaks.

5.6.4 Railway Street/ East Street (roundabout) Intersection Performance

The Railway/ East Street roundabout was analysed using SIDRA intersection software. **Table 5-12** presented in intersection performance of the roundabout. Detailed SIDRA outputs are presented in **Appendix A**.

Table 5-12 Railway Street / East Street intersection performance

Scenario	AM Peak				PM Peak			
	DoS	Delay (sec)	LoS	95 th ile Queue (m)	DoS	Delay (sec)	LoS	95 th ile Queue (m)
2015 Base	0.626	25.5	B	5.8	0.871	22.7	B	19.4
2017 Base	0.965	28.7	C	42.9	0.878	34.0	C	17.8
2017 Base + development	0.980	35.4	C	51.4	0.949	52.8	D	26.9
2022 Base	1.023	78.6	F	87.2	0.956	56.5	D	28.4
2022 Base + development	1.042	107.2	F	107.5	1.031	123.2	F	55.8
2032 Base	1.140	274.1	F	228.0	1.124	265.4	F	107.7
2032 Base + development	1.158	305.3	F	250.6	1.181	362.5	F	143.9

It is evident that by 2022, this intersection would be failing without the new development traffic volumes during the AM Peak, and in 2032 would fail during both AM and PM peaks. Without development the roundabout will begin to deteriorate in 2021 where the intersection performs at a level of service E.

As noted in **Section 5.1.2**, traffic generation for commercial areas is very conservative as is estimated that some trips are generated from the same project development, (residential area) that may use the commercial areas in the same project, without requiring a vehicle trip to/from residential - commercial.

The RMS rates do not specify project developments (complex buildings) with a mix used of commercial / retail / residential, therefore the assessment has assumed the land uses separately increasing vehicles trips that would not occur as the residents on the project development are likely to use the commercial premises within the project.

5.6.5 Railway Street/ Bridge Street (priority) Intersection Performance

The Railway Street/ Bridge Street intersection was analysed using SIDRA Intersection software. Detailed SIDRA outputs are presented in **Appendix A**.

Table 5-13 Railway Street/ Bridge Street intersection performance

Scenario	AM Peak				PM Peak			
	DoS	Delay (sec)	LoS	95 th %ile Queue (m)	DoS	Delay (sec)	LoS	95 th %ile Queue (m)
2015 Base	0.751	22.2	C	4.7	0.795	25.8	D	5.3
2017 Base	0.789	24.5	C	5.3	0.839	29.8	D	6.2
2017 Base + development	0.795	24.9	C	5.4	0.851	31.2	D	6.5
2022 Base	0.901	37.8	E	8.6	0.957	58.8	F	12.6
2022 Base + development	0.902	38.1	E	8.7	0.973	67.9	F	14.6
2032 Base	1.156	319.6	F	67.6	1.254	492.4	F	93.9
2032 Base + development	1.163	332.4	F	70.3	1.271	523.0	F	99.0

This intersection does not get adversely affected due to the addition of development site. This intersection begins to fail in 2022 during both AM and PM peaks. It is noticed that the addition of the traffic generated from the development would not make worse the performance of the intersection.

5.6.6 Church Street/ Bridge Street (priority) Intersection Performance

The Church Street and Bridge Street intersection was analysed using SIDRA intersection software, and a summary provided in **Table 5-14**. Detailed outputs are presented in **Appendix A**.

Table 5-14 Church Street/ Bridge Street intersection performance

Scenario	AM Peak				PM Peak			
	DoS	Delay (sec)	LoS	95 th %ile Queue (m)	DoS	Delay (sec)	LoS	95 th %ile Queue (m)
2015 Base	0.495	18.6	B	2.0	0.731	26.5	B	3.8
2017 Base	0.517	19.5	B	2.1	0.760	28.8	C	4.1
2017 Base + development	0.529	19.8	B	2.2	0.805	32.1	C	4.8
2022 Base	0.601	23.1	B	2.6	0.886	45.8	D	6.5
2022 Base + development	0.606	23.2	B	2.6	0.919	54.3	D	7.9
2032 Base	0.817	40.1	C	4.4	1.207	420.2	F	59.6
2032 Base + development	0.819	40.5	C	4.4	1.247	490.7	F	69.9

During the AM peak, this intersection continues to operate at a reasonable LoS. However, in 2032, the PM peak begins to fail, due to the increased number of vehicles approaching Church Street from the west.

5.6.7 Railway Street/ Mark Street (priority) Intersection Performance

The Railway Street and Mark Street intersection was analysed using SIDRA intersection software, and a summary provided in **Table 5-15**. Detailed outputs are presented in **Appendix A**.

Table 5-15 Railway Street/ Mark Street intersection performance

Scenario	AM Peak				PM Peak			
	DoS	Delay (sec)	LoS	95 th ile Queue (m)	DoS	Delay (sec)	LoS	95 th ile Queue (m)
2015 Base	0.121	11.2	A	0.4	0.111	11.3	A	0.4
2017 Base	0.128	11.4	A	0.4	0.117	11.5	A	0.4
2017 Base + development	0.128	11.4	A	0.4	0.117	11.5	A	0.4
2022 Base	0.139	12.0	A	0.5	0.127	12.1	A	0.4
2022 Base + development	0.139	12.0	A	0.5	0.127	12.1	A	0.4
2032 Base	0.171	13.3	A	0.6	0.156	13.5	A	0.5
2032 Base + development	0.171	13.3	A	0.6	0.156	13.5	A	0.5

This intersection will continue to perform at a LoS A until at least 2032. It should be noted that as it was assumed no development traffic would use these intersection, the base and base + development traffic is identical.

5.6.8 Mark Street/ Marsden Street/ Taylor Street (priority) Intersection Performance

The Mark Street, Marsden Street and Taylor Street intersection was analysed using SIDRA intersection software, and a summary provided in **Table 5-16**. Detailed outputs are presented in **Appendix A**.

Table 5-16 Mark Street/ Marsden Street/ Taylor Street intersection performance

Scenario	AM Peak				PM Peak			
	DoS	Delay (sec)	LoS	95 th ile Queue (m)	DoS	Delay (sec)	LoS	95 th ile Queue (m)
2015 Base	0.015	9.0	A	0.1	0.007	9.1	A	0.0
2017 Base	0.016	9.1	A	0.1	0.008	9.3	A	0.0
2017 Base + development	0.016	9.1	A	0.1	0.008	9.3	A	0.0
2022 Base	0.017	9.4	A	0.1	0.008	9.6	A	0.0
2022 Base + development	0.017	9.4	A	0.1	0.008	9.6	A	0.0
2032 Base	0.020	10.1	A	0.1	0.010	10.3	A	0.0
2032 Base + development	0.020	10.1	A	0.1	0.010	10.3	A	0.0

This intersection will continue to perform at a LoS A until at least 2032. It should be noted that as it was assumed no development traffic would use these intersection, the base and base + development traffic is identical.

5.7 Queue Length Assessment

The queue length assessment has been completed for intersections which are currently close to capacity, which are:

- > East Street/ Railway Street roundabout;
- > East Street/ James Street roundabout;
- > Railway Street/ Bridge Street intersection; and
- > Church Street / Bridge Street intersection.

Diagrams of the queue lengths during the critical peak period can be found in **Figure 5-17** to **Figure 5-24**.



Figure 5-17 East Street and Railway Street AM Peak

This East Street/ Railway Street intersection on the southern approach to the intersection queues up for 326m. This continues past the East Street/ James Street intersection.



Figure 5-18 East Street and Railway Street PM Peak

The worst queue length was found to be for the eastern approach along Railway Street, where a queue length of 178m was developed.



Figure 5-19 James Street and East Street AM Peak

The worst approach to this intersection is from the south with a 177m queue.



Figure 5-20 James Street and East Street PM Peak

During the PM peak, the James Street and East Street approach has sufficient queue lengths along East Street. On James Street however, these lengths can be up to 211m.



Figure 5-21 Bridge Street and Railway Street AM Peak

The only queue lengths are along Railway Street where queue length were 40m long.



Figure 5-22 Bridge Street and Railway Street PM Peak

Queue length of 6m was found during the PM peak at the Bridge Street and Railway Street intersection.



Figure 5-23 Bridge Street and Church Street AM Peak

The intersection of Bridge Street and Church Street had a 16m average queue length along Church Street which doesn't adversely affect traffic.



Figure 5-24 Bridge Street and Church Street PM Peak

PM peak queue lengths along Bridge and Church Street during the PM peak stretch to 31m, which does not block any intersections.

6 Council Comments Register

A meeting with Cumberland Council (Auburn) was held on 14 March 2017. Council has raised comments in regards to the rezoning traffic study. Comments and responses are summarised in table below.

Table 6-1 Council Comments Register

Item	Council Comment	Date	Response	Action
1	Traffic trip distribution and traffic split for the AM and PM peak periods is not consistent with the Traffic, Transport and Accessibility Study – Marsden Street Precinct, Lidcombe (Hyder Report April 2015)	14/03/2017	Traffic distribution split is are based on current trends of journey to/from work of the available data in the TfNSW Performance and Analytics, (Source: Transport for NSW, Performance and Analytics (Bureau of Traffic Statistics))	No actions required Refer to Section 5.3 Trip Distribution
2	Clarify Sidra intersection validation	14/03/2017	Intersection assessments done in SIDRA software have considered the existing queue length along the critical intersection during the AM and PM peak periods. Traffic data used as inputs in SIDRA are based on the available data from the Traffic, Transport and Accessibility Study – Marsden Street Precinct, Lidcombe (Hyder Report April 2015) Intersection traffic surveys have adjusted to year 2017 (Existing conditions)	Refer Section 5.7 Queue Length Assessment. Additional photographic information would be provided in the final stage of the report
3	Clarification of the internal road network configuration. Marsden Street Master Plan to be updated	14/03/2017	This traffic report assumes the existing road network within the Marsden Street Precinct is fit to purpose for this assessment. Changes to the Master Plan shall be advice by the Council.	No actions required. For details of existing local road network refer to Section 2.4 Road Network
4	Council requirement to provide assessment of existing conditions plus development	14/03/2017	Notwithstanding that the Council approach is not the common practice in a rezoning traffic study, Cardno will prepare the intersection assessment as requested by Council of the existing conditions (year 2017) using the traffic data listed in the Hyder Traffic Report adding the estimated traffic generation from the proposed development.	Refer to Section 5.4.3 Baseline Traffic Flows (2017 + Development)
5	Council seeks design intersection improvements and opportunities at the Railway Street and East Street intersection to alleviate existing traffic conditions Consideration to a two-lane roundabout or alternative options to be assessed without compromising the railway corridor boundary.	14/03/2017	A standalone Technical Memorandum was prepared to address comments from Council in regards to design intersection improvements and opportunities at the Railway Street and East Street. This has been reproduced in Section 7 for reference Design options to improve existing conditions without development do not form part of this rezoning traffic study.	Refer to Section 7 Railway Street / East Street Design Options

Further correspondence was provided by Cumberland Council in its letter, dated 18 December 2017. Comments and responses are summarised in the following table.

Table 6-2 Council Comments Register

Item	Council Comment	Date	Response	Action
A	<p>To assess the existing traffic situation including:</p> <ul style="list-style-type: none"> i. Existing traffic characteristics (including volume) of the local network and of the intersection. ii. Existing constraints to any intersection works, i.e. that no additional land can be taken from the Rookwood Cemetery property and that no additional land can be taken from the northern side which forms the boundary to an separation from the railway line. This section should also address the cycleway (via setbacks) along East Street that has been separately previously raised. iii. The capacity of the existing intersection configuration 	18/12/2017	Information requested, as identified by Council (refer to note) has been provided.	No actions required
B	Recognise the increase in traffic related to the proposed redevelopment (development concept) of the site and that will utilise the intersection – based on current / short term traffic volumes of the local network.	18/12/2017	Information requested, as identified by Council (refer to note) has been provided.	No actions required
C	Assess the potential increase in traffic that may utilise this intersection over a specified period of time. To include any other redevelopments currently known / proposed for the area e.g 4-12 Railway Street, as part of that increase.	18/12/2017	Information requested, as identified by Council (refer to note) has been provided.	No actions required
D	Identify options for intersection works to accommodate that traffic increase. Options are to include the larger two-lane roundabout option and the signalised intersection option as a minimum. This will also need to consider any supporting requirements, for example if the roundabout is enlarged, do the entry and exits	18/12/2017	This information has generally been provided in the technical memorandum (dated 30/03/2017) previously provided to Council. This information has been reproduced in Section 6 for reference.	No actions required. Refer to Section 7 .

	need to be widened for an appropriate distance.			
E	Identify any land from the subject site, along Railway Street and / or East Street, which may be needed to facilitate each of those proposed intersection works. Information of the distance, area, and location of that land, in broad terms, will need to be identified in text and on indicative plans. That land may be dedicated to / acquired by Council – separately discussed such as via the VPA process.	18/12/2017	This information has generally been provided in the technical memorandum (dated 30/03/2017) previously provided to Council. This information has been reproduced in Section 6 for reference.	No actions required. Refer to Section 7 .
note	Much of the information nominated under a), b) and c), have been produced for the traffic impact assessment provided as part of the Planning Proposal Request (Cardno report dated 20 February 2017). Therefore, the majority of new information to be produced would be in response to components d) and e).	18/12/2017	-	-

7 Intersection Design Options

The previous traffic studies undertaken around Lidcombe, including the Traffic Impact Assessment for 3-7 East Street and 2 Railway Street Traffic (APEX, 2016) and the Transport and Accessibility Study for the Marsden Street Precinct (Arcadis 2015) in addition to the findings of this assessment have all identified that the roundabout at Railway Street and East Street is likely to fail without any development by the year 2020.

This section provides details of four intersection design options for further discussion and detailed assessment post rezoning. These options include:

- > Two lane roundabout
- > Priority control intersection
- > No Right Turn
- > Signalised intersection



Figure 7-1 Subject area

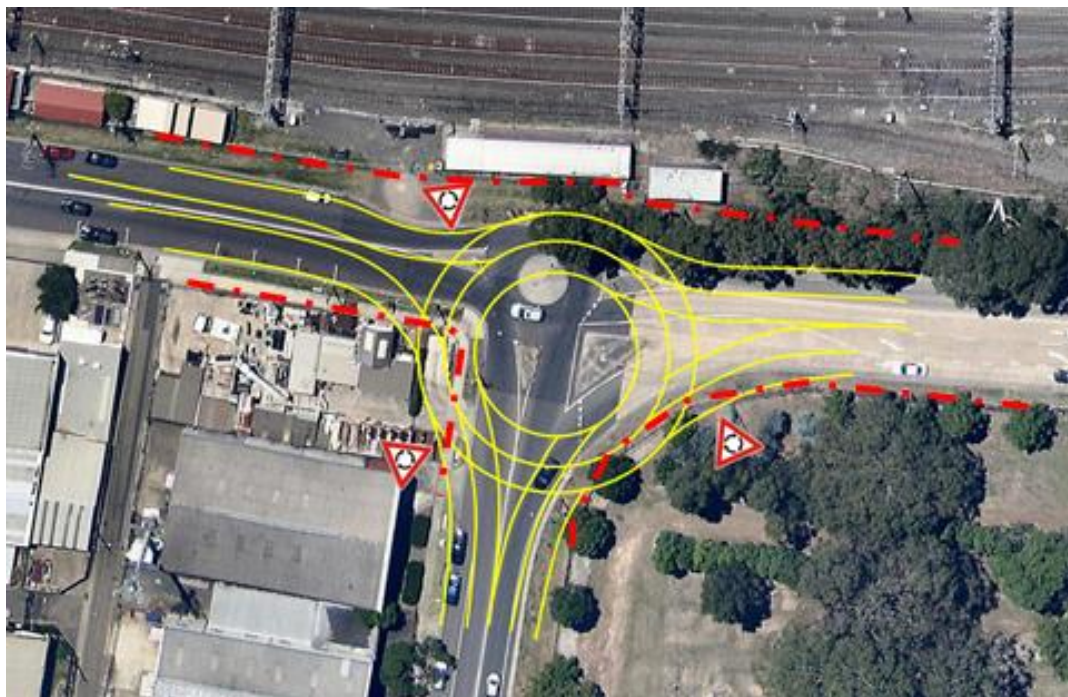


Figure 7-2 Two Lane Roundabout



Figure 7-3 Priority Controlled or Signalised Intersection

7.2 Intersection Options

7.2.1 Option 1 - Two lane roundabout

The two lane roundabout option proposes the upgrade of the existing roundabout from a one lane roundabout to a two lane roundabout. Key features of this new design layout include:

- > Addition of an extra lane on the northern side of the roundabout;
- > Addition of turning lanes on the western approach and southern approach;
- > Internal radius of roundabout is 10m minimum;
- > The slip lane will be kept for right turning on the eastern approach.

The site layout is shown below in **Figure 7-4**.

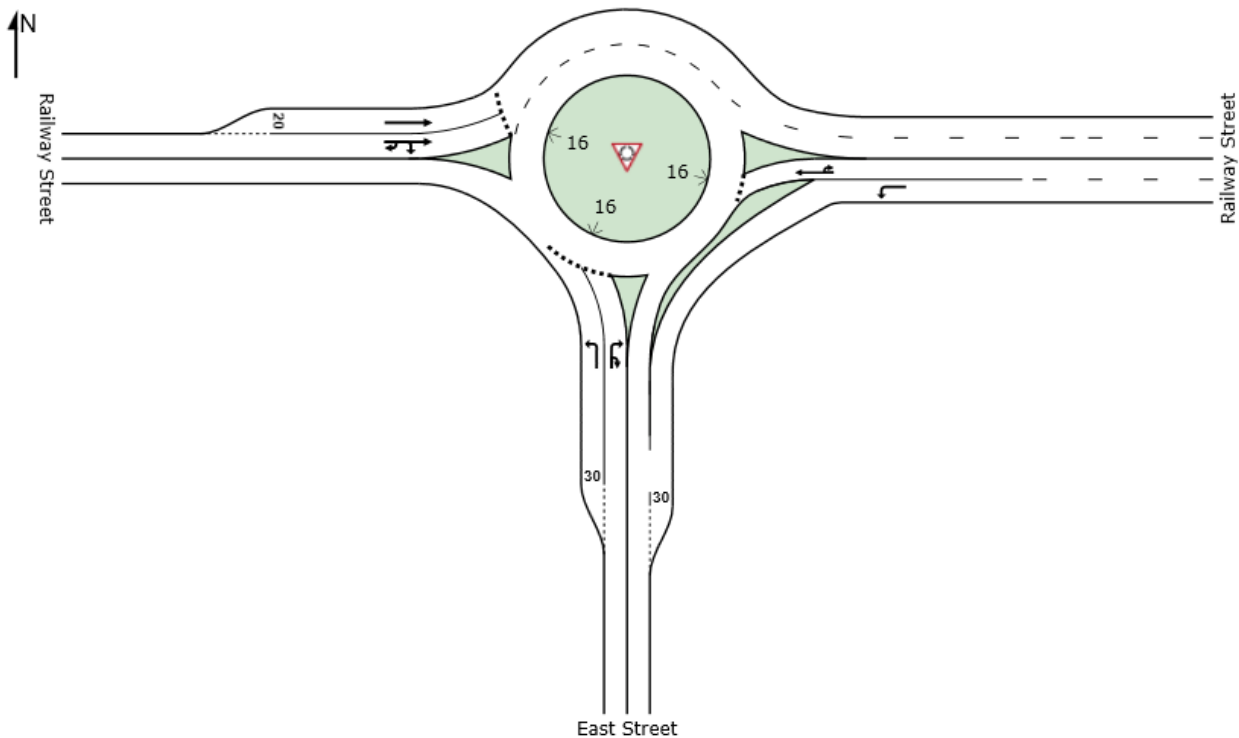


Figure 7-4 Option 1 – Roundabout

In 2032 base scenario, the intersection will operate a level of service B. Sidra intersection performance is shown below in **Table 5-10**. The intersection design layout would require a significant land acquisition in order to adjust the road geometric requirements, not just from the subject site but also from Rookwood Cemetery.

Table 7-1 Option 1 - Railway Street/ East Street intersection performance (No Development)

Scenario	AM Peak				PM Peak			
	DoS	Delay (sec)	LoS	95 th ile Queue (m)	DoS	Delay (sec)	LoS	95 th ile Queue (m)
2032 Base	0.396	18.4	B	3.3	0.690	18.1	B	8.4

7.2.2 Option 2 – Right Turning movements allowed from Railway Street

Key features include:

- > Slip lane on eastern approach is retained;
- > Two right turning lanes on the southern approach;
- > One right turning lane from Railway Street to East Street;
- > Priority movements are from East Street to Railway Street (east).

The site layout is shown below on **Figure 7-5**.

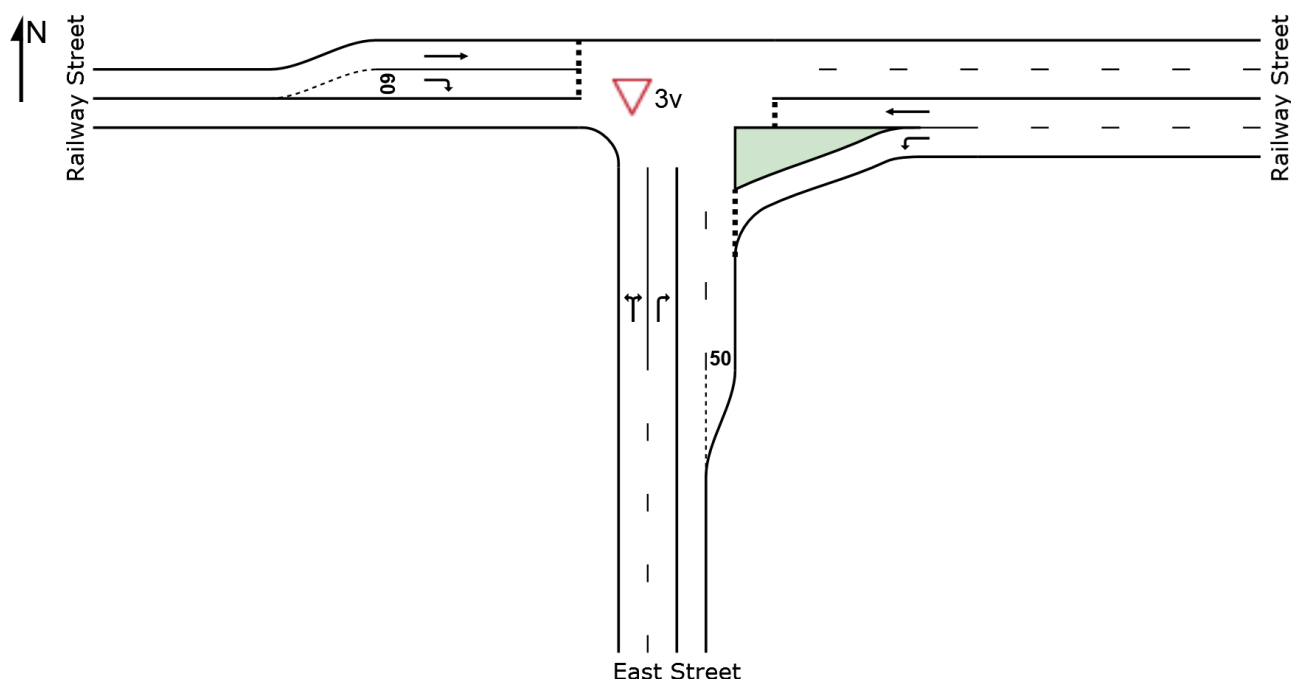


Figure 7-5 Option 2 – Priority Control Intersection – Right turning movements allowed

The priority controlled intersection will not provide additional capacity to the existing intersection, due to the excessive amounts of vehicles turning right from Railway Street onto East Street (western approach).

A sensitivity test was undertaken to identify the possible year where the intersection would still operate at satisfactory level of service. SIDRA analysis indicates that the intersection would deteriorate performance to near capacity in the 2018 for the PM peak period. Sidra intersection performance summary is shown below in **Table 7-2**.

Table 7-2 Option 2 - Railway Street/ East Street intersection performance (No Development)

Scenario	AM Peak				PM Peak			
	DoS	Delay (sec)	LoS	95 th ile Queue (m)	DoS	Delay (sec)	LoS	95 th ile Queue (m)
2017 Base	0.495	21.5	B	2.0	0.955	46.4	D	16.5
2032 Base	0.667	30.9	C	3.0	1.339	635.8	F	162.7

7.2.3 Option 3 – Right Turning movements banned from Railway Street

Key features include:

- > Slip lane on eastern approach is retained;
- > Two right turning lanes on the southern approach;
- > Right turning movements from Railway Street to East Street are banned
- > Priority movements are from East Street to Railway Street (east).

The site layout is shown below on **Figure 7-5**.

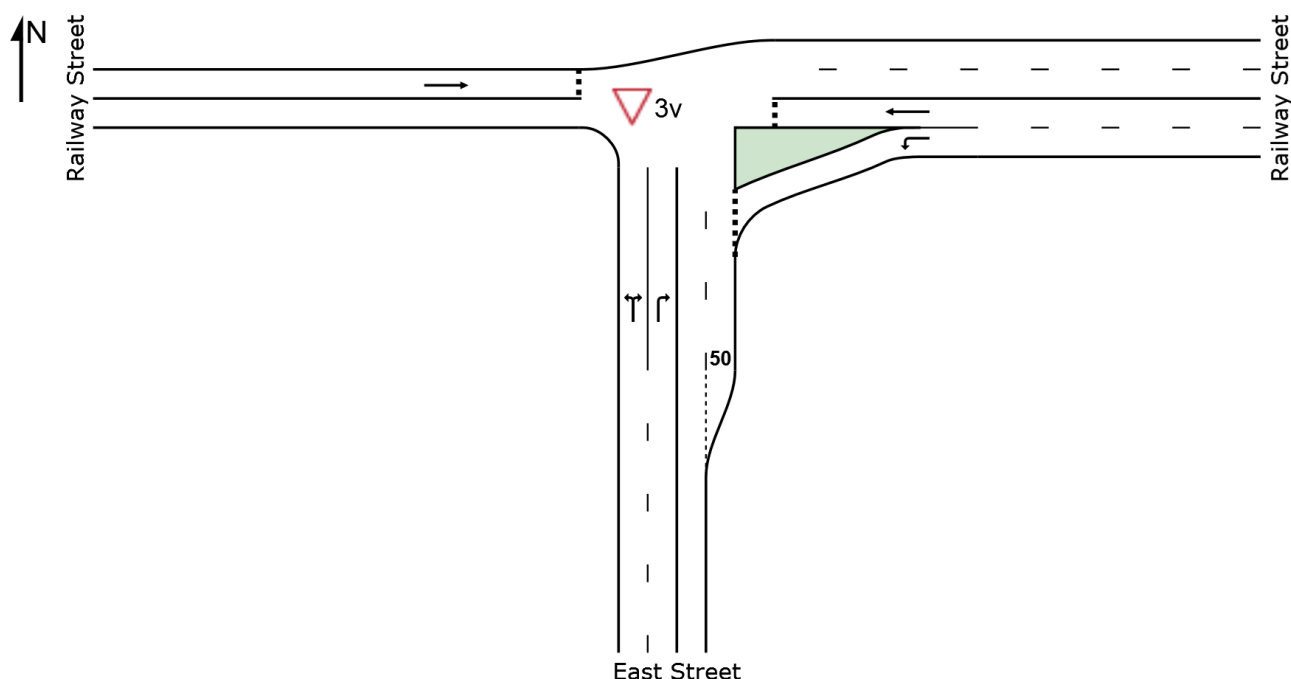


Figure 7-6 Option 3 – Priority Control Intersection – Right turning movements banned

The priority controlled intersection will provide additional capacity to the existing intersection, due to the right turning from Railway Street onto East Street (western approach) being banned. This intersection will perform at a LoS B during the AM Peak and LoS A during the PM Peak. Sidra intersection performance is shown below in **Table 7-3**.

Raphael Street runs parallel to East Street on its western side. While this intersection option assessment has not considered a new traffic re-distribution, it is recommended to consider this option with alternative treatments that could potentially be implemented on Raphael Street.

Table 7-3 Option 3 - Railway Street/ East Street intersection performance (No Development)

Scenario	AM Peak				PM Peak			
	DoS	Delay (sec)	LoS	95 th ile Queue (m)	DoS	Delay (sec)	LoS	95 th ile Queue (m)
2032 Base	0.527	21.0	B	2.3	0.533	12.6	A	3.0

7.2.4 Option 4 - Signalised intersection

The signalised intersection will provide additional capacity to the intersection. Key features include:

- > Additional turning lanes on the west and south approaches;
- > Retaining of the slip lane on the east approach. This slip lane will be a high angle slip lane with give way;
- > 60m of short lane for vehicles turning right from Railway Street to East Street.

The site layout is shown below in **Figure 7-7**.

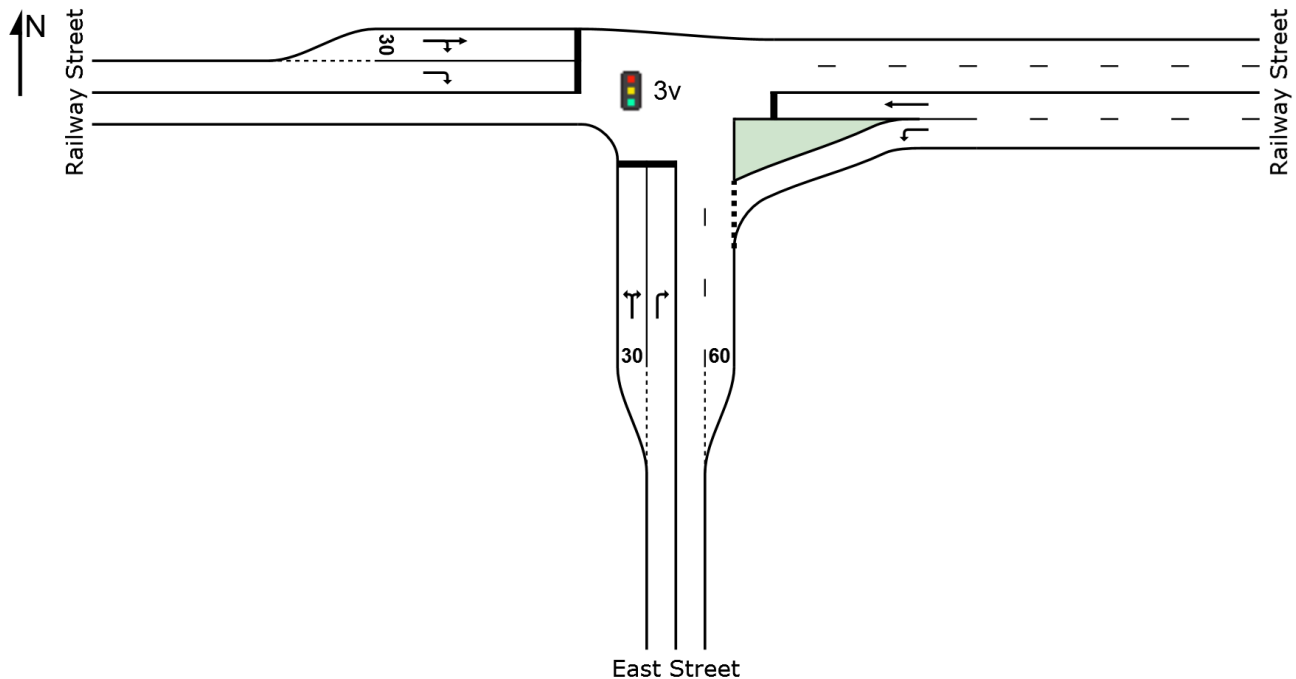


Figure 7-7 Option 4 – Signalised Intersection

In 2032 base scenario the intersection will operate a level of service C during the AM Peak and C in the PM Peak. Sidra intersection performance is shown below in **Table 7-4**.

Table 7-4 Option 4 - Railway Street/ East Street intersection performance (No Development)

Scenario	AM Peak				PM Peak			
	DoS	Delay (sec)	LoS	95 th ile Queue (m)	DoS	Delay (sec)	LoS	95 th ile Queue (m)
2032 Base	0.866	29.8	C	29.6	0.889	42.2	C	36.3

7.3 Options Summary

- The Railway Street and East Street intersection is likely to fail based on the existing configuration by year 2020.
- Four (4) intersection options design have been assessed
 - > **Option 1** – Two lane roundabout
 - > **Option 2** – Priority control intersection
 - > **Option 3** – No Right Turn
 - > **Option 4** – Signalised intersection.

- Option 1 (Two-Lane roundabout) will operate at satisfactory Level of Service LoS of B during the AM and PM peak periods in year 2032. The intersection design layout would require a significant land acquisition in order to adjust the road geometric requirements. **Figure 7-2** provides an approximation of the extend footprint that may be required for the implementation of this option.
- Option 2 (Priority Control Intersection) will operate at satisfactory level of Service LoS of C during the AM peak in year 2032. The PM peak period will perform at capacity and long delays would be expected.

A sensitivity test was undertaken to identify the possible year where the intersection would still operate at satisfactory level of service. SIDRA analysis indicates that the intersection would deteriorate performance to near capacity in the 2018 for the PM peak period.

- Option 3 (No Right Turn) will operate at satisfactory level of Service LoS of B and A during the AM peak and PM peak respectively in year 2032. The intersection option would require to eliminate the right turn from Railway Street into East Street southbound.

Raphael Street runs parallel to East Street on its western side. While this intersection option assessment has not considered a new traffic re-distribution, it is recommended to consider this option with alternative treatments that could potentially be implemented on Raphael Street.

- Option 4 (Signalised Intersection) will operate at satisfactory level of service LoS of C during both peak periods in year 2032.

The required upgrade at Railway Street and East Street is a consequence of background traffic growth and not specifically as a result of the proposed rezoning. The identified upgrades require varying degree of civil works however the contribution to any need for works can be addressed through the appropriate Section 94 levies.

8 Summary and Conclusions

Cardno has assessed the proposed Lidcombe rezoning proposal. The proposed development was assessed in accordance to RMS traffic generation guidelines and various supplementary documents. The assessment outcomes are as follows:

- > The trip generation of this development is estimated to be 50 vehicles during the AM peak and 99 vehicles during the PM peak.
- > Existing traffic generation of the light industrial land uses was estimated to be 24 trips during the AM peak and 25 trips during the PM peak.
- > It should be noted that traffic generation for commercial and retail areas are very conservative as is estimated that some trips are generated from the same project development, (residential area) that may use the commercial areas in the same project, without requiring a vehicle trip to/from residential commercial. For a conservative approach, this assessment has considered separately the land uses of the precinct. A refined mix-use traffic generation shall be provided in further stages beyond the rezoning traffic study.
- > It should be noted that the close proximity to a public transport interchange and major shopping centre may reduce the number of trips generate by private vehicle. For a conservative approach, this assessment has not considered traffic generation reduction rates that may be applicable to the precinct due to the close proximity to intermodal public transport interchange. A refined traffic rates reduction shall be considered in further stages beyond the rezoning traffic study.
- > Future trip generation took into account the loss of trips due to the redevelopment of the site area; change of land use from industrial into mix-use.
- > For residential development, 167 vehicle parking spaces are required plus 27 bicycle parking. For the commercial/ retail section 26 vehicles spaces, 1 disabled parking and 38 bicycle parking spaces.
- > Accessible public transport services are located in the close vicinity of the site. This includes train services to all parts of Sydney and bus services which travel in the north-south direction. As a result, the maximum parking rates provided in the DCP were found to be excessive indicating that traffic generation from the site would reasonable show a significative reduction in daily trips.
- > Intersection counts data from 2015, commissioned by Arcadis, (former Hyder) was used in the calculations of existing services. It was assumed a 1% linear growth in the traffic growth, taken from four permanent count stations surrounding the site.
- > Key intersections around the site area were assessed for the impacts from the project development traffic. Main traffic outcomes are summarised below:
 - The East Street and James Street intersection would operate at capacity during the AM peak in year 2022 without the project development. By year 2032 this intersection would operate at unsatisfactory LoS of F during both peak periods without the project development.
 - The Railway Street and Bridge Street intersection would operate at capacity in the AM peak and unsatisfactory during the PM peak in year 2022 without the project development. The addition of traffic generated from the project development would not worse the conditions on the intersection by 2022.
 - The Railway Street and East Street intersection would operate at unsatisfactory LoS of F during the AM peak without the project development by 2022.
 - The results from this assessment can be considered as highly conservative due to the close proximity of the proposed development to a public transport interchange and the standard traffic generation rates applied for the development.
- > The intersection of Railway Street and East Street requires upgrading as a result of development within Lidcombe, and not solely the subject site. Investigation into potential upgrades has identified that a dual lane roundabout will require significant land acquisition in order to adjust the road geometric requirements, not just from the subject site but also from Rookwood Cemetery whilst a signalled

intersection would result in improved intersection performance whilst being accommodated within the existing road reserve.

APPENDIX

A

SIDRA INTERSECTION ANALYSIS BASELINE

MOVEMENT SUMMARY



Site: 1 [Mark and James Street 2015 AM]

Mark Street and James Street
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: James Street											
5	T1	193	10.0	0.234	4.7	LOS A	1.6	12.0	0.50	0.53	41.8
6	R2	38	10.0	0.234	8.8	LOS A	1.6	12.0	0.50	0.53	42.5
Approach		231	10.0	0.234	5.4	LOS A	1.6	12.0	0.50	0.53	42.0
North: Mark Street											
7	L2	17	10.0	0.200	4.7	LOS A	1.1	8.4	0.46	0.65	38.6
9	R2	179	10.0	0.200	8.7	LOS A	1.1	8.4	0.46	0.65	38.3
Approach		196	10.0	0.200	8.4	LOS A	1.1	8.4	0.46	0.65	38.4
West: James Street											
10	L2	405	10.0	0.460	3.5	LOS A	4.8	36.7	0.30	0.40	42.1
11	T1	232	10.0	0.460	3.5	LOS A	4.8	36.7	0.30	0.40	44.2
Approach		637	10.0	0.460	3.5	LOS A	4.8	36.7	0.30	0.40	42.8
All Vehicles		1064	10.0	0.460	4.8	LOS A	4.8	36.7	0.37	0.48	41.7

MOVEMENT SUMMARY



Site: 1 [Mark and James Street 2015 PM]

Mark Street and James Street
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: James Street											
5	T1	275	10.0	0.423	7.3	LOS A	3.1	23.8	0.77	0.76	39.7
6	R2	48	10.0	0.423	11.4	LOS A	3.1	23.8	0.77	0.76	40.6
Approach		323	10.0	0.423	7.9	LOS A	3.1	23.8	0.77	0.76	39.8
North: Mark Street											
7	L2	40	10.0	0.425	5.0	LOS A	2.9	22.1	0.54	0.67	38.3
9	R2	396	10.0	0.425	9.0	LOS A	2.9	22.1	0.54	0.67	38.0
Approach		436	10.0	0.425	8.6	LOS A	2.9	22.1	0.54	0.67	38.1
West: James Street											
10	L2	175	10.0	0.304	3.5	LOS A	2.7	20.7	0.31	0.40	42.0
11	T1	220	10.0	0.304	3.5	LOS A	2.7	20.7	0.31	0.40	44.1
Approach		395	10.0	0.304	3.5	LOS A	2.7	20.7	0.31	0.40	43.1
All Vehicles		1154	10.0	0.425	6.7	LOS A	3.1	23.8	0.53	0.60	40.1

MOVEMENT SUMMARY



Site: 1 [Mark and James Street 2022 AM]

Mark Street and James Street
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: James Street											
5	T1	207	10.0	0.254	4.9	LOS A	1.7	13.3	0.52	0.55	41.7
6	R2	41	10.0	0.254	9.0	LOS A	1.7	13.3	0.52	0.55	42.4
Approach		247	10.0	0.254	5.5	LOS A	1.7	13.3	0.52	0.55	41.8
North: Mark Street											
7	L2	18	10.0	0.218	4.9	LOS A	1.2	9.3	0.48	0.66	38.5
9	R2	192	10.0	0.218	8.9	LOS A	1.2	9.3	0.48	0.66	38.3
Approach		210	10.0	0.218	8.5	LOS A	1.2	9.3	0.48	0.66	38.3
West: James Street											
10	L2	433	10.0	0.494	3.6	LOS A	5.5	41.6	0.33	0.41	41.9
11	T1	248	10.0	0.494	3.5	LOS A	5.5	41.6	0.33	0.41	44.0
Approach		682	10.0	0.494	3.6	LOS A	5.5	41.6	0.33	0.41	42.7
All Vehicles		1138	10.0	0.494	4.9	LOS A	5.5	41.6	0.40	0.48	41.5

MOVEMENT SUMMARY



Site: 1 [Mark and James Street 2022 PM]

Mark Street and James Street
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: James Street											
5	T1	294	10.0	0.469	8.2	LOS A	3.7	28.3	0.81	0.82	38.7
6	R2	51	10.0	0.469	12.3	LOS A	3.7	28.3	0.81	0.82	39.7
Approach		346	10.0	0.469	8.8	LOS A	3.7	28.3	0.81	0.82	38.9
North: Mark Street											
7	L2	43	10.0	0.462	5.2	LOS A	3.3	24.9	0.58	0.69	38.2
9	R2	424	10.0	0.462	9.2	LOS A	3.3	24.9	0.58	0.69	37.9
Approach		467	10.0	0.462	8.8	LOS A	3.3	24.9	0.58	0.69	37.9
West: James Street											
10	L2	187	10.0	0.327	3.6	LOS A	3.0	23.0	0.33	0.40	41.9
11	T1	235	10.0	0.327	3.6	LOS A	3.0	23.0	0.33	0.40	43.9
Approach		423	10.0	0.327	3.6	LOS A	3.0	23.0	0.33	0.40	43.0
All Vehicles		1235	10.0	0.469	7.0	LOS A	3.7	28.3	0.56	0.63	39.7

MOVEMENT SUMMARY



Site: 1 [Mark and James Street 2032 AM]

Mark Street and James Street
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: James Street											
5	T1	226	10.0	0.284	5.1	LOS A	2.0	15.2	0.56	0.57	41.4
6	R2	44	10.0	0.284	9.2	LOS A	2.0	15.2	0.56	0.57	42.1
Approach		270	10.0	0.284	5.8	LOS A	2.0	15.2	0.56	0.57	41.5
North: Mark Street											
7	L2	20	10.0	0.244	5.1	LOS A	1.4	10.7	0.52	0.68	38.4
9	R2	209	10.0	0.244	9.1	LOS A	1.4	10.7	0.52	0.68	38.1
Approach		229	10.0	0.244	8.7	LOS A	1.4	10.7	0.52	0.68	38.1
West: James Street											
10	L2	474	10.0	0.543	3.6	LOS A	6.5	49.5	0.38	0.41	41.7
11	T1	271	10.0	0.543	3.6	LOS A	6.5	49.5	0.38	0.41	43.7
Approach		745	10.0	0.543	3.6	LOS A	6.5	49.5	0.38	0.41	42.4
All Vehicles		1245	10.0	0.543	5.0	LOS A	6.5	49.5	0.44	0.49	41.3

MOVEMENT SUMMARY



Site: 1 [Mark and James Street 2032 PM]

Mark Street and James Street
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: James Street											
5	T1	322	10.0	0.541	10.1	LOS A	5.0	37.6	0.88	0.92	36.7
6	R2	56	10.0	0.541	14.2	LOS A	5.0	37.6	0.88	0.92	37.8
Approach		378	10.0	0.541	10.7	LOS A	5.0	37.6	0.88	0.92	36.9
North: Mark Street											
7	L2	47	10.0	0.517	5.5	LOS A	3.9	29.4	0.64	0.72	38.0
9	R2	463	10.0	0.517	9.5	LOS A	3.9	29.4	0.64	0.72	37.6
Approach		510	10.0	0.517	9.2	LOS A	3.9	29.4	0.64	0.72	37.7
West: James Street											
10	L2	205	10.0	0.360	3.6	LOS A	3.5	26.5	0.36	0.41	41.7
11	T1	257	10.0	0.360	3.6	LOS A	3.5	26.5	0.36	0.41	43.7
Approach		462	10.0	0.360	3.6	LOS A	3.5	26.5	0.36	0.41	42.8
All Vehicles		1350	10.0	0.541	7.7	LOS A	5.0	37.6	0.61	0.67	39.0

MOVEMENT SUMMARY

Site: 6 [Railway Street and Mark Street AM Peak 2015]

Railway Street and Mark Street
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Mark Street											
2	T1	431	10.0	0.246	0.0	LOS A	0.1	1.1	0.03	0.02	49.7
3	R2	15	10.0	0.246	5.6	LOS A	0.1	1.1	0.03	0.02	46.8
Approach		446	10.0	0.246	0.2	NA	0.1	1.1	0.03	0.02	49.7
East: Railway Street											
4	L2	53	10.0	0.041	5.3	LOS A	0.2	1.2	0.29	0.53	40.8
Approach		53	10.0	0.041	5.3	LOS A	0.2	1.2	0.29	0.53	40.8
North: Railway Street											
7	L2	1	10.0	0.101	4.7	LOS A	0.0	0.0	0.00	0.00	49.0
8	T1	190	10.0	0.101	0.0	LOS A	0.0	0.0	0.00	0.00	50.0
Approach		191	10.0	0.101	0.0	NA	0.0	0.0	0.00	0.00	50.0
West: Railway Street											
10	L2	160	10.0	0.163	6.7	LOS A	0.7	5.0	0.49	0.67	45.8
11	T1	34	10.0	0.121	7.7	LOS A	0.4	3.1	0.59	0.81	41.9
12	R2	28	10.0	0.121	11.2	LOS A	0.4	3.1	0.59	0.81	41.0
Approach		222	10.0	0.163	7.4	LOS A	0.7	5.0	0.52	0.71	44.8
All Vehicles		912	10.0	0.246	2.2	NA	0.7	5.0	0.16	0.21	47.8

MOVEMENT SUMMARY

Site: 6 [Railway Street and Mark Street PM Peak 2015]

Railway Street and Mark Street
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Mark Street											
2	T1	188	10.0	0.106	0.1	LOS A	0.0	0.3	0.03	0.01	49.8
3	R2	4	10.0	0.106	6.6	LOS A	0.0	0.3	0.03	0.01	46.9
Approach		192	10.0	0.106	0.2	NA	0.0	0.3	0.03	0.01	49.8
East: Railway Street											
4	L2	106	10.0	0.105	6.5	LOS A	0.4	3.1	0.46	0.65	40.1
Approach		106	10.0	0.105	6.5	LOS A	0.4	3.1	0.46	0.65	40.1
North: Railway Street											
7	L2	2	10.0	0.218	4.7	LOS A	0.0	0.0	0.00	0.00	49.0
8	T1	411	10.0	0.218	0.0	LOS A	0.0	0.0	0.00	0.00	49.9
Approach		413	10.0	0.218	0.0	NA	0.0	0.0	0.00	0.00	49.9
West: Railway Street											
10	L2	143	10.0	0.110	5.3	LOS A	0.5	3.5	0.30	0.52	46.3
11	T1	27	10.0	0.111	7.3	LOS A	0.4	2.8	0.59	0.80	41.8
12	R2	29	10.0	0.111	11.3	LOS A	0.4	2.8	0.59	0.80	41.0
Approach		199	10.0	0.111	6.4	LOS A	0.5	3.5	0.38	0.60	45.2
All Vehicles		910	10.0	0.218	2.2	NA	0.5	3.5	0.14	0.21	47.7

MOVEMENT SUMMARY

▽ Site: 6 [Railway Street and Mark Street AM Peak 2022]

Railway Street and Mark Street
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Mark Street											
2	T1	461	10.0	0.264	0.0	LOS A	0.2	1.2	0.03	0.02	49.7
3	R2	16	10.0	0.264	5.7	LOS A	0.2	1.2	0.03	0.02	46.8
Approach		477	10.0	0.264	0.2	NA	0.2	1.2	0.03	0.02	49.7
East: Railway Street											
4	L2	57	10.0	0.044	5.4	LOS A	0.2	1.3	0.30	0.53	40.8
Approach		57	10.0	0.044	5.4	LOS A	0.2	1.3	0.30	0.53	40.8
North: Railway Street											
7	L2	1	10.0	0.108	4.7	LOS A	0.0	0.0	0.00	0.00	49.0
8	T1	203	10.0	0.108	0.0	LOS A	0.0	0.0	0.00	0.00	50.0
Approach		204	10.0	0.108	0.0	NA	0.0	0.0	0.00	0.00	50.0
West: Railway Street											
10	L2	171	10.0	0.181	6.9	LOS A	0.7	5.5	0.51	0.69	45.7
11	T1	36	10.0	0.139	8.2	LOS A	0.5	3.5	0.63	0.82	41.4
12	R2	30	10.0	0.139	12.0	LOS A	0.5	3.5	0.63	0.82	40.6
Approach		237	10.0	0.181	7.8	LOS A	0.7	5.5	0.54	0.73	44.7
All Vehicles		975	10.0	0.264	2.3	NA	0.7	5.5	0.17	0.22	47.7

MOVEMENT SUMMARY

▽ Site: 6 [Railway Street and Mark Street PM Peak 2022]

Railway Street and Mark Street
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Mark Street											
2	T1	201	10.0	0.114	0.1	LOS A	0.0	0.3	0.03	0.01	49.8
3	R2	4	10.0	0.114	6.9	LOS A	0.0	0.3	0.03	0.01	46.9
Approach		205	10.0	0.114	0.2	NA	0.0	0.3	0.03	0.01	49.8
East: Railway Street											
4	L2	113	10.0	0.116	6.7	LOS A	0.5	3.5	0.48	0.67	39.9
Approach		113	10.0	0.116	6.7	LOS A	0.5	3.5	0.48	0.67	39.9
North: Railway Street											
7	L2	2	10.0	0.233	4.7	LOS A	0.0	0.0	0.00	0.00	49.0
8	T1	440	10.0	0.233	0.0	LOS A	0.0	0.0	0.00	0.00	49.9
Approach		442	10.0	0.233	0.0	NA	0.0	0.0	0.00	0.00	49.9
West: Railway Street											
10	L2	153	10.0	0.119	5.4	LOS A	0.5	3.8	0.32	0.53	46.3
11	T1	29	10.0	0.127	7.8	LOS A	0.4	3.2	0.62	0.82	41.4
12	R2	31	10.0	0.127	12.1	LOS A	0.4	3.2	0.62	0.82	40.6
Approach		213	10.0	0.127	6.7	LOS A	0.5	3.8	0.40	0.61	45.0
All Vehicles		973	10.0	0.233	2.3	NA	0.5	3.8	0.15	0.22	47.6

MOVEMENT SUMMARY

Site: 6 [Railway Street and Mark Street AM Peak 2032]

Railway Street and Mark Street
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Mark Street											
2	T1	504	10.0	0.289	0.1	LOS A	0.2	1.4	0.04	0.02	49.7
3	R2	18	10.0	0.289	5.8	LOS A	0.2	1.4	0.04	0.02	46.8
Approach		522	10.0	0.289	0.3	NA	0.2	1.4	0.04	0.02	49.6
East: Railway Street											
4	L2	62	10.0	0.049	5.5	LOS A	0.2	1.5	0.32	0.54	40.7
Approach		62	10.0	0.049	5.5	LOS A	0.2	1.5	0.32	0.54	40.7
North: Railway Street											
7	L2	1	10.0	0.118	4.7	LOS A	0.0	0.0	0.00	0.00	49.0
8	T1	222	10.0	0.118	0.0	LOS A	0.0	0.0	0.00	0.00	50.0
Approach		223	10.0	0.118	0.0	NA	0.0	0.0	0.00	0.00	50.0
West: Railway Street											
10	L2	187	10.0	0.210	7.3	LOS A	0.8	6.4	0.54	0.73	45.6
11	T1	40	10.0	0.171	9.2	LOS A	0.6	4.3	0.68	0.85	40.7
12	R2	33	10.0	0.171	13.3	LOS A	0.6	4.3	0.68	0.85	39.9
Approach		260	10.0	0.210	8.3	LOS A	0.8	6.4	0.58	0.76	44.3
All Vehicles		1067	10.0	0.289	2.5	NA	0.8	6.4	0.18	0.23	47.6

MOVEMENT SUMMARY

Site: 6 [Railway Street and Mark Street PM Peak 2032]

Railway Street and Mark Street
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Mark Street											
2	T1	220	10.0	0.125	0.1	LOS A	0.1	0.5	0.03	0.01	49.8
3	R2	5	10.0	0.125	7.2	LOS A	0.1	0.5	0.03	0.01	46.9
Approach		225	10.0	0.125	0.3	NA	0.1	0.5	0.03	0.01	49.7
East: Railway Street											
4	L2	124	10.0	0.135	7.0	LOS A	0.5	4.0	0.51	0.70	39.6
Approach		124	10.0	0.135	7.0	LOS A	0.5	4.0	0.51	0.70	39.6
North: Railway Street											
7	L2	2	10.0	0.255	4.7	LOS A	0.0	0.0	0.00	0.00	49.0
8	T1	481	10.0	0.255	0.0	LOS A	0.0	0.0	0.00	0.00	49.9
Approach		483	10.0	0.255	0.0	NA	0.0	0.0	0.00	0.00	49.9
West: Railway Street											
10	L2	167	10.0	0.133	5.5	LOS A	0.6	4.2	0.34	0.54	46.2
11	T1	32	10.0	0.156	8.6	LOS A	0.5	3.9	0.67	0.85	40.7
12	R2	34	10.0	0.156	13.5	LOS A	0.5	3.9	0.67	0.85	39.9
Approach		233	10.0	0.156	7.1	LOS A	0.6	4.2	0.43	0.63	44.8
All Vehicles		1065	10.0	0.255	2.4	NA	0.6	4.2	0.16	0.22	47.5

MOVEMENT SUMMARY

Site: 7a [Marsden Street and Mark Street AM Peak 2015]

Marsden Street and Mark Street
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
		Total	HV	Total	HV				Vehicles	Distance			
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Mark Street													
2	T1	428	10.0	428	10.0	0.237	0.0	LOS A	0.0	0.4	0.01	0.01	59.0
3	R2	5	10.0	5	10.0	0.237	6.4	LOS A	0.0	0.4	0.01	0.01	50.0
Approach		433	10.0	433	10.0	0.237	0.1	NA	0.0	0.4	0.01	0.01	58.7
East: RoadName													
4	L2	5	10.0	5	10.0	0.015	6.3	LOS A	0.1	0.4	0.37	0.62	38.2
6	R2	7	10.0	7	10.0	0.015	9.0	LOS A	0.1	0.4	0.37	0.62	37.3
Approach		12	10.0	12	10.0	0.015	7.9	LOS A	0.1	0.4	0.37	0.62	37.7
North: Mark Street													
7	L2	5	10.0	5	10.0	0.106	2.3	LOS A	0.0	0.0	0.00	0.01	49.0
8	T1	189	10.0	189	10.0	0.106	0.0	LOS A	0.0	0.0	0.00	0.01	59.5
Approach		194	10.0	194	10.0	0.106	0.1	NA	0.0	0.0	0.00	0.01	58.9
All Vehicles		639	10.0	639	10.0	0.237	0.2	NA	0.1	0.4	0.01	0.02	57.5

MOVEMENT SUMMARY

Site: 7b [Taylor Street and Mark Street AM Peak 2015]

Taylor Street and Mark Street
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows		Arrival Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
		Total	HV	Total	HV				Vehicles	Distance			
		veh/h	%	veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Mark Street													
7	L2	7	10.0	7	10.0	0.238	2.3	LOS A	0.0	0.0	0.00	0.01	49.1
8	T1	428	10.0	428	10.0	0.238	0.0	LOS A	0.0	0.0	0.00	0.01	59.5
Approach		435	10.0	435	10.0	0.238	0.0	NA	0.0	0.0	0.00	0.01	59.1
North: Mark Street													
2	T1	194	10.0	194	10.0	0.175	1.1	LOS A	0.7	5.4	0.33	0.19	38.4
3	R2	72	10.0	72	10.0	0.175	7.1	LOS A	0.7	5.4	0.33	0.19	43.1
Approach		266	10.0	266	10.0	0.175	2.7	NA	0.7	5.4	0.33	0.19	40.9
All Vehicles		701	10.0	701	10.0	0.238	1.0	NA	0.7	5.4	0.13	0.08	48.9

MOVEMENT SUMMARY

▽ Site: 7a [Marsden Street and Mark Street PM Peak 2015]

Marsden Street and Mark Street
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Mark Street											
2	T1	208	10.0	0.120	0.1	LOS A	0.1	0.6	0.05	0.02	57.0
3	R2	7	10.0	0.120	7.7	LOS A	0.1	0.6	0.05	0.02	49.4
Approach		215	10.0	0.120	0.4	NA	0.1	0.6	0.05	0.02	56.3
East: RoadName											
4	L2	4	10.0	0.007	7.4	LOS A	0.0	0.2	0.47	0.62	38.1
6	R2	2	10.0	0.007	9.1	LOS A	0.0	0.2	0.47	0.62	36.0
Approach		6	10.0	0.007	8.0	LOS A	0.0	0.2	0.47	0.62	37.5
North: Mark Street											
7	L2	7	10.0	0.238	2.3	LOS A	0.0	0.0	0.00	0.01	49.1
8	T1	429	10.0	0.238	0.0	LOS A	0.0	0.0	0.00	0.01	59.6
Approach		436	10.0	0.238	0.0	NA	0.0	0.0	0.00	0.01	59.3
All Vehicles		657	10.0	0.238	0.2	NA	0.1	0.6	0.02	0.02	57.6

MOVEMENT SUMMARY

▽ Site: 7b [Taylor Street and Mark Street PM Peak 2015]

Taylor Street and Mark Street
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Mark Street											
7	L2	23	10.0	0.116	2.3	LOS A	0.0	0.0	0.00	0.06	48.5
8	T1	189	10.0	0.116	0.0	LOS A	0.0	0.0	0.00	0.06	57.4
Approach		212	10.0	0.116	0.2	NA	0.0	0.0	0.00	0.06	55.1
North: Mark Street											
2	T1	436	10.0	0.320	0.4	LOS A	1.0	7.8	0.19	0.13	46.0
3	R2	110	10.0	0.320	6.0	LOS A	1.0	7.8	0.19	0.13	45.2
Approach		546	10.0	0.320	1.5	NA	1.0	7.8	0.19	0.13	45.6
All Vehicles		758	10.0	0.320	1.1	NA	1.0	7.8	0.14	0.11	47.6

MOVEMENT SUMMARY

▽ Site: 7a [Marsden Street and Mark Street AM Peak 2022]

Marsden Street and Mark Street
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Mark Street											
2	T1	458	10.0	0.254	0.0	LOS A	0.1	0.4	0.01	0.01	59.1
3	R2	5	10.0	0.254	6.5	LOS A	0.1	0.4	0.01	0.01	50.0
Approach		463	10.0	0.254	0.1	NA	0.1	0.4	0.01	0.01	58.8
East: RoadName											
4	L2	5	10.0	0.017	6.3	LOS A	0.1	0.4	0.38	0.63	37.8
6	R2	7	10.0	0.017	9.4	LOS A	0.1	0.4	0.38	0.63	35.6
Approach		13	10.0	0.017	8.1	LOS A	0.1	0.4	0.38	0.63	36.7
North: Mark Street											
7	L2	5	10.0	0.114	2.3	LOS A	0.0	0.0	0.00	0.01	49.0
8	T1	202	10.0	0.114	0.0	LOS A	0.0	0.0	0.00	0.01	59.5
Approach		208	10.0	0.114	0.1	NA	0.0	0.0	0.00	0.01	58.9
All Vehicles		684	10.0	0.254	0.2	NA	0.1	0.4	0.01	0.02	57.5

MOVEMENT SUMMARY

▽ Site: 7b [Taylor Street and Mark Street AM Peak 2022]

Taylor Street and Mark Street
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Mark Street											
7	L2	7	10.0	0.254	2.3	LOS A	0.0	0.0	0.00	0.01	49.1
8	T1	458	10.0	0.254	0.0	LOS A	0.0	0.0	0.00	0.01	59.5
Approach		465	10.0	0.254	0.0	NA	0.0	0.0	0.00	0.01	59.1
North: Mark Street											
2	T1	208	10.0	0.191	1.2	LOS A	0.8	6.1	0.35	0.19	39.1
3	R2	77	10.0	0.191	7.4	LOS A	0.8	6.1	0.35	0.19	42.8
Approach		285	10.0	0.191	2.9	NA	0.8	6.1	0.35	0.19	41.0
All Vehicles		750	10.0	0.254	1.1	NA	0.8	6.1	0.13	0.08	48.7

MOVEMENT SUMMARY

▽ Site: 7a [Marsden Street and Mark Street PM Peak 2022]

Marsden Street and Mark Street
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Mark Street											
2	T1	223	10.0	0.129	0.1	LOS A	0.1	0.7	0.05	0.02	56.9
3	R2	7	10.0	0.129	7.9	LOS A	0.1	0.7	0.05	0.02	49.3
Approach		230	10.0	0.129	0.4	NA	0.1	0.7	0.05	0.02	56.2
East: RoadName											
4	L2	4	10.0	0.008	7.6	LOS A	0.0	0.2	0.49	0.64	37.8
6	R2	2	10.0	0.008	9.6	LOS A	0.0	0.2	0.49	0.64	35.6
Approach		6	10.0	0.008	8.2	LOS A	0.0	0.2	0.49	0.64	37.2
North: Mark Street											
7	L2	7	10.0	0.255	2.3	LOS A	0.0	0.0	0.00	0.01	49.1
8	T1	459	10.0	0.255	0.0	LOS A	0.0	0.0	0.00	0.01	59.6
Approach		467	10.0	0.255	0.0	NA	0.0	0.0	0.00	0.01	59.3
All Vehicles		703	10.0	0.255	0.2	NA	0.1	0.7	0.02	0.02	57.5

MOVEMENT SUMMARY

▽ Site: 7b [Taylor Street and Mark Street PM Peak 2022]

Taylor Street and Mark Street
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Mark Street											
7	L2	25	10.0	0.125	2.3	LOS A	0.0	0.0	0.00	0.06	48.5
8	T1	202	10.0	0.125	0.0	LOS A	0.0	0.0	0.00	0.06	57.4
Approach		227	10.0	0.125	0.2	NA	0.0	0.0	0.00	0.06	55.1
North: Mark Street											
2	T1	467	10.0	0.344	0.4	LOS A	1.1	8.7	0.21	0.13	45.6
3	R2	118	10.0	0.344	6.1	LOS A	1.1	8.7	0.21	0.13	45.1
Approach		584	10.0	0.344	1.6	NA	1.1	8.7	0.21	0.13	45.4
All Vehicles		811	10.0	0.344	1.2	NA	1.1	8.7	0.15	0.11	47.4

MOVEMENT SUMMARY

▽ Site: 7a [Marsden Street and Mark Street AM Peak 2032]

Marsden Street and Mark Street
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Mark Street											
2	T1	501	10.0	0.278	0.0	LOS A	0.1	0.4	0.01	0.01	59.0
3	R2	6	10.0	0.278	6.7	LOS A	0.1	0.4	0.01	0.01	49.9
Approach		507	10.0	0.278	0.1	NA	0.1	0.4	0.01	0.01	58.7
East: RoadName											
4	L2	6	10.0	0.020	6.4	LOS A	0.1	0.5	0.41	0.65	37.3
6	R2	8	10.0	0.020	10.1	LOS A	0.1	0.5	0.41	0.65	35.0
Approach		14	10.0	0.020	8.6	LOS A	0.1	0.5	0.41	0.65	36.1
North: Mark Street											
7	L2	6	10.0	0.124	2.3	LOS A	0.0	0.0	0.00	0.01	49.0
8	T1	221	10.0	0.124	0.0	LOS A	0.0	0.0	0.00	0.01	59.5
Approach		227	10.0	0.124	0.1	NA	0.0	0.0	0.00	0.01	58.9
All Vehicles		748	10.0	0.278	0.2	NA	0.1	0.5	0.02	0.02	57.4

MOVEMENT SUMMARY

▽ Site: 7b [Taylor Street and Mark Street AM Peak 2032]

Taylor Street and Mark Street
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Mark Street											
7	L2	8	10.0	0.278	2.3	LOS A	0.0	0.0	0.00	0.01	49.1
8	T1	501	10.0	0.278	0.0	LOS A	0.0	0.0	0.00	0.01	59.5
Approach		509	10.0	0.278	0.0	NA	0.0	0.0	0.00	0.01	59.0
North: Mark Street											
2	T1	227	10.0	0.214	1.4	LOS A	1.0	7.2	0.38	0.20	37.8
3	R2	84	10.0	0.214	7.8	LOS A	1.0	7.2	0.38	0.20	42.3
Approach		311	10.0	0.214	3.2	NA	1.0	7.2	0.38	0.20	40.1
All Vehicles		820	10.0	0.278	1.2	NA	1.0	7.2	0.14	0.08	48.0

MOVEMENT SUMMARY

▽ Site: 7a [Marsden Street and Mark Street PM Peak 2032]

Marsden Street and Mark Street
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Mark Street											
2	T1	243	10.0	0.142	0.2	LOS A	0.1	0.8	0.05	0.02	56.6
3	R2	8	10.0	0.142	8.3	LOS A	0.1	0.8	0.05	0.02	49.3
Approach		252	10.0	0.142	0.4	NA	0.1	0.8	0.05	0.02	56.0
East: RoadName											
4	L2	5	10.0	0.010	7.8	LOS A	0.0	0.3	0.51	0.66	37.3
6	R2	2	10.0	0.010	10.3	LOS A	0.0	0.3	0.51	0.66	34.9
Approach		7	10.0	0.010	8.7	LOS A	0.0	0.3	0.51	0.66	36.6
North: Mark Street											
7	L2	8	10.0	0.279	2.3	LOS A	0.0	0.0	0.00	0.01	49.1
8	T1	502	10.0	0.279	0.0	LOS A	0.0	0.0	0.00	0.01	59.6
Approach		510	10.0	0.279	0.0	NA	0.0	0.0	0.00	0.01	59.3
All Vehicles		769	10.0	0.279	0.2	NA	0.1	0.8	0.02	0.02	57.4

MOVEMENT SUMMARY

▽ Site: 7b [Taylor Street and Mark Street PM Peak 2015]

Taylor Street and Mark Street
Giveaway / Yield (Two-Way)
Design Life Analysis (Final Year): Results for 17 years

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Mark Street											
7	L2	27	10.0	0.136	2.3	LOS A	0.0	0.0	0.00	0.06	48.5
8	T1	221	10.0	0.136	0.0	LOS A	0.0	0.0	0.00	0.06	57.4
Approach		248	10.0	0.136	0.2	NA	0.0	0.0	0.00	0.06	55.1
North: Mark Street											
2	T1	510	10.0	0.378	0.5	LOS A	1.3	10.1	0.23	0.13	45.1
3	R2	129	10.0	0.378	6.4	LOS A	1.3	10.1	0.23	0.13	44.9
Approach		639	10.0	0.378	1.7	NA	1.3	10.1	0.23	0.13	45.1
All Vehicles		887	10.0	0.378	1.3	NA	1.3	10.1	0.16	0.11	47.1

APPENDIX

B

SIDRA RESULTS (WITH DEVELOPMENT)

MOVEMENT SUMMARY

Site: 1 [Mark and James Street 2017 AM + DEV]

Mark Street and James Street
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: James Street											
5	T1	203	10.0	0.246	4.8	LOS A	1.7	12.7	0.51	0.54	41.8
6	R2	39	10.0	0.246	8.9	LOS A	1.7	12.7	0.51	0.54	42.5
Approach		242	10.0	0.246	5.4	LOS A	1.7	12.7	0.51	0.54	41.9
North: Mark Street											
7	L2	17	10.0	0.205	4.8	LOS A	1.1	8.7	0.47	0.65	38.6
9	R2	183	10.0	0.205	8.8	LOS A	1.1	8.7	0.47	0.65	38.3
Approach		200	10.0	0.205	8.4	LOS A	1.1	8.7	0.47	0.65	38.3
West: James Street											
10	L2	415	10.0	0.471	3.5	LOS A	5.0	38.3	0.31	0.40	42.0
11	T1	237	10.0	0.471	3.5	LOS A	5.0	38.3	0.31	0.40	44.1
Approach		652	10.0	0.471	3.5	LOS A	5.0	38.3	0.31	0.40	42.8
All Vehicles		1094	10.0	0.471	4.8	LOS A	5.0	38.3	0.38	0.48	41.6

MOVEMENT SUMMARY

Site: 1 [Mark and James Street 2017 PM + DEV]

Mark Street and James Street
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: James Street											
5	T1	288	10.0	0.446	7.5	LOS A	3.4	25.5	0.79	0.77	39.5
6	R2	49	10.0	0.446	11.6	LOS A	3.4	25.5	0.79	0.77	40.4
Approach		337	10.0	0.446	8.1	LOS A	3.4	25.5	0.79	0.77	39.6
North: Mark Street											
7	L2	41	10.0	0.436	5.1	LOS A	3.0	22.9	0.56	0.68	38.3
9	R2	404	10.0	0.436	9.1	LOS A	3.0	22.9	0.56	0.68	38.0
Approach		445	10.0	0.436	8.7	LOS A	3.0	22.9	0.56	0.68	38.0
West: James Street											
10	L2	206	10.0	0.330	3.5	LOS A	3.1	23.2	0.32	0.40	41.9
11	T1	224	10.0	0.330	3.5	LOS A	3.1	23.2	0.32	0.40	44.0
Approach		430	10.0	0.330	3.5	LOS A	3.1	23.2	0.32	0.40	43.0
All Vehicles		1212	10.0	0.446	6.7	LOS A	3.4	25.5	0.54	0.61	40.1

MOVEMENT SUMMARY



Site: 1 [Mark and James Street 2022 AM + DEV]

Mark Street and James Street
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: James Street											
5	T1	212	10.0	0.260	4.9	LOS A	1.8	13.6	0.53	0.55	41.6
6	R2	41	10.0	0.260	9.0	LOS A	1.8	13.6	0.53	0.55	42.4
Approach		253	10.0	0.260	5.5	LOS A	1.8	13.6	0.53	0.55	41.8
North: Mark Street											
7	L2	18	10.0	0.219	4.9	LOS A	1.2	9.3	0.49	0.66	38.5
9	R2	192	10.0	0.219	8.9	LOS A	1.2	9.3	0.49	0.66	38.2
Approach		210	10.0	0.219	8.6	LOS A	1.2	9.3	0.49	0.66	38.3
West: James Street											
10	L2	433	10.0	0.496	3.6	LOS A	5.5	41.9	0.33	0.41	41.9
11	T1	251	10.0	0.496	3.6	LOS A	5.5	41.9	0.33	0.41	44.0
Approach		684	10.0	0.496	3.6	LOS A	5.5	41.9	0.33	0.41	42.6
All Vehicles		1147	10.0	0.496	4.9	LOS A	5.5	41.9	0.40	0.48	41.5

MOVEMENT SUMMARY



Site: 1 [Mark and James Street 2022 PM + DEV]

Mark Street and James Street
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: James Street											
5	T1	302	10.0	0.482	8.4	LOS A	3.9	29.9	0.82	0.83	38.5
6	R2	51	10.0	0.482	12.5	LOS A	3.9	29.9	0.82	0.83	39.5
Approach		353	10.0	0.482	9.0	LOS A	3.9	29.9	0.82	0.83	38.7
North: Mark Street											
7	L2	43	10.0	0.478	5.5	LOS A	3.4	25.9	0.62	0.71	38.0
9	R2	424	10.0	0.478	9.5	LOS A	3.4	25.9	0.62	0.71	37.7
Approach		467	10.0	0.478	9.1	LOS A	3.4	25.9	0.62	0.71	37.8
West: James Street											
10	L2	187	10.0	0.346	3.6	LOS A	3.3	25.0	0.33	0.40	41.8
11	T1	263	10.0	0.346	3.6	LOS A	3.3	25.0	0.33	0.40	43.9
Approach		450	10.0	0.346	3.6	LOS A	3.3	25.0	0.33	0.40	43.0
All Vehicles		1270	10.0	0.482	7.1	LOS A	3.9	29.9	0.57	0.63	39.7

MOVEMENT SUMMARY



Site: 1 [Mark and James Street 2032 AM + DEV]

Mark Street and James Street
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: James Street											
5	T1	232	10.0	0.290	5.1	LOS A	2.0	15.6	0.56	0.57	41.4
6	R2	44	10.0	0.290	9.2	LOS A	2.0	15.6	0.56	0.57	42.2
Approach		276	10.0	0.290	5.7	LOS A	2.0	15.6	0.56	0.57	41.5
North: Mark Street											
7	L2	20	10.0	0.244	5.1	LOS A	1.4	10.7	0.52	0.68	38.4
9	R2	209	10.0	0.244	9.1	LOS A	1.4	10.7	0.52	0.68	38.1
Approach		229	10.0	0.244	8.8	LOS A	1.4	10.7	0.52	0.68	38.1
West: James Street											
10	L2	474	10.0	0.544	3.6	LOS A	6.6	49.8	0.38	0.41	41.7
11	T1	274	10.0	0.544	3.6	LOS A	6.6	49.8	0.38	0.41	43.7
Approach		748	10.0	0.544	3.6	LOS A	6.6	49.8	0.38	0.41	42.4
All Vehicles		1253	10.0	0.544	5.0	LOS A	6.6	49.8	0.44	0.49	41.3

MOVEMENT SUMMARY



Site: 1 [Mark and James Street 2032 PM + DEV]

Mark Street and James Street
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: James Street											
5	T1	330	10.0	0.555	10.4	LOS A	5.2	39.7	0.89	0.94	36.4
6	R2	56	10.0	0.555	14.5	LOS A	5.2	39.7	0.89	0.94	37.5
Approach		386	10.0	0.555	11.0	LOS A	5.2	39.7	0.89	0.94	36.6
North: Mark Street											
7	L2	47	10.0	0.534	6.0	LOS A	4.1	31.2	0.67	0.74	37.7
9	R2	463	10.0	0.534	10.0	LOS A	4.1	31.2	0.67	0.74	37.3
Approach		510	10.0	0.534	9.6	LOS A	4.1	31.2	0.67	0.74	37.4
West: James Street											
10	L2	205	10.0	0.381	3.7	LOS A	3.8	28.8	0.37	0.41	41.6
11	T1	285	10.0	0.381	3.7	LOS A	3.8	28.8	0.37	0.41	43.6
Approach		490	10.0	0.381	3.7	LOS A	3.8	28.8	0.37	0.41	42.8
All Vehicles		1386	10.0	0.555	7.9	LOS A	5.2	39.7	0.63	0.68	38.8

MOVEMENT SUMMARY



Site: 2 [James and East Street AM Peak 2015]

James and East Street
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: East Street											
1	L2	71	10.0	0.875	13.3	LOS A	20.4	154.5	1.00	0.79	38.4
2	T1	874	10.0	0.875	13.1	LOS A	20.4	154.5	1.00	0.79	39.7
3u	U	10	0.0	0.875	17.0	LOS B	20.4	154.5	1.00	0.79	42.1
Approach		955	9.9	0.875	13.2	LOS A	20.4	154.5	1.00	0.79	39.7
North: East Street											
8	T1	414	10.0	0.442	5.1	LOS A	4.4	33.0	0.34	0.51	45.1
9	R2	156	10.0	0.442	8.0	LOS A	4.4	33.0	0.34	0.51	43.5
9u	U	7	0.0	0.442	9.3	LOS A	4.4	33.0	0.34	0.51	45.9
Approach		577	9.9	0.442	5.9	LOS A	4.4	33.0	0.34	0.51	44.7
West: James Street											
10	L2	201	10.0	0.783	43.1	LOS D	9.3	70.9	1.00	1.36	21.2
12	R2	38	10.0	0.783	45.7	LOS D	9.3	70.9	1.00	1.36	22.7
12u	U	1	0.0	0.783	46.1	LOS D	9.3	70.9	1.00	1.36	21.9
Approach		240	10.0	0.783	43.5	LOS D	9.3	70.9	1.00	1.36	21.5
All Vehicles		1772	9.9	0.875	14.9	LOS B	20.4	154.5	0.78	0.78	37.1

MOVEMENT SUMMARY



Site: 2 [James and East Street PM Peak 2015]

James and East Street
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: East Street											
1	L2	56	10.0	0.568	8.3	LOS A	5.4	41.2	0.79	0.73	42.6
2	T1	443	10.0	0.568	8.2	LOS A	5.4	41.2	0.79	0.73	44.3
3u	U	2	0.0	0.568	12.2	LOS A	5.4	41.2	0.79	0.73	46.7
Approach		501	10.0	0.568	8.2	LOS A	5.4	41.2	0.79	0.73	44.1
North: East Street											
8	T1	924	10.0	0.895	6.7	LOS A	24.1	183.1	1.00	0.50	42.5
9	R2	241	10.0	0.895	9.6	LOS A	24.1	183.1	1.00	0.50	40.8
9u	U	1	0.0	0.895	10.8	LOS A	24.1	183.1	1.00	0.50	42.9
Approach		1166	10.0	0.895	7.3	LOS A	24.1	183.1	1.00	0.50	42.2
West: James Street											
10	L2	187	10.0	0.386	9.1	LOS A	2.8	21.3	0.81	0.83	38.0
12	R2	61	10.0	0.386	11.7	LOS A	2.8	21.3	0.81	0.83	39.4
12u	U	5	0.0	0.386	12.6	LOS A	2.8	21.3	0.81	0.83	40.1
Approach		253	9.8	0.386	9.8	LOS A	2.8	21.3	0.81	0.83	38.4
All Vehicles		1920	10.0	0.895	7.9	LOS A	24.1	183.1	0.92	0.60	42.1

MOVEMENT SUMMARY



Site: 2 [James and East Street AM Peak 2022]

James and East Street
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: East Street											
1	L2	76	10.0	0.950	24.1	LOS B	37.0	280.8	1.00	1.02	31.2
2	T1	935	10.0	0.950	24.0	LOS B	37.0	280.8	1.00	1.02	32.1
3u	U	11	0.0	0.950	27.8	LOS B	37.0	280.8	1.00	1.02	34.3
Approach		1022	9.9	0.950	24.0	LOS B	37.0	280.8	1.00	1.02	32.1
North: East Street											
8	T1	443	10.0	0.475	5.1	LOS A	4.9	37.1	0.36	0.51	45.0
9	R2	167	10.0	0.475	8.0	LOS A	4.9	37.1	0.36	0.51	43.4
9u	U	7	0.0	0.475	9.3	LOS A	4.9	37.1	0.36	0.51	45.8
Approach		617	9.9	0.475	6.0	LOS A	4.9	37.1	0.36	0.51	44.6
West: James Street											
10	L2	215	10.0	0.945	106.0	LOS F ¹¹	18.7	142.0	1.00	1.96	11.7
12	R2	41	10.0	0.945	108.6	LOS F ¹¹	18.7	142.0	1.00	1.96	12.7
12u	U	1	0.0	0.945	108.9	LOS F ¹¹	18.7	142.0	1.00	1.96	11.9
Approach		257	10.0	0.945	106.4	LOS F ¹¹	18.7	142.0	1.00	1.96	11.8
All Vehicles		1896	9.9	0.950	29.3	LOS C	37.0	280.8	0.79	0.98	28.5

MOVEMENT SUMMARY



Site: 2 [James and East Street PM Peak 2022]

James and East Street
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: East Street											
1	L2	60	10.0	0.621	9.5	LOS A	6.7	51.1	0.84	0.79	41.7
2	T1	474	10.0	0.621	9.4	LOS A	6.7	51.1	0.84	0.79	43.3
3u	U	2	0.0	0.621	13.3	LOS A	6.7	51.1	0.84	0.79	45.7
Approach		536	10.0	0.621	9.4	LOS A	6.7	51.1	0.84	0.79	43.1
North: East Street											
8	T1	989	10.0	0.964	8.9	LOS A	39.4	299.3	1.00	0.52	42.2
9	R2	258	10.0	0.964	11.8	LOS A	39.4	299.3	1.00	0.52	40.5
9u	U	1	0.0	0.964	12.8	LOS A	39.4	299.3	1.00	0.52	42.6
Approach		1248	10.0	0.964	9.5	LOS A	39.4	299.3	1.00	0.52	41.8
West: James Street											
10	L2	200	10.0	0.433	9.9	LOS A	3.3	25.3	0.85	0.88	37.2
12	R2	65	10.0	0.433	12.6	LOS A	3.3	25.3	0.85	0.88	38.7
12u	U	5	0.0	0.433	13.4	LOS A	3.3	25.3	0.85	0.88	39.3
Approach		271	9.8	0.433	10.6	LOS A	3.3	25.3	0.85	0.88	37.6
All Vehicles		2054	10.0	0.964	9.6	LOS A	39.4	299.3	0.94	0.64	41.6

MOVEMENT SUMMARY



Site: 2 [James and East Street AM Peak 2022 + DEV]

James and East Street
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: East Street											
1	L2	76	10.0	0.949	23.9	LOS B	36.8	279.3	1.00	1.02	31.3
2	T1	936	10.0	0.949	23.8	LOS B	36.8	279.3	1.00	1.02	32.2
3u	U	10	0.0	0.949	27.6	LOS B	36.8	279.3	1.00	1.02	34.4
Approach		1022	9.9	0.949	23.8	LOS B	36.8	279.3	1.00	1.02	32.2
North: East Street											
8	T1	444	10.0	0.475	5.1	LOS A	4.9	37.2	0.36	0.51	45.0
9	R2	167	10.0	0.475	8.0	LOS A	4.9	37.2	0.36	0.51	43.4
9u	U	7	0.0	0.475	9.3	LOS A	4.9	37.2	0.36	0.51	45.8
Approach		618	9.9	0.475	6.0	LOS A	4.9	37.2	0.36	0.51	44.6
West: James Street											
10	L2	217	10.0	0.953	111.2	LOS F	19.7	149.3	1.00	2.01	11.2
12	R2	41	10.0	0.953	113.8	LOS F	19.7	149.3	1.00	2.01	12.2
12u	U	1	0.0	0.953	114.1	LOS F	19.7	149.3	1.00	2.01	11.4
Approach		259	10.0	0.953	111.6	LOS F	19.7	149.3	1.00	2.01	11.4
All Vehicles		1899	9.9	0.953	30.0	LOS C	36.8	279.3	0.79	0.99	28.2

MOVEMENT SUMMARY



Site: 2 [James and East Street PM Peak 2022 + DEV]

James and East Street
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: East Street											
1	L2	60	10.0	0.629	9.7	LOS A	6.9	52.6	0.85	0.80	41.5
2	T1	480	10.0	0.629	9.5	LOS A	6.9	52.6	0.85	0.80	43.1
3u	U	2	0.0	0.629	13.5	LOS A	6.9	52.6	0.85	0.80	45.6
Approach		542	10.0	0.629	9.5	LOS A	6.9	52.6	0.85	0.80	43.0
North: East Street											
8	T1	990	10.0	0.978	11.3	LOS A	45.5	345.4	1.00	0.56	40.1
9	R2	259	10.0	0.978	14.2	LOS A	45.5	345.4	1.00	0.56	38.4
9u	U	1	0.0	0.978	15.3	LOS B	45.5	345.4	1.00	0.56	40.3
Approach		1250	10.0	0.978	11.9	LOS A	45.5	345.4	1.00	0.56	39.8
West: James Street											
10	L2	228	10.0	0.491	11.1	LOS A	4.2	31.6	0.88	0.93	36.3
12	R2	71	10.0	0.491	13.8	LOS A	4.2	31.6	0.88	0.93	37.8
12u	U	5	0.0	0.491	14.5	LOS B	4.2	31.6	0.88	0.93	38.2
Approach		304	9.8	0.491	11.8	LOS A	4.2	31.6	0.88	0.93	36.7
All Vehicles		2096	10.0	0.978	11.3	LOS A	45.5	345.4	0.94	0.68	40.1

MOVEMENT SUMMARY



Site: 2 [James and East Street AM Peak 2032]

James and East Street
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: East Street											
1	L2	83	10.0	1.059	133.4	LOS F ¹¹	122.1	926.9	1.00	2.80	10.9
2	T1	1023	10.0	1.059	133.3	LOS F ¹¹	122.1	926.9	1.00	2.80	11.0
3u	U	12	0.0	1.059	137.0	LOS F ¹¹	122.1	926.9	1.00	2.80	11.9
Approach		1117	9.9	1.059	133.3	LOS F ¹¹	122.1	926.9	1.00	2.80	11.0
North: East Street											
8	T1	484	10.0	0.516	5.2	LOS A	5.6	42.9	0.39	0.51	44.9
9	R2	183	10.0	0.516	8.1	LOS A	5.6	42.9	0.39	0.51	43.3
9u	U	8	0.0	0.516	9.4	LOS A	5.6	42.9	0.39	0.51	45.6
Approach		675	9.9	0.516	6.0	LOS A	5.6	42.9	0.39	0.51	44.5
West: James Street											
10	L2	235	10.0	1.097	274.7	LOS F ¹¹	49.4	375.4	1.00	3.46	5.3
12	R2	44	10.0	1.097	277.4	LOS F ¹¹	49.4	375.4	1.00	3.46	5.8
12u	U	1	0.0	1.097	277.5	LOS F ¹¹	49.4	375.4	1.00	3.46	5.3
Approach		281	10.0	1.097	275.1	LOS F ¹¹	49.4	375.4	1.00	3.46	5.4
All Vehicles		2073	9.9	1.097	111.1	LOS F ¹¹	122.1	926.9	0.80	2.14	12.4

MOVEMENT SUMMARY



Site: 2 [James and East Street PM Peak 2032]

James and East Street
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: East Street											
1	L2	66	10.0	0.682	10.9	LOS A	8.5	64.8	0.90	0.85	40.4
2	T1	518	10.0	0.682	10.7	LOS A	8.5	64.8	0.90	0.85	41.9
3u	U	2	0.0	0.682	14.7	LOS B	8.5	64.8	0.90	0.85	44.4
Approach		586	10.0	0.682	10.8	LOS A	8.5	64.8	0.90	0.85	41.8
North: East Street											
8	T1	1081	10.0	1.066	131.1	LOS F ¹¹	162.9	1238.1	1.00	1.56	11.1
9	R2	282	10.0	1.066	134.0	LOS F ¹¹	162.9	1238.1	1.00	1.56	10.1
9u	U	1	0.0	1.066	135.0	LOS F ¹¹	162.9	1238.1	1.00	1.56	10.3
Approach		1364	10.0	1.066	131.7	LOS F ¹¹	162.9	1238.1	1.00	1.56	10.9
West: James Street											
10	L2	219	10.0	0.509	12.1	LOS A	4.4	33.6	0.91	0.98	35.4
12	R2	71	10.0	0.509	14.8	LOS B	4.4	33.6	0.91	0.98	36.9
12u	U	6	0.0	0.509	15.6	LOS B	4.4	33.6	0.91	0.98	37.3
Approach		296	9.8	0.509	12.8	LOS A	4.4	33.6	0.91	0.98	35.8
All Vehicles		2246	10.0	1.066	84.5	LOS F ¹¹	162.9	1238.1	0.96	1.30	15.2

MOVEMENT SUMMARY

Site: 2 [James and East Street AM Peak 2017 + DEV]

James and East Street
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: East Street											
1	L2	72	10.0	0.894	14.8	LOS B	23.2	176.1	1.00	0.83	37.2
2	T1	892	10.0	0.894	14.7	LOS B	23.2	176.1	1.00	0.83	38.4
3u	U	10	0.0	0.894	18.6	LOS B	23.2	176.1	1.00	0.83	40.8
Approach		974	9.9	0.894	14.7	LOS B	23.2	176.1	1.00	0.83	38.4
North: East Street											
8	T1	423	10.0	0.451	5.1	LOS A	4.5	34.1	0.34	0.51	45.1
9	R2	159	10.0	0.451	8.0	LOS A	4.5	34.1	0.34	0.51	43.5
9u	U	7	0.0	0.451	9.3	LOS A	4.5	34.1	0.34	0.51	45.9
Approach		589	9.9	0.451	5.9	LOS A	4.5	34.1	0.34	0.51	44.7
West: James Street											
10	L2	207	10.0	0.831	53.7	LOS D	11.0	83.3	1.00	1.47	18.6
12	R2	39	10.0	0.831	56.4	LOS D	11.0	83.3	1.00	1.47	20.0
Approach		246	10.0	0.831	54.2	LOS D	11.0	83.3	1.00	1.47	18.9
All Vehicles		1809	9.9	0.894	17.2	LOS B	23.2	176.1	0.79	0.81	35.4

MOVEMENT SUMMARY

Site: 2 [James and East Street PM Peak 2017 + DEV]

James and East Street
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: East Street											
1	L2	57	10.0	0.587	8.6	LOS A	5.9	44.5	0.81	0.74	42.5
2	T1	458	10.0	0.587	8.4	LOS A	5.9	44.5	0.81	0.74	44.2
3u	U	2	0.0	0.587	12.4	LOS A	5.9	44.5	0.81	0.74	46.6
Approach		517	10.0	0.587	8.5	LOS A	5.9	44.5	0.81	0.74	44.0
North: East Street											
8	T1	944	10.0	0.917	7.0	LOS A	27.4	208.5	1.00	0.50	42.5
9	R2	247	10.0	0.917	9.9	LOS A	27.4	208.5	1.00	0.50	40.8
9u	U	1	0.0	0.917	11.0	LOS A	27.4	208.5	1.00	0.50	42.9
Approach		1192	10.0	0.917	7.6	LOS A	27.4	208.5	1.00	0.50	42.2
West: James Street											
10	L2	218	10.0	0.445	9.8	LOS A	3.5	26.3	0.85	0.87	37.3
12	R2	67	10.0	0.445	12.5	LOS A	3.5	26.3	0.85	0.87	38.8
Approach		285	10.0	0.445	10.5	LOS A	3.5	26.3	0.85	0.87	37.7
All Vehicles		1994	10.0	0.917	8.2	LOS A	27.4	208.5	0.93	0.62	42.0

MOVEMENT SUMMARY



Site: 2 [James and East Street AM Peak 2032 + DEV]

James and East Street
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: East Street											
1	L2	83	10.0	1.056	128.8	LOS F	119.0	903.8	1.00	2.73	11.2
2	T1	1023	10.0	1.056	128.6	LOS F	119.0	903.8	1.00	2.73	11.3
3u	U	10	0.0	1.056	132.4	LOS F	119.0	903.8	1.00	2.73	12.3
Approach		1116	9.9	1.056	128.7	LOS F	119.0	903.8	1.00	2.73	11.3
North: East Street											
8	T1	485	10.0	0.513	5.1	LOS A	5.6	42.8	0.38	0.51	44.9
9	R2	183	10.0	0.513	8.0	LOS A	5.6	42.8	0.38	0.51	43.3
9u	U	7	0.0	0.513	9.3	LOS A	5.6	42.8	0.38	0.51	45.7
Approach		675	9.9	0.513	6.0	LOS A	5.6	42.8	0.38	0.51	44.5
West: James Street											
10	L2	237	10.0	1.103	283.8	LOS F	51.1	388.2	1.00	3.53	5.1
12	R2	44	10.0	1.103	286.4	LOS F	51.1	388.2	1.00	3.53	5.6
12u	U	1	0.0	1.103	286.6	LOS F	51.1	388.2	1.00	3.53	5.2
Approach		282	10.0	1.103	284.2	LOS F	51.1	388.2	1.00	3.53	5.2
All Vehicles		2073	9.9	1.103	109.9	LOS F	119.0	903.8	0.80	2.11	12.5

MOVEMENT SUMMARY



Site: 2 [James and East Street PM Peak 2032 + DEV]

James and East Street
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: East Street											
1	L2	66	10.0	0.686	10.9	LOS A	8.7	65.9	0.90	0.85	40.4
2	T1	525	10.0	0.686	10.7	LOS A	8.7	65.9	0.90	0.85	41.9
3u	U	2	0.0	0.686	14.7	LOS B	8.7	65.9	0.90	0.85	44.4
Approach		593	10.0	0.686	10.7	LOS A	8.7	65.9	0.90	0.85	41.8
North: East Street											
8	T1	1083	10.0	1.079	155.2	LOS F	180.5	1371.5	1.00	1.81	9.7
9	R2	283	10.0	1.079	158.1	LOS F	180.5	1371.5	1.00	1.81	8.8
9u	U	1	0.0	1.079	159.1	LOS F	180.5	1371.5	1.00	1.81	8.9
Approach		1367	10.0	1.079	155.8	LOS F	180.5	1371.5	1.00	1.81	9.5
West: James Street											
10	L2	247	10.0	0.571	13.7	LOS A	5.5	41.5	0.94	1.04	34.3
12	R2	77	10.0	0.571	16.4	LOS B	5.5	41.5	0.94	1.04	35.8
12u	U	5	0.0	0.571	17.1	LOS B	5.5	41.5	0.94	1.04	36.0
Approach		329	9.8	0.571	14.4	LOS A	5.5	41.5	0.94	1.04	34.7
All Vehicles		2289	10.0	1.079	97.9	LOS F	180.5	1371.5	0.97	1.45	13.6

MOVEMENT SUMMARY



Site: 3 [Railway Street and East Street AM Peak 2015]

Railway Street and East Street
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: East Street											
1	L2	214	10.0	0.943	19.0	LOS B	33.8	256.6	1.00	0.80	28.3
3	R2	836	10.0	0.943	21.5	LOS B	33.8	256.6	1.00	0.80	38.9
3u	U	7	0.0	0.943	22.4	LOS B	33.8	256.6	1.00	0.80	31.9
Approach		1057	9.9	0.943	21.0	LOS B	33.8	256.6	1.00	0.80	37.3
East: Railway Street											
4	L2	443	10.0	0.368	6.0	LOS A	3.2	24.4	0.51	0.57	48.7
5	T1	141	10.0	0.125	5.9	LOS A	0.9	6.6	0.43	0.53	48.2
6u	U	1	0.0	0.125	9.8	LOS A	0.9	6.6	0.43	0.53	53.0
Approach		585	10.0	0.368	6.0	LOS A	3.2	24.4	0.49	0.56	48.6
West: Railway Street											
11	T1	93	10.0	0.626	22.2	LOS B	5.8	44.2	1.00	1.16	35.6
12	R2	128	10.0	0.626	24.9	LOS B	5.8	44.2	1.00	1.16	26.1
12u	U	4	0.0	0.626	25.5	LOS B	5.8	44.2	1.00	1.16	24.9
Approach		225	9.8	0.626	23.8	LOS B	5.8	44.2	1.00	1.16	30.7
All Vehicles		1867	9.9	0.943	16.6	LOS B	33.8	256.6	0.84	0.77	39.6

MOVEMENT SUMMARY



Site: 3 [Railway Street and East Street PM Peak 2015]

Railway Street and East Street
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: East Street											
1	L2	145	10.0	0.749	13.2	LOS A	11.0	83.6	0.96	0.90	32.4
3	R2	498	10.0	0.749	15.6	LOS B	11.0	83.6	0.96	0.90	42.7
3u	U	3	0.0	0.749	16.6	LOS B	11.0	83.6	0.96	0.90	36.4
Approach		646	10.0	0.749	15.1	LOS B	11.0	83.6	0.96	0.90	41.0
East: Railway Street											
4	L2	730	10.0	0.871	22.7	LOS B	19.4	147.7	1.00	1.22	37.4
5	T1	274	10.0	0.337	8.3	LOS A	2.6	19.7	0.78	0.75	46.7
6u	U	2	0.0	0.337	12.1	LOS A	2.6	19.7	0.78	0.75	51.8
Approach		1006	10.0	0.871	18.8	LOS B	19.4	147.7	0.94	1.09	39.4
West: Railway Street											
11	T1	113	10.0	0.845	24.1	LOS B	14.3	108.5	1.00	1.34	34.4
12	R2	410	10.0	0.845	26.8	LOS B	14.3	108.5	1.00	1.34	24.9
12u	U	4	0.0	0.845	27.5	LOS B	14.3	108.5	1.00	1.34	23.7
Approach		527	9.9	0.845	26.2	LOS B	14.3	108.5	1.00	1.34	27.4
All Vehicles		2179	10.0	0.871	19.5	LOS B	19.4	147.7	0.96	1.10	37.1

MOVEMENT SUMMARY

Site: 3 [Railway Street and East Street AM Peak 2017 + DEV]

Railway Street and East Street
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: East Street											
1	L2	223	10.0	0.980	32.1	LOS C	51.4	390.3	1.00	0.96	22.1
3	R2	866	10.0	0.980	34.5	LOS C	51.4	390.3	1.00	0.96	32.6
3u	U	7	0.0	0.980	35.4	LOS C	51.4	390.3	1.00	0.96	25.0
Approach		1096	9.9	0.980	34.0	LOS C	51.4	390.3	1.00	0.96	30.8
East: Railway Street											
4	L2	452	10.0	0.377	6.1	LOS A	3.3	25.2	0.52	0.58	48.7
5	T1	144	10.0	0.128	5.9	LOS A	0.9	6.7	0.43	0.53	48.2
6u	U	1	0.0	0.128	9.8	LOS A	0.9	6.7	0.43	0.53	53.0
Approach		597	10.0	0.377	6.0	LOS A	3.3	25.2	0.50	0.56	48.6
West: Railway Street											
11	T1	95	10.0	0.677	26.4	LOS B	6.7	50.5	1.00	1.21	33.5
12	R2	131	10.0	0.677	29.1	LOS C	6.7	50.5	1.00	1.21	24.1
12u	U	4	0.0	0.677	29.6	LOS C	6.7	50.5	1.00	1.21	22.8
Approach		230	9.8	0.677	28.0	LOS B	6.7	50.5	1.00	1.21	28.6
All Vehicles		1923	9.9	0.980	24.6	LOS B	51.4	390.3	0.84	0.87	34.9

MOVEMENT SUMMARY

Site: 3 [Railway Street and East Street PM Peak 2017 + DEV]

Railway Street and East Street
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: East Street											
1	L2	182	10.0	0.854	19.6	LOS B	17.6	133.9	1.00	1.06	28.0
3	R2	529	10.0	0.854	22.0	LOS B	17.6	133.9	1.00	1.06	38.7
3u	U	3	0.0	0.854	22.9	LOS B	17.6	133.9	1.00	1.06	31.6
Approach		714	10.0	0.854	21.4	LOS B	17.6	133.9	1.00	1.06	36.6
East: Railway Street											
4	L2	745	10.0	0.913	30.2	LOS C	25.0	189.7	1.00	1.40	33.7
5	T1	286	10.0	0.367	8.7	LOS A	2.9	21.7	0.81	0.78	46.5
6u	U	2	0.0	0.367	12.4	LOS A	2.9	21.7	0.81	0.78	51.6
Approach		1033	10.0	0.913	24.2	LOS B	25.0	189.7	0.95	1.23	36.4
West: Railway Street											
11	T1	115	10.0	0.949	49.4	LOS D	26.9	203.7	1.00	1.85	25.3
12	R2	430	10.0	0.949	52.2	LOS D	26.9	203.7	1.00	1.85	16.9
12u	U	19	0.0	0.949	52.8	LOS D	26.9	203.7	1.00	1.85	15.6
Approach		564	9.7	0.949	51.6	LOS D	26.9	203.7	1.00	1.85	18.9
All Vehicles		2311	9.9	0.949	30.0	LOS C	26.9	203.7	0.98	1.33	31.4

MOVEMENT SUMMARY



Site: 3 [Railway Street and East Street AM Peak 2022]

Railway Street and East Street
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: East Street											
1	L2	229	10.0	1.023	75.4	LOS F ¹¹	87.2	662.1	1.00	1.44	12.9
3	R2	895	10.0	1.023	77.8	LOS F ¹¹	87.2	662.1	1.00	1.44	21.1
3u	U	8	0.0	1.023	78.6	LOS F ¹¹	87.2	662.1	1.00	1.44	14.6
Approach		1131	9.9	1.023	77.3	LOS F ¹¹	87.2	662.1	1.00	1.44	19.6
East: Railway Street											
4	L2	474	10.0	0.398	6.1	LOS A	3.6	27.1	0.54	0.58	48.6
5	T1	151	10.0	0.135	5.9	LOS A	0.9	7.1	0.44	0.54	48.1
6u	U	1	0.0	0.135	9.9	LOS A	0.9	7.1	0.44	0.54	52.9
Approach		626	10.0	0.398	6.1	LOS A	3.6	27.1	0.52	0.57	48.5
West: Railway Street											
11	T1	100	10.0	0.722	30.3	LOS C	7.6	57.3	1.00	1.25	31.8
12	R2	137	10.0	0.722	33.0	LOS C	7.6	57.3	1.00	1.25	22.5
12u	U	5	0.0	0.722	33.5	LOS C	7.6	57.3	1.00	1.25	21.2
Approach		241	9.8	0.722	31.9	LOS C	7.6	57.3	1.00	1.25	26.9
All Vehicles		1999	9.9	1.023	49.5	LOS D	87.2	662.1	0.85	1.15	25.4

MOVEMENT SUMMARY



Site: 3 [Railway Street and East Street PM Peak 2022]

Railway Street and East Street
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: East Street											
1	L2	155	10.0	0.823	17.1	LOS B	15.1	115.0	1.00	1.00	29.5
3	R2	533	10.0	0.823	19.6	LOS B	15.1	115.0	1.00	1.00	40.1
3u	U	3	0.0	0.823	20.4	LOS B	15.1	115.0	1.00	1.00	33.2
Approach		691	10.0	0.823	19.0	LOS B	15.1	115.0	1.00	1.00	38.3
East: Railway Street											
4	L2	781	10.0	0.966	49.5	LOS D	38.8	295.0	1.00	1.82	26.9
5	T1	293	10.0	0.374	8.7	LOS A	2.9	22.2	0.81	0.78	46.5
6u	U	2	0.0	0.374	12.4	LOS A	2.9	22.2	0.81	0.78	51.6
Approach		1076	10.0	0.966	38.3	LOS C	38.8	295.0	0.95	1.54	30.2
West: Railway Street											
11	T1	121	10.0	0.956	53.1	LOS D	28.4	215.7	1.00	1.93	24.3
12	R2	439	10.0	0.956	55.9	LOS D	28.4	215.7	1.00	1.93	16.1
12u	U	4	0.0	0.956	56.5	LOS D	28.4	215.7	1.00	1.93	14.8
Approach		564	9.9	0.956	55.3	LOS D	28.4	215.7	1.00	1.93	18.2
All Vehicles		2332	10.0	0.966	36.7	LOS C	38.8	295.0	0.98	1.47	28.8

MOVEMENT SUMMARY



Site: 3 [Railway Street and East Street AM Peak 2022 + DEV]

Railway Street and East Street
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: East Street											
1	L2	233	10.0	1.042	103.9	LOS F	107.5	816.7	1.00	1.74	10.1
3	R2	908	10.0	1.042	106.4	LOS F	107.5	816.7	1.00	1.74	17.1
3u	U	7	0.0	1.042	107.2	LOS F	107.5	816.7	1.00	1.74	11.4
Approach		1148	9.9	1.042	105.9	LOS F	107.5	816.7	1.00	1.74	15.8
East: Railway Street											
4	L2	474	10.0	0.398	6.1	LOS A	3.6	27.1	0.54	0.58	48.6
5	T1	151	10.0	0.136	6.0	LOS A	0.9	7.2	0.45	0.54	48.1
6u	U	1	0.0	0.136	9.9	LOS A	0.9	7.2	0.45	0.54	52.9
Approach		626	10.0	0.398	6.1	LOS A	3.6	27.1	0.52	0.57	48.5
West: Railway Street											
11	T1	100	10.0	0.730	30.7	LOS C	7.8	58.8	1.00	1.26	31.6
12	R2	138	10.0	0.730	33.5	LOS C	7.8	58.8	1.00	1.26	22.3
12u	U	8	0.0	0.730	33.9	LOS C	7.8	58.8	1.00	1.26	21.0
Approach		246	9.7	0.730	32.4	LOS C	7.8	58.8	1.00	1.26	26.7
All Vehicles		2020	9.9	1.042	66.0	LOS E	107.5	816.7	0.85	1.32	21.5

MOVEMENT SUMMARY



Site: 3 [Railway Street and East Street PM Peak 2022 + DEV]

Railway Street and East Street
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: East Street											
1	L2	189	10.0	0.908	26.8	LOS B	24.3	184.3	1.00	1.20	24.3
3	R2	554	10.0	0.908	29.3	LOS C	24.3	184.3	1.00	1.20	34.9
3u	U	3	0.0	0.908	30.1	LOS C	24.3	184.3	1.00	1.20	27.4
Approach		746	10.0	0.908	28.7	LOS C	24.3	184.3	1.00	1.20	32.8
East: Railway Street											
4	L2	781	10.0	0.965	48.4	LOS D	38.2	290.3	1.00	1.80	27.2
5	T1	300	10.0	0.388	8.8	LOS A	3.1	23.3	0.82	0.79	46.3
6u	U	2	0.0	0.388	12.5	LOS A	3.1	23.3	0.82	0.79	51.5
Approach		1083	10.0	0.965	37.4	LOS C	38.2	290.3	0.95	1.52	30.5
West: Railway Street											
11	T1	121	10.0	1.031	119.9	LOS F	55.8	422.8	1.00	3.07	14.5
12	R2	451	10.0	1.031	122.6	LOS F	55.8	422.8	1.00	3.07	8.9
12u	U	19	0.0	1.031	123.2	LOS F	55.8	422.8	1.00	3.07	8.0
Approach		591	9.7	1.031	122.0	LOS F	55.8	422.8	1.00	3.07	10.2
All Vehicles		2420	9.9	1.031	55.4	LOS D	55.8	422.8	0.98	1.80	23.1

MOVEMENT SUMMARY



Site: 3 [Railway Street and East Street AM Peak 2032]

Railway Street and East Street
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: East Street											
1	L2	250	10.0	1.140	270.9	LOS F ¹¹	228.0	1732.1	1.00	3.39	4.4
3	R2	978	10.0	1.140	273.3	LOS F ¹¹	228.0	1732.1	1.00	3.39	8.1
3u	U	9	0.0	1.140	274.1	LOS F ¹¹	228.0	1732.1	1.00	3.39	5.0
Approach		1238	9.9	1.140	272.8	LOS F ¹¹	228.0	1732.1	1.00	3.39	7.4
East: Railway Street											
4	L2	518	10.0	0.442	6.3	LOS A	4.1	31.2	0.59	0.60	48.4
5	T1	165	10.0	0.150	6.1	LOS A	1.1	8.0	0.47	0.55	48.0
6u	U	1	0.0	0.150	10.0	LOS A	1.1	8.0	0.47	0.55	52.8
Approach		685	10.0	0.442	6.3	LOS A	4.1	31.2	0.56	0.59	48.4
West: Railway Street											
11	T1	109	10.0	0.767	33.7	LOS C	8.7	66.2	1.00	1.31	30.5
12	R2	150	10.0	0.767	36.4	LOS C	8.7	66.2	1.00	1.31	21.3
12u	U	5	0.0	0.767	36.9	LOS C	8.7	66.2	1.00	1.31	19.9
Approach		264	9.8	0.767	35.3	LOS C	8.7	66.2	1.00	1.31	25.6
All Vehicles		2186	9.9	1.140	160.7	LOS F ¹¹	228.0	1732.1	0.86	2.26	11.5

MOVEMENT SUMMARY



Site: 3 [Railway Street and East Street PM Peak 2032]

Railway Street and East Street
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: East Street											
1	L2	170	10.0	0.931	32.3	LOS C	28.6	217.5	1.00	1.30	22.1
3	R2	583	10.0	0.931	34.7	LOS C	28.6	217.5	1.00	1.30	32.5
3u	U	4	0.0	0.931	35.5	LOS C	28.6	217.5	1.00	1.30	24.9
Approach		756	10.0	0.931	34.2	LOS C	28.6	217.5	1.00	1.30	30.6
East: Railway Street											
4	L2	854	10.0	1.035	113.7	LOS F ¹¹	78.9	599.9	1.00	3.00	16.0
5	T1	321	10.0	0.403	8.7	LOS A	3.2	24.4	0.82	0.79	46.5
6u	U	2	0.0	0.403	12.4	LOS A	3.2	24.4	0.82	0.79	51.6
Approach		1177	10.0	1.035	84.9	LOS F ¹¹	78.9	599.9	0.95	2.40	19.4
West: Railway Street											
11	T1	132	10.0	1.124	262.1	LOS F ¹¹	107.7	818.3	1.00	5.19	7.8
12	R2	480	10.0	1.124	264.8	LOS F ¹¹	107.7	818.3	1.00	5.19	4.6
12u	U	5	0.0	1.124	265.4	LOS F ¹¹	107.7	818.3	1.00	5.19	4.0
Approach		617	9.9	1.124	264.3	LOS F ¹¹	107.7	818.3	1.00	5.19	5.3
All Vehicles		2549	10.0	1.124	113.2	LOS F ¹¹	107.7	818.3	0.98	2.75	14.5

MOVEMENT SUMMARY



Site: 3 [Railway Street and East Street AM Peak 2032 + DEV]

Railway Street and East Street
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: East Street											
1	L2	255	10.0	1.158	302.1	LOS F	250.6	1903.9	1.00	3.69	4.0
3	R2	992	10.0	1.158	304.5	LOS F	250.6	1903.9	1.00	3.69	7.4
3u	U	7	0.0	1.158	305.3	LOS F	250.6	1903.9	1.00	3.69	4.6
Approach		1254	9.9	1.158	304.0	LOS F	250.6	1903.9	1.00	3.69	6.7
East: Railway Street											
4	L2	518	10.0	0.441	6.3	LOS A	4.1	31.2	0.59	0.60	48.4
5	T1	165	10.0	0.150	6.1	LOS A	1.1	8.0	0.47	0.55	48.0
6u	U	1	0.0	0.150	10.0	LOS A	1.1	8.0	0.47	0.55	52.8
Approach		684	10.0	0.441	6.3	LOS A	4.1	31.2	0.56	0.58	48.4
West: Railway Street											
11	T1	109	10.0	0.770	33.8	LOS C	8.8	67.0	1.00	1.31	30.4
12	R2	150	10.0	0.770	36.5	LOS C	8.8	67.0	1.00	1.31	21.2
12u	U	8	0.0	0.770	37.0	LOS C	8.8	67.0	1.00	1.31	19.9
Approach		267	9.7	0.770	35.4	LOS C	8.8	67.0	1.00	1.31	25.5
All Vehicles		2205	9.9	1.158	179.1	LOS F	250.6	1903.9	0.86	2.44	10.5

MOVEMENT SUMMARY



Site: 3 [Railway Street and East Street PM Peak 2032 + DEV]

Railway Street and East Street
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: East Street											
1	L2	204	10.0	1.017	89.8	LOS F	65.0	493.6	1.00	2.21	11.3
3	R2	604	10.0	1.017	92.2	LOS F	65.0	493.6	1.00	2.21	18.9
3u	U	3	0.0	1.017	92.9	LOS F	65.0	493.6	1.00	2.21	12.8
Approach		811	10.0	1.017	91.6	LOS F	65.0	493.6	1.00	2.21	17.2
East: Railway Street											
4	L2	854	10.0	1.015	87.6	LOS F	65.5	498.1	1.00	2.53	19.2
5	T1	328	10.0	0.410	8.7	LOS A	3.3	25.1	0.82	0.79	46.5
6u	U	2	0.0	0.410	12.4	LOS A	3.3	25.1	0.82	0.79	51.6
Approach		1184	10.0	1.015	65.6	LOS E	65.5	498.1	0.95	2.05	22.7
West: Railway Street											
11	T1	132	10.0	1.181	359.2	LOS F	143.9	1090.7	1.00	6.43	6.0
12	R2	492	10.0	1.181	362.0	LOS F	143.9	1090.7	1.00	6.43	3.4
12u	U	19	0.0	1.181	362.5	LOS F	143.9	1090.7	1.00	6.43	3.0
Approach		643	9.7	1.181	361.4	LOS F	143.9	1090.7	1.00	6.43	4.0
All Vehicles		2638	9.9	1.181	145.7	LOS F	143.9	1090.7	0.98	3.17	11.9

MOVEMENT SUMMARY

▽ Site: 4 [Railway Street and Bridge Street AM Peak 2015]

Railway Street and Bridge Street
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: Railway Street											
6	R2	301	10.0	0.751	22.2	LOS C	4.7	35.8	0.89	1.26	29.2
Approach		301	10.0	0.751	22.2	LOS C	4.7	35.8	0.89	1.26	29.2
North: Bridge Street											
7	L2	202	10.0	0.223	5.7	LOS A	0.0	0.0	0.00	0.58	45.0
9	R2	210	10.0	0.223	5.6	LOS A	0.0	0.0	0.00	0.58	46.7
Approach		412	10.0	0.223	5.7	NA	0.0	0.0	0.00	0.58	46.0
West: Railway Street											
10	L2	598	10.0	0.320	5.7	LOS A	0.0	0.0	0.00	0.57	47.3
Approach		598	10.0	0.320	5.7	NA	0.0	0.0	0.00	0.57	47.3
All Vehicles		1311	10.0	0.751	9.5	NA	4.7	35.8	0.20	0.73	42.0

MOVEMENT SUMMARY

▽ Site: 4 [Railway Street and Bridge Street PM Peak 2015]

Railway Street and Bridge Street
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: Railway Street											
6	R2	294	10.0	0.795	25.8	LOS D	5.3	40.0	0.92	1.34	27.2
Approach		294	10.0	0.795	25.8	LOS D	5.3	40.0	0.92	1.34	27.2
North: Bridge Street											
7	L2	474	10.0	0.464	5.7	LOS A	0.0	0.0	0.00	0.58	45.0
9	R2	385	10.0	0.464	5.7	LOS A	0.0	0.0	0.00	0.58	46.7
Approach		859	10.0	0.464	5.7	NA	0.0	0.0	0.00	0.58	45.9
West: Railway Street											
10	L2	336	10.0	0.180	5.7	LOS A	0.0	0.0	0.00	0.57	47.3
Approach		336	10.0	0.180	5.7	NA	0.0	0.0	0.00	0.57	47.3
All Vehicles		1489	10.0	0.795	9.6	NA	5.3	40.0	0.18	0.73	41.4

MOVEMENT SUMMARY

▽ Site: 4 [Railway Street and Bridge Street AM Peak 2017]

Railway Street and Bridge Street
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: Railway Street											
6	R2	307	10.0	0.789	24.5	LOS C	5.3	40.4	0.91	1.33	27.9
Approach		307	10.0	0.789	24.5	LOS C	5.3	40.4	0.91	1.33	27.9
North: Bridge Street											
7	L2	206	10.0	0.227	5.7	LOS A	0.0	0.0	0.00	0.58	45.0
9	R2	214	10.0	0.227	5.6	LOS A	0.0	0.0	0.00	0.58	46.7
Approach		420	10.0	0.227	5.7	NA	0.0	0.0	0.00	0.58	46.0
West: Railway Street											
10	L2	610	10.0	0.326	5.7	LOS A	0.0	0.0	0.00	0.57	47.3
Approach		610	10.0	0.326	5.7	NA	0.0	0.0	0.00	0.57	47.3
All Vehicles		1337	10.0	0.789	10.0	NA	5.3	40.4	0.21	0.75	41.5

MOVEMENT SUMMARY

▽ Site: 4 [Railway Street and Bridge Street PM Peak 2017]

Railway Street and Bridge Street
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: Railway Street											
6	R2	300	10.0	0.839	29.8	LOS D	6.2	47.0	0.94	1.45	25.3
Approach		300	10.0	0.839	29.8	LOS D	6.2	47.0	0.94	1.45	25.3
North: Bridge Street											
7	L2	483	10.0	0.473	5.7	LOS A	0.0	0.0	0.00	0.58	45.0
9	R2	393	10.0	0.473	5.7	LOS A	0.0	0.0	0.00	0.58	46.7
Approach		876	10.0	0.473	5.7	NA	0.0	0.0	0.00	0.58	45.9
West: Railway Street											
10	L2	343	10.0	0.184	5.7	LOS A	0.0	0.0	0.00	0.57	47.3
Approach		343	10.0	0.184	5.7	NA	0.0	0.0	0.00	0.57	47.3
All Vehicles		1519	10.0	0.839	10.4	NA	6.2	47.0	0.19	0.75	40.6

MOVEMENT SUMMARY

▽ Site: 4 [Railway Street and Bridge Street AM Peak 2017 + DEV]

Railway Street and Bridge Street
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: Railway Street											
6	R2	309	10.0	0.795	24.9	LOS C	5.4	41.3	0.91	1.35	27.7
Approach		309	10.0	0.795	24.9	LOS C	5.4	41.3	0.91	1.35	27.7
North: Bridge Street											
7	L2	207	10.0	0.227	5.7	LOS A	0.0	0.0	0.00	0.58	45.0
9	R2	214	10.0	0.227	5.6	LOS A	0.0	0.0	0.00	0.58	46.7
Approach		421	10.0	0.227	5.7	NA	0.0	0.0	0.00	0.58	46.0
West: Railway Street											
10	L2	610	10.0	0.326	5.7	LOS A	0.0	0.0	0.00	0.57	47.3
Approach		610	10.0	0.326	5.7	NA	0.0	0.0	0.00	0.57	47.3
All Vehicles		1340	10.0	0.795	10.1	NA	5.4	41.3	0.21	0.75	41.4

MOVEMENT SUMMARY

▽ Site: 4 [Railway Street and Bridge Street PM Peak 2017 + DEV]

Railway Street and Bridge Street
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: Railway Street											
6	R2	302	10.0	0.851	31.2	LOS D	6.5	49.6	0.94	1.49	24.7
Approach		302	10.0	0.851	31.2	LOS D	6.5	49.6	0.94	1.49	24.7
North: Bridge Street											
7	L2	492	10.0	0.478	5.7	LOS A	0.0	0.0	0.00	0.58	45.0
9	R2	393	10.0	0.478	5.7	LOS A	0.0	0.0	0.00	0.58	46.7
Approach		885	10.0	0.478	5.7	NA	0.0	0.0	0.00	0.58	45.9
West: Railway Street											
10	L2	343	10.0	0.184	5.7	LOS A	0.0	0.0	0.00	0.57	47.3
Approach		343	10.0	0.184	5.7	NA	0.0	0.0	0.00	0.57	47.3
All Vehicles		1530	10.0	0.851	10.7	NA	6.5	49.6	0.19	0.76	40.3

MOVEMENT SUMMARY



Site: 4 [Railway Street and Bridge Street AM Peak 2022]

Railway Street and Bridge Street
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: Railway Street											
6	R2	322	10.0	0.896	36.8	LOS E ¹¹	8.4	63.5	0.96	1.69	22.6
Approach		322	10.0	0.896	36.8	LOS E ¹¹	8.4	63.5	0.96	1.69	22.6
North: Bridge Street											
7	L2	216	10.0	0.238	5.7	LOS A	0.0	0.0	0.00	0.58	45.0
9	R2	225	10.0	0.238	5.6	LOS A	0.0	0.0	0.00	0.58	46.7
Approach		441	10.0	0.238	5.7	NA	0.0	0.0	0.00	0.58	46.0
West: Railway Street											
10	L2	640	10.0	0.342	5.7	LOS A	0.0	0.0	0.00	0.57	47.3
Approach		640	10.0	0.342	5.7	NA	0.0	0.0	0.00	0.57	47.3
All Vehicles		1403	10.0	0.896	12.8	NA	8.4	63.5	0.22	0.83	38.9

MOVEMENT SUMMARY



Site: 4 [Railway Street and Bridge Street PM Peak 2022]

Railway Street and Bridge Street
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: Railway Street											
6	R2	315	10.0	0.957	58.8	LOS F ¹¹	12.6	95.9	0.98	2.14	16.8
Approach		315	10.0	0.957	58.8	LOS F ¹¹	12.6	95.9	0.98	2.14	16.8
North: Bridge Street											
7	L2	507	10.0	0.497	5.7	LOS A	0.0	0.0	0.00	0.58	45.0
9	R2	412	10.0	0.497	5.7	LOS A	0.0	0.0	0.00	0.58	46.7
Approach		919	10.0	0.497	5.7	NA	0.0	0.0	0.00	0.58	45.9
West: Railway Street											
10	L2	360	10.0	0.192	5.7	LOS A	0.0	0.0	0.00	0.57	47.3
Approach		360	10.0	0.192	5.7	NA	0.0	0.0	0.00	0.57	47.3
All Vehicles		1593	10.0	0.957	16.2	NA	12.6	95.9	0.19	0.88	35.7

MOVEMENT SUMMARY

▽ Site: 4 [Railway Street and Bridge Street AM Peak 2022 + DEV]

Railway Street and Bridge Street
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: Railway Street											
6	R2	324	10.0	0.902	38.1	LOS E	8.7	66.2	0.96	1.73	22.1
Approach		324	10.0	0.902	38.1	LOS E	8.7	66.2	0.96	1.73	22.1
North: Bridge Street											
7	L2	217	10.0	0.239	5.7	LOS A	0.0	0.0	0.00	0.58	45.0
9	R2	225	10.0	0.239	5.6	LOS A	0.0	0.0	0.00	0.58	46.7
Approach		442	10.0	0.239	5.7	NA	0.0	0.0	0.00	0.58	46.0
West: Railway Street											
10	L2	640	10.0	0.342	5.7	LOS A	0.0	0.0	0.00	0.57	47.3
Approach		640	10.0	0.342	5.7	NA	0.0	0.0	0.00	0.57	47.3
All Vehicles		1406	10.0	0.902	13.1	NA	8.7	66.2	0.22	0.84	38.6

MOVEMENT SUMMARY

▽ Site: 4 [Railway Street and Bridge Street PM Peak 2022 + DEV]

Railway Street and Bridge Street
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: Railway Street											
6	R2	317	10.0	0.973	67.9	LOS F	14.6	111.3	0.99	2.32	15.2
Approach		317	10.0	0.973	67.9	LOS F	14.6	111.3	0.99	2.32	15.2
North: Bridge Street											
7	L2	515	10.0	0.501	5.7	LOS A	0.0	0.0	0.00	0.58	45.0
9	R2	412	10.0	0.501	5.7	LOS A	0.0	0.0	0.00	0.58	46.7
Approach		927	10.0	0.501	5.7	NA	0.0	0.0	0.00	0.58	45.9
West: Railway Street											
10	L2	360	10.0	0.193	5.7	LOS A	0.0	0.0	0.00	0.57	47.3
Approach		360	10.0	0.193	5.7	NA	0.0	0.0	0.00	0.57	47.3
All Vehicles		1604	10.0	0.973	18.0	NA	14.6	111.3	0.20	0.92	34.4

MOVEMENT SUMMARY

Site: 4 [Railway Street and Bridge Street AM Peak 2032]

Railway Street and Bridge Street
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: Railway Street											
6	R2	352	10.0	1.155	318.8	LOS F ¹¹	67.5	513.1	1.00	5.71	4.2
Approach		352	10.0	1.155	318.8	LOS F ¹¹	67.5	513.1	1.00	5.71	4.2
North: Bridge Street											
7	L2	236	10.0	0.260	5.7	LOS A	0.0	0.0	0.00	0.58	45.0
9	R2	246	10.0	0.260	5.6	LOS A	0.0	0.0	0.00	0.58	46.7
Approach		482	10.0	0.260	5.7	NA	0.0	0.0	0.00	0.58	46.0
West: Railway Street											
10	L2	700	10.0	0.374	5.7	LOS A	0.0	0.0	0.00	0.57	47.3
Approach		700	10.0	0.374	5.7	NA	0.0	0.0	0.00	0.57	47.3
All Vehicles		1534	10.0	1.155	77.6	NA	67.5	513.1	0.23	1.76	16.0

MOVEMENT SUMMARY

Site: 4 [Railway Street and Bridge Street PM Peak 2032]

Railway Street and Bridge Street
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: Railway Street											
6	R2	344	10.0	1.254	492.4	LOS F ¹¹	93.9	713.6	1.00	7.14	2.8
Approach		344	10.0	1.254	492.4	LOS F ¹¹	93.9	713.6	1.00	7.14	2.8
North: Bridge Street											
7	L2	555	10.0	0.543	5.7	LOS A	0.0	0.0	0.00	0.58	45.0
9	R2	450	10.0	0.543	5.7	LOS A	0.0	0.0	0.00	0.58	46.7
Approach		1005	10.0	0.543	5.7	NA	0.0	0.0	0.00	0.58	45.9
West: Railway Street											
10	L2	393	10.0	0.210	5.7	LOS A	0.0	0.0	0.00	0.57	47.3
Approach		393	10.0	0.210	5.7	NA	0.0	0.0	0.00	0.57	47.3
All Vehicles		1742	10.0	1.254	101.8	NA	93.9	713.6	0.20	1.87	12.7

MOVEMENT SUMMARY

Site: 4 [Railway Street and Bridge Street AM Peak 2032 + DEV]

Railway Street and Bridge Street
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: Railway Street											
6	R2	354	10.0	1.163	332.4	LOS F	70.3	534.3	1.00	5.87	4.0
Approach		354	10.0	1.163	332.4	LOS F	70.3	534.3	1.00	5.87	4.0
North: Bridge Street											
7	L2	237	10.0	0.261	5.7	LOS A	0.0	0.0	0.00	0.58	45.0
9	R2	246	10.0	0.261	5.6	LOS A	0.0	0.0	0.00	0.58	46.7
Approach		483	10.0	0.261	5.7	NA	0.0	0.0	0.00	0.58	46.0
West: Railway Street											
10	L2	700	10.0	0.375	5.7	LOS A	0.0	0.0	0.00	0.57	47.3
Approach		700	10.0	0.375	5.7	NA	0.0	0.0	0.00	0.57	47.3
All Vehicles		1537	10.0	1.163	80.9	NA	70.3	534.3	0.23	1.80	15.5

MOVEMENT SUMMARY

Site: 4 [Railway Street and Bridge Street PM Peak 2032 + DEV]

Railway Street and Bridge Street
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East: Railway Street											
6	R2	346	10.0	1.271	523.0	LOS F	99.0	752.3	1.00	7.40	2.6
Approach		346	10.0	1.271	523.0	LOS F	99.0	752.3	1.00	7.40	2.6
North: Bridge Street											
7	L2	563	10.0	0.547	5.7	LOS A	0.0	0.0	0.00	0.58	45.0
9	R2	450	10.0	0.547	5.7	LOS A	0.0	0.0	0.00	0.58	46.7
Approach		1013	10.0	0.547	5.7	NA	0.0	0.0	0.00	0.58	45.8
West: Railway Street											
10	L2	393	10.0	0.210	5.7	LOS A	0.0	0.0	0.00	0.57	47.3
Approach		393	10.0	0.210	5.7	NA	0.0	0.0	0.00	0.57	47.3
All Vehicles		1752	10.0	1.271	107.8	NA	99.0	752.3	0.20	1.92	12.2

MOVEMENT SUMMARY

▽ Site: 5 [Church Street and Bridge Street AM Peak 2015]

Church Street and Bridge Street
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Bridge Street											
1	L2	282	10.0	0.488	4.7	LOS A	0.0	0.0	0.00	0.53	42.1
3	R2	616	10.0	0.488	4.7	LOS A	0.0	0.0	0.00	0.53	42.4
Approach		898	10.0	0.488	4.7	NA	0.0	0.0	0.00	0.53	42.3
East: Church Street											
4	L2	257	10.0	0.143	4.7	LOS A	0.0	0.0	0.00	0.53	42.8
Approach		257	10.0	0.143	4.7	NA	0.0	0.0	0.00	0.53	42.8
West: Church Street											
12	R2	159	10.0	0.495	18.6	LOS B	2.0	15.2	0.85	1.05	30.1
Approach		159	10.0	0.495	18.6	LOS B	2.0	15.2	0.85	1.05	30.1
All Vehicles		1314	10.0	0.495	6.4	NA	2.0	15.2	0.10	0.59	40.5

MOVEMENT SUMMARY

▽ Site: 5 [Church Street and Bridge Street PM Peak 2015]

Church Street and Bridge Street
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Bridge Street											
1	L2	364	10.0	0.342	4.7	LOS A	0.0	0.0	0.00	0.53	42.2
3	R2	266	10.0	0.342	4.7	LOS A	0.0	0.0	0.00	0.53	42.4
Approach		630	10.0	0.342	4.7	NA	0.0	0.0	0.00	0.53	42.3
East: Church Street											
4	L2	651	10.0	0.362	4.7	LOS A	0.0	0.0	0.00	0.53	42.8
Approach		651	10.0	0.362	4.7	NA	0.0	0.0	0.00	0.53	42.8
West: Church Street											
12	R2	216	10.0	0.731	26.5	LOS B	3.8	28.9	0.92	1.25	25.9
Approach		216	10.0	0.731	26.5	LOS B	3.8	28.9	0.92	1.25	25.9
All Vehicles		1497	10.0	0.731	7.8	NA	3.8	28.9	0.13	0.63	39.1

MOVEMENT SUMMARY

▽ Site: 5 [Church Street and Bridge Street AM Peak 2017]

Church Street and Bridge Street AM Peak 2015
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Bridge Street											
1	L2	288	10.0	0.497	4.7	LOS A	0.0	0.0	0.00	0.53	42.1
3	R2	628	10.0	0.497	4.7	LOS A	0.0	0.0	0.00	0.53	42.4
Approach		916	10.0	0.497	4.7	NA	0.0	0.0	0.00	0.53	42.3
East: Church Street											
4	L2	260	10.0	0.145	4.7	LOS A	0.0	0.0	0.00	0.53	42.8
Approach		260	10.0	0.145	4.7	NA	0.0	0.0	0.00	0.53	42.8
West: Church Street											
12	R2	160	10.0	0.517	19.5	LOS B	2.1	15.9	0.86	1.06	29.5
Approach		160	10.0	0.517	19.5	LOS B	2.1	15.9	0.86	1.06	29.5
All Vehicles		1336	10.0	0.517	6.5	NA	2.1	15.9	0.10	0.59	40.4

MOVEMENT SUMMARY

▽ Site: 5 [Church Street and Bridge Street PM Peak 2017]

Church Street and Bridge Street AM Peak 2015
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Bridge Street											
1	L2	371	10.0	0.349	4.7	LOS A	0.0	0.0	0.00	0.53	42.2
3	R2	271	10.0	0.349	4.7	LOS A	0.0	0.0	0.00	0.53	42.4
Approach		642	10.0	0.349	4.7	NA	0.0	0.0	0.00	0.53	42.3
East: Church Street											
4	L2	661	10.0	0.368	4.7	LOS A	0.0	0.0	0.00	0.53	42.8
Approach		661	10.0	0.368	4.7	NA	0.0	0.0	0.00	0.53	42.8
West: Church Street											
12	R2	217	10.0	0.760	28.8	LOS C	4.1	31.1	0.93	1.30	24.9
Approach		217	10.0	0.760	28.8	LOS C	4.1	31.1	0.93	1.30	24.9
All Vehicles		1520	10.0	0.760	8.1	NA	4.1	31.1	0.13	0.64	38.8

MOVEMENT SUMMARY

▽ Site: 5 [Church Street and Bridge Street AM Peak 2017 + DEV]

Church Street and Bridge Street AM Peak
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Bridge Street											
1	L2	289	10.0	0.498	4.7	LOS A	0.0	0.0	0.00	0.53	42.1
3	R2	628	10.0	0.498	4.7	LOS A	0.0	0.0	0.00	0.53	42.4
Approach		917	10.0	0.498	4.7	NA	0.0	0.0	0.00	0.53	42.3
East: Church Street											
4	L2	262	10.0	0.146	4.7	LOS A	0.0	0.0	0.00	0.53	42.8
Approach		262	10.0	0.146	4.7	NA	0.0	0.0	0.00	0.53	42.8
West: Church Street											
12	R2	163	10.0	0.529	19.8	LOS B	2.2	16.5	0.86	1.07	29.3
Approach		163	10.0	0.529	19.8	LOS B	2.2	16.5	0.86	1.07	29.3
All Vehicles		1342	10.0	0.529	6.5	NA	2.2	16.5	0.10	0.60	40.4

MOVEMENT SUMMARY

▽ Site: 5 [Church Street and Bridge Street PM Peak 2017 + DEV]

Church Street and Bridge Street
Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Bridge Street											
1	L2	374	10.0	0.350	4.7	LOS A	0.0	0.0	0.00	0.53	42.2
3	R2	271	10.0	0.350	4.7	LOS A	0.0	0.0	0.00	0.53	42.4
Approach		645	10.0	0.350	4.7	NA	0.0	0.0	0.00	0.53	42.3
East: Church Street											
4	L2	664	10.0	0.370	4.7	LOS A	0.0	0.0	0.00	0.53	42.8
Approach		664	10.0	0.370	4.7	NA	0.0	0.0	0.00	0.53	42.8
West: Church Street											
12	R2	228	10.0	0.805	32.1	LOS C	4.8	36.2	0.94	1.39	23.6
Approach		228	10.0	0.805	32.1	LOS C	4.8	36.2	0.94	1.39	23.6
All Vehicles		1537	10.0	0.805	8.7	NA	4.8	36.2	0.14	0.66	38.3

MOVEMENT SUMMARY

Site: 5 [Church Street and Bridge Street AM Peak 2022]

Church Street and Bridge Street
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Bridge Street											
1	L2	302	10.0	0.522	4.7	LOS A	0.0	0.0	0.00	0.53	42.1
3	R2	659	10.0	0.522	4.7	LOS A	0.0	0.0	0.00	0.53	42.4
Approach		961	10.0	0.522	4.7	NA	0.0	0.0	0.00	0.53	42.3
East: Church Street											
4	L2	273	10.0	0.152	4.7	LOS A	0.0	0.0	0.00	0.53	42.8
Approach		273	10.0	0.152	4.7	NA	0.0	0.0	0.00	0.53	42.8
West: Church Street											
12	R2	168	10.0	0.601	23.1	LOS B	2.6	19.4	0.89	1.12	27.6
Approach		168	10.0	0.601	23.1	LOS B	2.6	19.4	0.89	1.12	27.6
All Vehicles		1402	10.0	0.601	6.9	NA	2.6	19.4	0.11	0.60	40.0

MOVEMENT SUMMARY

Site: 5 [Church Street and Bridge Street PM Peak 2022]

Church Street and Bridge Street
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Bridge Street											
1	L2	389	10.0	0.366	4.7	LOS A	0.0	0.0	0.00	0.53	42.2
3	R2	285	10.0	0.366	4.7	LOS A	0.0	0.0	0.00	0.53	42.4
Approach		674	10.0	0.366	4.7	NA	0.0	0.0	0.00	0.53	42.3
East: Church Street											
4	L2	693	10.0	0.386	4.7	LOS A	0.0	0.0	0.00	0.53	42.8
Approach		693	10.0	0.386	4.7	NA	0.0	0.0	0.00	0.53	42.8
West: Church Street											
12	R2	228	10.0	0.886	45.8	LOS D	6.5	49.1	0.97	1.64	19.4
Approach		228	10.0	0.886	45.8	LOS D	6.5	49.1	0.97	1.64	19.4
All Vehicles		1595	10.0	0.886	10.5	NA	6.5	49.1	0.14	0.69	36.7

MOVEMENT SUMMARY

▽ Site: 5 [Church Street and Bridge Street AM Peak 2022 + DEV]

Church Street and Bridge Street
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Bridge Street											
1	L2	304	10.0	0.523	4.7	LOS A	0.0	0.0	0.00	0.53	42.1
3	R2	659	10.0	0.523	4.7	LOS A	0.0	0.0	0.00	0.53	42.4
Approach		963	10.0	0.523	4.7	NA	0.0	0.0	0.00	0.53	42.3
East: Church Street											
4	L2	273	10.0	0.152	4.7	LOS A	0.0	0.0	0.00	0.53	42.8
Approach		273	10.0	0.152	4.7	NA	0.0	0.0	0.00	0.53	42.8
West: Church Street											
12	R2	169	10.0	0.606	23.2	LOS B	2.6	19.6	0.90	1.12	27.5
Approach		169	10.0	0.606	23.2	LOS B	2.6	19.6	0.90	1.12	27.5
All Vehicles		1405	10.0	0.606	6.9	NA	2.6	19.6	0.11	0.60	40.0

MOVEMENT SUMMARY

▽ Site: 5 [Church Street and Bridge Street PM Peak 2022 + DEV]

Church Street and Bridge Street
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Bridge Street											
1	L2	392	10.0	0.368	4.7	LOS A	0.0	0.0	0.00	0.53	42.2
3	R2	285	10.0	0.368	4.7	LOS A	0.0	0.0	0.00	0.53	42.4
Approach		677	10.0	0.368	4.7	NA	0.0	0.0	0.00	0.53	42.3
East: Church Street											
4	L2	693	10.0	0.386	4.7	LOS A	0.0	0.0	0.00	0.53	42.8
Approach		693	10.0	0.386	4.7	NA	0.0	0.0	0.00	0.53	42.8
West: Church Street											
12	R2	236	10.0	0.919	54.3	LOS D	7.9	59.9	0.98	1.83	17.5
Approach		236	10.0	0.919	54.3	LOS D	7.9	59.9	0.98	1.83	17.5
All Vehicles		1606	10.0	0.919	12.0	NA	7.9	59.9	0.14	0.72	35.5

MOVEMENT SUMMARY

▽ Site: 5 [Church Street and Bridge Street AM Peak 2032]

Church Street and Bridge Street
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Bridge Street											
1	L2	330	10.0	0.571	4.7	LOS A	0.0	0.0	0.00	0.53	42.1
3	R2	721	10.0	0.571	4.7	LOS A	0.0	0.0	0.00	0.53	42.4
Approach		1051	10.0	0.571	4.7	NA	0.0	0.0	0.00	0.53	42.3
East: Church Street											
4	L2	298	10.0	0.166	4.7	LOS A	0.0	0.0	0.00	0.53	42.8
Approach		298	10.0	0.166	4.7	NA	0.0	0.0	0.00	0.53	42.8
West: Church Street											
12	R2	184	10.0	0.817	40.1	LOS C	4.4	33.5	0.96	1.37	21.0
Approach		184	10.0	0.817	40.1	LOS C	4.4	33.5	0.96	1.37	21.0
All Vehicles		1533	10.0	0.817	8.9	NA	4.4	33.5	0.12	0.63	38.0

MOVEMENT SUMMARY

▽ Site: 5 [Church Street and Bridge Street PM Peak 2032]

Church Street and Bridge Street
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Bridge Street											
1	L2	426	10.0	0.400	4.7	LOS A	0.0	0.0	0.00	0.53	42.2
3	R2	311	10.0	0.400	4.7	LOS A	0.0	0.0	0.00	0.53	42.4
Approach		737	10.0	0.400	4.7	NA	0.0	0.0	0.00	0.53	42.3
East: Church Street											
4	L2	758	10.0	0.422	4.7	LOS A	0.0	0.0	0.00	0.53	42.7
Approach		758	10.0	0.422	4.7	NA	0.0	0.0	0.00	0.53	42.7
West: Church Street											
12	R2	249	10.0	1.207	420.2	LOS F	59.6	453.3	1.00	5.91	3.3
Approach		249	10.0	1.207	420.2	LOS F	59.6	453.3	1.00	5.91	3.3
All Vehicles		1744	10.0	1.207	64.0	NA	59.6	453.3	0.14	1.30	16.4

MOVEMENT SUMMARY



Site: 5 [Church Street and Bridge Street AM Peak 2032 + DEV]

Church Street and Bridge Street
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Bridge Street											
1	L2	332	10.0	0.572	4.7	LOS A	0.0	0.0	0.00	0.53	42.1
3	R2	721	10.0	0.572	4.7	LOS A	0.0	0.0	0.00	0.53	42.4
Approach		1053	10.0	0.572	4.7	NA	0.0	0.0	0.00	0.53	42.3
East: Church Street											
4	L2	298	10.0	0.166	4.7	LOS A	0.0	0.0	0.00	0.53	42.8
Approach		298	10.0	0.166	4.7	NA	0.0	0.0	0.00	0.53	42.8
West: Church Street											
12	R2	184	10.0	0.819	40.5	LOS C	4.4	33.7	0.96	1.38	20.9
Approach		184	10.0	0.819	40.5	LOS C	4.4	33.7	0.96	1.38	20.9
All Vehicles		1535	10.0	0.819	9.0	NA	4.4	33.7	0.12	0.63	38.0

MOVEMENT SUMMARY



Site: 5 [Church Street and Bridge Street PM Peak 2032 + DEV]

Church Street and Bridge Street
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Bridge Street											
1	L2	428	10.0	0.401	4.7	LOS A	0.0	0.0	0.00	0.53	42.2
3	R2	311	10.0	0.401	4.7	LOS A	0.0	0.0	0.00	0.53	42.4
Approach		739	10.0	0.401	4.7	NA	0.0	0.0	0.00	0.53	42.3
East: Church Street											
4	L2	758	10.0	0.422	4.7	LOS A	0.0	0.0	0.00	0.53	42.7
Approach		758	10.0	0.422	4.7	NA	0.0	0.0	0.00	0.53	42.7
West: Church Street											
12	R2	257	10.0	1.247	490.7	LOS F	69.9	530.9	1.00	6.56	2.9
Approach		257	10.0	1.247	490.7	LOS F	69.9	530.9	1.00	6.56	2.9
All Vehicles		1754	10.0	1.247	75.9	NA	69.9	530.9	0.15	1.41	14.6

Technical Memorandum

Title	Railway Street / East Street Intersection Performance Options Year 2032		
Client	Automation Feeding Devices Pty Ltd	Project No	80017052
Date	30/03/2017	Status	Draft /
Author	Antonio Arrollave	Discipline	Traffic and Transport
		Office	Sydney

1 Introduction

Cardno has been engaged to provide traffic advice for the zone changing from industrial use to mixed use (commercial/ retail and residential) of the subject site (3-7 East Street and 2 Railway Street, Lidcombe). The study area has previously been assessed in various studies including the Railway Street – East Street Rezoning (Cardno 2017), Traffic Impact Assessment for 3-7 East Street and 2 Railway Street Traffic (APEX, 2016) and the Transport and Accessibility Study for the Marsden Street Precinct (Arcadis 2015).

The traffic studies have flagged that the roundabout at Railway Street and East Street is likely to fail without any development by the year 2020.

Following the traffic study prepared by Cardno in 2017, it was recommended to investigate possible intersection options to improve the traffic performance and alleviate the existing and future conditions (design year traffic 2032) of the intersection prior the construction of the precinct 3-7 East Street and 2 Railway Street. **Figure 1** shows the location of the subject intersection.

This technical memorandum provides details of four intersection design options for further discussion and detailed assessment. These options include:

- > Two lane roundabout
- > Priority control intersection
- > No Right Turn
- > Signalised intersection.

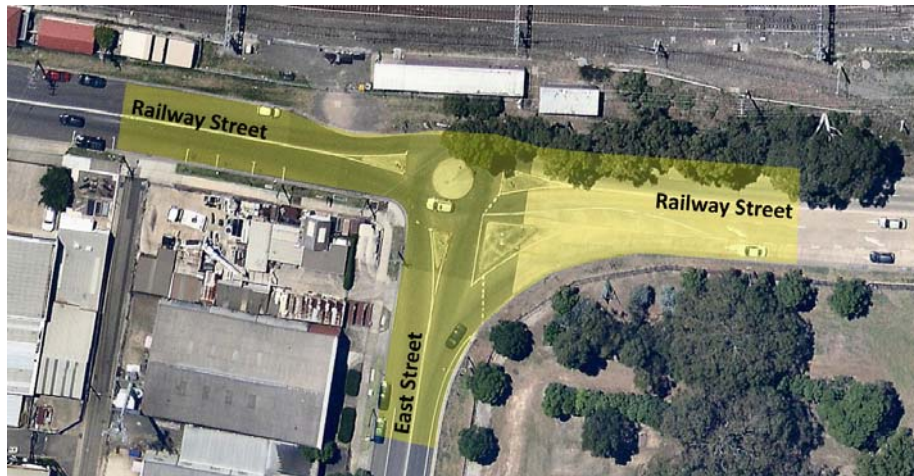


Figure 1 Subject area

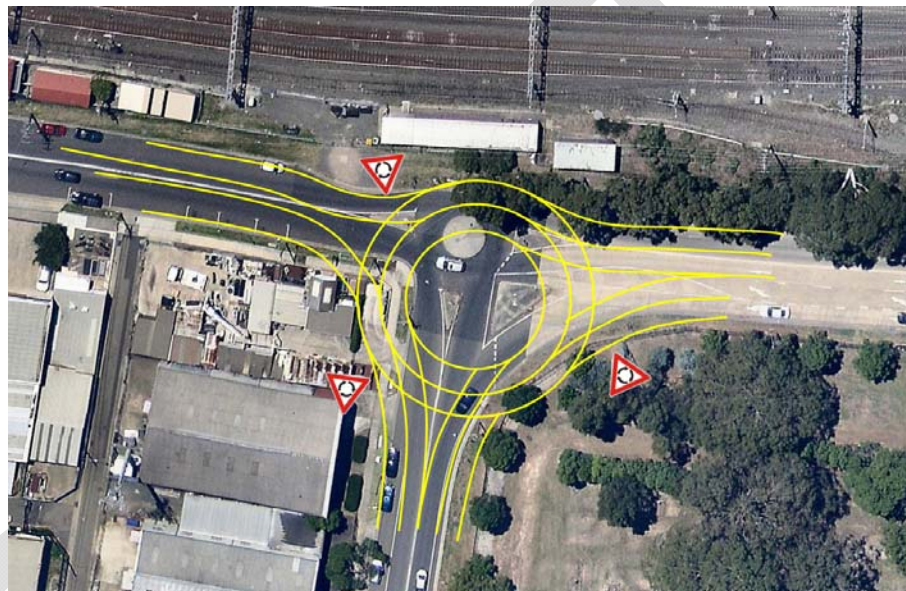


Figure 2 Intersection Option 1 Extend Footprint



Figure 3 Intersection Option 2 Extend Footprint

2 Intersection Options

1.1 Option 1 - Two lane roundabout

The two lane roundabout option proposes the upgrade of the existing roundabout from a one lane roundabout to a two lane roundabout. Key features of this new design layout include:

- > Addition of an extra lane on the northern side of the roundabout;
- > Addition of turning lanes on the western approach and southern approach;
- > Internal radius of roundabout is 10m minimum;
- > The slip lane will be kept for right turning on the eastern approach.

The site layout is shown below in **Figure 4**.

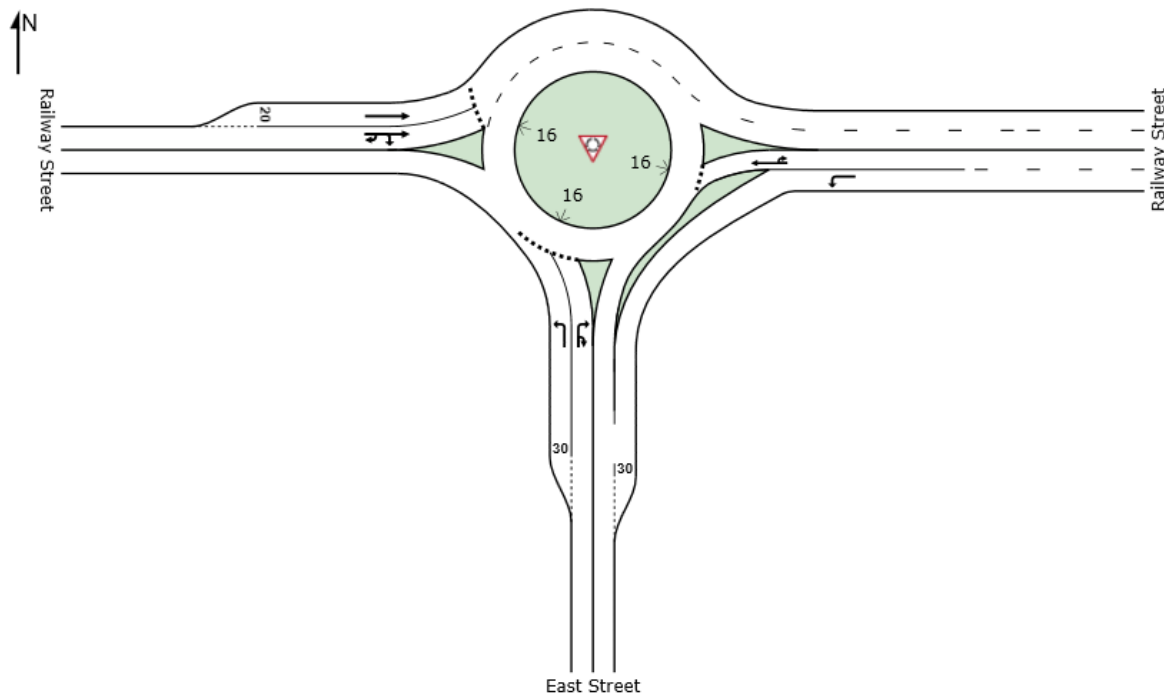


Figure 4 Option 1 – Roundabout

In 2032 base scenario, the intersection will operate a level of service B. Sidra intersection performance is shown below in **Table 1-1**. The intersection design layout would require a significant land acquisition in order to adjust the road geometric requirements.

Table 1-1 Option 1 - Railway Street/ East Street intersection performance (No Development)

Scenario	AM Peak				PM Peak			
	DoS	Delay (sec)	LoS	95 th ile Queue (m)	DoS	Delay (sec)	LoS	95 th ile Queue (m)
2032 Base	0.396	18.4	B	3.3	0.690	18.1	B	8.4

1.2 Option 2 - Priority control intersection

1.2.1 Option 2 – Right Turning movements allowed from Railway Street

Key features include:

- > Slip lane on eastern approach is retained;
- > Two right turning lanes on the southern approach;
- > One right turning lane from Railway Street to East Street;
- > Priority movements are from East Street to Railway Street (east).

The site layout is shown below on **Figure 5**.

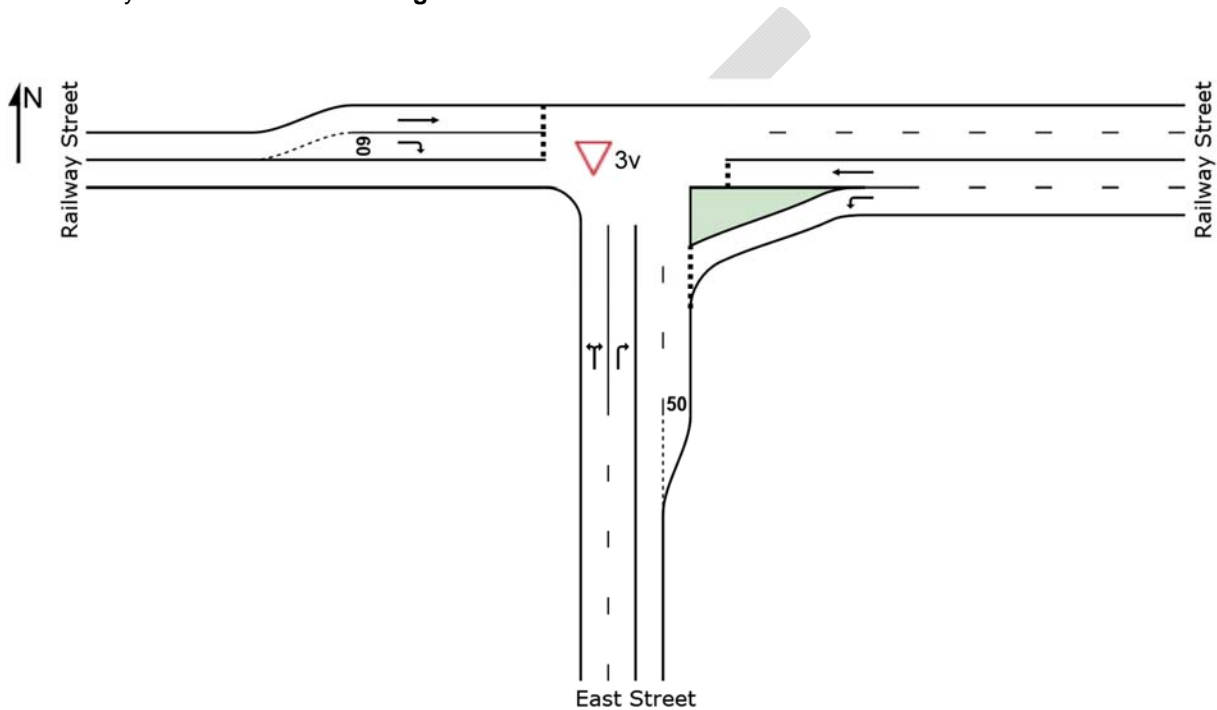


Figure 5 Option 2 – Priority Control Intersection – Right turning movements allowed

The priority controlled intersection will not provide additional capacity to the existing intersection, due to the excessive amounts of vehicles turning right from Railway Street onto East Street (western approach).

A sensitivity test was undertaken to identify the possible year where the intersection would still operate at satisfactory level of service. SIDRA analysis indicates that the intersection would deteriorate performance to near capacity in the 2018 for the PM peak period. Sidra intersection performance summary is shown below in **Table 1-2**.

Table 1-2 Option 2 - Railway Street/ East Street intersection performance (No Development)

Scenario	AM Peak				PM Peak			
	DoS	Delay (sec)	LoS	95 th ile Queue (m)	DoS	Delay (sec)	LoS	95 th ile Queue (m)
2017 Base	0.495	21.5	B	2.0	0.955	46.4	D	16.5
2032 Base	0.667	30.9	C	3.0	1.339	635.8	F	162.7

1.3 Option 3 - Priority control intersection

1.3.1 Option 3 – Right Turning movements banned from Railway Street

Key features include:

- > Slip lane on eastern approach is retained;
- > Two right turning lanes on the southern approach;
- > Right turning movements from Railway Street to East Street are banned
- > Priority movements are from East Street to Railway Street (east).

The site layout is shown below on **Figure 5**.

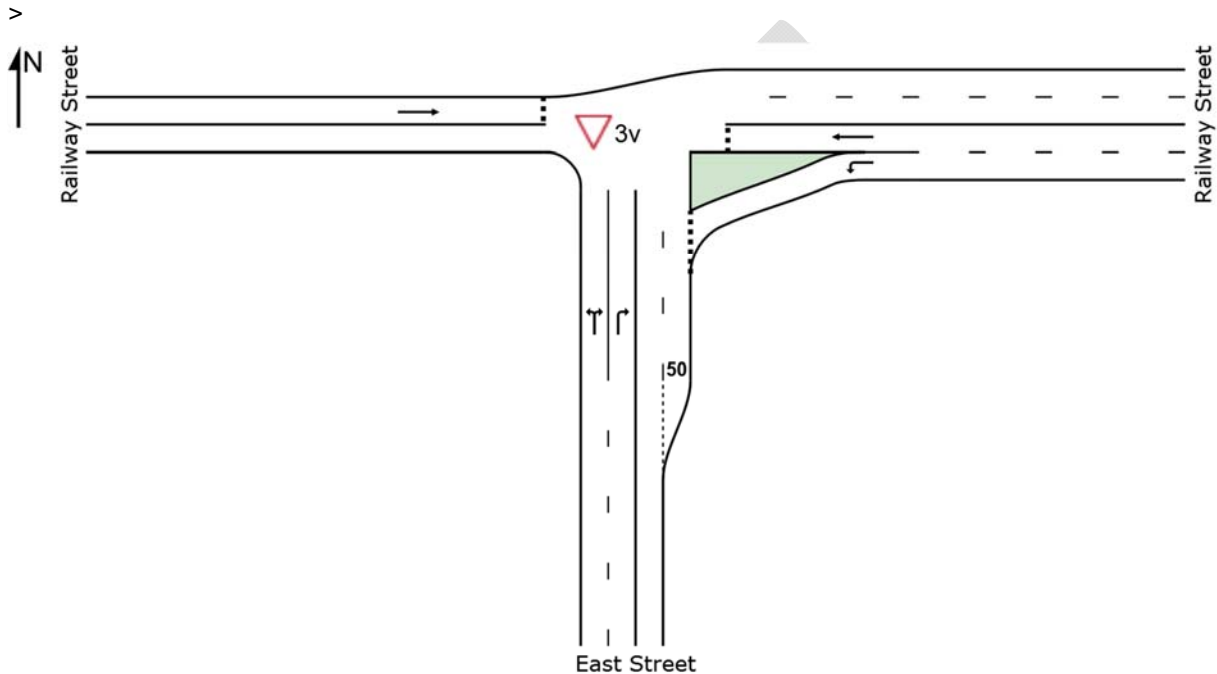


Figure 6 Option 3 – Priority Control Intersection – Right turning movements banned

The priority controlled intersection will provide additional capacity to the existing intersection, due to the right turning from Railway Street onto East Street (western approach) being banned. This intersection will perform at a LoS B during the AM Peak and LoS A during the PM Peak. Sidra intersection performance is shown below in **Table 1-3**.

Raphael Street runs parallel to East Street on its western side. While this intersection option assessment has not considered a new traffic re-distribution, it is recommended to consider this option with alternative treatments that could potentially be implemented on Raphael Street.

Table 1-3 Option 3 - Railway Street/ East Street intersection performance (No Development)

Scenario	AM Peak				PM Peak			
	DoS	Delay (sec)	LoS	95 th ile Queue (m)	DoS	Delay (sec)	LoS	95 th ile Queue (m)
2032 Base	0.527	21.0	B	2.3	0.533	12.6	A	3.0

1.4 Option 4 - Signalised intersection

The signalised intersection will provide additional capacity to the intersection. Key features include:

- > Additional turning lanes on the west and south approaches;
- > Retaining of the slip lane on the east approach. This slip lane will be a high angle slip lane with give way;
- > 60m of short lane for vehicles turning right from Railway Street to East Street.

The site layout is shown below in **Figure 7**.

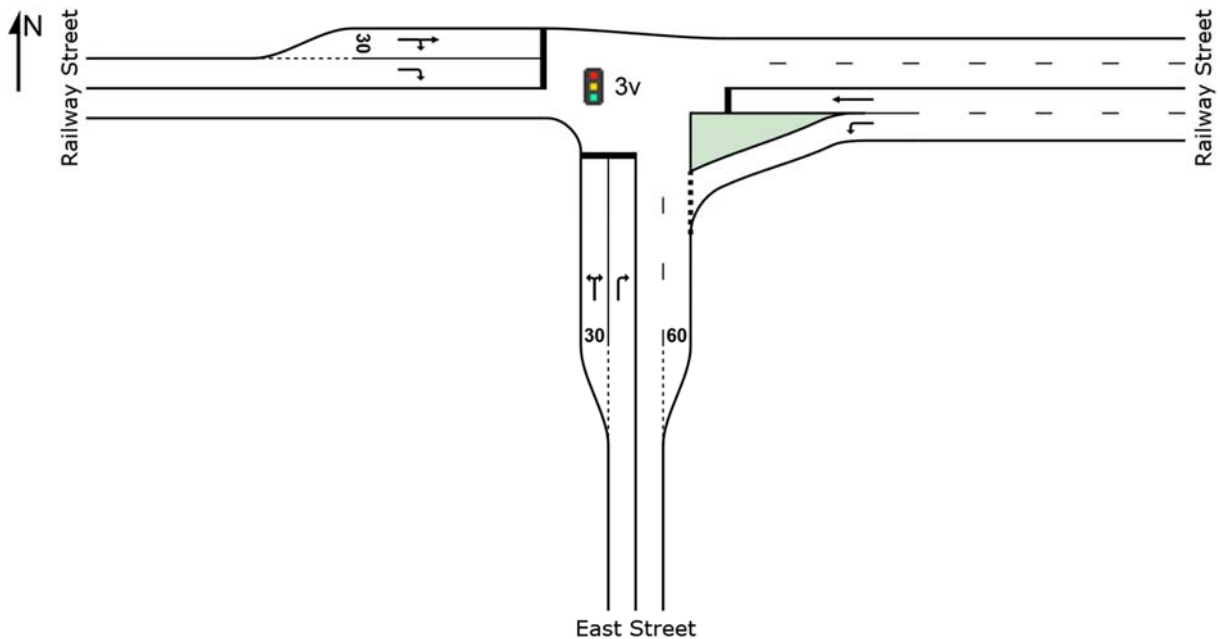


Figure 7 Option 4 – Signalised Intersection

In 2032 base scenario the intersection will operate a level of service C during the AM Peak and D in the PM Peak. Sidra intersection performance is shown below in **Table 1-4**.

Table 1-4 Option 4 - Railway Street/ East Street intersection performance (No Development)

Scenario	AM Peak				PM Peak			
	DoS	Delay (sec)	LoS	95 th ile Queue (m)	DoS	Delay (sec)	LoS	95 th ile Queue (m)
2032 Base	0.866	29.8	C	29.6	0.889	42.2	C	36.3

3 Conclusions

- The Railway Street and East Street intersection is likely to fail based on the existing configuration by year 2020.
- Cumberland Council is seeking for alternative options to improve the intersection performance and alleviate the traffic conditions prior the developments take place.
- Cumberland Council has recommended to investigate intersection design options that could improve the conditions of the intersections.
- Four (4) intersection options design have been assessed
 - > **Option 1** – Two lane roundabout
 - > **Option 2** – Priority control intersection
 - > **Option 3** – No Right Turn
 - > **Option 4** – Signalised intersection.
- Option 1 (Two-Lane roundabout) will operate at satisfactory Level of Service LoS of B during the AM and PM peak periods in year 2032. The intersection design layout would require a significant land acquisition in order to adjust the road geometric requirements. Figure 2 provides an approximation of the extend footprint that may be required for the implementation of this option.
- Option 2 (Priority Control Intersection) will operate at satisfactory level of Service LoS of C during the AM peak in year 2032. The PM peak period will perform at capacity and long delays would be expected.

A sensitivity test was undertaken to identify the possible year where the intersection would still operate at satisfactory level of service. SIDRA analysis indicates that the intersection would deteriorate performance to near capacity in the 2018 for the PM peak period.

- Option 3 (No Right Turn) will operate at satisfactory level of Service LoS of B and A during the AM peak and PM peak respectively in year 2032. The intersection option would require to eliminate the right turn from Railway Street into East Street southbound.

Raphael Street runs parallel to East Street on its western side. While this intersection option assessment has not considered a new traffic re-distribution, it is recommended to consider this option with alternative treatments that could potentially be implemented on Raphael Street.

- Option 4 (Signalised Intersection) will operate at satisfactory level of service LoS of C during both peak periods in year 2032.



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25 January 2018

The General Manager
Cumberland Council
PO Box 42
MERRYLANDS NSW 2160

Attention: **Ms Karen Hughes**
Strategic Planner

Dear Karen

**PLANNING PROPOSAL FOR MIXED USE REZONING OF
3-7 EAST STREET & 2 RAILWAY STREET, LIDCOMBE**

At its meeting of 20/12/16, the Cumberland Independent Hearing and Assessment Panel (CIHAP) considered a preliminary post exhibition report for the above planning proposal. The Panel resolved to defer consideration until further information was provided in relation to four matters:

- Revised traffic assessment using calibrated modelling;
- Economic impact assessment of supermarket;
- Overshadowing study of future park;
- Provision of bike path along East St.

A meeting was held between the applicant and Council's executive team on 23/11/17 to clarify Council's requirements in relation to three of the above matters which remain outstanding:

- Traffic management plan;
- Economic study;
- Overshadowing.

The outcomes of the meeting were documented in Council's letter of 18/12/17 and are addressed below.

Traffic management plan

We now enclose a Traffic Management Plan (TMP) by Cardno dated 24 January 2018 which addresses each of the matters outlined in Council's letter.

The TMP notes that the Railway St / East St intersection will be failing by 2022 without any development on the subject site. The proposed rezoning therefore does not generate the need for upgrading of this intersection. At worst, it will contribute a small proportion of the increased traffic using the intersection.

The TMP notes that the option of a two-lane roundabout at the Railway St / East St intersection would require substantial land acquisition from not only the subject site, but also from Rookwood Cemetery. Council's letter of 18/12/17 advises that acquisition from Rookwood Cemetery is not supported. The alternative option of a signalised intersection (which provides a better traffic outcome and does not require land acquisition) has therefore emerged as the most appropriate treatment for this intersection.

The findings of the TMP can now be considered in Council's overall traffic planning for Lidcombe Town Centre which will then inform the determination of appropriate Section 94 contributions to be levied across the whole town centre to help fund the total road works program for the centre.

The applicant has sought exemption from Section 94 contributions as part of the VPA offer associated with this Planning Proposal, due to the higher relative value of the public recreation land intended to be dedicated at no cost to Council.

To enable a speedy resolution of this issue, the applicant is now willing to modify this offer to provide for payment of the standard Section 94 contribution for Accessibility and Traffic. This will ensure that the applicant makes the same contribution towards traffic management facilities as any other developer within the town centre. Given the finding of the TMP that the need for upgrade of this intersection arises from traffic primarily generated by the Marsden Street Precinct rezoning and general background traffic growth, this is considered a generous offer which is fair and reasonable to all stakeholders.

The TMP addresses the bike path in general terms. It was previously noted that the concept scheme incorporates all setbacks requested by Council: Nil to Railway St, 4.0m to East St, 4.0m to the proposed parkland and 5.5m to Raphael St.

We have been advised by Council that these setbacks will accommodate the likely requirements of the bike path and the upgrade of surrounding streets. It would be premature to provide a detailed design for the bike path and we understand that this is not sought by Council at this early stage. There is scope to revisit these setbacks at DA stage once Council has resolved the detailed design of the bike path and adjacent street network.

Economic Study

An *Economic Impact Assessment* by Colliers International dated December 2017 is now enclosed. The EIA addresses all matters identified by Council and concludes that the proposal will have significant positive economic impacts.

Overshadowing

Council's letter has confirmed that overshadowing has been resolved and no further information is required.

We trust that the above and attached information will enable Council to progress the Planning Proposal. We look forward to the opportunity to discuss any issues, if requested.

Yours sincerely



Mark Shanahan BTP (Hons) Dip Law (LPAB) MPIA
Director