

Phase I Preliminary Site Investigation

618 Old Northern Rd, Dural NSW

Prepared for: Urbis Pty Ltd



ADE
CONSULTING
GROUP

Prepared for:

Urbis Pty Ltd

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618 Old Northern Rd, Dural

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Envirotech Australia Pty Ltd.

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ABBREVIATIONS

ADE	A.D. Envirotech Australia Pty Ltd
ALS	Australian Laboratory Services
AST	Above Ground Storage Tank
BGL	Below ground level (following excavation works)
BLGL	Below local area ground level
BR	Blind Replicate
BTEX	Benzene, toluene, ethyl-benzene, xylene
COC	Chain of Custody
DEC	Department of Environment and Conservation
DQI	Data Quality Indicators
DQO	Data Quality Objectives
EILs	Ecological Investigation Levels
ESLs	Ecological Screening Levels
GILs	Groundwater Investigation Levels
HILs	Health Investigation Levels
HSLs	Health Screening Levels
LPI	Land Property Information
LTO	Land Titles Office
NATA	National Association of Testing Authorities
NEPC	National Environmental Protection Council
NEPM	National Environmental Protection Measure
NSW EPA	New South Wales Environmental Protection Authority
OEH	Office of Environment and Heritage
OPPs	Organophosphorous Pesticides
OCPs	Organochlorine Pesticides
PAHs	Polycyclic Aromatic Hydrocarbons
PSI	Preliminary Site Investigation
QA/QC	Quality Assurance/Quality Control
RPD	Relative Percent Difference
SCID	Stored Chemical Information Database
SWL	Standing Water Level
SH&EWMS	Safety Health and Environmental Works Method Statement
TPH	Total Petroleum Hydrocarbons
TRH	Total Recoverable Hydrocarbons
UCL	Upper Confidence Limit
VAL	Validation Report
VHC	Volatile Halogenated Compounds

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1 INTRODUCTION

1.1 General Information

A. D. Envirotech Australia Pty Ltd (ADE) was engaged by Urbis Pty Ltd to undertake a Phase I Preliminary Site Contamination Investigation (PSI) to assess the potential for contamination at 618 Old Northern Rd, Dural NSW (hereafter referred to as the 'site').

The site entails Lot X DP 501233 in the Local Government Area of The Hills Shire Council, Parish of Nelson, County of Cumberland.

A site inspection was undertaken on the 3rd of July 2015 and comprised of a visual assessment of the site. Details of the field inspection are given in this report, together with comments on the significance of the findings of the investigation.

This report was completed in accordance with the *Guidelines for Consultants Reporting on Contaminated Sites*, NSW EPA, September 2000.

1.2 Proposed Development

ADE has been advised that, Urbis Pty Ltd, on behalf of their client, are re-zoning of the site from RU6 to most likely R2 for residential and mixed use purposes including hospital, aged care and retail.

1.3 Objectives

The objectives of the investigation were to:

- Identify past and present potentially contaminating activities;
- Identify potential sources of contamination and types of contaminants;
- Discuss the site condition;
- Provide a preliminary assessment of site contamination for the suitability of the proposed development; and
- Assess the need for further investigations.

1.4 Scope of Work

The scope of work required to achieve the objectives of the investigation involved the following:

- Completion of a Safety, Health & Environment Work Method Statement (SHEWMS);
- Desktop site review of:
 - Land title records;
 - Section 149 certificates;
 - WorkCover NSW;
 - NSW Environment and Heritage;
 - EPA contaminated lands register for notations; and
 - Dial Before You Dig service search;
- Review of past and current activities on the site;
- Review of past and current activities on neighbouring sites and identification of any potential on-site/off-site sources of contamination;

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- Review of past aerial photographs of the site and its surrounds to identify the locations of any previous buildings and/or other infrastructure associated with activities that could be on-site/off-site sources of contamination;
- Review of local geology and hydrogeology (including groundwater bore search);
- Site inspection by an experienced environmental consultant; and
- Preparation of a Phase I PSI report outlining:
 - Detailed information on the results of the desktop review and site inspection;
 - Conclusions regarding the potential for contamination at the site;
 - Conclusions regarding the sites suitability for the proposed development; and
 - Recommendations for a Phase II Detailed Site Investigation (DSI), should it be warranted.

1.5 Legislative Requirements

The legislative framework for the report is based on guidelines that have been issued and/or endorsed by the NSW Environmental Protection Agency (EPA) formerly the Office of Environment and Heritage (OEH) under the following Acts/Regulations:

- *Protection of the Environment Operations Act 1997*
- *Protection of the Environment Operations (Underground Petroleum Storage Systems) Regulation 2008*
- *Contaminated Land Management Act 1998*

The relevant guidelines issued under the provisions of the aforementioned Acts/Regulations include:

- *Guidelines for the NSW Site Auditor Scheme, NSW DEC 2006.*
- *Guidelines for Consultants Reporting on Contaminated Sites, NSW EPA, 2000.*
- *Guidelines for Assessing Service Station Sites, NSW EPA 1994.*
- *National Environmental Protection Measure (Assessment of Site Contamination), 1999, as amended 2013.*
- *Australian Standard AS 4482.1 Guide to the sampling and investigation of potentially contaminated soil. Part 1: Non-volatile and semi-volatile compounds.*
- *Australian Standard AS 4482.2 Guide to the sampling and investigation of potentially contaminated soil. Part 2: Volatile substances.*
- *Sampling Design Guidelines - NSW EPA, 1995.*
- *Waste Classification Guidelines Part 1: Classifying Waste, EPA, 2014.*
- *Guidelines for Implementing the Protection of the Environment Operations (Underground Petroleum Storage Systems) Regulation 2008, NSW DECCW 2009.*
- *Guidelines for the Assessment and Management of Groundwater Contamination, NSW DEC, 2007.*

1.6 Whole Report

No one section, or part of a section, of this report should be taken as giving an overall idea of this report. Each section must be read in conjunction with the whole of this report, including its appendices and attachments.

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2 SITE IDENTIFICATION

2.1 Site Location

The site has frontage to Derriwong Rd and The Old Northern Rd, Dural NSW as is shown by Figure 1 below.



Figure 1. Aerial photograph of the site (Photograph from maps.au.nearmap.com; accessed on 15.10.2015).

Bearings provided in this report are approximate only. For ease of representing locations in the report, the site is considered to be off the Old Northern Road having a nominal north-south direction assumed. All references to points of the compass within the report are based on these approximate bearings.

2.2 Site Inspection and Description

An Environmental Consultant from ADE carried out a site inspection on the 3rd of July 2015 in order to make a visual assessment of the site and provide information on potential site contamination issues, some of which are as follows:

- Surrounding land uses and potential contamination sources;
- Presence of hazardous or dangerous goods storage;
- Presence of Underground or Aboveground Storage Tanks, Generators or associated fuel transfers systems i.e. fuel lines;
- Condition of current structures, stockpiles, vegetation and soil;
- Proximity to water bodies/courses; and
- Visible and/or olfactory evidence of contamination.

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Figure 2. Aerial photograph of the site from map dated October 2009 (Photograph from maps.au.nearmap.com; accessed on 15.10.2015).

1. Residential House
2. Shed 3 - Workshop
3. Shed 2 – Maintenance equipment storage
4. Shed 1 – Processing shed
5. Eastern carpark
6. Approximate location of Above Ground Storage Tank (AST)
7. Western carpark
8. Constructed dam
9. Hazardous goods store
10. Former market garden / orchard across site

The former orchard and agricultural site comprises a large portion of land with a narrow frontage to The Old Northern Rd and Derriwong Rd situated on the northern and eastern boundaries respectively. The site is approximately 4.5 ha with large cleared grassland sloping from east to west. A large dam is present in the south-western corner of the site. A number of old storage sheds and maintenance buildings are present in the eastern portion of the site. This area appears to have been primarily utilised for the purpose of storing and running a former orchard. Large equipment and processing sheds are present as well as a residential house which was unoccupied at the time of the inspection.

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There is remnant evidence of former market garden use with windrows present across the site. Asphalt roads are present along the southern and northern boundary as well as along the eastern edge of dam to the north bisecting the property.

The Dam wall varies in size and materials with height ranging from 0.5m to greater than 10m in height. The dam appears to be constructed of imported fill. Pieces of asphalt, concrete and terracotta piping were observed on the surface of the dam exterior. A maintenance and pump shed are located adjacent to the dam. One of the sheds is signposted as a dangerous goods storage shed with a toxic sign (6) on the door stating a "Licensed capacity of 3000 L".

The dam appears to have been used for irrigation for the former orchard. It is not clear what materials were used for pipes associated with the irrigation. A pump shed was observed adjacent the dam.

Areas of seepage were observed on the western and southern edges of the dam along the base of the dam wall. An iridescent sheen was observed on the surface of the water in a number of locations. A section of dark silt like material was observed along the southern wall of the dam.

A carpark area was observed on the eastern edge of the dam, and is to be referred to as the western carpark, the area is covered with asphalt. A small stockpile (approximately 40m³) was observed consisting of imported fill with building materials observed (gravel, glass, ash). The area appeared to have previously been used for stockpiling materials.

The maintenance and storage facilities for the site are predominantly located in the eastern section of the site. A levelled platform is present on the eastern most point of the buildings with evidence of cut and fill activities present. An asphalt carpark, referred to as the eastern carpark was observed adjacent to shed 1 (refer to Figure 2). An above ground storage tank (AST) with significant localised staining present in the surrounding area was observed. A diesel odour was noted. The storage tank was poorly maintained and appeared to contain fuel. The estimated volume of the tank was 2,000 L. Presumed asbestos cement sheeting and debris was observed on the soil surface in surrounding area surface. A disused 44 gallon drum full of ash was observed.

Shed 1 appears to have been utilised for the processing of the produce from the orchard. The shed is situated on a raised platform of imported fill. A septic tank was observed on the northern exterior of the shed. A concrete pylon was noted on the southern exterior, the pylon was noted to be a potential support for an additional storage tank however no olfactory or visual signs of staining were observed. A generator was observed adjacent to the pylon. The interior of the shed was lined with presumed SMF insulation, a cool room for fruit storage was observed. The ground was covered with asphalt in fair condition with numerous areas of staining present on the ground.

Shed 2 is situated immediately to the south of shed 1. The shed was noted to be much older and constructed of timber and corrugated metal. Large volumes of old farming and maintenance equipment were present in a number of storage bays. Storage of chemicals was observed including oil, transmission fluid and more than 10 Castrol labelled 44 gallon drums. An old disused tractor was present. The ground within the shed was unsealed and a piece of asbestos debris was observed on the soil surface.

Shed 3 is separated from shed 2 by an awning, sections of the structure were constructed of asbestos cement sheeting predominantly around the southern exterior of the shed. Asbestos cement sheeting was noted to be in fair condition.

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The interior of shed 3 appeared to have been used as a workshop of various purposes. An asphalt capping was present in poor condition with significant cracking across the area. Hydrocarbon staining was observed on the soil surface. It appeared that vehicle maintenance of farming equipment had been carried out within shed 3.

On the eastern most portion of the site there is a residential house which appears to have been constructed in the 1980s. Presumed asbestos cement eaves were observed. The natural soil profile appeared to have been altered with evidence of cutting and filling for the purpose of levelling beneath the concrete slab. On the southern boundary of the site adjacent to the residence there is an asbestos cement shed as well as a garden bed along the edge of the driveway noted to contain fill materials with asbestos observed on the soil surface.

Photographs and site inspection notes taken on the 3rd July 2015 can be found in Appendix III – Photographs.

2.3 Surrounding Land Use

At the time of inspection the primary surrounding land-uses were observed as follows:

- *Northern boundary:* Immediately to the north of the site is Dural Public School which consists of landscaped terraces and buildings as well as playing fields in the lower eastern portion of the site. Adjacent the north-eastern boundary of the site is cleared and vacant land formerly utilised for orchard growing. Further north is a vacant block of land formerly used as a fruit shop and landscape supply storage area. Further north again is a nursery and industrial / commercial site.
- *Eastern boundary:* east of the subject site is The Old Northern Rd and then agricultural and former agricultural sites used for both commercial and residential purposes;
- *Southern boundary:* To the south of the site is 21 Derriwong Rd, which is understood to have formerly been adjoined to the subject site and utilised for the growing of orchards. Adjoining 21 Derriwong to the south is a residential property of significant size with a large associated paddock. Further south are residential properties; and
- *Western boundary:* West of the subject site are residential properties and bushland reserve which adjoins rural residential properties further to the west.

2.4 Summary of Site Details

Table 1 below provides a summary of details pertaining to the site.

Table 1. Site details and information.

Site Details	
Site address	618 Old Northern Rd, Dural NSW
Title identification(s)	Lot X DP 501233
Current site use	Rural agricultural / Residential
Proposed site use	Mixed use / residential and commercial
Investigation area	Approximately 4.5 ha

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3 PHYSICAL SETTING

3.1 Site Topography and Hydrology

The sites elevation varies between approximately 188 m AHD and 218 m AHD. The topography slopes moderately down from east to west. The fall of the land flows towards a second order stream which feeds into O'Haras Creek which is approximately 200 m west of the western border of the site. Much of the surface water flow is expected to be captured onsite by the large dam situated on the south-western boundary. Additional surface water flow and groundwater is expected to follow the slope of the land and flow westward to O'Haras Creek.

3.2 Local Geology and Soil

The site is located on a Glenorie Soil Landscape (gn) as indicated on the Sydney Soil Landscape Map, prepared by the Soil Conservation Services of NSW.

The geology of the Glenorie Soil Landscape is underlain by Wianamatta group Ashfield Shale and Bringelly Shale formations. The Ashfield shale is comprised of laminate and dark grey shale. Bringelly shale consists of shale, calcareous claystone, laminate and fine to medium grained lithic-quartz stone.

Soils are shallow to moderately deep (< 100cm) with variability across upper slopes and drainage gullies.

The topsoil (A1 Horizon) consists of a friable dark brown loam, with moderately to strongly pedal structure. apedal single-grained structure and porous sandy fabric. The pH ranges from strongly acid (pH 4.0) to slightly acid (pH 6.0).

Beneath this layer occurs the B Horizon consisting of hardsetting clay loam. The pH ranges between strongly acid (pH 4.0) to slightly acid (pH 6.5).

In conjunction with the B Horizon a brown, strongly pedal medium clay is present. The pH varies from strongly acid (pH 4.5) to moderately acid (pH 6.5). Strongly weathered sandstone fragments are common. Roots and charcoal fragments are rare.

It should be noted that the area occurs close to a transition between Glenorie and Lucas Heights soil landscapes and therefore transitional phases may occur and vary depending on the exact location.

Fill Material

No intrusive works were conducted during the site inspection however opportunistic soil profiles and surface soils suggest the presence of fill materials beneath the shed 1, shed 2 and shed 3, the house, throughout the dam wall, carpark, and along the driveway. Based on the evidence of former agricultural use, it is possible that top soil may have been imported to add nutrients and provide a growth medium for crops grown on site.

3.3 Hydrogeology

It was beyond the scope of work to study the groundwater flow direction. However, as previously mentioned in the above section, the local groundwater flow is likely to have a westerly direction towards O'Hara Creek which is located approximately 200 m to the west and flows from south to north.

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A search for registered groundwater wells within a 500 m radius of the site was undertaken by ADE via the NSW Office of Water (NSW Groundwater works, NR Atlas website). A groundwater bore was located on site in the south-western corner of the site (GW105866) with an additional 4 located nearby. Records of the groundwater bore on site indicate that the well was installed for stock and or domestic purposes. The well has a licensed status of “converted” and was established on the 05/05/2005. No additional information relating to standing water level or soil profiles was provided. A nearby groundwater well (GW105497) which is located approximately 170 m north of the site indicates a standing water level of 29 m (refer to Appendix IV – NSW Groundwater).

3.4 Acid Sulphate Soils

A review of the Acid Sulphate Soil Risk Maps demonstrated that the site is within an area of “no known occurrence or low risk” of acid sulphate soils (refer to *Appendix V – Acid Sulfate Soilss*). No further investigation is required with regards to acid sulphate soils however consideration of the fill materials is necessary in relation to Potential Acid Sulfate Soil (PASS) and Actual Acid Sulfate Soils (ASS)

4 SITE HISTORY

4.1 Historical Land and Title Search

The site history has been compiled from information gathered from the Land Titles Office (LTO), Land Property Information (LPI) and Council records.

The site entails Lot X DP 501233 in the Local Government Area of The Hills Shire Council, Parish of Nelson, County of Cumberland.

Table 2. Summary of LTO records for Lot X, Deposited Plan (DP) 501233

Date	Transferred/Leased From	Transferred/Leased To	Transfer No.	Certificate reference
Lot X DP501233				
30.06.1823	Crown land	Stephen Smith	N/A	Vol 12361 Folio 235
11.09.1964	Unknown	Alan Raymond Traffel, contractor and Ruth Blanche Traffel of Dural	J797841	Vol 9750 Folio 77
9.6.1978	Alan Raymond Traffel, contractor and Ruth Blanche Traffel of Dural	Easement for transmission line	P689956	Vol 12361 Folio 235
23.8.1989	Converted to computer folio	Unknown	N/A	Lot 2 DP 567995
15.2.2010	Unknown	Unknown – Departmental dealing	AF307786	X/501233
21.10.2011	Unknown	Unknown – Departmental dealing	AG513276	X/501233

The information obtained from the LTO, LPI and Council Records is unclear with regards to the former owners of the land due to missing information on the documentation (Refer to Appendix I – LTO Records). No information can be extrapolated with regard to contamination from the LTO records.

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4.2 NSW Office of Environment and Heritage

A search of the NSW Office of Environment and Heritage public register of state heritage inventory items identified no heritage listed items within the general area of the subject site (Refer to Appendix VI – NSW OEH State Heritage Records).

4.3 Aerial Photographs Review

A review of aerial photographs was conducted and is summarised in Table 3 below. Aerial photographs from the years of 1930, 1947, 1956, 1965, 1986, 1994, 2010, and 2015 were examined (refer to Appendix II - Aerial Photographs).

Table 3. Summary of aerial photography.

Year	Type	Subject Site Description	Adjacent Site Description
1930	Black and White	The site consists of a cleared area on the eastern portion of the site. There appears to be a building present in the eastern corner. A strip of windrows is evident immediately to the west. A dark strip potentially due to a drainage line or retained vegetation is evident from east to west. A large portion, approximately ½ of the site has vegetation retained. In the southern corner of the site, a portion of cleared market gardens is evident attached to a large scale market garden.	To the north of the site is cleared land which appears to be unused, or used for grazing. Agricultural properties can be observed on the eastern side The Old Northern Rd. To the west of the subject site is a large market garden. East of the site is predominantly cleared land with evidence of market gardens. To the south and south-west is remnant bushland.
1947	Black and White	The site remains largely unchanged.	The surrounding area remains largely unchanged, rural and agricultural lands surrounding appear to be more abundant than previous photo.
1956	Black and White	Additional clearing has been undertaken along the above mentioned vegetation running from east to west. Additional structures have been erected to the west of the main building. The building and cleared area surrounding it are of a significant size and are consistent with the older sheds present on site. Evidence of land disturbance is clear from the aerial photograph. The rest of the site remains largely unchanged.	Development of the site to the north (Dural Public School) has occurred. Development of property further north has occurred. Former market gardens along the western boundary have been removed and are now cleared and grassed land. Derriwong Rd has been established. Clearing of bushland to the south has occurred.

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Table 3. continued

Year	Type	Subject Site Description	Adjacent Site Description
1965	Black and White	The site has been entirely covered with market gardens evidenced by wind rows covering the entire site. There appears to be the walls of the dam present in the south-western portion of the site.	Properties to the north appear unchanged. A large residential property to the west has been constructed. Clearing to the west and south-west has occurred. Residential and farmstead style house appear to the south.
1986	Colour	The site appears largely unchanged with the addition of a large shed to the north of buildings previously present on site. A number of roads bisecting the site can be observed by cleared lines crossing the site.	Land to the north appears to be used for market gardens in areas. The neighbouring property to the south has been developed as agricultural land with market gardens evident across the entire site. A large building has been constructed which is understood to be a former fruitshop. The surrounding areas remain largely unchanged.
1994	Colour	The site appears largely unchanged. A cleared portion on the eastern corner of the dam is evident and appears to be consistent with the carpark area present today.	The surrounding areas appear unchanged.
2010	Colour	In focus aerial photographs indicate the presence of 2 small structures adjacent the northern edge of the dam, it is unclear how long they have been present. The site is covered with what appears to be fruit trees. Stockpile materials can be observed within the carpark adjacent the dam. Rubbish and junk is present around the eastern carpark situated beneath the sheds on site. A dark patch beneath the location of the AST identified on site can be observed.	The surrounding areas appear unchanged.
2015	Colour	The planted trees have been removed and most of the rubbish removed. The site has been allowed to be covered in grass. There appears to have been materials added to the southern and western wall of the dam.	The southern neighbouring property has also has previously planted trees and rubbish removed. The surrounding area appears largely unchanged.

4.4 Contaminated Land Register Search

A search of the sites listed by the EPA under the *Contaminated Land Management Act 1997* revealed that no records have been issued against the site. No records of other contaminated sites that could have a potential impact on the site are present on the properties in the area surrounding the site (Refer to Appendix X – EPA Contaminated Sites Register).

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4.5 Previous Investigation Reports

No previous investigative reports for the site or surrounding area have been provided by the client.

4.6 Section 149

The site is currently zoned under Zone RU6 Transition under The Hills Local Environmental Plan 2012. The Planning Certificate under Section 149 of the *Environmental Planning and Assessment Act 1979* (See Appendix VII – Section 149 Certificate) provides the state and local environmental planning instruments which affect the site.

The following matters are prescribed by section 59 (2) of the Contaminated Land Management Act 1997 as additional matters to be specified in the planning certificate.

- The land is not within an investigation area or remediation site under Part 3 of the Contaminated Land Management Act 1997;
- The land is not subject to an investigation order or an remediation order within the meaning of the Contaminated Land Management Act 1997;
- The land is not subject to a voluntary investigation proposal (or voluntary remediation proposal) that is the subject of the Environmental Protection Authority's agreement under Section 19 or 26 of the Contaminated Land Management Act 1997; and
- The land is not subject to a site audit statement within the meaning of the Contaminated Land Management Act 1997.

4.7 Dial Before You Dig

An online search for utilities located within the site was conducted and is summarised in Table 4, below. Asset owners were notified and provided information on their utilities (refer to Appendix VIII – Dial Before You Dig).

Table 4. Summary of utilities located on or adjacent to the site

Asset Owner	Utility Type	Utility Location
Augrid	Underground Cable	No services present within the boundary of the subject site.
Telstra	Fibre Optic Cables	A Telstra cable runs along the northern boundary of the site adjacent to the site boundary as well as from the The Old Northern Rd to the approximate location of the residential property. Conduits are identified as PVC
Sydney Water	Water	No services present within the boundary of the subject site.
Endeavour Energy	Electrical	No services present within the boundary of the subject site.
Jemena	Gas	No services present within the boundary of the subject site.

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4.8 Assessment of Historical Information Integrity

The site history assessment has been obtained from a variety of resources including government records from the NSW land titles office, local council, historical archives, historical aerial photographs, NSW Office of Water and EPA. The veracity of the information from these sources is considered to be high. The site history assessment is generally considered to be of high integrity with respect to the historical use of the site.

4.9 WorkCover

A search of the Stored Chemical Information Database (SCID) and the microfiche records held by WorkCover NSW has not located any records pertaining to the above mentioned premises (Refer to Appendix IX – NSW WorkCover).

5 POTENTIAL CONTAMINATION TYPES AND RECEPTORS

5.1 Potential Contamination Types

Table 5 below provides details of potential contamination types that were identified during the investigation. These are Contaminants of Potential Concern (COPC) were noted for each have the potential to have migrated to or be found on the site based on the site history.

Table 5. Potential Sources, Locations and Types of Contaminants.

Potential Source of contamination	Location	Migration Pathway	Contaminants of Potential Concern
Previous Land-use – Orchard during the 1940s onwards	Entire site	Spray	OCPs & OPPs
Major road way adjacent to site (Old Northern Rd)	Perimeters of site	Surface water run off	Heavy Metals
Irrigation of site	Throughout site	Imported to site	Asbestos conduits
Poor demolition practices / site maintenance	Area surrounding sheds 1, 2 and 3	Imported to site	Asbestos
Previous Land-use – Storage of agricultural equipment and supplies	Site shed and surrounding areas associated with maintenance and storage of materials	Leaking and spillage	Heavy Metals, PAHs, TRHs, BTEX
Storage shed presumed to have had chemicals stored within it	Storage shed and immediate surrounds	Leaking and spillage	PAHs, TRHs, BTEX and Phenols
Above Ground Storage Tanks (AST)	Eastern carpark and areas down slope of AST	Leaking and spillage	TRH, BTEX and lead (Pb)

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Table 5. continued ...

Potential Source of contamination	Location	Migration Pathway	Contaminants of Potential Concern
Importation of fill	Dam wall, eastern and western carpark, beneath shed 1, shed 2 and shed 3, along driveway , eastern and western carpark	Importation to site	Heavy Metals, PAHs, TRH, BTEX and Asbestos
On site waste water treatment	Adjacent to Septic tank	Demolition and leakage	Heavy metals and bacteria
Structures on site	All buildings	Importation to site, potential spread via poor demolition practices	Asbestos and lead paint

No specific assessment of groundwater contamination has been undertaken within this investigation.

5.2 Potential Transport Mechanism

Primary transport mechanisms for the migration of potential contaminants on to the site or off the site include:

- Airborne particulates due to wind turbulence events;
- Surface water runoff and storm water drainage;
- Downward migration and leaching via infiltration of rain water into the soil; and
- Later migration via groundwater.

5.3 Potential Contamination Receptors

The main potential contamination receptors were considered to include:

- Future construction / utility workers involved in excavation for future development of the site;
- Future residents and or users of the site;
- The aquatic ecosystems in O’Haras Creek.

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5.4 Potential Contamination Discussion

During the course of the site inspection olfactory indication and visual staining directly beneath and around the Above Ground Storage Tank (AST) were noted. There is the potential for localised spreading of contamination to surrounding areas over numerous years of leakages and spills. Asbestos was observed on the soil surface in a number of locations, specifically around the site sheds, on the surface of the eastern carpark and on the surface of imported fill within garden beds on the southern boundary. Fill materials and altered natural soil profiles were observed across the site. A small stockpile was observed at the western carpark, no asbestos was observed. An area on the southern exterior of shed 1 with a concrete slab was noted to possibly have been used as a platform for an AST, however no obvious staining was observed.

Materials associated with the Dam wall are from an unknown location and the materials appear to have been imported from offsite. As such the nature of the materials is unknown. Surface examination of the soils indicated the majority of the materials appeared to be clean fill however areas of dumped rubbish including tiles, bricks, concrete and asphalt were observed in a number of locations.

Areas within and around the site storage sheds are expected to have surface contamination based on the staining, presence of asbestos and continued use of the site for industrial style activities.

Ongoing usage of the subject site for agricultural purposes, both as an orchard and what appears to be vegetable crops, it is considered likely that regular spraying of the site with pesticides and herbicides occurred over an extended period of time. As such the entire site has the potential for ongoing exposure and elevated levels of Organochlorine Pesticides (OCPs) and Organophosphate Pesticides (OPPs).

Due to the proximity of a major road (The Old Northern Rd) there is a low to moderate potential for contamination to have migrated on to the site via surface water runoff. As such limited sampling on the perimeter of the site should be undertaken to address this potential issue. Contaminants of concern include heavy metals, TRH, and BTEX.

The onsite waste water treatment tank observed provide a potential source of contamination in the form of bacteria and heavy metals. Removal of the tank and trenches is to be carried out in accordance with the Local Government Authority (local council) requirements.

The residential house and large sheds present on the subject site provides possible localised contamination surrounding the building footprint. Asbestos cement debris was observed on the soil surface in a range of areas. Presumed lead paint may be on and around the sheds and or house and should be managed appropriately. A hazardous materials survey should be undertaken prior to any demolition practices being undertaken. All hazardous materials are to be removed by a suitably qualified contractor prior to demolition of the house. Prior to disposal offsite, building rubble present on the northern boundary of the site should be inspected for potential asbestos contamination.

Results from the Stored Chemical Information Database no dangerous goods have were registered to the property address, however an AST is present on site.

Upon review the available information presented within the body of this report, it is the opinion of ADE that there is the potential contaminants of concern to pose a risk to the proposed future users of the site and that further investigation into the nature and extent of contamination (if present) is required.

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6 CONCLUSIONS

Based on the data and evidence collected in the course of the site inspection and site history review, the findings of the Phase I PSI are as follows:

- The land –use has been predominantly agricultural since the 1940’s, prior to this the land use is not clear;
- Presumed asbestos containing materials were observed in a number of locations on the site;
- Based on ongoing usage of the subject site for agricultural purposes it is likely that regular spraying of the site with pesticides and herbicides has occurred over an extended period of time;
- Visual inspection revealed the presence of an Above Ground Storage Tank (AST) with significant localised staining surrounding the area;
- Areas of imported fill were observed in various locations of the site including the carparks, areas surrounding the sheds and small stockpiles;
- A large dam with significant quantities of fill materials of an unknown origin is present on the south-western corner of the site;
- Asbestos cement debris was observed on the soil surface in a range of areas. Presumed lead paint may be on and around the sheds and or house and should be managed appropriately. A hazardous materials survey should be undertaken prior to any demolition practices being undertaken.
- Site sheds have been used for storage and maintenance of farming and agricultural equipment as well as fuels and transmission fluid; and
- It is the opinion of ADE that there is the potential for contaminants of concern to pose a risk to the proposed future users of the site and that further investigation into the nature and extent of contamination (if present) is required. .
- ADE considers that it is likely that any contamination detected during further investigations (if present) will be capable of being remediated such that the site is suitable for the proposed land use.

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7 LIMITATIONS

This report has been prepared for use by the client who has commissioned the works in accordance with the project brief only and has been based on information provided by the client. The advice herein relates only to this project and all results, conclusions and recommendations made should be reviewed by a competent and experienced person with experience in environmental investigations, before being used for any other purpose. A.D. Envirotech Australia Pty Ltd (ADE) accepts no liability for use or interpretation by any person or body other than the client who commissioned the works. This report should not be reproduced or amended in any way without prior approval by the client or ADE and should not be relied upon by any other party, who should make their own independent enquiries.

Furthermore, soils, rock and aquifer conditions are often variable, resulting in non-homogenous contaminant distributions across a site. Boundaries between zones of variable contamination are often indistinct and have been interpreted based on available information and the application of professional judgement. The accuracy with which the subsurface conditions have been characterised depends on the frequency and methods of sampling and the uniformity of subsurface conditions and is therefore limited by the scope of works undertaken.

This report does not provide a complete assessment of the environmental status of the site and it is limited to the scope defined herein. Should information become available regarding conditions at the site including previously unknown sources of contamination, ADE reserves the right to review the report in the context of the additional information.

Access to the interior of the hazardous storage material shed and the interior of the residential house could not be gained during the site inspection, should any suspect materials or the storage of chemicals be uncovered, the information should be provided to ADE for review of the available information.

ADE's professional opinions are based upon its professional judgement, experience, training and results from analytical data. In some cases further testing and analysis may be required, thus producing different results and/or opinions. ADE has limited investigation to the scope agreed upon with its client.

ADE has used a degree of care and skill ordinarily exercised in similar investigations by reputable member of the Environmental Industry within Australia. No other warranty, expressed or implied, is made or intended.

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8 REFERENCES

1. Australian Standard AS 4482.1 *Guide to the sampling and investigation of potentially contaminated soil. Part 1: Non-volatile and semi-volatile compounds.*
2. Australian Standard AS 4482.2 *Guide to the sampling and investigation of potentially contaminated soil. Part 2: Volatile substances.*
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4. *Contaminated Land Management Act 1998.*
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6. DLWC 1995a, *Guidelines for the Use of Acid Sulfate Soils Risk Maps*, by S.D. Naylor, G.A. Chapman, G. Atkinson, C.L. Murphy, M.J. Tulau, T.C. Flewin, H.B. Milford, & D.T. Morand, Soil Conservation Service of NSW, Department of Land and Water Conservation, Sydney .
7. EPA Requirements for Quality Assurance Project Plans (EPA QA/R-5).
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9. *Guidelines for the Assessment and Management of Groundwater Contamination*, NSW DEC, 2007.
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13. *Guidelines for the investigation, assessment and remediation of mould in workplaces, March 2001* (Canada, Workplace Safety and Health Division Manitoba Department of Labour & Immigration).
14. Guidance for the Preparation of Standard Operating Procedures for Quality-Related Documents (EPA QA/G-6).
15. Herbert, C. (ed) (1983), *Geology of the Sydney 1:100000 Sheet 9130*, New South Wales Department of Mineral Resources, Sydney Stone, Y, Ahern CR, and Blunden B (1998).
16. *National Environmental Protection Measure (Assessment of Site Contamination), 1999, as amended 2013.*
17. *NSW Code of Practice: How to Manage and Control Asbestos in the Workplace (2011).*
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22. *Soils Manual 1998.* Acid Sulfate Soil Management Advisory Committee, Wollongbar, NSW, Australia.
23. *Waste Classification Guidelines Part 1: Classifying Waste*, EPA, 2014.
24. *WHS Regulation 2011.*
25. *WHS Act 2011.*
26. *WorkCover NSW Working With Asbestos Guide (2008).*

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Appendix I – LTO Records

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HISTORY OF TITLE TRANSACTION

Title Reference: X/501233

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE

20/10/2015 9:44PM

FOLIO: X/501233

First Title(s): OLD SYSTEM
Prior Title(s): VOL 9750 FOL 77

Recorded -----	Number -----	Type of Instrument -----	C.T. Issue -----
23/8/1989		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
15/2/2010	AF307786	DEPARTMENTAL DEALING	
21/10/2011	AG513276	TRANSMISSION APPLICATION	EDITION 1

*** END OF SEARCH ***

PRINTED ON 20/10/2015

TITLE SEARCH

Title Reference: X/501233

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: X/501233

SEARCH DATE	TIME	EDITION NO	DATE
20/10/2015	9:44 PM	1	21/10/2011

LAND

LOT X IN DEPOSITED PLAN 501233
 AT DURAL
 LOCAL GOVERNMENT AREA THE HILLS SHIRE
 PARISH OF NELSON COUNTY OF CUMBERLAND
 TITLE DIAGRAM DP501233

FIRST SCHEDULE

ALAN RAYMOND TRAPPEL
 IN 1/2 SHARE
 RAYMOND JAMES TRAPPEL
 IN 1/8 SHARE
 MICHAEL GEORGE TRAPPEL
 IN 1/8 SHARE
 KAY FRANCES HALL
 IN 1/8 SHARE
 SUZANNE RUTH SMITH
 IN 1/8 SHARE
 AS TENANTS IN COMMON (TA AG513276)

SECOND SCHEDULE (2 NOTIFICATIONS)

- 1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
- 2 Q684955 EASEMENT FOR TRANSMISSION LINE AFFECTING THE LAND SHOWN SO BURDENED IN DP451451

NOTATIONS

NOTE: DP774463 (ACQUISITION)
 UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

PRINTED ON 20/10/2015

* ANY ENTRIES PRECEDED BY AN ASTERISK DO NOT APPEAR ON THE CURRENT EDITION OF THE CERTIFICATE OF TITLE.
 WARNING: THE INFORMATION APPEARING UNDER NOTATIONS HAS NOT BEEN FORMALLY RECORDED IN THE REGISTER.



CERTIFICATE OF TITLE
PROPERTY ACT, 1900, as amended.



09750077

NEW SOUTH WALES
Application No.42888



PR Vol. **9750** Fol. **77**

1st Edition issued 15-7-1964

9750 Fol. 77
(Page 1) Vol.

I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

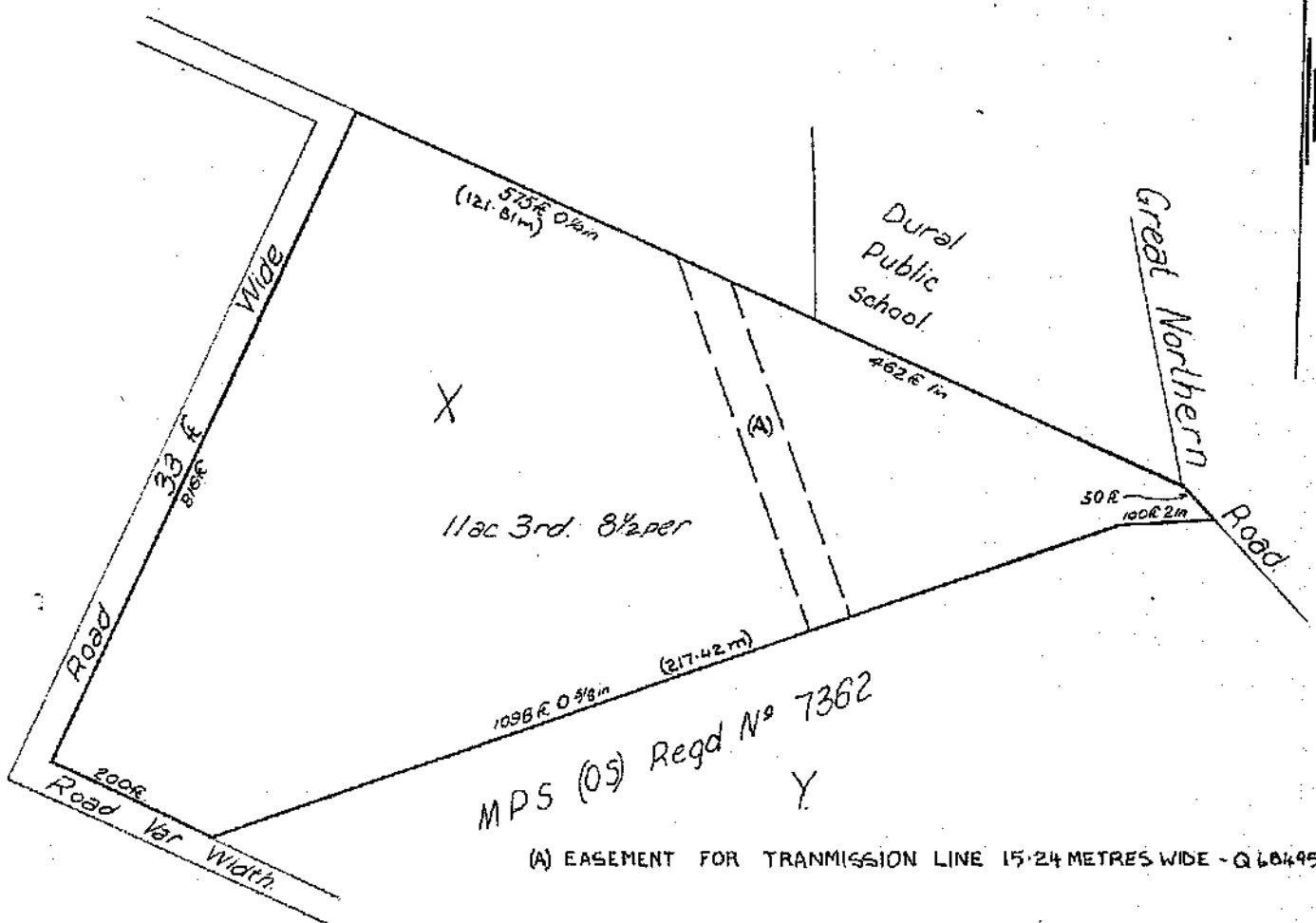
Witness

CANCELLED
Registrar General.



PLAN SHOWING LOCATION OF LAND

SEE AUTO FOLIO



DP 501233 Rd. 148.

Scale: 200 feet to one inch.

ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot X in Deposited Plan 501233 at Dural, Shire of Baulkham Hills, Parish of Nelson and County of Cumberland being part of Portion 139 granted to Stephen Smith on 30-6-1823.

Jamieson
Registrar General.

FIRST SCHEDULE (Continued overleaf)

~~ALAN RAYMOND~~ of Dural, Contractor.

Jamieson
Registrar General.

SECOND SCHEDULE (Continued overleaf)

1. Reservations and conditions, if any, contained in the Crown Grant(s) above referred to

Jamieson
Registrar General.

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON

WARNING: THIS DOCUMENT MUST NOT BE REMOVED FROM THE LAND TILES OFFICE.

ST 1109 V. E. N. BLUNT, GOVERNMENT PRINTER

J797841
 CT 191417
 96805557
 DP 773465
 16-11-1964

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT		ENTERED	Signature of Registrar General
	NATURE	NUMBER		
Alan Raymond Inghel of several contracts and Ruth Blanche Inghel of several married woman contracts in common in equal shares	Transfer	J797841	16-11-1964	<i>[Signature]</i>
CANCELLED				
SEE AUTO FOLIO				

SECOND SCHEDULE (continued)

PARTICULARS	ENTERED	Signature of Registrar General	CANCELLATION
<p>96805557</p> <p>Transfer</p> <p>9-6-1971</p> <p>Encumbrance for Transmission Limit (as more fully set out in the said instrument) affecting that part of the land with a description shown as burdened in caption A</p>	9-6-1971	<i>[Signature]</i>	

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED

Appendix II – Aerial Photographs

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Aerial Photograph 1. Aerial photograph of the site dated 1930 with approximate site boundary. Sourced from the Department of Finance and Services records, accessed on the 20.07.2015.



Aerial Photograph 2. Aerial photograph of the site dated 1947 with approximate site boundary. Sourced from the Department of Finance and Services records, accessed on the 20.07.2015.

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Aerial Photograph 3. Aerial photograph of the site dated 1956 with approximate site boundary. Sourced from the Department of Finance and Services records, accessed on the 20.07.2015.



Aerial Photograph 4. Aerial photograph of the site dated 1965 with approximate site boundary. Sourced from the Department of Finance and Services records, accessed on the 20.07.2015.

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Aerial Photograph 5. Aerial photograph of the site dated 1986 with approximate site boundary. Sourced from the Department of Finance and Services records, accessed on the 20.07.2015.



Aerial Photograph 6. Aerial photograph of the site dated 1994 with approximate site boundary. Sourced from the Department of Finance and Services records, accessed on the 20.07.2015.

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Aerial Photograph 7. Aerial photograph of the site dated 2010 with approximate site boundary. Sourced from the nearmap.com, accessed on the 20.07.2015.



Aerial Photograph 8. Aerial photograph of the site dated 2015 with approximate site boundary. Sourced from the nearmap.com, accessed on the 20.07.2015.

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Appendix III – Photographs

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Photograph 1 – Stockpile present along northern boundary of lower carpark



Photograph 4 – Apparent fill beneath shed 1 along the eastern portion of the site



Photograph 2 – Site sloping from east to west



Photograph 5 – View of AST and carpark beneath shed 1, facing south



Photograph 3 – Road dissecting the property from south to north



Photograph 6 – Presumed asbestos cement debris located adjacent to the eastern carpark

New South Wales Office:

A. D. Envirotech Australia Pty Ltd
Unit 6/7 Millennium Court
Silverwater, NSW 2128

Queensland Office:

A. D. Envirotech Australia Pty Ltd
P.O. Box 288
Upper Coomera, QLD 4209

Telephone:

NSW: (02) 8541 7214
QLD: (07) 5519 4610

Internet:

site: www.ADenvirotech.com.au
e-mail info@ADenvirotech.com.au

ABN:

520 934 529 50



Photograph 7 – View of AST, soil staining and the cleared orchard area, facing west



Photograph 10 – cement slab present adjacent to southern exterior of shed 1, potential previous location of tank



Photograph 8 – Above ground Storage Tank (AST).



Photograph 11 – Staining present within shed 1



Photograph 9 – eastern carpark covered with asphalt



Photograph 12 – Stored rubbish, chemicals and former agricultural equipment within shed 2

New South Wales Office:

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Photograph 13 – Stored transmission fluid containers within shed 2



Photograph 16 – Interior of shed 3, staining observed, presumed to have been used as a workshop



Photograph 14 – Asbestos cement debris observed on soil surface within shed 2



Photograph 17 – Residential house present, 1980s style construction



Photograph 15 – Asbestos cement sheeting in fair condition on the southern exterior of Shed 3



Photograph 18 – Asbestos cement shed present on southern exterior of residential building

New South Wales Office:

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ABN:

520 934 529 50



Photograph 19 – Dam present in the south-western corner



Photograph 22 – Dam wall with roof tiles and other building debris present on surface



Photograph 20 – Western carpark located immediately east of the dam



Photograph 23 – Western dam wall



Photograph 21 – Chemical storage shed situated adjacent to the dam



Photograph 24 – Iridescent sheen on water surface leaching from the dam wall

New South Wales Office:

A. D. Envirotech Australia Pty Ltd
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Photograph 25 – Former orchard area adjacent to Derriwong Rd



Photograph 28 – Dark black silty soil observed along the base of the dam wall



Photograph 26 – Southern dam wall and driveway



Photograph 29 – Southern dam wall facing east



Photograph 27 – Iridescent sheen observed on water leaching from base of dam

New South Wales Office:

A. D. Envirotech Australia Pty Ltd
Unit 6/7 Millennium Court
Silverwater, NSW 2128

Queensland Office:

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Appendix IV – Groundwater Search

New South Wales Office:

A. D. Envirotech Australia Pty Ltd
Unit 6/7 Millennium Court
Silverwater, NSW 2128

Queensland Office:

A. D. Envirotech Australia Pty Ltd
P.O. Box 288
Upper Coomera, QLD 4209

Telephone:

NSW: (02) 8541 7214
QLD: (07) 5519 4610

Internet:

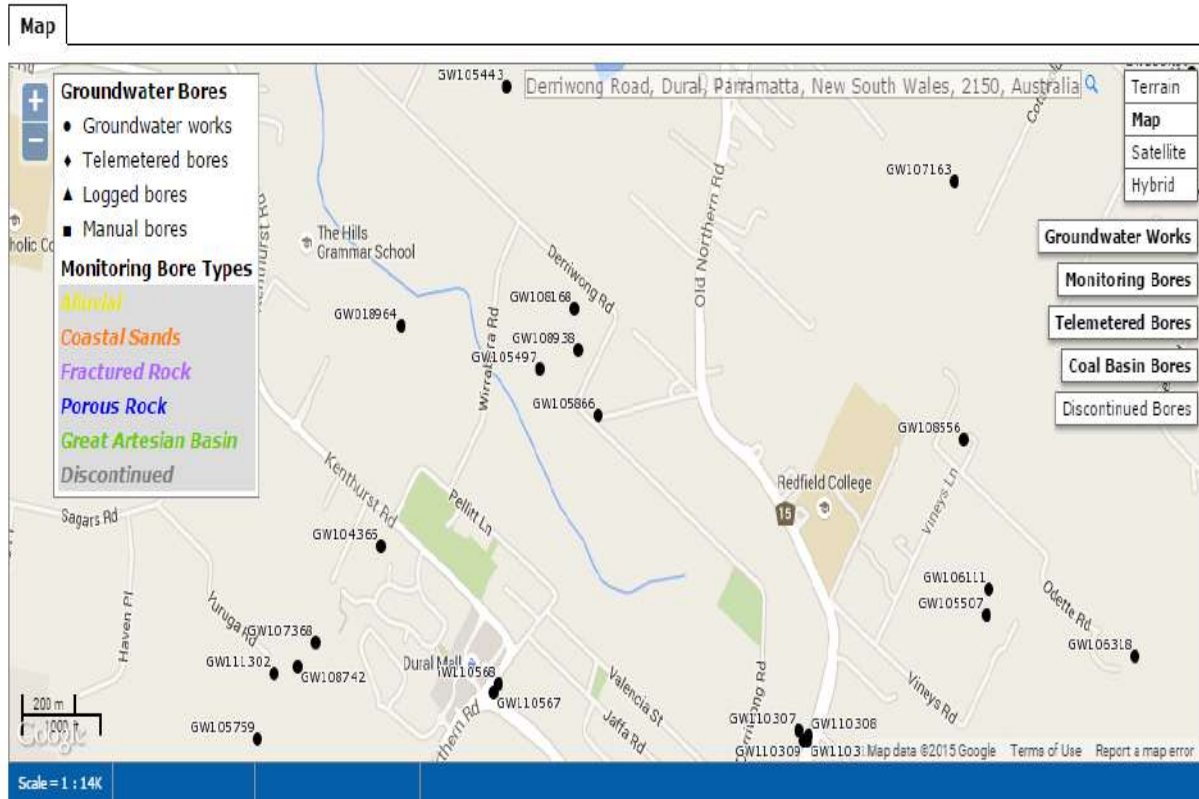
site: www.ADenvirotech.com.au
e-mail info@ADenvirotech.com.au

ABN:

520 934 529 50

Hawkesbury River Basin

All data times are Eastern Standard Time



NSW Office of Water

Work Summary

GW105866
Licence: 10BL163206

Licence Status: CONVERTED

Authorised Purpose(s): STOCK,DOMESTIC
Intended Purpose(s):
Work Type: Bore

Work Status:
Construct.Method:
Owner Type:
Commenced Date:
Completion Date: 05/05/2005

Final Depth:
Drilled Depth:
Contractor Name:
Driller:
Assistant Driller:
Property: TRAPPEL 618 OLD NORTHERN RD DURAL 2158

Standing Water Level:
GWMA: -
GW Zone: -

Salinity:
Yield:

Site Details

Site Chosen By:

County	Parish	Cadastre
Form A: CUMBE	CUMBE.38	X 501233
Licensed: CUMBERLAND	NELSON	Whole Lot X//501233

Region: 10 - Sydney South Coast

CMA Map: 9130-4S

River Basin: 212 - HAWKESBURY RIVER
Area/District:
Grid Zone:
Scale:
Elevation: 0.00 m (A.H.D.)
Elevation (Unknown)
Source:
Northing: 6270712.0
Easting: 316825.0

Latitude: 33°41'15.9"S
Longitude: 151°01'25.8"E

GS Map: -

MGA Zone: 0

Coordinate Unknown
Source:

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)

Geologists Log

Drillers Log

From	To	Thickness	Drillers Description	Geological Material	Comments

(m)	(m)	(m)			
-----	-----	-----	--	--	--

Remarks

***** End of GW105866 *****

Warning To Clients: This raw data has been supplied to the NSW Office of Water by drillers, licensees and other sources. The NOW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

NSW Office of Water

Work Summary

GW105497
Licence: 10BL162452

Licence Status: CONVERTED

Authorised Purpose(s): STOCK,DOMESTIC

Intended Purpose(s): STOCK, DOMESTIC

Work Type: Bore

Work Status:
Construct.Method: Rotary Air

Owner Type:
Commenced Date:
Completion Date: 12/11/2003

Final Depth: 150.00 m

Drilled Depth: 150.00 m

Contractor Name: INTERTEC DRILLING SERVICES

Driller: Damian Paranihi

Assistant Driller:
Property: MASTA P/L 30 DERRIWONG RD **Standing Water Level:** 29.000
DURAL 2158

GWMA: -
GW Zone: -

Salinity:
Yield: 0.300

Site Details

Site Chosen By:

County	Parish	Cadastre
Form A: CUMBE	CUMBE.38	2 623323
Licensed: CUMBERLAND	NELSON	Whole Lot 2//623323

Region: 10 - Sydney South Coast

CMA Map: 9130-4S

River Basin: 212 - HAWKESBURY RIVER
Area/District:
Grid Zone:
Scale:
Elevation: 0.00 m (A.H.D.)
Elevation (Unknown)
Source:
Northing: 6270813.0
Easting: 316632.0

Latitude: 33°41'12.5"S
Longitude: 151°01'18.3"E

GS Map: -

MGA Zone: 0

Coordinate Unknown
Source:

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	5.60	205			Down Hole Hammer
1		Hole	Hole	5.60	90.00	159			Down Hole Hammer
1		Hole	Hole	90.00	150.00	156			Down Hole Hammer
1	1	Casing	Steel	-0.40	5.60	168	158		Driven into Hole
1	1	Casing	Pvc Class 9	0.40	35.60	140			Suspended in Clamps, Screwed and Glued

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth	Duration (hr)	Salinity (mg/L)
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						(m)		
62.30	62.40	0.10	Unknown			0.25	66.00	830.00
69.20	70.00	0.80	Unknown			0.10	72.00	869.00
126.00	127.30	1.30	Unknown			0.45	132.00	780.00
136.50	137.80	1.30	Unknown	29.00		0.30	138.00	998.00

Geologists Log

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	0.30	0.30	TOPSOIL	Topsoil	
0.30	32.50	32.20	SANDSTONE BROWN/GREY MG	Sandstone	
32.50	32.70	0.20	F. SANDSTONE GREY AND SILTSTONE	Sandstone	
32.70	62.30	29.60	SANDSTONE GREY	Sandstone	
62.30	62.40	0.10	W. O.25 SANDSTONE L/GREY	Sandstone	
62.40	69.20	6.80	SANDSTONE GREY M/G	Sandstone	
69.20	70.00	0.80	SANDSTONE GREY	Sandstone	
70.00	126.00	56.00	SANDSTONE GREY L/GREY	Sandstone	
126.00	127.30	1.30	SANDSTONE L/GREY AND QUARTZ	Sandstone	
127.30	136.50	9.20	SANDSTONE L/GREY	Sandstone	
136.50	137.80	1.30	W,QUARRTZ	Quartz	
137.80	150.00	12.20	SANDSTONE L/GREY	Sandstone	

Remarks

10/11/2010: Karla Abbs 10-Nov-2010; Removed invalid codes and updated drillers log

*** End of GW105497 ***

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NSW Office of Water

Work Summary

GW108938
Licence: 10BL601876

Licence Status: CONVERTED

Authorised Purpose(s): DOMESTIC

Intended Purpose(s): DOMESTIC

Intended Purpose(s): DOMESTIC

Work Type: Bore

Work Status:
Construct.Method:
Owner Type: Private

Commenced Date:
Completion Date: 19/06/2008

Final Depth:
Drilled Depth:
Contractor Name: INTERTEC DRILLING SERVICES

Driller: Paul Sheehy

Assistant Driller:
Property: BREITENBERGER 32
DERRIWONG ROAD ROUND
CORNER DURAL 2158 NSW

Standing Water Level:
GWMA:
GW Zone:
Salinity:
Yield:

Site Details

Site Chosen By:

County	Parish	Cadastre
Form A: CUMBE Licensed:	CUMBE.38	102/818569

Region: 10 - Sydney South Coast

CMA Map:
River Basin: - Unknown
Area/District:
Grid Zone:
Scale:
Elevation: 0.00 m (A.H.D.)
Elevation Unknown
Source:
Northing: 6270860.0
Easting: 316755.0

Latitude: 33°41'11.1"S
Longitude: 151°01'23.1"E

GS Map: -

MGA Zone: 0

Coordinate Unknown
Source:

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)

Geologists Log

Drillers Log

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From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
-------------	-----------	------------------	----------------------	---------------------	----------

Remarks

***** End of GW108938 *****

Warning To Clients: This raw data has been supplied to the NSW Office of Water by drillers, licensees and other sources. The NOW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

NSW Office of Water

Work Summary

GW108168
Licence: 10BL600425

Licence Status: CONVERTED

Authorised Purpose(s): DOMESTIC,STOCK

Intended Purpose(s): STOCK, DOMESTIC

Work Type: Bore

Work Status: Supply Obtained

Construct.Method: Down Hole Hammer

Owner Type: Private

Commenced Date:
Completion Date: 20/06/2006

Final Depth: 237.40 m

Drilled Depth: 237.40 m

Contractor Name: INTERTEC DRILLING SERVICES

Driller: Colin Leslie Barden

Assistant Driller:
Property: CALLUS 34 DERRIWONG RD
DURAL 2158 NSW

Standing Water Level: 34.000

GWMA: -
GW Zone: -

Salinity:
Yield: 0.700

Site Details

Site Chosen By:

County	Parish	Cadastre
Form A: CUMBE	CUMBE.38	101 818569
Licensed: CUMBERLAND	NELSON	Whole Lot 101//818569

Region: 10 - Sydney South Coast

CMA Map:
River Basin: - Unknown

Grid Zone:
Scale:
Area/District:
Elevation: 0.00 m (A.H.D.)

Northing: 6270954.0

Latitude: 33°41'08.0"S

Elevation: Unknown

Easting: 316741.0

Longitude: 151°01'22.7"E

Source:
GS Map: -

MGA Zone: 0

Coordinate Source: GIS - Geographic Information System

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	2.50	203			Down Hole Hammer
1		Hole	Hole	2.50	120.00	165			Down Hole Hammer
1		Hole	Hole	120.00	237.40	160			Down Hole Hammer
1		Annulus	Concrete	0.00	2.50	203			
1	1	Casing	Pvc Class 9	-0.50	59.50	140			Suspended in Clamps, Screwed and Glued
1	1	Casing	Steel	-0.50	2.50	168	158		Driven into Hole

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)
65.00	66.00	1.00	Unknown			0.30		00:25:00	1570.00
112.00	113.00	1.00	Unknown			0.08		00:25:00	1450.00
128.00	130.00	2.00	Unknown			0.27		00:25:00	3300.00
232.00	236.00	4.00	Unknown	34.00		0.05		00:05:00	1900.00

Geologists Log Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	0.50	0.50	topsoil	Topsoil	
0.50	34.50	34.00	sandstone, grey weathered	Sandstone	
34.50	39.00	4.50	shale	Shale	
39.00	51.00	12.00	sandstone, grey	Sandstone	
51.00	51.50	0.50	shale	Shale	
51.50	65.00	13.50	sandstone, grey	Sandstone	
65.00	66.00	1.00	sandstone, grey quartz	Sandstone	
66.00	112.00	46.00	sandstone, grey	Sandstone	
112.00	113.00	1.00	sandstone, grey quartz	Sandstone	
113.00	115.00	2.00	siltstone	Siltstone	
115.00	128.00	13.00	sandstone, grey	Sandstone	
128.00	130.00	2.00	sandstone, grey quartz	Sandstone	
130.00	150.00	20.00	sandstone, grey	Sandstone	
150.00	158.50	8.50	siltstone	Siltstone	
158.50	204.00	45.50	sandstone, grey	Sandstone	
204.00	207.00	3.00	sandstone, light brown	Sandstone	
207.00	232.00	25.00	sandstone, grey	Sandstone	
232.00	236.00	4.00	sandstone, grey quartz	Sandstone	
236.00	237.40	1.40	sandstone, grey	Sandstone	

Remarks

20/06/2006: Form A Remarks:

air lift test at 150m when completed was producing a surface flow rate of 0.6 LPS and TDS of 1650mg/l

03/05/2010: updated from original form A

*** End of GW108168 ***

Warning To Clients: This raw data has been supplied to the NSW Office of Water by drillers, licensees and other sources. The NOW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

Appendix V – Acid Sulphates Soils

New South Wales Office:

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Unit 6/7 Millennium Court
Silverwater, NSW 2128

Queensland Office:

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P.O. Box 288
Upper Coomera, QLD 4209

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site: www.ADenvirotech.com.au
e-mail info@ADenvirotech.com.au

ABN:

520 934 529 50

Appendix VI - NSW OEH State Heritage Records

New South Wales Office:

A. D. Envirotech Australia Pty Ltd
Unit 6/7 Millennium Court
Silverwater, NSW 2128

Queensland Office:

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P.O. Box 288
Upper Coomera, QLD 4209

Telephone:

NSW: (02) 8541 7214
QLD: (07) 5519 4610

Internet:

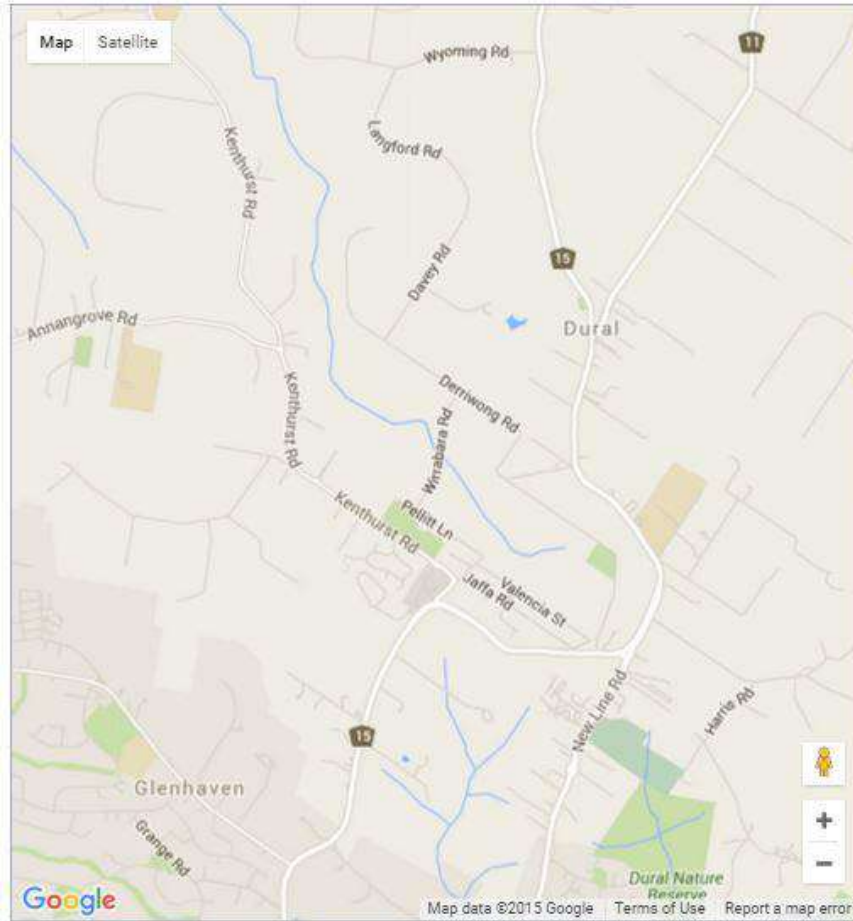
site: www.ADenvirotech.com.au
e-mail info@ADenvirotech.com.au

ABN:

520 934 529 50

Search State Heritage Register

The results shown below are for the State Heritage Register ONLY and does not include items listed on Local Environmental Plans and s.170 Heritage and Conservation Registers. For further mapping information for please contact the relevant Local or State government agency.
Disclaimer: The positions of the State Heritage Register items shown on this page are for general identification and research purposes only. It should not be used for legal searches. Some SHR items have not been included for privacy and security reasons. Free downloading of State Heritage Register spatial datasets and associated metadata into a Geographical Information System (GIS) software package is available at [Community Access to Natural Resources Information \(CANRI\) - http://canri.nsw.gov.au/download/](http://canri.nsw.gov.au/download/)



The map displays the Dural area in New South Wales, Australia. It shows a network of roads including Wyoming Rd, Kangford Rd, Daney Rd, Derwong Rd, Annangrove Rd, Kenthurst Rd, Wirrabara Rd, Pellitt Ln, Jaffe Rd, Valencia St, New Line Rd, and Harrie Rd. A blue arrow points to a specific location on Daney Rd. The map also shows the Dural Nature Reserve and the Dural Nature Reserve. The map is overlaid with a grid and includes a search bar and a dropdown menu for local government area.

Local government area
The Hills

Suburb/postcode
[Empty text box]

NSW historic theme
Please Choose...

Item type

- All
- Archaeological-Maritime
- Archaeological-Terrestrial
- Built
- Landscape
- Movable / Collection
- Complex / Group
- Conservation Area

Map data ©2015 Google Terms of Use Report a map error

Appendix VII – Section 149

New South Wales Office:

A. D. Envirotech Australia Pty Ltd
Unit 6/7 Millennium Court
Silverwater, NSW 2128

Queensland Office:

A. D. Envirotech Australia Pty Ltd
P.O. Box 288
Upper Coomera, QLD 4209

Telephone:

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QLD: (07) 5519 4610

Internet:

site: www.ADenvirotech.com.au
e-mail info@ADenvirotech.com.au

ABN:

520 934 529 50

THE HILLS SHIRE COUNCIL

3 Columbia Court, Baulkham Hills NSW 2153
PO Box 7064, Baulkham Hills BC NSW 2153

Telephone +61 2 9843 0555

Facsimile +61 2 9843 0409

DX 9966 Norwest

Email council@thehills.nsw.gov.au

www.thehills.nsw.gov.au

ABN No. 25 034 494 656

PLANNING CERTIFICATE UNDER SECTION 149 (2)
ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979 AS AMENDED.

A.D Envirotech Australia
6/7 Millennium Ct
SILVERWATER NSW 2128

Certificate Number: **83242**
Reference: 9315:60041
Issue Date: 8 October 2015
Receipt No: 5001564
Fee Paid: \$ 53.00

ADDRESS: 618 Old Northern Road, DURAL NSW 2158
DESCRIPTION: Lot X DP 501233

The land is zoned:
Zone RU6 Transition

The following prescribed matters apply to the land to which this certificate relates:

The Environmental Planning and Assessment Amendment Act 1997 commenced operation on 1 July 1998. As a consequence of this Act, the information contained in this certificate needs to be read in conjunction with the provisions of the Environmental Planning and Assessment Regulation 2000.

THIS CERTIFICATE IS DIRECTED TO THE FOLLOWING MATTERS
PRESCRIBED UNDER SECTION 149 (2) OF THE ABOVE ACT.

1. Names of relevant planning instruments and DCPs

- (1) The name of each environmental planning instrument that applies to the carrying out of development on the land.

(A) **Local Environmental Plans**

The Hills Local Environmental Plan 2012, as amended, applies to all land in the Shire unless otherwise stated in this certificate.

State Environmental Planning Policies

SEPP No.19 - Bushland In Urban Areas
 SEPP No.21 - Caravan Parks
 SEPP No.30 - Intensive Agriculture
 SEPP No.33 - Hazardous And Offensive Development
 SEPP No.50 - Canal Estate Development
 SEPP No.55 - Remediation Of Land
 SEPP No.62 - Sustainable Aquaculture
 SEPP No.64 - Advertising And Signage
 SEPP No.65 - Design Quality Of Residential Flat Development
 SEPP No.70 - Affordable Housing (Revised Schemes)
 SEPP (Building Sustainability Index: Basix) 2004
 SEPP (Major Development) 2005
 SEPP (Mining, Petroleum Production And Extractive Industries) 2007
 SEPP (Miscellaneous Consent Provisions)2007
 SEPP (Infrastructure) 2007
 SEPP (Exempt and Complying Development Codes) 2008
 SEPP (Affordable Rental Housing) 2009
 SEPP (State and Regional Development) 2011
 Sydney Regional Environmental Plan No. 9 Extractive Industries (No.2) - Amendment No.1
 Sydney Regional Environmental Plan No. 20 Hawkesbury – Nepean River (No.2 – 1997)

The following SEPP's may apply to the land. Please refer to '**Land to which Policy applies**' for each individual SEPP.

SEPP (Housing For Seniors Or People With A Disability) 2004

- (2) The name of 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 Director-General has notified the council that the making of the proposed instrument has been deferred indefinitely or has not been approved).

(A) **Proposed Local Environmental Plans**

No Proposed Local Environmental Plans apply to this land.

(B) **Proposed State Environmental Planning Policies**

Draft State Environmental Planning Policy (Competition).
State Environmental Planning Policy No 65 – Design Quality of Residential Flat Development (Amendment No 3)

- (3) The name of each development control plan that applies to the carrying out of development on the land.

The Hills Development Control Plan 2012

- (4) In this clause, proposed environmental planning instrument includes a planning proposal for a LEP or a draft environmental planning instrument.

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).

- (A) The Hills Local Environmental Plan 2012 applies to the land unless otherwise stated in this certificate and identifies the land to be:

Zone RU6 Transition

- (B) The purposes for which the instrument provides that development may be carried out within the zone without development consent:

Refer Attachment 2(B)

Also refer to the applicable instrument for provisions regarding Exempt Development

- (C) The purposes for which the instrument provides that development may not be carried out within the zone except with development consent:

Refer Attachment 2(B)

Also refer to the applicable instrument for provisions regarding Complying Development

- (D) The purposes for which the instrument provides that development is prohibited in the zone:

Refer Attachment 2(B)

- (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?

The Hills Local Environmental Plan 2012?

YES

Clause 4.2A of The Hills Local Environmental Plan 2012 provides minimum land dimensions for the erection of a dwelling house on the following zones:

RU1 Primary Production, RU2 Rural Landscape, RU6 Transition, E3 Environmental Management and E4 Environmental Living.

Any other Planning Proposal?

NO

- (F) Whether the land includes or comprises critical habitat?

The Hills Local Environmental Plan 2012?

NO

Any other Planning Proposal?

NO

- (G) Whether the land is in a conservation area (however described)?

The Hills Local Environmental Plan 2012?

NO

Any Other Planning Proposal?

NO

- (H) Whether an item of environmental heritage (however described) is situated on the land?

The Hills Local Environmental Plan 2012?

NO

Any other Planning Proposal?

NO

2A. Zoning and land use under State Environmental Planning Policy (Sydney Region Growth Centres) 2006

To the extent that the land is within any zone (however described) under:

- (a) Part 3 of the *State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (the 2006 SEPP)*, or
 - (b) a Precinct Plan (within the meaning of the 2006 SEPP), or
 - (c) a proposed Precinct Plan that is or has been the subject of community consultation or on public exhibition under the ACT.
- (A) State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (Appendix 2 North Kellyville Precinct Plan) applies to the land unless otherwise stated in this certificate and identifies the land to be:

State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (Appendix 2 North Kellyville Precinct Plan) does not apply.

State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (Appendix 11 The Hills Growth Centre Precincts Plan) applies to the land unless otherwise stated in this certificate and identifies the land to be:

State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (Appendix 11 The Hills Growth Centre Precincts Plan) does not apply.

Note: This precinct plan applies to land within the Box Hill Precinct or Box Hill Industrial Precinct.

- (B) The purposes for which the instrument provides that development may be carried out within the zone without development consent:

Refer Attachment 2(B)

Also refer to the applicable instrument for provisions regarding Exempt Development.

- (C) The purposes for which the instrument provides that development may not be carried out within the zone except with development consent:

Refer Attachment 2(B)

Also refer to the applicable instrument for provisions regarding Complying Development

- (D) The purposes for which the instrument provides that development is prohibited in the zone:

Refer Attachment 2(B)

- (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?

State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (Appendix 2 North Kellyville Precinct Plan)?

NO

Any amendments to Proposed State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (Appendix 2 North Kellyville Precinct Plan)?

NO

State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (Appendix 11 The Hills Growth Centre Precincts Plan)?

NO

Any amendments to Proposed State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (Appendix 11 The Hills Growth Centre Precincts Plan)?

NO

- (F) Whether the land includes or comprises critical habitat?

State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (Appendix 2 North Kellyville Precinct Plan)?

NO

State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (Appendix 11 The Hills Growth Centre Precincts Plan)?

NO

- (G) Whether the land is in a conservation area (however described)?

State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (Appendix 2 North Kellyville Precinct Plan)?

NO

State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (Appendix 11 The Hills Growth Centre Precincts Plan)?

NO

- (H) Whether an item of environmental heritage (however described) is situated on the land?

State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (Appendix 2 North Kellyville Precinct Plan)?

NO

State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (Appendix 11 The Hills Growth Centre Precincts Plan)?

NO

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.
- (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.

General Housing Code and Rural Housing Code

Complying Development under the General Housing Code and Rural Housing Code **may be** carried out on the land.

Housing Alterations Code and General Development Code

Complying Development under the Housing Alterations Code and General Development Code **may be** carried out on the land.

Commercial and Industrial (New Buildings and Additions) Code

Complying Development under the Commercial and Industrial (New Buildings and Additions) Code **may be** carried out on the land.

Commercial and Industrial Alterations, Subdivision, Demolition and Fire Safety Codes

Complying Development under the Commercial and Industrial Alterations, Subdivision, Demolition and Fire Safety Codes **may be** carried out on the land.

Note: Where reference is made to an applicable map, this information can be sourced from the following websites:

The Hills Local Environmental Plan 2012 - www.thehills.nsw.gov.au
State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (Appendix 2 North Kellyville Precinct) or (Appendix 11 The Hills Growth Centre Precincts Plan) - www.planning.nsw.gov.au

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 Services, Technology and Administration?

NO

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.

NO

- (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.

NO

(3) (Repealed)

4B. Annual charges under Local Government Act 1993 for coastal protection services that relate to existing coastal protection works

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).

NO

Note. "Existing coastal protection works" are works to reduce the impact of coastal hazards on land (such as seawalls, revetments, groynes and beach nourishment) that existed before the commencement of section 553B of the Local Government Act 1993.

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?

NO

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

NO

(B) any environmental planning instrument; or

NO

(C) any resolution of council?

a) The Hills Development Control Plan 2012?

NO

b) Any other resolution of council?

NO

7. Council and other public authority policies on hazard risk restrictions

Whether or not the land is affected by a policy:

(a) adopted by 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)?

Council's policies on hazard risk restrictions are as follows:

(i) Landslip

a) By The Hills Local Environmental Plan 2012 zoning?

NO

No resolution has been adopted but attention is directed to the fact that there are areas within the Shire liable to landslip.

b) By The Hills Local Environmental Plan 2012 local provision?

NO

No resolution has been adopted but attention is directed to the fact that there are areas within the Shire liable to landslip.

c) By The Hills Development Control Plan 2012 provision?

NO

No resolution has been adopted but attention is directed to the fact that there are areas within the Shire liable to landslip.

(ii) Bushfire

YES

Please note this is a statement of Council policy only and NOT a statement on whether or not the property is affected by bushfire. That question is answered in Section 11 of this certificate.

Council has adopted the NSW Rural Fire Service Guidelines entitled 'Planning for Bushfire Protection 2006'. Development subject to bushfire risk will be required to address the requirements in these guidelines and can be downloaded off the RFS web site www.rfs.nsw.gov.au

The Development Control Plan may also contain provisions for development on Bushfire Prone Land and Bushfire Hazard Management. Refer Part 1(3) of this certificate for the applicable Development Control Plan.

(iii) Tidal inundation

NO

Please note this is a statement of Council policy only and NOT a statement on whether or not the property is affected by tidal inundation.

(iv) **Subsidence**

NO

Please note this is a statement of Council policy only and NOT a statement on whether or not the property is affected by subsidence.

(v) **Acid sulphate soils**

NO

(vi) **Land contamination**

NO

Please note this is a statement of Council policy only and NOT a statement on whether or not the property is affected by contamination or potential contamination.

(vii) **Any other risk**

NO

7A. Flood related development controls information

- (1) Whether or not development on that land or part of the land for the purposes of dwelling houses, 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?

NO

Please note this is a statement of flood related development controls and is NOT a statement on whether or not the property is subject to flooding.

- (2) Whether or not development on that land or part of the land for any other purpose is subject to flood related development controls?

NO

Please note this is a statement of flood related development controls and is NOT a statement on whether or not the property is subject to flooding.

- (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.

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 Hills Local Environmental Plan 2012?

NO

Any other Planning Proposal?

NO

State Environmental Planning Policy?

NO

Proposed State Environmental Planning Policy?

NO

9. Contributions plans

The name of each contributions plan applying to the land:

THE HILLS SECTION 94A

9A. Biodiversity Certified Land

Whether the land is biodiversity certified land within the meaning of Part 7AA of the *Threatened Species Conservation Act 1995*?

NO

10. Biobanking Agreements

Whether the land is land to which a biobanking agreement under part 7A of the *Threatened Species Conservation Act 1995* relates, (but only if the council has been notified of the existence of the agreement by the Director-General of the Department of Environment, Climate Change and Water)?

NO

11. Bush fire prone land

Has the land been identified as bush fire prone land?

YES

The land is identified on Council's certified Bush Fire Prone Land map as being partly or wholly bush fire prone land. For details refer to the Bush Fire Prone Land map that can be viewed on Council's website at www.thehills.nsw.gov.au

12. Property vegetation plans

Has the council been notified that a property vegetation plan under the Native Vegetation Act 2003 applies to this land?

NO

13. Orders under 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 this land (but only if the council has been notified of the order)?

NO

14. Directions under Part 3A

Whether 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?

NO

15. Site compatibility certificates and conditions for seniors housing

(a) Whether there is a current site compatibility certificate (seniors housing) of which council is aware, issued under State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 in respect of proposed development on the land?

NO

(b) Whether there are any terms of a kind referred to in clause 18(2) of State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 that have been imposed as a condition of consent to a development application granted after 11 October 2007 in respect of the land?

NO

16. Site compatibility certificates for infrastructure

Whether there is a valid site compatibility certificate (infrastructure), of which the council is aware, in respect of proposed development on the land?

NO

17. Site compatibility certificates and conditions for affordable rental housing

(1) 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?

NO

(2) Whether there are 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?

NO

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.

NO DEVELOPMENT PLAN APPLIES

(2) The date of any subdivision order that applies to the land.

NO SUBDIVISION ORDER APPLIES

(3) Words and expressions used in this clause have the same meaning as they have in Part 16C of this Regulation.

19. Site verification certificates

Whether there is a current site verification certificate, of which the council is aware, in respect of the land?

NO

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*.

Note. The following matters are prescribed by section 59 (2) of the *Contaminated Land Management Act 1997* as additional matters 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,

NO

(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,

NO

(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,

NO

(d) that the land to which the certificate relates is subject to an ongoing maintenance order within the meaning of the Act – if it is subject to such an order at the date when the certificate is issued,

NO

(e) that the land to which the certificate relates is the subject of a site audit statement within the meaning of the Act – if a copy of such a statement has been provided at any time to the local authority issuing the certificate.

NO

Note: Whether Council has been provided with a copy of any exemption under section 23 or authorisation by the Co-ordinator General under section 24 of the *Nation Building and Jobs Plan (State Infrastructure Delivery) Act 2009*?

NO

THE HILLS SHIRE COUNCIL

This land has frontage to a "Classified Road". Roads and Maritime Services, 27-31 Argyle St, Parramatta, is the responsible authority for classified roads and should be consulted for any road widening proposals.

DAVE WALKER
GENERAL MANAGER



Per:

PLEASE NOTE: COUNCIL RETAINS THE ELECTRONIC ORIGINAL OF THIS CERTIFICATE. WHERE THIS CERTIFICATE REFERS TO INFORMATION DISPLAYED ON COUNCIL'S WEBSITE OR TO ANY EXTERNAL WEBSITE, IT REFERS TO INFORMATION DISPLAYED ON THE WEBSITE ON THE DATE THIS CERTIFICATE IS ISSUED.

ATTACHMENT 2(B)**Zone RU6 Transition****1 Objectives of zone**

- To protect and maintain land that provides a transition between rural and other land uses of varying intensities or environmental sensitivities.
- To minimise conflict between land uses within this zone and land uses within adjoining zones.
- To encourage innovative and sustainable tourist development, sustainable agriculture and the provision of farm produce directly to the public.

2 Permitted without consent

Bed and breakfast accommodation; Extensive agriculture; Home occupations.

3 Permitted with consent

Agricultural produce industries; Animal boarding or training establishments; Aquaculture; Building identification signs; Business identification signs; Cemeteries; Child care centres; Community facilities; Dual occupancies (attached); Dwelling houses; Eco-tourist facilities; Environmental facilities; Environmental protection works; Farm buildings; Farm stay accommodation; Flood mitigation works; Garden centres; Home-based child care; Home businesses; Home industries; Information and education facilities; Intensive plant agriculture; Landscaping material supplies; Places of public worship; Plant nurseries; Public administration buildings; Recreation areas; Recreation facilities (indoor); Recreation facilities (outdoor); Respite day care centres; Restaurants or cafés; Roads; Roadside stalls; Rural workers' dwellings; Secondary dwellings; Veterinary hospitals; Water supply systems.

4 Prohibited

Any development not specified in item 2 or 3.

NOTE: This land use table should be read in conjunction with the Dictionary at the end of The Hills LEP 2012 which defines words and expressions for the purpose of the plan.

Appendix VIII – Dial Before You Dig (DBYD)

New South Wales Office:

A. D. Envirotech Australia Pty Ltd
Unit 6/7 Millennium Court
Silverwater, NSW 2128

Queensland Office:

A. D. Envirotech Australia Pty Ltd
P.O. Box 288
Upper Coomera, QLD 4209

Telephone:

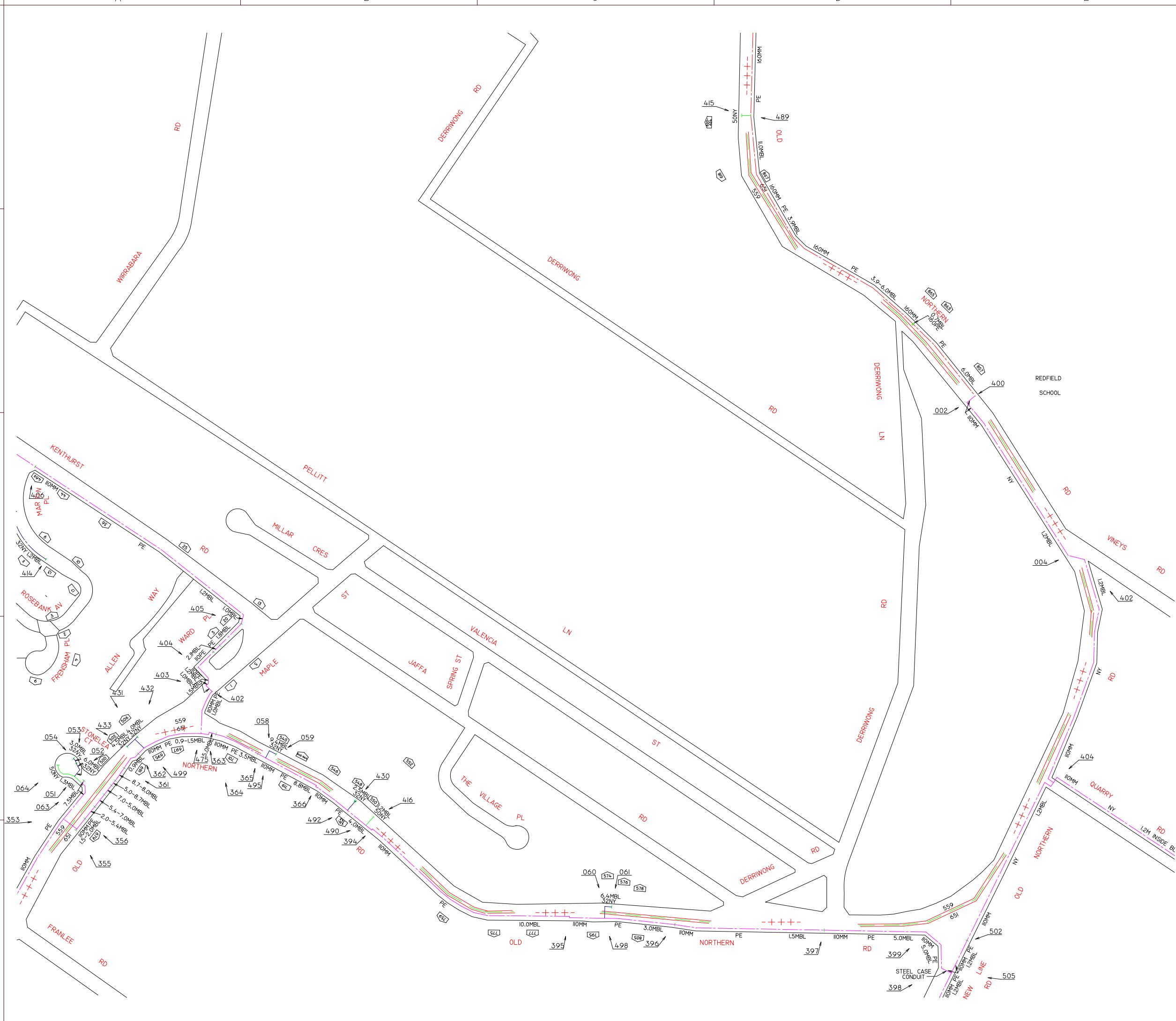
NSW: (02) 8541 7214
QLD: (07) 5519 4610

Internet:

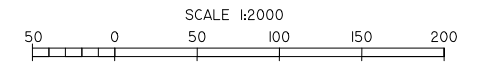
site: www.ADenvirotech.com.au
e-mail info@ADenvirotech.com.au

ABN:

520 934 529 50



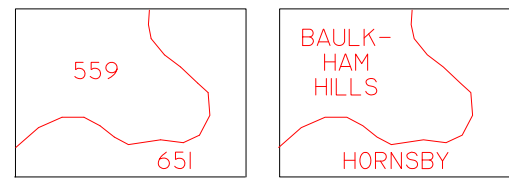
DURAL 4D



THIS MAP UPDATED ON 11/12/2014
 THIS PLAN IS DIAGRAMATIC ONLY. DISTANCES
 SCALED FROM THIS PLAN MAY NOT BE ACCURATE.
 DATE ALTERED:..... BY:.....

D4A	D4B	D5A
D4C	D4D	D5C
D7A	D7B	D8A

ADJOINING MAPS



NETWORK AREA MUNICIPALITY AREA

Jemena

KEY

- | MAX ALLOWABLE OPERATING PRESSURE | |
|----------------------------------|--|
| — T — | TRUNK PIPELINE 7000 kPa |
| — P — | PRIMARY MAIN 3500 kPa |
| — S — | SECONDARY MAIN 1050 kPa |
| — 400 — | NETWORK MAIN 400 kPa |
| — 300 — | NETWORK MAIN 300 kPa |
| — 210 — | NETWORK MAIN 210 kPa |
| — 100 — | NETWORK MAIN 100 kPa |
| — 30 — | NETWORK MAIN 30 kPa |
| — 7 — | NETWORK MAIN 7 kPa |
| — 2 — | NETWORK MAIN 2 kPa |
| — + + + — | PROPOSED MAINS |
| PR II-2 3 | STEEL MAIN PROJECT NUMBER |
| △ | PRESSURE MONITORING STATION |
| ▽ | VALVE |
| □ | SYSTEM PRESSURE REGULATOR |
| • | SIPHON |
| 123 | NETWORK NODE |
| 123S | NETWORK VALVE NODE |
| 123 | VALVE NUMBER |
| 6NB | 6 INCH CAST IRON MAIN |
| 150MM | 150MM STEEL MAIN |
| 110MM PE/NY | 110MM POLYETHYLENE/NYLON MAIN |
| ⊙NB 50MM NY | 50MM NYLON INSERTED INTO 6NB MAIN CAST IRON MAIN |
| 1.2MBL | DISTANCE IN METRES OF MAIN FROM BOUNDARY LINE |
| 1957 | YEAR LAID |
| — + + + — | MUNICIPALITY BOUNDARY |
| — + + + — | NETWORK BOUNDARY |
| 123 | HOUSE NUMBER |

If further information is required, please contact:
Ausgrid DBYD
Phone: (02) 4951 0899
Fax: (02) 4951 0729



Emergency Phone Number 131388

Underground Cable Location Search Advice

**-- Ausgrid Assets Not Recorded in the Vicinity --
(Caution Still Required)**

To:	Mr Evan Webb AD Envirotech 4 10 Millenium Silverwater NSW 2128	Phone No:	0296486669
		Issue Date:	30/06/2015

In response to your enquiry, Sequence No46400381 the records of Ausgrid **do not** disclose that there are Ausgrid underground cables in the defined search location.

This search is based on the geographical position of the dig site as denoted in the Dial Before You Dig caller confirmation sheet and an overview is provided:

Address:	618 Old Northern Road Dural NSW 2158
Job #:	9359099

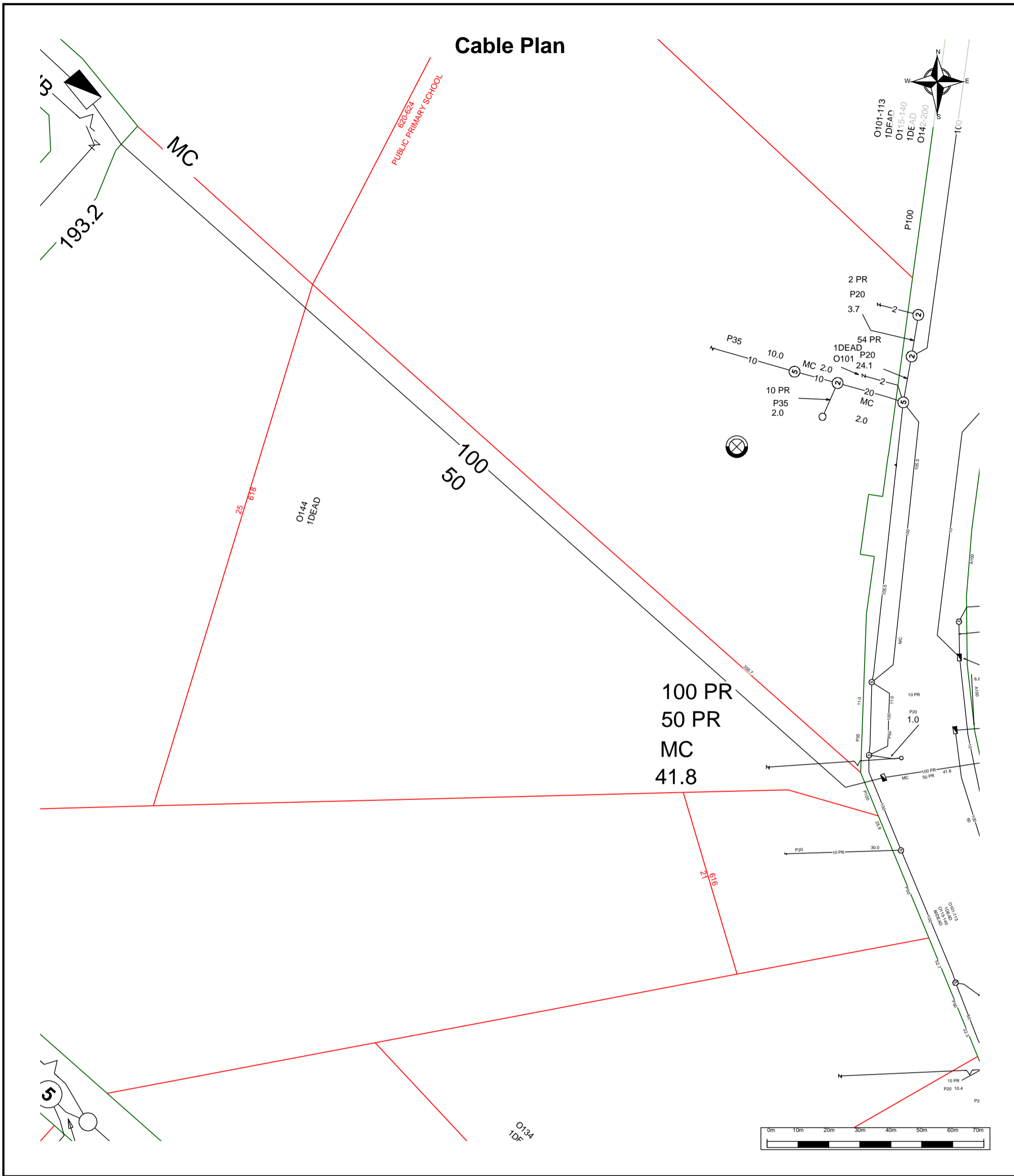


****Important****

All information provided to you is ONLY VALID FOR **30 DAYS** from the date of issue

**YOU MUST READ AND UNDERSTAND THE:
IMPORTANT INFORMATION
AND
CHECKLIST FOR WORK NEAR OR AROUND UNDERGROUND CABLES
THAT ARE INCLUDED AS PART OF THIS ADVICE**

Cable Plan



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: 46400383

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.

TELSTRA CORPORATION LIMITED A.C.N. 051 775 556

Generated On 30/06/2015 14:26:17

The above plan must be viewed in conjunction with the Mains Cable Plan on the following page

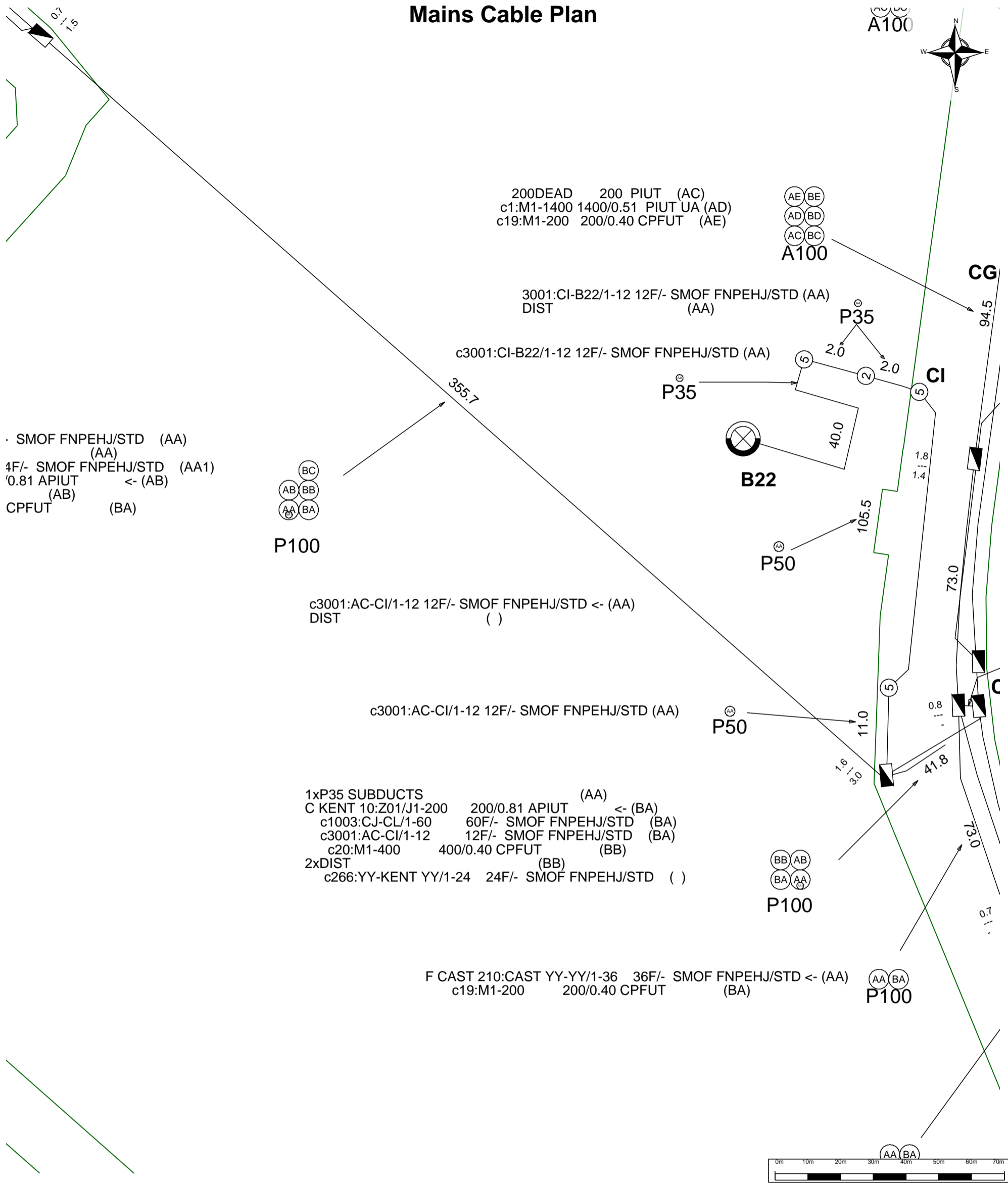
WARNING - Due to the nature of Telstra underground plant and the age of some cables and records, it is impossible to ascertain the precise location of all Telstra plant from Telstra's plans. The accuracy and/or completeness of the information supplied can not be guaranteed as property boundaries, depths 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.

Mains Cable Plan



For all Telstra DBYD plan enquiries -
 email - Telstra.Plans@team.telstra.com
 For urgent onsite contact only - ph 1800 653 935 (bus hrs)

TELSTRA CORPORATION LIMITED A.C.N. 051 775 556

Generated On 30/06/2015 14:26:22

Sequence Number: 46400383

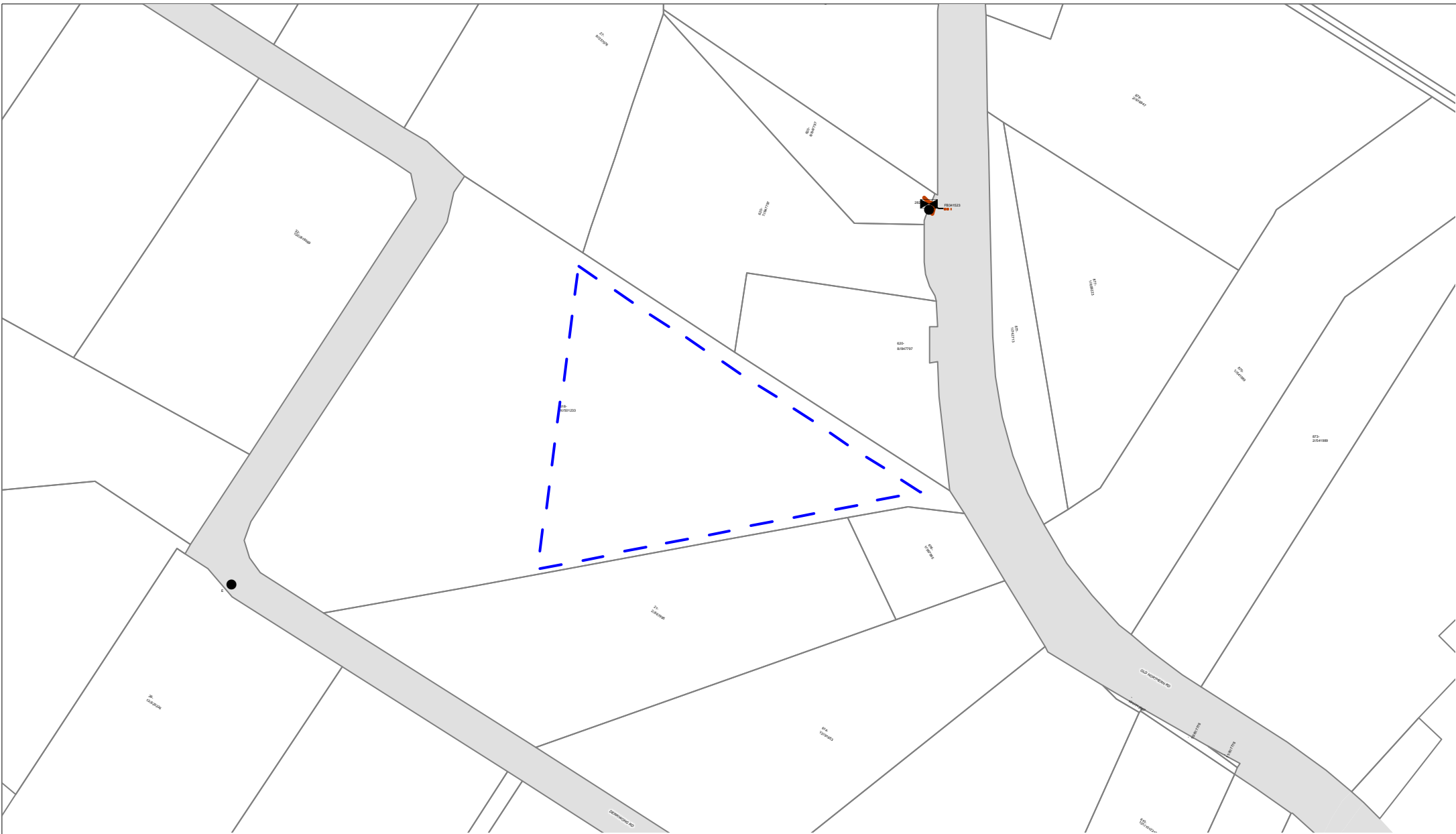
CAUTION: Fibre optic and/ or major network present in plot area. Please read the Duty of Care and contact Telstra Plan Services should you require any assistance.

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.



ENDEAVOUR ENERGY WARNING

This plan shows the approximate location of underground cables relative to fixtures existing when the cables were laid, and has been prepared solely for Endeavour Energy's own use. Endeavour Energy has taken all reasonable steps to ensure that the information is accurate as possible but will accept no liability for inaccuracies in the information shown on such plans from any cause whatsoever arising. Persons excavating are expected to exercise all due care in the vicinity where cables are indicated and will be held responsible for any damage caused to Endeavour Energy's property.

ALL ELECTRICAL APPARATUS SHALL BE CONSIDERED LIVE UNTIL PROVED DE-ENERGISED.
Contact with live electrical apparatus will cause severe injury or death.

Those excavating near Endeavour Energy's cables should be aware that **ASBESTOS OR ASBESTOS - CONTAINING MATERIAL MAY BE PRESENT** in Endeavour Energy's underground assets and that Organo-Chloride Pesticides(OCP) may be present in some sub-transmission trenches.



DO NOT SCALE

DBYD Sequence Number:	46400382
Issued Date:	30/06/2015



Response Cover Letter

Date: 30/06/2015

PIPE Networks
Level 17, 127 Creek St
Brisbane QLD 4000
Phone: +61 732339895
Fax: +61 732339880

To:

Mr Evan Webb - Customer ID: 1153777
AD Envirotech - Mr Evan Webb
4 10 Millenium
Silverwater
NSW
2128

Email: e.webb@adenvirotech.com.au
Phone: 0296486669
Fax: Not Supplied
Mobile: 0449960490

Dear Mr Evan Webb

The following is our response to your Dial Before You Dig enquiry.

Assets Affected: Telstra

Sequence Number: 46400380

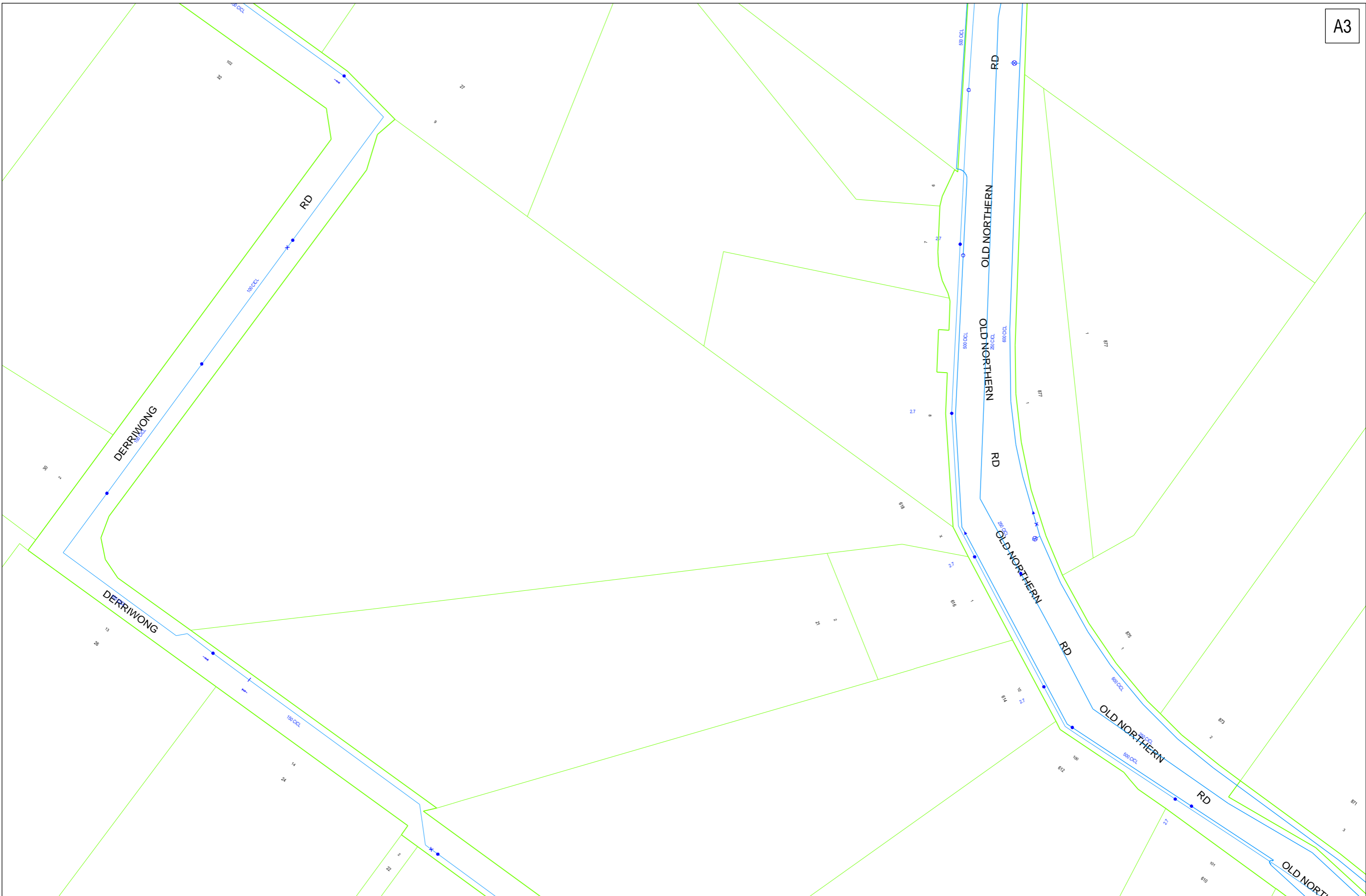
Location: 618 Old Northern Road
Dural
NSW 2158

Commencement Date: 06/07/2015

Please read over the attached documents for more information about your enquiry.

DISCLAIMER: No responsibility/liability is taken by PIPE Networks for any inaccuracy, error, omission or action based on the information supplied in this correspondence.

Note: If the works fall in an area that adjacent to PIPE Networks infrastructure, a pre-inspection is required prior to commencement of works. Contact PIPE Networks to arrange an inspection time. **NO WORKS TO COMMENCE PRIOR TO INSPECTION.**



Appendix IX – NSW WorkCover

New South Wales Office:

A. D. Envirotech Australia Pty Ltd
Unit 6/7 Millennium Court
Silverwater, NSW 2128

Queensland Office:

A. D. Envirotech Australia Pty Ltd
P.O. Box 288
Upper Coomera, QLD 4209

Telephone:

NSW: (02) 8541 7214
QLD: (07) 5519 4610

Internet:

site: www.ADenvirotech.com.au
e-mail info@ADenvirotech.com.au

ABN:

520 934 529 50



WorkCover

Our Ref: D15/166189

Your Ref: Evan Webb

WorkCover NSW
92-100 Donnison Street, Gosford, NSW 2250
Locked Bag 2906, Lisarow, NSW 2252
T 02 4321 5000 F 02 4325 4145
Customer Service Centre 13 10 50
DX 731 Sydney workcover.nsw.gov.au

13 October 2015

Attention: Evan Webb
AD Envirotech Pty Ltd
6/7 Millenium Court
Silverwater NSW 2128

Dear Mr Webb,

RE SITE: 618 Old Northern Rd Dural NSW

I refer to your site search request received by WorkCover NSW on 6 October 2015 requesting information on licences to keep dangerous goods for the above site.

A search of the Stored Chemical Information Database (SCID) and the microfiche records held by WorkCover NSW has not located any records pertaining to the above mentioned premises.

If you have any further queries please contact the Dangerous Goods Licensing Team on (02) 4321 5500.

Yours Sincerely

Brent Jones
Senior Licensing Officer
Dangerous Goods Team

Appendix X – EPA Contaminated Sites Register

New South Wales Office:

A. D. Envirotech Australia Pty Ltd
Unit 6/7 Millennium Court
Silverwater, NSW 2128

Queensland Office:

A. D. Envirotech Australia Pty Ltd
P.O. Box 288
Upper Coomera, QLD 4209

Telephone:

NSW: (02) 8541 7214
QLD: (07) 5519 4610

Internet:

site: www.ADenirotech.com.au
e-mail info@ADenirotech.com.au

ABN:

520 934 529 50



[Home](#) > [Contaminated land](#) > [Record of notices](#)

Search results

Your search for:LGA: Baulkham Hills Shire Council

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Phase I Preliminary Site Investigation

626 Old Northern Rd, Dural NSW

Prepared for: Urbis Pty Ltd



ADE
CONSULTING
GROUP

Prepared for:

Urbis Pty Ltd
Phase I Preliminary Site Investigation

626 Old Northern Rd, Dural

Version	Details	Date
v1 final	Written by Evan Webb	30 th October, 2015

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30th October, 2015

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Envirotech Australia Pty Ltd.

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ABBREVIATIONS

ADE	A.D. Envirotech Australia Pty Ltd
ALS	Australian Laboratory Services
AST	Above Ground Storage Tank
BGL	Below ground level (following excavation works)
BLGL	Below local area ground level
BR	Blind Replicate
BTEX	Benzene, toluene, ethyl-benzene, xylene
COC	Chain of Custody
DEC	Department of Environment and Conservation
DQI	Data Quality Indicators
DQO	Data Quality Objectives
EILs	Ecological Investigation Levels
ESLs	Ecological Screening Levels
GILs	Groundwater Investigation Levels
HILs	Health Investigation Levels
HSLs	Health Screening Levels
LPI	Land Property Information
LTO	Land Titles Office
NATA	National Association of Testing Authorities
NEPC	National Environmental Protection Council
NEPM	National Environmental Protection Measure
NSW EPA	New South Wales Environmental Protection Authority
OEH	Office of Environment and Heritage
OPPs	Organophosphorous Pesticides
OCPs	Organochlorine Pesticides
PAHs	Polycyclic Aromatic Hydrocarbons
PSI	Preliminary Site Investigation
QA/QC	Quality Assurance/Quality Control
RPD	Relative Percent Difference
SCID	Stored Chemical Information Database
SWL	Standing Water Level
SH&EWMS	Safety Health and Environmental Works Method Statement
TPH	Total Petroleum Hydrocarbons
TRH	Total Recoverable Hydrocarbons
UCL	Upper Confidence Limit
VAL	Validation Report
VHC	Volatile Halogenated Compounds

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1 INTRODUCTION

1.1 General Information

A. D. Envirotech Australia Pty Ltd (ADE) was engaged by Urbis Pty Ltd to undertake a Phase I Preliminary Site Contamination Investigation (PSI) to assess the potential for contamination at 626 Old Northern Rd, Dural NSW (hereafter referred to as the 'site').

The site entails Lot 2, DP 541329 in the Local Government Area of The Hills Shire Council, Parish of Nelson, County of Cumberland.

A site inspection was undertaken on the 3rd of July 2015 and comprised of a visual assessment of the site. Details of the field inspection are given in this report, together with comments on the significance of the findings of the investigation.

This report was completed in accordance with the *Guidelines for Consultants Reporting on Contaminated Sites*, NSW EPA, September 2000.

1.2 Proposed Development

ADE has been advised that, Urbis Pty Ltd, on behalf of their client, are re-purposing the site and adjoining properties for *a mixed use residential and commercial development comprising retail outlet shops and medium density residential units*.

1.3 Objectives

The objectives of the investigation were to:

- Identify past and present potentially contaminating activities;
- Identify potential sources of contamination and types of contaminants;
- Discuss the site condition;
- Provide a preliminary assessment of site contamination for the suitability of the proposed development; and
- Assess the need for further investigations.

1.4 Scope of Work

The scope of work required to achieve the objectives of the investigation involved the following:

- Completion of a Safety, Health & Environment Work Method Statement (SHEWMS);
- Desktop site review of:
 - Land title records;
 - Section 149 certificates;
 - WorkCover NSW;
 - NSW Environment and Heritage;
 - EPA contaminated lands register for notations; and
 - Dial Before You Dig service search;
- Review of past and current activities on the site;

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- Review of past and current activities on neighbouring sites and identification of any potential on-site/off-site sources of contamination;
- Review of past aerial photographs of the site and its surrounds to identify the locations of any previous buildings and/or other infrastructure associated with activities that could be on-site/off-site sources of contamination;
- Review of local geology and hydrogeology (including groundwater bore search);
- Site inspection by an experienced environmental consultant; and
- Preparation of a Phase I PSI report outlining:
 - Detailed information on the results of the desktop review and site inspection;
 - Conclusions regarding the potential for contamination at the site;
 - Conclusions regarding the sites suitability for the proposed development; and
 - Recommendations for a Phase II Detailed Site Investigation (DSI), should it be warranted.

1.5 Legislative Requirements

The legislative framework for the report is based on guidelines that have been issued and/or endorsed by the NSW Environmental Protection Agency (EPA) formerly the Office of Environment and Heritage (OEH) under the following Acts/Regulations:

- *Protection of the Environment Operations Act 1997*
- *Protection of the Environment Operations (Underground Petroleum Storage Systems) Regulation 2008*
- *Contaminated Land Management Act 1998*

The relevant guidelines issued under the provisions of the aforementioned Acts/Regulations include:

- *Guidelines for the NSW Site Auditor Scheme*, NSW DEC 2006.
- *Guidelines for Consultants Reporting on Contaminated Sites*, NSW EPA, 2000.
- *Guidelines for Assessing Service Station Sites*, NSW EPA 1994.
- *National Environmental Protection Measure (Assessment of Site Contamination), 1999, as amended 2013.*
- Australian Standard AS 4482.1 *Guide to the sampling and investigation of potentially contaminated soil. Part 1: Non-volatile and semi-volatile compounds.*
- Australian Standard AS 4482.2 *Guide to the sampling and investigation of potentially contaminated soil. Part 2: Volatile substances.*
- *Sampling Design Guidelines* - NSW EPA, 1995.
- *Waste Classification Guidelines Part 1: Classifying Waste*, EPA, 2014.
- *Guidelines for Implementing the Protection of the Environment Operations (Underground Petroleum Storage Systems) Regulation 2008*, NSW DECCW 2009.
- *Guidelines for the Assessment and Management of Groundwater Contamination*, NSW DEC, 2007.

1.6 Whole Report

No one section, or part of a section, of this report should be taken as giving an overall idea of this report. Each section must be read in conjunction with the whole of this report, including its appendices and attachments.

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2 SITE IDENTIFICATION

2.1 Site Location

The site has frontage to The Old Northern Rd, Dural NSW as is shown by Figure 1 below.

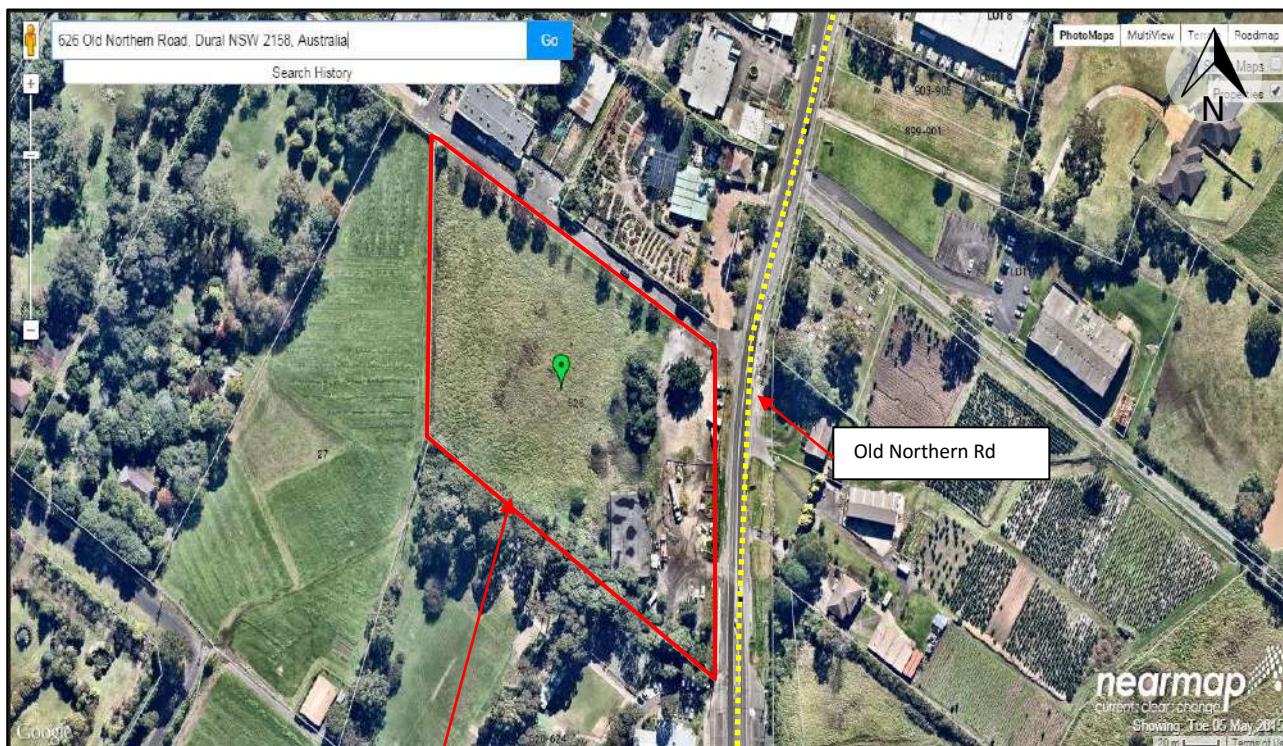


Figure 1. Aerial photograph of the site (Photograph from maps.au.nearmap.com; accessed on 15.10.2015).

Bearings provided in this report are approximate only. For ease of representing locations in the report, the site is considered to be off the Old Northern Road which has been used for compass point directions having a nominal north-south direction assumed. All references to points of the compass within the report are based on these approximate bearings.

2.2 Site Inspection and Description

An Environmental Consultant from ADE carried out a site inspection on the 3rd of July 2015 in order to make a visual assessment of the site and provide information on potential site contamination issues, some of which are as follows:

- Surrounding land uses and potential contamination sources;
- Presence of hazardous or dangerous goods storage;
- Presence of Underground or Aboveground Storage Tanks, Generators or associated fuel transfers systems i.e. fuel lines;
- Condition of current structures, stockpiles, vegetation and soil;
- Proximity to water bodies/courses; and
- Visible and/or olfactory evidence of contamination.

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The site is approximately 1.9 ha of cleared land with a levelled platform adjacent to the Old Northern Rd before sloping from east to west. The levelled section is approximately 50 m wide and is consistent with the surrounding topography of the land. There appears to have been fill imported associated with the construction of a carpark / storage area which has been capped with gravel. The depth of fill is unknown. Visual inspection of the carpark area suggests that the area has also been used for storage of landscape supplies. Anecdotal evidence indicates the area was formerly used by ANL supplies for material storage and distribution. A number of small stockpiles of mulch and topsoil were observed in the southern section of the carpark.

An abandoned building is situated on the western section of the platform which is built in to the slope of the land. The building was formerly used as a fruit shop. At the time of the inspection there were no furnishings or sign of recent use along the building. The building is constructed on concrete and brick. A piece of presumed asbestos was observed on top of the ground within the centre of the first floor, no indication of the source of the debris was noted. The basement / surface soil of the building appeared to have some staining of an unknown origin with a range of discoloration noted. Rubbish, tins and spray paint can were observed. A section of exposed soil within the basement of the fruit shop was noted to have building rubble on the soil surface.

Adjacent the building on the western exterior, dumped rubbish included TVs, car tyres and wood were observed.

A number of small stockpiles of potential fill materials were noted approximately 15m west of disused building with an approximate volume of 100m³. The soil may have come from an area of cutting into the slope during the construction of the fruitshop.

The remainder of the site is cleared grassland sloping towards the west. No apparent land use was noted in recent times.

Photographs and site inspection notes taken on the 3rd July 2015 can be found in Appendix III – Photographs.

2.3 Surrounding Land Use

At the time of inspection the primary surrounding land-uses were observed as follows:

- Northern boundary: Immediately to the north of the site is a commercial building and associated carpark and a nursery. Further north are rural residential and former agricultural sites;
- Eastern boundary: directly to the east of the site is The Old Northern Rd, on the opposite side is an large orchard property;
- Southern boundary: To the south of the site is Dural Public School; and
- Western boundary: A disused and cleared block is situated to the west of the subject site. The site appears to have been used as a former orchard site.

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2.4 Summary of Site Details

Table 1 below provides a summary of details pertaining to the site.

Table 1. Site details and information.

Site Details	
Site address	626 Old Northern Rd, Dural NSW
Title identification(s)	Lot 2, DP 541329
Current site use	Former commercial site
Proposed site use	Mixed use / residential and commercial
Investigation area	Approximately 1.9 ha

3 PHYSICAL SETTING

3.1 Site Topography and Hydrology

The sites elevation varies between approximately 215 m AHD and 201 m AHD. The topography slopes with a moderate to steep decline from east to west. A first order stream which is evident only through an apparent drainage line is situated south-west of the site commencing in the adjacent public school, the drainage line runs across the adjoining site and flows into O'Haras Creek further to the west.

3.2 Local Geology and Soil

The site is located on a Glenorie Soil Landscape (gn) as indicated on the Sydney Soil Landscape Map, prepared by the Soil Conservation Services of NSW.

The geology of the Glenorie Soil Landscape is underlain by Wianamatta group Ashfield Shale and Bringelly Shale formations. The Ashfield shale is comprised of laminate and dark grey shale. Bringelly shale consists of shale, calcareous clastone, laminate and fine to medium grained lithic-quartz stone.

Soils are shallow to moderately deep (< 100cm) with variability across upper slopes and drainage gullies.

The topsoil (A1 Horizon) consists of a friable dark brown loam, with moderately to strongly pedal structure. apedal single-grained structure and porous sandy fabric. The pH ranges from strongly acid (pH 4.0) to slightly acid (pH 6.0).

Beneath this layer occurs the B Horizon consisting of hardsetting clay loam. The pH ranges between strongly acid (pH 4.0) to slightly acid (pH 6.5).

In conjunction with the B Horizon, occurs a brown, strongly pedal medium clay. The pH varies from strongly acid (pH 4.5) to moderately acid (pH 6.5). Strongly weathered sandstone fragments are common. Roots and charcoal fragments are rare.

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It should be noted that the area occurs close to a transition between Glenorie and Lucas Heights soil landscapes and therefore transitional phases may occur and vary depending on the exact location.

Fill Material

No intrusive works were conducted during the site inspection, no obvious signs of cut or fill activities were observed on the site. Based on the evidence of former agricultural use, it is possible that top soil may have been imported to add nutrients and provide a growth medium for crops grown on site.

3.3 Hydrogeology

It was beyond the scope of work to study the groundwater flow direction. However, as previously mentioned in the above section, the local groundwater flow is likely to have a westerly direction towards O'Hara Creek which is located approximately 350 m to the west.

A search for registered groundwater wells within a 500 m radius of the site was undertaken by ADE via the NSW Office of Water (NSW Groundwater works, NR Atlas website). A groundwater bore was located approximately 350m to the south of the site (GW105866) with an additional 3 located nearby to the south-west of the site. No additional information relating to standing water level or soil profiles was provided (refer to Appendix IV – NSW Groundwater (NRAtlas).

3.4 Acid Sulphate Soils

A review of the Acid Sulphate Soil Risk Maps demonstrated that the site is within an area of “no known occurrence or low risk” of acid sulphate soils (refer to *Appendix V – Acid Sulfate Soils*).

4 SITE HISTORY

4.1 Historical Land and Title Search

The site history has been compiled from information gathered from the Land Titles Office (LTO), Land Property Information (LPI) and Council records.

The site entails Lot 2, DP 541329 in the Local Government Area of The Hills Shire Council, Parish of Nelson, County of Cumberland.

Anecdotal information provided by a local business owner nearby suggests that the site was previously used as a peach orchard.

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Table 2. Summary of LTO records for Lot 2, DP 541329

Date	Transferred/Leased From	Transferred/Leased To	Transfer No.	Certificate reference
Lot 2, DP 541329				
23.06.1823	Crown land	James Byrne	N/A	Vol 3106 Fol 53
30.09.1920	Unknown	Darcy Edward Hawkins of Raymond Terrace, Fruit Inspector	22381	Vol 3106 Fol 53
21.04.1922	Darcy Edward Hawkins of Raymond Terrace, Fruit Inspector	Part transfer to His Majesty King George V for the purpose of the Closer Settlement Acts and Settlement Purchases by discharged soldiers,	810461	Vol 3106 Fol 53
10.04.1932	Darcy Edward Hawkins of Raymond Terrace, Fruit Inspector	Charles Albert Hitchcock of Glenorie, orchardist	C124745	Vol 3106 Fol 53
07.09.1950	Charles Albert Hitchcock of Glenorie, orchardist	Adrienne Elizabeth Chorley of Castle Hill, married woman	F301906	Vol 3106 Fol 53
20.06.1952	Adrienne Elizabeth Chorley of Castle Hill, married woman	Thomas Marshall of Castle Hill, clerk	F687528	Vol 3106 Fol 53
30.06.1960	Thomas Marshall of Castle Hill, clerk	Kelvin Park Investments Pty Ltd	H591243	Vol 3106 Fol 53
31.1.1964	Kelvin Park Investments Pty Ltd	Kelvin Park Investments Pty Ltd	N/A	Vol 9621 Fol 126
26.2.1965	Kelvin Park Investments Pty Ltd	Part of land within described as being Lot 26 in DP223272 (Main Roads Act)	K102554	Vol 9621 Fol 126
23.05.1969	Kelvin Park Investments Pty Ltd	Easement in Transmission affecting that part of the land within discussed,	L509473	Vol 9621 Fol 126
08.07.1970	Kelvin Park Investments Pty Ltd	Ben Nomindes Pty Ltd	L903291	Vol 11312 Fol 12
24.01.1972	Ben Nomindes Pty Ltd	Salvatore Raso of Glenhaven, Grower and Catherine Raso his wife as joint tenants	M478949	Vol 11312 Fol 12
01.04.1976	Salvatore Raso of Glenhaven, Grower and Catherine Raso his wife as joint tenants	Nino Barbaro of Eastwood, Truck driver and Maria Barbaro his wife as joint tenants	P663835	Vol 11312 Fol 12

The information obtained from the LTO, LPI and Council Records is unclear with regards to the former owners of the land due to missing information on the documentation (Refer to Appendix I – LTO Records). The information suggests the land has been owned by a number of Orchardists' across the past 100 years. No other information can be extrapolated with regard to contamination from the LTO records.

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4.2 NSW Office of Environment and Heritage

A search of the NSW Office of Environment and Heritage public register of state heritage inventory items identified no heritage listed items within the general area of the subject site (Refer to Appendix VI – NSW OEH State Heritage Records).

4.3 Aerial Photographs Review

A review of aerial photographs was conducted and is summarised in Table 3 below. Aerial photographs from the years of 1930, 1947, 1956, 1965, 1986, 1994, 2009, 2011 and 2015 were examined (refer to Appendix II - Aerial Photographs).

Table 3. Summary of aerial photography.

Year	Type	Subject Site Description	Adjacent Site Description
1930	Black and White	The site is a cleared block with access to a cleared area with a building situated adjacent the Old Northern Rd on the eastern boundary of the property. The rest of the site has been cleared of vegetation.	Market gardens are present in surrounding properties to the north, east and south-west. The area has undergone extensive clearing for the purpose of agricultural activities. A bushland reserve is present to the west of the subject site.
1947	Black and White	The site appears largely unchanged.	To the west and south-west of the site is an established orchard.
1956	Black and White	The eastern section of the site appears to have been altered and a platform consistent with the lay of land as it is today observed. Disturbed soil is evident in the north-eastern corner. The residential house has been demolished.	A number of buildings have been constructed to the south of the subject site believed to be associated with the school. Orchards to the west of the site appear to have been scaled back.
1965	Black and White	The site appears to be unused.	Orchards to the west have been removed. Market gardens are now present opposite the site on the eastern side of the Old Northern Road.
1986	Colour	A building has been constructed in the south-eastern corner of the subject site. The eastern portion of the site appears to have been cleared for the purpose of a carpark. Some signs of soil disturbance are evident in the south-western corner of the site.	The school to the south has added large playgrounds adjacent to the property. The surrounds appear largely unchanged. The property to the west appears to be used for market gardens.
1994	Colour	The site appears unchanged, the soil along the eastern boundary of the site appears exposed.	The nursery to the north appears to have constructed new buildings however the aerial photograph cuts off most of the view. The property to the west continues to be used for market gardens.
2009	Colour	The site appears unchanged.	The surrounding area appears largely unchanged.

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Table 3. Continued ...

Year	Type	Subject Site Description	Adjacent Site Description
2011	Colour	The site appears unchanged.	The surrounding area appears largely unchanged.
2015	Colour	The site is being used for landscape supply storage with trucks observed, soil exposed and small stockpiles observed.	Surrounding agricultural activities appear to have been scaled back.

4.4 Contaminated Land Register Search

A search of the sites listed by the EPA under the *Contaminated Land Management Act 1997* revealed that no records have been issued against the site. No records of other contaminated sites that could have a potential impact on the site are present on the properties in the area surrounding the site (Refer to Appendix X – EPA Contaminated Sites Register).

4.5 Previous Investigation Reports

No previous investigative reports for the site or surrounding area have been provided by the client.

4.6 Section 149

The site is currently zoned under Zone RU6 Transition under The Hills Local Environmental Plan 2012. The Planning Certificate under Section 149 of the *Environmental Planning and Assessment Act 1979* (See Appendix VII – Section 149 Certificate) provides the state and local environmental planning instruments which affect the site.

The following matters are prescribed by section 59 (2) of the Contaminated Land Management Act 1997 as additional matters to be specified in the planning certificate.

- The land is not within an investigation area or remediation site under Part 3 of the Contaminated Land Management Act 1997;
- The land is not subject to an investigation order or an remediation order within the meaning of the Contaminated Land Management Act 1997;
- The land is not subject to a voluntary investigation proposal (or voluntary remediation proposal) that is the subject of the Environmental Protection Authority's agreement under Section 19 or 26 of the Contaminated Land Management Act 1997; and
- The land is not subject to a site audit statement within the meaning of the Contaminated Land Management Act 1997.

4.7 Dial Before You Dig

An online search for utilities located within the site was conducted and is summarised in Table 4, below. Asset owners were notified and provided information on their utilities (refer to Appendix VIII – Dial Before You Dig).

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Table 4. Summary of utilities located on or adjacent to the site

Asset Owner	Utility Type	Utility Location
Augrid	Underground Cable	No services present within the boundary of the subject site.
Pipe Networks	Fibre Optic Cables	No services present within the boundary of the subject site.
Telstra	Fibre Optic Cables	No services present within the boundary of the subject site.
Sydney Water	Water	A pipe runs along the eastern border of the site.
Endeavour Energy	Electrical	No services present within the boundary of the subject site.
Jemena	Gas	No services present within the boundary of the subject site.

4.8 Assessment of Historical Information Integrity

The site history assessment has been obtained from a variety of resources including government records from the NSW land titles office, local council, historical archives, historical aerial photographs, NSW Office of Water and EPA. The veracity of the information from these sources is considered to be high. The site history assessment is generally considered to be of high integrity with respect to the historical use of the site.

4.9 WorkCover

A search of the Stored Chemical Information Database (SCID) and the microfiche records held by WorkCover NSW has not located any records pertaining to the above mentioned premises (Refer to Appendix IX – NSW WorkCover).

5 POTENTIAL CONTAMINATION TYPES AND RECEPTORS

5.1 Potential Contamination Types

Table 5 below provides details of potential contamination types that were identified during the investigation. These are Contaminants of Potential Concern (COPC) were noted for each have the potential to have migrated to or be found on the site based on the site history.

New South Wales Office:

A. D. Envirotech Australia Pty Ltd
Unit 6/7 Millennium Court
Silverwater, NSW 2128

Queensland Office:

A. D. Envirotech Australia Pty Ltd
P.O. Box 288
Upper Coomera, QLD 4209

Telephone:

NSW: (02) 8541 7214
QLD: (07) 5519 4610

Internet:

site: www.ADenvirotech.com.au
e-mail info@ADenvirotech.com.au

ABN:

520 934 529 50

Table 5. Potential Sources, Locations and Types of Contaminants.

Potential Source of contamination	Location	Migration pathway	Contaminants of Potential Concern
Importation of fill	Carpark along eastern portion of site and to west of building	Imported fill	Heavy Metals, PAHs, TRH, BTEX, Phenols & Asbestos
Commercial building	Former fruit shop - throughout building & first floor, location of asbestos observed.	Demolition	Asbestos fibre cement and dust
Soil staining of unknown origin	Basement of fruit shop, soil surface and face of fill within basement	Imported fill, leakages from unknown source	Heavy Metals, PAHs, TRH, BTEX, Phenols

No specific assessment of groundwater contamination has been undertaken within this investigation.

5.2 Potential Transport Mechanism

Primary transport mechanisms for the migration of potential contaminants on to the site or off the site include:

- Airborne particulates due to wind turbulence events;
- Surface water runoff and storm water drainage;
- Downward migration and leaching via infiltration of rain water into the soil; and
- Later migration via groundwater.

5.3 Potential Contamination Receptors

The main potential contamination receptors were considered to include:

- Future construction / utility workers involved in excavation for future development of the site;
- Future residents and or users of the site;
- The aquatic ecosystems in O'Haras Creek.

5.4 Potential Contamination Discussion

During the course of the site inspection no signs of olfactory contamination were noted. No dumped rubbish or obvious signs of imported fill were noted across the site.

The carpark appears to have been filled in sections for the purpose of levelling off the top 50 m of the site. Evidence from aerial photographs suggests this occurred during the 1950's. The nature of the materials is unknown. The carpark has also been used for an extended period of time for storage of materials and unregulated importation and exporting of fill. As such the entire area should require investigation in relation to potential contamination.

The building appears to be constructed of predominantly bricks and concrete however a detailed inspection of the building was not undertaken as it was not part of the scope of works. The presence of

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presumed asbestos cement debris in the middle of the first floor on top of the ground suggests previous storage of asbestos within the area. Storage and or damage of the materials may have resulted in loose asbestos fibres contaminating the surrounding area and should be reviewed during a hazardous material survey of the building to be undertaken prior to demolition of the structure. The basement / surface soil of the building appeared to have some staining of an unknown origin and should be further investigated.

It should be noted that thick long grass covered the rest of the site at the time of inspection and visual assessment of the soil surface could not be achieved.

Results from the Stored Chemical Information Database no dangerous goods have were registered to the property address.

It is considered that the likelihood of contamination for the site is low however past land use indicates the potential for surface contamination and the possibility of imported fill from an unknown origin.

Upon review the available information presented within the body of this report, it is the opinion of ADE that there is the potential for contaminants of concern to pose a low risk to the proposed future users of the site and that a limited investigation into the nature and extent of contamination (if present) is required in the form of a limited detailed site investigation.

6 CONCLUSIONS

Based on the data and evidence collected in the course of the site inspection and site history review, the findings of the Phase I PSI are as follows:

- The land –use has been predominantly commercial for the past 30 years, prior to this it appears unused;
- The carpark / levelled platform present on the eastern section of the site appears to have had fill imported for the purpose of levelling out the site. The origin of the fill materials is unknown. The area has been utilised as a carpark and for the storage of various materials in the form of a landscape supply yard;
- Based on the age of the commercial building and the observation of asbestos cement debris on the ground surface, there is the potential for bonded and friable asbestos materials to be present within the building fabric. A hazardous materials survey should be undertaken prior to any demolition practices being undertaken and recommendations adhered; and
- It is the opinion of ADE that there is the potential for contaminants of concern to pose a low risk to the proposed future users of the site and that a limited investigation into the nature and extent of contamination (if present) is required in the form of a limited detailed site investigation.
- ADE considers that it is likely that any contamination detected during further investigations (if present) will be capable of being remediated such that the site is suitable for the proposed land use.

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ABN:

520 934 529 50

7 LIMITATIONS

This report has been prepared for use by the client who has commissioned the works in accordance with the project brief only and has been based on information provided by the client. The advice herein relates only to this project and all results, conclusions and recommendations made should be reviewed by a competent and experienced person with experience in environmental investigations, before being used for any other purpose. A.D. Envirotech Australia Pty Ltd (ADE) accepts no liability for use or interpretation by any person or body other than the client who commissioned the works. This report should not be reproduced or amended in any way without prior approval by the client or ADE and should not be relied upon by any other party, who should make their own independent enquiries.

Furthermore, soils, rock and aquifer conditions are often variable, resulting in non-homogenous contaminant distributions across a site. Boundaries between zones of variable contamination are often indistinct and have been interpreted based on available information and the application of professional judgement. The accuracy with which the subsurface conditions have been characterised depends on the frequency and methods of sampling and the uniformity of subsurface conditions and is therefore limited by the scope of works undertaken.

At the time of inspection the residential house could not be accessed. In the event that chemicals or other unexpected items of potential concern are uncovered, the information should be provided to ADE for review and consideration.

This report does not provide a complete assessment of the environmental status of the site and it is limited to the scope defined herein. Should information become available regarding conditions at the site including previously unknown sources of contamination, ADE reserves the right to review the report in the context of the additional information.

ADE's professional opinions are based upon its professional judgement, experience, training and results from analytical data. In some cases further testing and analysis may be required, thus producing different results and/or opinions. ADE has limited investigation to the scope agreed upon with its client.

ADE has used a degree of care and skill ordinarily exercised in similar investigations by reputable member of the Environmental Industry within Australia. No other warranty, expressed or implied, is made or intended.

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ABN:

520 934 529 50

8 REFERENCES

1. Australian Standard AS 4482.1 *Guide to the sampling and investigation of potentially contaminated soil. Part 1: Non-volatile and semi-volatile compounds.*
2. Australian Standard AS 4482.2 *Guide to the sampling and investigation of potentially contaminated soil. Part 2: Volatile substances.*
3. Chapman, G.A. and Murphy, C.L. (1989), *Soil Landscapes of the Sydney 1:100000 sheet.* Soil Conservation Services of NSW, Sydney.
4. *Contaminated Land Management Act 1998.*
5. Cummins Distribution, Distribution Business Unit Environmental Due Diligence and Pollution Prevention Process (*Power Point Presentation*) – Individual Sites, July 2013.
6. DLWC 1995a, *Guidelines for the Use of Acid Sulfate Soils Risk Maps*, by S.D. Naylor, G.A. Chapman, G. Atkinson, C.L. Murphy, M.J. Tulau, T.C. Flewin, H.B. Milford, & D.T. Morand, Soil Conservation Service of NSW, Department of Land and Water Conservation, Sydney .
7. EPA Requirements for Quality Assurance Project Plans (EPA QA/R-5).
8. *Guidelines for Assessing Service Station Sites*, NSW EPA 1994.
9. *Guidelines for the Assessment and Management of Groundwater Contamination*, NSW DEC, 2007.
10. *Guidelines for Consultants Reporting on Contaminated Sites*, NSW EPA, 2000.
11. *Guidelines for Implementing the Protection of the Environment Operations (Underground Petroleum Storage Systems) Regulation 2008*, NSW DECCW 2009.
12. *Guidelines for the NSW Site Auditor Scheme*, NSW DEC 2006.
13. *Guidelines for the investigation, assessment and remediation of mould in workplaces, March 2001* (Canada, Workplace Safety and Health Division Manitoba Department of Labour & Immigration).
14. *Guidance for the Preparation of Standard Operating Procedures for Quality-Related Documents (EPA QA/G-6).*
15. Herbert, C. (ed) (1983), *Geology of the Sydney 1:100000 Sheet 9130*, New South Wales Department of Mineral Resources, Sydney Stone, Y, Ahern CR, and Blunden B (1998).
16. *National Environmental Protection Measure (Assessment of Site Contamination), 1999, as amended 2013.*
17. *NSW Code of Practice: How to Manage and Control Asbestos in the Workplace (2011).*
18. *NSW Code of Practice: How to Safely Remove Asbestos (2011).*
19. *Protection of the Environment Operations Act 1997.*
20. *Protection of the Environment Operations (Underground Petroleum Storage Systems) Regulation 2008.*
21. *Sampling Design Guidelines - NSW EPA, 1995.*
22. *Soils Manual 1998.* Acid Sulfate Soil Management Advisory Committee, Wollongbar, NSW, Australia.
23. *Waste Classification Guidelines Part 1: Classifying Waste*, EPA, 2014.
24. *WHS Regulation 2011.*
25. *WHS Act 2011.*
26. *WorkCover NSW Working With Asbestos Guide (2008).*

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Appendix I – LTO Records

New South Wales Office:

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ABN:

520 934 529 50



TITLE SEARCH

Title Reference: 2/541329

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 2/541329

SEARCH DATE	TIME	EDITION NO	DATE
27/10/2015	1:56 PM	8	2/9/2006

LAND

LOT 2 IN DEPOSITED PLAN 541329
 AT DURAL
 LOCAL GOVERNMENT AREA THE HILLS SHIRE
 PARISH OF NELSON COUNTY OF CUMBERLAND
 TITLE DIAGRAM DP541329

FIRST SCHEDULE

AUSTRALIAN NATIVE LANDSCAPES PTY. LIMITED (T 060523)

SECOND SCHEDULE (7 NOTIFICATIONS)

- 1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
- * 2 RIGHT OF WAY CREATED BY THE WILL OF RUTH HAWKINS, DECEASED (PROBATE NO. 37443)
- 3 A810461 RIGHT OF WAY AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM
- 4 K102554 RESTRICTION(S) ON THE USE OF LAND OF THE PART OF THE LAND ABOVE DESCRIBED CONTAINED IN LOT 26 IN DP223272 - SEE SECTION 27E (6) MAIN ROADS ACT, 1924
- 5 L508473 EASEMENT FOR TRANSMISSION LINE AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM
- 6 AC103003 MORTGAGE TO AUSTRALIA AND NEW ZEALAND BANKING GROUP LIMITED
- 7 DP1075559 EASEMENT FOR DRAINAGE OF WATER 3 METRE(S) WIDE APPURTENANT TO THE LAND ABOVE DESCRIBED

NOTATIONS

DP847797 NOTE: PLAN OF ACQUISITION
 DP1089583 NOTE: PLAN OF PROPOSED EASMENT
 UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

PRINTED ON 27/10/2015

* ANY ENTRIES PRECEDED BY AN ASTERISK DO NOT APPEAR ON THE CURRENT EDITION OF THE CERTIFICATE OF TITLE.
 WARNING: THE INFORMATION APPEARING UNDER NOTATIONS HAS NOT BEEN FORMALLY RECORDED IN THE REGISTER.

HISTORY OF TITLE TRANSACTION

Title Reference: 2/541329

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE

 27/10/2015 1:56PM

FOLIO: 2/541329

First Title(s): SEE PRIOR TITLE(S)
 Prior Title(s): VOL 11312 FOL 19

Recorded	Number	Type of Instrument	C.T. Issue
-----	-----	-----	-----
28/3/1988		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
13/7/1988		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
12/4/1989	Y292722	WITHDRAWAL OF CAVEAT	
12/4/1989	Y292723	WITHDRAWAL OF CAVEAT	
12/4/1989	Y292724	DISCHARGE OF MORTGAGE	
12/4/1989	Y292725	TRANSFER	EDITION 1
19/5/1989	Y374595	MORTGAGE	EDITION 2
5/8/1991	Z788195	MORTGAGE	EDITION 3
3/3/1995	O60521	DISCHARGE OF MORTGAGE	
3/3/1995	O60522	DISCHARGE OF MORTGAGE	
3/3/1995	O60523	TRANSFER	
3/3/1995	O60524	MORTGAGE	EDITION 4
22/3/1995	DP847797	DEPOSITED PLAN	
8/10/1997	3433841	DISCHARGE OF MORTGAGE	
8/10/1997	3433842	MORTGAGE	EDITION 5
2/4/2002	DP1038486	DEPOSITED PLAN	
30/3/2004	AA531043	DISCHARGE OF MORTGAGE	
30/3/2004	AA531046	MORTGAGE	EDITION 6
2/12/2004	AB134486	CAVEAT	
17/2/2005	AB297404	WITHDRAWAL OF CAVEAT	
31/10/2005	AB876098	REQUEST	
1/11/2005	DP1089583	DEPOSITED PLAN	
4/11/2005	AB887673	CAVEAT	

END OF PAGE 1 - CONTINUED OVER

PRINTED ON 27/10/2015



LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE

27/10/2015 1:56PM

FOLIO: 2/541329 PAGE 2

Recorded -----	Number -----	Type of Instrument -----	C.T. Issue -----
21/12/2005	AB980399	WITHDRAWAL OF CAVEAT	
9/2/2006	AC103000	DISCHARGE OF MORTGAGE	
9/2/2006	AC103003	MORTGAGE	EDITION 7
2/9/2006	DP1075559	DEPOSITED PLAN	EDITION 8
19/6/2013	AH808698	DEPARTMENTAL DEALING	

*** END OF SEARCH ***

PRINTED ON 27/10/2015

48807

CERTIFICATE OF TITLE.

(C.)

New South Wales.

CANCELLED

[Appⁿ No. 22381]



REGISTER BOOK,

VOL. 3106 FOL. 53

St 917

CANCELLED

DARCY EDWARD HAWKINS of Raymond Terrace, Fruit Inspector, applicant in primary application No. 22381 is now the proprietor of an Estate in Fee Simple subject nevertheless to the reservations and conditions if any contained in the Grant hereinafter referred to and also subject to such encumbrances liens and interests as are notified hereon in that piece of land situated at Dural in the Shire of Baulkham Hills Parish of Nelson and County of Cumberland containing nine acres three roods thirty one and one half perches or thereabouts as shown in the plan hereon and therein edged red and also shown in the plan lodged with said application No. 22381 being part of 100 acres (portion 138 of parish) delineated in the Public Map of the said Parish in the Department of Lands originally granted to James Byrne by Crown Grant dated the thirtieth day of June one thousand eight hundred and twenty three.

In witness whereof, I have hereunto signed my name and affixed my Seal, this 30th day of September one thousand nine hundred and twenty

Signed in the presence of

H. McKay

A. Kilgus

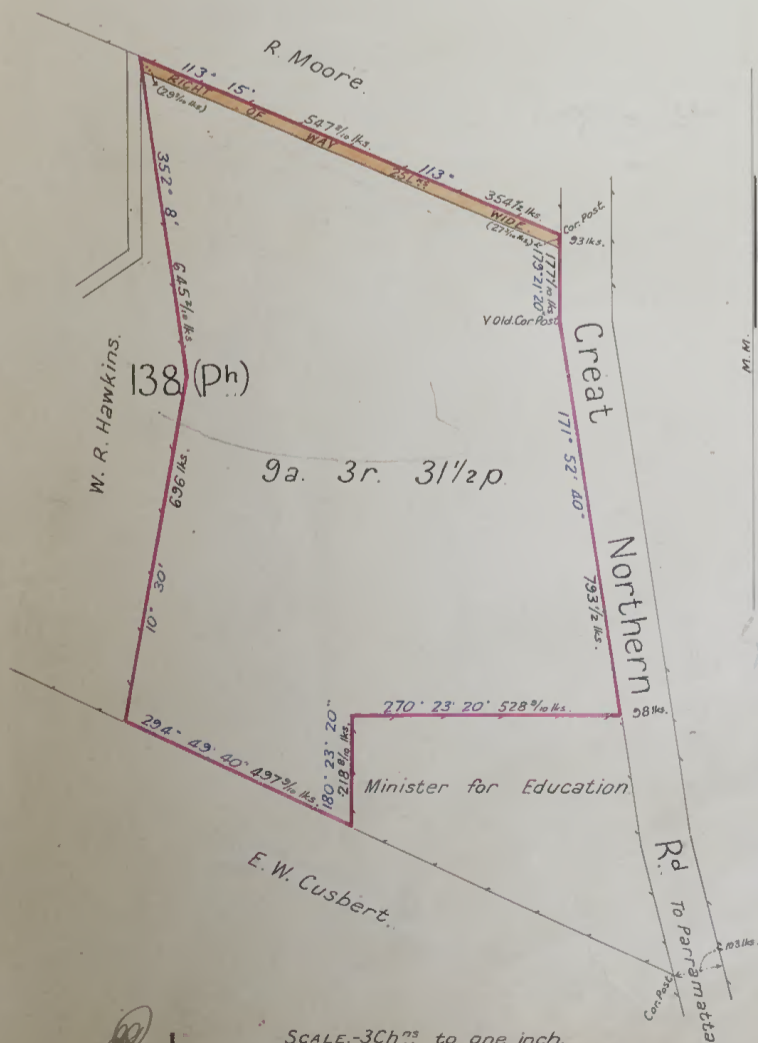
Registrar General.



NOTIFICATION REFERRED TO.

Subject to the rights of way created by the will of Ruth Hawkins deceased (probate No. 37443).

Registrar General.



No. A 810461 TRANSFER dated 21st April 1922 from the said Darcy Edward Hawkins To His Majesty King George V for the purposes of the Closer Settlement Act and Settlement Purchase by Discharged Soldiers of a Right of Way over that part of the land within described now shown by brown color on the plan within described Produced and entered 12th May 1922 at 4 1/2 o'clock in the afternoon.

A. Kilgus
REGISTRAR GENERAL



9-810461

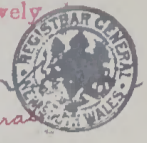
Te
1247

No. C124745 TRANSFER dated 10th April 1932
from the said Darcy Edward Hawkins to Charles Albert
Nitchcock of Plouvie, Orchardist
of the land within described
Produced and entered 9th June 1932
at 24th into pt 3 o'clock in the after noon.
Amos D. Ono
Acting REGISTRAR GENERAL.



This deed is cancelled as to the whole
New Certificates of Title have issued for lots in
deposited Plan No. 220056 as follows:-
Lots 1 & 2 Vol. 9621 Fol. 125 & 126 respectively

Jawatson
Registrar General



M
6

No. C124746 MORTGAGE dated 7th June 1932
from the said Charles Albert Nitchcock to The National
Bank of Australasia Limited.
Produced and entered 9th June 1932
at 24th into pt 3 o'clock in the after noon.
Amos D. Ono
Acting REGISTRAR GENERAL.



F.30

No. F301905 DISCHARGE of within mortgage
No. C124746 dated 7th August 1950
Produced and entered 11th September 1950
at 2 into pt 10 o'clock in the fore noon.
J. Wells
REGISTRAR GENERAL.



No. F301906 TRANSFER dated 7th September 1950
from the said Charles Albert Nitchcock to Adrienne
Elizabeth Charley of Castle Hill married
Woman
of the land within described
Produced and entered 11th September 1950
at 2 into pt 10 o'clock in the fore noon.
J. Wells
REGISTRAR GENERAL.



Te
1248
M

No. F687528 TRANSFER dated 20th June 1952
from the said Adrienne Elizabeth Charley
to Thomas Jenner Marshall of Castle
Hill Clerk
of the land within described
Produced and entered 26th June 1952
at 24 into pt 10 o'clock in the fore noon.
J. Wells
REGISTRAR GENERAL.



No. F687529 MORTGAGE dated 20th June 1952
from the said Thomas Jenner Marshall to The
National Bank of Australasia Limited
Produced and entered 26th June 1952
at 24 into pt 10 o'clock in the fore noon.
J. Wells
REGISTRAR GENERAL.



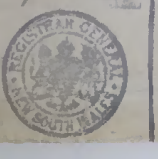
D
H

MORTGAGE No. F687529 has been discharged.
See H591242 Entered 13th October 1960.
Jawatson
REGISTRAR GENERAL.



Te
1243
H591242 M
1451

Calvin Park Investments Pty. Limited is
now the registered proprietor of the land within described.
See TRANSFER No. H591243 dated 30th August 1960
Entered 13th October 1960.
Jawatson
REGISTRAR GENERAL.



DP 22005680 w/1/2
5327191 all mortgage
5524213 T Est 1
Mortgage 22005680
for 24.720000
for 24.720000

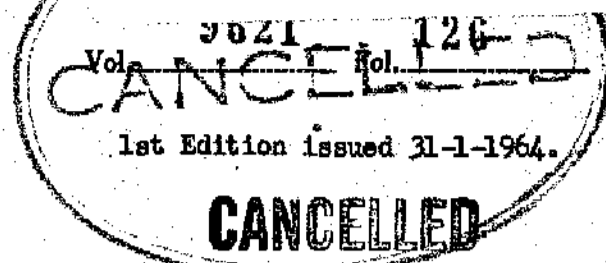
G. 4
NEW SOUTH WALES

CERTIFICATE OF TITLE
PROPERTY ACT, 1900, as amended.



9621 126

Appln. No. 22381
Prior Title Vol. 3106 Fol. 53



9621 126

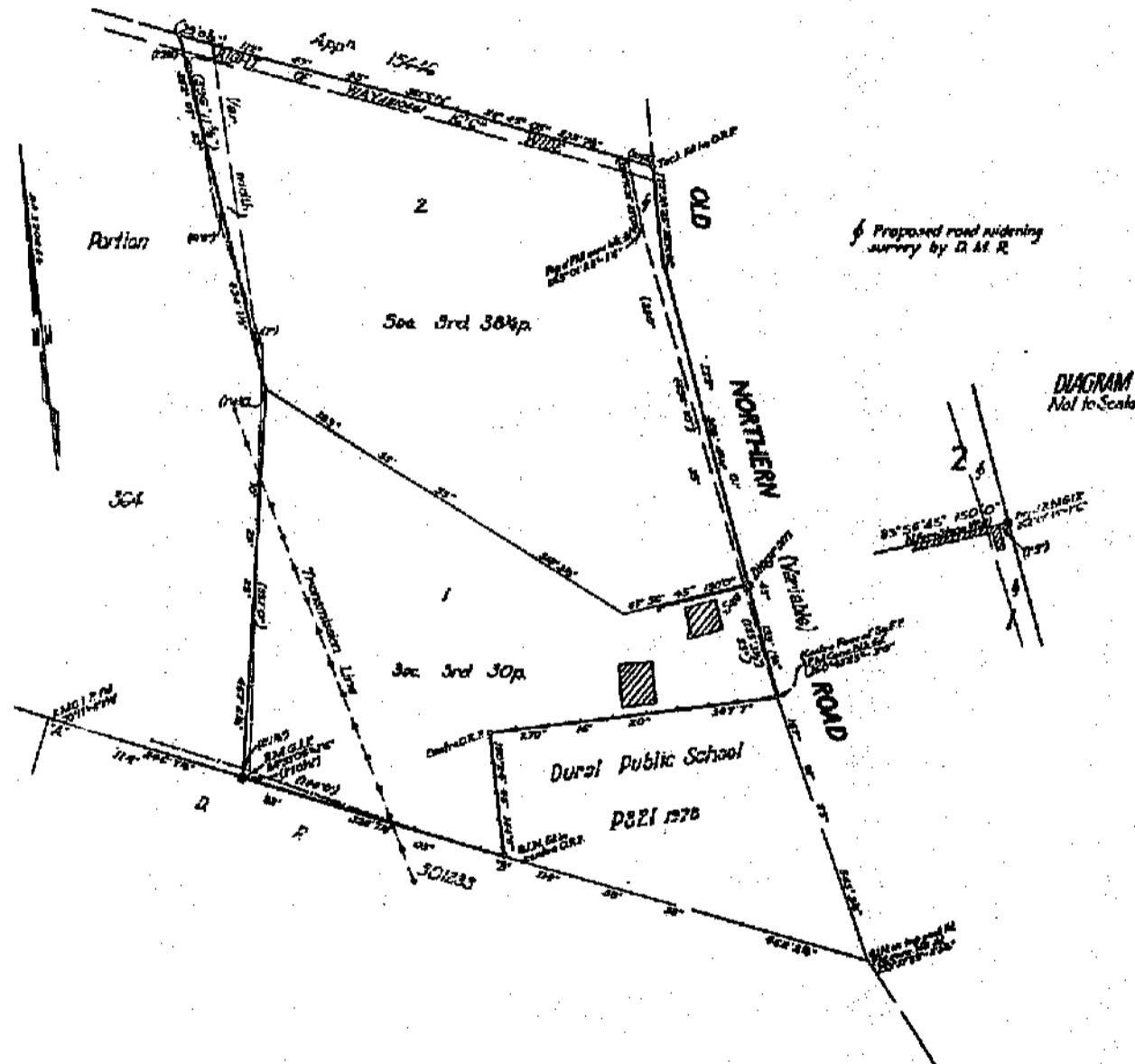
Fol. (Page 1) Vol.

I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

Witness

B. Bailey

Jawatson
Registrar-General.



ESTATE AND LAND REFERRED TO.

Estate in Fee Simple in Lot 2 in Deposited Plan 220056 at Dural in the Shire of Baulkham Hills Parish of Nelson and County of Cumberland being part of Portion 138 granted to James Byrne on 30-6-1823.

FIRST SCHEDULE (Continued overleaf)

KELVIN PARK INVESTMENTS PTY. LIMITED.

Jawatson
Registrar General.

SECOND SCHEDULE (Continued overleaf)

1. Reservations and conditions, if any, contained in the Crown Grant(s) referred to in the said Deposited Plan.
2. Rights of Way created by the Will of Ruth Hawkins deceased (Probate No. 37443).
3. Right of Way created by Transfer No. AB10461 affecting the piece of land shown as "Right of Way 16 feet 6 inches Wide" in the plan hereon.

Jawatson
Registrar General.


NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR-GENERAL ARE CANCELLED.

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON

WARNING: THIS DOCUMENT MUST NOT BE REMOVED FROM THE LAND TITLES OFFICE.

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT		ENTERED	Signature of Registrar-General
	NATURE	NUMBER		
This deed is cancelled as to <u>whole</u> New Certificates of Title have issued on <u>28.5.1970</u> for lots in <u>Deported</u> Plan No. <u>541329</u> as follows: Lots <u>1 & 2</u> Vol <u>11312</u> P. <u>1518919</u> PARAPHS:				


Jackson
 REGISTRAR GENERAL

SECOND SCHEDULE (continued)

NATURE	INSTRUMENT NUMBER	DATE	PARTICULARS	ENTERED	Signature of Registrar-General	CANCELLATION
Particulars as above	1102.5.5.4	26.2.1965	of part of the land within deeded land being Lot 26 in D.P. 23272 as subject of No. Doc 215(6). Main Roads Ord 1924 - 1963.	10.1.1966	<i>Jackson</i>	
Transfer	1509413	29.5.1964	Escrow for Transmission of title. Has more fully set out in the said instrument affecting that part of the land within described above as near width in the plan hereto. 18.8.1969.		<i>Jackson</i>	

9621 Fol 126

Vol.

(Page 2 of 2 pages)



11312

NEW SOUTH WALES

CERTIFICATE OF TITLE

PROPERTY ACT, 1900, as amended.



Appl. No. 22381
Prior Title Vol. 9621 Fol.126

Vol. 11312 Fol. 19

Edition issued 12-5-1970

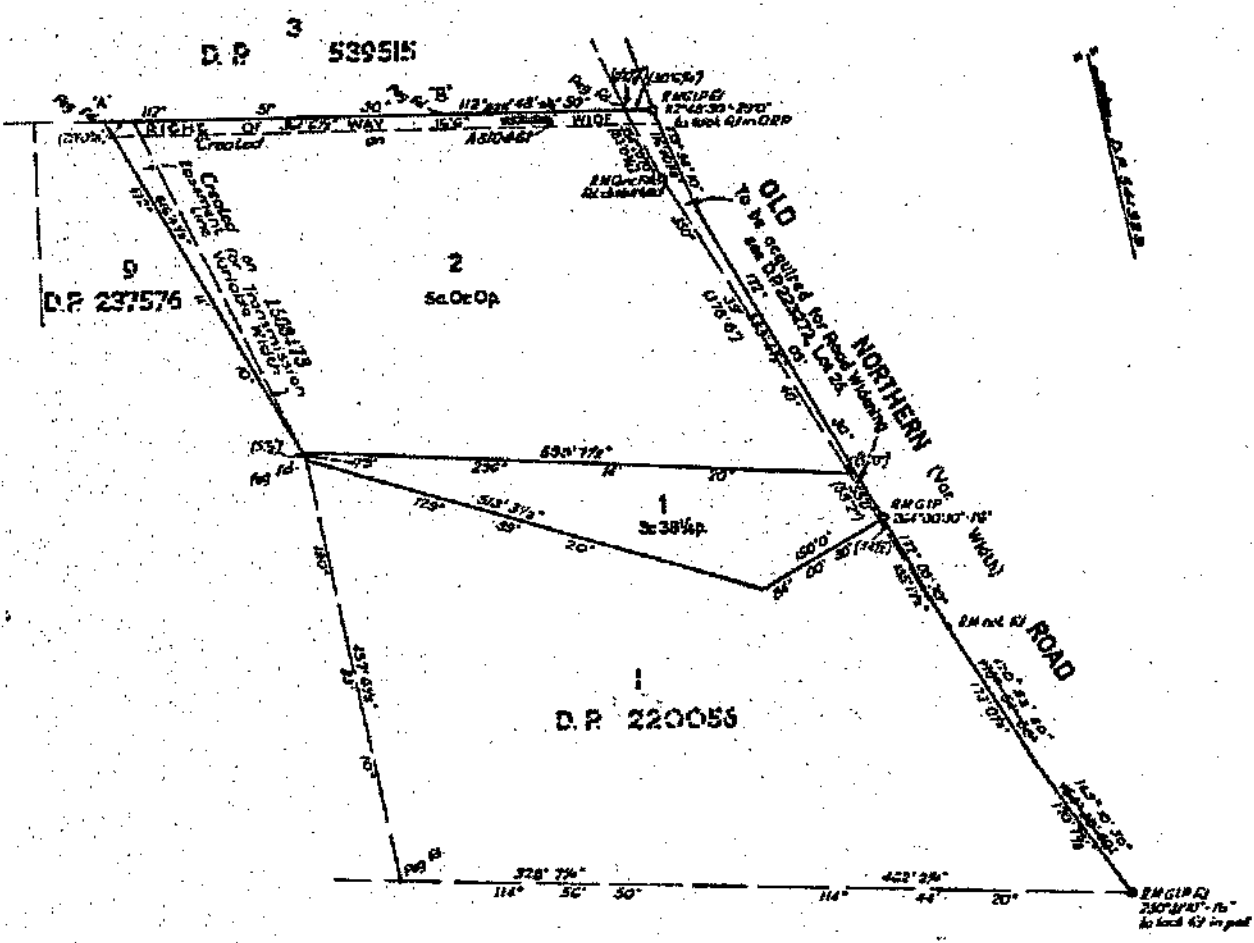
I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in fee simple in the land described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

Witness

Barnes

CANCELLED
Jawatson
Registrar General
SEE AUTO FOLIO

PLAN SHOWING LOCATION OF LAND



ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 2 in Deposited Plan 541329 at Dural in the Shire of Baulkham Hills Parish of Nelson and County of Cumberland being part of Portion 138 granted to James Byrne on 30-6-1823.

FIRST SCHEDULE

~~KELVIN PARK INVESTMENTS PTY. LIMITED:~~

SECOND SCHEDULE

- 1. Reservations and conditions, if any, contained in the Crown Grant above referred to.
- AA 2. Rights of Way created by the Will of Ruth Hawkins, deceased (Probate No. 37443).
- RW 3. Right of Way created by Transfer No. A810461 affecting the piece of land shown as "Right of Way 16 feet 6 inches wide" in the plan hereon.
- RV 4. Restriction on user No. K102554 of the part of the land above described contained in Lot 26 in Deposited Plan 223272 - see Section 27E(6) Main Roads Act, 1924. Entered 10-1-1966.
- ET 5. Easement for Transmission Line created by Transfer No. L508473 affecting the part of the land above described shown as "Easement for Transmission Line Variable Width" in the plan hereon.

Jawatson
Registrar General

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON

WARNING: THIS DOCUMENT MUST NOT BE REMOVED FROM THE LAND TITLES OFFICE.

11312 Fol. 19
(Page 1) Vol.

V. C. N. BLIGHT, GOVERNMENT PRINTER

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	NATURE	INSTRUMENT		ENTERED	Signature of Registrar-General
		NUMBER	DATE		
<i>Spain Mortgages Pty Limited</i>	<i>Transfer</i>	<i>598389</i>	<i>19-6-1970</i>	<i>8-7-1970</i>	<i>Jackson</i>
<i>Robertson & Co, Executors of the Estate of John Robertson, deceased</i>	<i>Transfer</i>	<i>14178949</i>	<i>8-10-1971</i>	<i>24-1-1972</i>	<i>Jackson</i>
<i>Nino Barbaro of Eastwood, Truck Driver and Maria Barbaro his wife as joint tenants</i>	<i>Transfer</i>	<i>P663835</i>		<i>1-4-1976</i>	<i>Jackson</i>

CANCELLED

SEE AUTO FOLIO

SECOND SCHEDULE (continued)

REGISTERED PROPRIETOR	NATURE	INSTRUMENT NUMBER	DATE	PARTICULARS	ENTERED	Signature of Registrar-General	CANCELLATION
<i>Mortgage</i>	<i>M294136</i>	<i>27-5-1971</i>	<i>to The Industrial Acceptances Corporation Limited</i>	<i>15-6-1971</i>	<i>Jackson</i>	<i>Discharged M478948</i>	
<i>Mortgage</i>	<i>M478950</i>	<i>8-10-1971</i>	<i>to David Keith Donald of Lindfield and Graham Arnold James of Castle Hill both debtors</i>	<i>24-1-1972</i>	<i>Jackson</i>	<i>Discharged P38708</i>	
<i>Mortgage</i>	<i>P38709</i>	<i>3-10-1974</i>	<i>to William Murray Cummings of Dural, Carrier</i>	<i>22-11-1974</i>	<i>Jackson</i>	<i>Discharged P624797</i>	
<i>Caveat by Anthony William Starr and Susan Jane Dixon</i>	<i>T813002</i>		<i>Registered 29-3-1984</i>		<i>Jackson</i>	<i>Withdrawn W408624</i>	
<i>Mortgage to State Bank of New South Wales</i>	<i>V278574</i>		<i>Registered 23-8-1984</i>		<i>Jackson</i>	<i>Withdrawn W408625</i>	
<i>Caveat by Anthony William Starr and Susan Jane Dixon</i>	<i>V508704</i>		<i>Registered 21-12-1984</i>		<i>Jackson</i>		
<i>Caveat by Silovi Pty Limited</i>	<i>V619156</i>		<i>Registered 8-3-1985</i>		<i>Jackson</i>		
<i>Caveat by Anthony William Starr and Susan Jane Dixon against the land marked Area A and Area B in plan 1408623 Registered 6/8/1984</i>	<i>N408623</i>				<i>Jackson</i>		

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR-GENERAL ARE CANCELLED

M71131
 M294136
 M478949
 M478950
 P38709
 P663835
 P624797
 T813002
 V278574
 V508704
 V619156
 W408624
 W408625

Appendix II – Aerial Photographs

New South Wales Office:

A. D. Envirotech Australia Pty Ltd
Unit 6/7 Millennium Court
Silverwater, NSW 2128

Queensland Office:

A. D. Envirotech Australia Pty Ltd
P.O. Box 288
Upper Coomera, QLD 4209

Telephone:

NSW: (02) 8541 7214
QLD: (07) 5519 4610

Internet:

site: www.ADenvirotech.com.au
e-mail info@ADenvirotech.com.au

ABN:

520 934 529 50



Aerial Photograph 1. Aerial photograph of the site dated 1930 with approximate site boundary. Sourced from the Department of Finance and Services records, accessed on the 20.07.2015.



Aerial Photograph 2. Aerial photograph of the site dated 1947 with approximate site boundary. Sourced from the Department of Finance and Services records, accessed on the 20.07.2015.

New South Wales Office:

A. D. Envirotech Australia Pty Ltd
Unit 6/7 Millennium Court
Silverwater, NSW 2128

Queensland Office:

A. D. Envirotech Australia Pty Ltd
P.O. Box 288
Upper Coomera, QLD 4209

Telephone:

NSW: (02) 8541 7214
QLD: (07) 5519 4610

Internet:

site: www.ADenvirotech.com.au
e-mail info@ADenvirotech.com.au

ABN:

520 934 529 50



Aerial Photograph 3. Aerial photograph of the site dated 1956 with approximate site boundary. Sourced from the Department of Finance and Services records, accessed on the 20.07.2015.



Aerial Photograph 4. Aerial photograph of the site dated 1965 with approximate site boundary. Sourced from the Department of Finance and Services records, accessed on the 20.07.2015.

New South Wales Office:

A. D. Envirotech Australia Pty Ltd
Unit 6/7 Millennium Court
Silverwater, NSW 2128

Queensland Office:

A. D. Envirotech Australia Pty Ltd
P.O. Box 288
Upper Coomera, QLD 4209

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Internet:

site: www.ADenvirotech.com.au
e-mail info@ADenvirotech.com.au

ABN:

520 934 529 50



Aerial Photograph 5. Aerial photograph of the site dated 1986 with approximate site boundary. Sourced from the Department of Finance and Services records, accessed on the 20.07.2015.



Aerial Photograph 6. Aerial photograph of the site dated 1994 with approximate site boundary. Sourced from the Department of Finance and Services records, accessed on the 20.07.2015.

New South Wales Office:

A. D. Envirotech Australia Pty Ltd
Unit 6/7 Millennium Court
Silverwater, NSW 2128

Queensland Office:

A. D. Envirotech Australia Pty Ltd
P.O. Box 288
Upper Coomera, QLD 4209

Telephone:

NSW: (02) 8541 7214
QLD: (07) 5519 4610

Internet:

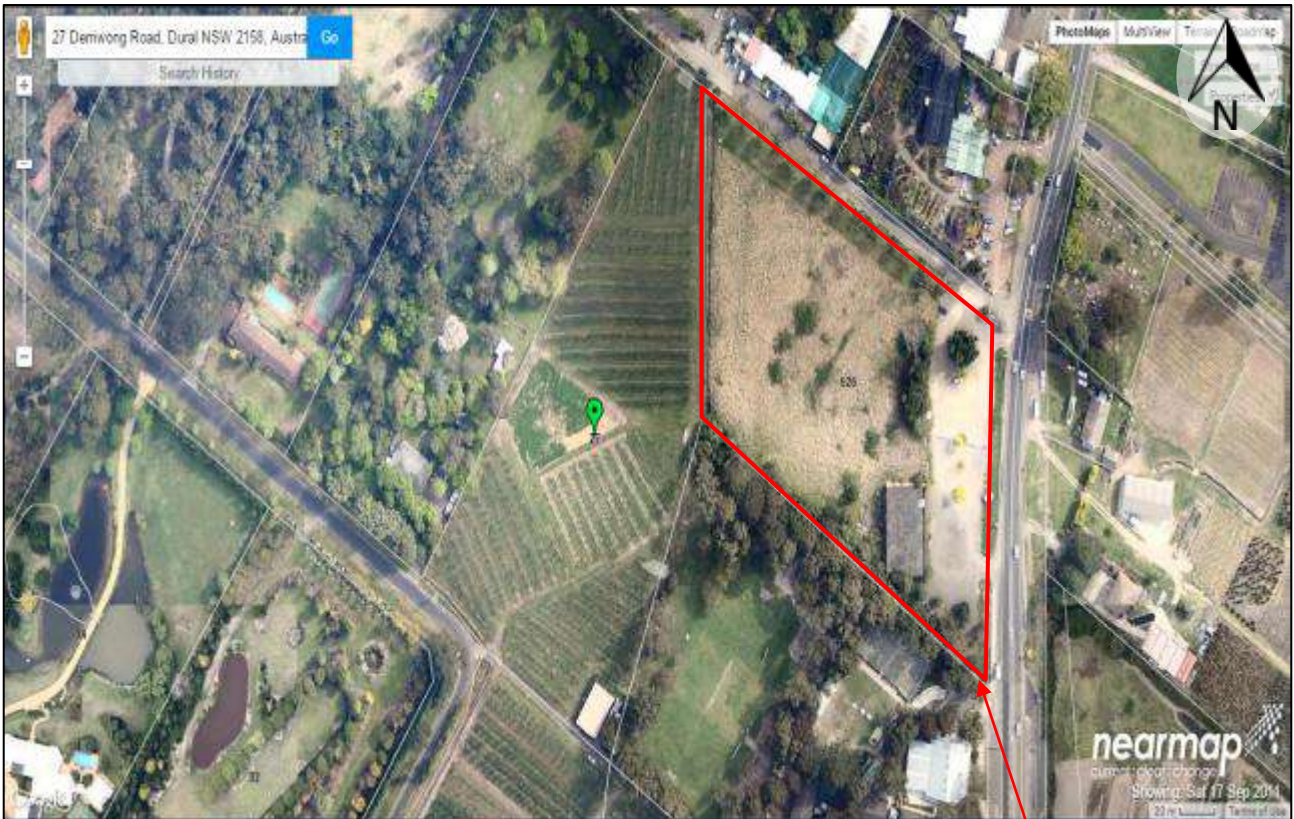
site: www.ADenvirotech.com.au
e-mail info@ADenvirotech.com.au

ABN:

520 934 529 50



Aerial Photograph 7. Aerial photograph of the site dated 2009 with approximate site boundary. Sourced from the nearmap.com, accessed on the 20.07.2015.



Aerial Photograph 8. Aerial photograph of the site dated 2011 with approximate site boundary. Sourced from the nearmap.com, accessed on the 20.07.2015.

New South Wales Office:

A. D. Envirotech Australia Pty Ltd
Unit 6/7 Millennium Court
Silverwater, NSW 2128

Queensland Office:

A. D. Envirotech Australia Pty Ltd
P.O. Box 288
Upper Coomera, QLD 4209

Telephone:

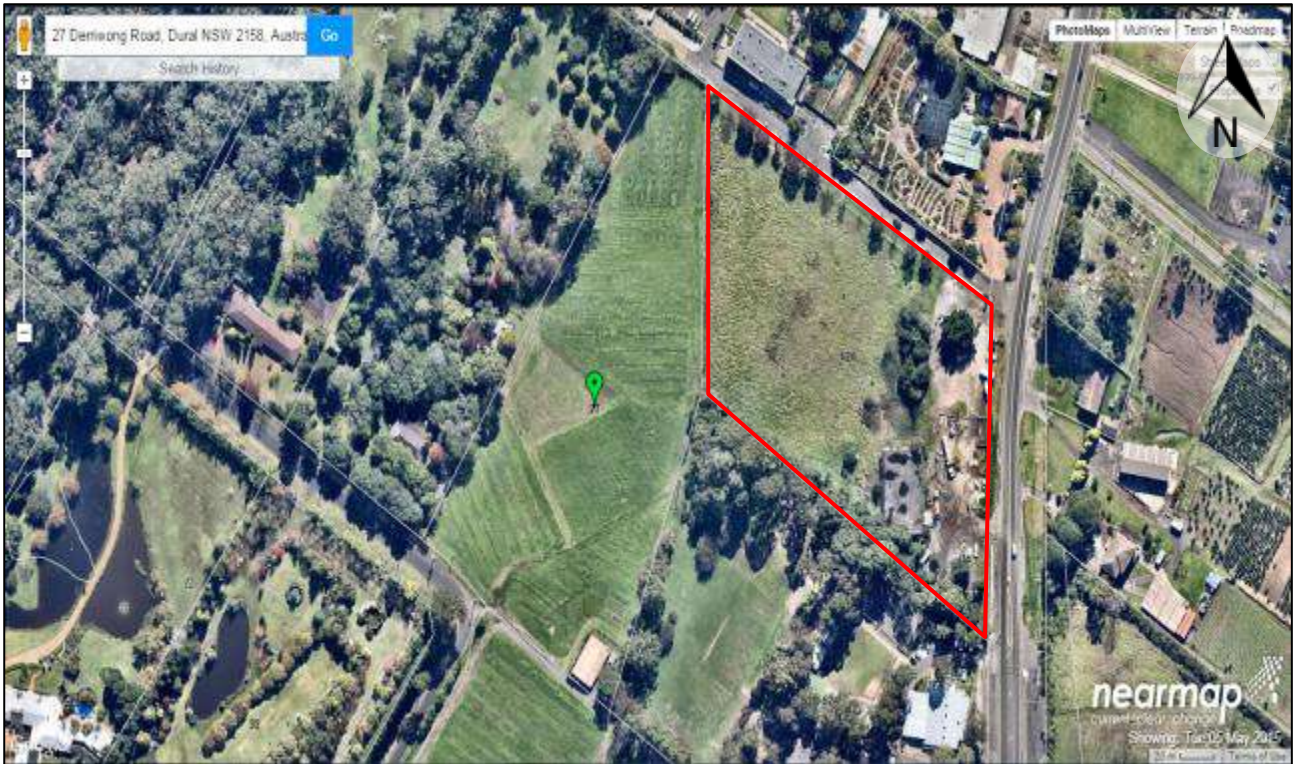
NSW: (02) 8541 7214
QLD: (07) 5519 4610

Internet:

site: www.ADenvirotech.com.au
e-mail info@ADenvirotech.com.au

ABN:

520 934 529 80



Aerial Photograph 9. Aerial photograph of the site dated 2015 with approximate site boundary. Sourced from the nearmap.com, accessed on the 20.07.2015.

New South Wales Office:

A. D. Envirotech Australia Pty Ltd
Unit 6/7 Millennium Court
Silverwater, NSW 2128

Queensland Office:

A. D. Envirotech Australia Pty Ltd
P.O. Box 288
Upper Coomera, QLD 4209

Telephone:

NSW: (02) 8541 7214
QLD: (07) 5519 4610

Internet:

site: www.ADenirotech.com.au
e-mail info@ADenirotech.com.au

ABN:

520 934 529 50

Appendix III – Photographs

New South Wales Office:

A. D. Envirotech Australia Pty Ltd
Unit 6/7 Millennium Court
Silverwater, NSW 2128

Queensland Office:

A. D. Envirotech Australia Pty Ltd
P.O. Box 288
Upper Coomera, QLD 4209

Telephone:

NSW: (02) 8541 7214
QLD: (07) 5519 4610

Internet:

site: www.ADenvirotech.com.au
e-mail info@ADenvirotech.com.au

ABN:

520 934 529 50



Photograph 1 – Disused land facing south-east towards former fruit shop



Photograph 4 – Area of former landscape stockpile storage associated with landscape supply



Photograph 2 – Facing east towards Old Northern Rd and levelled carpark area



Photograph 5 – Former fruit shop



Photograph 3 – Levelled carpark area adjacent to Old Northern Rd



Photograph 6 – Presumed asbestos cement debris located within localised area of the former fruit shop

New South Wales Office:

A. D. Envirotech Australia Pty Ltd
Unit 6/7 Millennium Court
Silverwater, NSW 2128

Queensland Office:

A. D. Envirotech Australia Pty Ltd
P.O. Box 288
Upper Coomera, QLD 4209

Telephone:

NSW: (02) 8541 7214
QLD: (07) 5519 4610

Internet:

site: www.ADenvirotech.com.au
e-mail info@ADenvirotech.com.au

ABN:

520 934 529 50



Photograph 7 – Area of presumed fill and modified soil profile on southern boundary of subject site, west of fruit shop



Photograph 10 – View of the subject site facing north-east



Photograph 8 – Basement / ground floor area of former fruit shop



Photograph 9 – Area of stockpiled wood and dumped rubbish, raised soil profile suggesting fill

New South Wales Office:

A. D. Envirotech Australia Pty Ltd
Unit 6/7 Millennium Court
Silverwater, NSW 2128

Queensland Office:

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Upper Coomera, QLD 4209

Telephone:

NSW: (02) 8541 7214
QLD: (07) 5519 4610

Internet:

site: www.ADenvirotech.com.au
e-mail info@ADenvirotech.com.au

ABN:

520 934 529 50

Appendix IV – Groundwater Search

New South Wales Office:

A. D. Envirotech Australia Pty Ltd
Unit 6/7 Millennium Court
Silverwater, NSW 2128

Queensland Office:

A. D. Envirotech Australia Pty Ltd
P.O. Box 288
Upper Coomera, QLD 4209

Telephone:

NSW: (02) 8541 7214
QLD: (07) 5519 4610

Internet:

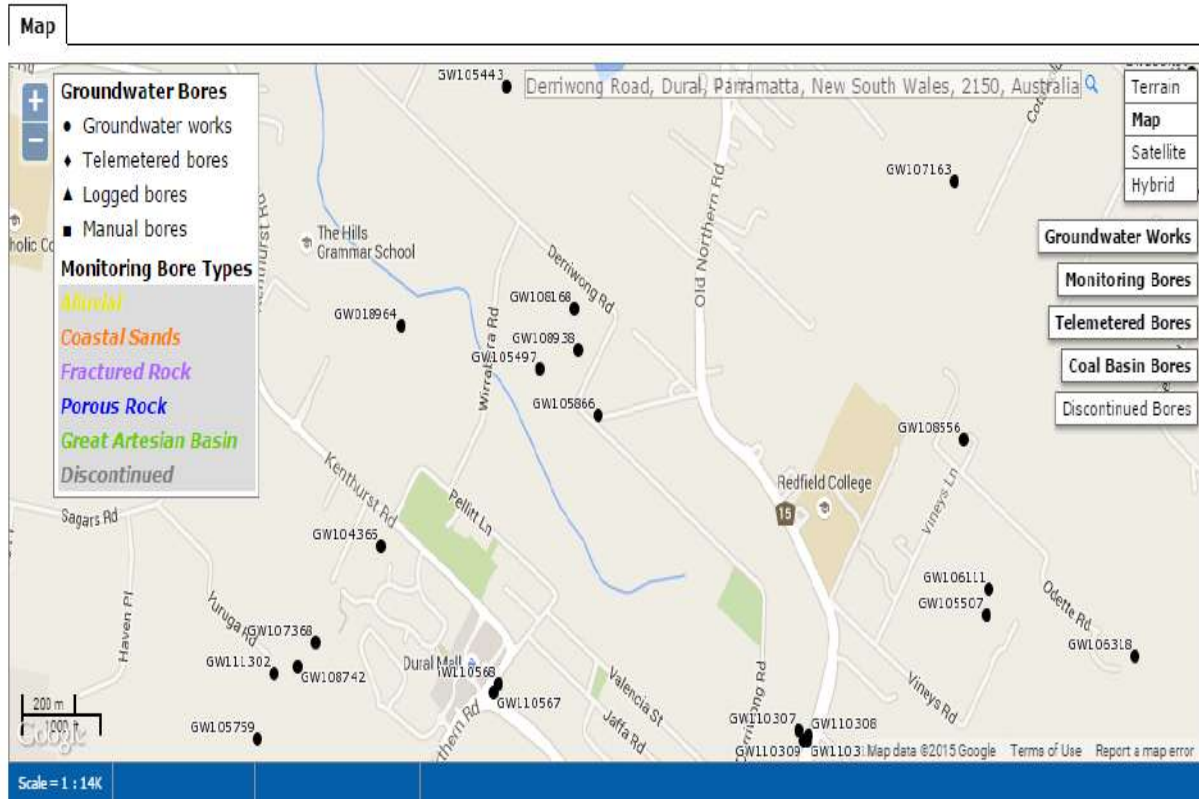
site: www.ADenvirotech.com.au
e-mail info@ADenvirotech.com.au

ABN:

520 934 529 50

Hawkesbury River Basin

All data times are Eastern Standard Time



NSW Office of Water

Work Summary

GW105866
Licence: 10BL163206

Licence Status: CONVERTED

Authorised Purpose(s): STOCK,DOMESTIC
Intended Purpose(s):
Work Type: Bore

Work Status:
Construct.Method:
Owner Type:
Commenced Date:
Completion Date: 05/05/2005

Final Depth:
Drilled Depth:
Contractor Name:
Driller:
Assistant Driller:
Property: TRAPPEL 618 OLD NORTHERN RD DURAL 2158

Standing Water Level:
GWMA: -
GW Zone: -

Salinity:
Yield:

Site Details

Site Chosen By:

County	Parish	Cadastre
Form A: CUMBE	CUMBE.38	X 501233
Licensed: CUMBERLAND	NELSON	Whole Lot X//501233

Region: 10 - Sydney South Coast

CMA Map: 9130-4S

River Basin: 212 - HAWKESBURY RIVER
Area/District:
Grid Zone:
Scale:
Elevation: 0.00 m (A.H.D.)
Elevation (Unknown)
Source:
Northing: 6270712.0
Easting: 316825.0

Latitude: 33°41'15.9"S
Longitude: 151°01'25.8"E

GS Map: -

MGA Zone: 0

Coordinate Unknown
Source:

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)

Geologists Log

Drillers Log

From	To	Thickness	Drillers Description	Geological Material	Comments

(m)	(m)	(m)			
-----	-----	-----	--	--	--

Remarks

***** End of GW105866 *****

Warning To Clients: This raw data has been supplied to the NSW Office of Water by drillers, licensees and other sources. The NOW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

NSW Office of Water

Work Summary

GW105497
Licence: 10BL162452

Licence Status: CONVERTED

Authorised Purpose(s): STOCK, DOMESTIC

Intended Purpose(s): STOCK, DOMESTIC

Work Type: Bore

Work Status:
Construct.Method: Rotary Air

Owner Type:
Commenced Date:
Completion Date: 12/11/2003

Final Depth: 150.00 m

Drilled Depth: 150.00 m

Contractor Name: INTERTEC DRILLING SERVICES

Driller: Damian Paranihi

Assistant Driller:
Property: MASTA P/L 30 DERRIWONG RD **Standing Water Level:** 29.000
DURAL 2158

GWMA: -
GW Zone: -

Salinity:
Yield: 0.300

Site Details

Site Chosen By:

County	Parish	Cadastre
Form A: CUMBE	CUMBE.38	2 623323
Licensed: CUMBERLAND	NELSON	Whole Lot 2//623323

Region: 10 - Sydney South Coast

CMA Map: 9130-4S

River Basin: 212 - HAWKESBURY RIVER
Area/District:
Grid Zone:
Scale:
Elevation: 0.00 m (A.H.D.)

Elevation (Unknown)

Source:
Northing: 6270813.0

Easting: 316632.0

Latitude: 33°41'12.5"S

Longitude: 151°01'18.3"E

GS Map: -

MGA Zone: 0

Coordinate Unknown

Source:

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	5.60	205			Down Hole Hammer
1		Hole	Hole	5.60	90.00	159			Down Hole Hammer
1		Hole	Hole	90.00	150.00	156			Down Hole Hammer
1	1	Casing	Steel	-0.40	5.60	168	158		Driven into Hole
1	1	Casing	Pvc Class 9	0.40	35.60	140			Suspended in Clamps, Screwed and Glued

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth	Duration (hr)	Salinity (mg/L)
----------	--------	---------------	----------	------------	------------	-------------	------------	---------------	-----------------

						(m)		
62.30	62.40	0.10	Unknown			0.25	66.00	830.00
69.20	70.00	0.80	Unknown			0.10	72.00	869.00
126.00	127.30	1.30	Unknown			0.45	132.00	780.00
136.50	137.80	1.30	Unknown	29.00		0.30	138.00	998.00

Geologists Log

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	0.30	0.30	TOPSOIL	Topsoil	
0.30	32.50	32.20	SANDSTONE BROWN/GREY MG	Sandstone	
32.50	32.70	0.20	F. SANDSTONE GREY AND SILTSTONE	Sandstone	
32.70	62.30	29.60	SANDSTONE GREY	Sandstone	
62.30	62.40	0.10	W. O.25 SANDSTONE L/GREY	Sandstone	
62.40	69.20	6.80	SANDSTONE GREY M/G	Sandstone	
69.20	70.00	0.80	SANDSTONE GREY	Sandstone	
70.00	126.00	56.00	SANDSTONE GREY L/GREY	Sandstone	
126.00	127.30	1.30	SANDSTONE L/GREY AND QUARTZ	Sandstone	
127.30	136.50	9.20	SANDSTONE L/GREY	Sandstone	
136.50	137.80	1.30	W,QUARRTZ	Quartz	
137.80	150.00	12.20	SANDSTONE L/GREY	Sandstone	

Remarks

10/11/2010: Karla Abbs 10-Nov-2010; Removed invalid codes and updated drillers log

*** End of GW105497 ***

Warning To Clients: This raw data has been supplied to the NSW Office of Water by drillers, licensees and other sources. The NOW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

NSW Office of Water

Work Summary

GW108938
Licence: 10BL601876

Licence Status: CONVERTED

Authorised Purpose(s): DOMESTIC

Intended Purpose(s): DOMESTIC

Intended Purpose(s): DOMESTIC

Work Type: Bore

Work Status:
Construct.Method:
Owner Type: Private

Commenced Date:
Completion Date: 19/06/2008

Final Depth:
Drilled Depth:
Contractor Name: INTERTEC DRILLING SERVICES

Driller: Paul Sheehy

Assistant Driller:
Property: BREITENBERGER 32
DERRIWONG ROAD ROUND
CORNER DURAL 2158 NSW

Standing Water Level:
GWMA:
GW Zone:
Salinity:
Yield:

Site Details

Site Chosen By:

County	Parish	Cadastre
Form A: CUMBE	CUMBE.38	102/818569
Licensed:		

Region: 10 - Sydney South Coast

CMA Map:
River Basin: - Unknown
Area/District:
Grid Zone:
Scale:
Elevation: 0.00 m (A.H.D.)
Elevation Unknown
Source:
Northing: 6270860.0
Easting: 316755.0

Latitude: 33°41'11.1"S
Longitude: 151°01'23.1"E

GS Map: -

MGA Zone: 0

Coordinate Unknown
Source:

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)

Geologists Log

Drillers Log

--	--	--	--	--	--	--	--	--	--

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
-------------	-----------	------------------	----------------------	---------------------	----------

Remarks

***** End of GW108938 *****

Warning To Clients: This raw data has been supplied to the NSW Office of Water by drillers, licensees and other sources. The NOW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

NSW Office of Water

Work Summary

GW108168
Licence: 10BL600425

Licence Status: CONVERTED

Authorised Purpose(s): DOMESTIC,STOCK

Intended Purpose(s): STOCK, DOMESTIC

Work Type: Bore

Work Status: Supply Obtained

Construct.Method: Down Hole Hammer

Owner Type: Private

Commenced Date:
Completion Date: 20/06/2006

Final Depth: 237.40 m

Drilled Depth: 237.40 m

Contractor Name: INTERTEC DRILLING SERVICES

Driller: Colin Leslie Barden

Assistant Driller:
Property: CALLUS 34 DERRIWONG RD
DURAL 2158 NSW

Standing Water Level: 34.000

GWMA: -
GW Zone: -

Salinity:
Yield: 0.700

Site Details

Site Chosen By:

County	Parish	Cadastre
Form A: CUMBE	CUMBE.38	101 818569
Licensed: CUMBERLAND	NELSON	Whole Lot 101//818569

Region: 10 - Sydney South Coast

CMA Map:
River Basin: - Unknown

Grid Zone:
Scale:
Area/District:
Elevation: 0.00 m (A.H.D.)

Northing: 6270954.0

Latitude: 33°41'08.0"S

Elevation: Unknown

Easting: 316741.0

Longitude: 151°01'22.7"E

Source:
GS Map: -

MGA Zone: 0

Coordinate Source: GIS - Geographic Information System

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	2.50	203			Down Hole Hammer
1		Hole	Hole	2.50	120.00	165			Down Hole Hammer
1		Hole	Hole	120.00	237.40	160			Down Hole Hammer
1		Annulus	Concrete	0.00	2.50	203			
1	1	Casing	Pvc Class 9	-0.50	59.50	140			Suspended in Clamps, Screwed and Glued
1	1	Casing	Steel	-0.50	2.50	168	158		Driven into Hole

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)
65.00	66.00	1.00	Unknown			0.30		00:25:00	1570.00
112.00	113.00	1.00	Unknown			0.08		00:25:00	1450.00
128.00	130.00	2.00	Unknown			0.27		00:25:00	3300.00
232.00	236.00	4.00	Unknown	34.00		0.05		00:05:00	1900.00

Geologists Log Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	0.50	0.50	topsoil	Topsoil	
0.50	34.50	34.00	sandstone, grey weathered	Sandstone	
34.50	39.00	4.50	shale	Shale	
39.00	51.00	12.00	sandstone, grey	Sandstone	
51.00	51.50	0.50	shale	Shale	
51.50	65.00	13.50	sandstone, grey	Sandstone	
65.00	66.00	1.00	sandstone, grey quartz	Sandstone	
66.00	112.00	46.00	sandstone, grey	Sandstone	
112.00	113.00	1.00	sandstone, grey quartz	Sandstone	
113.00	115.00	2.00	siltstone	Siltstone	
115.00	128.00	13.00	sandstone, grey	Sandstone	
128.00	130.00	2.00	sandstone, grey quartz	Sandstone	
130.00	150.00	20.00	sandstone, grey	Sandstone	
150.00	158.50	8.50	siltstone	Siltstone	
158.50	204.00	45.50	sandstone, grey	Sandstone	
204.00	207.00	3.00	sandstone, light brown	Sandstone	
207.00	232.00	25.00	sandstone, grey	Sandstone	
232.00	236.00	4.00	sandstone, grey quartz	Sandstone	
236.00	237.40	1.40	sandstone, grey	Sandstone	

Remarks

20/06/2006: Form A Remarks:

air lift test at 150m when completed was producing a surface flow rate of 0.6 LPS and TDS of 1650mg/l

03/05/2010: updated from original form A

*** End of GW108168 ***

Warning To Clients: This raw data has been supplied to the NSW Office of Water by drillers, licensees and other sources. The NOW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

Appendix V – Acid Sulphates Soils

New South Wales Office:

A. D. Envirotech Australia Pty Ltd
Unit 6/7 Millennium Court
Silverwater, NSW 2128

Queensland Office:

A. D. Envirotech Australia Pty Ltd
P.O. Box 288
Upper Coomera, QLD 4209

Telephone:

NSW: (02) 8541 7214
QLD: (07) 5519 4610

Internet:

site: www.ADenvirotech.com.au
e-mail info@ADenvirotech.com.au

ABN:

520 934 529 50

Location Search **Advanced Search**

Search Address or Place

[Place on map](#)

State: New South Wales, Australia

[Clear all layers](#)

Environmental Planning Instruments

- Acid Sulfate Soils
 - Class 1
 - Class 2
 - Class 3
 - Class 4
 - Class 5
- Active Street Frontage
- Additional Permitted Uses
- Additional Rural Village Land
- Airport Noise
- Bulk Water Supply Infrastructure
- Drinking Water
- Dwelling Density

Map data ©2015 Google 200 m Terms of Use Report a map error

Appendix VI - NSW OEH State Heritage Records

New South Wales Office:

A. D. Envirotech Australia Pty Ltd
Unit 6/7 Millennium Court
Silverwater, NSW 2128

Queensland Office:

A. D. Envirotech Australia Pty Ltd
P.O. Box 288
Upper Coomera, QLD 4209

Telephone:

NSW: (02) 8541 7214
QLD: (07) 5519 4610

Internet:

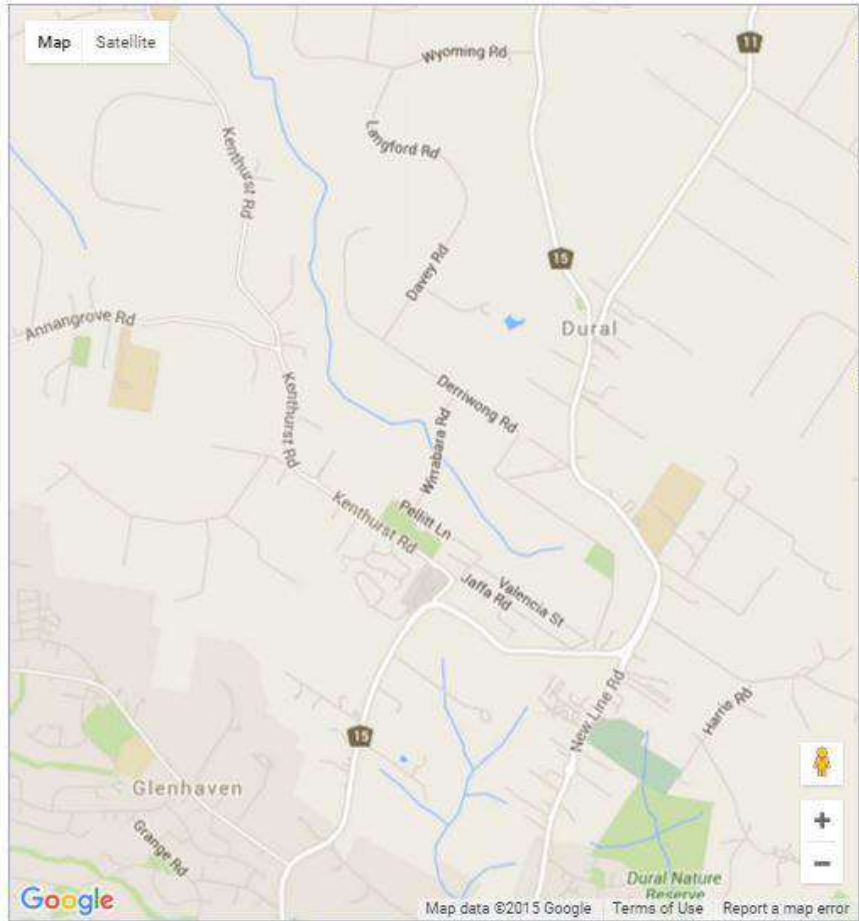
site: www.ADenvirotech.com.au
e-mail info@ADenvirotech.com.au

ABN:

520 934 529 50

Search State Heritage Register

The results shown below are for the State Heritage Register ONLY and does not include items listed on Local Environmental Plans and s.170 Heritage and Conservation Registers. For further mapping information for please contact the relevant Local or State government agency. *Disclaimer:* The positions of the State Heritage Register items shown on this page are for general identification and research purposes only. It should not be used for legal searches. Some SHR items have not been included for privacy and security reasons. Free downloading of State Heritage Register spatial datasets and associated metadata into a Geographical Information System (GIS) software package is available at [Community Access to Natural Resources Information \(CANRI\) - http://canri.nsw.gov.au/download/](http://canri.nsw.gov.au/download/)



The map displays the Dural area in New South Wales, Australia. It shows a network of roads including Wyoming Rd, Kangford Rd, Daney Rd, Derwong Rd, Annangrove Rd, Kenthurst Rd, Wirrabara Rd, Pellitt Ln, Jaffe Rd, Valencia St, New Line Rd, and Harrie Rd. A blue arrow points to a specific location on Daney Rd. The map also shows the Dural Nature Reserve and the town of Glenhaven. The Google logo is visible in the bottom left corner, and map data is attributed to ©2015 Google. There are also links for Terms of Use and Report a map error.

Local government area
The Hills

Suburb/postcode
[Empty text box]

NSW historic theme
Please Choose...

Item type

- All
- Archaeological-Maritime
- Archaeological-Terrestrial
- Built
- Landscape
- Movable / Collection
- Complex / Group
- Conservation Area

Appendix VII – Section 149

New South Wales Office:

A. D. Envirotech Australia Pty Ltd
Unit 6/7 Millennium Court
Silverwater, NSW 2128

Queensland Office:

A. D. Envirotech Australia Pty Ltd
P.O. Box 288
Upper Coomera, QLD 4209

Telephone:

NSW: (02) 8541 7214
QLD: (07) 5519 4610

Internet:

site: www.ADenvirotech.com.au
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THE HILLS SHIRE COUNCIL

3 Columbia Court, Baulkham Hills NSW 2153
PO Box 7064, Baulkham Hills BC NSW 2153

Telephone +61 2 9843 0555

Facsimile +61 2 9843 0409

DX 9966 Norwest

Email council@thehills.nsw.gov.au

www.thehills.nsw.gov.au

ABN No. 25 034 494 656

PLANNING CERTIFICATE UNDER SECTION 149 (2) ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979 AS AMENDED.

A.D Envirotech Australia
6/7 Millennium Ct
SILVERWATER NSW 2128

Certificate Number: **83243**
Reference: 9315:60041
Issue Date: 8 October 2015
Receipt No: 5001564
Fee Paid: \$ 53.00

ADDRESS: 626 Old Northern Road, DURAL NSW 2158
DESCRIPTION: Lot 2 DP 541329

The land is zoned:
Zone RU6 Transition
Zone SP2 Infrastructure

The following prescribed matters apply to the land to which this certificate relates:

The Environmental Planning and Assessment Amendment Act 1997 commenced operation on 1 July 1998. As a consequence of this Act, the information contained in this certificate needs to be read in conjunction with the provisions of the Environmental Planning and Assessment Regulation 2000.

THIS CERTIFICATE IS DIRECTED TO THE FOLLOWING MATTERS
PRESCRIBED UNDER SECTION 149 (2) OF THE ABOVE ACT.

1. Names of relevant planning instruments and DCPs

- (1) The name of each environmental planning instrument that applies to the carrying out of development on the land.

(A) **Local Environmental Plans**

The Hills Local Environmental Plan 2012, as amended, applies to all land in the Shire unless otherwise stated in this certificate.

State Environmental Planning Policies

SEPP No.19 - Bushland In Urban Areas
 SEPP No.21 - Caravan Parks
 SEPP No.30 - Intensive Agriculture
 SEPP No.33 - Hazardous And Offensive Development
 SEPP No.50 - Canal Estate Development
 SEPP No.55 - Remediation Of Land
 SEPP No.62 - Sustainable Aquaculture
 SEPP No.64 - Advertising And Signage
 SEPP No.65 - Design Quality Of Residential Flat Development
 SEPP No.70 - Affordable Housing (Revised Schemes)
 SEPP (Building Sustainability Index: Basix) 2004
 SEPP (Major Development) 2005
 SEPP (Mining, Petroleum Production And Extractive Industries) 2007
 SEPP (Miscellaneous Consent Provisions)2007
 SEPP (Infrastructure) 2007
 SEPP (Exempt and Complying Development Codes) 2008
 SEPP (Affordable Rental Housing) 2009
 SEPP (State and Regional Development) 2011
 Sydney Regional Environmental Plan No. 9 Extractive Industries (No.2) - Amendment No.1
 Sydney Regional Environmental Plan No. 20 Hawkesbury – Nepean River (No.2 – 1997)

The following SEPP's may apply to the land. Please refer to '**Land to which Policy applies**' for each individual SEPP.

SEPP (Housing For Seniors Or People With A Disability) 2004

- (2) The name of 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 Director-General has notified the council that the making of the proposed instrument has been deferred indefinitely or has not been approved).

(A) **Proposed Local Environmental Plans**

No Proposed Local Environmental Plans apply to this land.

(B) **Proposed State Environmental Planning Policies**

Draft State Environmental Planning Policy (Competition).
State Environmental Planning Policy No 65 – Design Quality of Residential
Flat Development (Amendment No 3)

- (3) The name of each development control plan that applies to the carrying out of development on the land.

The Hills Development Control Plan 2012

- (4) In this clause, proposed environmental planning instrument includes a planning proposal for a LEP or a draft environmental planning instrument.

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).

- (A) The Hills Local Environmental Plan 2012 applies to the land unless otherwise stated in this certificate and identifies the land to be:

**Zone RU6 Transition
Zone SP2 Infrastructure**

- (B) The purposes for which the instrument provides that development may be carried out within the zone without development consent:

Refer Attachment 2(B)

Also refer to the applicable instrument for provisions regarding Exempt Development

- (C) The purposes for which the instrument provides that development may not be carried out within the zone except with development consent:

Refer Attachment 2(B)

Also refer to the applicable instrument for provisions regarding Complying Development

- (D) The purposes for which the instrument provides that development is prohibited in the zone:

Refer Attachment 2(B)

- (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?

The Hills Local Environmental Plan 2012?

YES

Clause 4.2A of The Hills Local Environmental Plan 2012 provides minimum land dimensions for the erection of a dwelling house on the following zones:

RU1 Primary Production, RU2 Rural Landscape, RU6 Transition, E3 Environmental Management and E4 Environmental Living.

Any other Planning Proposal?

NO

- (F) Whether the land includes or comprises critical habitat?

The Hills Local Environmental Plan 2012?

NO

Any other Planning Proposal?

NO

- (G) Whether the land is in a conservation area (however described)?

The Hills Local Environmental Plan 2012?

NO

Any Other Planning Proposal?

NO

- (H) Whether an item of environmental heritage (however described) is situated on the land?

The Hills Local Environmental Plan 2012?

NO

Any other Planning Proposal?

NO

2A. Zoning and land use under State Environmental Planning Policy (Sydney Region Growth Centres) 2006

To the extent that the land is within any zone (however described) under:

- (a) Part 3 of the *State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (the 2006 SEPP)*, or
- (b) a Precinct Plan (within the meaning of the 2006 SEPP), or

(c) a proposed Precinct Plan that is or has been the subject of community consultation or on public exhibition under the ACT.

(A) State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (Appendix 2 North Kellyville Precinct Plan) applies to the land unless otherwise stated in this certificate and identifies the land to be:

State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (Appendix 2 North Kellyville Precinct Plan) does not apply.

State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (Appendix 11 The Hills Growth Centre Precincts Plan) applies to the land unless otherwise stated in this certificate and identifies the land to be:

State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (Appendix 11 The Hills Growth Centre Precincts Plan) does not apply.

Note: This precinct plan applies to land within the Box Hill Precinct or Box Hill Industrial Precinct.

(B) The purposes for which the instrument provides that development may be carried out within the zone without development consent:

Refer Attachment 2(B)

Also refer to the applicable instrument for provisions regarding Exempt Development.

(C) The purposes for which the instrument provides that development may not be carried out within the zone except with development consent:

Refer Attachment 2(B)

Also refer to the applicable instrument for provisions regarding Complying Development

(D) The purposes for which the instrument provides that development is prohibited in the zone:

Refer Attachment 2(B)

(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?

State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (Appendix 2 North Kellyville Precinct Plan)?

NO

Any amendments to Proposed State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (Appendix 2 North Kellyville Precinct Plan)?

NO

State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (Appendix 11 The Hills Growth Centre Precincts Plan)?

NO

Any amendments to Proposed State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (Appendix 11 The Hills Growth Centre Precincts Plan)?

NO

(F) Whether the land includes or comprises critical habitat?

State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (Appendix 2 North Kellyville Precinct Plan)?

NO

State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (Appendix 11 The Hills Growth Centre Precincts Plan)?

NO

(G) Whether the land is in a conservation area (however described)?

State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (Appendix 2 North Kellyville Precinct Plan)?

NO

State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (Appendix 11 The Hills Growth Centre Precincts Plan)?

NO

(H) Whether an item of environmental heritage (however described) is situated on the land?

State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (Appendix 2 North Kellyville Precinct Plan)?

NO

State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (Appendix 11 The Hills Growth Centre Precincts Plan)?

NO

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.
- (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.

General Housing Code and Rural Housing Code

Complying development under the General Housing Code and Rural Housing Code **may not** be carried out on the land **unless** the development is carried out on any part of the lot that is not affected by the following specific land exemption/s:

The land is reserved for a public purpose in the environmental planning instrument. Refer to the Land Zoning Map of the applicable instrument.

Housing Alterations Code and General Development Code

Complying Development under the Housing Alterations Code and General Development Code **may be** carried out on the land.

Commercial and Industrial (New Buildings and Additions) Code

Complying development under the Commercial and Industrial (New Buildings and Additions) Code **may not** be carried out on the land **unless** the development is carried out on any part of the lot that is not affected by the following specific land exemption/s:

The land is reserved for a public purpose in the environmental planning instrument. Refer to the Land Zoning Map of the applicable instrument.

Commercial and Industrial Alterations, Subdivision, Demolition and Fire Safety Codes

Complying Development under the Commercial and Industrial Alterations, Subdivision, Demolition and Fire Safety Codes **may be** carried out on the land.

Note: Where reference is made to an applicable map, this information can be sourced from the following websites:

The Hills Local Environmental Plan 2012 - www.thehills.nsw.gov.au
State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (Appendix 2 North Kellyville Precinct) or (Appendix 11 The Hills Growth Centre Precincts Plan) - www.planning.nsw.gov.au

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 Services, Technology and Administration?

NO

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.

NO

- (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.

NO

- (3) (Repealed)

4B. Annual charges under Local Government Act 1993 for coastal protection services that relate to existing coastal protection works

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).

NO

Note. "Existing coastal protection works" are works to reduce the impact of coastal hazards on land (such as seawalls, revetments, groynes and beach nourishment) that existed before the commencement of section 553B of the Local Government Act 1993.

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?

NO

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

NO

- (B) any environmental planning instrument; or

YES

The Hills Local Environmental Plan 2012 identifies the land as being zoned for "Classified Road" widening.

Refer Part 2(A) of this certificate for the applicable zoning and environmental planning instrument.

- (C) any resolution of council?

- a) The Hills Development Control Plan 2012?

NO

- b) Any other resolution of council?

NO

7. Council and other public authority policies on hazard risk restrictions

Whether or not the land is affected by a policy:

- (a) adopted by 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)?

Council's policies on hazard risk restrictions are as follows:

(i) Landslip

- a) By The Hills Local Environmental Plan 2012 zoning?

NO

No resolution has been adopted but attention is directed to the fact that there are areas within the Shire liable to landslip.

- b) By The Hills Local Environmental Plan 2012 local provision?

NO

No resolution has been adopted but attention is directed to the fact that there are areas within the Shire liable to landslip.

c) By The Hills Development Control Plan 2012 provision?

NO

No resolution has been adopted but attention is directed to the fact that there are areas within the Shire liable to landslip.

(ii) Bushfire

YES

Please note this is a statement of Council policy only and NOT a statement on whether or not the property is affected by bushfire. That question is answered in Section 11 of this certificate.

Council has adopted the NSW Rural Fire Service Guidelines entitled 'Planning for Bushfire Protection 2006'. Development subject to bushfire risk will be required to address the requirements in these guidelines and can be downloaded off the RFS web site www.rfs.nsw.gov.au

The Development Control Plan may also contain provisions for development on Bushfire Prone Land and Bushfire Hazard Management. Refer Part 1(3) of this certificate for the applicable Development Control Plan.

(iii) Tidal inundation

NO

Please note this is a statement of Council policy only and NOT a statement on whether or not the property is affected by tidal inundation.

(iv) Subsidence

NO

Please note this is a statement of Council policy only and NOT a statement on whether or not the property is affected by subsidence.

(v) Acid sulphate soils

NO

(vi) Land contamination

NO

Please note this is a statement of Council policy only and NOT a statement on whether or not the property is affected by contamination or potential contamination.

(vii) Any other risk

NO

7A. Flood related development controls information

- (1) Whether or not development on that land or part of the land for the purposes of dwelling houses, 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?

NO

Please note this is a statement of flood related development controls and is NOT a statement on whether or not the property is subject to flooding.

- (2) Whether or not development on that land or part of the land for any other purpose is subject to flood related development controls?

NO

Please note this is a statement of flood related development controls and is NOT a statement on whether or not the property is subject to flooding.

- (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.

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 Hills Local Environmental Plan 2012?

YES

Clause 5.1 of The Hills Local Environmental Plan 2012 variously provides for the acquisition of land within the SP2 Infrastructure, RE1 Public Recreation zones and E1 National Parks and Nature Reserves.

Any other Planning Proposal?

NO

State Environmental Planning Policy?

NO

Proposed State Environmental Planning Policy?

NO

9. Contributions plans

The name of each contributions plan applying to the land:

THE HILLS SECTION 94A

9A. Biodiversity Certified Land

Whether the land is biodiversity certified land within the meaning of Part 7AA of the *Threatened Species Conservation Act 1995*?

NO

10. Biobanking Agreements

Whether the land is land to which a biobanking agreement under part 7A of the *Threatened Species Conservation Act 1995* relates, (but only if the council has been notified of the existence of the agreement by the Director-General of the Department of Environment, Climate Change and Water)?

NO

11. Bush fire prone land

Has the land been identified as bush fire prone land?

YES

The land is identified on Council's certified Bush Fire Prone Land map as being partly or wholly bush fire prone land. For details refer to the Bush Fire Prone Land map that can be viewed on Council's website at www.thehills.nsw.gov.au

12. Property vegetation plans

Has the council been notified that a property vegetation plan under the *Native Vegetation Act 2003* applies to this land?

NO

13. Orders under 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 this land (but only if the council has been notified of the order)?

NO

14. Directions under Part 3A

Whether 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?

NO

15. Site compatibility certificates and conditions for seniors housing

(a) Whether there is a current site compatibility certificate (seniors housing) of which council is aware, issued under State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 in respect of proposed development on the land?

NO

(b) Whether there are any terms of a kind referred to in clause 18(2) of State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 that have been imposed as a condition of consent to a development application granted after 11 October 2007 in respect of the land?

NO

16. Site compatibility certificates for infrastructure

Whether there is a valid site compatibility certificate (infrastructure), of which the council is aware, in respect of proposed development on the land?

NO

17. Site compatibility certificates and conditions for affordable rental housing

(1) 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?

NO

(2) Whether there are 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?

NO

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.

NO DEVELOPMENT PLAN APPLIES

(2) The date of any subdivision order that applies to the land.

NO SUBDIVISION ORDER APPLIES

(3) Words and expressions used in this clause have the same meaning as they have in Part 16C of this Regulation.

19. Site verification certificates

Whether there is a current site verification certificate, of which the council is aware, in respect of the land?

NO

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.

Note. The following matters are prescribed by section 59 (2) of the Contaminated Land Management Act 1997 as additional matters 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,

NO

(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,

NO

(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,

NO

(d) that the land to which the certificate relates is subject to an ongoing maintenance order within the meaning of the Act - if it is subject to such an order at the date when the certificate is issued,

NO

(e) that the land to which the certificate relates is the subject of a site audit statement within the meaning of the Act - if a copy of such a statement has been provided at any time to the local authority issuing the certificate.

NO

Note: Whether Council has been provided with a copy of any exemption under section 23 or authorisation by the Co-ordinator General under section 24 of the Nation Building and Jobs Plan (State Infrastructure Delivery) Act 2009?

NO

THE HILLS SHIRE COUNCIL

This land has frontage to a "Classified Road". Roads and Maritime Services, 27-31 Argyle St, Parramatta, is the responsible authority for classified roads and should be consulted for any road widening proposals.

DAVE WALKER
GENERAL MANAGER



Per:

PLEASE NOTE: COUNCIL RETAINS THE ELECTRONIC ORIGINAL OF THIS CERTIFICATE. WHERE THIS CERTIFICATE REFERS TO INFORMATION DISPLAYED ON COUNCIL'S WEBSITE OR TO ANY EXTERNAL WEBSITE, IT REFERS TO INFORMATION DISPLAYED ON THE WEBSITE ON THE DATE THIS CERTIFICATE IS ISSUED.

ATTACHMENT 2(B)**Zone RU6 Transition****1 Objectives of zone**

- To protect and maintain land that provides a transition between rural and other land uses of varying intensities or environmental sensitivities.
- To minimise conflict between land uses within this zone and land uses within adjoining zones.
- To encourage innovative and sustainable tourist development, sustainable agriculture and the provision of farm produce directly to the public.

2 Permitted without consent

Bed and breakfast accommodation; Extensive agriculture; Home occupations.

3 Permitted with consent

Agricultural produce industries; Animal boarding or training establishments; Aquaculture; Building identification signs; Business identification signs; Cemeteries; Child care centres; Community facilities; Dual occupancies (attached); Dwelling houses; Eco-tourist facilities; Environmental facilities; Environmental protection works; Farm buildings; Farm stay accommodation; Flood mitigation works; Garden centres; Home-based child care; Home businesses; Home industries; Information and education facilities; Intensive plant agriculture; Landscaping material supplies; Places of public worship; Plant nurseries; Public administration buildings; Recreation areas; Recreation facilities (indoor); Recreation facilities (outdoor); Respite day care centres; Restaurants or cafés; Roads; Roadside stalls; Rural workers' dwellings; Secondary dwellings; Veterinary hospitals; Water supply systems.

4 Prohibited

Any development not specified in item 2 or 3.

NOTE: This land use table should be read in conjunction with the Dictionary at the end of The Hills LEP 2012 which defines words and expressions for the purpose of the plan.

ATTACHMENT 2(B)

Zone SP2 Infrastructure

1 Objectives of zone

- To provide for infrastructure and related uses.
- To prevent development that is not compatible with or that may detract from the provision of infrastructure.

2 Permitted without consent

Roads

3 Permitted with consent

The purpose shown on the Land Zoning Map, including any development that is ordinarily incidental or ancillary to development for that purpose.

4 Prohibited

Any development not specified in item 2 or 3.

NOTE: This land use table should be read in conjunction with the Dictionary at the end of The Hills LEP 2012 which defines words and expressions for the purpose of the plan.

Appendix VIII – Dial Before You Dig (DBYD)

New South Wales Office:

A. D. Envirotech Australia Pty Ltd
Unit 6/7 Millennium Court
Silverwater, NSW 2128

Queensland Office:

A. D. Envirotech Australia Pty Ltd
P.O. Box 288
Upper Coomera, QLD 4209

Telephone:

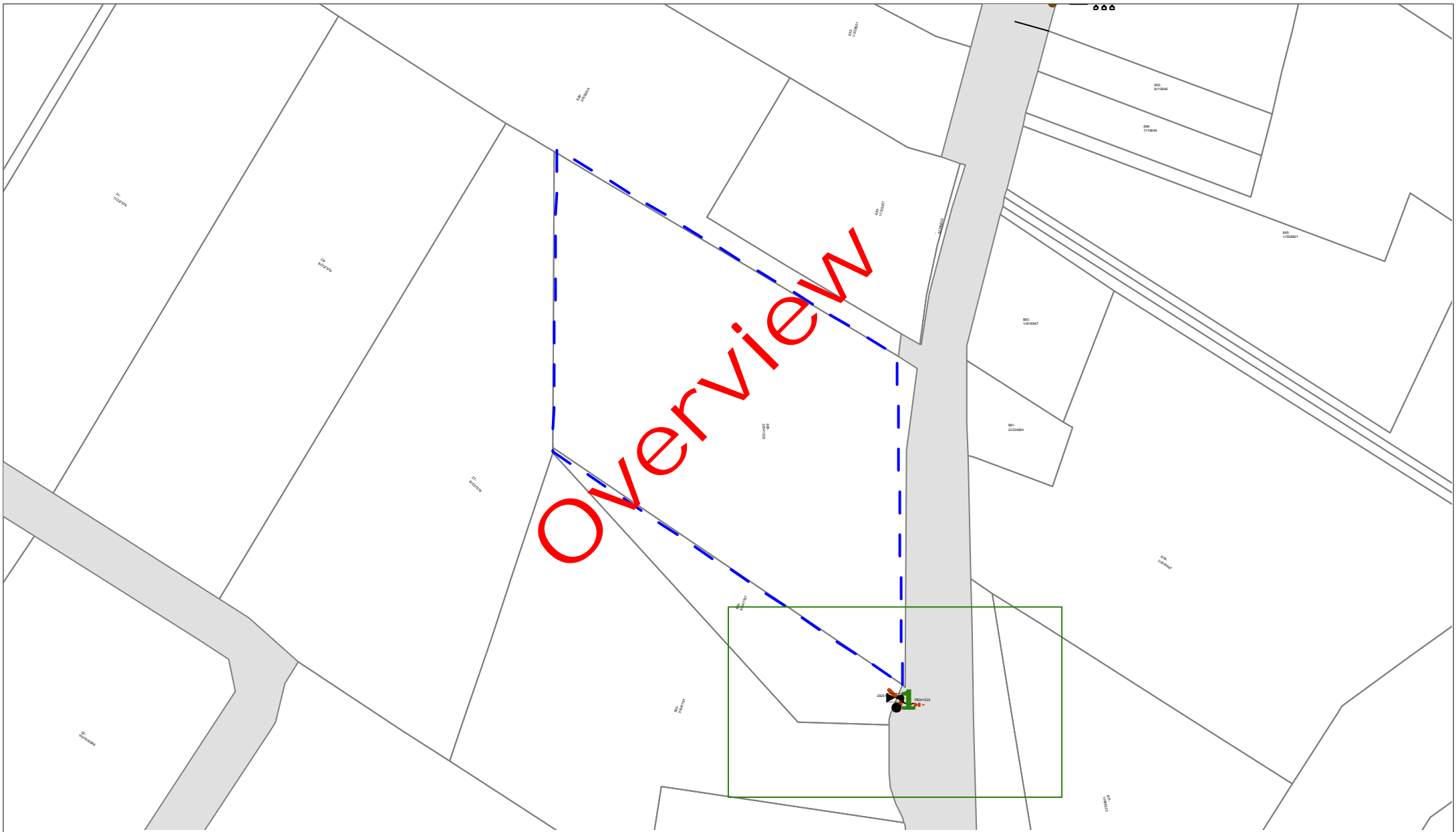
NSW: (02) 8541 7214
QLD: (07) 5519 4610

Internet:

site: www.ADenvirotech.com.au
e-mail info@ADenvirotech.com.au

ABN:

520 934 529 50



ENDEAVOUR ENERGY WARNING

This plan shows the approximate location of underground cables relative to fixtures existing when the cables were laid, and has been prepared solely for Endeavour Energy's own use. Endeavour Energy has taken all reasonable steps to ensure that the information is accurate as possible but will accept no liability for inaccuracies in the information shown on such plans from any cause whatsoever arising. Persons excavating are expected to exercise all due care in the vicinity where cables are indicated and will be held responsible for any damage caused to Endeavour Energy's property.



ALL ELECTRICAL APPARATUS SHALL BE CONSIDERED LIVE UNTIL PROVED DE-ENERGISED.
Contact with live electrical apparatus will cause severe injury or death.

Those excavating near Endeavour Energy's cables should be aware that **ASBESTOS OR ASBESTOS - CONTAINING MATERIAL MAY BE PRESENT** in Endeavour Energy's underground assets and that Organo-Chloride Pesticides(OCP) may be present in some sub-transmission trenches.



DO NOT SCALE

DBYD Sequence Number:	46400449
Issued Date:	30/06/2015

620.
6/18/7797

28251

FB341523

U72 T84 P1
(UNSIGHTED)



ENDEAVOUR ENERGY WARNING

This plan shows the approximate location of underground cables relative to fixtures existing when the cables were laid, and has been prepared solely for Endeavour Energy's own use. Endeavour Energy has taken all reasonable steps to ensure that the information is accurate as possible but will accept no liability for inaccuracies in the information shown on such plans from any cause whatsoever arising. Persons excavating are expected to exercise all due care in the vicinity where cables are indicated and will be held responsible for any damage caused to Endeavour Energy's property.



ALL ELECTRICAL APPARATUS SHALL BE CONSIDERED LIVE UNTIL PROVED DE-ENERGISED.
Contact with live electrical apparatus will cause severe injury or death.

Those excavating near Endeavour Energy's cables should be aware that **ASBESTOS OR ASBESTOS - CONTAINING MATERIAL MAY BE PRESENT** in Endeavour Energy's underground assets and that Organo-Chloride Pesticides(OCP) may be present in some sub-transmission trenches.



DO NOT SCALE

DBYD Sequence Number:	46400449
Issued Date:	30/06/2015



Response Cover Letter

Date: 30/06/2015

PIPE Networks
Level 17, 127 Creek St
Brisbane QLD 4000
Phone: +61 732339895
Fax: +61 732339880

To:

Mr Evan Webb - Customer ID: 1153777
AD Envirotech - Mr Evan Webb
4 10 Millenium
Silverwater
NSW
2128

Email: e.webb@adenvirotech.com.au
Phone: 0296486669
Fax: Not Supplied
Mobile: 0449960490

Dear Mr Evan Webb

The following is our response to your Dial Before You Dig enquiry.

Assets Affected: Telstra

Sequence Number: 46400447

Location: 626 Old Northern Road
Dural
NSW 2158

Commencement Date: 06/07/2015

Please read over the attached documents for more information about your enquiry.

DISCLAIMER: No responsibility/liability is taken by PIPE Networks for any inaccuracy, error, omission or action based on the information supplied in this correspondence.

Note: If the works fall in an area that adjacent to PIPE Networks infrastructure, a pre-inspection is required prior to commencement of works. Contact PIPE Networks to arrange an inspection time. **NO WORKS TO COMMENCE PRIOR TO INSPECTION.**

Mci 'UFYk cf _]b['bYUF'HFUbgg]cb'7UV'Yg"McI 'a i ghW6bHUM5i g[f]X'cb'f6&(-) % - 8\$\$'UH'YUghik c'k'YY_g'VYZ'fY'k cf_ 'W6a a YbWg"GY'5 i g[f]X'BYk cf_ 'GHbUX'BG%' "

DU442 - AV1

SPEC.1359 Pilot 19 HITACHI Drum No. 57
Pilot 20 HITACHI Drum No. 42

Ref: F8

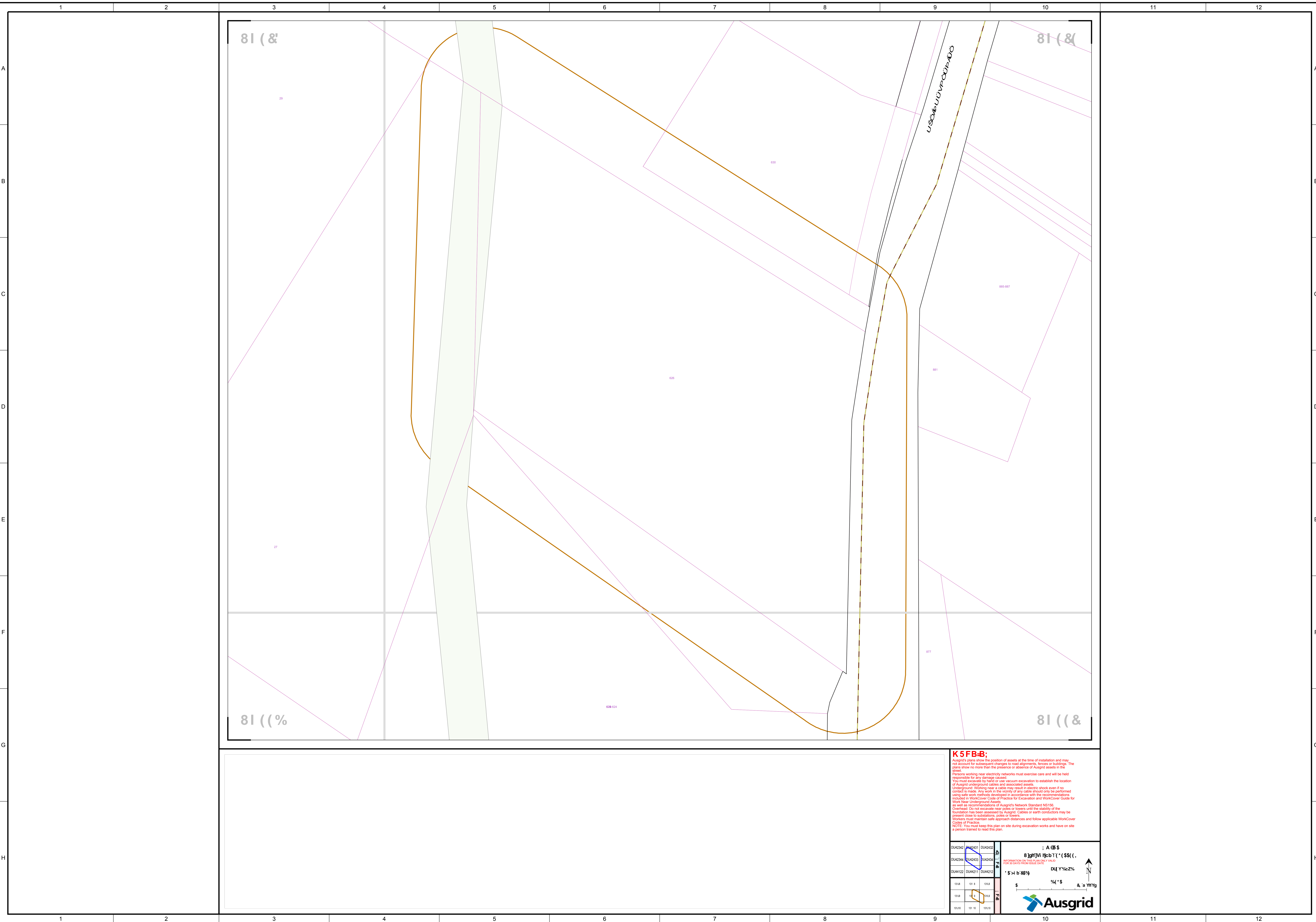


DU42342	DU42341	DU42343
DU42344	DU42343	DU42344
DU41122	DU42111	DU42112

Information on this plan only valid for dates from 08/01/2024 to 08/31/2024

Scale: 1:100

Ausgrid logo



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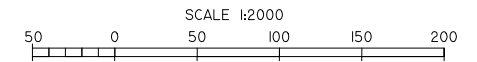
K5FB-B;
Ausgrid's plans show the position of assets at the time of installation and may not account for subsequent changes to asset alignments, fences or buildings. The plans show no more than the presence or absence of Ausgrid assets in the street.
Persons working near electricity networks must exercise 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 cables 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.
Overhead: Do not excavate near poles or towers until the stability of the surrounding 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 Code of Practice.
NOTE: You must keep this plan on site during excavation works and have on site a person trained to read this plan.

DU42342	DU42421	DU42432
DU42344	DU42423	DU42424
DU44122	DU44211	DU44212

81 ((&))
A @ \$
INFORMATION ON THIS PLAN ONLY VALID FOR SIX MONTHS FROM ISSUE DATE.
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Ausgrid



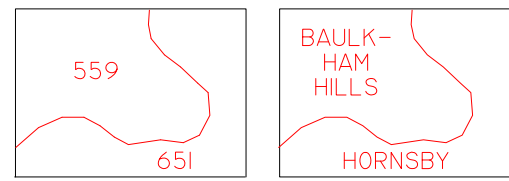
DURAL 4D



THIS MAP UPDATED ON 11/12/2014
 THIS PLAN IS DIAGRAMATIC ONLY. DISTANCES
 SCALED FROM THIS PLAN MAY NOT BE ACCURATE.
 DATE ALTERED:..... BY:.....

D4A	D4B	D5A
D4C	D4D	D5C
D7A	D7B	D8A

ADJOINING MAPS



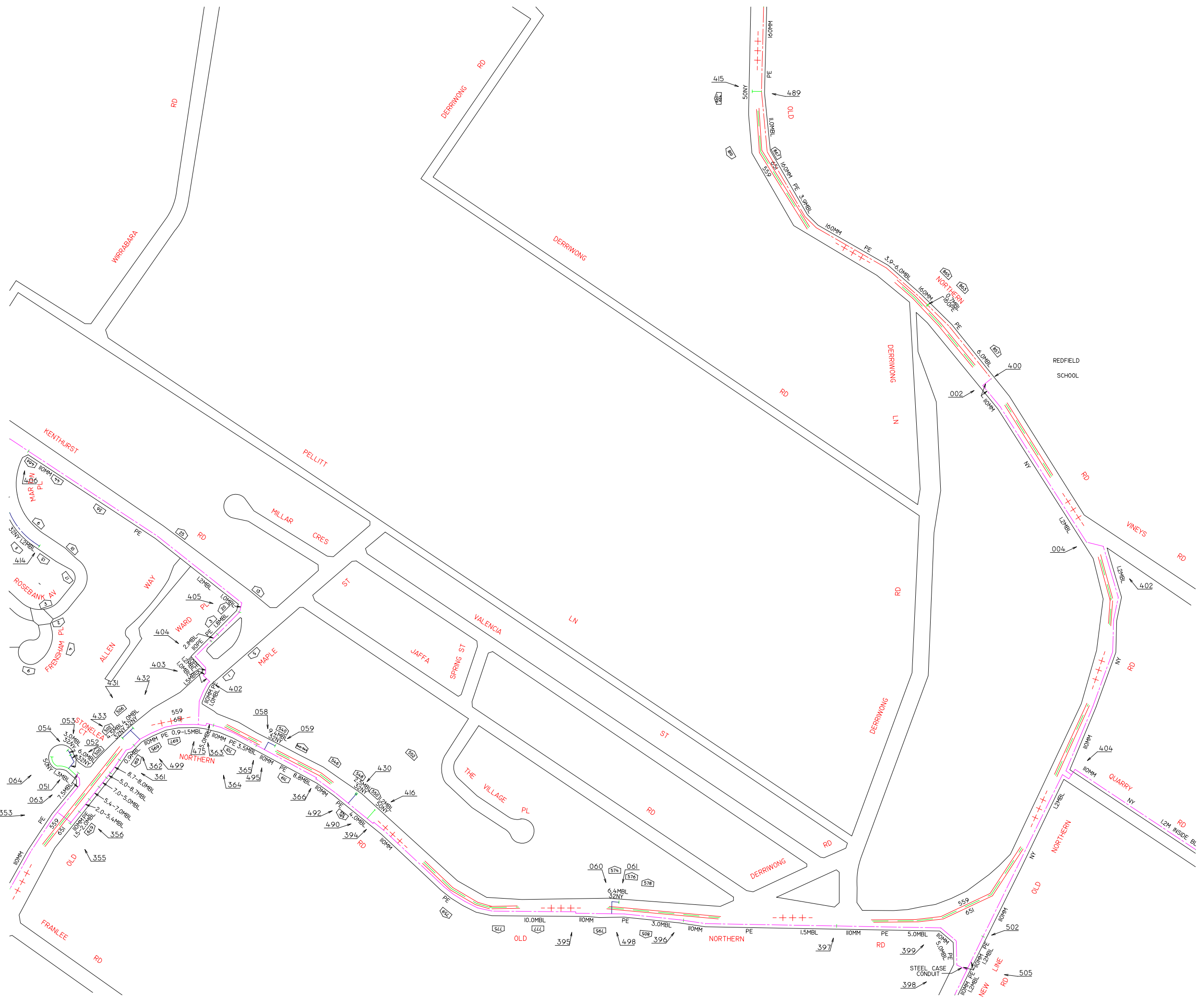
NETWORK AREA MUNICIPALITY AREA

Jemena

KEY

- | MAX ALLOWABLE OPERATING PRESSURE | |
|----------------------------------|--|
| — T — | TRUNK PIPELINE 7000 kPa |
| — P — | PRIMARY MAIN 3500 kPa |
| — S — | SECONDARY MAIN 1050 kPa |
| — 400 — | NETWORK MAIN 400 kPa |
| — 300 — | NETWORK MAIN 300 kPa |
| — 210 — | NETWORK MAIN 210 kPa |
| — 100 — | NETWORK MAIN 100 kPa |
| — 30 — | NETWORK MAIN 30 kPa |
| — 7 — | NETWORK MAIN 7 kPa |
| — 2 — | NETWORK MAIN 2 kPa |
| — + + + — | PROPOSED MAINS |
| PR II-2 3 | STEEL MAIN PROJECT NUMBER |
| △ | PRESSURE MONITORING STATION |
| ▽ | VALVE |
| □ | SYSTEM PRESSURE REGULATOR |
| • | SIPHON |
| 123 | NETWORK NODE |
| 123S | NETWORK VALVE NODE |
| 123V | VALVE NUMBER |
| 6NB | 6 INCH CAST IRON MAIN |
| 150MM | 150MM STEEL MAIN |
| 110MM PE/NY | 110MM POLYETHYLENE/NYLON MAIN |
| ⊙NB 50MM NY | 50MM NYLON INSERTED INTO 6NB MAIN CAST IRON MAIN |
| 1.2MBL | DISTANCE IN METRES OF MAIN FROM BOUNDARY LINE |
| 1957 | YEAR LAID |
| — + + + — | MUNICIPALITY BOUNDARY |
| — + + + — | NETWORK BOUNDARY |
| 123 | HOUSE NUMBER |

DURAL 4D





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Sequence Number: 46400451

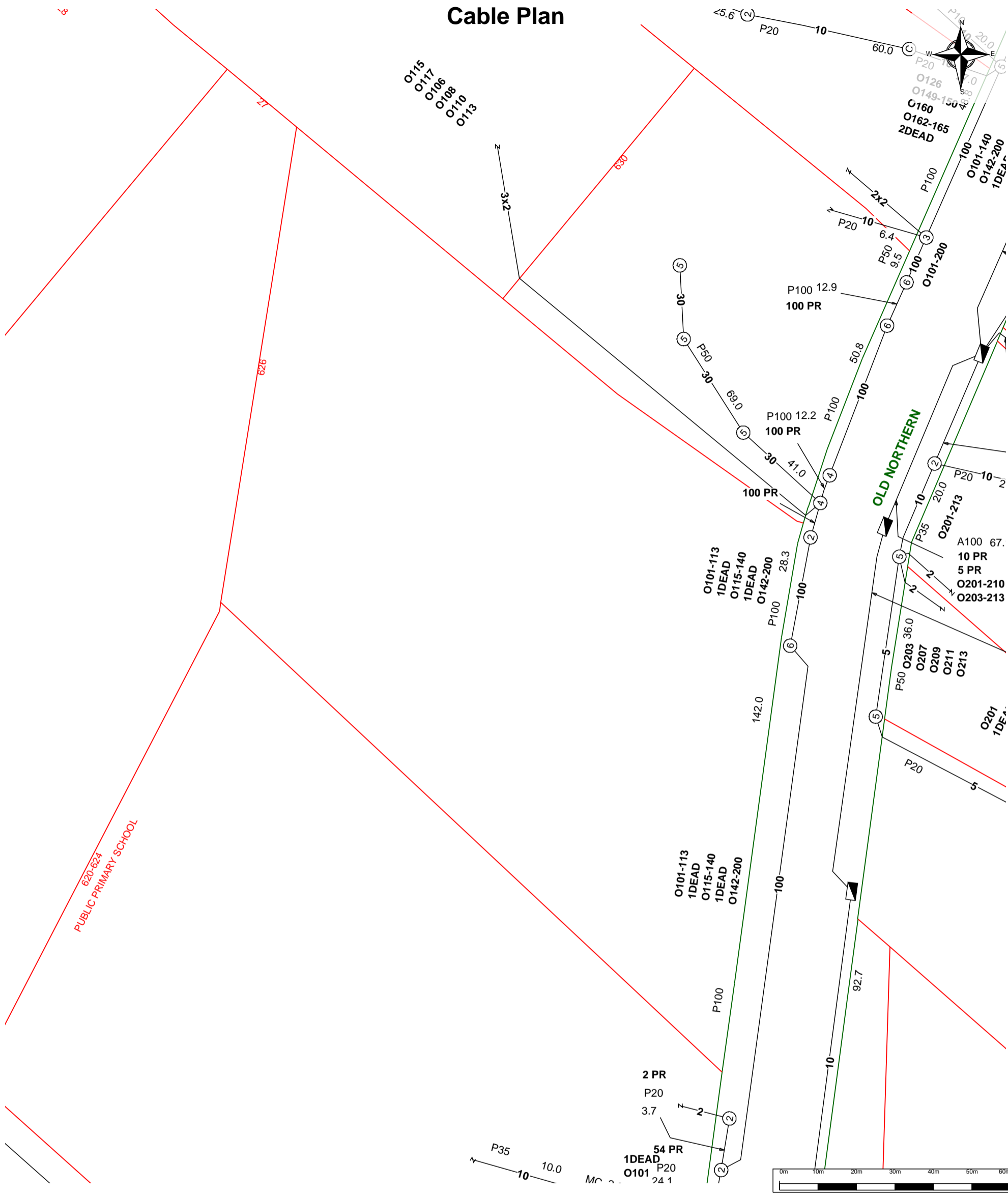
Date Generated: 30/06/2015



For all Optus DBYD plan enquiries –
 Email: Fibre.Locations@optus.net.au
 For urgent onsite assistance contact 1800 505 777
 Optus Limited ACN 052 833 208



Cable Plan



For all Telstra DBYD plan enquiries -
 email - Telstra.Plans@team.telstra.com
 For urgent onsite contact only - ph 1800 653 935 (bus hrs)

TELSTRA CORPORATION LIMITED A.C.N. 051 775 556

Generated On 30/06/2015 14:26:40

Sequence Number: 46400450

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.

The above plan must be viewed in conjunction with the Mains Cable Plan on the following page

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.

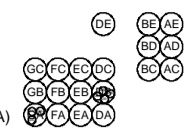
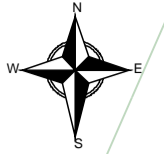
It is your responsibility to locate Telstra's underground plant by careful hand pot-holing prior to any excavation in the vicinity and to exercise due care during that excavation.

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.

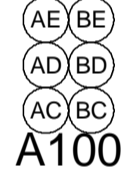
Mains Cable Plan

3004:YY-AC/1-84 PIUT UA (AD)
 c19:M1-200 200/0.40 CPFUT (AE)
 <C CAST 11:Z01/J1-100 800 PIUT (DA)
 c10:M101-600
 <C CAST 11:Z01/J601-700
 c10:M701-800
 106:BY-AE/1-6 6F/- MMOF FNPEHJ/STD (DA)
 1003:AB-CJ/1-60 60F/- SMOF FNPEHJ/STD (DB)
 4xP35 SUBDUCTS (DB)
 266:YY-KENT YY/1-24 24F/- SMOF FNPEHJ/STD (DB1)
 102:YY-BQ/1-60 60F/- SMOF FNPEHJ/STD (DB4)
 c21:M1-1200 1200/0.40 CPIUT (DC)
 F CAST 210:CAST YY-YY/1-36 36F/- SMOF FNPEHJ/STD <- (EA)
 F CAST 1003:CG-CH/1-60 60F/- SMOF FNPEHJ/STD <- (EB)
 C KENT 10:Z01/J1-200 200/0.81 APIUT <- (FA)
 c17:M1-2700 2700/0.40 CPIUT (FB)
 3xP35 SUBDUCTS (GA)
 256:YY-AE/1-36 36F/- SMOF FNPEHJ/STD (GA1)
 3001:AB-AC/1-60 60F/- SMOF FNPEHJ (GB)
 123:YY-AE/1-6 6F/- SMOF FNPEHJ/STD (GB)

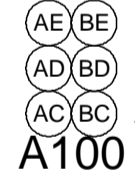


(AA)
 NPEHJ/STD (AA1)
 <- (AB)
 EHJ/STD (AB)
 (BB)

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 c1:M1-1400 1400/0.51 PIUT UA (AD)
 c19:M1-200 200/0.40 CPFUT (BE)



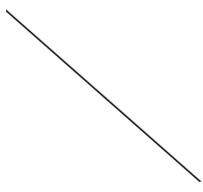
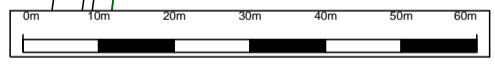
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 c1:M1-1400 1400/0.51 PIUT UA (AD)
 c19:M1-200 200/0.40 CPFUT (AE)



3001:CI-B22/1-12 12F/- SMOF FNPEHJ/STD (AA)
 DIST (AA)

P35

c3001:CI-B22/1-12 12F/- SMOF FNPEHJ/STD (AA)



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: 46400450

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.

TELSTRA CORPORATION LIMITED A.C.N. 051 775 556

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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.

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

Appendix IX – NSW WorkCover

New South Wales Office:

A. D. Envirotech Australia Pty Ltd
Unit 6/7 Millennium Court
Silverwater, NSW 2128

Queensland Office:

A. D. Envirotech Australia Pty Ltd
P.O. Box 288
Upper Coomera, QLD 4209

Telephone:

NSW: (02) 8541 7214
QLD: (07) 5519 4610

Internet:

site: www.ADenvirotech.com.au
e-mail info@ADenvirotech.com.au

ABN:

520 934 529 50



WorkCover

Our Ref: D15/167148
Your Ref 131563

WorkCover NSW
92-100 Donnison Street, Gosford, NSW 2250
Locked Bag 2906, Lisarow, NSW 2252
T 02 4321 5000 F 02 4325 4145
Customer Service Centre 13 10 50
DX 731 Sydney workcover.nsw.gov.au

13 October 2015

Attention: Evan Webb
6/7 Millenium Court
Silverwater NSW 2128

Dear Evan,

RE SITE: 626 Old Northern Rd, Dural

I refer to your site search request received by WorkCover NSW on 1st October 2015 requesting information on licences to keep dangerous goods for the above site.

A search of the Stored Chemical Information Database (SCID) and the microfiche records held by WorkCover NSW has not located any records pertaining to the above mentioned premises.

If you have any further queries please contact the Dangerous Goods Licensing Team on (02) 4321 5500.

Yours Sincerely

Bernadette Sturgiss
Customer Service Officer
Dangerous Goods Team

Appendix X – EPA Contaminated Sites Register

New South Wales Office:

A. D. Envirotech Australia Pty Ltd
Unit 6/7 Millennium Court
Silverwater, NSW 2128

Queensland Office:

A. D. Envirotech Australia Pty Ltd
P.O. Box 288
Upper Coomera, QLD 4209

Telephone:

NSW: (02) 8541 7214
QLD: (07) 5519 4610

Internet:

site: www.ADenvirotech.com.au
e-mail info@ADenvirotech.com.au

ABN:

520 934 529 50



Healthy Environment, Healthy Community, Healthy Business

[Home](#) > [Contaminated land](#) > [Record of notices](#)

Search results

Your search for:LGA: Baulkham Hills Shire Council

Matched 5 notices relating to 1 site.

[Search Again](#)

[Refine Search](#)

Suburb	Address	Site Name	Notices related to this site
Kenthurst	137 Annangrove Road	Annangrove Climbers	5 former

Page 1 of 1

30 June 2015

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Level 7
153 Walker Street
North Sydney
NSW 2060
P 02 9439 1777
F 02 9923 1055
E info@atl.net.au
ABN 96 130 882 405

www.atl.net.au

10th May 2016

Urbis

Level 23, Tower 2 Darling Park
201 Sussex Street
Sydney NSW 2000

Your Ref:

Our Ref: 15-296-C001-03

Direct phone: 02 9439 1777

Attention David Lousick

Dear David,

Old Northern Road – Northern Lots, Dural Services Investigation Letter

Further to recent discussions and correspondence on the proposed development of Old Northern Road in Dural please find below a summary of the external servicing strategy for the development.

Our investigations of the site were carried out based on a Dial Before You Dig (DBYD) search and an Indicative Estate Masterplan sketch prepared by Urbis on 19th February 2016.

The site which is located within The Hills Shire Council LGA comprises multiple lots and is split into Northern and Southern Lots. The Northern lots are approximately 10.8Ha in area and includes the following lots:

- 618 Old Northern Road, Dural
- 626 Old Northern Road, Dural
- 21 Derriwong Road, Dural
- 27 Derriwong Road, Dural

The Southern lots are approximately 8.27 Ha in area and includes the following lots:

- 584 Old Northern Road, Dural
- 586 Old Northern Road, Dural
- 590 Old Northern Road, Dural
- 600 Old Northern Road, Dural

- 602 Old Northern Road, Dural
- 606 Old Northern Road, Dural
- 7 Derriwong Road, Dural
- 11 Derriwong Road, Dural

Refer Figure 1 for lot location.

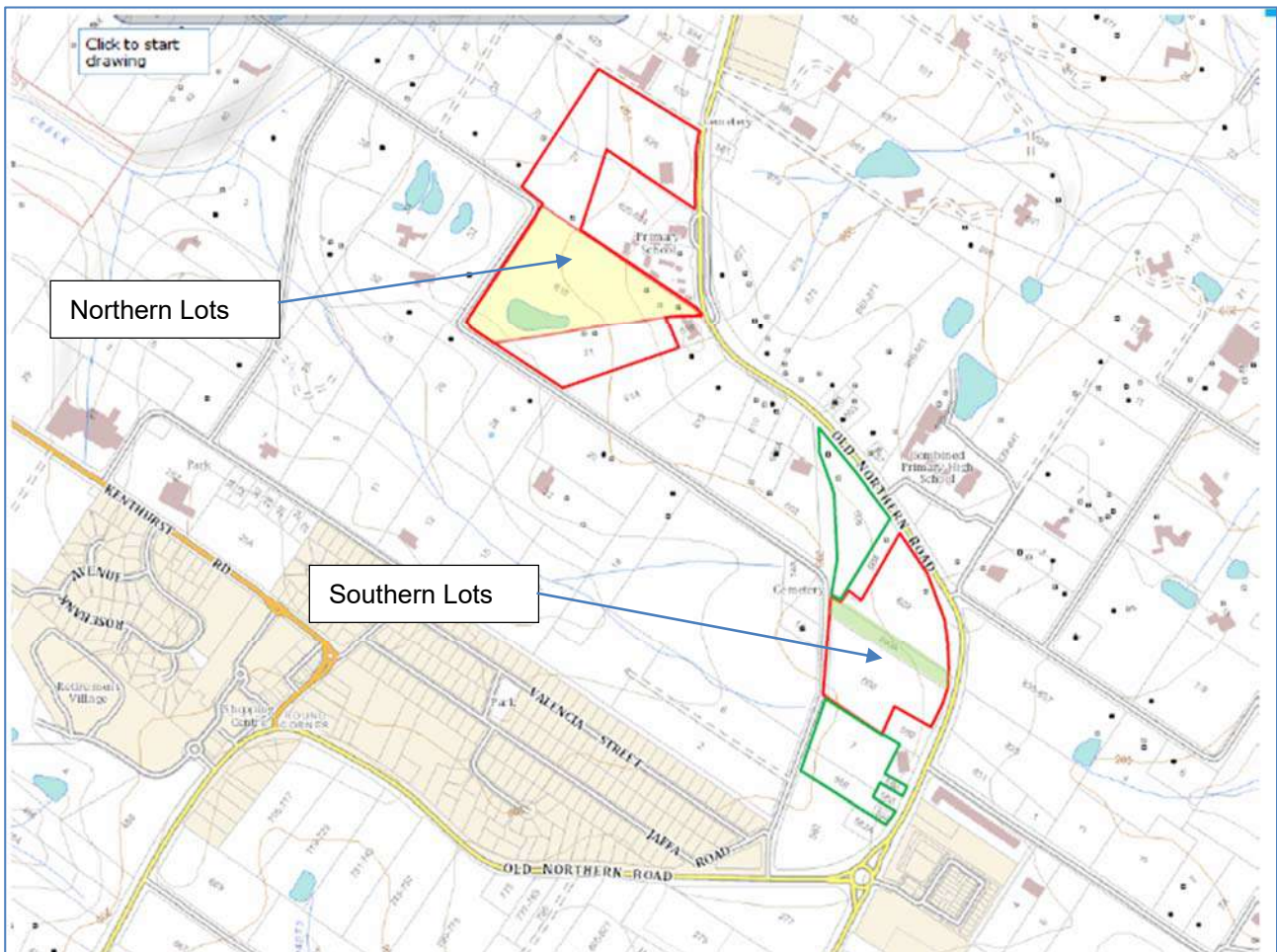


Figure 1 - Site Location

This services investigation report will be concentrating on the proposed development of the Northern Lots. Once the proposed masterplan of the Southern Lots is finalised a separate report will be undertaken for these lots.

EXISTING SITE

The site is currently a mixture of open farm land comprising grass and shrubs with buildings and sheds located mainly along the eastern side of the lot adjacent Old Northern Road. There is also an existing dam located within the southern portion of Lot 619 Old Northern Road. The site is bordered by Dural Public School and Old Northern Road to the east, Derriwong Road to the south and west and a nursery to the north.

The site generally falls from the north east to the south west. The majority of site is covered in pervious grassed fields with a minor component of the site comprising buildings and sheds. There is no formal stormwater drainage network for these buildings with all runoff directed as overland flows to the west and south west. Levels adjacent Old North Road in the north east corner are approximately RL210.5 falling approximately to RL184.5 in the south west corner

adjacent Derriwong Road. Refer to attached survey for existing site levels. There is also a natural low spot on the western side of 27 Derriwong Road at RL189.2 which falls into the neighbouring lot to the west.

The lots to the south of the School fall into from north to south towards Derriwong Road. There is no formal drainage system within these lots with all stormwater drainage running overland into the existing dam to the south. The lots to the north and west of the school falls towards the low spot in 27 Derriwong Road with overland flows directed into the neighbouring lot to the west. The entire site is classified as a “greenfield” site. Refer to Appendix B for existing survey drawings.

The purpose of this report is to liaise with the relevant authorities to determine:

- Locations of existing services and the likely connection points to supply the site
- Potential; service upgrades required to ensure adequate capacity to the site
- Timing of likely service upgrades
- Indicative works required to upgrade or provide new services

PROPOSED DEVELOPMENT

The proposal for the development of the Northern Lots is to create the following:

- 92 typical lots approx. 700m² in area for residential use
- 7 atypical lots approx. 700m² in area for residential use
- An aquatic centre of approximate area of 5,825m²
- Associated roads and infrastructure to service the residential lots and aquatic centre.

Refer to Appendix A for proposed lot layout.

EXISTING SERVICES

Water

From Dial Before You Dig (DBYD) information obtained there are the following water services within the area:

- 2 x 500mm CI/CL (Cast Iron Cement Lined) main in the western verge of Old Northern Road
- A 600mm CI/CL (Cast Iron Cement Lined) main the eastern verge of Old Northern Road
- A 250mm CI/CL (Cast Iron Cement Lined) main in the eastern verge of Old Northern Road
- A 100mm / 150mm CI/CL (Cast Iron Cement Lined) main within the northern verge of Derriwong Road. This main is within the eastern verge where Derriwong Road runs in a north-south direction

Refer to Appendix C for Sydney Water map.

Preliminary advice received from Land Partners (Water and Service Coordinators) suggests there is sufficient capacity within these water mains to service the proposed residential component of the site.

For the proposed aquatic centre a study will need to be undertaken to determine the potable water usage required. This rate will then need to be submitted to Sydney Water for application approval.

Summary

Land Partners have indicated a feasibility application needs to be submitted to Sydney Water to determine the connection points for the proposed residential and aquatic lots. This feasibility study can take between 4-6 weeks however for the sake of this servicing report it is assumed the Northern Lot of this development can be serviced with water.

Sewer

From Dial Before You Dig (DBYD) information obtained there doesn't appear to be an sewer mains within the immediate vicinity of the site.

Refer to Appendix C for Sydney Water map.

The closest sewer main is located approximately 175m south of 600 Old Northern Road. Connection to this main is a function of topography, receiving sewer levels and the designed pipe capacity. Advice received from Land Partners suggests it is doubtful there was any allowance made for receiving upstream flows into this existing system.

There is also a 400mm VC sewer and pump station south of OHara's Creek to the south of Derriwong Road.

Summary

Feasibility analysis and discussions are currently underway with Sydney Water to service this site for sewer. It is likely this will require some form of pump station and rising main system passing below O'Hara's creek and connecting into the existing pump station to the south. Refer to Proposed Sewer Lead In Plan within Appendix C for proposed route of rising main.

This option will be finalised following progression of discussions with Sydney Water to agree on the most suitable and cost-effective servicing solution for the planning proposal, as well as other rezoning proposals in the area to achieve a coordinated delivery of necessary upgrades and maximise cost benefits.

Power

From Dial Before You Dig records there are existing electrical ducts and high voltage cables owned by Ausgrid within the western verge of Old Northern Road. Overhead power cables are also evident along Derriwong Road to the south and west of the site.

Survey records indicate there is a 66kV overhead power line passing through the site. The overhead line runs in a north-south direction from the north-west corner of the site, through the western side of Dural Public School and running to the south east corner of the site into Derriwong Road. A 15.5m wide easement exists beneath the overhead lines. Refer to attached survey drawings for location of easement (Appendix D).

Feasibility analysis and negotiations are currently occurring with Endeavour Energy to service the site. It is recognised that the planning proposal is one of a number occurring in the surrounding area. While a coordinated approach is being undertaken, initial advice from a Level 3 Accredited Service Provider confirms the following:

Initial discussions with a Level 3 accredited service provide offer the following advice:

Existing electricity supply:

The area is supplied via Endeavour Energy's 11,000 volt overhead network supplied from Kenthurst Zone substation. The area is predominately large lot rural residential.

Please find attached:

- SK-01 showing the location of Kenthurst Zone substation in relation to the site (Appendix D).
- SK-02 showing the existing 11,000 volt network in the vicinity of the site (Appendix D).
- SK-03 showing the existing overhead 66,000 volt line encumbering the site(Appendix D).

Electricity Service Capacity

The future redevelopment of the land, to include up to 99 residential lots and an aquatic centre, will require an electricity capacity of between 1,043-1,243kVA.

Endeavour Energy will require the electrical load to be calculated for this proposed 99 residential lot development utilising a minimum of 7.5kVA per lot after diversity maximum demand. This equates to a load of 743kVA.

In respect to the future aquatic centre, at this stage based our experience with other Aquatic centres it is anticipated that the load could be in the order of 300kVA to 500kVA. However this can vary depending on air conditioning, filtration and pumps configuration

Method of supply;

On receipt of an application for load Endeavour Energy planners with model what effect the proposed new load will have on the network in respect to available capacity and quality of supply (voltage regulation).

Typically Endeavour Energy will load their feeders to up to maximum of 4,500kVA however this is sometimes is reduced in rural type areas due to voltage regulation problems

Supply options:

Detailed investigations and negotiations are currently being coordinated in consultation with Endeavour Energy. Based on the preliminary investigations three (3) options have been identified to support the delivery of the development, including:

- **Option 1:** Connect to the existing 11,000 volt network adjacent to the site (subject to confirmation of network capacity) may be able to support the load and allow (Cost: Nil).
- **Option 2:** Augmentation of the existing supply service to improve quality (of supply). This option would involve the replacement of existing overhead conductors with larger conductors and/or the installation of a voltage regulator (Cost: \$50-300k).
- **Option 3:** Installation of a new feeder may be created from the zone substation (Cost: \$2m)

Initial discussions with Endeavour Energy indicate that a combination of Options 1 and 2 is likely, allowing for connection the existing service infrastructure with improvements to the network aimed at elevating service supply to meet increased demand.

Internal network connections:

The land will be connected to the broader electricity network including the provision of street lighting installed in accordance with Endeavour Energy Standards. Two to three pad mount type substations will be required, depending on the aquatic centre's final load. For feasibility purposes a \$7k contingency per lot for electricity and street lighting reticulation costs has been provided, plus a \$100k contingency for each pad mount substation.

Existing Infrastructure: 66kV line:

An existing 66kV line traverses the land and options for the relocation of this infrastructure is being discussed with Endeavour Energy. Three (3) alternative outcomes/options are being discussed, these include:

- **Option 1:** Reconsideration of the subdivision design and layout to locate new roads along the alignment of existing pole and line infrastructure along road corridors (i.e. avoid locating infrastructure in future private residential land holdings – consistent with Endeavour Energy policy and practice). Establishment of an easement in favour of Endeavour Energy.
- **Option 2:** Augment the existing pole and line infrastructure to align with the proposed road layout. Estimated cost is \$40k+GST per relocated pole.
- **Option 3:** Undergrounding of all infrastructure. The indicative cost the undergrounding the line is in the order of \$1,500/m plus \$300k for the terminations.

Option 1 does not result in a positive urban design outcome or orderly and economic use of the land. Based on current negotiations it is envisaged that Option 2 is the most viable and reasonable outcome. A preliminary estimate and cost contingency of \$300,000 has been made to support the implementation of this outcome.

Summary

Preliminary investigations of the site and the area have identified several options for extending and delivering services and utilities to the land. These will be finalised following progression of discussions with Endeavour Energy to agree on the most suitable and cost-effective servicing solution for the planning proposal, as well as other rezoning proposals in the area to achieve a coordinated delivery of necessary upgrades and maximise cost benefits.

Gas

From Dial Before You Dig records there is an existing 160mm diameter PE (polyethylene) gas main owned by Jemena within the Old Northern Road.

Summary

Preliminary investigation of the site has identified the site should be able to be serviced with gas. Confirmation and approval will need to be sought by Jemena as owners of these gas mains for all connections into their network.

Communications

From Dial Before You Dig records there is record of existing Telstra telecommunications cables within both Derriwong Road and Old Northern Road.

Summary

Preliminary investigation of the site has identified the site should be able to be serviced with telecommunications. Confirmation and approval will need to be sought by Telstra and Optus as owners of these telecommunication mains for all connections into their network.

Stormwater

From discussions with the Hills Shire Council and reviewing the survey data there is no formal stormwater drainage within Lots 618 and 626 Old Northern Road and 21 and 27 Derriwong Road. As mentioned previously the lots to the north and west of Dural Public School naturally fall to the west into the neighbouring property. Runoff is via overland flow paths only. Survey records indicate a 3.0m wide drainage easement exists to the north-west of the school which extends through the site to the western boundary. At this stage no records are available to indicate if there is a pipe within this easement, however given this location coincides with the low spot of the school it is logical to summarise the school drains to the north-west through a pipe network /overland flow path through to the west. Confirmation will need to be sought at DA design stages to confirm this easement and how the school drains. Refer to attached survey drawings for existing overland flow paths and existing easement. It is likely this pipework and easement will need to be relocated within the proposed roads to ensure it doesn't pass through private lots.

The lots to the south of the School fall to the south into an existing dam adjacent Derriwong Road. When the dam overtops to runoff drains into existing pits within Derriwong Road which ultimately drain to the south into OHara's Creek.

Council have confirmed all stormwater drainage will need to confirm to The Hills Shire Council "Design Guidelines Subdivision/Developments". Within these guidelines is the installation of On-Site-Detention (OSD) systems. Council have confirmed the site falls within the Hawkesbury River Catchment and as such OSD need to comply with the Hawkesbury River Catchment Area Permissible Site Discharge (PSD) rates and Site Storage Volume (SSR) requirements. For this site these rates have been confirmed as:

Permissible Site Discharge (PSD) = 104L/sec/Ha

Site Storage Volume (SSR) = 362m³/Ha

Given the site is approximately 10.89Ha in area this equates to a PSD of **1132L/sec** and SSR of **3,950m³** for the entire site. Given there are two existing outlets/overland flow paths off site these rates will need to be split on a pro-rata basis. It is likely the total site storage volume will be achieved by the construction of regional open basins and/or underground storage tanks. The location and extent of these basins/tanks to correspond with the overland flow paths off site will be determined at DA design stage.

Summary

Based on discussions with The Hills Shire Council there shouldn't be any issues with connecting this site into the existing Council stormwater network within Derriwong Road. This is provided the internal stormwater network is designed to meet the Council engineering guidelines.

Water Sensitive Urban Design

The Hills Shire Council have Water Urban Sensitive Urban Design (WSUD) objectives to:

- Reduce water demand
- Reduce water discharge to receiving environments
- Maximum opportunities for water harvesting and re-use; and
- Reduce water pollution

Given the site is classified as a “greenfield” Council will likely be looking at a number of methods to implement WSUDs into the development. These will include the use of:

- Rainwater tanks
- Gross Pollutant traps
- Bio-filtration
- Bio-retention
- Detention basins
- Swales
- Porous paving/ surfaces
- wetlands

Detailed stormwater designs will be developed and submitted to Council during the development application stage however at this stage allowances should be made to incorporate Gross Pollutant Traps within the stormwater design as a minimum level to achieve WSUDs.

It is also highly likely rainwater harvest tanks will also be required to recycle the roof water generated from the site.

Flooding

Given the site is located north of OHara’s Creek flooding may be an issue, particularly for those lots immediately north of Derriwong Road.

At this stage Council do not have any records of any flooding of this creek however a study may be required during detailed design to ensure the development does not cause any adverse impacts to flooding surrounding the creek and Derriwong Road. This would also be to ensure all habitable floor levels are set the minimum freeboard level above the 100 year ARI storm event and to ensure the development does not increase flooding to the surrounding area.

Conclusion

Based on our preliminary investigations and discussions with the relevant authorities, it is our recommendation that this site can be adequately serviced with all required utilities and that the most appropriate options for providing each utility are coordinated with the relevant service providers.

Please feel free to discuss if you have any queries.

Yours sincerely







Andrew Tweedie BEng Civil MIEAust CPEng
Senior Civil Engineer
02 9439 1777

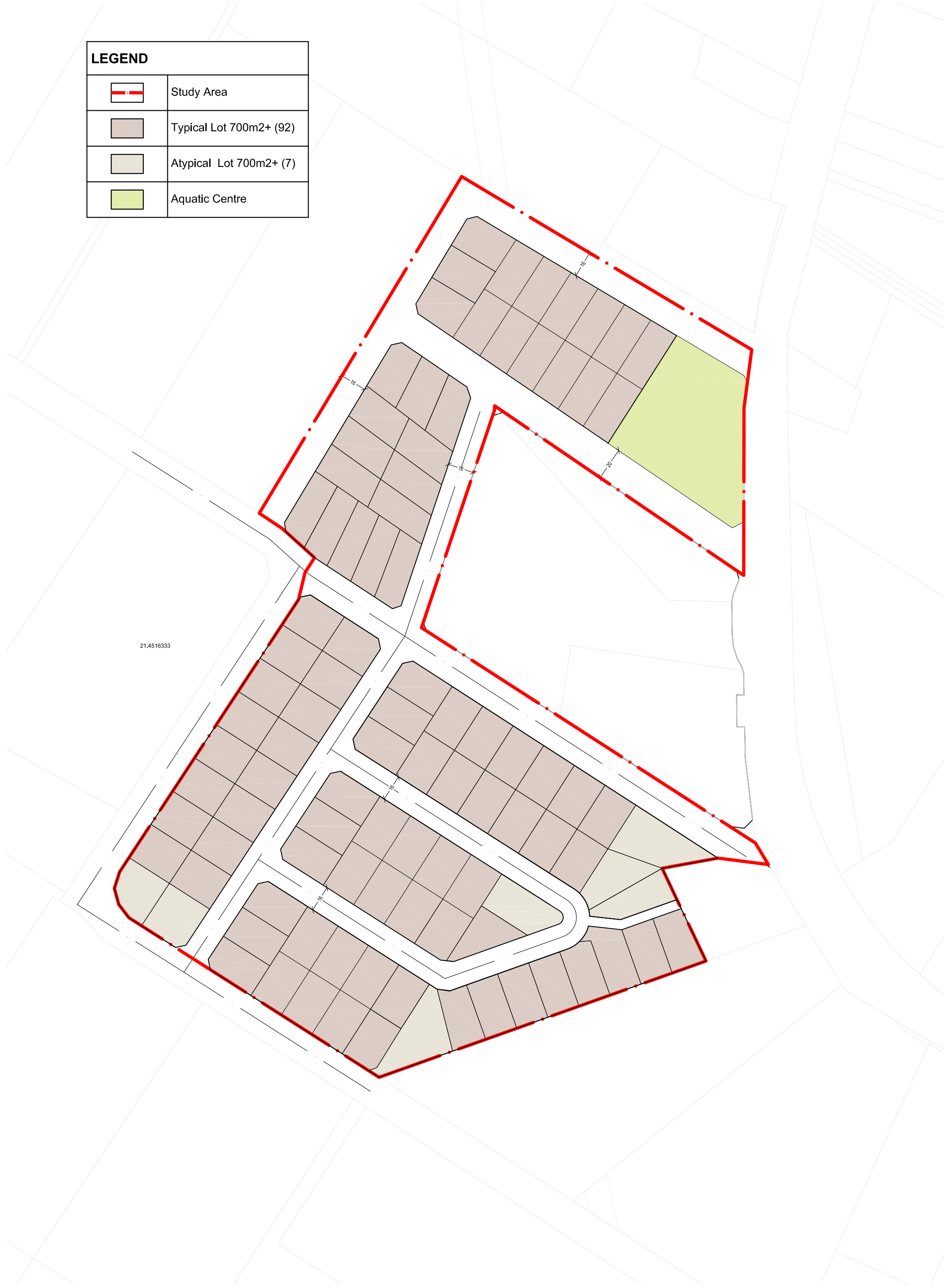
Appendices

- Appendix A – Dural North Planning Proposal
- Appendix B - Survey Drawings
- Appendix C - Sydney Water Map
- Appendix D – Electrical Drawings
- Appendix E - Bulk Earthworks Cut/Fill Plan

Appendix A

Dural North Planning Drawings

LEGEND	
	Study Area
	Typical Lot 700m2+ (92)
	Atypical Lot 700m2+ (7)
	Aquatic Centre

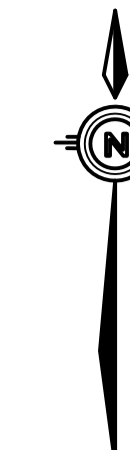


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Appendix B

Survey Drawings

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CLIENT

URBIS

PROJECT
DETAIL SURVEY
OF
**LOT 1 IN DP 656036, LOT 100
& LOT 101 IN DP 713628**
OLD NORTHERN ROAD
DUAL

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 FS 535002

HEIGHT DATUM AHD	LOCAL AUTHORITY THE HILLS SHIRE
HEIGHT ORIGIN SSM 72130 RL 184.959	SCALE 1:3000 (A1)
MERIDIAN 56	CONTOUR INTERVAL 0.5 Metre
CO-ORD SYSTEM MGA	SURVEYOR LH
COAD FILE SY073666	DATE OF SURVEY 01/07/15
AUTOCAD FILE SY073666	DRAWN LJMc
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PLAN NUMBER SY073666.000	DATE 16/07/15
	DATE 17/07/15
	DATE 17/07/15

PLAN NUMBER
SY073666.000
SHEET OVERALL

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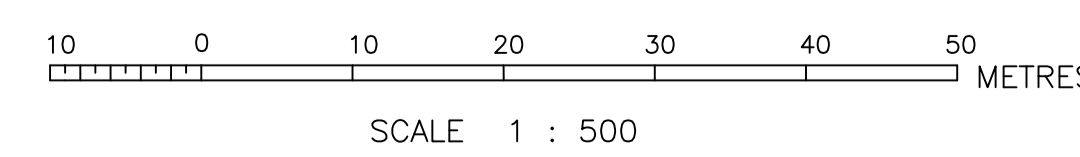
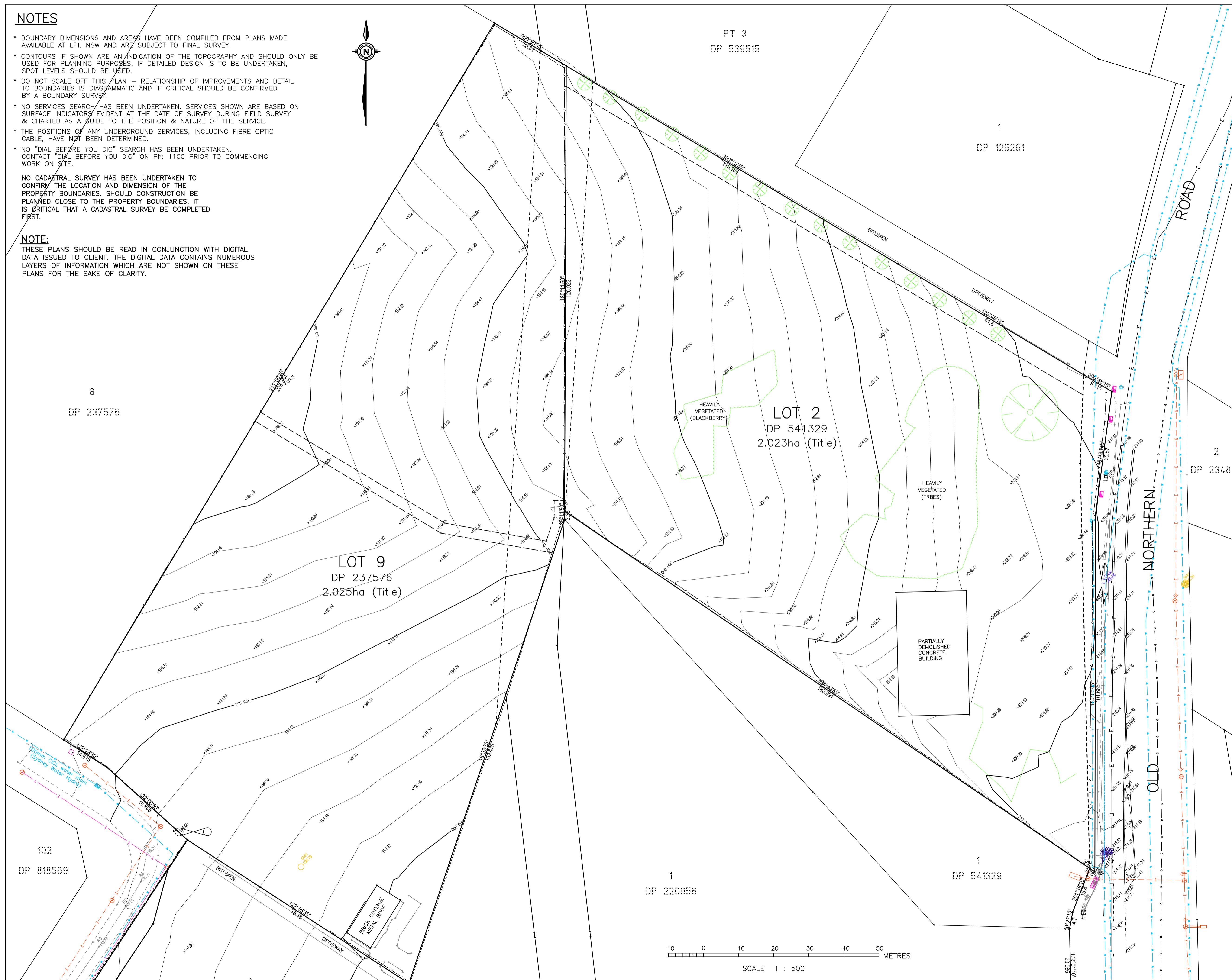
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OF	
LOT X IN DP501233, LOT 2	
IN DP 567995, LOT 2 IN	
DP 541329 & LOT 9 DP237576	
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	Sign
	Power Pole & Light
	Power Pole
	Gate
	Sewer Manhole Cover
	Sewer Lamphole
	Gully P/Lid Grate Centre
	Tree
	Tree Shrub
	Water Meter
	Water Hydrant
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	Water Tap
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HEIGHT ORIGIN	SCALE
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MERIDIAN	CONTOUR INTERVAL
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CO-ORD SYSTEM	SURVEYOR
LH	LH
DATE OF SURVEY	DATE
16/07/15	16/07/15
DRAWN	CHECKED
LJM	RWP
DATE	DATE
17/07/15	17/07/15
APPROVED	DATE
GKO	17/07/15
PLAN NUMBER	
SY073666.000	
SHEET 1 OF 5	
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LEGEND	
	Telephone Pli Lid (Single)
	Sign
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	Power Pole
	Gate
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	Sewer Lamphole
	Gully Pli Grate Centre
	Tree
	Tree Shrub
	Water Meter
	Water Hydrant
	Water Stop Valve
	Water Tap
	State Survey Mark
	Gas Meter
	Gas Valve
	Gas Man

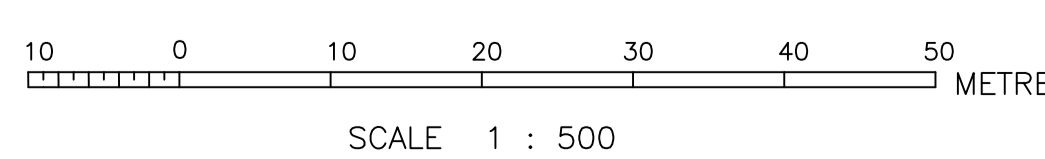
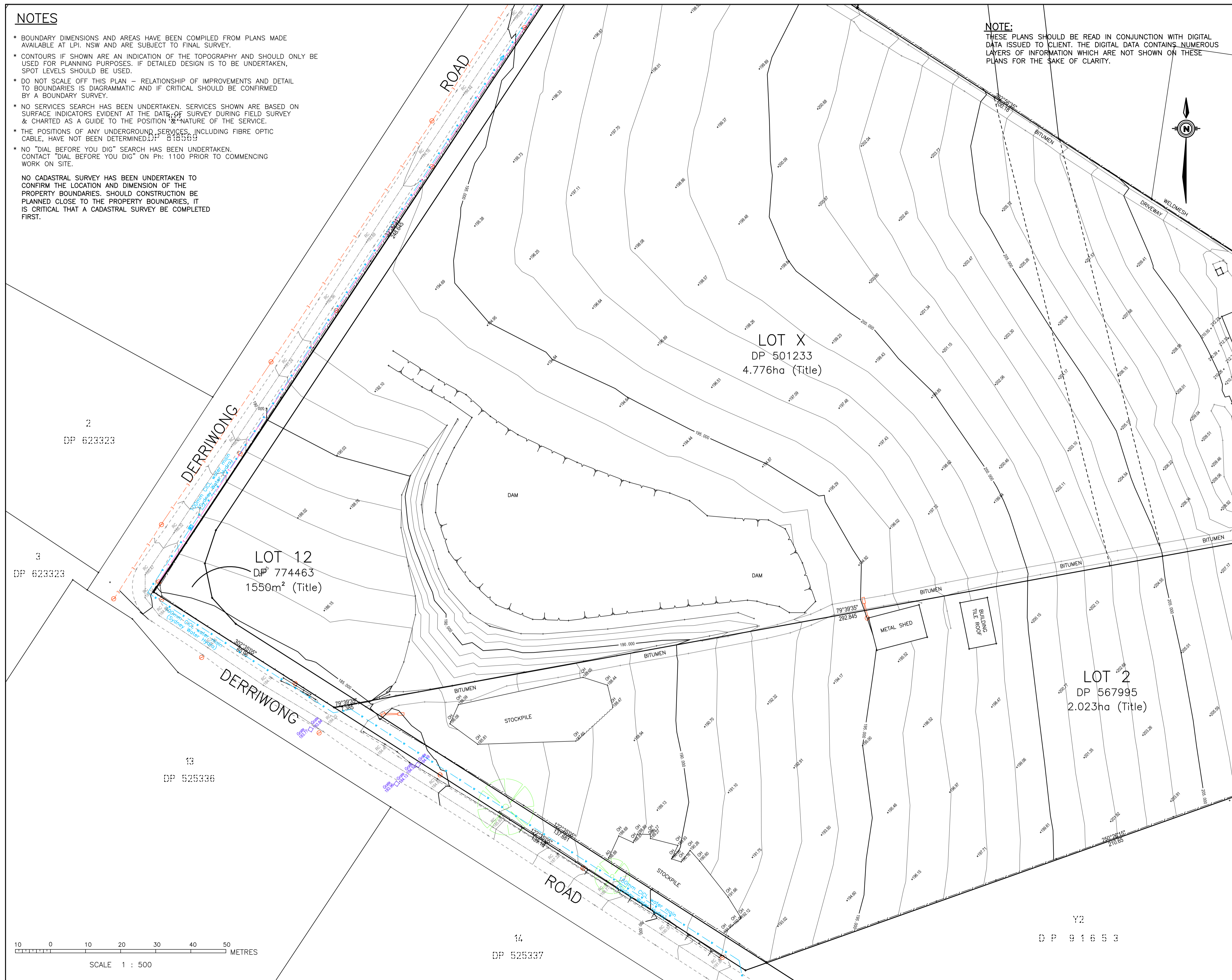
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Y2
DP 91653

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PPP/CF	LPL	DD/MM/YY	COMMENT
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LEGEND

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- Sign
- Power Pole & Light
- Power Pole
- Gate
- Sewer Manhole Cover
- Sewer Lamphole
- Gully Pit Grate Centre
- T+Tree (650.5m Diameter Of Trunk @645.0m High)
- Tree Shrub
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- Water Hydrant
- Water Stop Valve
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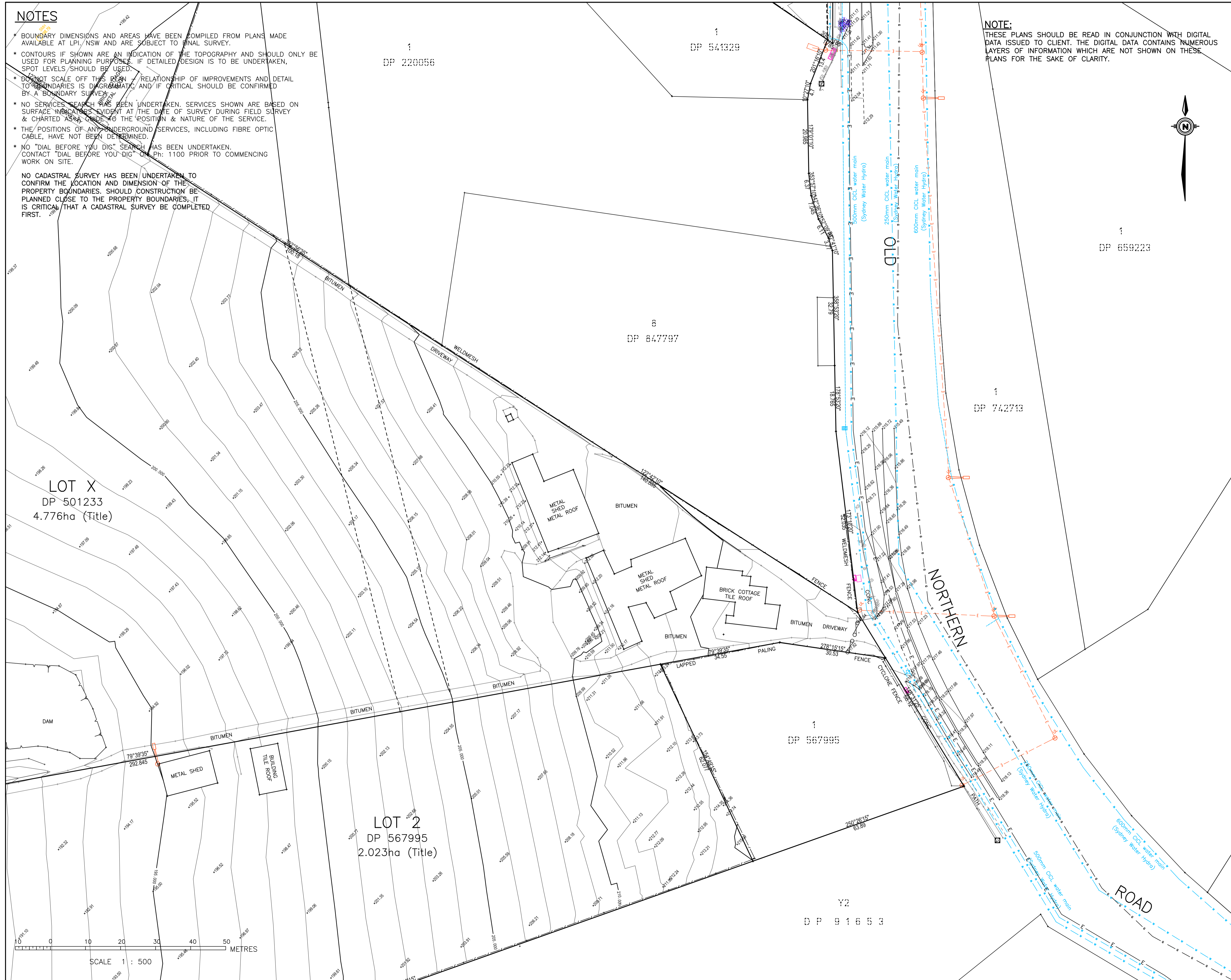
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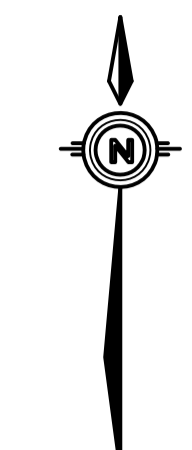
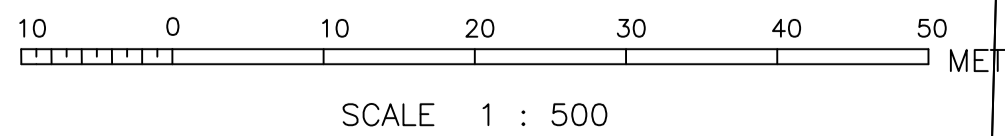
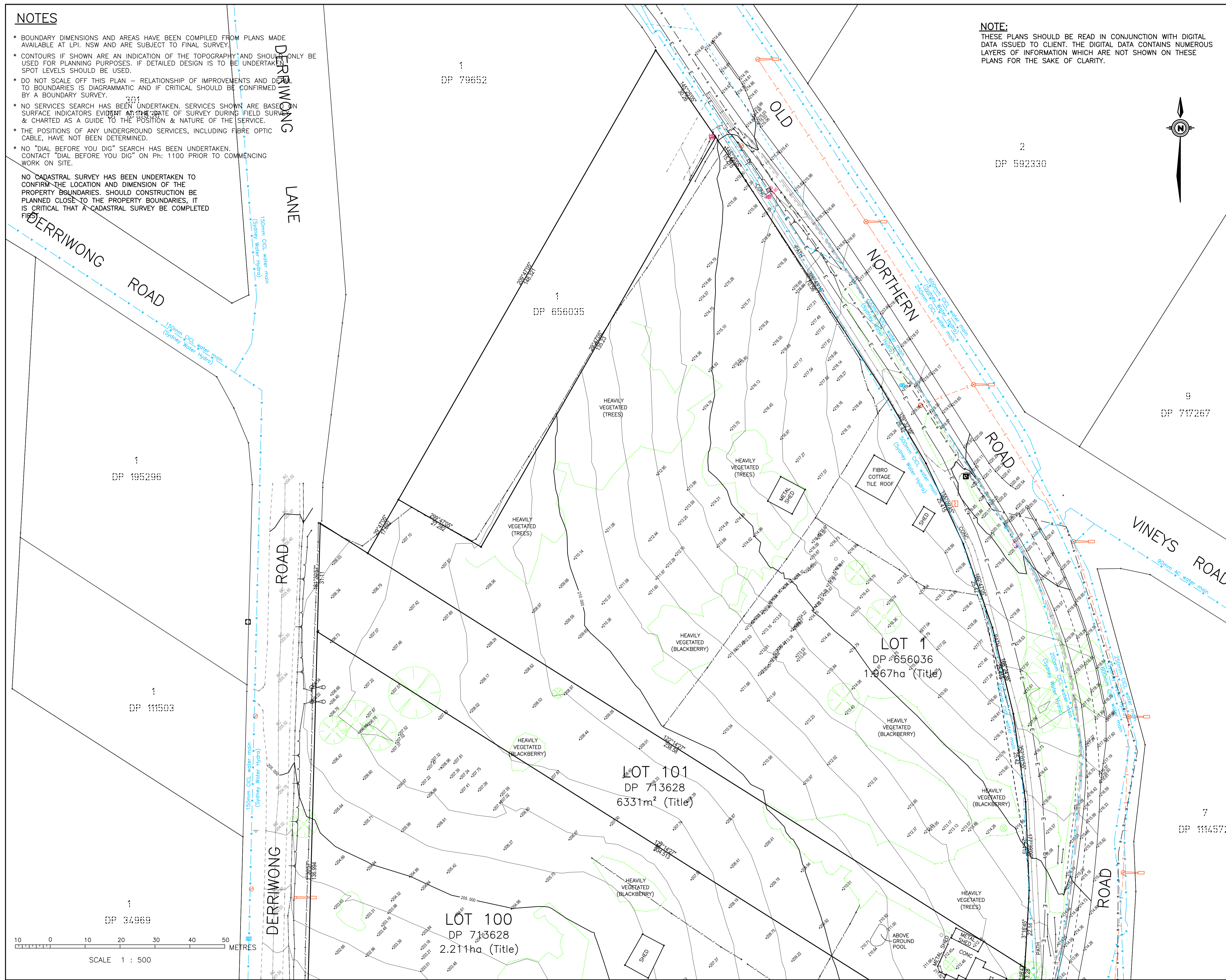
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PLAN NUMBER	SY073666.000		

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1
DP 111503

1
DP 34969

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DP 866560

12
DP 866560

1
DP 564716

11
DP 825077

LOT 1
DP #656036
1.967ha (Title)

LOT 101
DP 713628
6331m² (Title)

LOT 100
DP 713628
2.211ha (Title)

7
DP 1144572

1
DP 656029

501
DP 656331

10 0 10 20 30 40 50 METRES
SCALE 1 : 500

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	Gas Man

Symbols shown are indicative only. The symbol size and orientation does not necessarily represent the real size or orientation of the feature.



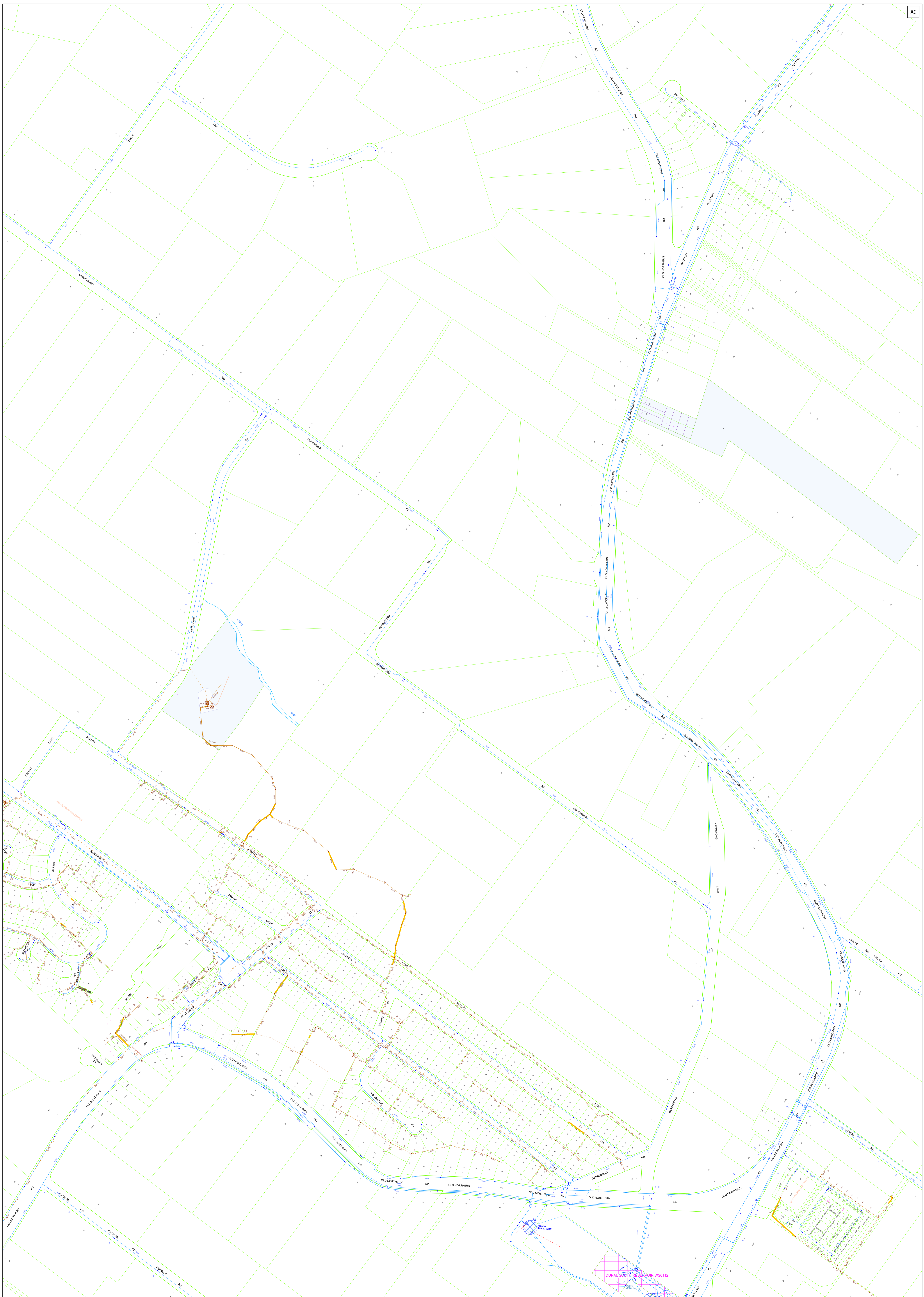
Sydney Office
Level 2, 23-29 South Street
Rydalmere NSW 2116
PO Box 1144
Dundas NSW 2117
Tel: (02) 9685 2000
Tel: (02) 9685 2001
Email: sydney@landpartners.com.au
www.landpartners.com.au
ISO 9001:2009
FS 35000

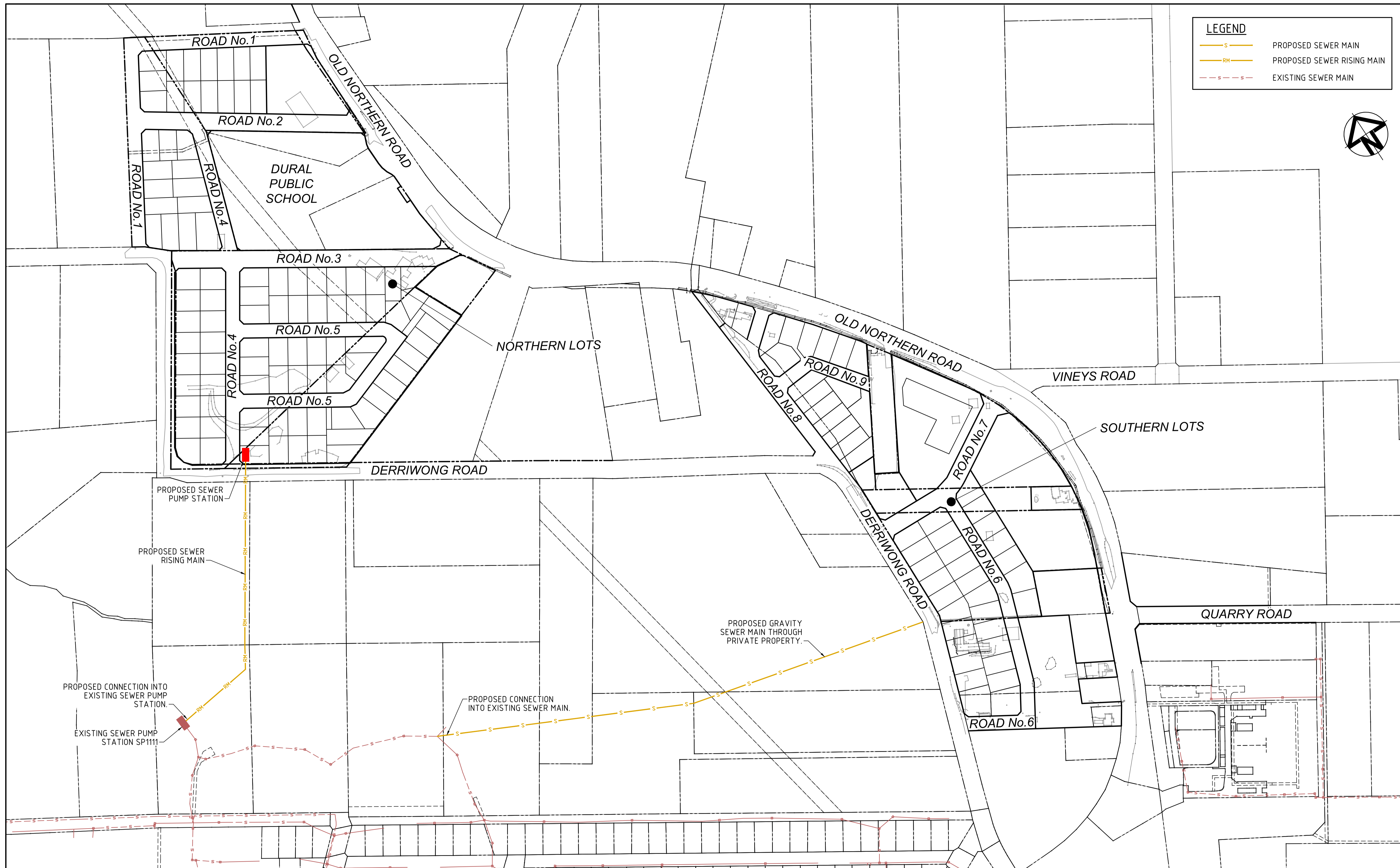
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HEIGHT ORIGIN SSM 72130 RL 184.959	SCALE 1:500 (A1)
MERIDIAN 56	CONTOUR INTERVAL 0.5 Metre
CO-ORD SYSTEM MGA	SURVEYOR LH
COAD FILE SY073666	DATE OF SURVEY 16/07/15
AUTOCAD FILE SY073666	DRAWN LJMc
ARCHIVE FILE SY073666	CHECKED RWP
	DATE 17/07/15
	APPROVED GKO
	DATE 17/07/15

PLAN NUMBER
SY073666.000

Appendix C

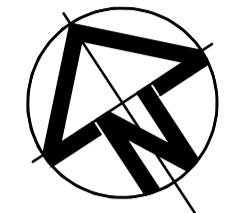
Sydney Water Map





LEGEND

- S— PROPOSED SEWER MAIN
- RM— PROPOSED SEWER RISING MAIN
- - - S - - - EXISTING SEWER MAIN



PROPOSED SEWER PUMP STATION

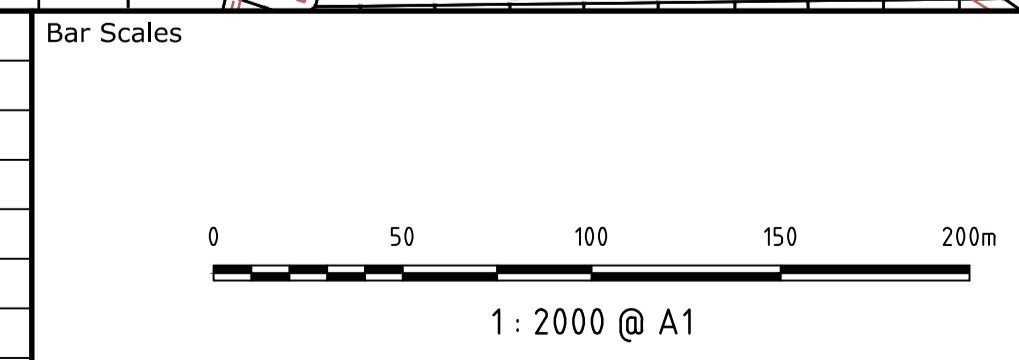
PROPOSED SEWER RISING MAIN

PROPOSED CONNECTION INTO EXISTING SEWER PUMP STATION.

EXISTING SEWER PUMP STATION SP1111

PROPOSED CONNECTION INTO EXISTING SEWER MAIN.

PROPOSED GRAVITY SEWER MAIN THROUGH PRIVATE PROPERTY.



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Client	Drawn	GB
	Designed	GB
	Checked	AT
	Approved	
Scales	1 : 2000	
Grid	MGA	
Height Datum	AHD	

Project
PROPOSED RESIDENTIAL DEVELOPMENT OLD NORTHERN RD DURAL
 Title
PROPOSED SEWER LEAD IN PLAN

Civil Engineers and Project Managers
at&l
 Level 7, 153 Walker Street
 North Sydney NSW 2060
 ABN 96 130 882 405
 Tel: 02 9439 1777
 Fax: 02 9923 1055
 www.atl.net.au
 info@atl.net.au

Issue	Description	Date
P1	ISSUED FOR INFORMATION	05-05-16

Status FOR INFORMATION NOT TO BE USED FOR CONSTRUCTION		
Drawing No. SKC03	Project No. 15-296	Issue P1

Appendix D

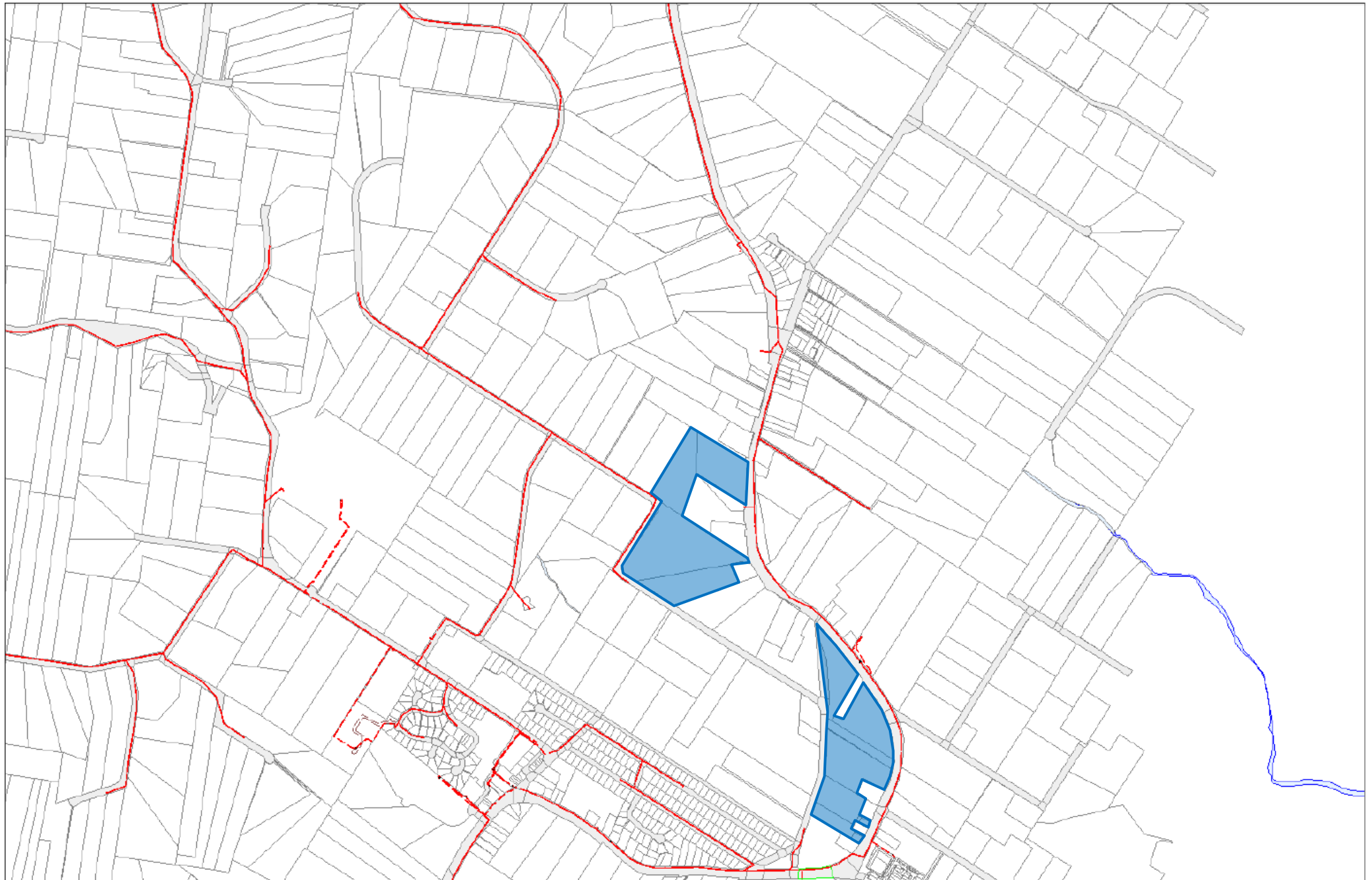
Electrical Drawings



Kenthurst Zone Substation

Subject Site

SK-02 - Existing 11kVA Network



1 km

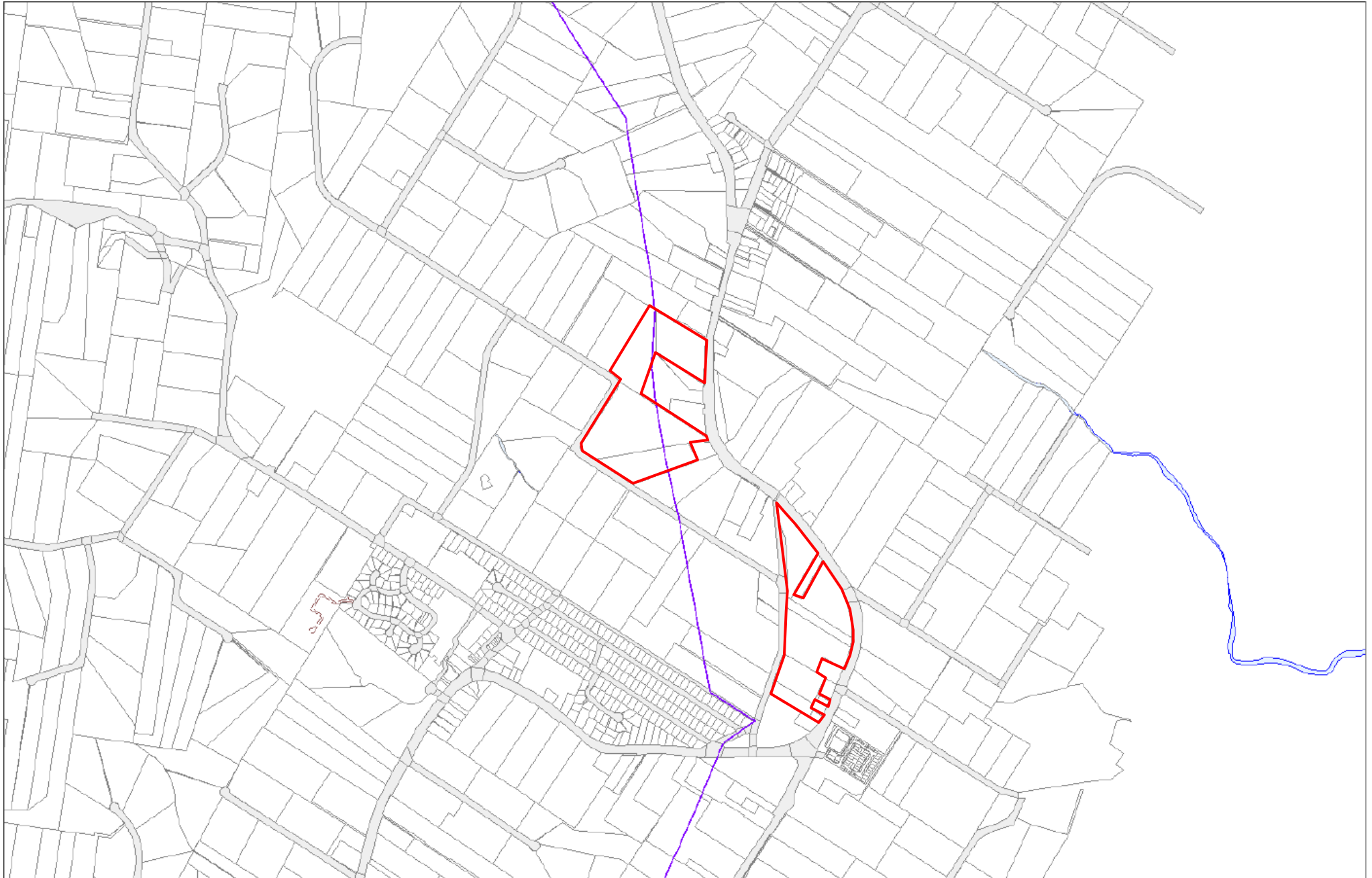
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Endeavour Energy

SK-03 - Existing 66kVA Line



1 km



1 : 11438

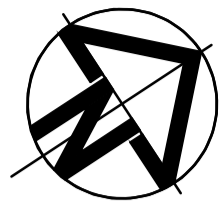
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Appendix E

Bulk Earthworks Cut/Fill Plan



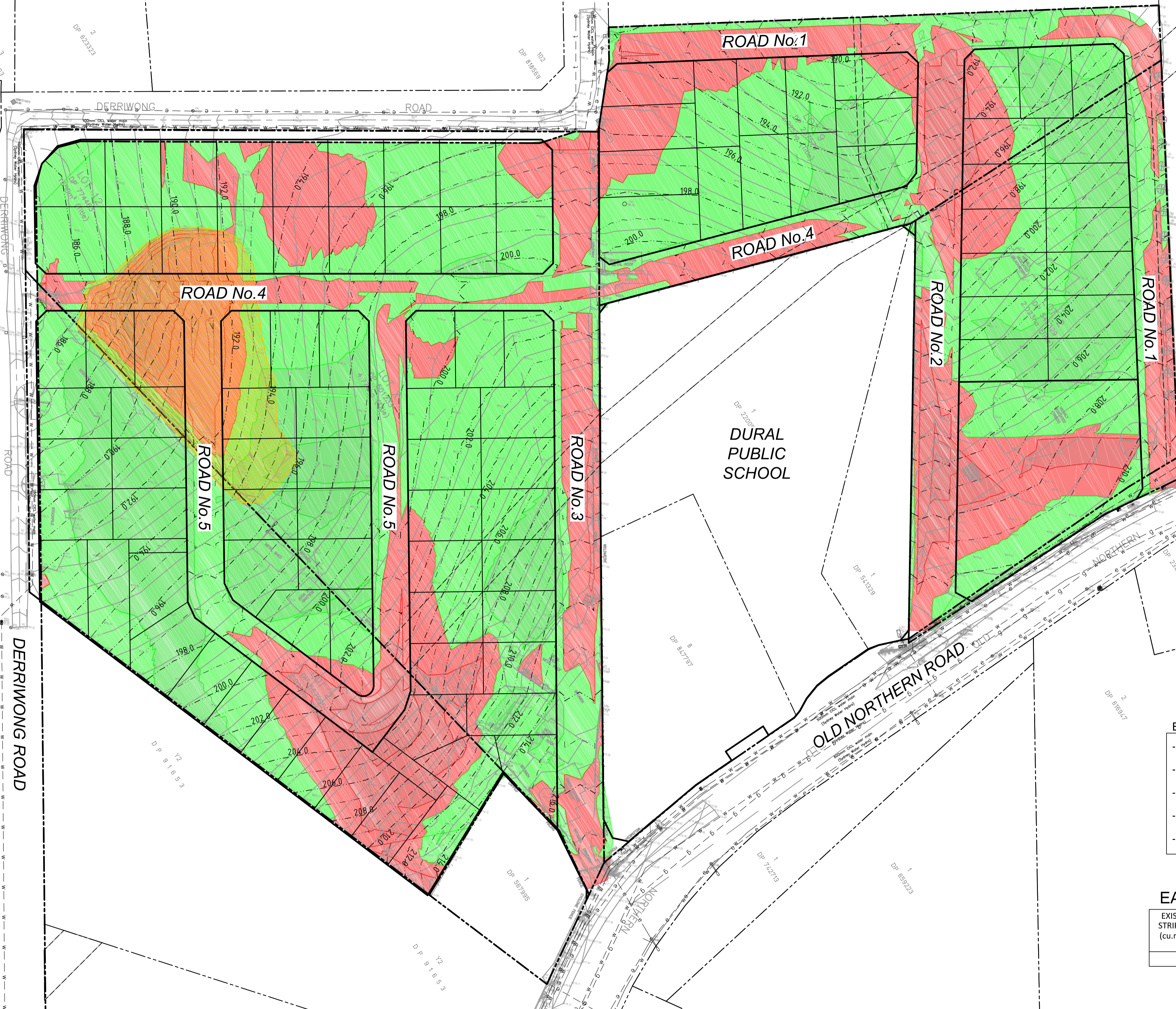
LEGEND

EXISTING

- EXISTING BOUNDARY
- EXISTING EASEMENT
- 60.0 EXISTING CONTOUR
- EXTENT OF EXCAVATION OF EXISTING DAMS (REFER NOTE No.2)

PROPOSED

- PROPOSED BOUNDARY
- 65.0 PROPOSED CONTOUR



- NOTES**
- EXISTING TOPSOIL STRIPPED 200mm.
 - ADDITIONAL EXCAVATION OF EXISTING CREEKS AND DAMS WITHIN SITE AREA TO A DEPTH OF 1m BELOW EXISTING INVERT AND WIDTH OF EXISTING CREEK/DAM EXTENT. VOLUMES ARE APPROXIMATE.
 - THE VOLUMES DO NOT TAKE INTO ACCOUNT THE FOLLOWING --
 - BULKING FACTORS OF REMOVED CUT
 - REMOVAL OF EXISTING BUILDING SLABS AND PAVEMENTS
 - REMOVAL AND/OR REMEDIATION OF ANY EXISTING UNCONTROLLED FILL
 - PROPOSED LANDSCAPING
 - PROPOSED RETAINING WALL EARTHWORKS AND BACKFILL MATERIAL

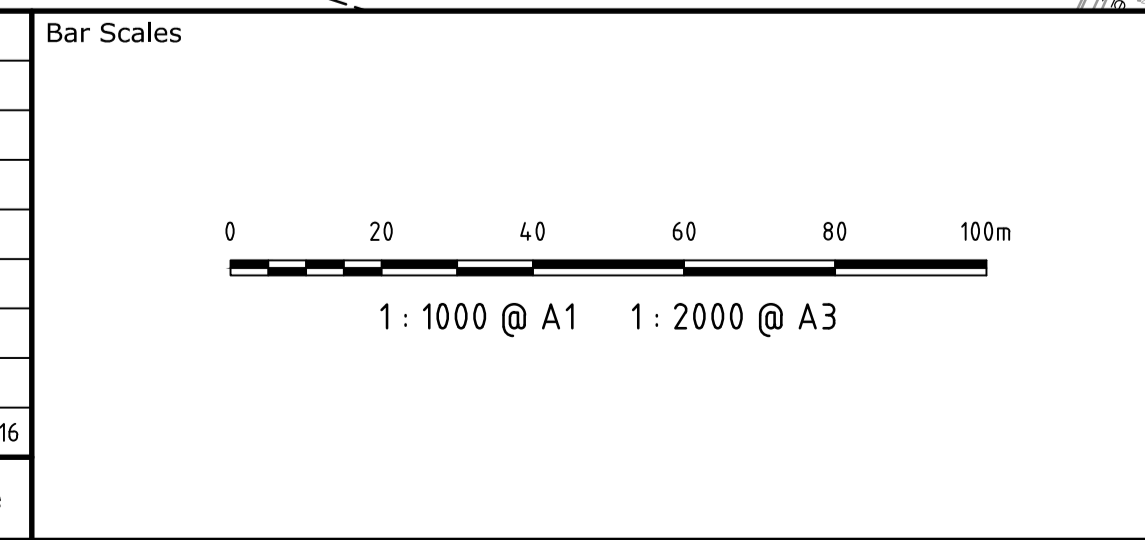
EARTHWORKS CUT/FILL DEPTH RANGE LEGEND

-14m to -13m	-9m to -8m	-4m to -3m	1m to 2m	6m to 7m
-13m to -12m	-8m to -7m	-3m to -2m	2m to 3m	7m to 8m
-12m to -11m	-7m to -6m	-2m to -1m	3m to 4m	8m to 9m
-11m to -10m	-6m to -5m	-1m to 0m	4m to 5m	9m to 10m
-10m to -9m	-5m to -4m	0m to 1m	5m to 6m	10m to 11m

EARTHWORKS VOLUMES

EXISTING TOPSOIL STRIPPING VOLUME (cu.m) REFER NOTE No.1	EXCAVATION OF EXISTING CREEKS AND DAMS (cu.m) REFER NOTE No.2	NET CUT (cu.m)	NET FILL (cu.m)	BALANCE (cu.m)
21,392	16,775	20,578	61,098	-40,520

Issue	Description	Date
P1	ISSUED FOR INFORMATION	18-03-16



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Client

Scales	1 : 1000	Drawn	MM
		Designed	MM
Grid	MGA	Checked	AT
Height Datum	AHD	Approved	

Project

PROPOSED RESIDENTIAL DEVELOPMENT OLD NORTHERN RD DURAL

Title

BULK EARTHWORKS CUT/FILL PLAN

Civil Engineers and Project Managers

Level 7, 153 Walker Street
North Sydney NSW 2060
ABN 96 130 882 405
Tel: 02 9439 1777
Fax: 02 9923 1055
www.atl.net.au
info@atl.net.au

Status

FOR INFORMATION NOT TO BE USED FOR CONSTRUCTION

Drawing No.	Project No.	Issue
SKC01	15-296	P1

10th May 2016

Urbis

Level 23, Tower 2 Darling Park
201 Sussex Street
Sydney NSW 2000

Your Ref:**Our Ref:** 15-296-C002-03**Direct phone:** 02 9439 1777

Attention David Lousick

Dear David,

Old Northern Road –Southern Lots, Dural Services Investigation Letter

Further to recent discussions and correspondence on the proposed development of Old Northern Road in Dural please find below a summary of the external servicing strategy for the development.

Our investigations of the site were carried out based on a Dial Before You Dig (DBYD) search and a Dural Planning Proposal – Southern Site Proposed Subdivision prepared by Urbis on 22nd March 2016.

The site which is located within The Hills Shire Council LGA comprises multiple lots and is split into Northern and Southern Lots. The Northern lots are approximately 10.8Ha in area and includes the following lots:

- 618 Old Northern Road, Dural
- 626 Old Northern Road, Dural
- 21 Derriwong Road, Dural
- 27 Derriwong Road, Dural

The Southern lots are approximately 8.27Ha in area and includes the following lots:

- 584 Old Northern Road, Dural
- 586 Old Northern Road, Dural
- 590 Old Northern Road, Dural
- 600 Old Northern Road, Dural

- 602 Old Northern Road, Dural
- 606 Old Northern Road, Dural
- 7 Derriwong Road, Dural
- 11 Derriwong Road, Dural

Refer Figure 1 for lot location.

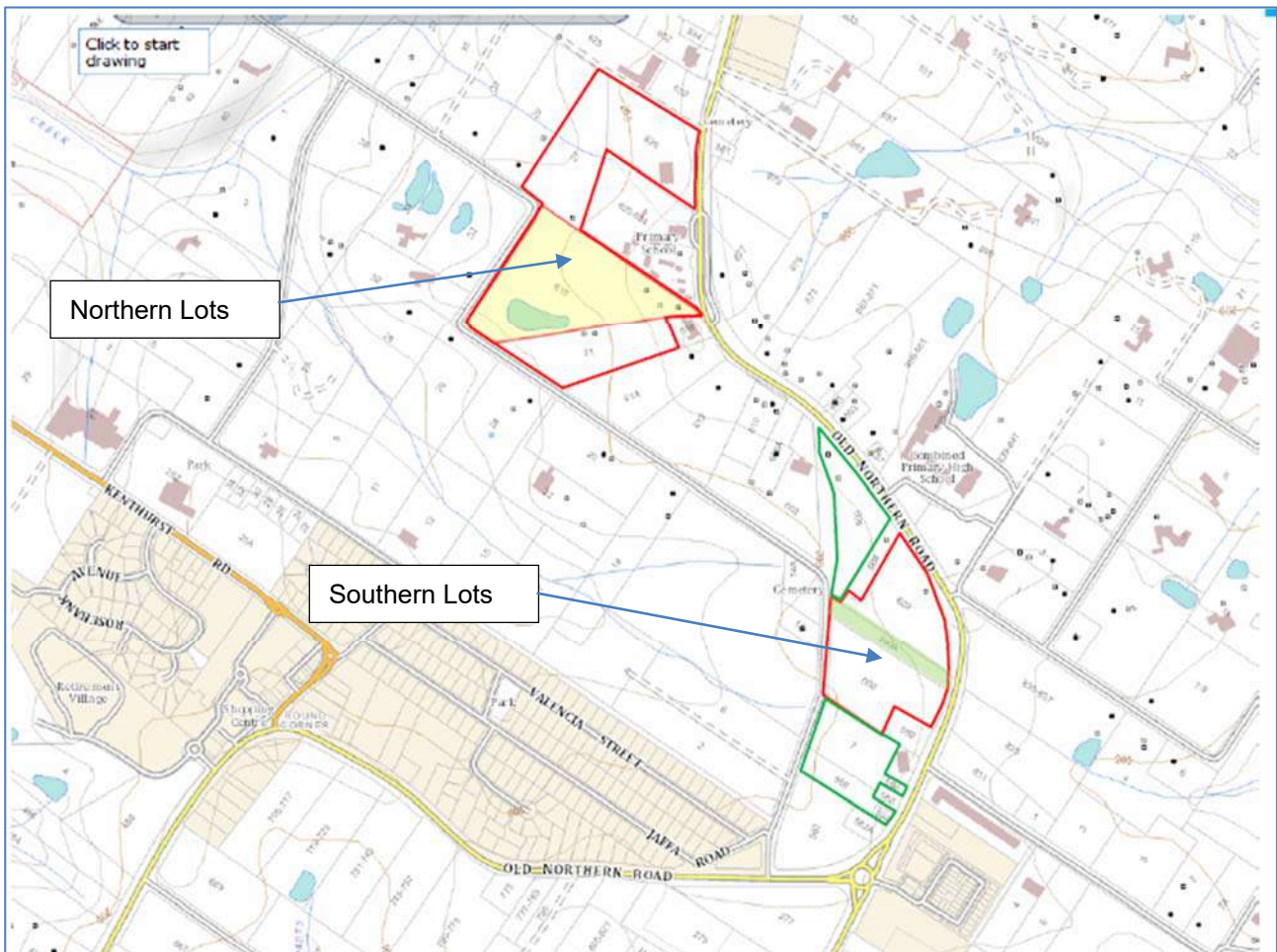


Figure 1 - Site Location

This services investigation report will concentrate on the proposed development of the **Southern** Lots. A separate letter report for the Northern Lots has previously been issued dated 18th March 2016 (15-296-C001-01).

EXISTING SITE

The site mostly comprises open farm land comprising grass and shrubs. There are existing houses and sheds scattered across the site which are predominately used for farming.

The site is bordered by Old Northern Road to the north and east, Derriwong Road to the west and bushland to the south.

Refer to Appendix B for existing survey drawings.

The site generally falls from the north and north east to the south west and west into Derrinwong Road. The majority of site is covered in pervious grassed fields with a minor component of the site comprising buildings and sheds. There is no formal stormwater drainage network for these buildings with all runoff directed as overland flows to the west and south west. Levels adjacent Old Northern Road in the north are approximately RL217.2 falling approximately to RL198.9 in the south west corner adjacent Derrinwong Road. Refer to attached survey for existing site levels. The entire site is classified as a “greenfield” site as there is no record of formal drainage systems within. All runoff drains overland into the eastern verge of Derrinwong Road which drains into a pipe and pit system to the south west of the site.

The purpose of this report is to liaise with the relevant authorities to determine:

- Locations of existing services and the likely connection points to supply the site
- Potential; service upgrades required to ensure adequate capacity to the site
- Timing of likely service upgrades
- Indicative works required to upgrade or provide new services

PROPOSED DEVELOPMENT

The proposal for the development of the Southern Lots is to create the following:

- 48 lots approx. 700m² in area for residential use
- 1 lot approx. 1.6Ha for use as day surgery/ medical centre
- 1 lot approx. 2,700m² for use as park
- 1 lot approximately 8,900m² for approximately 60 self-contained seniors apartments
- 1 lot approximately 1.47Ha for a residential aged care facility with circa 150 beds
- Associated roads and infrastructure to service these lots

Refer to Appendix A for proposed lot layout.

EXISTING SERVICES

Water

From Dial Before You Dig (DBYD) information obtained there are the following water services within the area:

- 1 x 500mm and 1x 200mm CICL (Cast Iron Cement Lined) main in the western verge of Old Northern Road
- 1x 600mm and 1 x 250mm CICL (Cast Iron Cement Lined) main the eastern verge of Old Northern Road
- A 150mm CICL (Cast Iron Cement Lined) main within the western verge of Derrinwong Road and Derrinwong Lane.

Refer to Appendix C for Sydney Water map.

Preliminary advice received from Land Partners (Water and Service Coordinators) suggests there is sufficient capacity within these water mains to service the proposed development.

For the proposed medical centre a study will need to be undertaken to determine the potable water usage required. This rate will then need to be submitted to Sydney Water for application approval.

Summary

Land Partners have indicated a feasibility application needs to be submitted to Sydney Water to determine the connection points for the proposed residential and aquatic lots. This feasibility study can take between 4-6 weeks however for the sake of this servicing report it is assumed this development can be serviced with water.

Sewer

From Dial Before You Dig (DBYD) information obtained there doesn't appear to be an sewer mains within the immediate vicinity of the site.

Refer to Appendix C for Sydney Water map.

The closest sewer main is located approximately 50m east of 584 Old Northern Road. Connection to this main is a function of topography, receiving sewer levels and the designed pipe capacity. Advice received from Land Partners suggests it is doubtful there was any allowance made for receiving upstream flows into this existing system.

There is also a 150mm VC sewer within the intersection of Derriwong Road and Jaffa Road to the south west of the site. This is approximately 150m to the south west of 11 Derriwong Road. It is doubtful if this sewer main has sufficient capacity to receive upstream flows.

Summary

Feasibility analysis and discussions are currently underway with Sydney Water to service this site for sewer. It is likely this will require some form of gravity system draining from Derriwong Road in a westerly direction through private property into the existing gravity sewer system servicing Pellitt Lane. Refer to Proposed Sewer Lead In Plan within Appendix C for proposed route of rising main.

This option will be finalised following progression of discussions with Sydney Water to agree on the most suitable and cost-effective servicing solution for the planning proposal, as well as other rezoning proposals in the area to achieve a coordinated delivery of necessary upgrades and maximise cost benefits

Power

A search conducted of records using Dial Before You Dig confirms that there are existing electrical ducts and high voltage cables owned by Ausgrid within the western verge of Old Northern Road. Overhead power cables are also available along Derriwong Road to the west of the site.

Feasibility analysis and negotiations are currently occurring with Endeavour Energy to service the site. It is recognised that the subject planning proposal is one of a number occurring in the surrounding area. While a coordinated approach is being undertaken, initial advice from a Level 3 Accredited Service Provider has provided the following:

Existing electricity supply:

The land is current improved for the purpose of large lot residential serviced by Endeavour Energy's 11,000 volt overhead network that connects to the Kenthurst Zone substation-as detailed in the supporting plan detail:

- SK-01 showing the existing 11,000 volt network in the vicinity of the site (Appendix D)
- SK-02 showing the existing 33,000 volt network in the vicinity of the site (Appendix D)

Proposed load:

The future redevelopment of the land will require an electricity capacity of between 1,060-1,160kVA.

Endeavour Energy require the electrical load to be calculated for this proposed 48 residential lot development utilising a minimum of 7.5kVA per lot after diversity maximum demand. This equates to a load of 360kVA.

In respect to the proposed 3,000m² GFA medical centre, this load can vary considerably depending on air-conditioning and x-ray equipment installed. At this stage, assuming the facility will be fully air-conditioned the load is calculated to be in the order of 300kVA to 400kVA.

In respect to the proposed senior housing, based on 60 independent living units and a 150 bed residential aged care facility, the assumed load is calculated to be in the order of 400kVA.

Method of supply:

On receipt of an application for load, Endeavour Energy planners will model the effect that the new loads will have on the existing network capacity and quality of supply (voltage regulation).

Typically Endeavour Energy will load their feeders to up to maximum of 4,500kVA. However, this is sometimes reduced in rural areas due to voltage regulation issues. The capacity of the feeder will be further resolved during the consultation with Endeavour Energy.

Supply options:

Detailed investigations and negotiations are currently being coordinated in consultation with Endeavour Energy. Based on the preliminary investigations three (3) options have been identified to support the delivery of the development, including:

- **Option 1:** Connect to the existing 11,000 volt network adjacent to the site (subject to confirmation of network capacity) may be able to support the load and allow (Cost: Nil).
- **Option 2:** Augmentation of the existing supply service to improve quality (of supply). This option would involve the replacement of existing overhead conductors with larger conductors and/or the installation of a voltage regulator (Cost: \$50-300k).
- **Option 3:** Installation of a new feeder may be created from the zone substation (Cost: \$2m)

A \$300k contingency has been included for cost summary estimate purposes. However, the most suitable solution will be developed in consultation with Endeavour Energy.

Internal reticulation:

The site will be reticulated and street lighting installed in accordance with Endeavour Energy Standards. A minimum of Three pad mount type substation are likely to be required depending on the aquatic centre's final load. For feasibility purposes allow \$7,000 +GST per lot for electricity and street lighting reticulation costs plus \$100,000 for each pad mount substation.

Summary

Preliminary investigations of the site and the area have identified several options for extending and delivering services and utilities to the land. These will be finalised following progression of discussions with Endeavour Energy to agree on the most suitable and cost-effective servicing solution for the planning proposal, as well as other rezoning proposals in the area to achieve a coordinated delivery of necessary upgrades and maximise cost benefits.

Gas

From Dial Before You Dig records there is an existing 160mm diameter PE (polyethylene) gas main owned by Jemena within Old Northern Road.

Summary

Preliminary investigation of the site has identified the site should be able to be serviced with gas. Confirmation and approval will need to be sought by Jemena as owners of these gas mains for all connections into their network.

Communications

From Dial Before You Dig records there is record of existing Telstra telecommunications cables within both Derriwong Road and Old Northern Road.

There is also an overhead communication cable which runs along the western boundary of the site within Derriwong Lane. This overhead conduit will need to be relocated or undergrounded as part of the development. At this stage no allowance has been made to underground the existing overhead conduit along the eastern side of Derriwong Road.

These works will need to be confirmed with Telstra.

Summary

Preliminary investigation of the site has identified the site should be able to be serviced with telecommunications. Confirmation and approval will need to be sought by Telstra and Optus as owners of these telecommunication mains for all connections into their network.

Stormwater

From discussions with the Hills Shire Council and reviewing the survey data there is no formal stormwater drainage within all the Southern Site lots. As mentioned previously the lots naturally fall from the north to the south west of the site along Derriwong Road. Runoff is via overland flow paths across the lots into a natural swale along the eastern verge of Derriwong Road. This swale falls to the south to discharge into a series of kerb inlet pits to the west of 11 Derriwong Road. This is the natural low lying area of the site. From these pits the water then drains via an underground piped system to the west into the adjacent OHara's Creek.

Refer to attached survey drawings for existing overland flow paths and swale adjacent Derriwong Road.

Council have confirmed all stormwater drainage will need to confirm to The Hills Shire Council "Design Guidelines Subdivision/Developments". Within these guidelines is the installation of On-Site-Detention (OSD) systems. Council have confirmed the site falls within the Hawkesbury River Catchment and as such OSD need to comply with the Hawkesbury River Catchment Area Permissible Site Discharge (PSD) rates and Site Storage Volume (SSR) requirements. For this site these rates have been confirmed as:

Permissible Site Discharge (PSD) = 104L/sec/Ha

Site Storage Volume (SSR) = 362m³/Ha

Given the site is approximately 8.27 Ha in area this equates to a PSD of **860L/sec** and SSR of **2,995m³** for the entire site.

As indicated within the Southern Site Proposal Subdivision Plan (attached) is the inclusion of a park area some 2,700m² in area to be located at the north-west corner of Lot 100 Old Northern Road. Given OSD is required for this development the likely position to install an OSD basin would be within this park area.

Given the existing site topography and not being able to gravity drain the entire southern site into the OSD basin within the park area an additional OSD basin will likely be required within the south west portion of the site. This basin which will be approximately 1,250m³ in volume will likely be situated within the south west corner of the site adjacent Derriwong Road or alternatively off site to the west subject to landowners consent.

For this letter report it is assumed there will be 2 OSD basins constructed as part of the development. Refer to attached sketch SKC03 within Appendix E. for proposed locations along with proposed connection points for the outlet structures.

Summary

Based on discussions with The Hills Shire Council there shouldn't be any issues with connecting this site into the existing Council stormwater network within Derriwong Road. This is provided the internal stormwater network is designed to meet the Council engineering guidelines.

Water Sensitive Urban Design

The Hills Shire Council have Water Urban Sensitive Urban Design (WSUD) objectives to:

- Reduce water demand
- Reduce water discharge to receiving environments
- Maximum opportunities for water harvesting and re-use; and
- Reduce water pollution

Given the site is classified as a "greenfield" Council will likely be looking at a number of methods to implement WSUDs into the development. These will include the use of:

- Rainwater tanks
- Gross Pollutant traps
- Bio-filtration
- Bio-retention
- Detention basins
- Swales
- Porous paving/ surfaces
- wetlands

Detailed stormwater designs will be developed and submitted to Council during the development application stage however at this stage allowances should be made to incorporate Gross Pollutant Traps within the stormwater design as a minimum level to achieve WSUDs.

It is also highly likely rainwater harvest tanks will also be required to recycle the roof water generated from the site.

Flooding

Given the site is located close to OHara's Creek flooding may be an issue, particularly for those lots in the south west corner of the site adjacent Derriwong Road.

At this stage Council do not have any records of any flooding of this creek however a study may be required during detailed design to ensure the development does not cause any adverse impacts to flooding surrounding the creek and Derriwong Road. This would also be to ensure all habitable floor levels are set the minimum freeboard level above the 100 year ARI storm event and to ensure the development does not increase flooding to the surrounding area.

Conclusion

Based on our preliminary investigations and discussions with the relevant authorities, it is our recommendation that this site can be adequately serviced with all required utilities and that the most appropriate options for providing each utility are coordinated with the relevant service providers.

Please feel free to discuss if you have any queries.

Yours sincerely










Andrew Tweedie BEng Civil MIEAust CPEng
Senior Civil Engineer
02 9439 1777

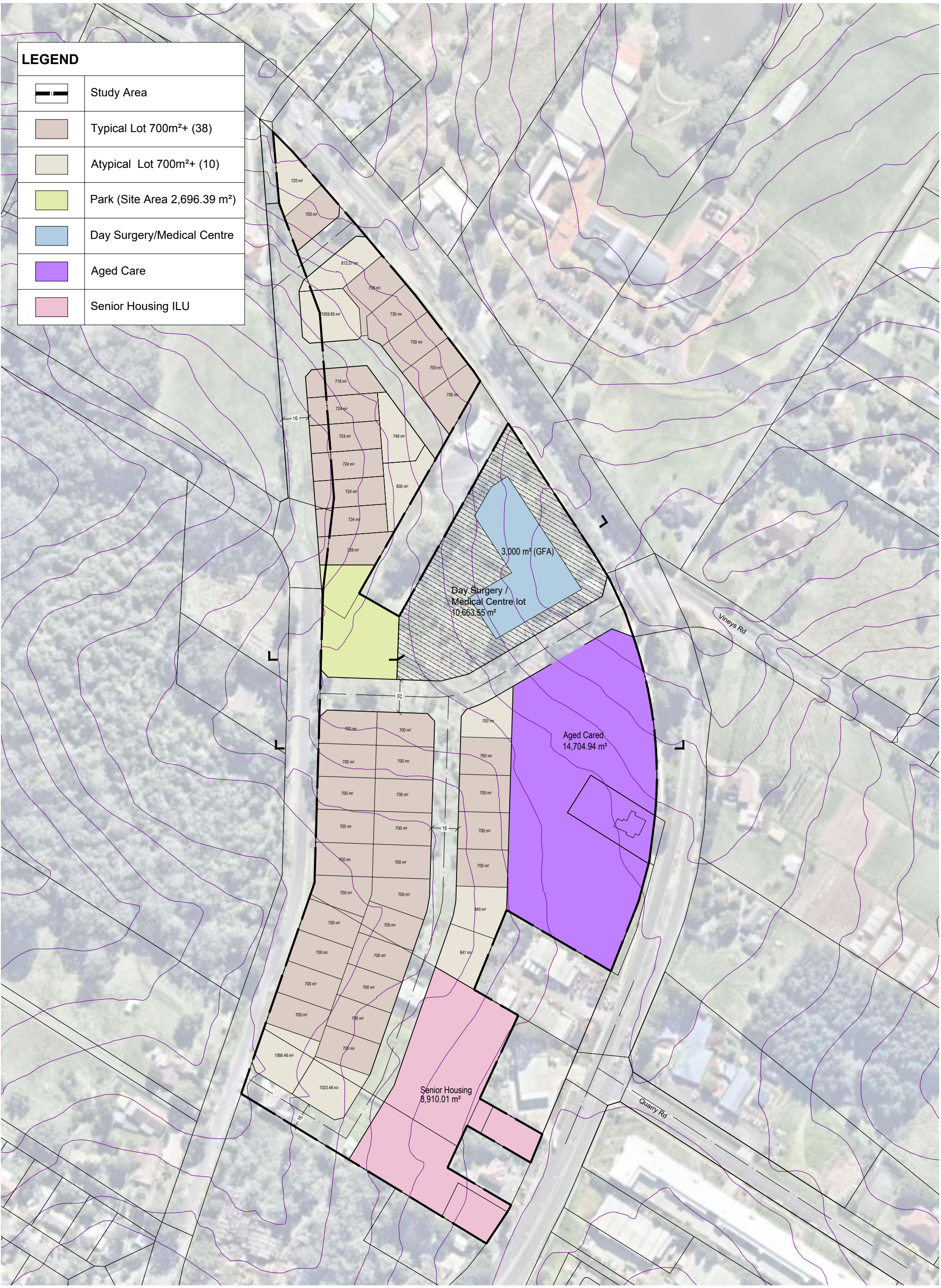
Appendices

- Appendix A – Dural Planning Proposal – Southern Site Proposal Subdivision
- Appendix B -Survey Drawings
- Appendix C –Sydney Water Map
- Appendix D - Electrical Drawings
- Appendix E - Bulk Earthworks Cut/Fill Plan

Appendix A

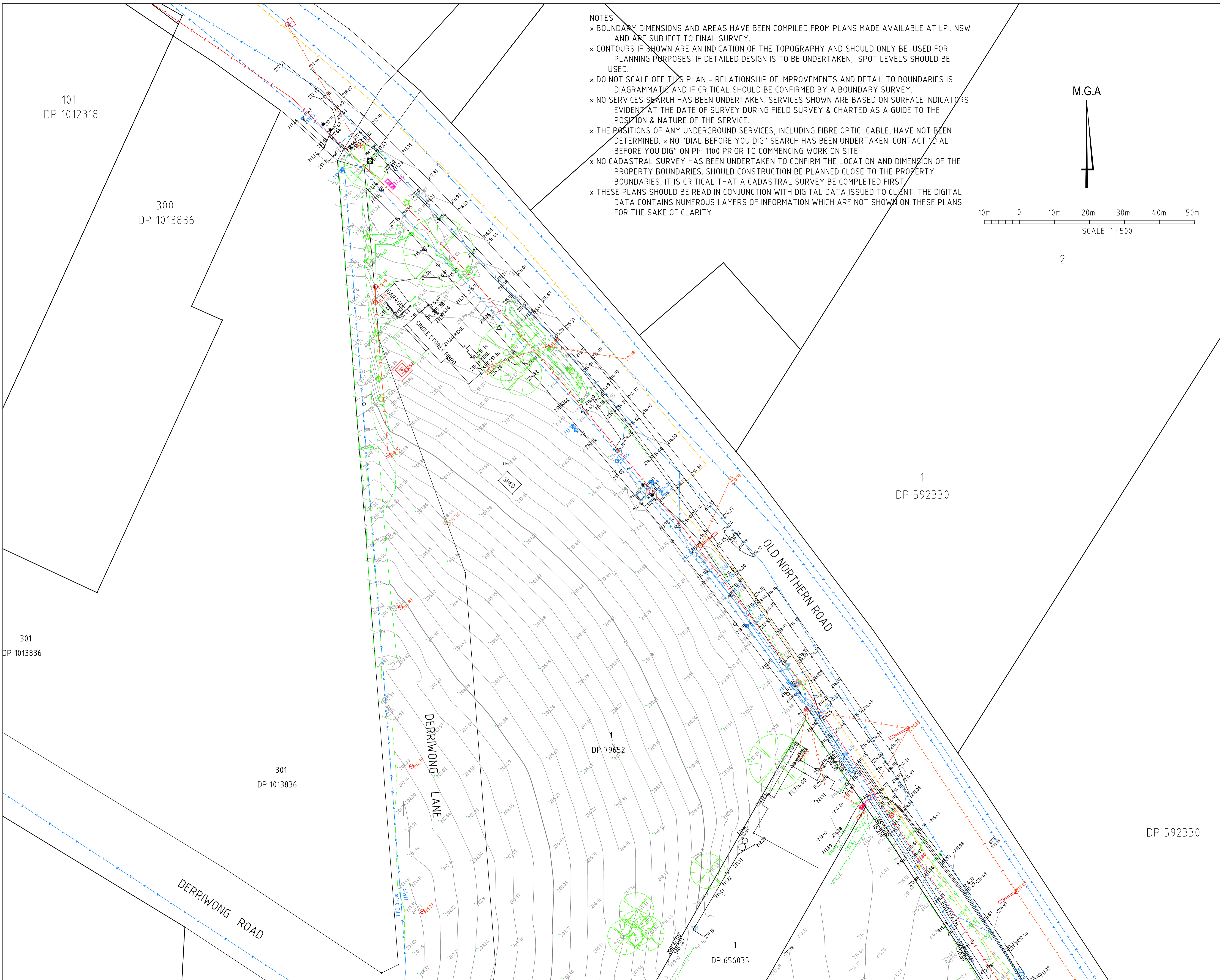
Dural Planning Proposal – Southern Site Proposal
Subdivision

LEGEND	
	Study Area
	Typical Lot 700m ² + (38)
	Atypical Lot 700m ² + (10)
	Park (Site Area 2,696.39 m ²)
	Day Surgery/Medical Centre
	Aged Care
	Senior Housing ILU



Appendix B

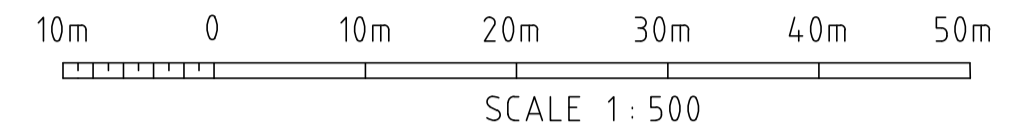
Survey Drawings



NOTES

- × BOUNDARY DIMENSIONS AND AREAS HAVE BEEN COMPILED FROM PLANS MADE AVAILABLE AT LPI. NSW AND ARE SUBJECT TO FINAL SURVEY.
- × CONTOURS IF SHOWN ARE AN INDICATION OF THE TOPOGRAPHY AND SHOULD ONLY BE USED FOR PLANNING PURPOSES. IF DETAILED DESIGN IS TO BE UNDERTAKEN, SPOT LEVELS SHOULD BE USED.
- × DO NOT SCALE OFF THIS PLAN - RELATIONSHIP OF IMPROVEMENTS AND DETAIL TO BOUNDARIES IS DIAGRAMMATIC AND IF CRITICAL SHOULD BE CONFIRMED BY A BOUNDARY SURVEY.
- × NO SERVICES SEARCH HAS BEEN UNDERTAKEN. SERVICES SHOWN ARE BASED ON SURFACE INDICATORS EVIDENT AT THE DATE OF SURVEY DURING FIELD SURVEY & CHARTED AS A GUIDE TO THE POSITION & NATURE OF THE SERVICE.
- × THE POSITIONS OF ANY UNDERGROUND SERVICES, INCLUDING FIBRE OPTIC CABLE, HAVE NOT BEEN DETERMINED. × NO "DIAL BEFORE YOU DIG" SEARCH HAS BEEN UNDERTAKEN. CONTACT "DIAL BEFORE YOU DIG" ON Ph: 1100 PRIOR TO COMMENCING WORK ON SITE.
- × NO CADASTRAL SURVEY HAS BEEN UNDERTAKEN TO CONFIRM THE LOCATION AND DIMENSION OF THE PROPERTY BOUNDARIES. SHOULD CONSTRUCTION BE PLANNED CLOSE TO THE PROPERTY BOUNDARIES, IT IS CRITICAL THAT A CADASTRAL SURVEY BE COMPLETED FIRST.
- × THESE PLANS SHOULD BE READ IN CONJUNCTION WITH DIGITAL DATA ISSUED TO CLIENT. THE DIGITAL DATA CONTAINS NUMEROUS LAYERS OF INFORMATION WHICH ARE NOT SHOWN ON THESE PLANS FOR THE SAKE OF CLARITY.

M.G.A



2

CLIENT

URBIS

PROJECT

DETAIL SURVEY
OF
LOT 1 IN DP 656036, LOT 100
□ **LOT 101 IN DP 713628**

OLD NORTHERN ROAD
DUAL

The title boundaries shown hereon were not marked at the time of survey and have been determined by plan dimensions only and not by field survey. Services shown hereon have been located where possible by field survey. If not able to be so located, services have been plotted from the records of relevant authorities where available and have been noted accordingly on the plan. Where such records do not exist or are inadequate a notation has been made hereon.

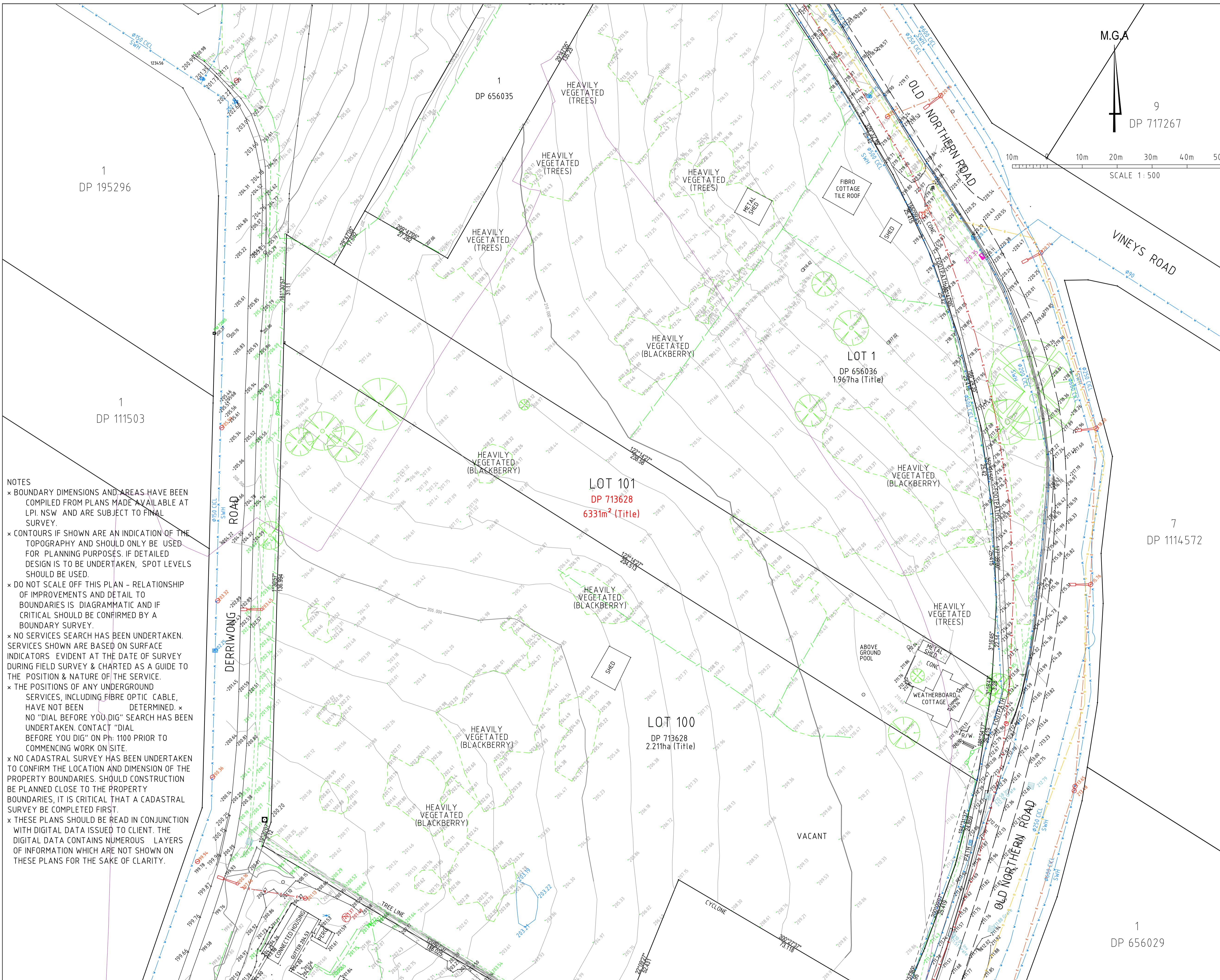
Prior to any demolition, excavation or construction on the site, the relevant authority should be contacted for possible location of further underground services and detailed locations of all services.

PPP/CR/LPL	DATE	COMMENT

- LEGEND
- ☐ Telephone Pit Lid (Single)
 - ☐ Sign
 - ☐ Power Pole & Light
 - ☐ Power Pole
 - ☐ Gate
 - ☐ Sewer Manhole Cover
 - ☐ Sewer Lamphole
 - ☐ Gully Pit Grate Centre
 - T=Tree
05=0.5m Diametre Of Trunk
09=9.0m High
 - ☐ Tree Shrub
 - ☐ Water Meter
 - ☐ Water Hydrant
 - ☐ Water Stop Valve
 - ☐ Water Tap
 - ☐ State Survey Mark
 - ☐ Gas Valve
 - Gas Main
 - Water Main
 - Electricity Line

LandPartners Limited
LEVEL 2, 23-29 South Street
Rydalmere, NSW, 2116, Australia
Phone: (02) 9685 2023. Fax: (02) 9685 2001
www.landpartners.com.au

HEIGHT DATUM AHD	LOCAL AUTHORITY THE HILLS SHIRE	
HEIGHT ORIGIN SSM 72130 RL 184.959	SCALE 1:500 @ A1	
MERIDIAN 56	CONTOUR INTERVAL 0.5 Metre	
CO-ORD SYSTEM MGA	SURVEYOR LH	DATE OF SURVEY 01/07/15
DCAD FILE SY073666_	DRAWN AV	DATE 1/03/16
AUTOCAD FILE SY073666.001	CHECKED RWP	DATE 1/03/16
ARCHIVE FILE SY073666	APPROVED GKO	DATE 1/03/16
PLAN NUMBER	SY073666.001	



CLIENT
URBIS

PROJECT
DETAIL SURVEY OF LOT 1 IN DP 656036, LOT 100 & LOT 101 IN DP 713628 OLD NORTHERN ROAD DURAL

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PPP/CR/LP	DATE	COMMENT

LEGEND

- Telephone Pit Lid (Single)
- Sign
- Power Pole & Light
- Power Pole
- Gate
- Sewer Manhole Cover
- Sewer Lamphole
- Gully Pit Grate Centre
- T=Tree
05=0.5m Diameter Of Trunk
09=9.0m High
- Tree Shrub
- Water Meter
- Water Hydrant
- Water Stop Valve
- Water Tap
- State Survey Mark
- Gas Valve
- Gas Main
- Water Main
- Electricity Line

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LandPartners Limited
LEVEL 2, 23-29 South Street
Rydalmere, NSW, 2116, Australia
Phone: (02) 9685 2023. Fax: (02) 9685 2001
www.landpartners.com.au

HEIGHT DATUM AHD	LOCAL AUTHORITY THE HILLS SHIRE
HEIGHT ORIGIN SSM 72130 RL 184.959	SCALE 1:500 @ A1
MERIDIAN 56	CONTOUR INTERVAL 0.5 Metre
CO-ORD SYSTEM MGA	SURVEYOR LH
	DATE OF SURVEY 01/07/15
DCAD FILE SY073666_	DRAWN AV
	DATE 1/03/16
AUTOCAD FILE SY073666.001	CHECKED RWP
	DATE 1/03/16
ARCHIVE FILE SY073666	APPROVED GKO
	DATE 1/03/16
PLAN NUMBER SY073666.001	

SHEET 2 OF 3

NOTES

- BOUNDARY DIMENSIONS AND AREAS HAVE BEEN COMPILED FROM PLANS MADE AVAILABLE AT LPI.NSW AND ARE SUBJECT TO FINAL SURVEY.
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- × SURVEY CODES AND SOME HEIGHTS HIDDEN FOR CLARITY.

CLIENT
URBIS

PROJECT
DETAIL SURVEY OF LOT 1 IN DP 656036, LOT 100 & LOT 101 IN DP 713628 OLD NORTHERN ROAD DURAL

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 - Water Hydrant
 - Water Stop Valve
 - Water Tap
 - State Survey Mark
 - Gas Valve
 - Gas Main
 - Water Main
 - Electricity Line

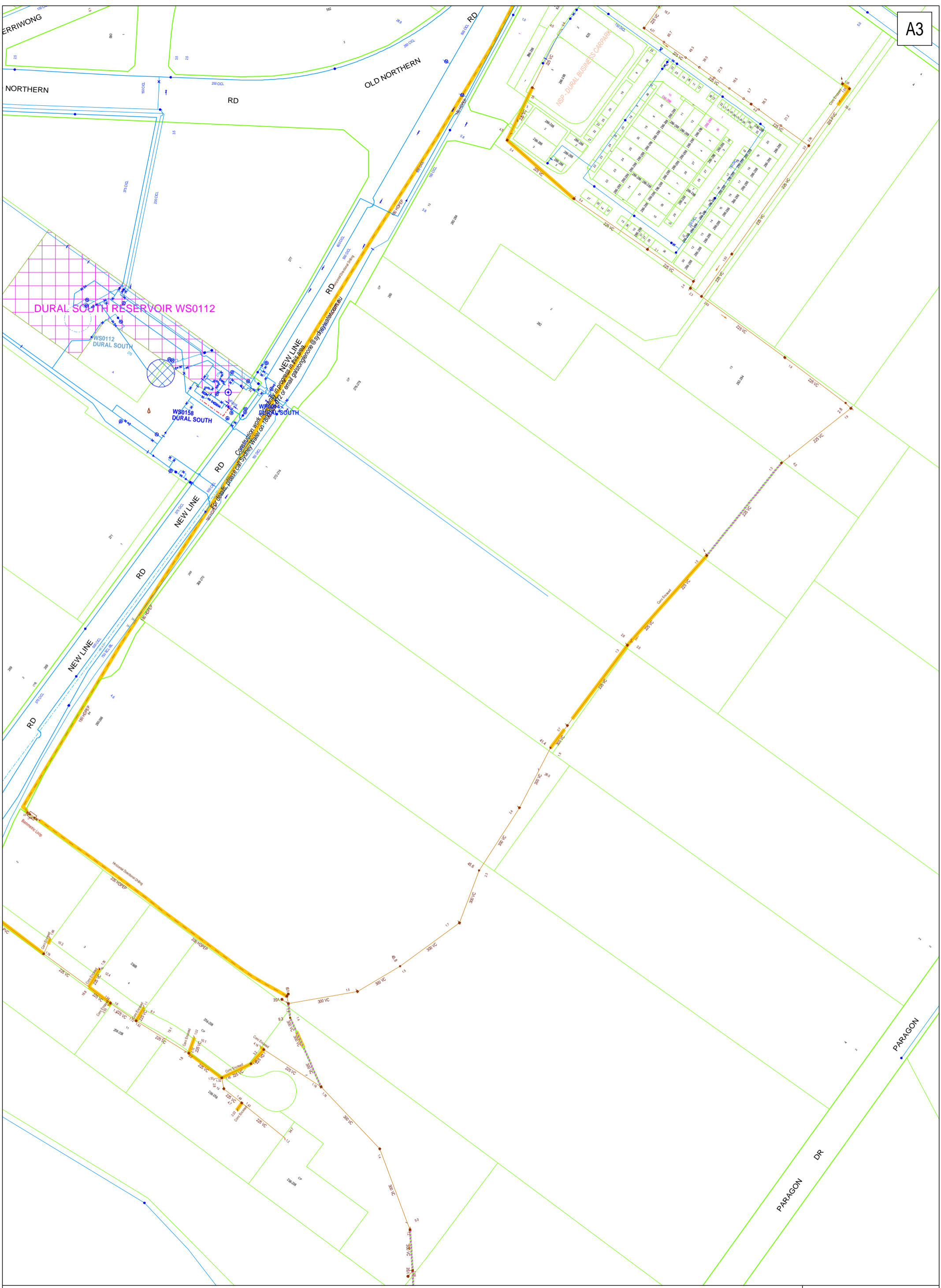
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built environment consultants

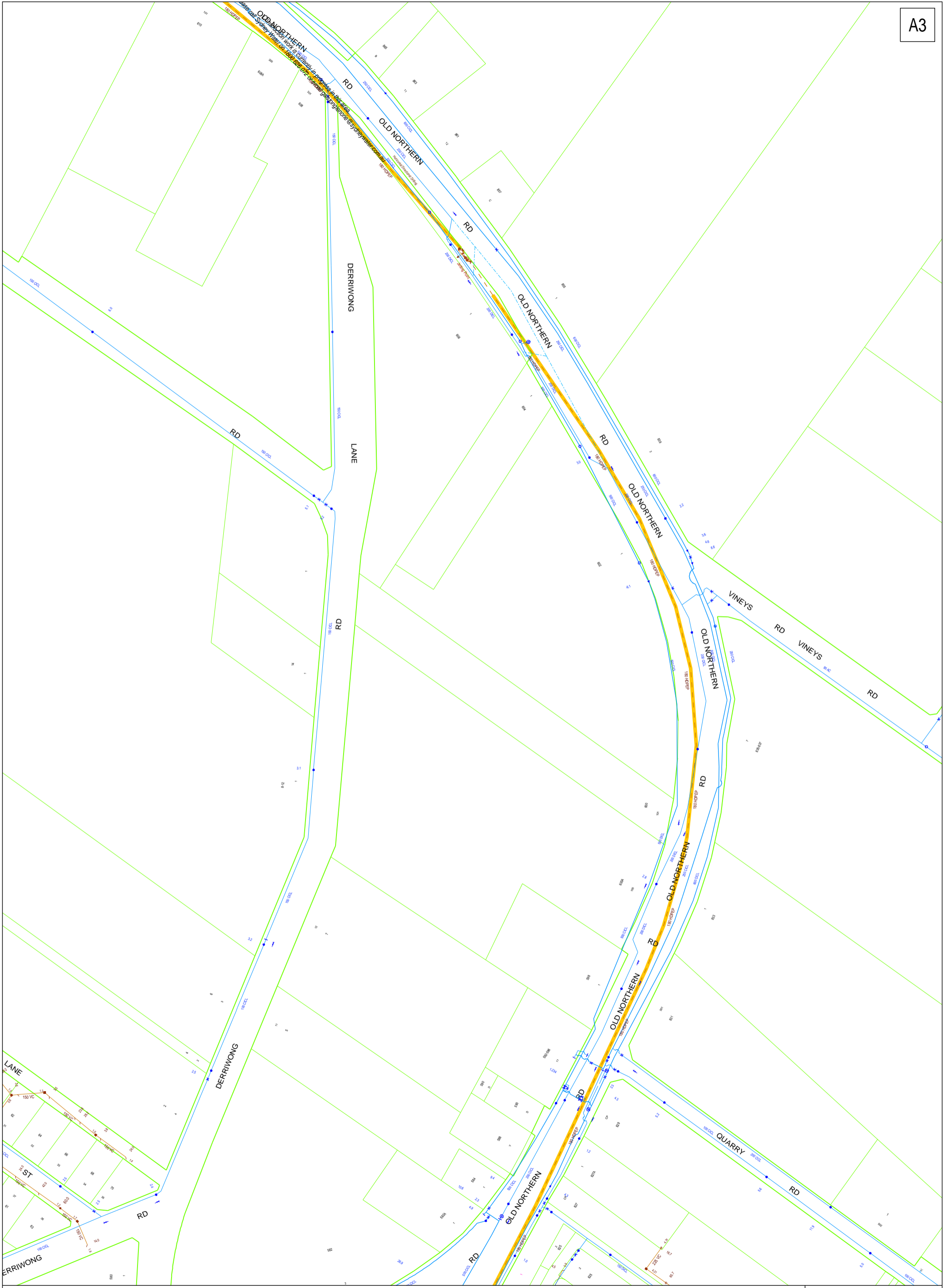
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HEIGHT DATUM AHD	LOCAL AUTHORITY THE HILLS SHIRE
HEIGHT ORIGIN SSM 72130 RL 184.959	SCALE 1:500 @ A1
MERIDIAN 56	CONTOUR INTERVAL 0.5 Metre
CO-ORD SYSTEM MGA	SURVEYOR LH
DATE OF SURVEY 01/07/15	DATE 1/03/16
CAD FILE SY073666_	DRAWN AV
AUTOCAD FILE SY073666.001	CHECKED RWP
DATE 1/03/16	DATE 1/03/16
ARCHIVE FILE SY073666	APPROVED GKO
DATE 1/03/16	DATE 1/03/16
PLAN NUMBER SY073666.001	

Appendix C

Sydney Water Map



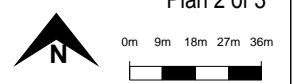


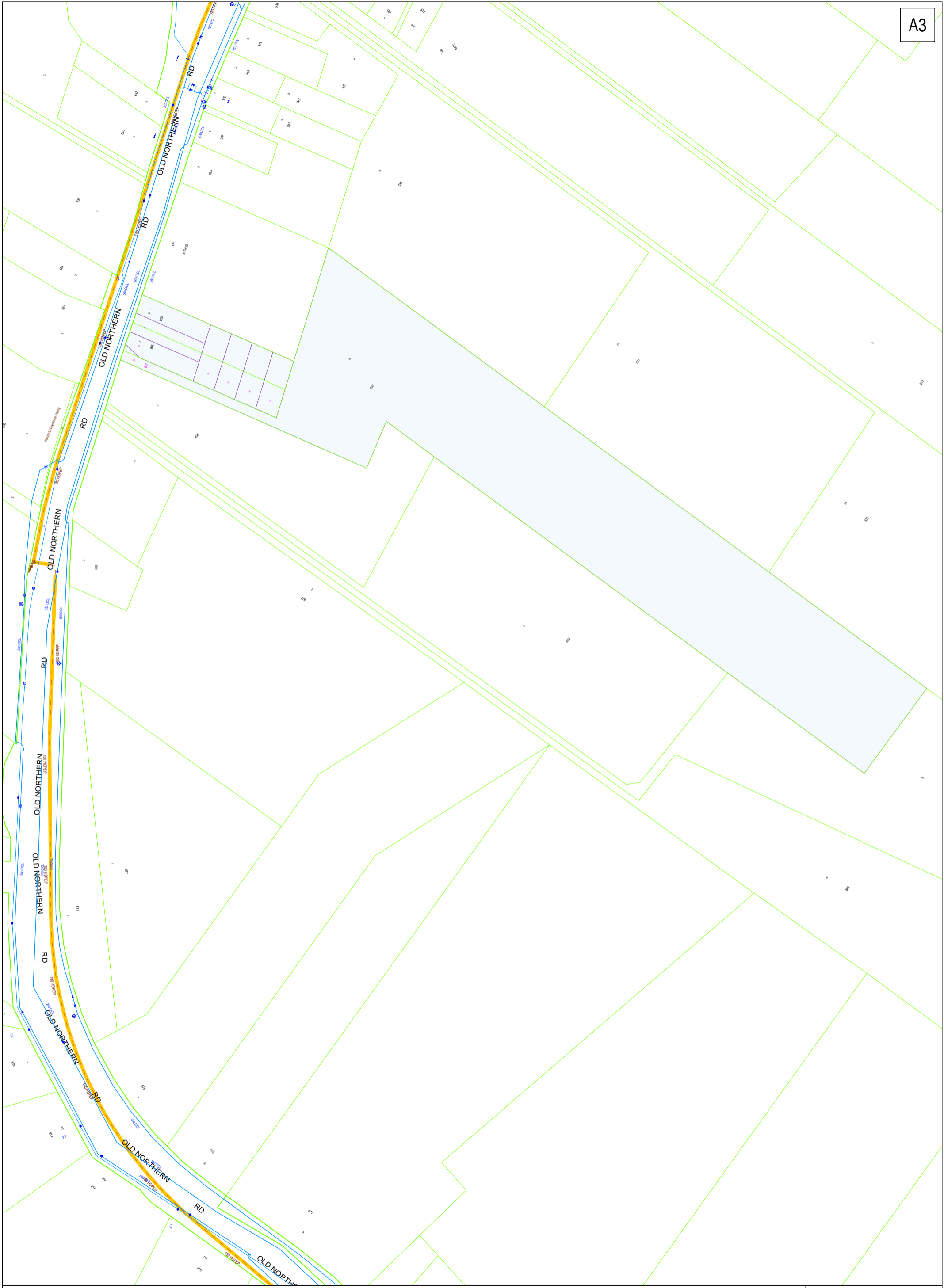
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Dural NSW 2158

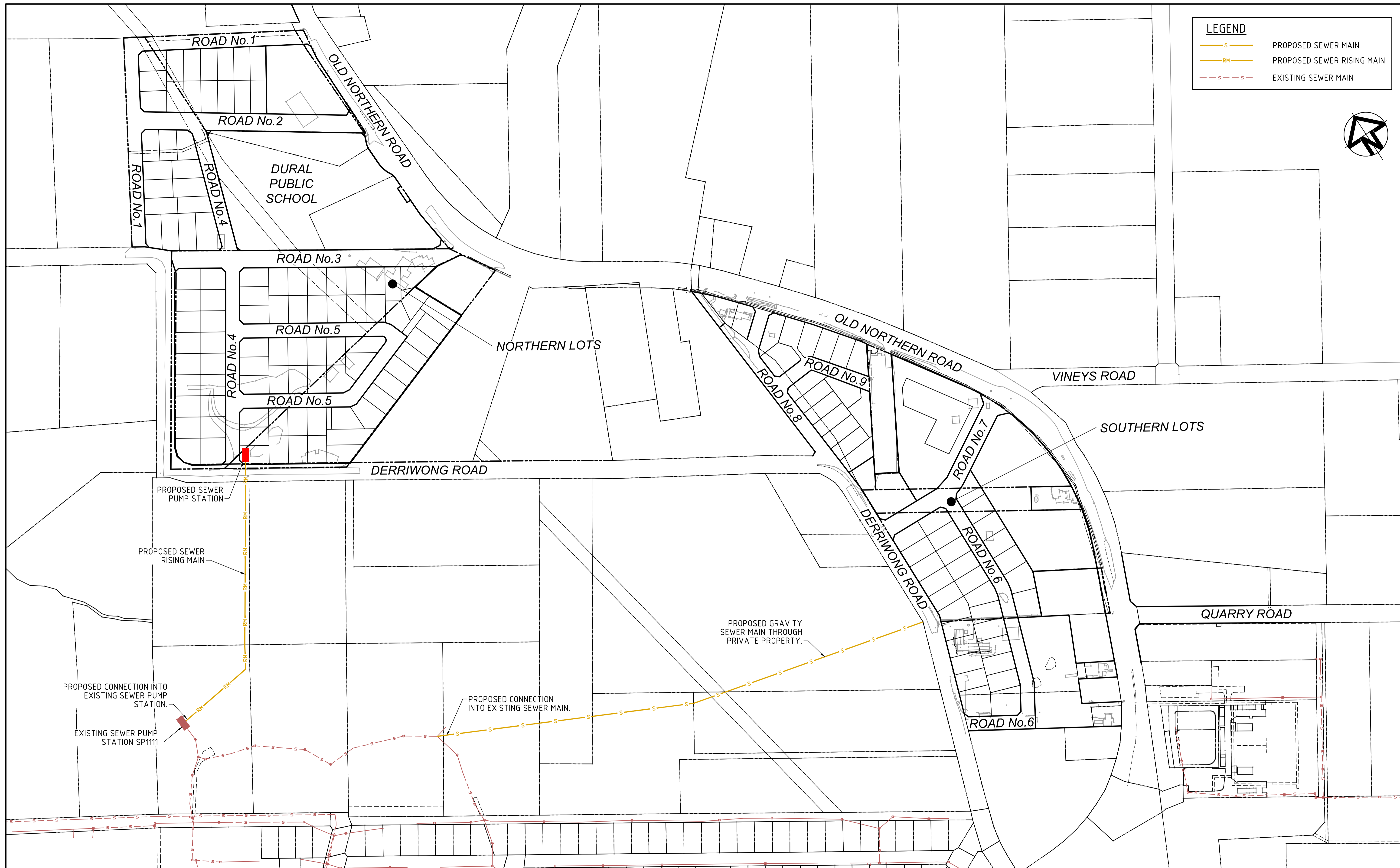
DBYD Job No: 10470092
DBYD Sequence No: 51758613

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SYDNEY WATER CORPORATION

Scale: 1:2000
Date of Production: 24/03/2016

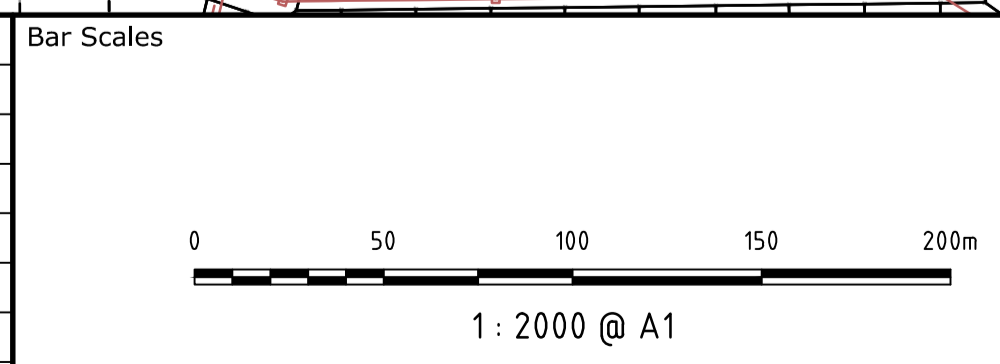
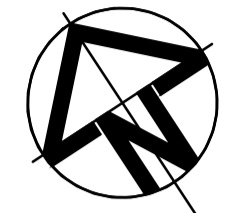






LEGEND

- S— PROPOSED SEWER MAIN
- RM— PROPOSED SEWER RISING MAIN
- - - S - - - EXISTING SEWER MAIN



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Client

Scale	1 : 2000	Drawn	GB
		Designed	GB
Grid	MGA	Checked	AT
Height Datum	AHD	Approved	

Project
PROPOSED RESIDENTIAL DEVELOPMENT OLD NORTHERN RD DURAL

Title
PROPOSED SEWER LEAD IN PLAN

Civil Engineers and Project Managers

Level 7, 153 Walker Street
 North Sydney NSW 2060
 ABN 96 130 882 405
 Tel: 02 9439 1777
 Fax: 02 9923 1055
 www.atl.net.au
 info@atl.net.au

Issue	Description	Date
P1	ISSUED FOR INFORMATION	05-05-16

Status FOR INFORMATION NOT TO BE USED FOR CONSTRUCTION		
Drawing No. SKC03	Project No. 15-296	Issue P1

Appendix D

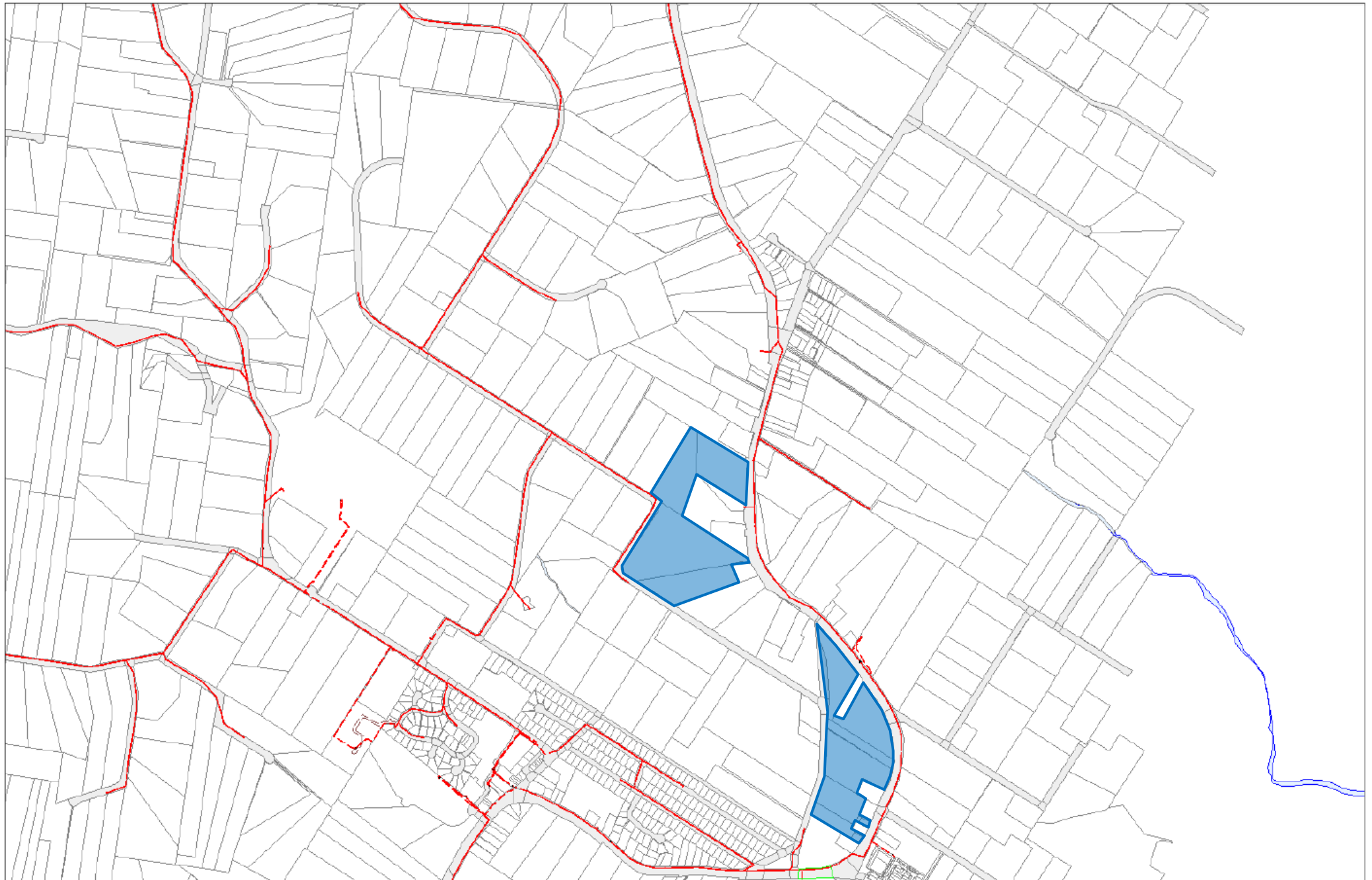
Electrical Drawings



Kenthurst Zone Substation

Subject Site

SK-02 - Existing 11kVA Network



1 km

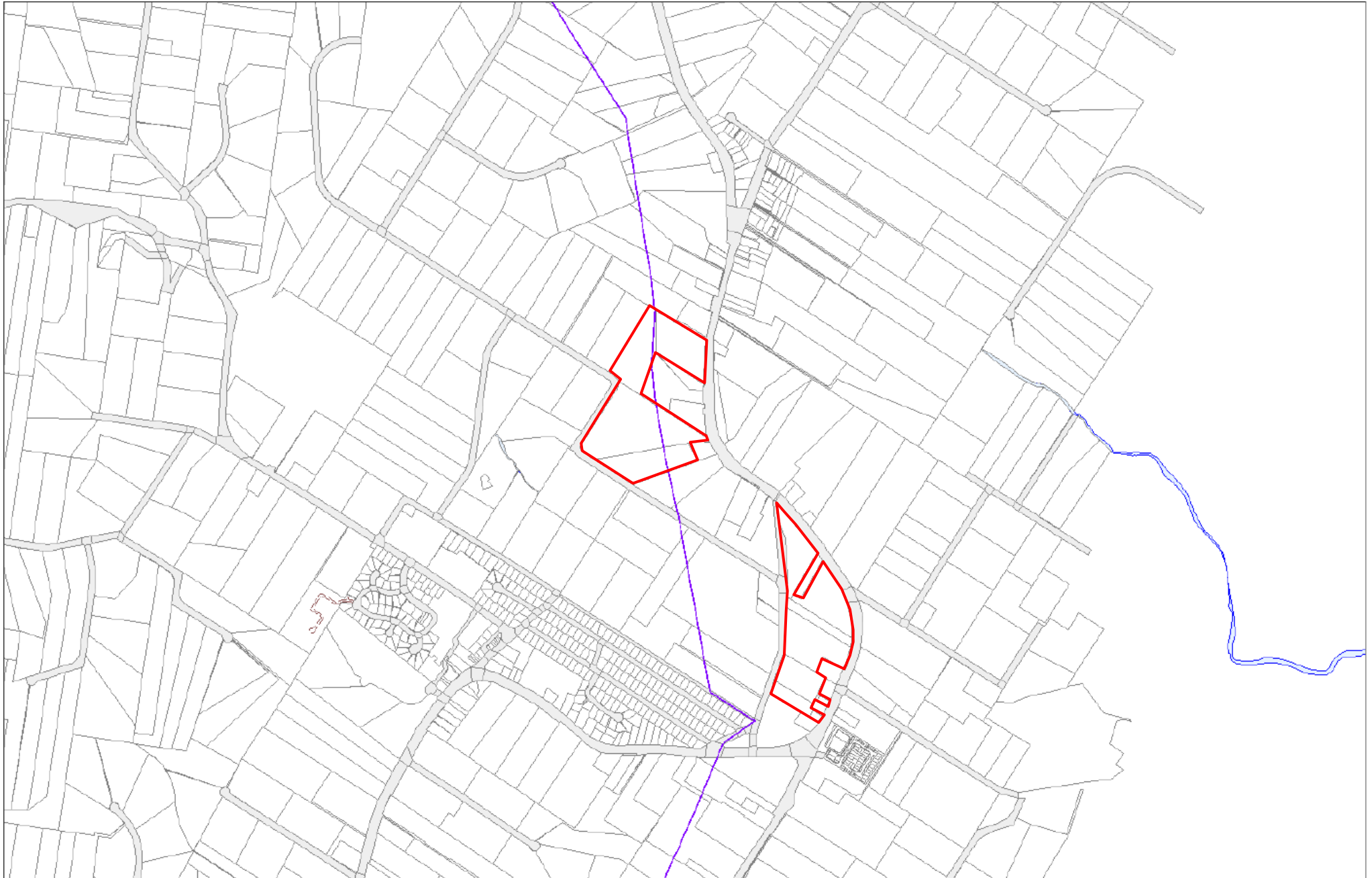
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SK-03 - Existing 66kVA Line



1 km



1 : 11438

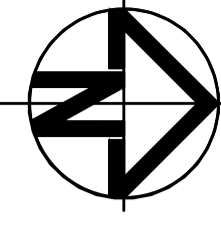
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Appendix E

Bulk Earthworks Cut/Fill Plan



EARTHWORKS CUT/FILL DEPTH RANGE LEGEND

Lower_value	Upper_value	Colour	
-6	to -5	m	[Red]
-5	to -4	m	[Red]
-4	to -3	m	[Red]
-3	to -2	m	[Red]
-2	to -1	m	[Red]
-1	to 0	m	[Red]
0	to 1	m	[Light Green]
1	to 2	m	[Light Green]
2	to 3	m	[Light Green]
3	to 4	m	[Light Green]
4	to 5	m	[Light Green]

LEGEND

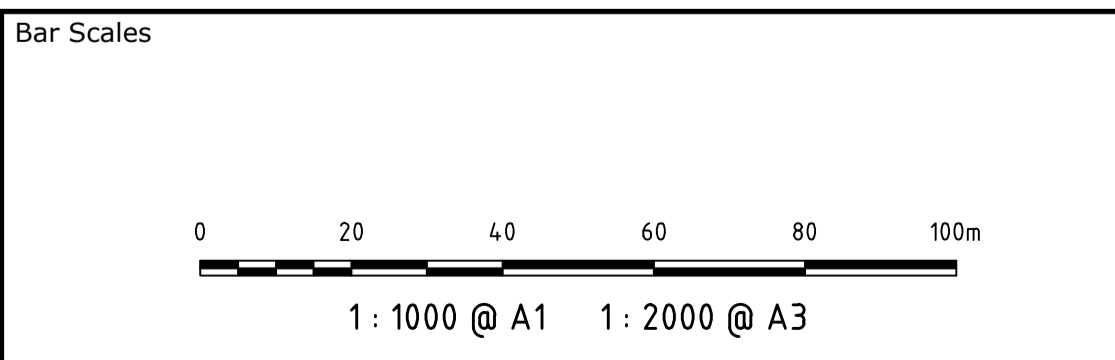
EXISTING	
---	EXISTING BOUNDARY
---	EXISTING EASEMENT
60.0	EXISTING CONTOUR
PROPOSED	
---	PROPOSED BOUNDARY
65.0	PROPOSED CONTOUR

- NOTES**
- EXISTING TOPSOIL STRIPPED 200mm.
 - THE VOLUMES DO NOT TAKE INTO ACCOUNT THE FOLLOWING --
 - BULKING FACTORS OF REMOVED CUT
 - REMOVAL OF EXISTING BUILDING SLABS AND PAVEMENTS
 - REMOVAL AND/OR REMEDIATION OF ANY EXISTING UNCONTROLLED FILL
 - PROPOSED LANDSCAPING
 - PROPOSED RETAINING WALL EARTHWORKS AND BACKFILL MATERIAL

EARTHWORKS VOLUMES

EXISTING TOPSOIL STRIPPING VOLUME (cu.m) REFER NOTE No.1	NET CUT (cu.m)	NET FILL (cu.m)	BALANCE (cu.m)
17,530	12,020	24,630	-12,610

Issue	Description	Date
P1	ISSUED FOR INFORMATION	??



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Scales	Drawn	QD
1 : 1000	Designed	QD
Grid	Checked	AT
MGA	Checked	AT
Height Datum	Approved	
AHD	Approved	

Project
PROPOSED RESIDENTIAL DEVELOPMENT OLD NORTHERN RD DURAL

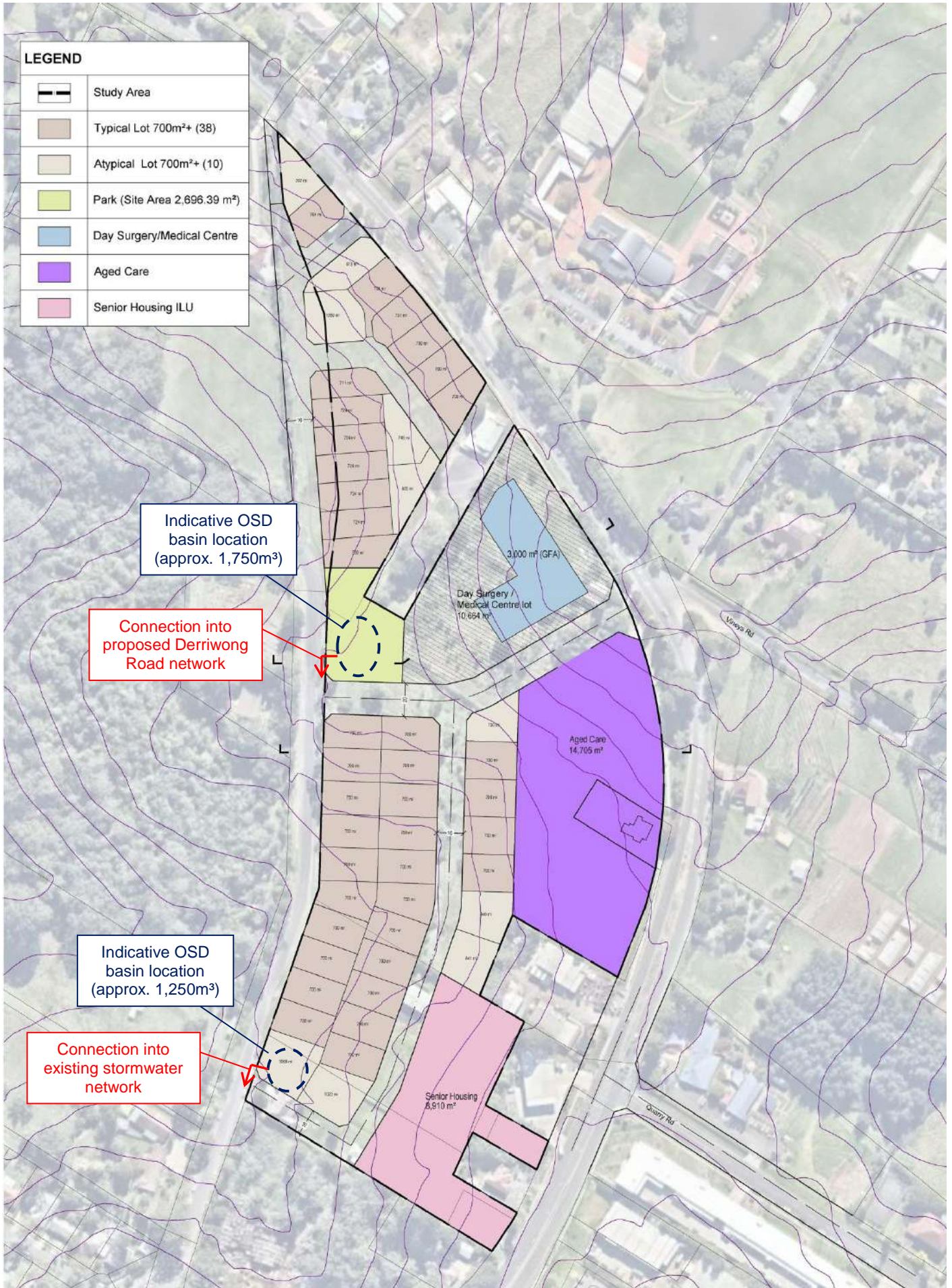
Title
BULK EARTHWORKS CUT/FILL PLAN STAGE 2

Civil Engineers and Project Managers

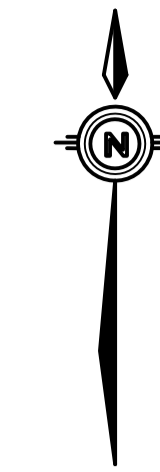
Level 7, 153 Walker Street
North Sydney NSW 2060
ABN 96 130 882 405
Tel: 02 9439 1777
Fax: 02 9923 1055
www.atl.net.au
info@atl.net.au

Status FOR INFORMATION NOT TO BE USED FOR CONSTRUCTION	A1
Drawing No. SKC02	Issue P1
Project No. 15-296	

SKC03 – Indicative OSD Basement Locations



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URBIS

PROJECT

DETAIL SURVEY
 OF
 LOT 1 IN DP 656036, LOT 100
 & LOT 101 IN DP 713628
 OLD NORTHERN ROAD
 DUAL

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PPP/CF	LPL	DD/MM/YY	COMMENT

Symbols shown are indicative only. The symbol size and orientation does not necessarily represent the real size or orientation of the feature.



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 Rydalmere NSW 2116
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 Durids NSW 2117
 (02) 9685 2000
 (02) 9685 2001
 sydney@landpartners.com.au
 www.landpartners.com.au
 ISO 9001:2008
 FS 535002

HEIGHT DATUM AHD	LOCAL AUTHORITY THE HILLS SHIRE
HEIGHT ORIGIN SSM 72130 RL 184.959	SCALE 1:3000 (A1)
MERIDIAN 56	CONTOUR INTERVAL 0.5 Metre
CO-ORD SYSTEM MGA	SURVEYOR LH
COAD FILE SY073666	DATE OF SURVEY 01/07/15
AUTOCAD FILE SY073666	DRAWN LJMc
ARCHIVE FILE SY073666	DATE 16/07/15
	CHECKED RWP
	DATE 17/07/15
	APPROVED GKO
	DATE 17/07/15

PLAN NUMBER
SY073666.000

SHEET OVERALL
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NOTES

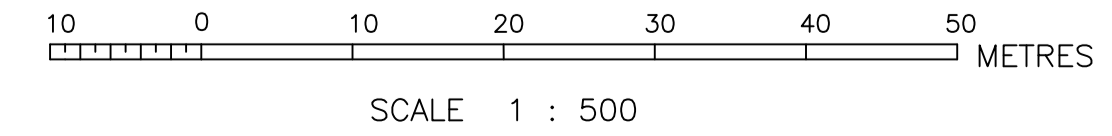
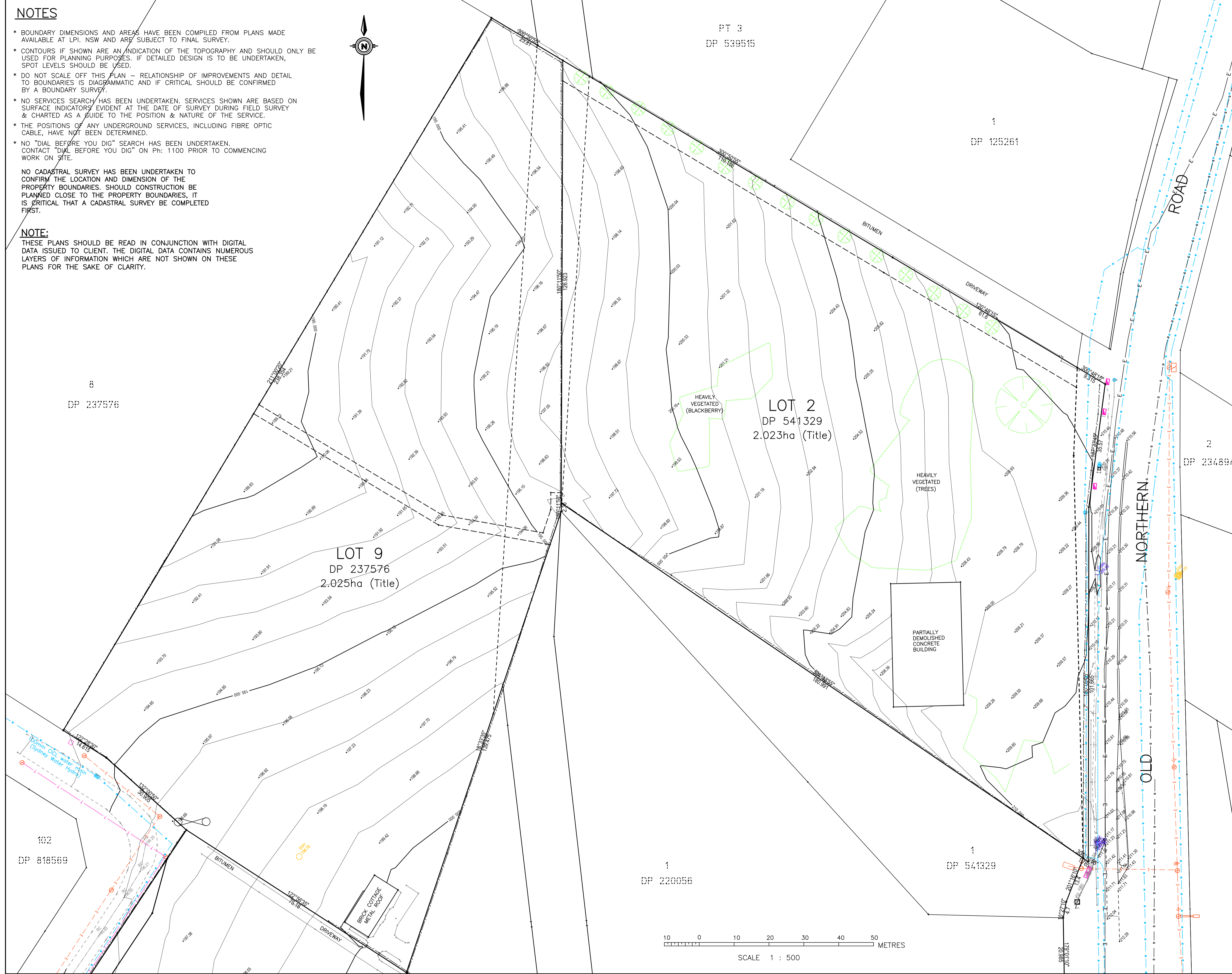
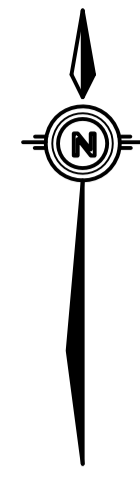
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CLIENT	
URBIS	
PROJECT	
DETAIL SURVEY	
OF	
LOT X IN DP501233, LOT 2	
IN DP 567995, LOT 2 IN	
DP 541329 & LOT 9 DP237576	
OLD NORTHERN ROAD	
DUAL	
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(02) 9685 2000 (02) 9685 2001 sydney@landpartners.com.au www.landpartners.com.au	
HEIGHT DATUM	LOCAL AUTHORITY
AHD	THE HILLS SHIRE
HEIGHT ORIGIN	SCALE
SSM 72130 RL 184.959	1:500 (A1)
MERIDIAN	CONTOUR INTERVAL
56	0.5 Metre
CO-ORD SYSTEM	SURVEYOR
LH	LH
DATE OF SURVEY	DATE
16/07/15	16/07/15
AUTOCAD FILE	CHECKED
SY073666	RWP
DATE	DATE
17/07/15	17/07/15
ARCHIVE FILE	APPROVED
SY073666	GKO
DATE	DATE
17/07/15	17/07/15
PLAN NUMBER	
SY073666.000	
SHEET 1 OF 5	
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URBIS

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DETAIL SURVEY
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OLD NORTHERN ROAD
DUAL

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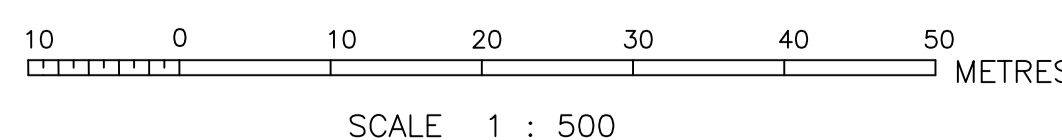
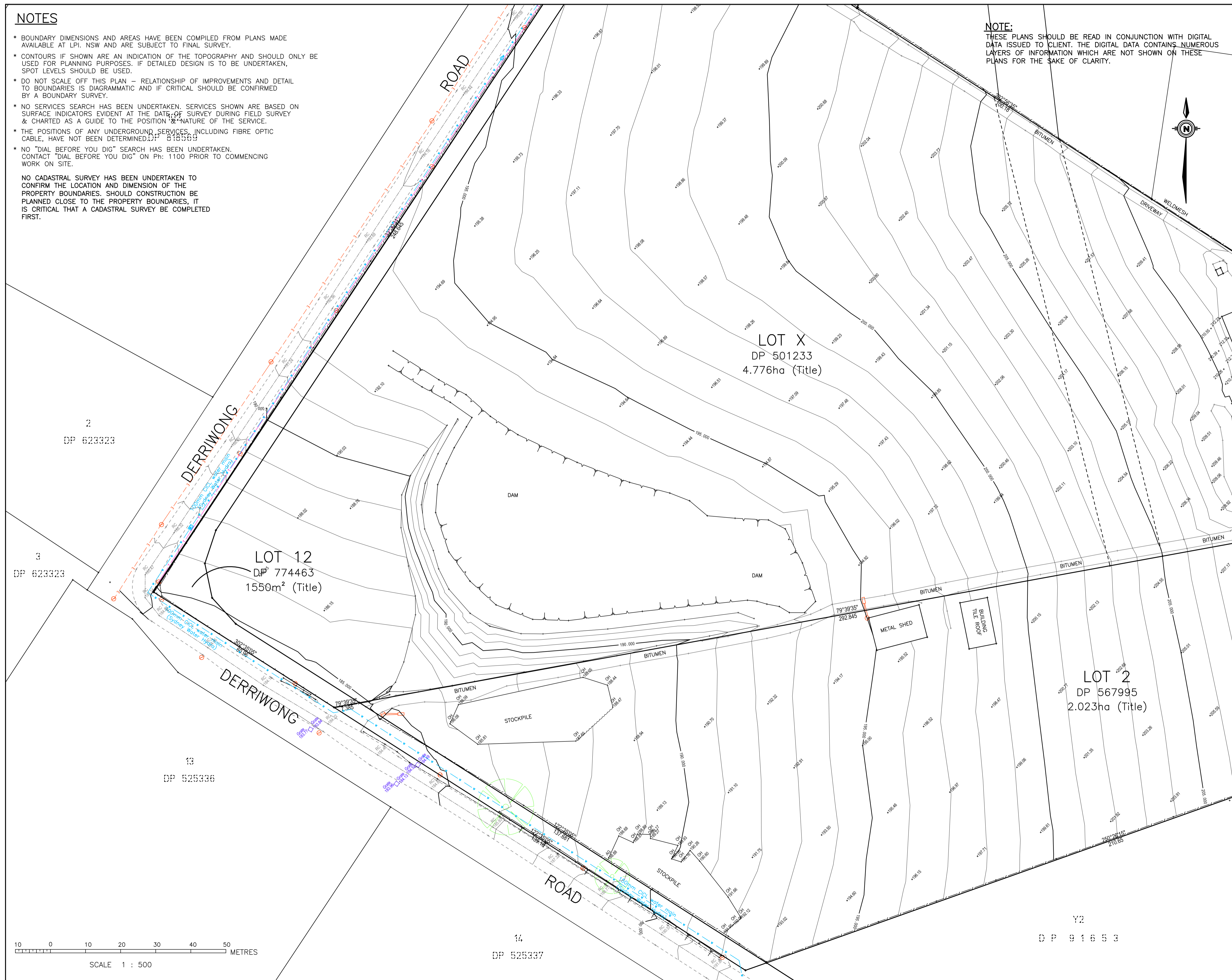
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ARCHIVE FILE SY073666	DATE 16/07/15
PLAN NUMBER SY073666.000	CHECKED RWP
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	DATE 17/07/15

SHEET 2 OF 5
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CLIENT

URBIS

PROJECT

DETAIL SURVEY
OF
LOT X IN DP501233, LOT 2 IN DP 567995, LOT 2 IN DP 541329 & LOT 9 DP237576
OLD NORTHERN ROAD
DUAL

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PPP/CF LPL DD/MM/YY COMMENT

LEGEND

- Telephone Pit Lid (Single)
- Sign
- Power Pole & Light
- Power Pole
- Gate
- Sewer Manhole Cover
- Sewer Lamphole
- Gully Pit Grate Centre
- T+Tree (650.5m Diameter Of Trunk @64.0m High)
- Tree Shrub
- Water Meter
- Water Hydrant
- Water Stop Valve
- Water Tap
- State Survey Mark
- Gas Meter
- Gas Valve
- Gas Man

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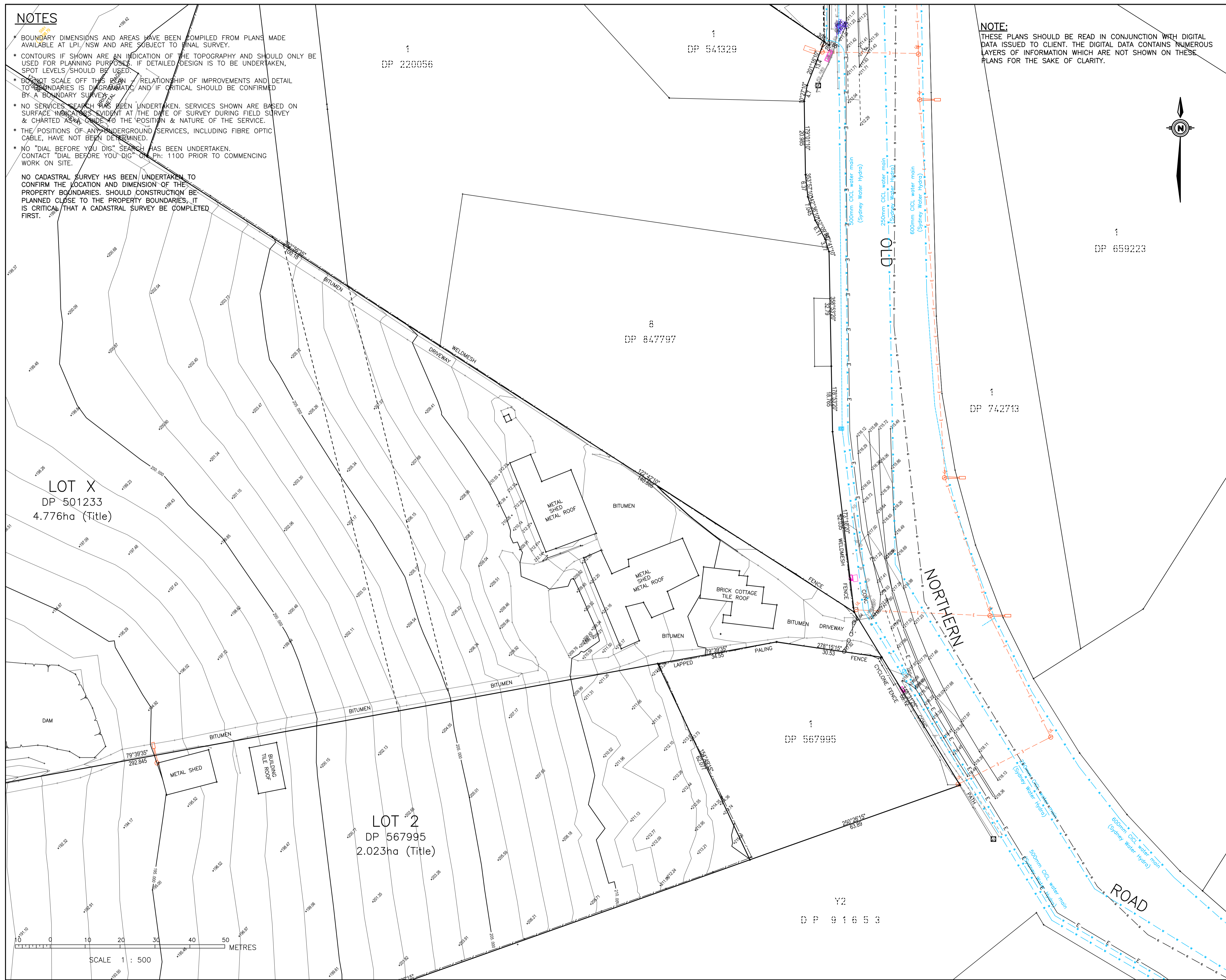
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HEIGHT DATUM AHD	LOCAL AUTHORITY THE HILLS SHIRE
HEIGHT ORIGIN SSM 72130 RL 184.959	SCALE 1:500 (A1)
MERIDIAN 56	CONTOUR INTERVAL 0.5 Metre
CO-ORD SYSTEM MGA	SURVEYOR LH
COAD FILE SY073666	DATE OF SURVEY 16/07/15
AUTOCAD FILE SY073666	DRAWN LJM
ARCHIVE FILE SY073666	CHECKED RWP
PLAN NUMBER SY073666.000	DATE 17/07/15
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PROJECT
DETAIL SURVEY
OF
LOT 1 IN DP 656036, LOT 100 & LOT 101 IN DP 713628
OLD NORTHERN ROAD
DUAL

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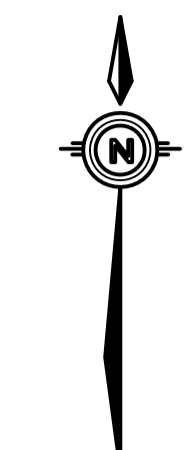
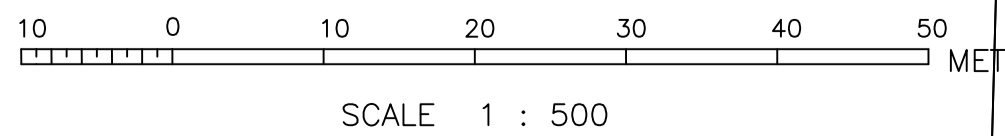
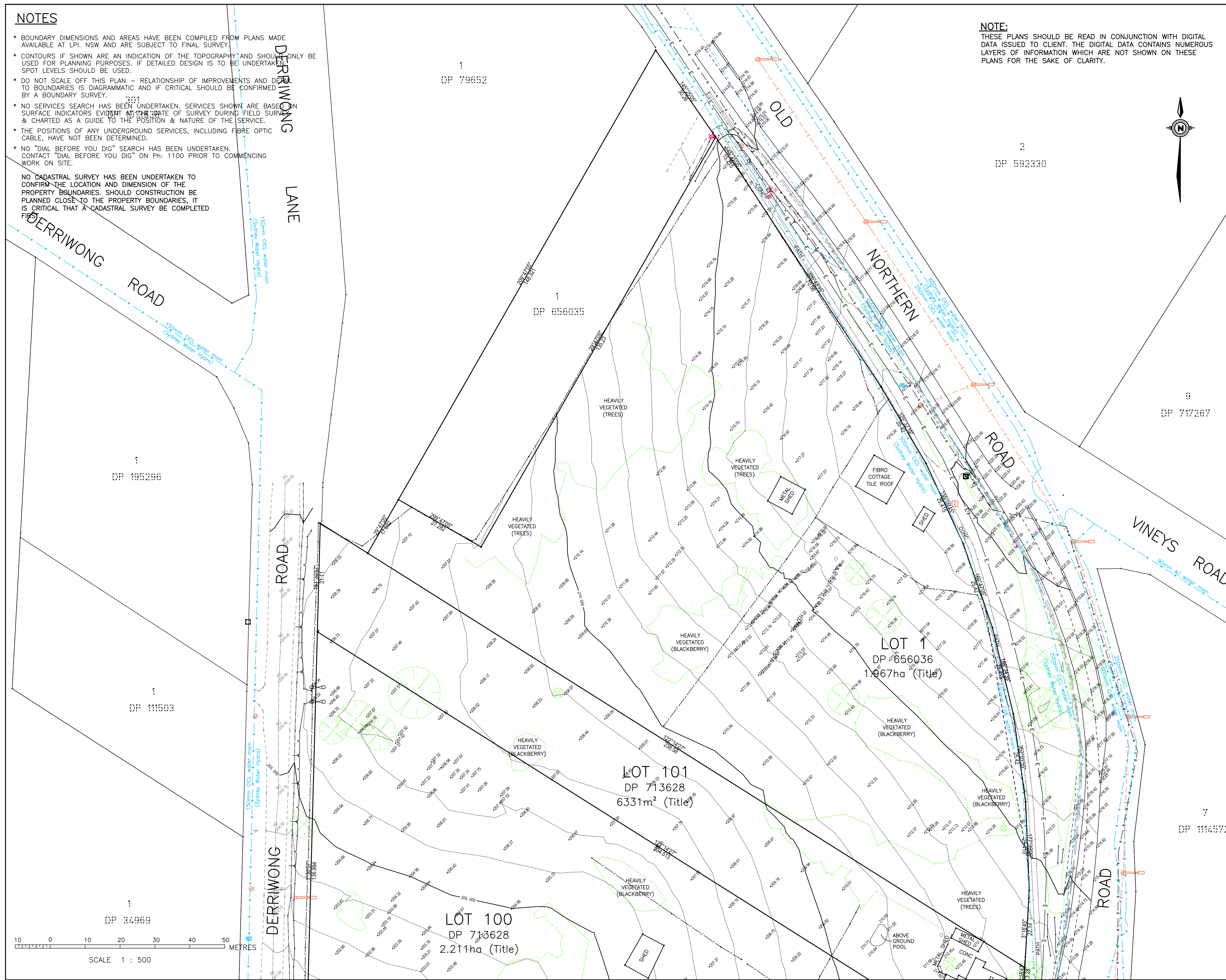
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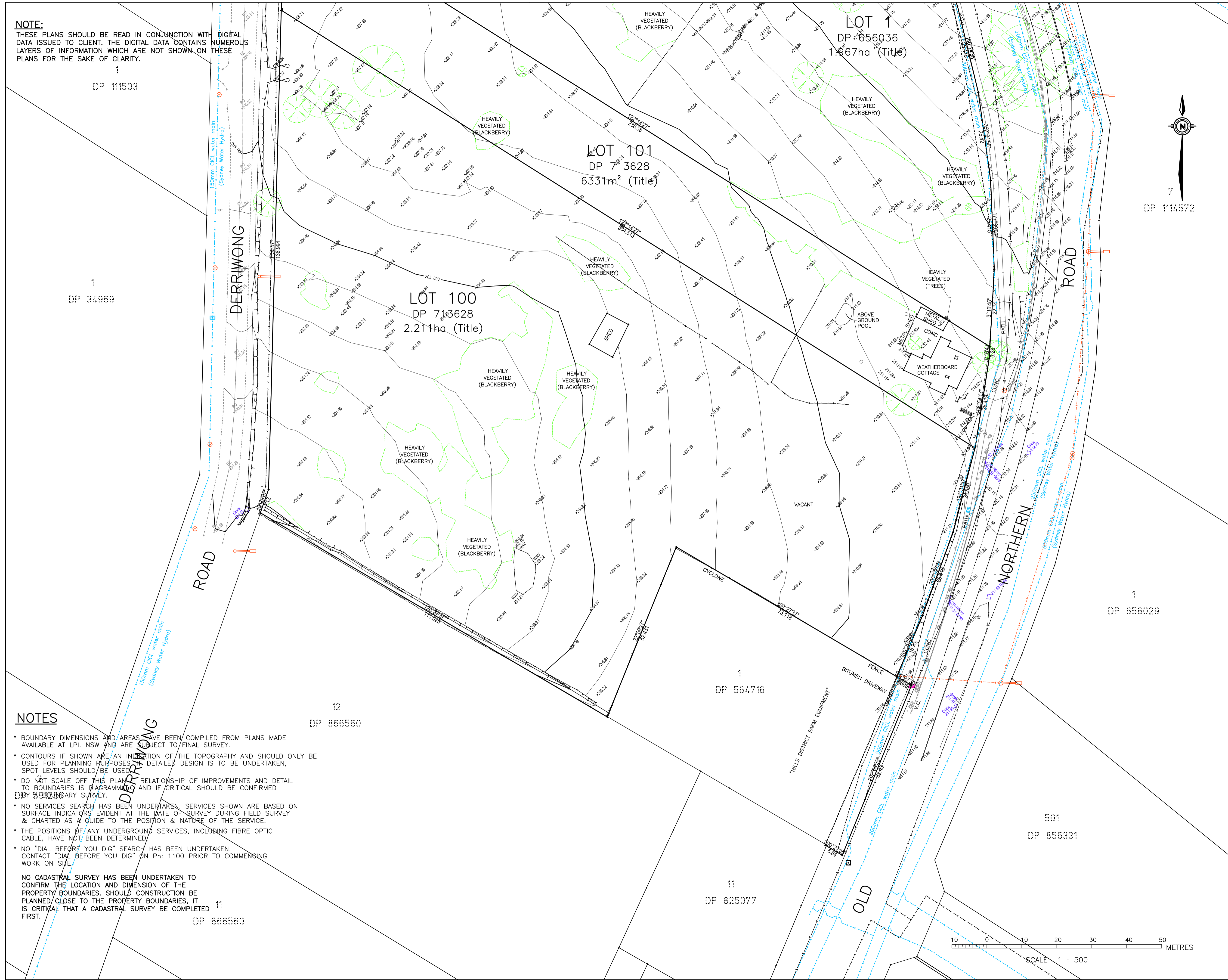
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HEIGHT DATUM	AHD	LOCAL AUTHORITY	THE HILLS SHIRE
HEIGHT ORIGIN	SSM 72130 RL 184.959	SCALE	1:500 (A1)
MERIDIAN	56	CONTOUR INTERVAL	0.5 Metre
CO-ORD SYSTEM	MGA	SURVEYOR	LH
		DATE OF SURVEY	01/07/15
COAD FILE	SY073666	DRAWN	LJM
		DATE	16/07/15
AUTOCAD FILE	SY073666	CHECKED	RWP
		DATE	17/07/15
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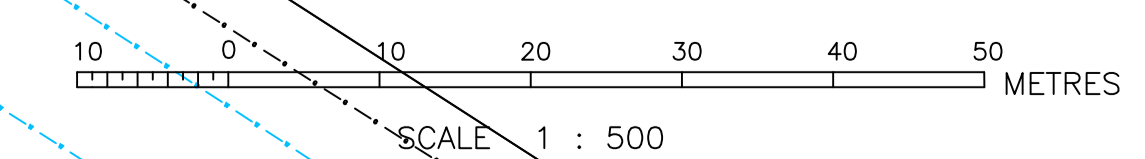


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PLANNING PROPOSAL

OLD NORTHERN ROAD, DURAL

URBIS STAFF RESPONSIBLE FOR THIS REPORT WERE:

Director	Clare Brown
Senior Consultant	Rachel Snape
Assistant Planner	Kate Ryan
Project Code	SA6076
Report Number	Final

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EXECUTIVE SUMMARY

This Planning Proposal has been prepared on behalf the owners of the subject land. This Planning Proposal provides justification to The Hills Shire Council to commence the process of transforming rural land into urban land for the purposes of delivering additional residential dwellings and open space.

The land, subject to this proposal comprises a total of 12 lots divided between two (2) parcels referred to as the Northern and Southern sites, each legally described in **Table 1**. The land is bound to the east and west (front and rear) by Old Northern Road and Derriwong Road, respectively, to the north of Round Corner Town Centre. Old Northern Road forms the boundary between The Hills Local Government Area (LGA) and Hornsby Shire Council LGA.

The land naturally grades in a south, southwest direction towards Derriwong Road and O'Hara's Creek beyond. The site is predominantly cleared of any substantial vegetation with only sporadic and fragmented vegetation patches remaining. Existing uses are predominantly rural residential in nature, with the majority of allotments currently zoned RU6 Transition under *The Hills Local Environmental Plan 2012* (THLEP 2012).

The Planning Proposal seeks to rezone the land to R2 Low Density Residential. Combined with the change in land use zoning, the Planning Proposal seeks to amend the following development standards applying to the land:

- Minimum lot size requirement from 2 hectares to 700m², with an additional clause under Part 7 of THLEP 2012 to permit a maximum of 101 residential lots within the northern parcel with a minimum lot size of 600m².
- Amend the maximum building heights from 10 metres to 9 metres.

The Planning Proposal is supported by an urban design study which supports the logical expansion of the urban fringe, demonstrating compatibility of future land use zones (on land not included in this request) and a suitable urban layout and form that accommodates future road connections.

Support for this Planning Proposal is justified based on the following:

- The proposed rezoning is consistent with the emerging and anticipated urban character of the area and the existing pattern of density for development within adjacent urban centres;
- Compatibility and integration of the proposed land uses and urban form with Round Corner and provision for future connectivity with adjacent lands (not included in this proposal);
- The land is not currently used for agricultural purposes. The potential use of the land for agriculture is constrained due to the proximity of urban land and the potential for intensive agriculture to generate adverse environmental impacts;
- The rezoning and future redevelopment would support the continued growth of Round Corner through increasing proximate residential yields;
- The proposal will not dilute the primacy of adjacent urban centres, but reinforce and support their growth through the increased residential density and worker populations within retail catchments;
- The rezoning reflects a logical extension and infill of urban land uses, bookended between two (2) existing centres that are the subject of continuing growth and development; and
- The residential subdivision will deliver new residential land to meet demand of existing and potential residents, in an identified market gap for downsizers and young families.

Taking into account the detailed consideration of the emerging character and trends towards urbanisation of land surrounding Round Corner, the request to rezone the land subject of this proposal is considered supportable. It is requested that Council endorse the proposal and request the Department of Planning and Environment to issue a gateway determination to commence the process to amend the relevant planning maps of *The Hills Local Environmental Plan 2012* to permit an extension to the urban fringe

1. INTRODUCTION

1.1. OVERVIEW

This report has been prepared on behalf of Dural Investments Holdings Pty Ltd and supports their request to The Hills Shire Council, as the relevant planning authority, to prepare a Planning Proposal. The request is for an amendment of the land use zoning and development standards that currently apply under *The Hills Local Environmental Plan 2012* (THLEP 2012) for the land described in Table 1.

The intent of the request is to rezone the land for urban purposes to permit the delivery of residential dwellings and future open space. The amendment would extend the existing urban fringe northward by rezoning the land from RU6 Transition to R2 Low Density Residential. The rezoning of the land for urban purposes would permit redevelopment of underutilised and poor quality agricultural land for low density residential blocks.

The envisaged future development is consistent with the proposed R2 Low Density Residential zoning and aligns with broad direction and intent of the metropolitan strategy, *A Plan for Growing Sydney*.

The proposal presents a significant opportunity to increase the diversity of residential land options within Dural, responding to market demand of both an aging demographic looking to downsize and young families seeking a more affordable residential option. The proposal is a logical extension of the existing urban fringe that responds to recent gateway determinations supporting the rezoning of land to the south from rural to urban, combined with the growth of both Round Corner and Dural Centres. In this regard, the proposal places a key emphasis on accommodating population growth, which will support the economic development of nearby local centres without diluting or detracting from the centres hierarchy.

The proposed amendment will make a positive contribution to the growth and revitalisation of the local area in a manner that contributes to housing variety and affordability.

1.2. PROPOSED LEP AMENDMENTS

The Planning Proposal requests amendments to the land use zone, minimum lot sizes and height of building development standards applying under THLEP 2012.

A high level master plan has been prepared for the subject sites and land immediately adjacent and surrounding, in order to indicate how the land would connect and relate to surrounding urban areas. The proposed changes to the adopted provisions of THLEP 2012 are outlined in Parts 2 Explanation of Provisions and Part 4 Mapping, contained within this proposal.

The amendments are influenced by a number of key factors which are addressed in this report. These include:

- Orderly and economic use of the land that is otherwise under-utilised and undesirable for agricultural purposes;
- No additional or new impacts on the ecological sensitivities of the site or the surrounding and adjacent land;
- A development of the site that is consistent with and achieve key directions for the area and locality as expressed in the metropolitan plan *A Plan for Growing Sydney*, in particular an increase in the quantum of housing and variety of housing typologies; and
- The design has been informed by detailed consideration of market demands and needs, combined with the physical characteristics of the land, the urban design analysis contained within the report demonstrates the redevelopment of the site is capable of achieving suitable streetscape and context consistency despite the change in density.

1.3. SUPPORTING DOCUMENTATION

This report is accompanied by the following documentation:

- Architectural Built Form and Massing Study prepared by Urbis dated November 2016;
- Traffic and Transport Impact Assessment prepared by AECOM dated 13 October 2016;
- Ecological Report prepared by Eco Logical Australia dated 23 March 2016;
- Bushfire Report prepared by Eco Logical Australia dated March 21016;
- Residential Market Analysis prepared by Urbis dated February 2016;
- Assessment of New Agricultural Enterprise Viability in Dural prepared by Urbis dated November 2016;
- Heritage Impact Statement prepared by Urbis dated February 2016;
- Preliminary Site Investigations Reports prepared by ADE Consulting;
- Services Connections Report prepared by Arup dated 11 October 2016;
- Survey prepared by Land Partners dated 17 July 2015; and
- Acoustic Assessment prepared by WSP Parsons Brinkerhoff dated September 2016.

1.4. REPORT STRUCTURE

This Planning Proposal is structured as follows:

- **Section 1:** Introduction
- **Section 2:** Description and analysis of the site and local context with reference to metropolitan strategic planning and infrastructure projects;
- **Section 3:** Overview of Current Planning Controls;
- **Section 4:** The Planning Proposal, including the
 - **Part 1:** Objectives and intended outcomes of the planning proposal;
 - **Part 2:** Explanation of the provisions of the proposed amendment to the LEP;
 - **Part 3:** Justification of the Planning Proposal and Concept Urban Layout and Form;
 - **Part 4:** Mapping;
 - **Part 5:** Consideration of the community consultation likely to be associated with the Planning Proposal; and
 - **Part 6:** Project Timeline.
- **Section 5:** Conclusion

2. CONTEXT AND THE SITES

2.1. REGIONAL CONTEXT

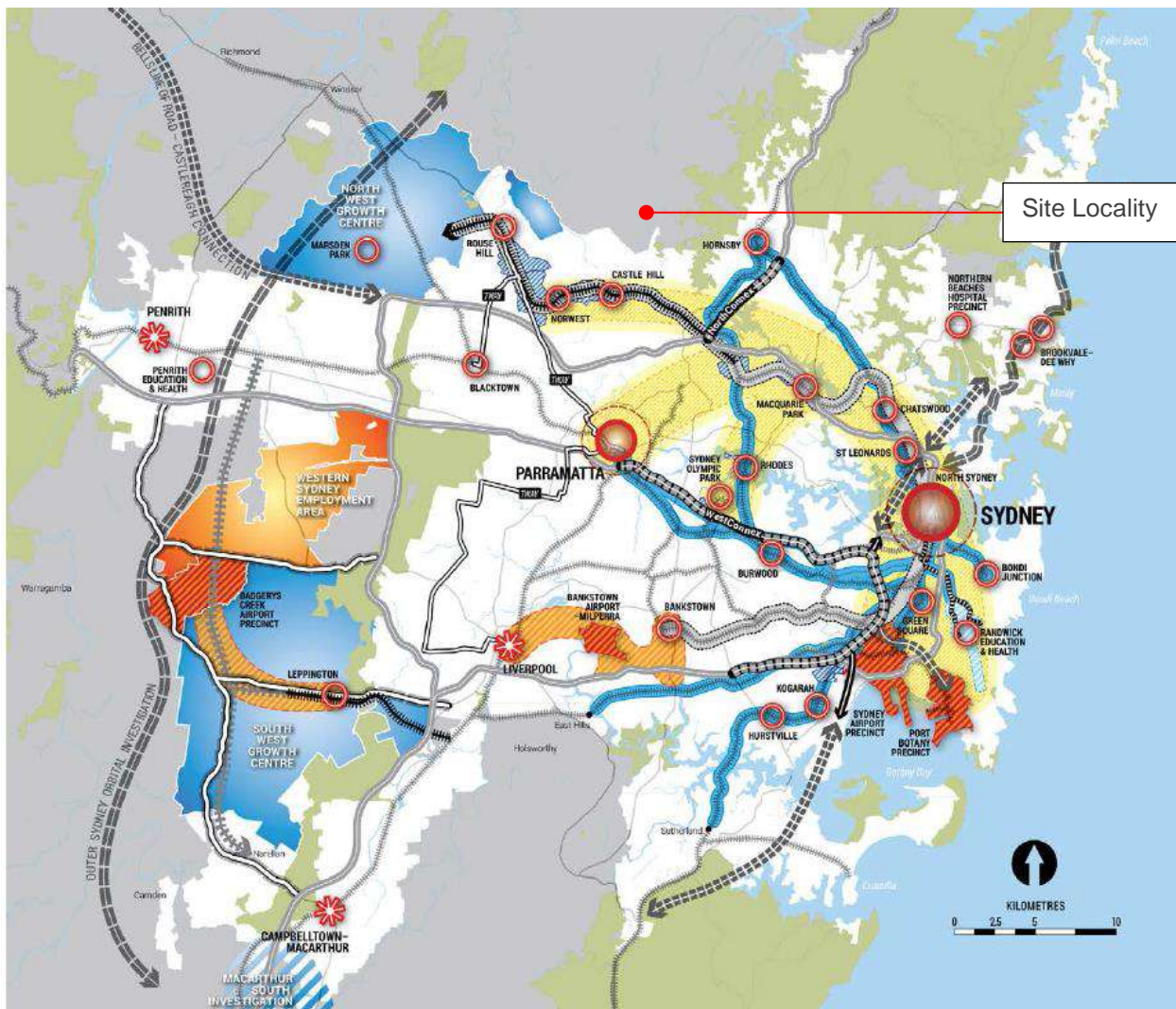
The land, subject to this planning proposal, is located north west of the Sydney Metropolitan Region and beyond the urban fringe in the The Hills Local Government Area (LGA), which is located approximately 30 kilometres from the Sydney CBD (GPO). Refer to **Figures 1** and **2**.

The Hills LGA covers an area of approximately 40km² and is home to approximately 192,230 people (ABS, 2015). The predominant character of residential development across the LGA is low density housing, reflected in overall population density of 4.8 persons per hectare.

While the ABS (2016) reported growth in high and medium density housing over the period of 2006 to 2011, single dwellings are still preferred, accounting for 60.9% of housing growth in the LGA, a high percentage of which (92.4%) are owner occupied.

This is likely to change following the completion of the North West rail link, which will encourage increased densities within the established centres around key future transport nodes.

Figure 1 – A Plan for Growing Sydney (Source: www.planning.nsw.gov.au)



Population demographics for The Hills LGA reflect dominant cohorts in the younger workforce (25 to 34) and parents and homebuilders (35 to 49). As with many areas throughout Sydney and NSW, there is an aging population, with approximately 16.7% of the residents between the age of 60 – 85+.

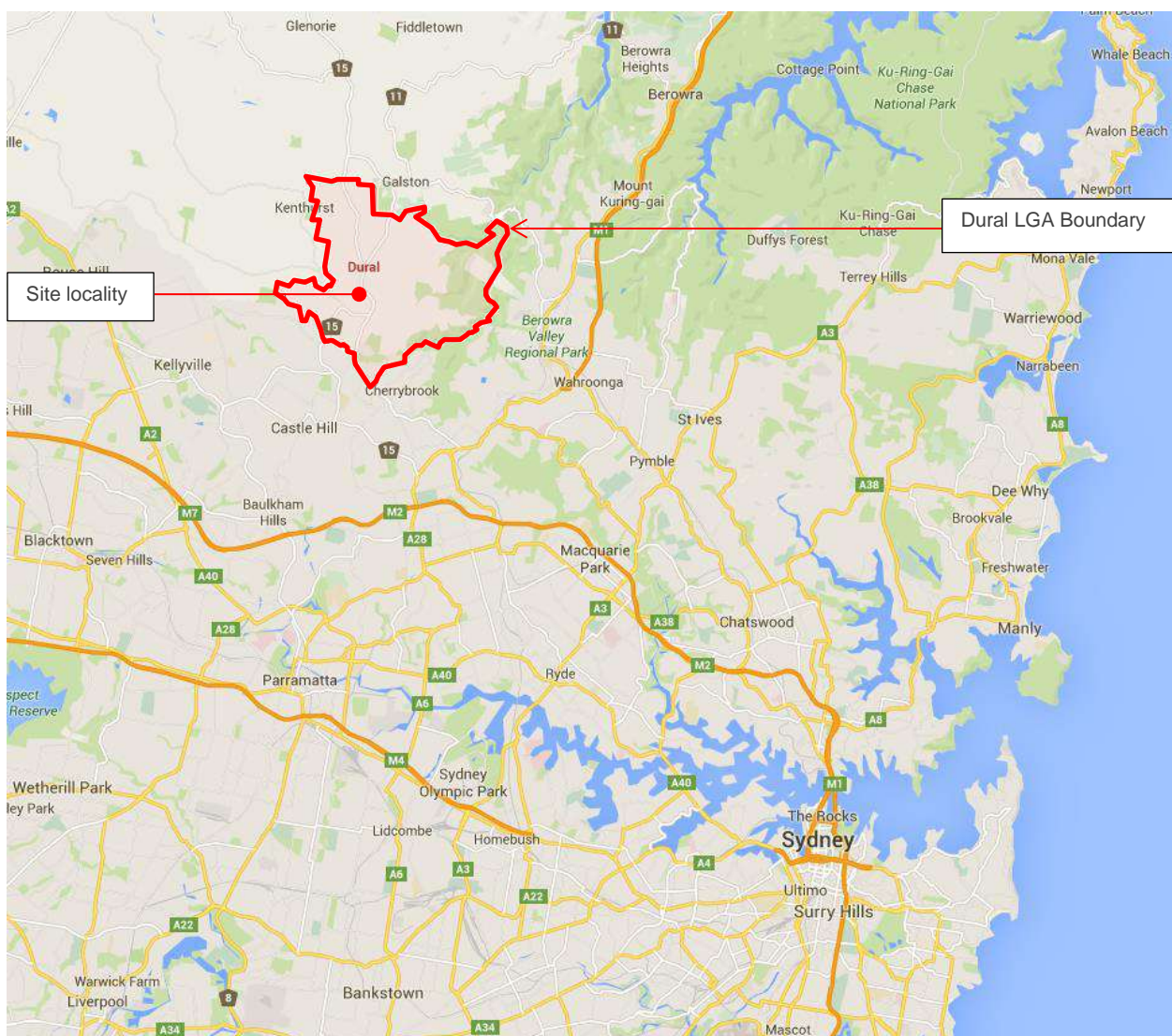
Reflective of the dominant cohorts (moving into and within the parents and homebuilders phase) combined with the delivery of rail infrastructure contributing to increased residential opportunities and densities, population is estimated to grow by 33.47% over the next 15 years to 2031, to 248, 899 people. 25.2% of this population will be aged between 55 and 85 +.

2.2. LOCAL CONTEXT

Dural covers an area of approximately 1,462 hectares (or 15km²) and in 2011 was home to 2,832 residents with a population density of 1.94 persons per hectare. In general, the population of Dural has remained stable since 2001 due to the limited residential land stock and release. 94% of residents in Dural are private owner/occupiers, with the majority of residents aged 35 to 49 falling within the service age group described as parents and homebuilders.

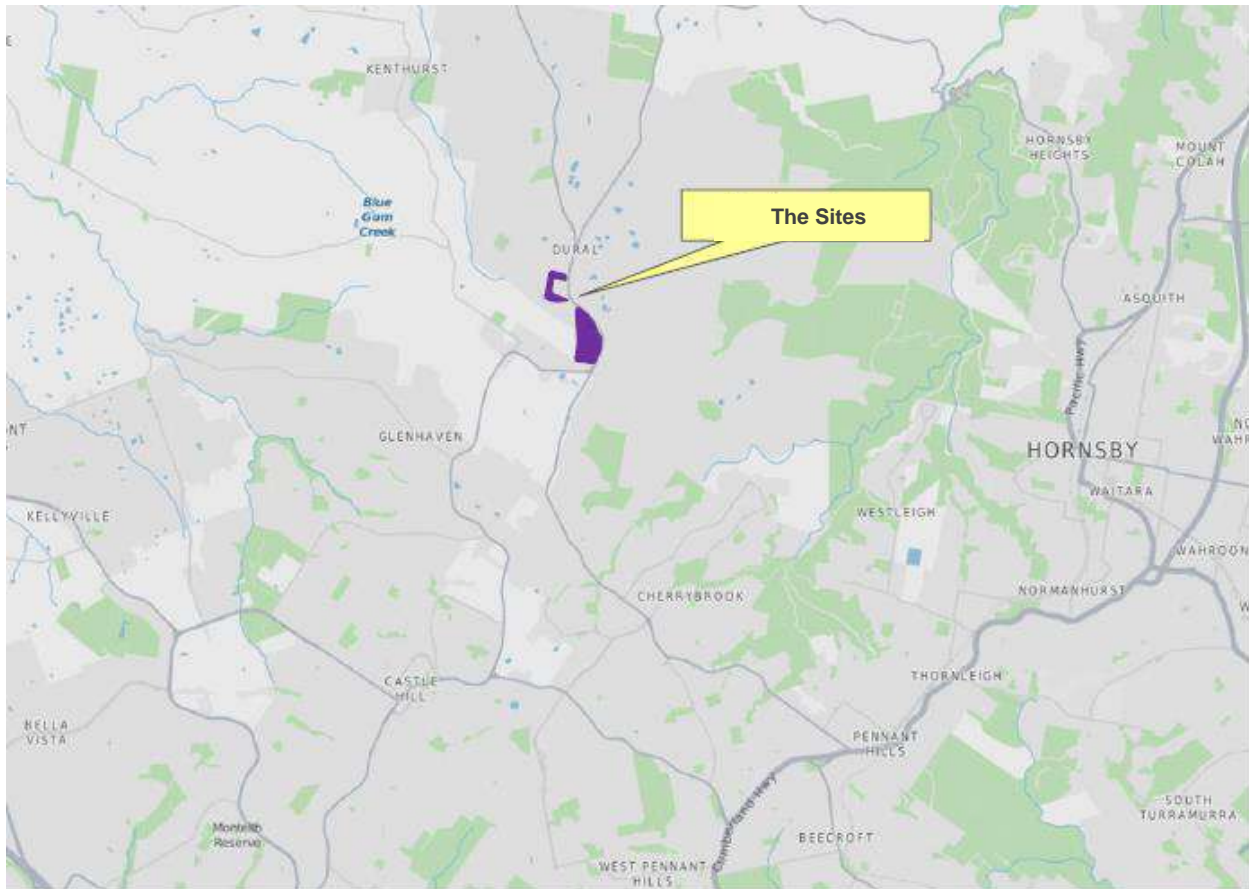
Rural land with the LGA is used mainly for hobby farms, nurseries and orchards, especially citrus fruits.

Figure 2 – Dural Locality Map (Source: www.google.com)



The immediate context of the land that makes up the northern and southern land holdings is shown in **Figure 5**. The prevailing context would be presently described as peri urban, reflecting a mix of urban and rural character, denoting the site and its surrounds as an area in transition.

Figure 3 – Regional Context of the Sites (Source: AECOM, 2016)



The sites are bookended by urban development forms, including Round Corner to the South and the Dural Neighbourhood Centre to the north. Both urban areas are presently being expanded by recent approvals for development and rezoning applications that will have transformative influences on built form character and density. Furthermore, the locality in the short to medium term will be influenced by significant planning proposals and Development Approvals that are being considered by The Hills and Hornsby Councils, including:

- Former Timber Yard;
- South Dural;
- Dural Service Centre; and
- The Cascades Development.

FORMER TIMBER YARD, OLD NORTHERN ROAD, DURAL

A Planning Proposal to rezone land at Nos. 582 and 582A Old Northern Road, Dural was submitted to The Hills Shire Council on 23 October 2014, seeking to rezone the land from RU6 Transition to R3 Medium Density Residential (7/2015/PLP). The location of the land subject of the proposal is shown in **Figure 4**

The Planning Proposal seeks to facilitate redevelopment of the site to deliver the following:

- Six (6) x two (2) bedroom townhouses;
- 47 x three (3) bedroom townhouses; and
- Four (4) x four (4) bedroom townhouses;

Future redevelopment under the current concept plan, will also deliver supporting areas of open space.

Figure 4 – Plans Relating to Old Northern Road Planning Proposal (Source: RTP,2016)



Picture 1 – Location of Site



Picture 2 – Concept Layout

SOUTH DURAL: PLANNING PROPOSAL

A Planning Proposal to rezone existing rural land for urban purposes as shown in **Figure 5** received Gateway Approval on 7 March 2014.

The objective of the proposal is to facilitate comprehensive redevelopment of the land for urban purposes, including residential and mixed use developments. The proposal includes employment uses and the delivery of new infrastructure to support anticipated growth. The proposal seeks to amend the local zoning maps as well minimum lot sizes and height of buildings to reflect a low density urban form.

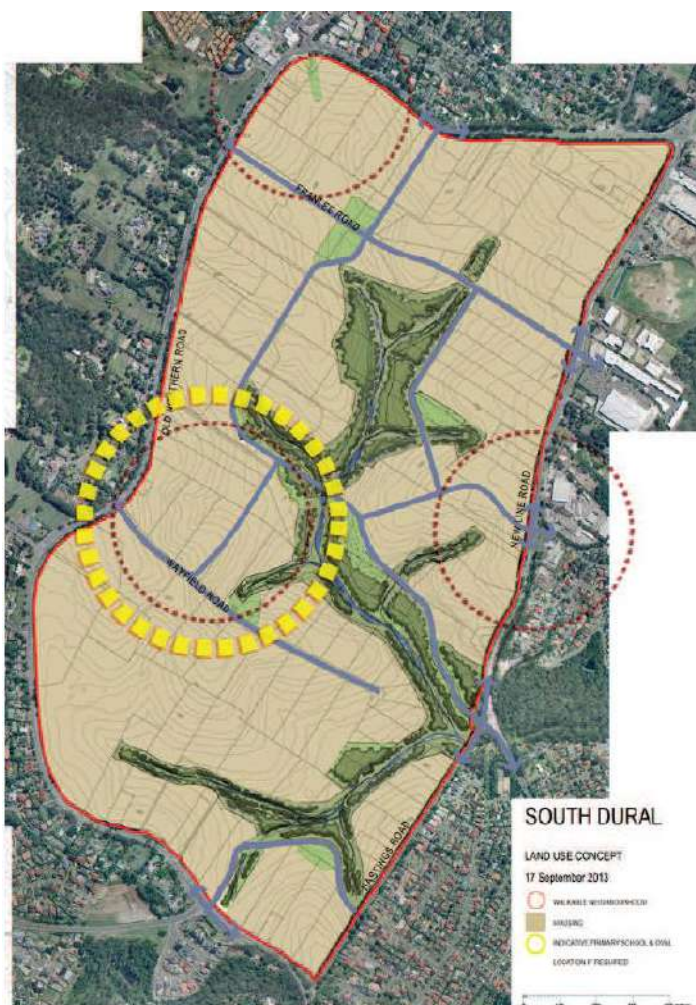
The South Dural Urban Investigation Area, Retail and Commercial Potential Report, prepared by Don Fox Planning (2008), submitted in support of the Planning Proposal indicates that the following the rezoning, future redevelopment could achieve:

- A maximum of 2,900 new residential dwellings; and
- Between 1,300m² and 3,000m² retail and commercial floor space (dependant on the delivery of a small supermarket).

The economic report indicated that the increase in residential density may also contribute to an increased demand in medical, child care and education services within the locality.

Despite the above figures (taken from the supporting Retail and Commercial Potential Report prepared by Don Fox Planning), the proposal, at the time of receiving Gateway Determination, was not supported by detailed plans stipulating the future potential yield with respect to dwellings numbers and non-residential floor space. A copy of the submitted concept plan, detailing the extent of land to which the proposal relates is provided at **Figure 5**. The proximity of the subject sites to the land, subject of the South Dural Planning Proposal is shown in **Figure 6**.

Figure 5 – South Dural: Indicative Concept Plan (Source: Shire Council Website)



DURAL SERVICE CENTRE: NEW LINE ROAD, DURAL

The Planning Proposal seeks to rezone the subject properties from IN2 Light Industrial to B2 Local Centre, in support of a retail development. No amendment was proposed for changes to the adopted building height (10.5 metres) and floor space ratio (0.7:1). The proposal envisages the expansion of the Dural Business Park to the south to facilitate the delivery of a new shopping centre including supermarket, medical centre and commercial space.

The proposal was reported to Hornsby Council on 13 April 2014 and received a recommendation of support for referral to the Department of Planning and Environment for Gateway Approval.

2.3. THE SITES

The land to which the Planning Proposal relates is made up of multiple individual land parcels that are broadly divided into the Northern and Southern Sites. The general location of these unconsolidated holdings is shown in **Figure 6** and summarised in **Table 1**.

Figure 6 – Aerial View of the Southern and Northern Sites and Surrounding Context (Source: Urbis, 2016)

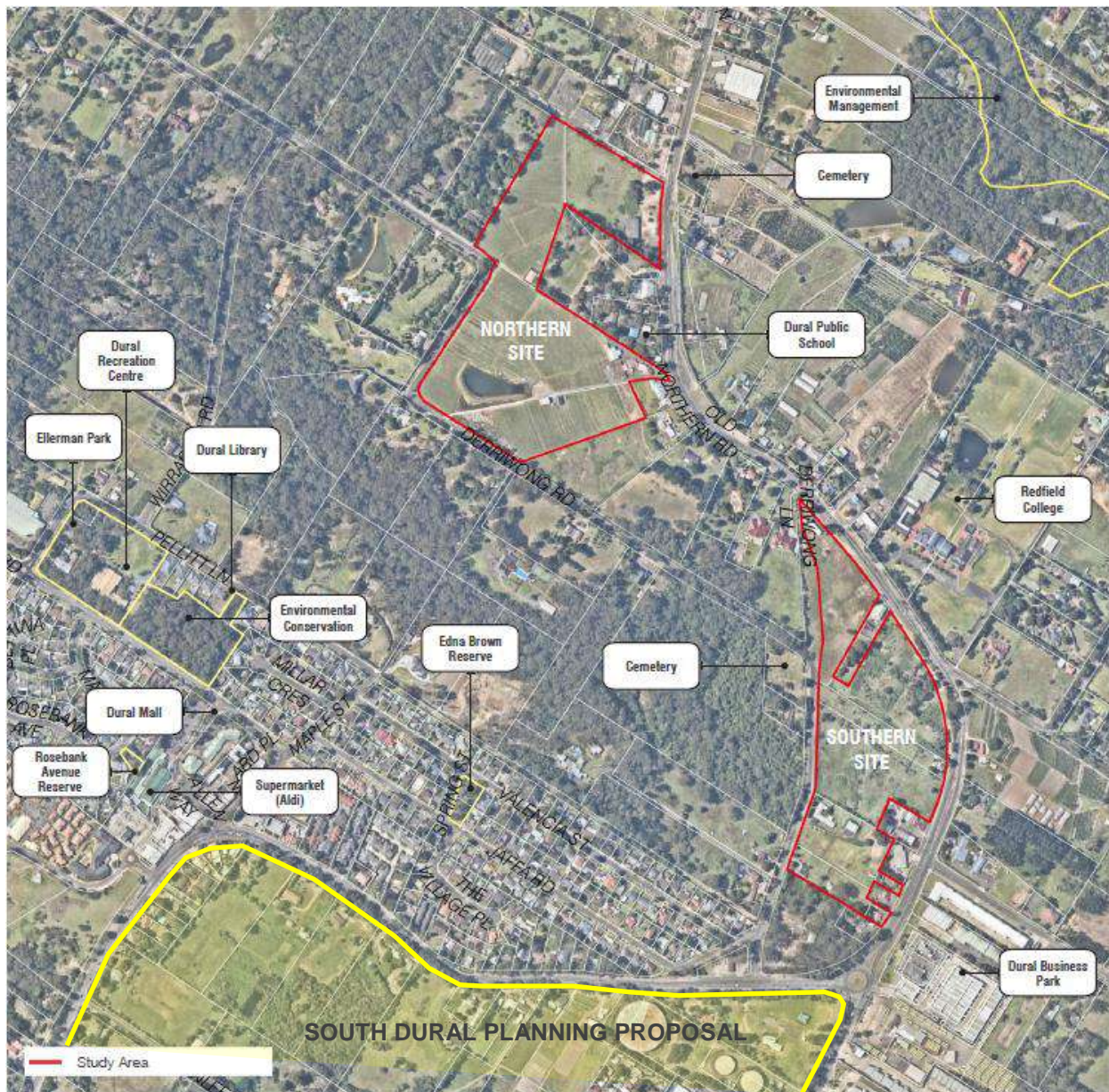


Table 1 – Summary of Landholdings

Northern Site	Southern Site
626 Old Northern Road, legally described as Lot 2 in DP 541329 (2.023 hectares)	606 Old Northern Road, legally described as Lot 1 in DP73652 (1.622 hectares)
27 Derriwong Road, legally described as Lot 9 in DP237576 (2.025 hectares)	602 Old Northern Road, legally described as Lot 1 in DP 656036 (1.967 hectares)
618 Old Northern Road, legally described as Lot X in DP 501233 (4.777 hectares)	600A Old Northern Road, legally described as Lot 101 in DP713628 (6,331m ²)
21 Derriwong Road, legally described as Lot 2 in DP567995 (2.023 hectares)	600 Old Northern Road, legally described as Lot 100 in DP 713628 (2.211 hectares)
	5 Derriwong Road (also described as 586 Old Northern Road), legally described as Lot 11 DP866560 (6,024m ²).
	7 Derriwong Road, legally described as Lot 12 in DP 866560 (1.211 ha)
	590 Old Northern Road, legally described as Lot D in DP38097 and Lot D in DP39261 (859.9m ²)
	584 Old Northern Road, legally described as Lot 1 DP660184 (746.1m ²)
Total area: 10.848 hectares (108,480m²)	Total area: 10.617 hectares (106,171m²)

2.3.1. Topography

The northern site slopes away from Old Northern Road towards Derriwong with a variable gradient ranging from 6-8%. While the southern site also has south, southwest slope away from Old Northern Road towards Derriwong the gradient is much lower ranging between 3-5%.

A detailed survey showing local landform of each of the lots is provided at **Appendix I**.

2.3.2. Hydrology

SURFACE WATER FLOW

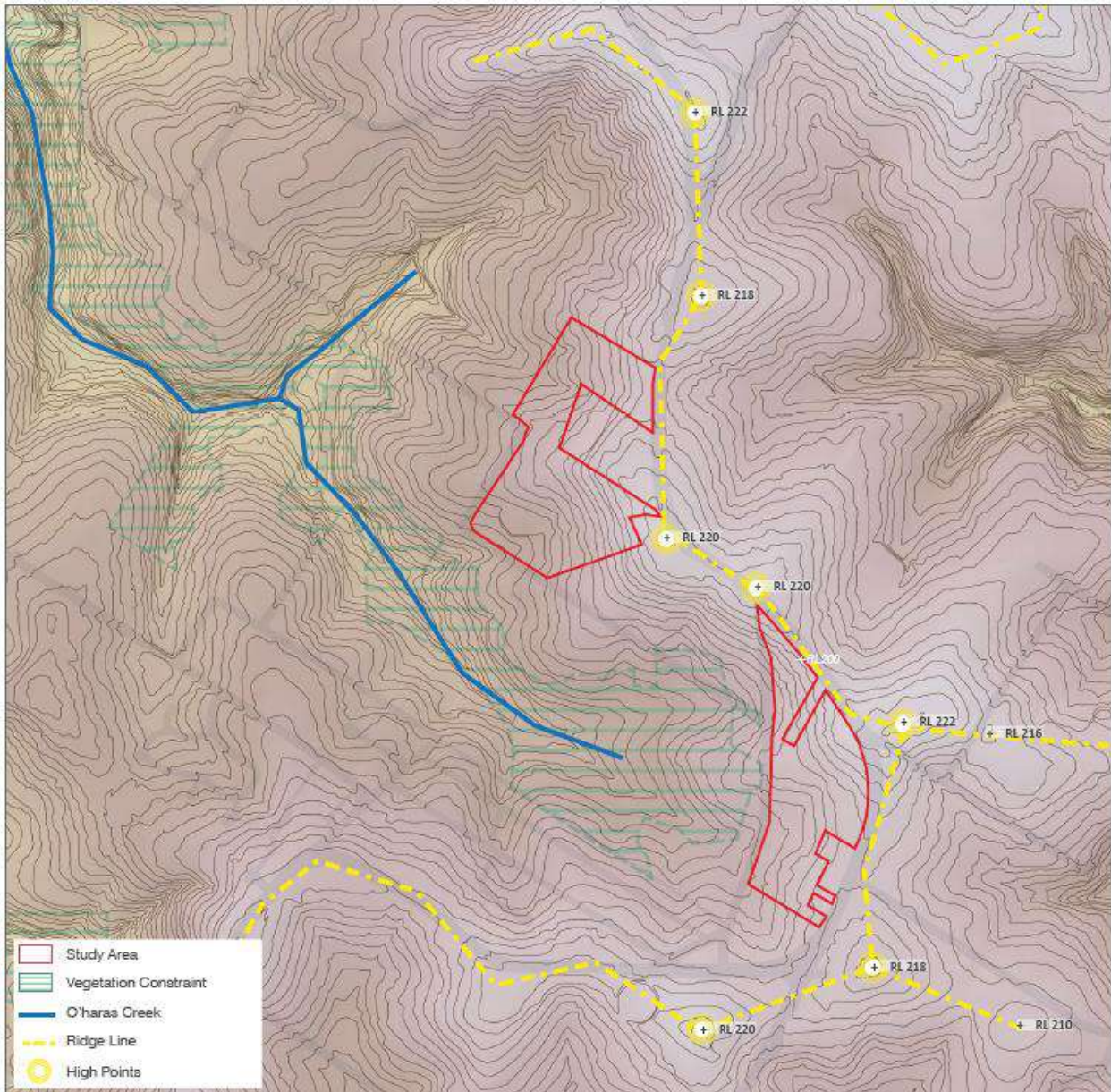
As outlined in section 2.2.1 the land generally slopes away from Old Northern Road in a west, south west direction towards the natural drainage lines and permanent water courses.

Eco Logical Australia have undertaken an assessment of the sites and the surrounding lands, identifying that several tributaries of the O'Hara Creek drain away from the sites and converge at the O'Hara Creek to the west and south-west of the site. O'Hara's Creek is identified as a major creek line by Eco Logical (refer to **Appendix D**), the creek flows in a north-west direction (**Figure 7**) and is buffered by existing and established native vegetation refer to **Figure 8**).

GROUNDWATER FLOWS

The presence of groundwater flows is anticipated given the presence of a series of streams and creek lines within the immediate context of the sites. ADE Consulting (**Appendix G**) anticipates that local groundwater is likely to flow in a westerly direction towards O'Hara Creek which is located approximately 200 metres to the west, flowing south to north.

Figure 7 – Local Topography and Hydrology Lines



2.3.3. Local Geology

SOILS

ADE Consulting Group have undertaken preliminary site investigations and determined that the sites are located on a Glenorie Soil Landscape (gn) as indicated on the Sydney Soil Landscape Map prepared by the Soil Conservation Services of NSW.

The geology of the Glenorie Soil Landscape is underlain by Wianamatta Group Ashfield Shale and Bringelly Shale formations. The Ashfield Shale is comprised of laminate and dark grey shale. Bringelly Shale consists of shale, calcareous claystone, laminate and fine to medium grained lithic-quartz stone.

Soils are shallow to moderately deep (< 100cm) with variability across upper slopes and drainage gullies. The topsoil (A1 Horizon) consists of a friable dark brown loam, with moderately to strongly pedal structure, pedal single-grained structure and porous sandy fabric. The pH ranges from strongly acid (pH 4.0) to slightly acid (pH 6.0).

Beneath this layer occurs the B Horizon consisting of hard setting clay loam. The pH ranges between strongly acid (pH 4.0) to slightly acid (pH 6.5). The B Horizon is brown strongly pedal medium clay. The pH

varies from strongly acid (pH 4.5) to moderately acid (pH 6.5). Strongly weathered sandstone fragments are common. Roots and charcoal fragments are rare.

It should be noted that the area occurs close to a transition between Glenorie and Lucas Heights soil landscapes and therefore transitional phases may occur and vary depending on the exact location.

ACID SULPHATE SOILS

The sites are identified on the adopted planning maps as low risk and unlikely to contain acid sulphate soils.

2.3.4. Flora and Fauna

The sites have been substantially cleared and consist mainly of grassed land that is currently unutilised for any agricultural purposes.

Land to the south, forming the riparian lands, around the O'Hara's Creek line and tributaries contain significant areas of vegetation.

2.3.4.1. Flora (Species and Vegetation Communities)

Assessment of existing vegetation mapping was undertaken by Eco Logical Australia and ground-truthed by site inspections of land subject of this proposal. Land adjacent to and surrounding the sites subject of the proposal was also the subject of desk top review.

Eco Logical concludes that while the majority of the site has been substantially modified to support historical use as market gardens, pockets of native vegetation are present both on the site and on land adjacent and surrounding. The distribution of identified vegetation communities is shown in **Figure 8**.

The majority of all the sites, subject of this proposal, support exotic species with the notable exception of:

- Sporadic patches in the southern lot that contains *Eucalyptus saligna* (Sydney Blue Gum), including mature specimens and regenerating saplings. *Eucalyptus saligna* (Sydney Blue Gum) is a key diagnostic species of the Blue Gum High Forest (BGHF) listed as a critically endangered ecological community under the *Threatened Species Conservation Act 1995* (TSC Act).
- A small linear patch of Sydney Turpentine Ironbark Forest (STIF) located in the northern site along the western boundary to Derriwong Road. STIF is listed as an endangered ecological Community under the TSC Act.

Land within the broader study area may also support STIF and BGHF, indicated by the presence of key characteristic species such as *Syncarpia glomulifera* (Turpentine) and *Eucalyptus saligna*. Refer to **Figure 8**.

Despite the presence of protected vegetation communities, no individual threatened flora species were recorded.

2.3.4.2. Fauna

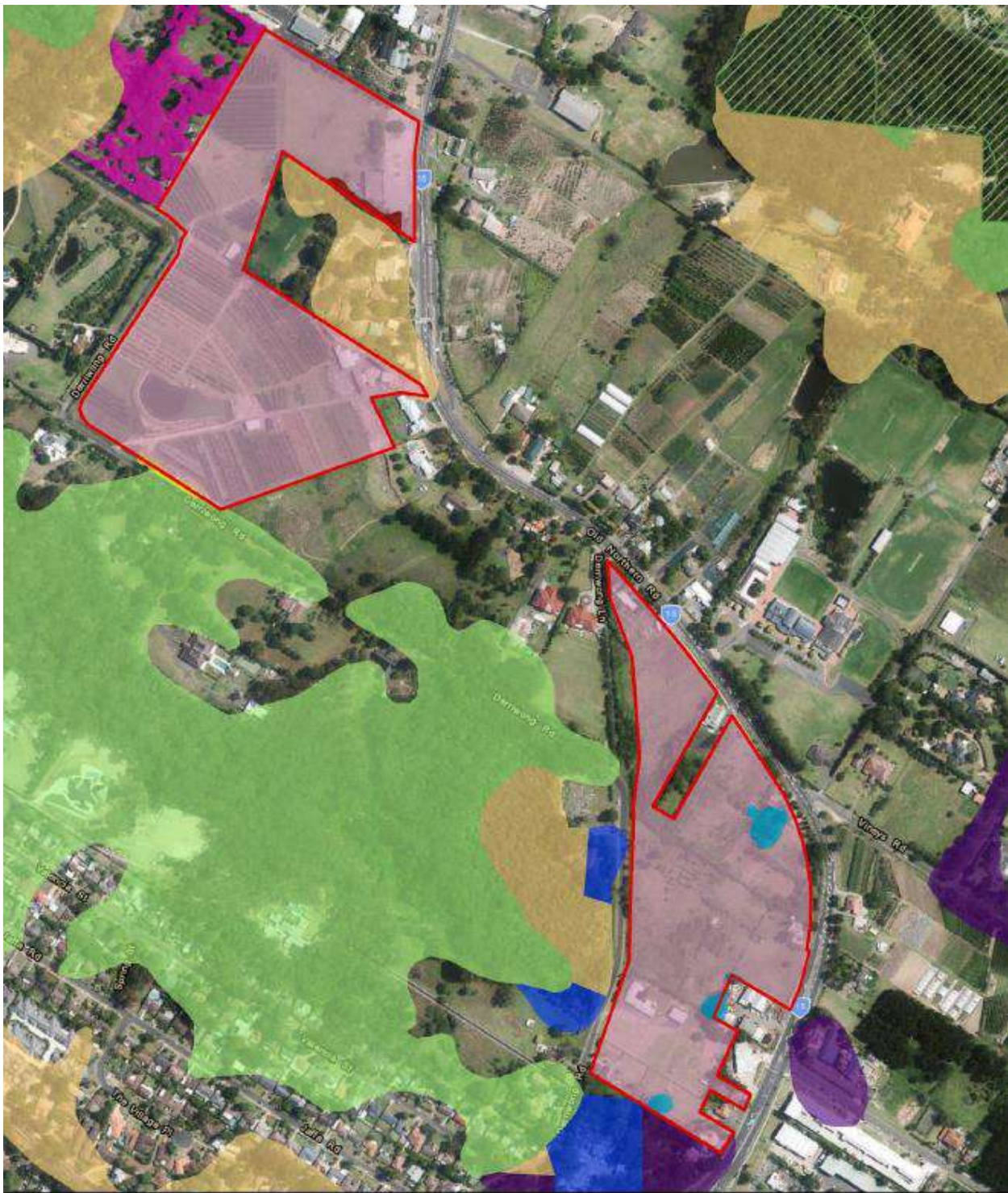
Eco Logical having undertaken a high level mapping assessment of vegetation combined with field validation determining that the site contains limited faunal habitat or foraging availability owing to:

- Limited availability (presence) of farm dams, canopy and hollow bearing trees recorded within the sites;
- Limited presence of native species in the under or canopy storey layers limiting the generation of leaf litter and woody debris to provide faunal habitat.

Consequently the site is unlikely to support significant permanent faunal species communities and where present they are likely to be highly mobile, such as threatened micro bats and birds (such as Little Eagle) that may utilise the area for occasional foraging and roosting.

Notwithstanding, during the site inspection Ecological recorded one migratory species, *Ardea ibis* (Cattle Egret) foraging on the site with livestock. The species is listed under the *Environmental Biodiversity Conservation Act 2000* as being present on the site and is common in disturbed environments.

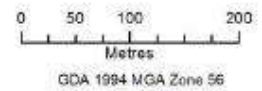
Figure 8 – Distribution of Vegetation Communities (Ecological Report, November, 2015)



Legend

- Subject Site
- Validated Vegetation (ELA 2015/2016)**
- Blue Gum High Forest (low condition)
- Exotics
- Native Planted
- Sydney Turpentine Ironbark Forest

- THSC 2008**
- Sydney Turpentine Ironbark Forest
- NPWS 2002**
- Blue Gum High Forest
- Sydney Turpentine Ironbark Forest
- Turpentine-Ironbark Margin Forest
- Western Sandstone Gully Forest
- Unclassified Vegetation



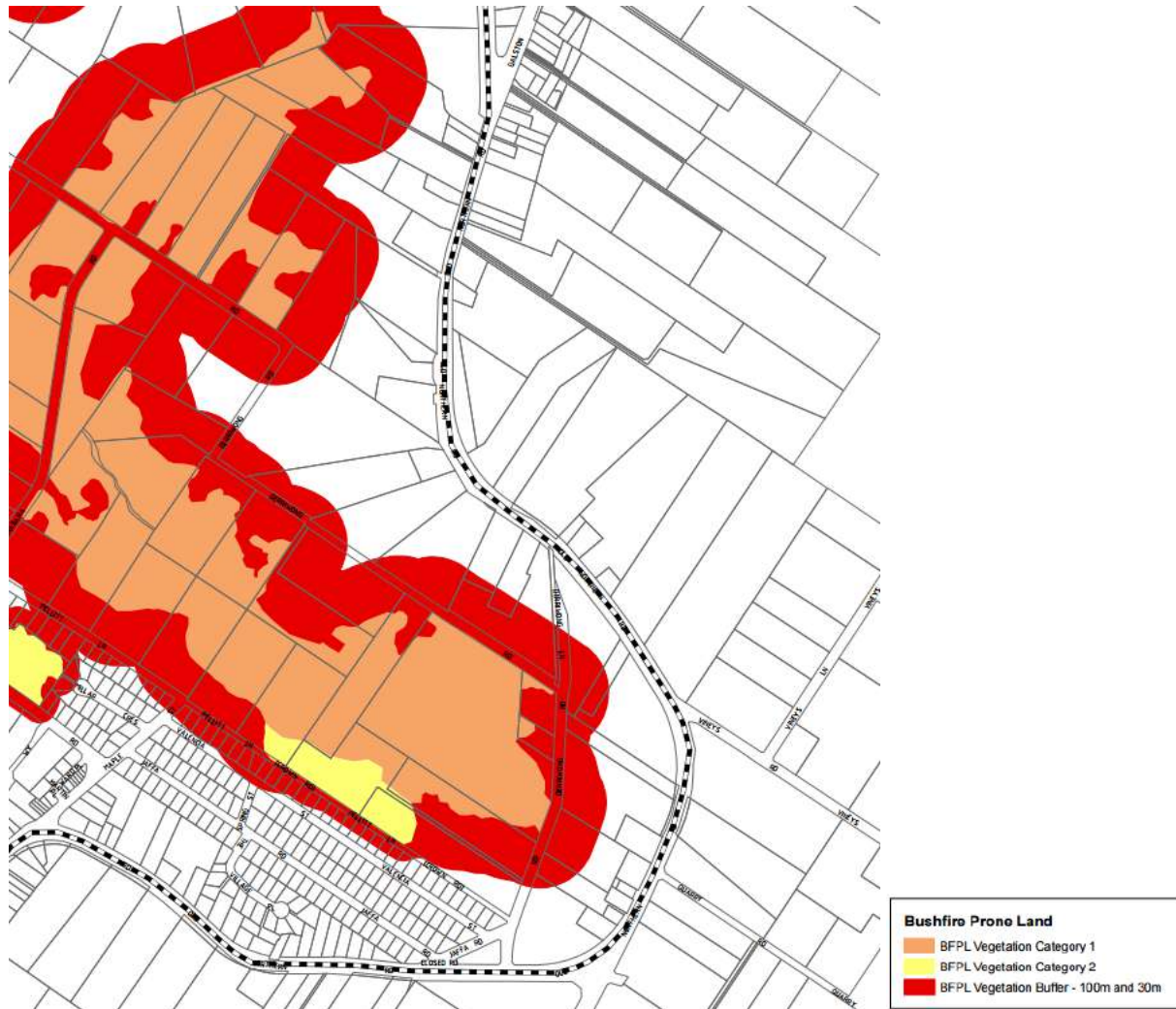
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www.ecoaus.com.au
 Prepared by: BHVH Date: 19/02/2016

2.3.5. Bushfire

The land is identified as being located within the vegetation buffer (100 metres and 30 metres) on Council's adopted bushfire prone land planning maps (**Figure 9**).

Figure 9 – Extract of Bushfire Planning Map (Source: Hills Shire Council)



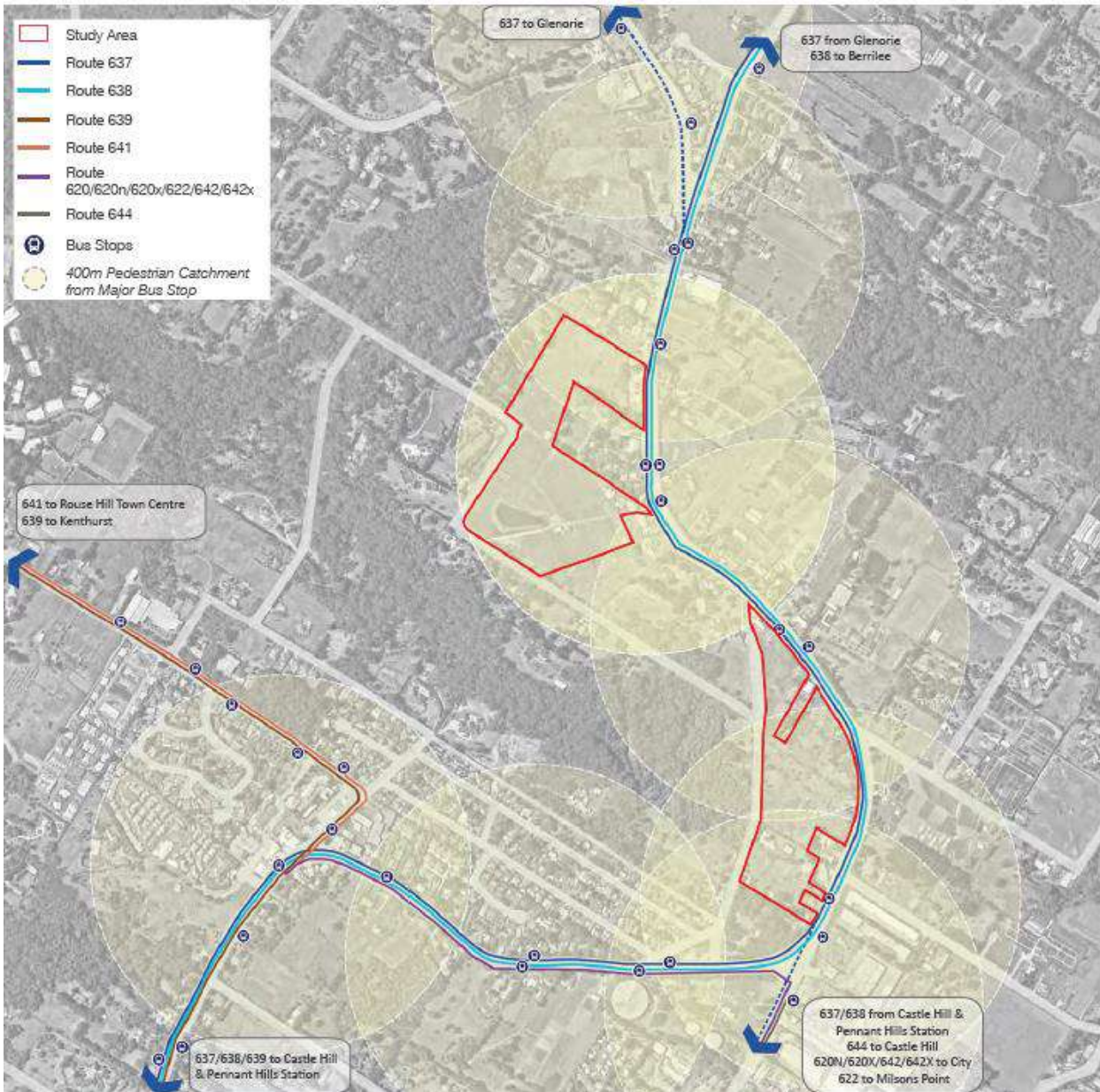
2.3.6. Access and Movement

2.3.6.1. Public Transport

The sites are accessible via public transport, with regular bus services available along Old Northern Road. Both sites are immediately adjacent to the north bound service stop with south bound services available on the opposite side of Old Northern Road accessible via the pedestrian over pass or traffic controlled intersection. South bound services connect to Pennant Hills and Castel Hill. While north bound service connect to Glenorie.

The location of bus stops along Old Northern Road in relation to the sites is shown in **Figure 10**.

Figure 10 – Public Transport Connections and Routes Servicing the Sites

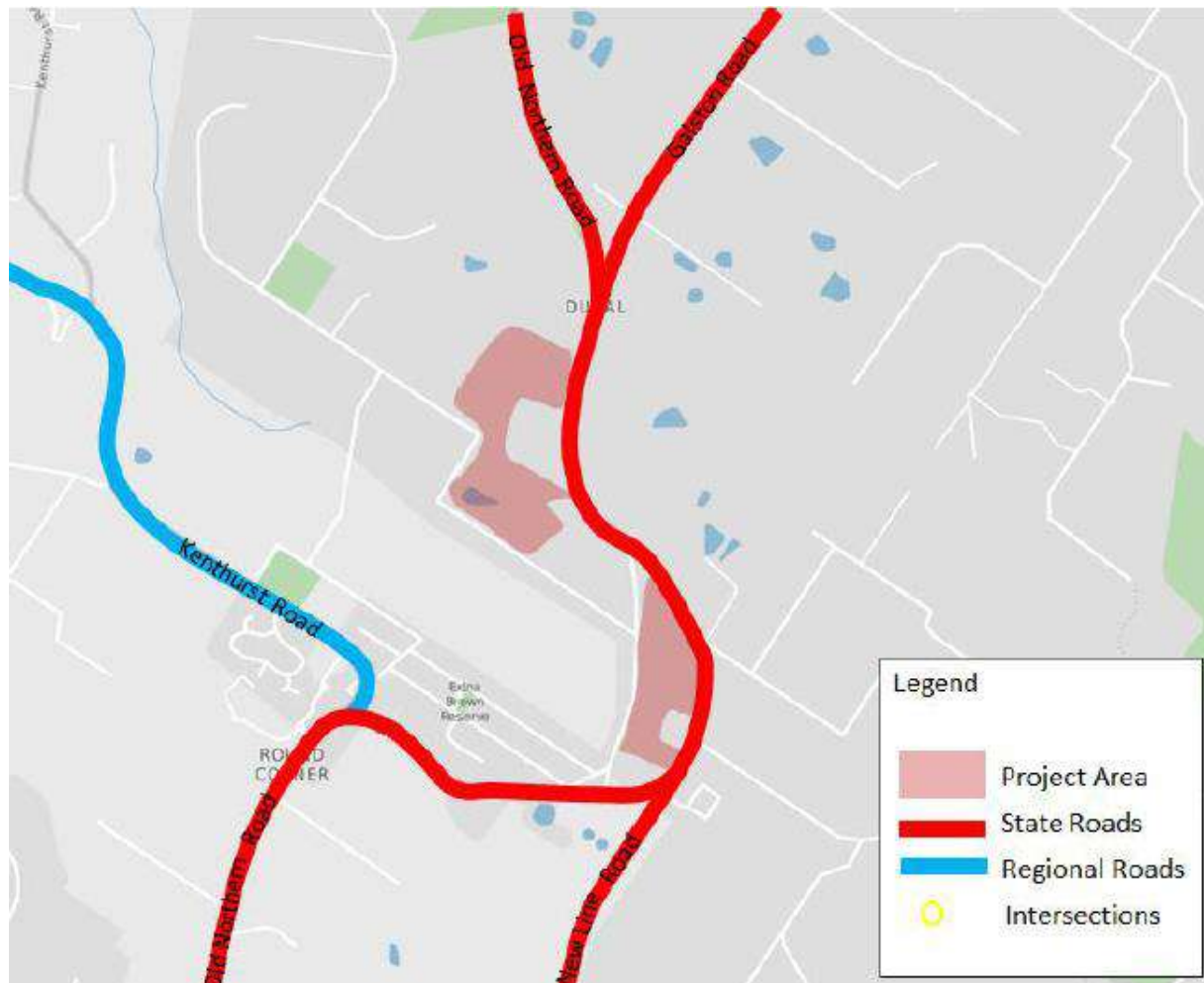


2.3.6.2. Vehicle Access

The existing local road network currently supports the following vehicle access, egress and movements:

- **Old Northern Road/New Line Road:** A two way, classified road, serving and the main vehicle movement route into and out of Dural and connecting the sites to Round Corner and Dural Centres.
- **Derriwong Road** is a minor two way collector/local road to the west of the sites that is accessed via Old Northern Road.

Figure 11 – Existing Road Network (Source: AECOM, 2016)

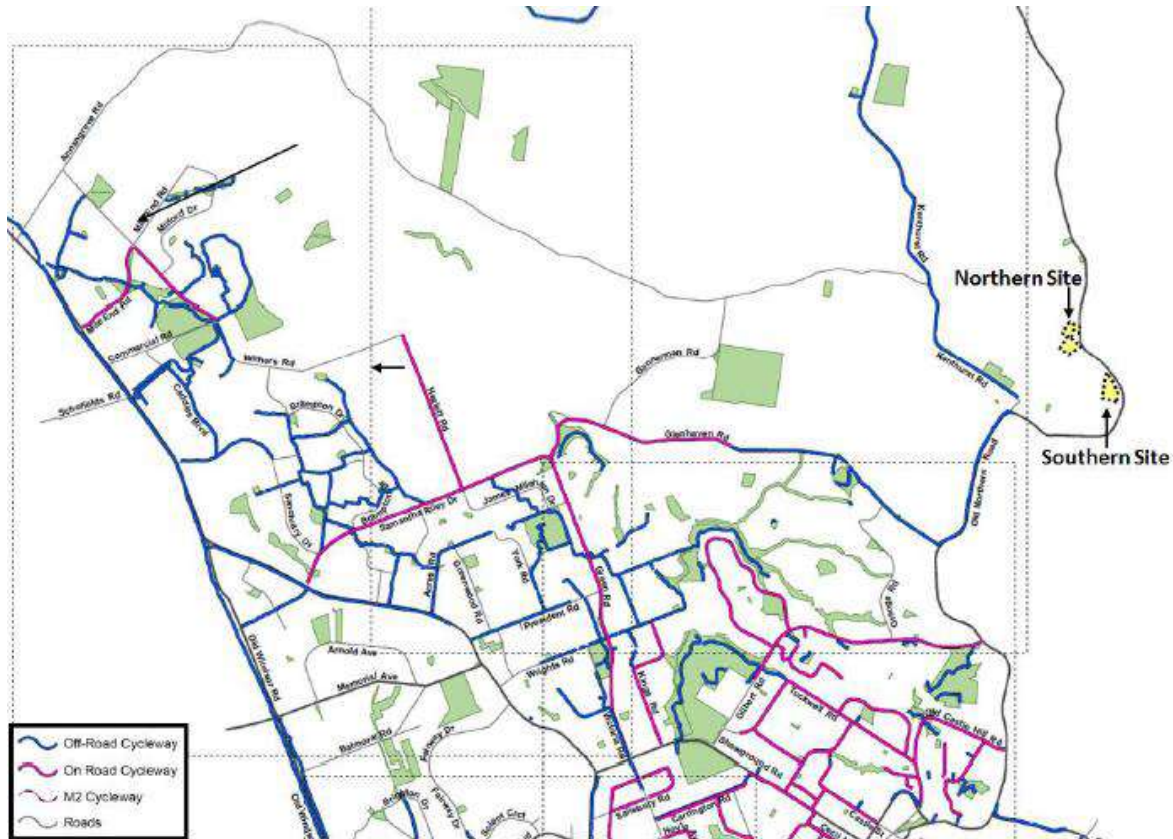


2.3.6.3. Pedestrian and Cycleway Access

Formal pedestrian footpaths are provided along the western side of Old Northern Road, connecting the sited to Round Corner in the south and the Memorial Hall and Dural Public School to the north. There is currently no footpath provision on Derriwong Road.

An extensive cycleway network is available, on road and off throughout the Hills extending throughout Dural including the sites (**Figure 12**).

Figure 12 – Existing Cycle Way Routes (Source: AECOM, 2016)



Source: Hills Shire Council Cycleways map.

2.3.7. Social Infrastructure

The sites are located between two (2) urban centres, Round Corner to the south and the Dural Neighbourhood Centre to the north. These urban centres offer a range of services including:

- Banking institution (Commonwealth Bank Branch);
- Post office;
- A range of specialty retail premises; and
- Supermarket.

Beyond the urban, retail and commercial centres, the sites are well located with respect to local schools including, Dural Public School, Redfield College, The Hills Grammar and Pacific Hills Christian School.

2.3.8. Services and Utilities

Preliminary investigations into the availability of services and utilities have been undertaken by AT&L (**Appendix H**) and Arup (**Appendix I**). The investigations identified the following:

- Water services are available within the area to service the sites;
- The land is not presently serviced by sewer mains, existing services south of the site will need to be extended (and potentially) upgraded to support the new residential development and increased density;
- Electricity is available to the site, the utility can be upgraded to meet anticipate additional loads.
- Gas is currently available within the area, by Jemena.
- Telecommunications cables are currently available.
- Owing to the current rural character of the site, there is limited formal infrastructure within the sites. Each is capable of gravity drainage to an adjacent street that connects to the existing Council stormwater system.

3. CURRENT PLANNING CONTROLS

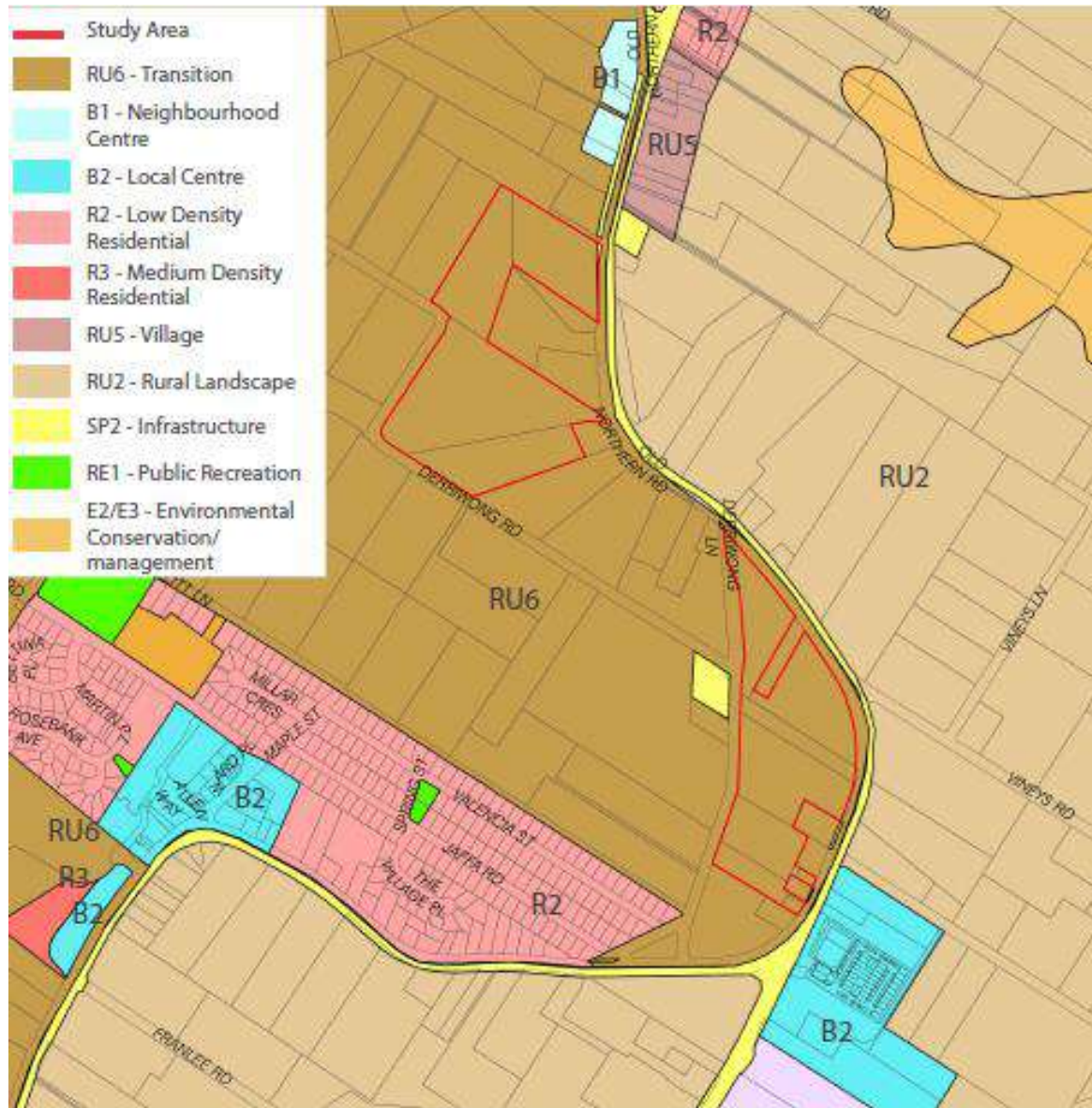
3.1. THE HILLS LOCAL ENVIRONMENTAL PLAN 2012

The following clauses of *The Hills Local Environmental Plan 2012* (THLEP 2012) are relevant to the land and the proposed amendments.

3.1.1. Zoning and Land Use

As shown in **Figure 13** the site is currently zoned RU6 Transition.

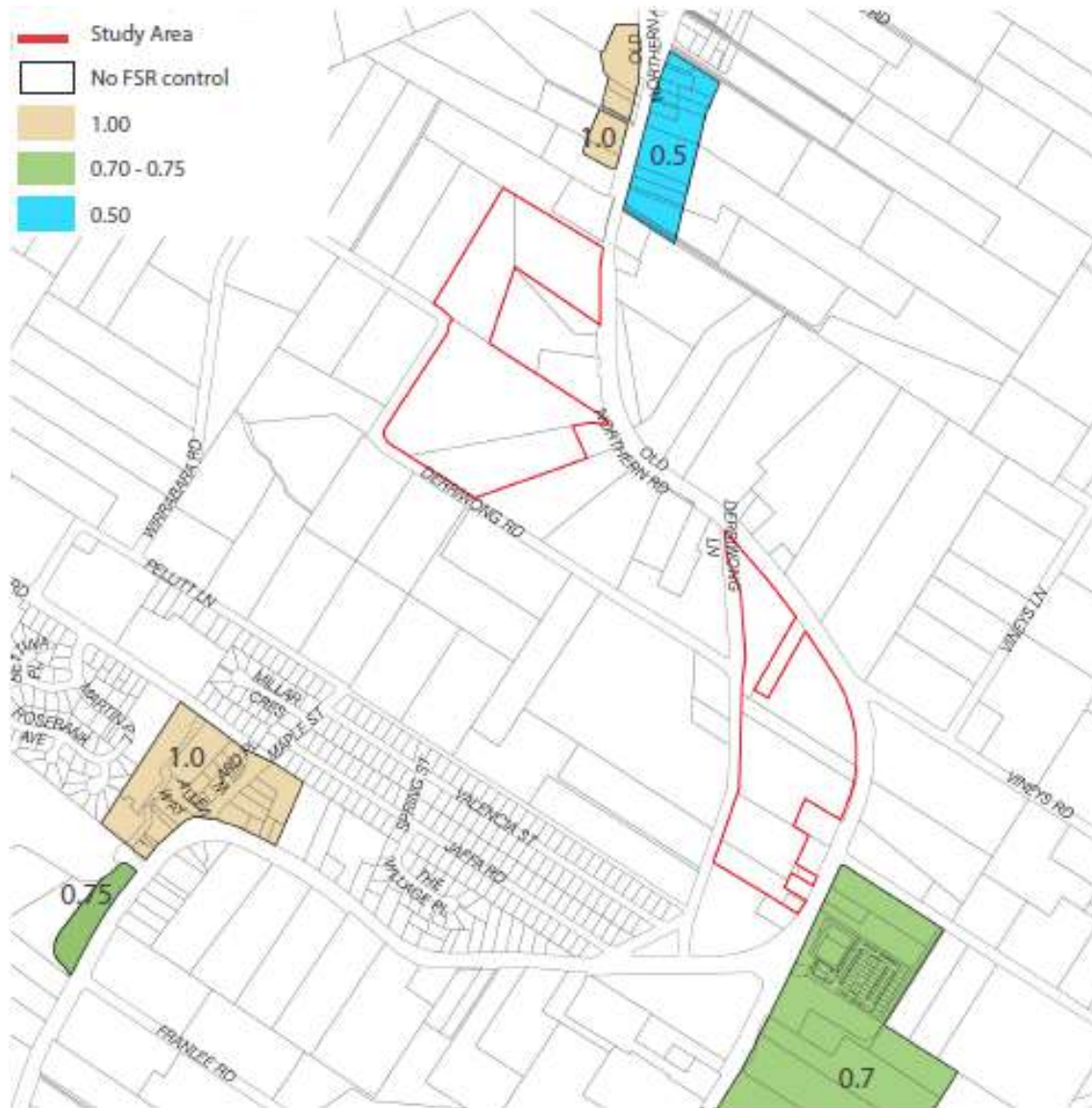
Figure 13 – Extract of LEP 2012 Zoning Map Showing Location of the Sites



3.1.2. Floor Space Ratio

As shown in **Figure 14** land for residential purposes is unconstrained by FSR controls, land within the B2 Local Centre is subject to a maximum FSR of 0.5:1.

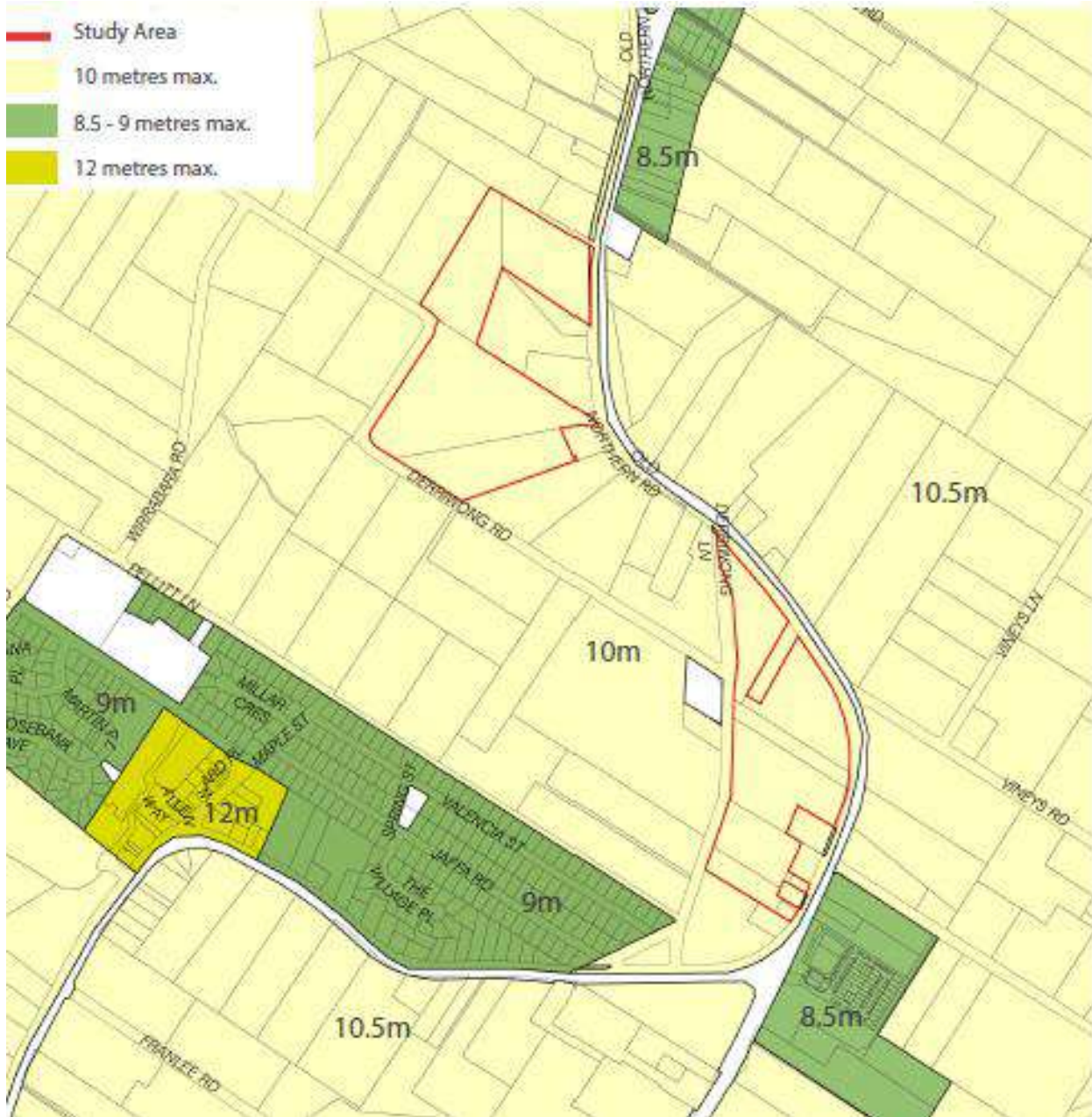
Figure 14 – Existing FSR Planning Map



3.1.3. Height of Buildings

The Height of Buildings planning map permits buildings up to 10 metres on the sites. Urban land to the south of the site in Round Corner Town Centre is permitted building of between 8.5 metres and 12.0 metres in height, with the variable heights reflecting the change in land use with higher building forms up to 12 metres permitted on land zoned B2 Local Centre.

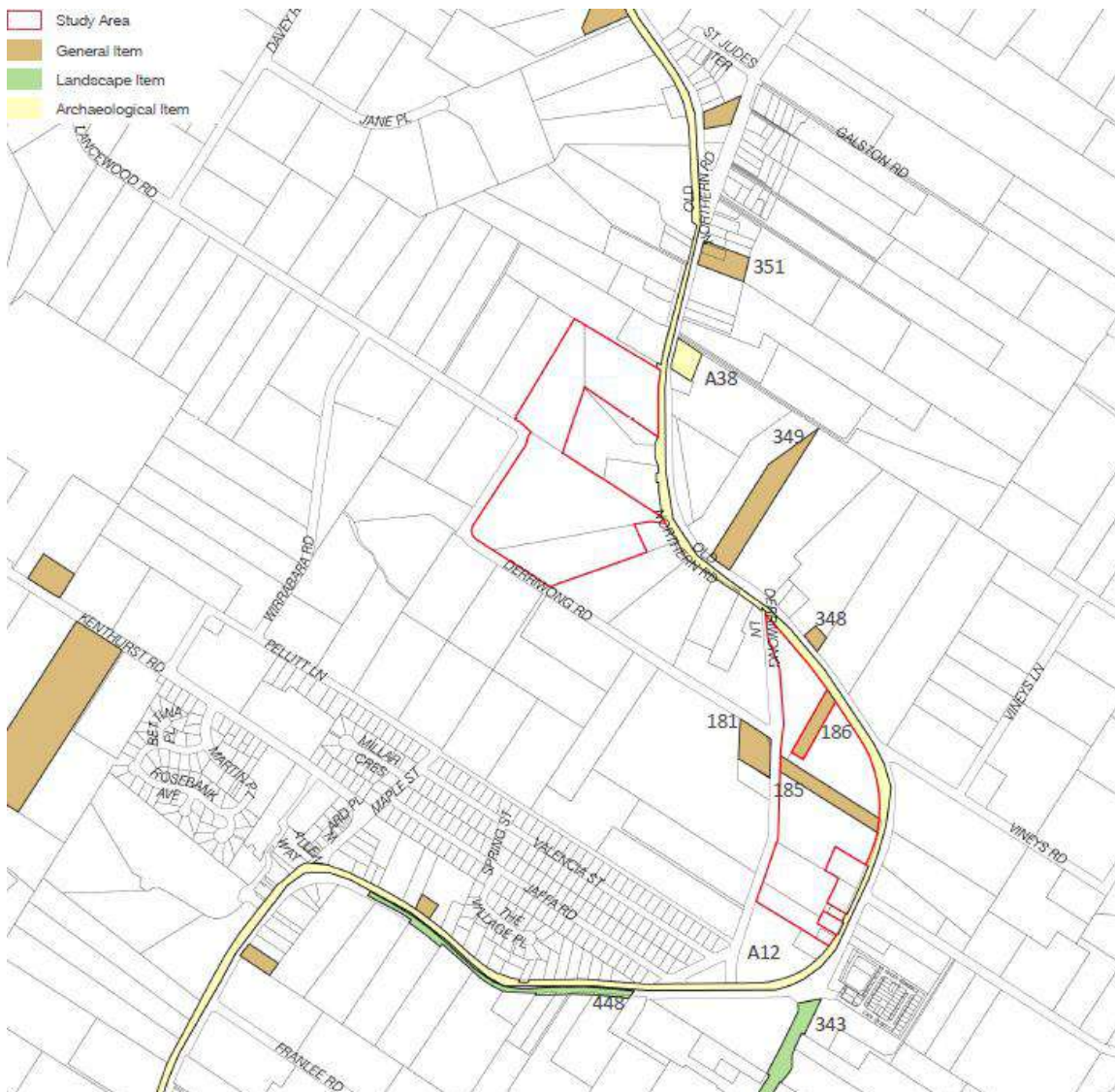
Figure 15 – Existing Height of Building Map



3.1.4. Heritage

The site is located within proximity five (5) identified heritage items within and immediately adjacent to the sites, as well as Old Northern Road extending along the eastern boundary, listed as an item of archaeological significance. The Planning Proposal does not seek to amend the heritage planning map.

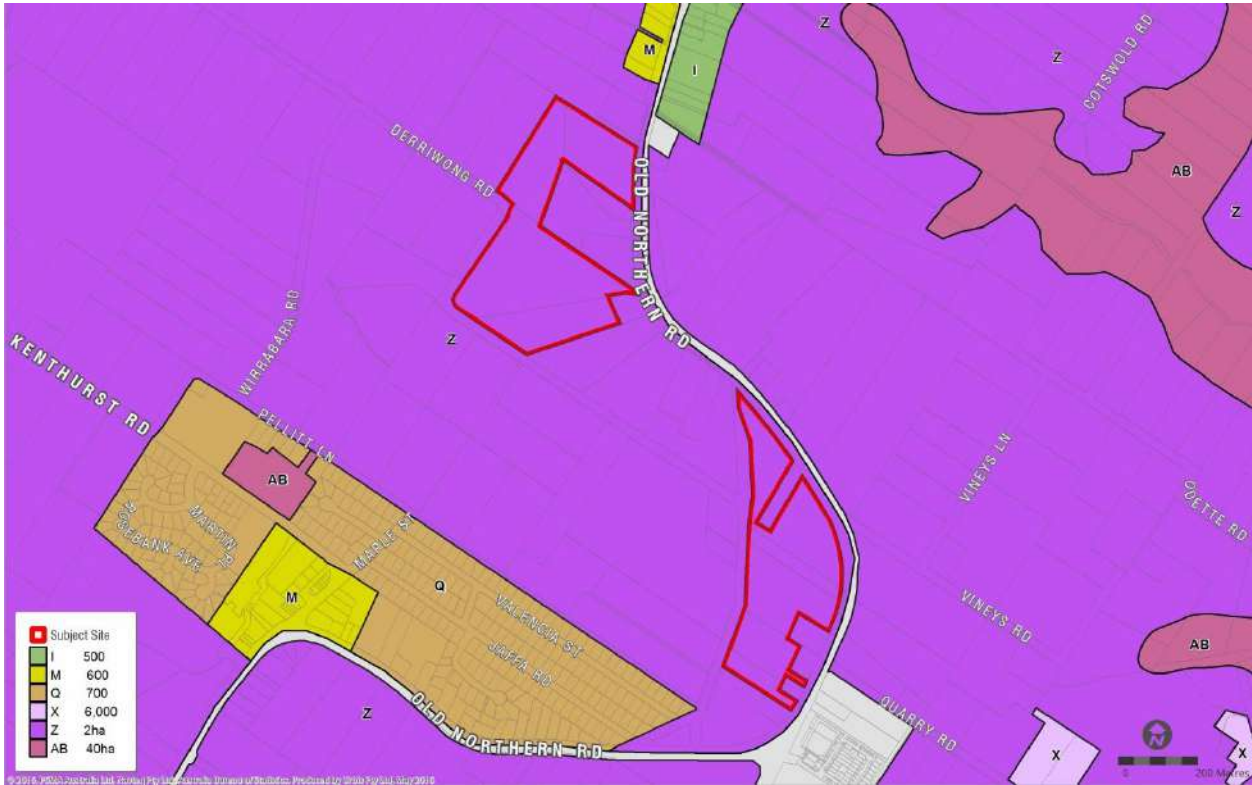
Figure 16 – Heritage Planning Map THLEP 2012 and HELP 2013



3.1.5. Minimum Lot Size

The minimum lot size applying to the land is 2 ha (2,000m²). Land to the south of the site in Round Corner is permitted to be a minimum of between 600m² and 700m². Increase density, reflected in the reduction of minimum lots sizes to 600m² is permitted within the Round Corner Town Centre and Dural Neighbourhood Centres where land is zoned B2 Local Centre and B1 Neighbourhood Centre. Refer to **Figure 17**.

Figure 17 – Existing Minimum Lot Size Map



4. THE PLANNING PROPOSAL

This Planning Proposal has been prepared in accordance with Section 55 of the *Environmental Planning and Assessment Act 1979* with consideration of the Department of Planning and Environment's *A guide to preparing planning proposals* dated August 2016.

The Planning Proposal is addressed in the following six (6) parts:

- **Part 1:** A statement of the objectives and intended outcomes of the proposed instrument;
- **Part 2:** An explanation of the provisions that are to be included in the proposed instrument;
- **Part 3:** The justification for those objectives, outcomes and the process for their implementation;
- **Part 4:** Mapping;
- **Part 5:** Details of community consultation that is to be undertaken for the planning proposal;
- **Part 6:** Project Timeline.

Discussion for each of the above parts is outlined in the following sections.

PART 1 – OBJECTIVES AND INTENDED OUTCOMES

OBJECTIVES

The primary objectives of the Planning Proposal specific to the site are as follows:

- Rezone the land from rural to urban purposes to allow for the delivery of low density residential lots;
- Support orderly and economic use of otherwise underutilised rural land;
- Provide a height control that responds appropriately to the variable development forms while ensuring compatibility with the context the transitioning context;
- Deliver a suitable urban layout and structure that will provide for future and logical connections with existing and future urban land, allowing for improved permeability;
- Improve the access and safety of vehicle movements around the existing Dural Public School;
- Ensure that new development is appropriate to the surrounding and likely future built form context and provides an acceptable transition the (new) rural edge; and
- Ensure that the development provides an appropriate relationship to and protection of existing heritage items.

INTENDED OUTCOMES

The intended outcomes of the Planning Proposal are as follows:

- To rezone the land from rural to urban to facilitate the delivery of increased residential density; and
- Amend the appropriate development standard maps, for height of buildings and minimum lot size shown at Part 2 of this Planning Proposal.

The intended overall outcome of the Planning Proposal is to facilitate the redevelopment of the site to accommodate low density residential uses which will aid in meeting housing demand and whilst also contributing to housing diversity within the locality. In doing so, the proposal will contribute to the NSW State Government's vision to increase the delivery of housing within proximity to existing centres aimed at strengthening their economic viability and growth.

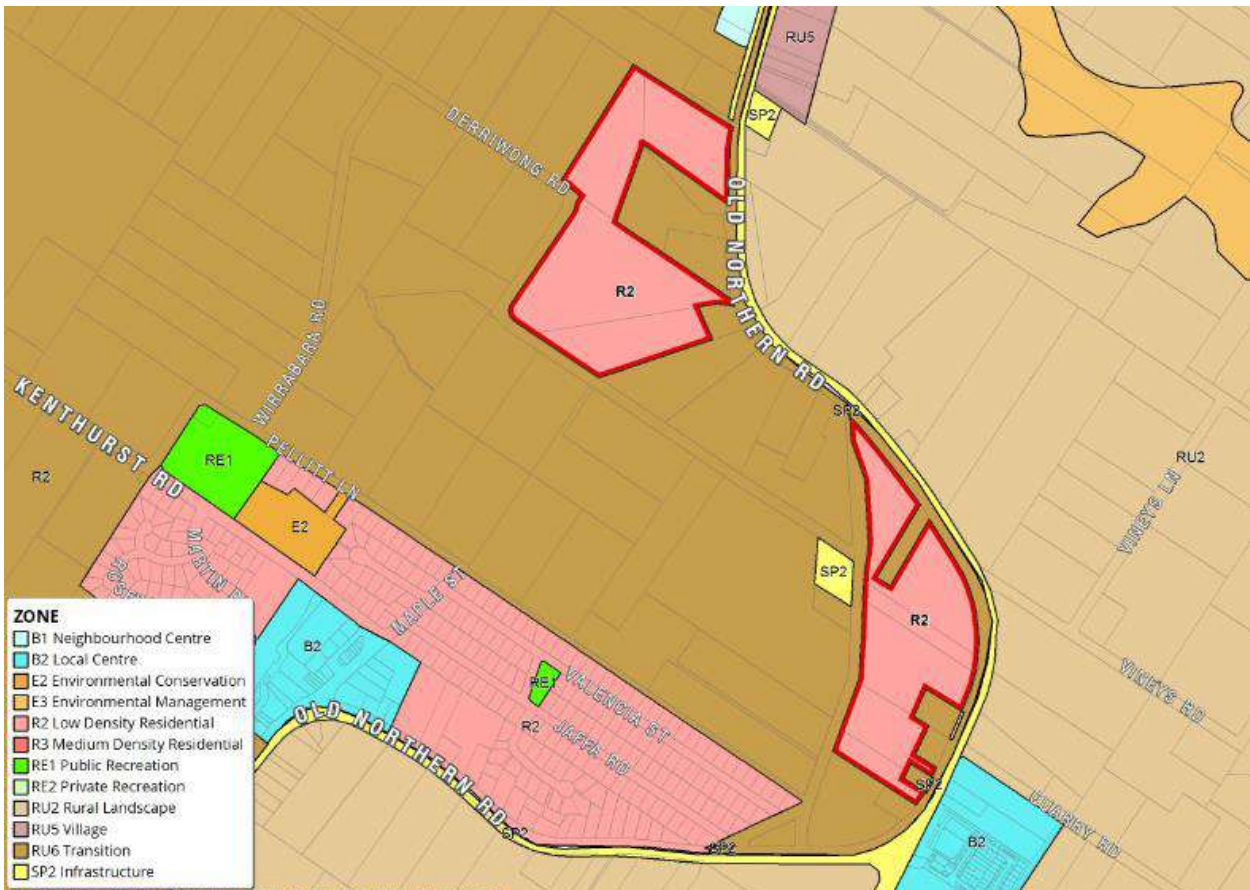
PART 2 – EXPLANATION OF PROVISIONS

The objectives and intended outcomes of the Planning Proposal will be achieved by amending the zoning, minim lot size and building height maps of THLEP 2012 as they apply to the sites, as outlined in the following sections.

LAND ZONING MAP

The proposed amendment seeks to a rezone the existing RU6 Transition zone to the R2 Low Density Residential zone as indicated in **Figure 18**.

Figure 18 – Proposed Zoning Map



HEIGHT OF BUILDINGS

Amendment of the LEP 2012 Height of Buildings Map in accordance with the proposed height map is shown in **Figure 19**, which indicates a maximum permissible 9.0 metre limit height across the site. The 9.0 metre height control is consistent with the adopted development standards for residential development with Round Corner.

Figure 19 – Proposed Height of Buildings Map



MINIMUM LOT SIZE

Amendment of the LEP 2012 Minimum Lot Size map in accordance with the proposed minimum lot size map is shown in **Figure 20** is 700m².

The proposed minimum lot size for residential subdivision is consistent with the minimum lot size adopted under the provision of THELP 2012 for residential land within Round Corner.

We understand that it is in Council's long term strategy to provide an additional east-west connection from Annangrove Road through to Old Northern Road. To facilitate a wider road reserve to accommodate a future connection, an additional clause is proposed to be added under Part 7 of THLEP to allow lots within the northern portion (identified as Area C in Figure 20 below) to have a minimum lot size of 600m². The clause would require that development in this area would result in more than 101 residential lots, which is the yield achieved based on regular road reserve widths.

A draft clause under Part 7 is provided as follows:

"7.12 Residential development yield on certain land in Dural

- (1) *The objectives of this clause are as follows:*
 - (a) *to facilitate the provision of a road reserve to accommodate future road networks,*
 - (b) *to ensure development does not place an unreasonable burden on the provision of services, facilities and infrastructure in the area to which this clause applies.*
- (2) *This clause applies to land identified as "Area C" on the Key Sites Map.*
- (3) *The consent authority may consent to the subdivision of land to provide a maximum of 101 residential lots.*
- (4) *Development consent must not be granted to the subdivision of land to which this clause applies if the development has minimum lot sizes of less than 600m².*

Figure 20 – Proposed Minimum Lot Size Map



PART 3 – JUSTIFICATION FOR THE PLANNING PROPOSAL

SECTION A – NEED FOR A PLANNING PROPOSAL

Is the Planning Proposal a result of any strategic study or report?

No. The Planning Proposal is a proponent initiated change that responds to the outcomes of a market analysis of the area undertaken by Urbis (Economics and Market Research) that identified:

- Existing and continued demand for residential properties including:
 - Existing and continued demand for smaller lots, including townhouses and larger apartments by existing residents looking to down size from acreage who do not want to leave the Dural area and
 - Demand for larger lots in areas outside Kellyville and Castle Hill, due to lower market entry prices.

A comprehensive urban design study (**Appendix A**) has been undertaken to support this Planning Proposal and provides context to the proposal including future connectivity with surrounding land in terms of land use zoning as well as urban form, connectivity and layout (i.e. precinct structure planning)

In preparing this Planning Proposal, alternate development options have been examined and tested in regards to the layout of the street network and built form to ensure that future development is appropriate to the context of the site and the locality. This is addressed in Section C of this Planning Proposal and **Appendix A** containing the Urban Design Report. Urban form and layout has been developed to respond, where possible, to site constraints including bushfire, ecology (flora and fauna) and heritage. The Planning Proposal is also supported by a Traffic Impact Assessment was prepared by AECOM Consultants (**Appendix C**).

The Planning Proposal details how amendments to the current controls of THLEP 2012 can be realised with minimal adverse environmental impacts.

Is the Planning Proposal the best means for achieving the objectives or intended outcomes or is there a better way?

A Planning Proposal is the most appropriate mechanism of achieving a rezoning of the land from rural to urban. There is no other alternative that would permit the residential uses with proposed lot size and building height.

SECTION B – RELATIONSHIP TO STRATEGIC PLANNING FRAMEWORK

Is the Planning Proposal consistent with the objectives and actions of the applicable regional or subregional strategy?

In December 2014 the NSW Government published *A Plan for Growing Sydney*. Consistency with *A Plan for Growing Sydney* and the directions for the *West Central Subregion* is discussed below.

A PLAN FOR GROWING SYDNEY (2034)

A *Plan for Growing Sydney* sets the high level strategic vision to guide the development of the Sydney Metropolitan Region. The plan is framed around Key Directions and Actions to inform productivity, environmental management and liveability (Refer to **Figure 1**).

Dural is located in the northwest of the Metropolitan Region and is identified on the high level strategy map as forming part of the Metropolitan Rural Area approximately 3 kilometres from the Metropolitan Urban Area .

Despite the location of the sites beyond the urban fringe, recent gateway and development approvals on land to north and south of the sites are contributing to transition in the nature, density and scale of development. The cumulative outcome of the recent approvals will extend the urban fringe and contribute to the increasingly urbanised character of the area.

The site, while not specifically identified in the metropolitan strategy, *A Plan for Growing Sydney*, it is located within proximity to strategic growth centres and corridors including Rouse Hill, Castle Hill and Hornsby. The

proposal to rezone land within the immediate proximity to the urban fringe would support key directions and actions of the metropolitan plan as outlined in **Table 2**.

Table 2 – Consideration of the Planning Proposal against the relevant directions and actions

Direction / Action	Comment / Consistency
Goal 1: Sydney’s Competitive Economy	
Direction 1.10: Plan for education and health services to meeting Sydney’s growing needs.	The Planning Proposal seeks to rezone the land for residential purposes in a location proximate to a number of existing and planned health and education facilities. These facilities are located within Dural Neighbourhood Centre and Round Corner as outlined in Section 2.3.7.
Action 1.11.3: Undertake long term planning for social infrastructure to support growing communities.	The indicative subdivision plan allows for future open space to be co-located with compatible land uses including the existing school and public hall to support a range of future recreational opportunities for a broad cross section of the community (existing and future).
Goal 2: A City of housing choice, with homes that meet our needs and lifestyles; Sydney’s Housing Choice	
Direction 2.1: Accelerate housing supply across Sydney to deliver 664,000 new dwellings by 2031.	Dural, while currently located with the Metropolitan Rural Area, is located only 1.6 kilometres north of urban zoned land and 3km from the metropolitan urban fringe.
Action 2.1.1: Accelerate housing supply and local housing choices	<p>The social demographic of Dural is families and over 55’s. Strategic housing and economic investigation demonstrates a demand for smaller housing lots driven by relative affordability for young families as well as demand generated by empty nesters and retirees looking to remain in the village like area but wanting to down size from 2 hectare properties.</p> <p>The proposal is consistent with current demand for an alternate housing product within a homogenous supply environment combined with planning for long term growth up to 20 years in the future.</p>
Direction 2.3: Improve housing choice to suit different needs and lifestyles.	This proponent initiated Planning Proposal has examined local demographics and market demand to determine the need and desire of existing and future residents to provide for housing supply and choice.
Action 2.3.1 Require Local Housing Strategies to Plan for range of housing types.	In particular the proposal will facilitate the delivery of smaller land holdings within a desirable location to support couples, families looking to upscale (i.e. 2nd or 3rd time buyers) who cannot afford to purchase in strategic growth centres and need larger family lots and older residents looking to downsize from 2 ha holdings and age in place. The delivery of an in between residential product would support the 50 per cent of the aging population would prefer to remain within their existing community while allowing for housing choice to provide Universal Housing allowing aging in place.

Direction / Action	Comment / Consistency
Goal 4: Sydney's sustainable and resilient environment	
<p>Direction 4.1: Protect our natural environment and biodiversity.</p> <p>Action 4.1.1: Protect and deliver a network of high conservation value land by investing in green corridors and protecting native vegetation and biodiversity.</p>	<p>The sites have been substantially cleared of vegetation. An extensive vegetation corridor (located outside the site boundaries) is located to the south/southwest and follows the O'Hara Creek Line.</p> <p>An ecological assessment of the land and surrounds has been undertaken and identified the presence of endangered and threatened flora communities within the sites.</p> <p>The current concept plan for development of the southern site will require the removal of the identified flora community. Assessment of their condition by ELA has concluded, the surveyed species are in a poor condition and highly fragmented.</p> <p>Notwithstanding this, the species may be present throughout the extensive vegetation corridor located to the south/southwest that will not be affected by the proposal. Detailed consideration of the potential for environmental impact is considered in Part 3, Section C of this Proposal and the attached ELA report. It is considered that there are alternatives that may overcome the potential for adverse impacts.</p>
<p>Action 4.1.2: Prepare a strategic framework for the metropolitan rural area to enhance and protect its broad range of environmental, economic and social assets.</p>	<p>The land is located within an Agricultural cluster as depicted on Figure 25 of APFGS.</p> <p>The Planning Proposal is not considered to result in a loss of commercially viable or productive agricultural land. Surrounding land uses are predominantly urban in nature including local centres to north and south providing services such as educational establishments and retail and commercial operations. The nature of the surrounding uses compromise its ability to be utilised for agricultural purposes. Rezoning the land from rural to urban purposes may provide for the following:</p> <ul style="list-style-type: none"> • Boost the economy and support the growth of Round Corner and Dural Centres; and • Improve access to Dural Public School.
<p>Direction 4.2: Building Sydney's resilience to natural hazards.</p> <p>Action 4.2.3: Map Natural Hazard Risks to inform land use planning decisions.</p>	<p>The Planning Proposal has been informed by mapping of local constraints and opportunities including ecological characteristics, flooding and fire hazard.</p> <p>As discussed in Part 3, Section C of this Planning Proposal, investigations conclude that existing environmental sensitivities can be appropriately and adequately managed to ensure suitability of the land for residential purposes.</p>

West Central District

The Hills LGA forms part of the West Central District that provides for contained growth of Sydney Region. The Metropolitan Plan has identified that the West Central Subregion will be the focus of significant infrastructure, including the extension of the rail network.

The West Central District is anticipated to experience population growth of approximately 1.9 per cent to 2031, 0.3 per cent above the average of the Sydney Metropolitan Region. Of this growth 3.5 per cent will be persons aged over 65 years of age, double the current population proportion. The highest anticipated growth by household type is lone person households reflecting 2.6 per cent.

The priorities of the Subregion are generally focused on delivering priority precincts. While the subject land is located outside these precincts, the proposal will play a role in delivering housing and diversity of housing stock within an otherwise homogenous residential area.

Priority Statement: Accelerate housing supply and choice through the identification of suitable land for housing and employment growth coordinated with infrastructure.

Response: The Planning Proposal will provide for the delivery of additional housing. The delivery of housing in this location will respond to a measured market demand for smaller lifestyle lots (i.e. below 2 hectares) allowing for existing residents to down size or growing families an affordable residential lot within the peri-urban setting with access to schools, village centres and public transport connections.

Is the Planning Proposal consistent with the local Council's community strategic plan, or other local strategic plan?

The Hills Local Strategy (2008)

The Hills Local Strategy is underpinned by a series of eight (8) Directions Papers, each containing key directions for achieving the developmental goals of the Shire. The consistency of the proposal against each of the relevant actions of the Directions Papers has been considered in the following sections.

The Hills Residential Directions (2008)

The Hills Residential Directions Paper was adopted on 10 June 2008 to inform the development of The Hills LEP 2012. The Directions Strategy is based on four (4) key directions, including:

- Accommodating Population Growth;
- Respond to changing housing needs;
- Provide a sustainable living environment; and
- Facilitate quality housing outcomes.

The Directions Paper recognises that achieving the key directions (or goals) is a challenge due to the following:

- Maintaining the garden image of the Hills Shire while delivering housing mix and providing affordability (delivering a homogenous housing stock to provide large garden settings);
- Encouraging timely delivery of residential development;
- Accommodating an aging population;
- Fostering and maintaining a safe and secure communities; and
- Balancing urban growth with the preservation of ecological and environmental objectives.

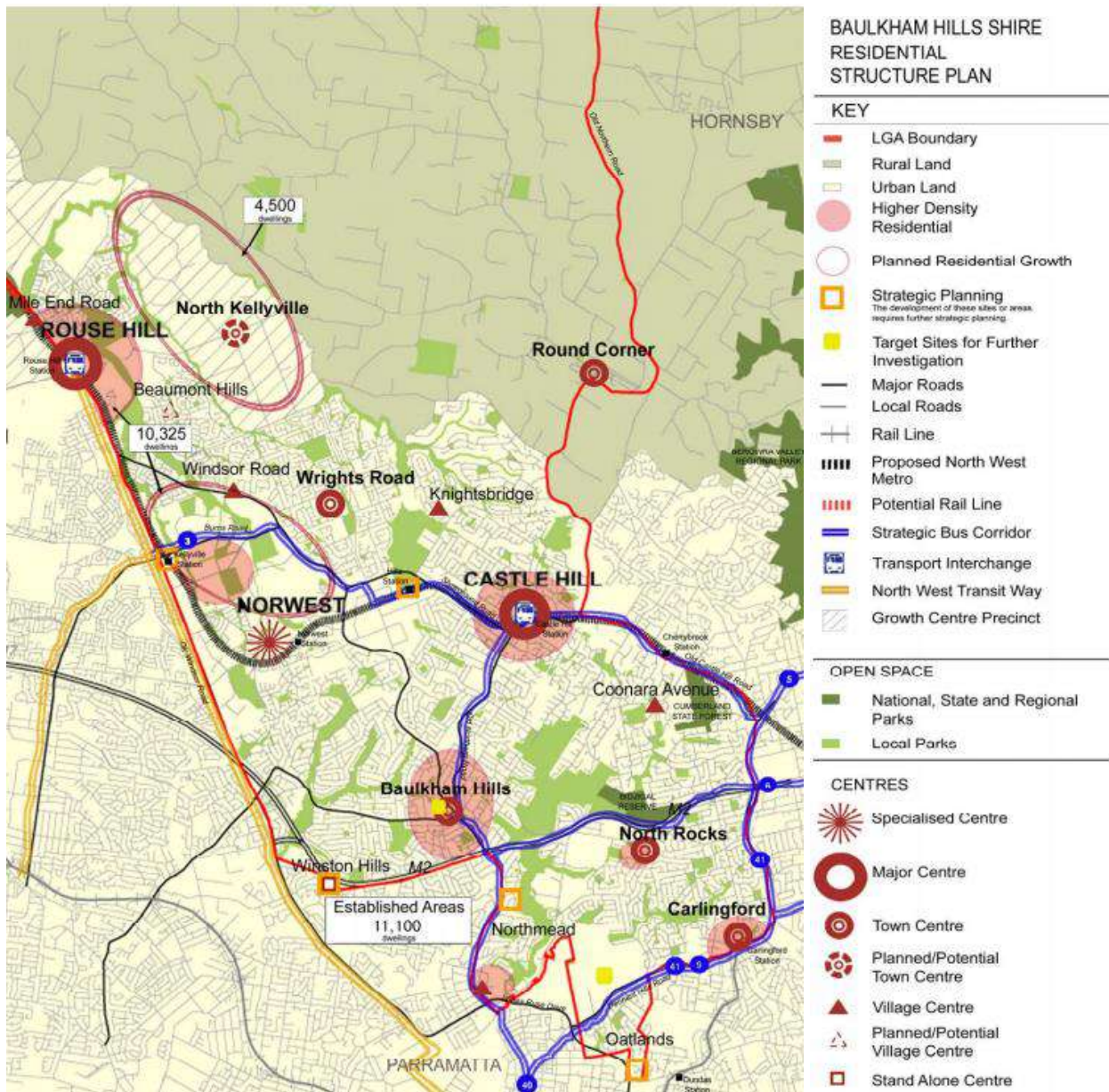
The aims and objectives of the Residential Directions Paper align with the former Metropolitan Plan for Sydney and Northwest Subregional Strategy. The Discussion Paper examined the outcomes of the previous Residential Development Strategy 1997, which introduced residential density uplift across 16 target sites and adopted a Residential Structure Plan to support the delivery of new and intensified residential development (refer to Figure 20).

The subject sites of the Planning Proposal are located in the north of The Hills LGA and are identified as rural land within close proximity and between urban zoned centres including of Round Corner Town Centre (including residential zoned land) and Dural Neighbourhood Centre.

In 2008, residential growth priorities focused on development within established urban areas (centres). Development focuses were predominantly aimed at delivering apartments within Baulkham Hills, Castle Hills and Carlingford. At this time there was a slow take up on the opportunity to develop townhouses in Dural, including land within the town centre of Round Corner. The paper concluded that one of the key challenges in facilitating higher density development within this form of development had been access to jobs, transport and facilities.

Notably in the intervening eight (8) years since the paper was adopted by Council, published demand trends have significantly altered, with Urbis' market analysis indicating a significant increase in the demand for town house and smaller lot style residential development within the area. Consequently, despite the status of this strategic vision paper the directions are inconsistent with current market demand.

Figure 21 – Residential Structure Plan (Source: The Hills Residential Discussion Paper, 2008)



Despite inconsistency between these older strategies and the current market demand assessment, the proposal has been considered against the relevant key directions of the Hills Residential Directions Paper, concluding the following;

Key Direction 2.1.2: Housing Needs: As demonstrated in the urban design report (Appendix A) careful site planning has considered the potential interface issues combined with massing and scale to ensure compatibility with the peri-urban/fringe locations of the sites. The proposed R2 Low Density Residential land will accommodate development of a scale subordinate to the rural aesthetic of the locality.

Whilst it is acknowledge that the development will contribute to an extension of the metropolitan boundary into current rural land, the sites and their immediate surrounds are bookended by current urban zoned centres that have been the focus of recent approvals to expand their capacity. It is therefore considered that the infill of this area reflects a logical extension of existing urban areas on land that has otherwise been deemed unsuitable for meaningful agricultural purpose.

Key Direction 2.1.3 and 2.2.1: Housing Diversity and Affordability: The proposal will deliver greater housing diversity within market that currently presents a largely homogenous housing offering. There is also limited land for development, with ABS statistics indicating that there has been marginal increase in land availability in the past 10 years due to limited supply. Residents looking to down size are required to relocate to urbanised areas where prices are rapidly escalating and where market re-entry is competitive.

The proposal will deliver a desirable product that aims to fill a current market gap . A market analysis of demand for residential properties by type has been undertaken by Urbis (Appendix B) and concludes that there is demand for new residential land in the area.

The Hills Scenic Directions Paper

The Hills Centres Direction Paper provides overall strategic context for the planning and management of the development and growth of centres within the Hills Shire to 2031. The residential proposal will support the viability commercial growth within existing centres, in addition to recent significance applications discussed below.

The sites are located between two (2) nearby centres identified in the Discussion Paper, Round Corner to the south identified as a Town Centre and Dural to the north, identified as a neighbourhood/rural centre. Under the THLEP 2012, the centres are zoned B2 Local Centre and B1 Neighbourhood Centre, respectively.

The relevant outcomes of the discussion paper in relation to the sites and surrounding locality include:

- A recommendation to restrict rezoning or expansion of the Dural Centre (north of the site) due to the potential for impact on the primacy of Round Corner; and
- Identification of limited growth demand for the retail centres of Round Corner or Dural, to specialty retail outlets.

Notwithstanding, in the intervening eight (8) years to 2016 the residential market and demand for increased density has grown and The Hills Council have supported the following significant applications that have altered retail opportunities within the locality:

- **Cascades:** 636 Old Northern Road, Dural that will deliver 17 residential apartments, 5,421m² of gross leasable floor area containing a mix of business, shops, medical, restaurants, cafes, child care centre and recreation space.
- **Planning Proposal:** 488-494 Old Northern Road, Dural - Rezoning from RU6 Transition to part B2 Local Centre & part R3 Medium Density Residential & that a floor space ratio standard of 0.75:1 be implemented over the land zoned B2. Approved at gateway.

The planning proposal does not include a commercial component, rather it is envisaged that the future residential population will support the viability of existing and planned retail activity in the locality.

Environmental AND Leisure Directions Paper

The Environmental and Leisure Directions Paper sets a framework of six (6) key directions for achieving Council's desired approach to the planning, protection and management of the Shire's environment and leisure spaces (private and public). These include:

1. Protecting and managing the Shire's environment and leisure spaces.
2. Providing high quality spaces for community recreation and enjoyment.
3. Improving the accessibility and connectivity of environment and leisure spaces.

4. Providing for public domain spaces that encourage community interaction.
5. Conserving the Shire's unique diversity of plants and animals.
6. Protecting Aboriginal cultural heritage.

The Planning Proposal is considered to deliver outcomes consistent with Council's policy direction for the delivery and preservation of open space, in particular the envisaged urban form and layout of the each land parcel has achieved the following:

- Preservation of heritage items and curtilage combined with adequate separation to moderate any potential interface impacts;
- Consideration of the broader context and connectivity to adjoining land, in particular land to the south forming part of a O'Hara Creek riparian corridor
- Delivery of high quality open spaces with respect to size, configuration, access and context.

Waterways Directions

The Waterways Direction is built around three (3) priorities for achieving, protection, management and maintenance of the Shire's waterways. These include:

1. Effective Stormwater Planning;
2. Effective Stormwater Management; and
3. Management of Natural Waterways.

Future development of the land is capable of achieving consistency with the strategic aims and directions of the Waterways Policy. The sites are capable of connections to existing stormwater infrastructure and water sensitive urban design (WSUD) elements would be developed and implemented at DA stage following the Planning Proposal process.

O'Hara's Creek is located to the south, south-west of the sites. The land subject of this proposal is outside the riparian corridor and as such is unlikely to have a direct influence on water quality or protection. Notwithstanding this, as outlined above it is envisaged that WSUD elements would be implemented as part of any future development, contributing to reduced nutrient and sediment loads of water reaching the natural and manmade water system.

Consideration of stormwater capacity and connections of the land to existing infrastructure has been undertaken and is discussed in detail in Part C of this proposal. The resolution of preliminary investigations is that the land is capable of being serviced.

Rural Lands Strategy (2003)

The Rural Lands Strategy provides a strategic framework for the Shire's rural lands to, amongst other objectives achieve the following:

- Protect and enhance the existing and future rural economy – including employment and future investment opportunities;
- Avoid land use conflict; and
- Respond to social needs and preserve social values of the rural community.

The Planning Proposal seeks to transform the land from rural to urban land. In considering the consistency of the proposal against this strategy regard has been given to the implications of pending or recently approved application and proposals for urban development within the immediate locality, including:

- South Dural Planning Proposal: Approved at Gateway, supporting the rezoning of rural to urban land and the potential delivery of 2,900 dwellings and 3,000m² non-residential floor space;
- Dural Service Centre Planning Proposal: Supported by Hornsby Council and proposing rezoning that south of the existing Dural Business Park from IN2 Light Industrial to B2 Local Centre. The Planning Proposal, if approved, will facilitate the delivery of a new shopping centre anchored by a supermarket, retention of bulky goods retailing, medical centre and commercial space;

- Rezoning of on 488 – 494 Old Northern Road, Dural by the Hills Shire, to increase residential density to R3 Medium Density and expand the B2 Local Centre (Round Corner);
- Approval of the Cascades development to the north of the site, expanding the service and retail offerings in the Dural Neighbourhood Centre; and
- Planning Proposal for the former timber yards at Nos. 582 and 582A Old Northern Road, Dural for medium density residential (pending support from Council)

It is evident from both the number and nature of uses sought across the various proposal and applications that the character of the area is transforming. The subject sites are bookended by the two (2) centres of Dural to the north and Round Corner to the south and reflect a logical extension to the urban fringe.

The land is not currently and has not in recent years been utilised for agricultural purposes and its proximity to Round Corner and other urban activities make it unsuitable for agriculture use due to the potential for land use conflict associated with noise, odour, dust and the like.

Accordingly, the Planning Proposal reflects a logical extension of existing urban land that does not contribute to or cause a loss of viable agricultural land or undermine the objectives of the Rural Lands Strategy.

Is the Planning Proposal consistent with applicable state environmental planning policies?

The Planning Proposal is consistent with all relevant state environmental planning policies (SEPPs) as assessed in **Table 3** below.

Table 3 – Consideration of relevant state planning instruments

Policy	Consistency
<i>State Environmental Planning Policy No. 55 – Remediation of Land</i>	A preliminary site investigation has been undertaken for all lots the subject of this Planning Proposal that concludes while the presence of contaminants have been detected, all sites are capable of being made suitable for their intended future purpose. Refer to Appendix G .
<i>State Environmental Planning Policy (Infrastructure) 2007</i>	<p>The following provisions of ISEPP are relevant:</p> <ul style="list-style-type: none"> • Old Northern Road is an RMS controlled road. The proposed amendment will require new intersections to be constructed to facilitate access and permeability; these are discussed and assessed for future performance in the Traffic and Transport Report prepared by AECOM (Appendix C). • Design measures can be incorporated to mitigate potential road traffic noise impacts, as discussed in Section C and the Acoustic Report Prepared by WSP Parsons Brinkerhoff (Appendix L). <p>Future development envisaged by the Planning Proposal is capable of complying with the relevant provisions of the ISEPP.</p>
<i>State Environmental Planning Policy (Rural Lands) 2008</i>	<p>Baulkham Hills, now known as The Hills Shire Council is listed under clause 4 as land to which the SEPP applies.</p> <p>The proposal seeks to rezone existing rural lands to allow for urban purposes. In this regard, as the Planning Proposal is a request to amend a LEP, the application should demonstrate consistency with Part 2 clause 7 Rural Planning Policies. Notwithstanding the implicit loss of rural lands as a consequence of the planning proposal, the LEP amendment demonstrates consistency with the principles of the SEPP on the basis of the following:</p> <p>(a) The land is not currently used and has not been used in recent</p>

Policy	Consistency
	<p>years for agricultural purposes. The current land use and zoning of surrounding land fragments these holdings from other areas of agricultural land to the north. Furthermore the landholdings are effectively bookended by urban purposes that further limit the viability of land for any agricultural purpose due to the inherent potential for land use conflicts.</p> <p>(b) As noted above, the land is fragmented from extensive areas of agricultural land to the north and primarily serves as large rural lifestyle lot or is undeveloped/unoccupied vacant land. Despite demands in the region for some smaller hobby farms, the land is not currently used for agricultural purposes.</p> <p>(c) As noted above the land is not used for rural purposes and therefore provides no social or economic value in its current state.</p> <p>(d) The Planning Proposal has taken into account the natural, ecological and biodiversity characteristics of the land and responded with appropriate zones and lots sizes to manage environmental sensitivities.</p> <p>(e) The land is presently zoned RU6 Transition and is located immediately north of the urban fringe. Proximity to land uses such as petrol stations and commercial developments results in an unfavourable rural lifestyle image.</p> <p>(f) Necessary services, utilities and infrastructure will be extended and augmented to provide for the increased density.</p> <p>The land is not presently utilised for agricultural purposes and is not identified in schedule 2 as being state significant agricultural land .</p>
<p><i>Sydney Regional Plan No. 20 – Hawkesbury Nepean River (No. 2 – 1997)</i></p>	<p>Baulkham Hills, now known as The Hills Shire Council is listed under clause 2 as land to which the SREP applies.</p> <p>The Nepean River is to the southwest of Dural in the lower catchment of the Hawkesbury River that divides to form the Nepean and Grose Rivers.</p> <p>The proposal has been considered against the relevant key principles as follows:</p> <ul style="list-style-type: none"> • There are no rivers, streams or wetlands present on the sites and the future development is considered unlikely to have direct or significant impact on the river and aquatic health. • The rezoning and future development is capable of managing water quality and quantity. • The Planning Proposal and envisaged future development has sought to protect and integrate local heritage items into the future urban layout. • The sites have been disturbed by former agricultural activity or land clearing and currently only support sporadic and highly fragmented vegetation patches that have limited structural complexity and no habitat value. Despite flora species being identified as part of an endangered ecological community, they have limited capability of being connected to

Policy	Consistency
	<p>other more significant corridors of vegetation to the south west.</p> <ul style="list-style-type: none"> • The sites and adjacent land within the immediate context is not utilised for any significant agricultural purpose. The context of the site is increasing urbanised character with Round Corner to the south and the increasing local centre to the north that would further restrict the use of the land for any agricultural purpose. • The proposal includes the provision of local open space and recreation facilities to support new and existing residents. • The Planning Proposal will facilitate the delivery approximately 176 low density residential lots. Preliminary servicing investigations have been undertaken to support the delivery of sewer to the area, it is not intended to provide onsite effluent disposal. A total water cycle management plan can be developed at DA stage. <p>The future redevelopment of the land (following rezoning) is unlikely to have an adverse impact on water quality within the catchment. The future subdivision pattern and dwellings across the site will be designed in an appropriate manner to ensure the preservation of water quality, including the delivery of WSUD to ensure appropriate water quality can be achieved within subdivision design.</p>

Is the Planning Proposal consistent with applicable ministerial directions?

The following Ministerial Directions are considered applicable:

Table 4 – Consideration of relevant Section 117 directions

Direction	Consistency
1. Employment Resources	
1.2 Rural Zones	<p>No. The proposal seeks to rezone existing rural land within an LGA listed under clause (2) (b) of the Ministerial Direction. Notwithstanding, the proposal is not inconsistent with the objective of the direction to protect land of value to agricultural production.</p> <p>The subject land is not used for agricultural purposes, nor is land within close proximity to the subject sites. Therefore there is limited potential for the introduction of rural land use conflict resulting from the proposal. The land is located within close proximity of existing urban land used for residential, commercial/retail and educational land uses. The proximity to urban uses combined with the fragmented nature of the land ownership and lot size is inconsistent with agricultural production.</p> <p>Despite the loss of agricultural farm land, the rezoning of the site for residential subdivision and development can be justified as future agricultural land uses are unlikely to generate a sufficient return to warrant future investment in agricultural enterprises on the subject land (refer to Appendix C for further discussion).</p> <p>The Planning Proposal reflects a logical extension of the urban zone from Round Corner in the south to the Dural Neighbourhood Centre in the north.</p>

Direction	Consistency
1.5 Rural Lands	<p>No. Notwithstanding the inconsistency of the proposal with the Direction, the proposal is not inconsistent with the objectives of the zone to:</p> <p>(a) Protect the agricultural production value of rural land;</p> <p>(b) Facilitate orderly and economic development of rural lands for rural and related purposes.</p> <p>As outlined above and throughout the Planning Proposal the land and immediately surrounding lands are not used for any rural or agricultural purpose. Furthermore the subjects land's proximity to urban land uses makes it unsuitable for any such rural endeavour due to potential land use conflicts. The changing residential and commercial character of surrounding land to the north and south further supports the logical potential for rezoning the sites.</p>
2.Environment and Heritage	
2.3 Heritage Conservation	Yes. The Planning Proposal is consistent with the Ministerial Directions and does not seek to remove existing provisions to protect items of environmental heritage.
3.Housing, Infrastructure and Urban Development	
3.1 Residential Zones	Yes. The Planning Proposal is consistent with the Ministerial Directions relating to Residential zones, aiming to improve housing choice within the Dural area and deliver services and infrastructure to support the same.
3.3 Home Occupations	Yes. The proposed residential zoning will permit home occupations to be carried out in dwelling houses without the need for development consent.
3.4 Integrating Land Use and Transport	Yes. The Planning Proposal to create new urban land is consistent with the Ministerial Direction. A detailed Urban Design Study has been prepared and provides an appropriate urban structure and form that is close to public transport routes along Old Northern Road and is located adjacent to an existing town centre. All future residents are located within a 400m walking catchment of bus stops along Old Northern Road that connect to large urban centres such as Castle Hill.
4.Hazard and Risk	
4.4 Planning for Bushfire Protection	Yes. The Planning Proposal is consistent with the Ministerial Directions. Future development is capable of achieving adequate protection in accordance with the guidelines Planning for Bushfire Protection. A detailed bushfire assessment has been undertaken and is provided at Appendix E.
6.Local Plan Making	
6.1 Approval and Referral Requirements	Yes. The Planning Proposal is consistent with the Ministerial Directions.
6.2 Reserving Land for Public Purpose	Yes. The Planning Proposal is consistent with the Ministerial Directions.

Direction	Consistency
6.3 Site Specific Provisions	Yes. The Planning Proposal is consistent with the Ministerial Directions.
7. Metropolitan Planning	
7.1 Implementation of A Plan for Growing Sydney	Yes. The Planning Proposal is consistent with the Ministerial Directions. Refer to Table 2.

SECTION C – ENVIRONMENTAL, SOCIAL AND ECONOMIC FRAMEWORK

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?

Eco Logical Australia (ELA) undertook a flora and fauna assessment of the site and broader locality to determine the likelihood, presence and absence of critical habitat, threatened species or populations or ecological communities or their habitats.

The ecological assessment was based on preliminary desktop searches and follow-up site surveys the confirmed the presence of the following:

- Two (2) threatened ecological flora communities were identified, including:
 - Blue Gum High Forest, listed a critically endangered under the *Threatened Species Conservation Act 1993* (TSC Act); and
 - Turpentine Ironbark Forest, listed as endangered under the TSC Act.
- One (1) potential threatened flora species, *Epacris purpurascens var. purpurascens* was identified as being present.
- The potential for the following fauna species to be present:
 - Highly mobile micro bats and bird species; and
 - The potential presence within the study area of a threatened invertebrate *Pommerhelix duralensis* (Dural land snail)

Vegetation, communities and flora species

The distribution of the two (2) ecological vegetation communities, combined with broader vegetation mapping for the sites and the broader locality is shown in **Figure 8**.

It is evident from the vegetation map that the surveyed areas of ecological sensitivity are small patches that are highly fragmented and located within large and expansive areas of highly modified and altered landscapes dominated by exotic vegetation species. ELA has concluded that both EECs surveyed on site are in poor condition .

The Planning Proposal and future redevelopment of the land may impact on these communities requiring the removal of the mature and regenerating *Eucalyptus saligna* (Blue Gum) trees and removal of two (2) mature *Eucalyptus pilularis* (Blackbutt) both a key diagnostic species of the Blue Gum High Forest, listed under the TSC Act. Notably the size (<1 ha) and quality of these vegetation patches excludes them from qualification for protection under the *Environmental Protection and Biodiversity Act 1999*.

Notwithstanding the above, as TSC Act listed species, the trees have been mapped as high constraints by ELA (refer to **Appendix D**) and prior to their removal a test of significance will need to be undertaken to determine the scope of impact of development on the vegetation community.

ELA have indicated that there is potential for the Blue Gum High Forest Community to be more wide spread throughout the locality that may have the potential to mitigate any loss of the highly degraded and

fragmented patches on the sites. This would be the subject of further targeted studies at DA stage, to confirm the presence and extent of the community in the area and the completion of a seven part test to determine significance. In the event that the preferred design layout cannot be implemented, design alternatives may be explored as well as opportunities to transplant trees or collect, seeds to support revegetation elsewhere within the immediate area.

The potential impact has feasible alternatives that may be explored at DA stage.

Fauna and flora habitat

Based on the ELA assessment (**Appendix D**) the potential for the rezoning and future redevelopment to adversely affect fauna species is considered low, owing to the limited habitat value of the site.

ELAs survey of the site identified extensive and dominant presence of exotic flora species combined with a lack of structural complexity within the vegetation surveyed (i.e. no canopy, mid and ground cover storey) reducing the availability of faunal habitat in the form of hollow bearing trees, leaf litter and woody debris.

Fauna identified as present or likely to be present by ELA is unlikely to be adversely affected by the proposal, on the basis of the following:

- the site does not contain forest habitat to support the presence of the *Pommerhelix duralensis* (Dural land snail) and it is therefore considered unlikely to be present within the sites;
- A migratory species, *Adrea ibis* (Cattle egret) was surveyed as being present on the site. However, the species is common to disturbed environments and similar habitat is exists within proximity to the site that will not be disturbed as a result of the proposal;
- Dewatering of the existing dam may encounter fauna species (not surveyed at the time of the ELA inspection). Potential impacts can be mitigated at DA/construction stage with the preparation of a pre-clearing fauna management plan;
- Roosting or foraging by highly mobile micro bats and birds is potentially limited by the significantly low number of trees present on the site. Particularly when viewed in the context of the large expanse of continuous trees and habitat to the south and southwest of the site along O'Hara Creek.

It is reasonable to conclude that where the potential for impact has been identified that there are suitable means and options for managing and potentially overcoming the effects of future redevelopment.

Are there any other likely environmental effects as a result of the Planning Proposal and how are they proposed to be managed?

The preparation of the Planning Proposal to rezone the land has considered the potential effects of the proposal on the following environmental matters:

- Urban Design and Built Form;
- Land use interfaces;
- Heritage;
- Traffic and Transport
- Water Quality;
- Bushfire; and
- Site Contamination.

Urban design, layout and form

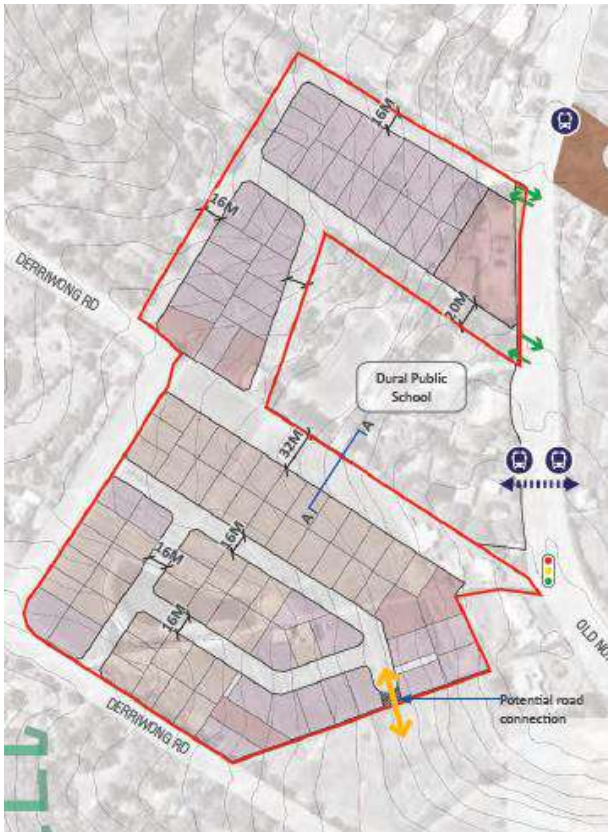
An Urban Design Report has prepared by Urbis and provided in **Appendix A** which identifies:

- A future potential urban layout and form, including street network and subdivision pattern;
- Building footprint, public domain areas and pedestrian/cycle linkages;
- Proposed building mass and heights; and
- Street setbacks.

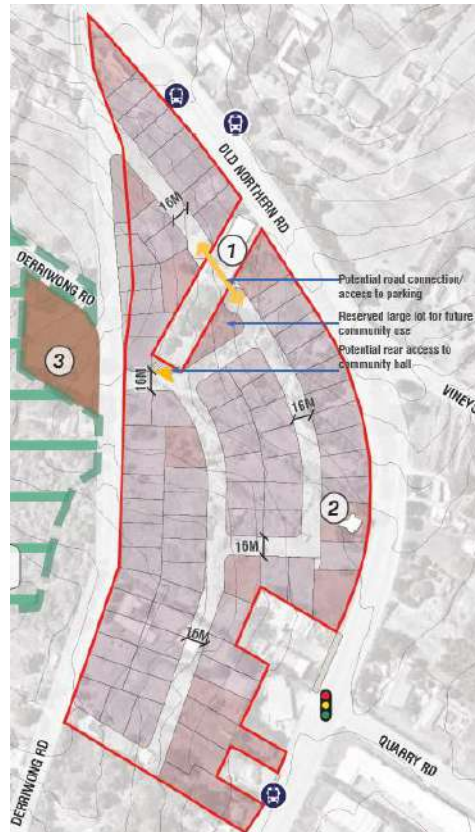
The detailed Urban Design Report outlines the design approach to the development at precinct and development site level to demonstrate the capability of the site and the potential connectivity to and consistency with the broader area.

The residential subdivision plan responds to the existing site context, in addition to facilitating future connections within the sites and to surrounding sites. As detailed below, the subdivisional plan and landscaping treatments have been designed to ensure high levels of future residential amenity. Traffic noise associated with Old Northern Road will be moderated through generous setbacks and landscape buffers. The layout plans have been developed to respond to adjacent heritage items through the establishment of generous curtilage.

Figure 22 – Indicative subdivision plans



Picture 3 – Northern Site



Picture 4 – Southern Site

Street layout / network

Local street patterns and block size (width and length) are determinates of liveability. Despite the peri urban nature of the locality a typical urban layout and block length and width has been adopted to encourage pedestrian movement (in particular to promote use and access to the public transport routes along Old Northern Road). Street widths and frontage depths have been based on the prevailing pattern of development through The Hills that seeks to reinforce feelings of open landscaped settings.

Site specific factors that have influenced the urban form and street layout include:

- Utilise, where possible, the road network to establish a suitable separation from bushfire sources (i.e. provide a ring road);
- Access to sites provided from Derriwong Road, limiting the number of new crossings onto Old Northern Road;
- Achieve a logical street network to limit the number of residential battle-axe blocks.
- Provide logical and effective connections to the existing road network and where possible enhance access and operation of intersections through upgrades;

- Achieve a flexible and adaptable road layout that will support future extension and integration of adjacent land holdings between sites and further to the south;
- Allow for future road connections between lots to limit cul-de-sacs;
- Enhance safety and access around Dural Public School;
- Promote safety, accessibility and connectivity of all road users.

The outcome of these design drivers can be seen in the envisaged urban layout shown in Figures 26 and 30, contained in the urban design report provide at Appendix A.

The following street widths have been adopted to reinforce street hierarchy:

- **Main Road:** 32m; and
- **Local Collector Roads:** 20 metres; and
- **Residential Streets:** 16 metres.

Building heights

The proposed nine (9) metre building height retains and reinforces the local character of existing low density housing within the adjacent urban areas.

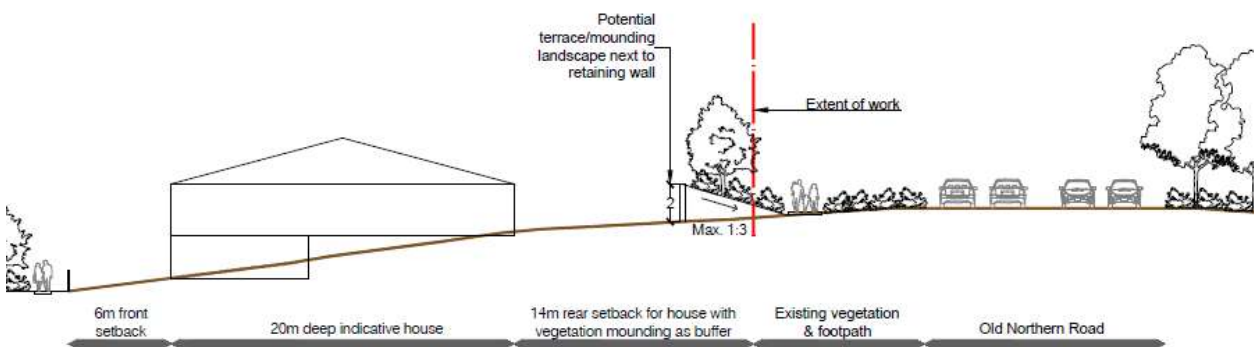
Setbacks

The urban layout has been developed to achieve future setbacks consistent with Council’s DCP and the prevailing urban context. In this regard, the following setbacks can be achieved:

- **Old Northern Road:** 14 metres to road verge
- **All other streets:** 6 metres.

The most visible elements of any future development will be those along Old Northern Road. Of particular relevance to the Southern Site, the layout has been established to ensure a generous setback can be achieved for lots abutting Old Northern Road. Generous setbacks can accommodate tree planting and landscaped mounding, as indicated in **Figure 23**, to ensure appropriate screening of the development in addition to enhancing residential acoustic amenity.

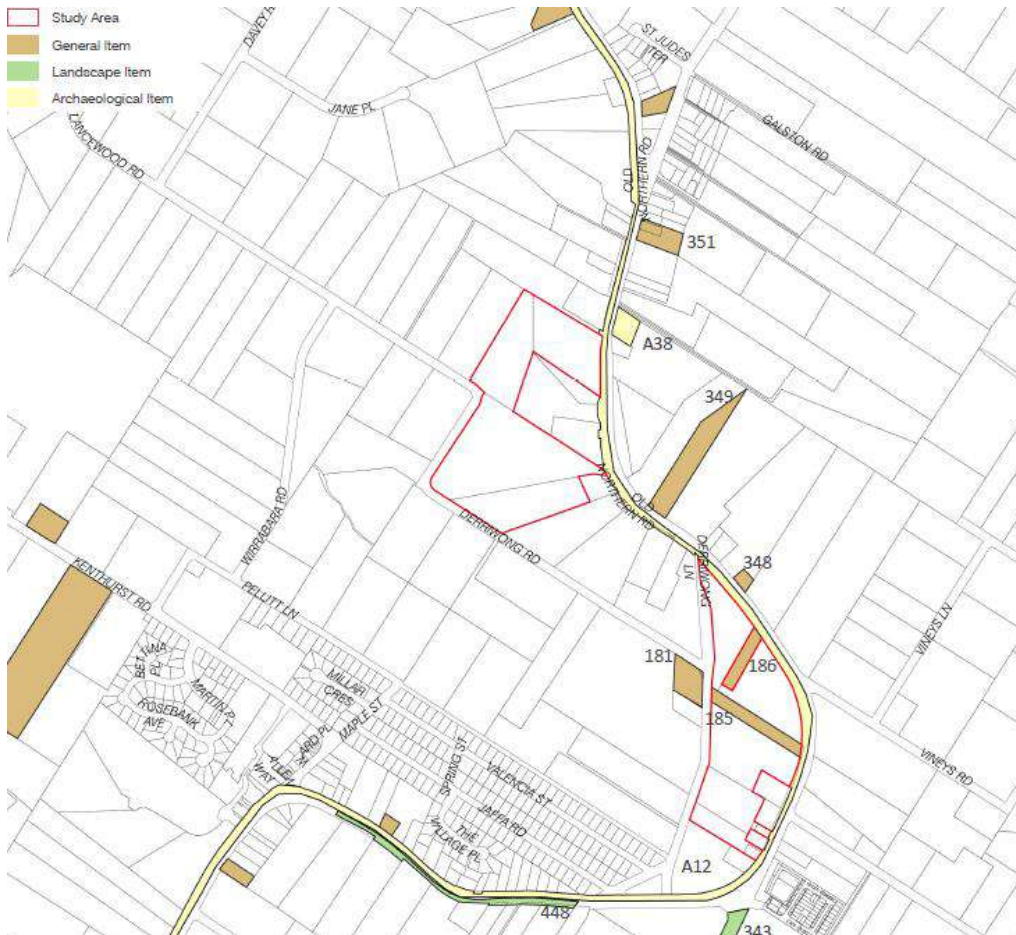
Figure 23 – Section through Southern site



Heritage

As outlined in Section 1, Old Northern Road forms the LGA boundary between The Hills Shire and Hornsby Council. Accordingly the sites are located within proximity to environmental heritage items listed under THLEP 2012 and the Hornsby Local Environmental Plan 2013 (HLEP 2013) as indicated in the heritage map extract at **Figure 24**. The proposal will facilitate built forms and heights of similar scales to adjacent and nearby heritage items, aiding in the retention of the existing visual character of the locality and the spatial relationship of buildings.

Figure 24 – Extract of THLEP 2012 Heritage Map (Source: Urbis, 2016)



A Heritage Impact Statement (HIS), prepared by Urbis (Heritage) (**Appendix F**) has considered the relationship of future built form of the land and relevant heritage items. The HIS addresses all heritage items within proximity to the site, shown in **Figure 24** and summarised by LGA in **Table 5**.

Table 5 – Summary of Heritage items by LGA

The Hills Shire	Hornsby Council
Item: 86: The Dural Soldiers Memorial, located at 604 Old Northern Road	Item 348: Dwelling, located at 857 Old Northern Road
Item: 85: Dwelling, located at, located at 600A Old Northern Road	Item 349: Dwellings located at 873 Old Northern Road, Dural
Item 81: Uniting Church Cemetery, Derriwong Road	Item 448: Street Trees located along the eastern side of Old Northern Road.
Item A12 (Archaeological item): Old Northern Road, between Dural and Wiseman's Ferry.	

The potential for impact arising from the rezoning or future development on items located on the opposite side of Old Northern Road in the Hornsby LGA is limited due to the separation and distance provided by Old Northern Road. Equally, the rezoning and future redevelopment is considered unlikely to have direct or indirect impacts on the heritage value, context or setting of the cemetery located on the south-western side of Derriwong Road (Item I81, in **Figure 25**).

Accordingly the assessment of potential impact has focused on those items listed under The Hills LEP 2012 located within the immediate vicinity of the site. In particular the following

- **Item 85, Dwelling:** a weatherboard cottage (circa 1880 – 1900) constructed on the former Tuckwell land grant. The house and curtilage, despite significant degradation, have been assessed as having historical, associative and representative significant under the NSW Assessing for Significant Guidelines (2001). Refer to **Figure 25, Picture 5**.
- **Item 86: Memorial Hall:** a Spanish mission style building (1925) built by the community as a memorial to local soldiers of the first world war and as such of local significance. However, they are common throughout The Hills. Refer to **Figure 25, Picture 6**.

Figure 25 – Picture of THLEP 2012 Heritage items within Vicinity of the Site



Picture 5 – Item 85: 600A Old Northern Road



Picture 6 – Item 86: 604 Old Northern Road

Items 85 and 86 will adjoin land to be rezoned for low density residential purposes, which will be supported by changes in lot size and building heights. Changes in urban and built form will alter the spatial relationships of the buildings and has the potential to alter the curtilage of the sites and their visual prominence within the streetscape. However, future development will be of a similar scale and height to these heritage items.

Urbis (Heritage) provided recommendations aimed at mitigating any effects of the transitioning urban form on the heritage item at 600A Old Northern Road, a summary of these issues is provided in Table 6.

Table 6 – Consideration of Heritage Recommendations (Item 85)

Heritage Recommendation	Urban Design Response
A heritage curtilage be formed for the house at 600A Old Northern Road to protect the impacts of potential future development.	No. 600A Old Northern Road is intended to be retained as a standalone lot, i.e. dwelling and curtilage preserved. The site has been integrated into the urban form as shown in Figure 10.
Consider restoration of the house as part of the proposed works so that the principal house form is wholly retained. This would ultimately conserve and enhance the heritage significance of the item.	The envisaged future form and layout of lots surrounding the heritage item will not encumber the ability to restore the house in the future.
When developed, it is recommended that lower-scale residences (one to two storeys) in the vicinity of the heritage items would be in keeping with other development in the area and would not	Future dwelling houses will be subject to a maximum building height of 9m, which presents a similar form and scale to the heritage item. More the preservation of the curtilage and suitable setback will provide landscaping

Heritage Recommendation	Urban Design Response
impact on views and the heritage significance of the item. Development in the vicinity of the items must respond appropriate to their form and scale.	opportunities to further enhance and integrate any future development.

While no specific recommendations were made by Urbis (Heritage) in relation to the Memorial Hall, the planning proposal, in relation to distribution urban form and layout has considered future interface and spatial relationships. Notably the urban design analysis and direction has sought to integrate the memorial hall into the new urban form and provide complimentary layout aimed at enhancing the site both visually and practically through the following:

- Co-location of public open space that achieves a longitudinal connectivity from Old Northern Road, the Memorial Hall extending southward through a proposed park (public open space) and the adjacent cemetery (refer to Figure 22);
- Allowance for a new and alternative site entry (removing the need to enter and exit from Old Northern Road);
- Flexible street layout to allow for a future internal road connection through the heritage site;
- Large side setbacks to support landscaping along boundaries aimed at preserving the ‘garden setting’.

Traffic and Transport

The Dural Planning Proposal will facilitate the delivery of the following:

- The northern site is proposed to consist of approximately 96 low density residential lots and land for future open space.
- The southern site will support up to 86 low density residential lots and land for future open space

Delivery of the expanded urban zone will also involve the construction of new road networks and connections to Old Northern Road, altering and contributing to local traffic flows.

A traffic and transport study undertaken by AECOM Consultants (**Appendix C**) to establish the existing level of service at intersections and capacity within the road network, potential impacts of the post-development traffic flows on the on the existing traffic network and the suitability of the proposed development and intersection design.

Traffic Volumes

Roads and Maritime Traffic Data indicates that the primary access roads to Dural and the sites, Old Northern Road and New Line Road, carry approximately 19,500 and 30,000 vehicles per day respectively. AECOM suggest that this road network link is approaching capacity. Within the immediate vicinity of the site, this is in part reflected in the operation of key intersections.

Figures 26 and 27, detail the AM and PM peak hour vehicle movements and indicate that three (3) of the five (5) existing intersections with Old Northern Road operate satisfactorily, with the remaining two (2) experiencing significant delays or failing.

Figure 26 – Existing AM peak intersection performance (Source: AECOM, 2016)

Intersection	Intersection Type	Demand Flow (veh/h)	Level of Service	Degree of Saturation (v/c)	Ave Delay (sec)	95% Back of Queue (m)
Old Northern Road Derriwong Road	Give-way (left out)	2,347	F	0.511	89.8 ¹	191
Old Northern Road New Line Road	Roundabout	4,454	F	1.102	70.9	814
	Signals	4,454	C	0.833	30.5	160
Old Northern Road Vineys Road	Roundabout	2,996	A	0.462	9.2 ¹	31
Old Northern Road Nursery Access Road	Give-way	2,177	A	0.688	11.4 ¹	2

Figure 27 – Existing PM peak intersection

Intersection	Intersection Type	Demand Flow (veh/h)	Level of Service	Degree of Saturation (v/c)	Ave Delay (sec)	95% Back of Queue (m)
Old Northern Road Derriwong Road	Give-way (left out)	2,585	E	0.767	59.4 ¹	182
Old Northern Road New Line Road	Roundabout	4,709	F	1.116	104.6	1,013
	Signals	4,709	C	0.893	35.2	135
Old Northern Road Vineys Road	Roundabout	2,840	A	0.462	9.6 ¹	29
Old Northern Road Nursery Access Road	Give-way	2,344	B	0.673	17.8 ¹	7

Based on the future development profile, AECOM estimate that the development sites would generate the following additional trips as indicated in **Figure 28** below.

Figure 28 – Total trips generated by proposed development

Site	Development Type	Quantity	AM Peak		PM Peak	
			Trip Rate	Trips Generated	Trip Rate	Trips Generated
Northern Site	Low density residential	96 lots	0.86 per dwelling	83	0.89 per dwelling	86
Southern Site	Low density residential	80 lots	0.86 per dwelling	69	0.89 per dwelling	71
Total			152		157	

These additional traffic flows, though objectively minor in nature, have implications for the operation of the local traffic network including the major distributor (classified) road of Old Northern Road and New Line Road, as well as the proposed intersections. These implications and the potential mitigation works are outlined in the following sections and the Traffic and Transport Report provided at Appendix C.

Vehicle Access

Vehicle access will be provided from Old Northern Road and Derriwong Road as indicated in **Figure 29** below.

The northern site can be accessed from both Old Northern Road and Derriwong Road. It will have three accesses from Old Northern Road via the two LILO intersections and one intersection allowing all movements listed below:

- Access 1 – conversion of the existing intersection of Old Northern Road | Nursery Access Road to a left in left out (LILO)
- Access 2 – new intersection allowing all movements
- Access 3 – new LILO.

Direct access for the southern site will be from Derriwong Road which vehicles are able to access at intersections along Old Northern Road. With the intersection of Old Northern Road and Derriwong Road proposed to operate as a LILO, banned right turn movements are required to use the new access points from Old Northern Road:

- Vehicles heading to the west (along Old Northern Road) will be required to use Access 2 (all movements)
- Vehicles coming from the south (along New Line Road) will likely use Access 2 or Access 3.

Management of the anticipated traffic flows from the future subdivision onto Old Northern Road, have been used to inform the urban design report and road layout. AECOM have recommended that to manage the increased flows the following upgrades are required:

- Upgrade of Old Northern Road and New Line Road to provide additional capacity.
- Old Northern Road and New Line Road to be upgraded to a signalised intersection.
- Old Northern Road and Vineys Road to be upgraded to a roundabout.
- Conversion of Old Northern Road and Derriwong Road to operate as a LILO
- Access 1 – conversion of the existing intersection of Old Northern Road and Nursery Access Road to a LILO.
- Access 2 – New roundabout or signalised intersection on Old Northern Road, north of Dural Primary School.
- Access 3 – New LILO intersection on Old Northern Road, south of Dural Primary School.

The proposed concept includes the provision of a 32 metre-wide road reserve to the south of the Dural Public School to accommodate a potential location for the future extension of Annangrove Road through to Old Northern Road.

The existing and proposed road network together with intersection upgrades are shown in **Figure 29**.

Figure 29 – Envisaged urban layout including new road connections/intersections



In relation to the broader traffic network and in particular the operation of the major collector roads, Old Northern Road/New Line Road south of the site, it is understood that infrastructure upgrades will be required to provide sufficient capacity to support the delivery and realisation of several planning proposals including South Dural, Dural Service Centre and the adjoining Round Corner Timber site.

South Dural Planning Proposal was granted Gateway Approval on the premise of delivering these infrastructure upgrades and, despite the potential for the gateway approval to lapse, the DP&E has provided an extension of time to allow this proposal to be developed and implemented. The South Dural Planning Proposal, together with the Dural Service Centre, Round Corner Timber Yard and the subject Planning Proposal, represent an opportunity for a coordinated approach and efficient spending on infrastructure. The significant progression of the South Dural Planning Proposal, together with the recent extension of time granted to the proponent, represents a clear commitment to the delivery of the necessary infrastructure works and should be interpreted as certainty that upgrades will be delivered in the near future.

The Proponent for this Planning Proposal is willing to contribute a fair and equitable proportion of upgrade costs associated with improving local road infrastructure to support the delivery of the proposal.

Transport and Accessibility

The proposed urban layout and street network has been designed to achieve the following:

- A new road network that supports safe and suitable movement for cars and cyclists;
- Promote an active walking catchment and use of public transport;
- A road layout that support a high level of permeability and connectivity and safety for vehicles and pedestrians; and
- The majority of the sites will be within the 400m catchment of current bus routes operating on Old Northern Road and New Line Road. Therefore, most of the residents will be within a 400m walking distance of an existing bus route linking to surrounding transport hubs.
- It is also anticipated that new bus connections to the NWRL stations will be established that are accessible from the study area. Local and Regional Road Infrastructure is capable of being upgraded to meet the increased demands of additional traffic flows.

Acoustic Impacts

An acoustic assessment has been undertaken by WSP Parsons Brinckerhoff and is attached at Appendix L. The assessment included logging unattended noise along Old Northern Road at locations representative of future residential development, incorporating the stipulated 14m site boundary setback. Noise was logged during the day (7am – 10pm) and in during the night (10pm – 7am).

The Australian Standards assign a satisfactorily internal noise level for residential properties as 30 dBA. Contained within the table at Figure x below, is the noise levels predicated at residential facades.

Figure 30 – Predicted road noise levels at residential facades

Development site and land use	Setback from boundary, metres	Distance to Old Northern Road, metres	Predicted level at façade, dBA _{Leq period}		Required reduction to meet internal noise goal, dBA
			Day 7am – 10pm	Night 10pm – 7am	
Northern	14	39	63	59	29
Southern	14	17	63	58	28

As indicated within the above table, the survey locations indicate noise levels above the satisfactory noise goal. The above data represents ambient noise recordings, whereas the noise goal refers to internal areas. The report concludes that the internal noise goal can be met through the following mitigation measures:

- *Ground floor: 1.8 metre solid barrier, such as a Colorbond or a capped-and-lapped fence, on the boundary adjacent to Old Northern Road. Windows are to meet Rw 30 dB, which may be achieved using 6mm single glazing and sufficient seals to meet this rating.*
- *First floor: windows are to have sufficient seals and glazing to meet Rw 35 dB, which may be achieved using a double-glazed construction or 10mm single glazing.*

To provide a better streetscape appearance, the concept includes a landscaped earth mound adjacent to Old Northern Road, and within private property, in lieu of a fence (see Figure 23 above).

Bushfire

ELA has undertaken a Bushfire Fire Assessment identifying all potential bushfire constraints to the future urban development within the study area, classification of hazard and planning requirements to ensure appropriate management and future asset protection (**Appendix E**).

In accordance with the NSW Policy of Planning for Bushfire Protection (BPB), the predominant vegetation class and effective slope of the sites as key indicators of bushfire threat have been determined to establish potential bushfire affectation and risk, expressed as Bushfire Attack Levels (BAL). The outcome of this assessment is summarised in **Figures 31** and **32**.

The land, subject of this proposal, has been identified to having a BAL of 29. Within this zone primary focus is given to the protection of buildings from ember attack and burning debris ignited by wind borne embers and radiant heat. Impact may be managed through the establishment of Asset Protection Zones (APZs) providing separation between a potential source of fire threat and development.

Figure 31 – BAL and APZ Requirements

Direction from envelope	Slope ¹	Vegetation ²	PBP required APZ ³	BAL-29 APZ AS3959	Comments
Northern cluster					
West and south	0-5 ⁰ downslope	Forest	25 m 70 m (SFPP)	32 m	Provided within property boundaries
South	0-5 ⁰ downslope	Grassland	10 m	10 m	
All other directions	Managed land				
Southern cluster					
West	0-5 ⁰ downslope	Forest	25 m 70 m (SFPP)	32 m	Provided by Derriwong Road and within property boundaries
West	0-5 ⁰ downslope	Grassland	10 m	10 m	Provided within property boundaries
South	0-5 ⁰ downslope	Low hazard	10 m 30 m (SFPP)	14 m	
All other directions	Managed land				

¹ Slope most significantly influencing the fire behaviour of the site having regard to vegetation found. Slope classes are according to PBP.

² Predominant vegetation is identified, according to PBP and "Where a mix of vegetation types exist the type providing the greater hazard is said to be predominate".

³ Assessment according to Table A2.4 of PBP

Figure 32 – Recommended APZS (Source: ELA, 2016)



The recommendations of ELA and how they have incorporated into the potential future subdivision design and layout is summarised in **Table 7**.

Table 7 – Consideration of Recommendations of ELA

ELA Recommendation	Response
Use of perimeter roads to create separation between fire source and future development	The existing and extended urban layout provides for perimeter roads to the south and west to provide separation between existing forest and future residential development.
Provision of alternative access and egress for fire service vehicles	The future urban layout will improve permeability and provide alternative entry and egress points to Old Northern Road
Ensure adequate setback from bushfire prone vegetation (APZs) Integrate non-combustible infrastructure within APZs such as roads, easements and parking areas. The majority of APZs should be contained within perimeter roads and front yard setbacks	Development will be subject to development controls adopted under the existing DCP that promote 10 metre front setbacks. These setbacks when combined with the existing street widths (approximately 16 metres) should provide adequate separation.
Ensure adequate access and egress from the study area through a well-designed road system	As above for fire service vehicle access, the development will improve vehicle permeability by providing more road controlled connections through to Old Northern Road.
Consider the adequacy of water supply and the delivery of other services (gas and electricity)	Services and utilities will be augmented, upgraded and expanded as necessary. Refer to later discussion and Appendix H.
Provide temporary APZs during any staged development	This may be addressed as part of a future DA and Construction Management Plan.
Provide for effective and ongoing management of APZs.	May be achieved through the registration of notices of titles to raise awareness of construction requirements for potential purchasers.
Consider construction standards (AS3959) implications for future developments depending on development type (25 and 70 metre APZs).	May be achieved through the registration of notices of titles to raise awareness of construction requirements for potential purchasers.

Taking into account the above, the identified sensitivities can be appropriately managed to ensure protection of the future land uses.

Water Quality

The Planning Proposal is unlikely to have adverse effects on local or catchment level water quality. Future redevelopment of the site would involve the integration of WSUD elements in accordance with the local development controls and connection of the land to reticulated sewer and stormwater systems.

The combination of these measures would feasibly improve water quality in relation to the removing sources of ground water contaminants (such as on site effluent disposal systems) and reduce sediment and nutrient loads of run off reaching O'Hara's Creek.

Detailed design of water quality measures would be undertaken as part of a development application following gazettal of the planning proposal.

Site Contamination

ADE Group Pty Ltd has undertaken preliminary site investigations (PSI) for all the individual title lots that make up the northern and southern sites of the subject of this Planning Proposal. A summary of each is provided in Table 8.

Table 8 – Summary of PSI Findings

Lot No. & DP	Findings	Recommendations
Lot 2 in DP 567995 (No. 21 Derriwong Road)	<ul style="list-style-type: none"> • Presence of invalidated fill along the eastern boundary; • Visible stockpiling of asbestos and asbestos conduits; • Previous use and remaining structural elements indicate potential use of the site to involve fuel storage and chemicals associated with former agricultural production; • Presence of an onsite waste water treatment tank (bacteria and heavy metals); and • Contamination arising from the former use of the site for agricultural purposes arising from crop spraying (pesticides and herbicides – low to moderate risk). 	<p>Past use and existing development indicate the potential for contamination to be present on the site. Further detailed testing is required prior to use for residential purposes.</p> <p>ADE indicates that if contaminants are encountered they will be capable of remediation such that the site can be made suitable for its intended use.</p>
Lot 9 in DP 237576 (No. 27 Derriwong Road)	<ul style="list-style-type: none"> • Contamination arising from the former use of the site for agricultural purposes arising from crop spraying (pesticides and herbicides – low to moderate risk); • Potential for asbestos to be present on the site in the existing building fabric. 	<p>Low potential for contaminant of concern to pose a risk to the proposed future users of the site, limited investigation is required to determine risk.</p> <p>ADE indicate that if contaminants are encountered they will be capable of remediation such that the site can be made suitable for its intended use</p>

Lot No. & DP	Findings	Recommendations
<p>Lot 100 in DP 713628 (No. 600 Old Northern Road)</p>	<ul style="list-style-type: none"> • Previous use and remaining structural elements indicate potential use of the site to involve fuel storage and chemicals associated with former agricultural production; • Presence of an onsite waste water treatment tank (bacteria and heavy metals); • Contamination arising from the former use of the site for agricultural purposes arising from crop spraying (pesticides and herbicides – low to moderate risk); • Proximity of the site to Old Northern Road there is a low to moderate potential for contamination arising from runoff • Proximity of the site to an operating petrol station may have exposed the site to point source contamination from underground storage tanks (risk is considered low due to the potential directional flow westward of ground water) 	<p>ADE concludes that there is the potential for contaminants of concern to pose a risk to the proposed future users of the site and that further investigation into the nature and extent of contamination (if present) is required.</p>
<p>Lot 1 in DP 656036 (602 Old Northern Road)</p>	<ul style="list-style-type: none"> • Previous use and remaining structural elements indicate potential use of the site to involve fuel storage and chemicals associated with former agricultural production; • Presence of an onsite waste water treatment tank (bacteria and heavy metals); • Contamination arising from the former use of the site for agricultural purposes arising from crop spraying (pesticides and herbicides – low to moderate risk); • The site during inspection by ADE was identified as being used for the storage of rubbish including chemicals (petrol, chlorine residential grade chemicals), imported (invalidated) fill materials and 44 gallon drums with unknown chemical materials. 	<p>ADE concludes that there is potential for contaminants of concern to pose a risk to the proposed future users of the site and that a limited investigation into the nature and extent of contamination (if present) is required. In particular:</p> <ul style="list-style-type: none"> • Areas observed to contain motor oil, chlorine and unknown chemical storage; • Onsite effluent tanks etc. <p>Notwithstanding, ADE indicate that if contaminants are encountered they will be capable of remediation such that the site can be made suitable for its intended use.</p>

Lot No. & DP	Findings	Recommendations
Lot X in DP 501233 (No. 618 Old Northern Road)	<p>This site has an extensive history of use that may have contributed to the presence of contaminants requiring remediation. In particular the following:</p> <ul style="list-style-type: none"> • Use of the site as a former market garden; • Presence of an existing dam (constructed using imported fill material), combined with in-ground pipes of unknown material; • Use of imported fill across the site to construct car parking combined with stockpiles • Potential chemical spills and leaks associated with machinery use and repair; • Use of asbestos construction materials; • Presence of above ground storage tank and hydrocarbon staining on soil service 	<p>ADE concludes that there is the potential for contaminants of concern to pose a risk to the proposed future users of the site and that further investigation into the nature and extent of contamination (if present) is required.</p> <p>Notwithstanding, ADE indicate that if contaminants are encountered they will be capable of remediation such that the site can be made suitable for its intended use.</p>
Lot2 DP541329 (No. 626 Old Northern Road)	<p>The conceptual site model for the site has identified the following potential sources of contamination on the site:</p> <ul style="list-style-type: none"> • Importation of controlled fill material to establish a carpark (Heavy metals, BTEX, PAHS etc.); • Leakages from unknown sources; • Presence of a former commercial building leading to introduction of uncontrolled fill and asbestos. 	<p>ADE concludes that there is the potential for contaminants of concern to pose a risk to the proposed future users of the site and that further investigation into the nature and extent of contamination (if present) is required. Notwithstanding, ADE indicate that if contaminants are encountered they will be capable of remediation such that the site can be made suitable for its intended use.</p>
Lot 11 DP 866560 (5 Derriwong Road)	<p>The conceptual site model for the site has identified the following potential sources of contamination on the site:</p> <ul style="list-style-type: none"> • Uncontrolled fill material under dwelling slabs; • Construction materials (asbestos, lead paint etc.) existing dwelling and the footprint of a former shed; • Organic contaminants and metals from septic tanks/sewage; and • Seepage (leaking USTs) from adjacent service station. 	<p>ADE concludes that there is the potential for contaminants of concern to pose a risk to the proposed future users of the site and that further investigation into the nature and extent of contamination (if present) is required. Notwithstanding, ADE indicate that if contaminants are encountered they will be capable of remediation such that the site can be made suitable for its intended use.</p>

Lot No. & DP	Findings	Recommendations
7 Derriwong Road (Lot 12 in DP 866560)	<p>The site has historically been used for grazing purposes and is located within proximity to agriculture since the 1920s. Currently the site adjoins a service station with USTs.</p> <p>The conceptual site model for the site has identified the following potential sources of contamination on the site:</p> <ul style="list-style-type: none"> • Uncontrolled fill material in stockpiles and areas of altered profile (i.e. carparks) • Leakages and spills associated with the former agricultural maintenance facility; • Organic contaminants and metals from septic tanks/sewage; and • Seepage (leaking USTs) from adjacent service station. <p>All potential contamination sources and pathways have been identified as a low, moderate and likely.</p>	<p>ADE concludes that there is the potential for contaminants of concern to pose a risk to the proposed future users of the site and that further investigation into the nature and extent of contamination (if present) is required.</p> <p>Targeted sampling of the site can be undertaken to determine the extent of contamination and remediation necessary to render the land suitable for residential use.</p>
584 Derriwong Road (Lot 1 DP 660184)	<p>The conceptual site model for the site has identified the following potential sources of contamination on the site:</p> <ul style="list-style-type: none"> • Uncontrolled fill material under dwelling slabs; • Construction materials (asbestos, lead paint etc.) existing dwelling and the footprint of a former shed; • Seepage (leaking USTs) from adjacent service station; and • Leakages and spills of fields etc. 	<p>ADE concludes that there is the potential for contaminants of concern to pose a risk to the proposed future users of the site and that further investigation into the nature and extent of contamination (if present) is required. Notwithstanding, ADE indicate that if contaminants are encountered they will be capable of remediation such that the site can be made suitable for its intended use.</p>
590 Derriwong Road (Lot D DP 38097)	<p>The conceptual site model for the site has identified the following potential sources of contamination on the site:</p> <ul style="list-style-type: none"> • Uncontrolled fill material under dwelling slabs; • Construction materials (asbestos, lead paint etc.) existing dwelling and the footprint of a former shed; • Seepage (leaking USTs) from adjacent 	<p>ADE concludes that there is the potential for contaminants of concern to pose a risk to the proposed future users of the site and that further investigation into the nature and extent of contamination (if present) is required. Notwithstanding, ADE indicate that if contaminants are encountered they will be capable of remediation such that the site</p>

Lot No. & DP	Findings	Recommendations
	service station; and <ul style="list-style-type: none"> • Organic contaminants and metals from septic tanks/sewage. 	can be made suitable for its intended use.
606 Old Northern Road (Lot 1 DP 73652)	The conceptual site model for the site has identified the following potential sources of contamination on the site: <ul style="list-style-type: none"> • Previous use as an orchard would have contributed to wide spread potential contamination of the site. • Organic contaminants and metals from septic tanks/sewage; • Uncontrolled fill material under dwelling slabs; and • Construction materials (asbestos, lead paint etc.) existing dwelling and the footprint of a former shed. 	ADE concludes that there is the potential for contaminants of concern to pose a risk to the proposed future users of the site and that further investigation into the nature and extent of contamination (if present) is required. Notwithstanding, ADE indicate that if contaminants are encountered they will be capable of remediation such that the site can be made suitable for its intended use.

With the exception of No. 606 Old Northern Road that has a history of use as an orchard, the nature of the contaminant sources and migration pathways identified in the various conceptual site models, if sites are contaminated it is likely to be limited to hot spots. As outlined above and detailed in the PSI Reports, each of the sites despite exposure to contaminant sources owing to historical agricultural use can be made suitable for residential use.

How has the Planning Proposal adequately addressed any social and economic effects?

The proposed amendment is considered to make a positive social and economic contribution to the immediate locality and broader LGA. The positive implications associated with the amendment and likely future development is outlined in the following section.

The proposal will provide an increase in total dwelling yield and will diversify local housing typologies, contributing to increased housing choice.

Residential redevelopment of the site, as facilitated by this Planning Proposal will deliver a number of social and economic benefits including greater housing choice, a new public street network and more pedestrian connections through the area which will encourage a more vibrant and activated public domain generally.

SECTION D – STATE AND COMMONWEALTH INTERESTS

Is there adequate public infrastructure for the Planning Proposal?

INFRASTRUCTURE AND UTILITIES

The proposal will require the expansion, augmentation and upgrade to existing public infrastructure, including:

- Electricity;
- Telecommunications;
- Sewer; and
- Water.

Preliminary investigations have been undertaken by AT&L and Arup, to determine available service connection points and identify potential service routes (where expended networks are required). These investigations have identified several options for the delivery of services to the land which are currently being discussed with service providers to confirm feasibility and support.

The investigation reports, identifying the location of current services and connections points are provided in Appendix I and Appendix K, with details of the options for connection, expansion and upgrade. AT&L and Arup have concluded that all the land the subject of the Planning Proposal can be adequately serviced by the necessary infrastructure and utilities.

SOCIAL INFRASTRUCTURE

The Planning Proposal can facilitate the delivery of future open space, including:

- 3,364m² within the northern site to be dedicated to the Department of Education and used in association with Dural Public School, such as parking and/or sports courts(as indicated in Figure 33 below); and
- 1,177m² in the southern site adjacent to the Memorial Hall.

The indicative areas of open space can be delivered as either private or public recreation facilities. In the event the facilities are dedicated to Council, a formal offer by way of Voluntary Planning Agreement will be submitted and advertised in accordance with the provisions of the EP&A Act 1979.

The delivery of expanded recreational opportunities to the local and wider community is considered to make a positive social impact.

Figure 33 – Potential uses of land adjacent to Dural Public School



What are the views of state and commonwealth public authorities consulted in accordance with the gateway determination?

Appropriate consultation with relevant government agencies would be undertaken by Council following a gateway determination. A preliminary list of agencies that would be consulted as part of the exhibition of the proposal is included below.

- Endeavour Energy;
- Telstra;
- Sydney Water;
- Roads and Maritime Services;
- Transport for New South Wales;
- Office of Environment and Heritage; and
- NSW Office of Water.

A final list of all relevant agencies will be determined as part of the Gateway Determination. Following the Gateway determination, all relevant agencies will be consulted.

PART 4 - MAPPING

This Planning Proposal seeks to amend the following planning maps contained in *The Hills Local Environmental Plan 2012* as they apply to the sites:

- Land Zoning;
- Height of Buildings;
- Minimum Lot Sizes; and
- Key Sites.

Copies of the proposed planning maps are provided in Part 2 explanation of the provisions.

PART 5 – COMMUNITY CONSULTATION

Public consultation will be undertaken in accordance with the requirements of the Environmental Planning and Assessment Act 1979 and Council's policies for community consultation. It is anticipated that public exhibition of the Planning Proposal would involve:

- Publishing of the proposal and supporting technical reports on The Hills website;
- Publishing of a Public Notice in in the Sydney Morning Herald and/or a relevant local newspaper; and
- Direct Notice, in writing to the owners and occupiers of adjoining and nearby properties and relevant community groups.

The Planning Proposal will be publicly exhibited for a period of between 14 and 28 days in accordance with Council's policies. Exhibition material will be made available on Council's Website and at Council's administration centre.

The Proponent would welcome the opportunity to engage with Council following the lodgement of this planning proposal. This would include briefing councillors and Council staff to inform the process and to provide for a better understanding of the Planning Proposal prior to it being considered for gateway determination.

PART 6 – PROJECT TIMELINE

The following project timeline will assist with tracking the progress of the planning proposal through its various stages of consultation and approval. It is estimated that this amendment to *The Hills Local Environmental Plan 2012* will be completed by April 2017.

Table 9 – Project Timeline

Stage	2016		2017									
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Submit Planning Proposal to Council	█											
Council exhibit Planning Proposal	█	█										
Council assess PP, consider submissions and report to Council for endorsement		█	█	█								
PP referred to DPE for gateway determination				█	█							
DPE consider PP and issue gateway determination					█	█	█	█				
Community consultation								█	█			
Final assessment of PP including consideration of submissions									█	█	█	
Making of LEP												█

5. CONCLUSION

The Planning Proposal has been prepared in accordance with section 55 of the EP&A Act and the relevant guidelines prepared by the NSW Department of Planning including A Guide to Preparing Local Environmental Plans and A Guide to Preparing Planning Proposals.

The Planning Proposal provides a comprehensive justification of the proposed amendment to THLEP 2012, and is supported on the following grounds:

- The proposed rezoning is consistent with the emerging and anticipated urban character of the area and the existing pattern of density for development within adjacent urban centres;
- The proposed residential urban form is compatible and integrate with Round Corner and will provide for future connectivity with adjacent lands (not included in this proposal);
- The land is not presently used for agricultural purposes and the potential use of the land for agriculture is constrained due to the proximity of urban land and the potential for intensive agriculture to generate adverse environmental impacts;
- The rezoning and future development would support the continued growth of Round Corner local centre with increased proximate residential density;
- The proposal will not dilute the primacy of adjacent urban centres, but reinforce and support their growth through the increased residential density and worker populations within the retail catchment;
- The rezoning reflects a logical extension and infill of urban land uses, bookended between two (2) existing centres that are the subject of continuing growth and development;
- The proposal represents orderly and economic use of otherwise underutilised land that cannot be used for meaningful agricultural production;
- The residential subdivision will deliver new residential land to meet demand of existing and potential residents, in an identified market gap for downsizers and young families
- The proposed road network will deliver increased permeability in the locality; and
- The proposal will result in positive social and economic impacts on the local community through the delivery of expanded recreational opportunities and new job creation.

Overall, it is considered that the Planning Proposal has a range of positive benefits, and it is requested The Hills Shire Council take the necessary steps to enable it to proceed to Gateway Determination under Section 56 of the EP&A Act.

DISCLAIMER

This report is dated 3 November 2016 and incorporates information and events up to that date only and excludes any information arising, or event occurring, after that date which may affect the validity of Urbis Pty Ltd's (**Urbis**) opinion in this report. Urbis prepared this report on the instructions, and for the benefit only, of Development Management Services Pty Ltd (**Instructing Party**) for the purpose of Planning Proposal (**Purpose**) and not for any other purpose or use. To the extent permitted by applicable law, Urbis expressly disclaims all liability, whether direct or indirect, to the Instructing Party which relies or purports to rely on this report for any purpose other than the Purpose, and to any other person which relies or purports to rely on this report for any purpose whatsoever (including the Purpose).

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This report has been prepared with due care and diligence by Urbis and the statements and opinions given by Urbis in this report are given in good faith and in the reasonable belief that they are correct and not misleading, subject to the limitations above.

APPENDIX A URBAN DESIGN REPORT

APPENDIX B RESIDENTIAL MARKET ASSESSMENT

APPENDIX C ASSESSMENT OF NEW AGRICULTURAL ENTERPRISE VIABILITY IN DURAL

APPENDIX D TRAFFIC AND TRANSPORT ASSESSMENT

APPENDIX E ECOLOGICAL ASSESSMENT

APPENDIX F BUSHFIRE ASSESSMENT

APPENDIX G HERITAGE ASSESSMENT

APPENDIX H PRELIMINARY SITE INVESTIGATION

APPENDIX I SERVICING AND UTILITIES INVESTIGATIONS

APPENDIX J SITE SURVEYS

APPENDIX K SERVICE CONNECTIONS REPORT

APPENDIX L ACOUSTIC ASSESSMENT



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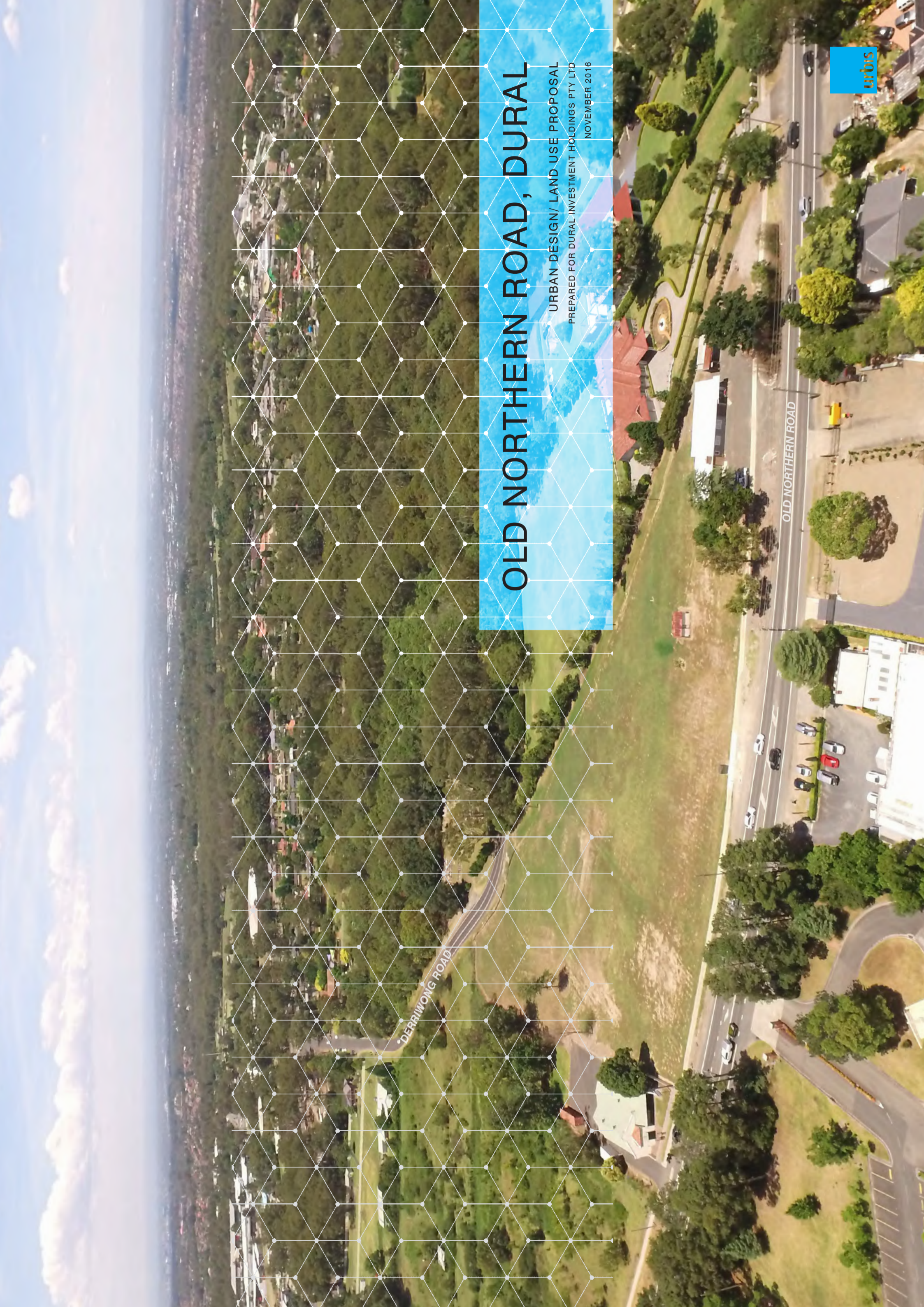
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OLD NORTHERN ROAD, DURAL

URBAN DESIGN/ LAND USE PROPOSAL
PREPARED FOR DURAL INVESTMENT HOLDINGS PTY LTD
NOVEMBER 2016



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1.0 EXECUTIVE SUMMARY

Urbis has been engaged by Dural Investments Holdings Pty Ltd to prepare an urban design study to investigate the development opportunities and potential rezoning of two sites located in Dural.

The two sites are located on the western side of the Old Northern Road. One site is located adjacent to and north of the major intersection with New Line Road (Southern Site) and the other site surrounds Dural Public School (Northern Site).

The urban design and strategic justification for the urban development and rezoning of the two sites is based on the following consideration:

- This part of the Dural locality is undergoing a transition from historical rural land uses with an expansion of the urban fringe and non-rural land uses to the north and south of the sites, with low density residential zones proposed, as demand for housing with good access to employment, retail and service increases in the region.
- This transition is particularly reflected in the South Dural planning proposal, located south of the site between the Old Northern Road and New Line Road, which proposes the staged delivery of 3,000 dwellings.
- The sites have not in recent years and in some instances never been used for productive agricultural activities.
- The sites are located between two centres, Cascades at the north and Round Corner at the south. The Cascade proposal will see a redevelopment of the local centre with the introduction of new retail opportunities and apartment buildings.

- Land surrounding the Round Corner local centre been developed with low density housing on lots of approximately 700 square metres and the physical boundaries have been reached. Any further expansion of the existing residential neighbourhood would logically be northward along Old Northern Road in order to avoid and protect the ecologically sensitive land adjacent to the town centre.

- The sites that are mostly cleared and present no physical constraints to urban development.
- The provision of a Metro Norwest station at Castle Hill.
- There is already significant amount of infrastructure, facilities services and education facilities available in the locality.

The design proposal has investigated the opportunities to develop the sites for a variety of land uses to support and compliment the Dural community. The planning proposal and this urban design study presents the following land use opportunities.

NORTHERN SITE:

- 101 low density residential lots
- Private recreational/ sporting fields

SOUTHERN SITE:

- 80 low density residential lots
- Approximately 1,000m² of potential community use

This urban design study has demonstrated that the rezoning and development of the two sites:

- Would represent the logical extension of the low density residential neighbourhood and urban centre Round Corner
- Improves access of the Dural Public School and the Dural Memorial Hall, enhancing the relationship of the social infrastructure with the surrounding area
- Will deliver additional amenities to the community with the delivery of recreation and open space facilities
- Will benefit from the sites location proximate to a range of environmental and open space opportunities
- Will be supported by and provide economic uplift to the two local centres adjacent to the sites
- Improves vehicular and pedestrian permeability of the area, consolidating the urban fabric of Dural

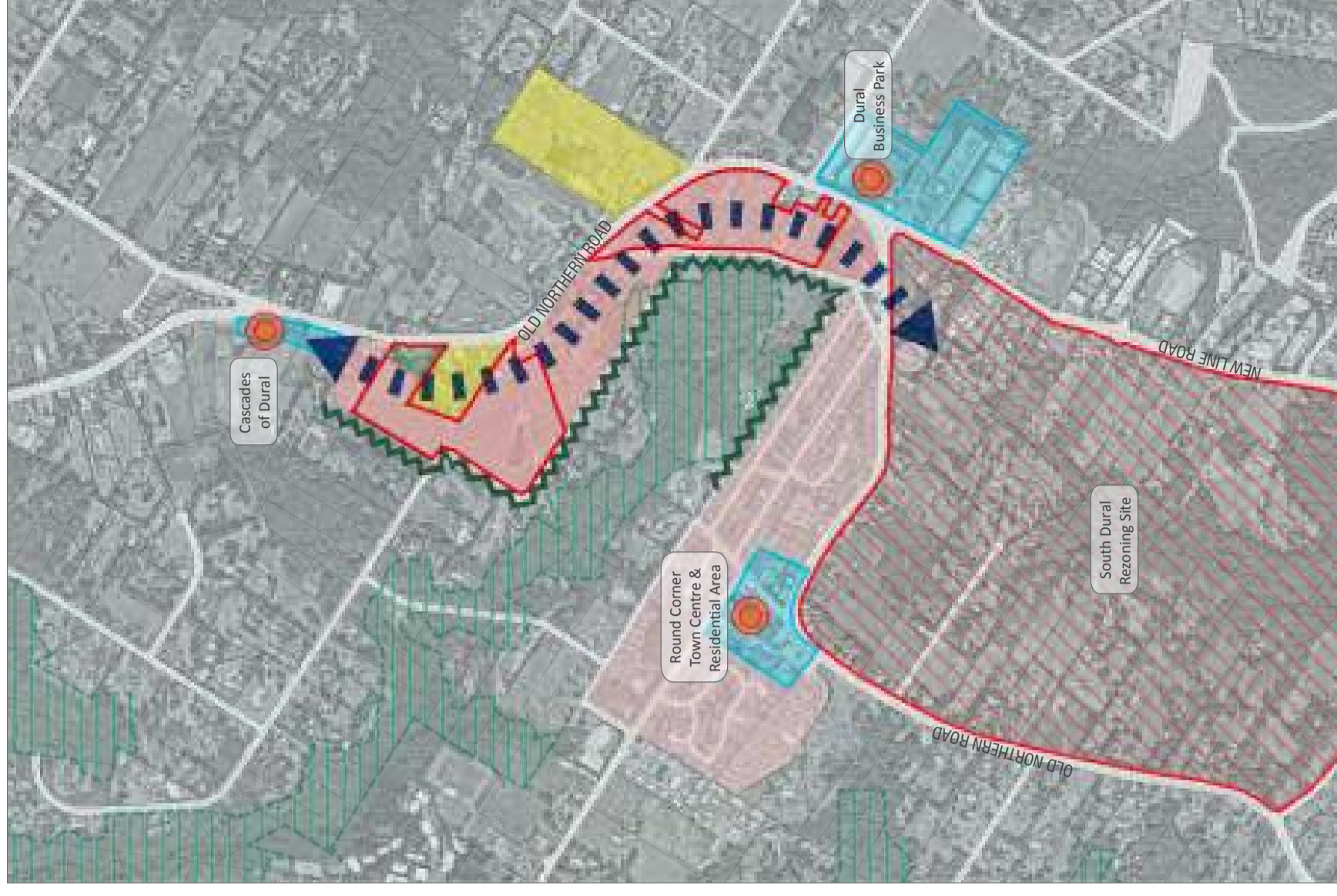
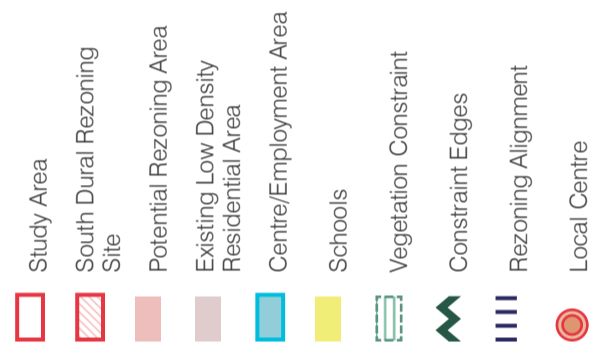


Figure 1: Rezoning Opportunities

2.0 INTRODUCTION

2.1 SITE IDENTIFICATION

The subject sites are located between the Old Northern Road and the Derriwong Road, with a total area of 18.9 hectares.

The Northern Site has an area of 10.7 hectares, surrounding the Dural Public School, legally identified as:

- Lot 2 / DP541329
- Lot 9 / DP237576
- Lot X / DP501233
- Lot 2 / DP567995

The Southern Site has an area of 8.2 hectares and is adjacent to the major intersection of Old Northern Road and New Line Road. The nine allotments are legally identified as:

- Lot 1 / DP73652
- Lot 1 / DP656036
- Lot 101 / DP713628
- Lot 100 / DP713628
- Lot 12 / DP866560
- Lot 11 / DP866560
- Lot 1 / DP660184
- Lot D / DP39261
- Lot D / DP38097

2.2 SITE CHARACTERISTICS

Key features on the sites include:

- The subject sites are located approximately 25km northwest of Sydney CBD.
- The sites have access to public parks, nature reserves and a range of facilities and services.
- The northern site surrounds the north, west and southern perimeters of Dural Public School.
- The southern site contains a locally listed heritage item that is in poor condition.
- Both sites typically slope downwards from the ridge line along Old Northern Road in a south-westerly direction towards the vegetated area of O'Haras Creek.
- Round Corner Local Centre is located 1km west of the sites and Cascades (Neighbourhood Centre) is located 1km north of the sites.
- The southern site is located in proximity to Dural Business Park.
- Old Northern Road has a major role in the local context of the site, with its role as a high frequency bus road, connecting the site to major centres, predominantly, Castle Hill.
- Old Northern Road is also the major road that leads traffic at the North to the New Line Road and M2 further South.

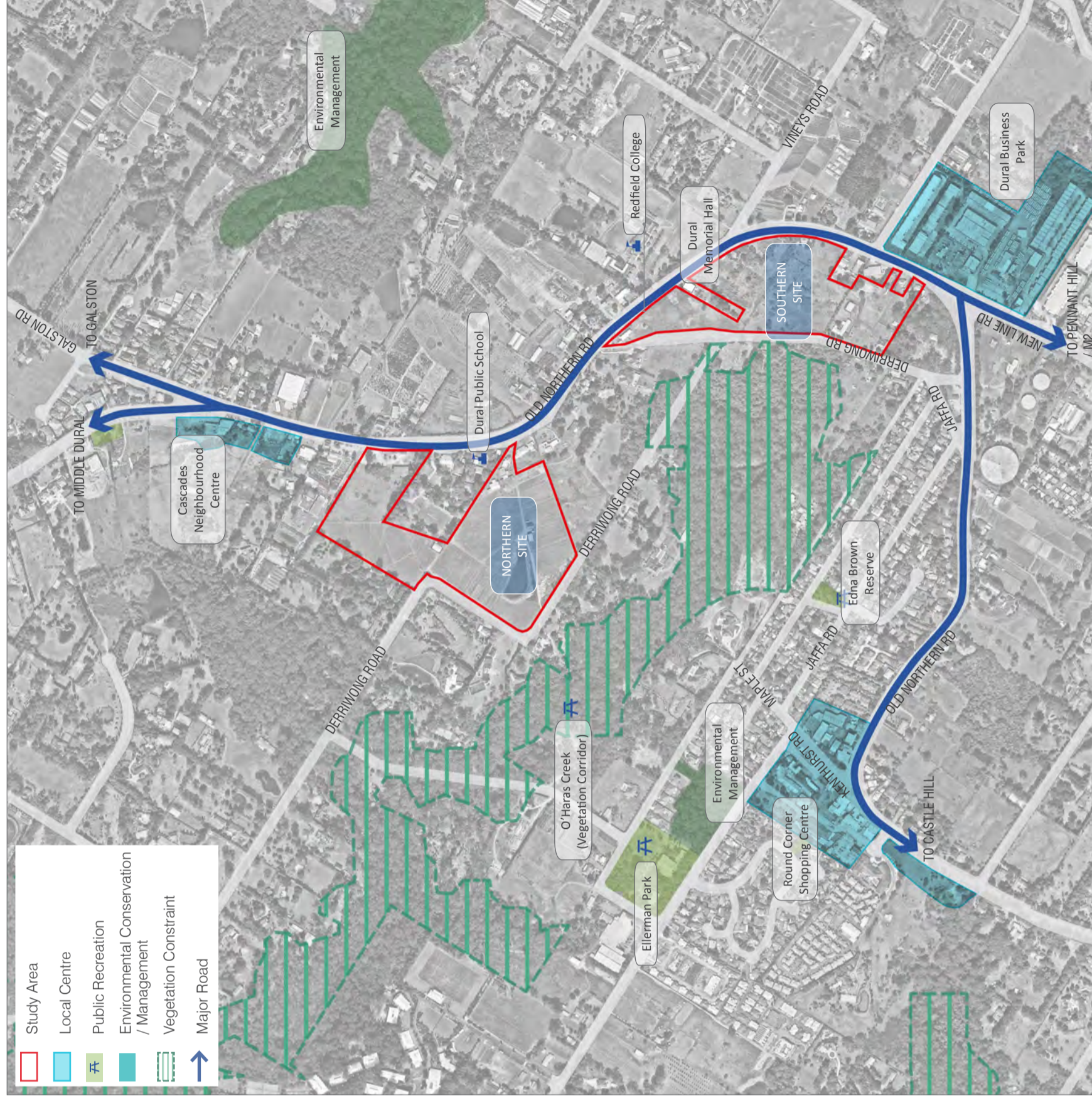


Figure 2: Context Map

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3.0 REGIONAL CONTEXT

3.1 ACCESS AND CONNECTION

The subject sites are located 5km north of Castle Hill, one of the major strategic centres identified in greater metropolitan Sydney. High frequency bus routes along the Old Northern Road link the site to Castle Hill.

Castle Hill will be serviced by the Metro Norwest line which is expected to be completed in early 2019. The metro line will improve access to the employment centres of Norwest, Macquarie Park and North Sydney and Sydney CBD.

Future transport infrastructure upgrades planned for the district will further improve connectivity to employment and educational centres which in turn provides a more desirable choice for businesses and residents to locate their presence in Dural.

The development of the subject sites along with the provision of a greater variety of housing choice in a desirable location will support the general population growth and promote more people working closer to existing and future employment areas.

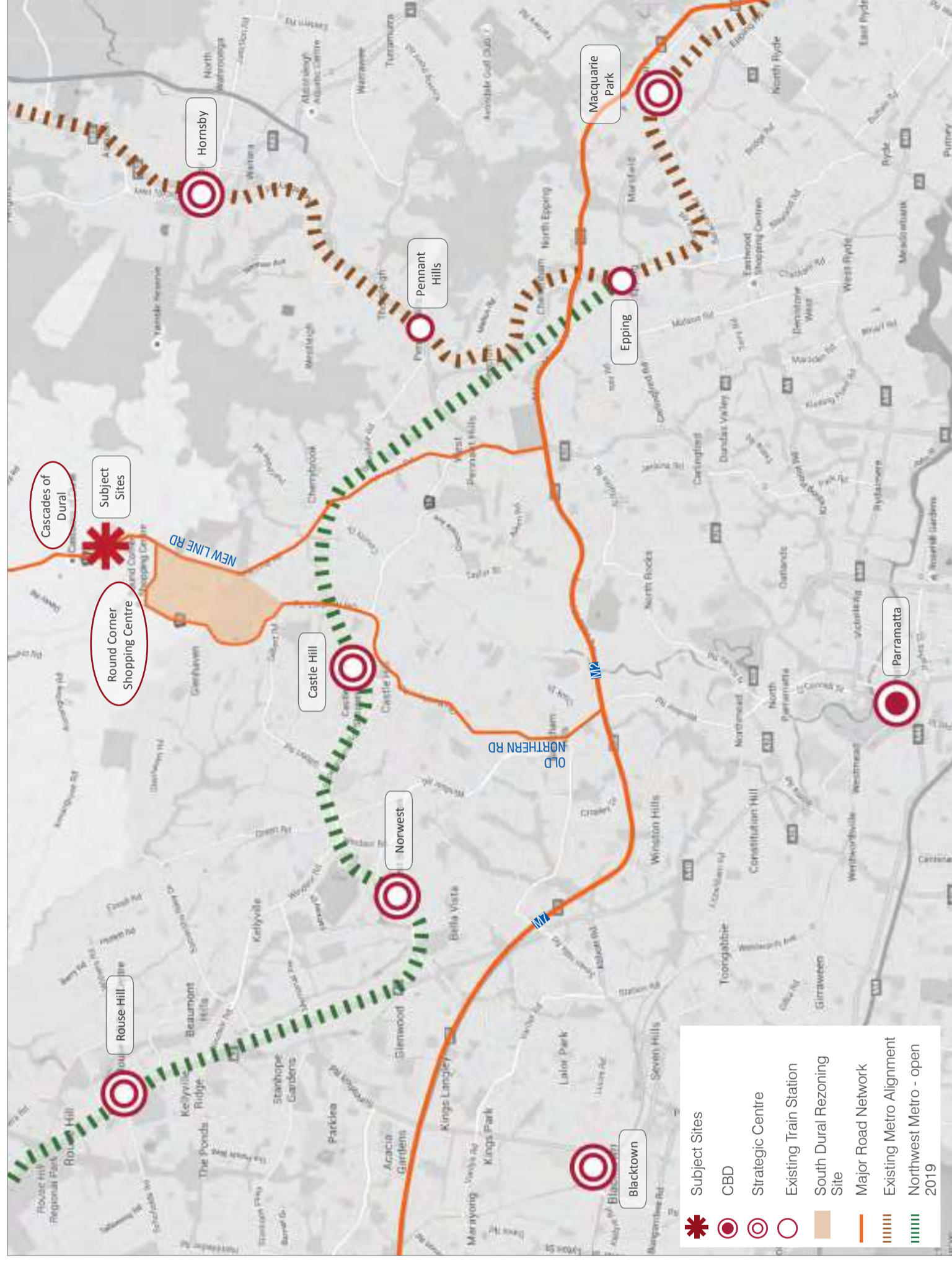


Figure 3: Regional Context Map

3.2 SOUTH DURAL PLANNING PROPOSAL

The South Dural planning proposal covers a 240 ha precinct located between Round Corner and Castle Hill. The precinct is bounded by The Old Northern Road, New Line Road and Hasting Road. The precinct is envisaged to accommodate in the order of 3,000 dwelling and contain three centres, the most northern one, opposite the Round Corner Local Centre.

The planning proposal has gone through Gateway Determination and is being progressed with Hornsby Council.

The rezoning of the South Dural Precinct will bring the urban edge to the southern part of the study area, further reinforcing the opportunity to rezone the subject sites.

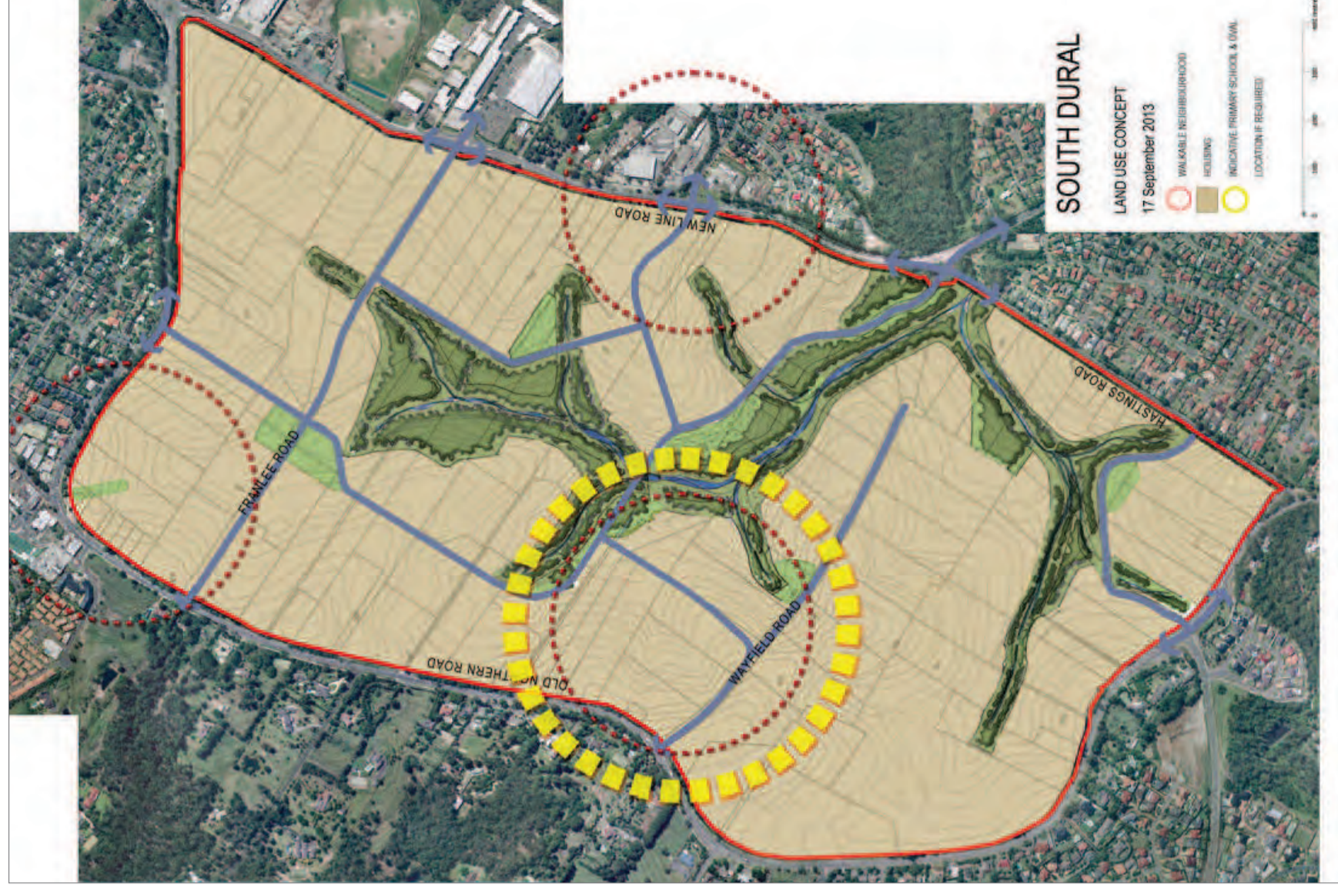


Figure 4: South Dural Planning Proposal

4.0 CONTEXT ANALYSIS

4.1 SURROUNDING LAND USES

The subject sites present significant development opportunities given their location, existing land uses and likelihood of change in their urban form. The sites are prominently located on a well trafficked road with good access to public transport, local facilities and services.

The sites are located between the Round Corner (Local Centre - B2), Cascade (Neighbourhood Centre - B1) and the Dural Business Park, where a range of retail shops, cafes and restaurants are located.

- Surrounding land uses are presently low density with residential as the primary use in the area, however, closer to the town centre, an amalgam of more urbanised forms of use are evident, having been developed over a period of time. These include:
 - A number of seniors housing sites west of the local centre;
 - Townhouse, attached/dual occupancy and villa style development;
 - Dural Business Park and the light industrial sites along New Line Road;
 - Holiday Parks and Motels

- Closer to the local centre, south-west of the subject sites, residential subdivisions have evolved, developed at an average of 700m² allotments.
- More compact forms of urban character** are also evident in areas proximate to the local centre such as villa style, attached and townhouse developments off Old Northern Road such as those between 542-550 Old Northern Road;
- South of the local centre a new precinct is envisaged to accommodate in the order of 3,000 dwelling and contain three centres, the most northern one, opposite the Round Corner Local Centre.
- North of the subject sites, examples of change in urban form include the rezoning and development of Cascades, a mixed-use development comprising business uses,

residential, food and beverage, a child care centre and a recreation facility/multipurpose hall.

- The sites are located in close proximity to educational facilities, specifically
 - The Dural Public School surrounded by the Northern Site.
 - Redfield College, right from the Southern Site along Old Northern Road
- There are heritage items located around the subject sites such as:
 - A cemetery across from the Northern Site on Old Northern Road, identified as an archaeological item.
 - Uniting Church Cemetery located adjacent to the Southern Site at the intersection of Derriwong Road and Derriwong Lane.
 - The Dural Memorial Hall located within the Southern Site.
 - One Cottage House located within the Southern Site.

LOCAL OPEN SPACE AND VEGETATED AREAS

The sites have some access to open spaces:

- It is located 1.5km to the west of Berowra Valley National Park, including Tunks Creek.
- Holland Reserve and Dural Nature Reserve are two biodiversity corridors located at the west and south of the subject sites
- Ellerman Park, Edna Brown Reserve and Rosebank Avenue Reserve are three key public parks in the surrounding area
- O'Haras Creek Vegetation Corridor is located between the Round Corner Town Centre and the Northern Site has potential to improve access to the natural amenity of future developments in Dural. **This area of vegetation also presents as a natural boundary for urban development in the area, constraining incremental development of compact urban forms northward along Old Northern Road.**

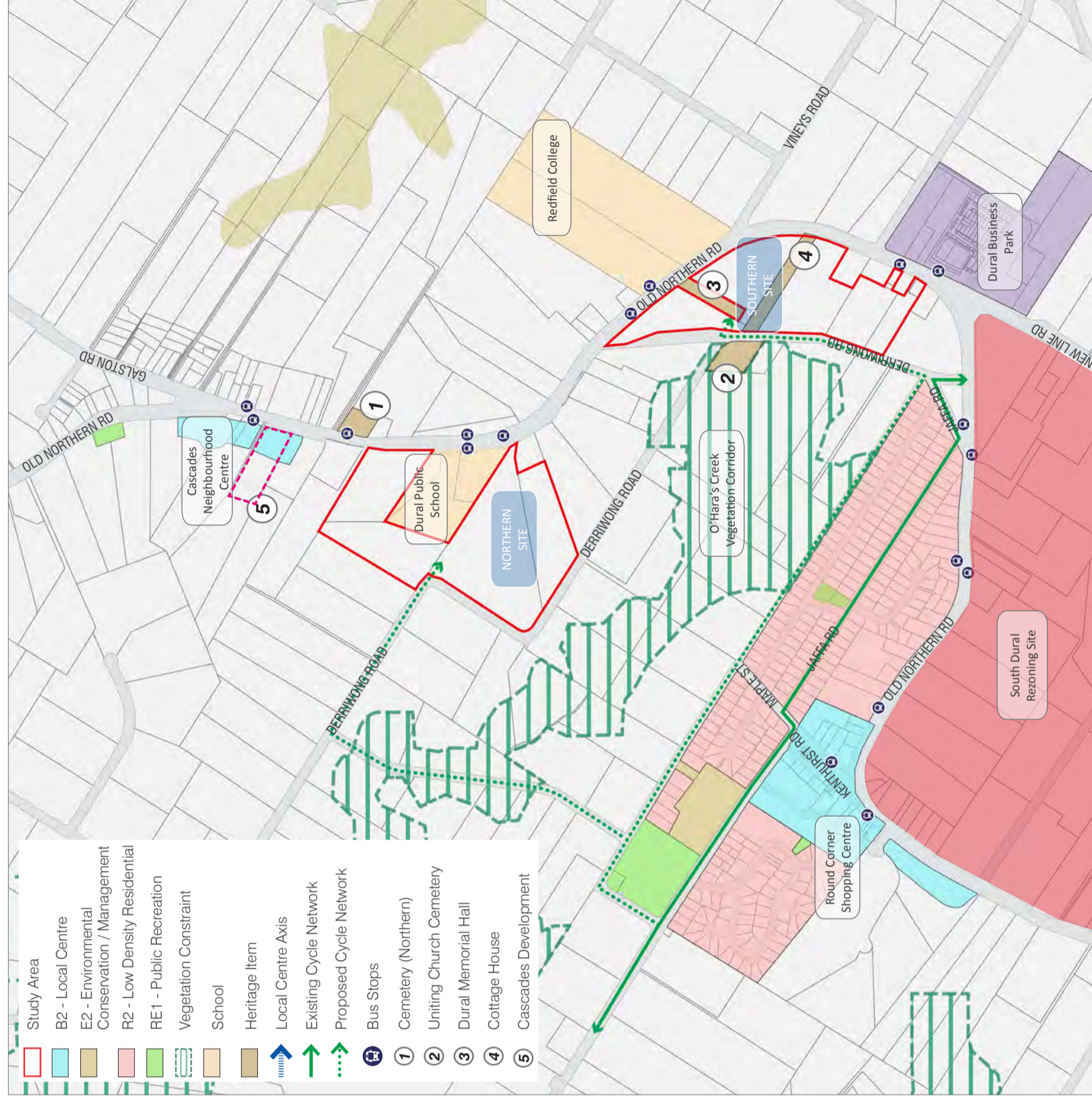
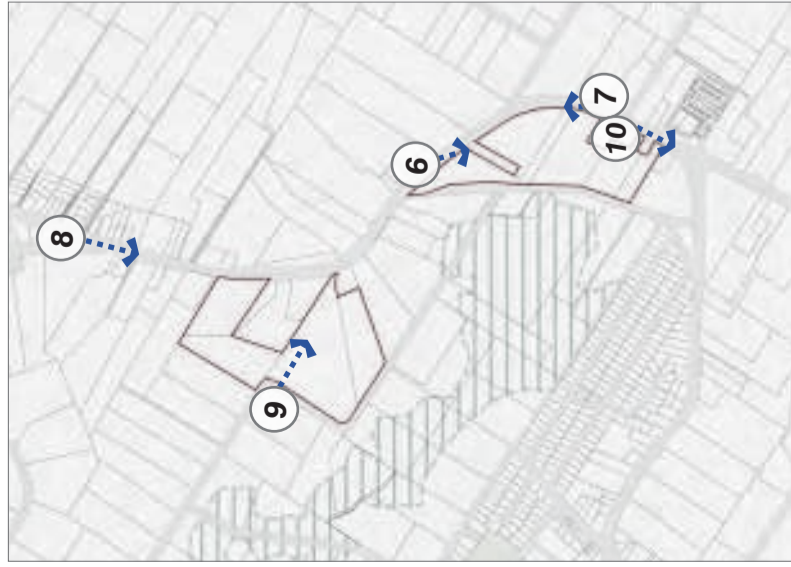


Figure 5: Land Uses Map

SITE PHOTOS



Key (1:20,000)



Figure 6: Dural Memorial Hall - Heritage Item



Figure 7: Cottage House - Heritage Item



Figure 8: Cascades Neighbourhood Centre looking south towards bend in Old Northern Road



Figure 9: Looking east towards Dural Public School from Derriwong Road



Figure 10: Looking south towards Dural Business Park in Old Northern Road

GOOGLE STREETVIEW



Key (1:20,000)



View 1: Eastern view towards subject site at intersection of Wirrabarra Road and Derriwong Road



View 2: Eastern view towards subject site on Derriwong Road at bend



View 3: South West view on site boundary from Derriwong Road



View 4: Looking north east along Derriwong Road towards site boundary



View 5: Looking at the intersection of Old Northern Road and Maple Road towards Round Croner Shopping Centre



View 6: Looking at compact building typologies at 542 Old Northern Road



View 7: Looking at townhouse residential typologies at 546 Old Northern Road



View 8: Towards the edge condition of Dural Business Park. Generally, wide separations from boundary to building line decrease perception of safety for pedestrians. Setbacks with building edges closer to the road allow for greater passive surveillance.

4.2 ACCESS & MOVEMENT

ROAD ACCESS

The subject sites primary point of access and vehicle movement is via Old Northern Road.

- Old Northern Road has direct connection towards New Line Road and M2 Hills Highway further South. This Major Road connects the subject sites to Castle Hill, Macquarie Park and Sydney CBD.
- Derriwong Road is a local road that connects both sites to the south-west of Old Northern Road, servicing primarily large lot residential west of the site.
- Derriwong Road presents potential to be the key access route to both sites in order to divert traffic from Old Northern Road
- Intersection points proximate to the study area include:
 - The Y-intersection of Old Northern Road and Galston Road, at the north of the subject sites that connect to Glenorie and Marramarra National Park.
 - T-intersection of Old Northern Road and Vineys Road, at the lower portion of the Southern Site.
 - T-intersection of Old Northern Road and Quarry Road, at the mid portion of the Southern Site connecting to Berowra Valley National Park.
 - The round-a-bout intersection where Old Northern Road and New Line Road intersect south of the sites connecting to Castle Hill or West Pennant Hills and the M2.
 - T-intersection point of Kenthurst Road and Old Northern Road, south-east of the subject site, located at Round Corner Shopping Centre.

Presently, Dural Public School and Dural Memorial Hall are currently restricted to one point of access and servicing from Old Northern Road. Traffic issues because of limited access to these community facilities is particularly challenging on busy periods or special event days.

Further in this report, opportunities to address and alleviate some of the current issues regarding traffic have been developed as part of the proposal and will be addressed in the following pages.

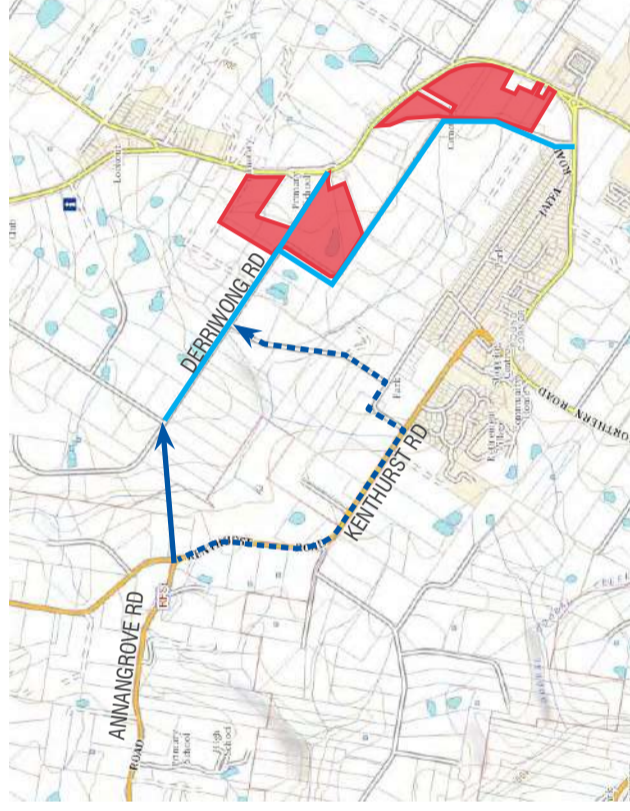


Figure 11: Regional Access Options

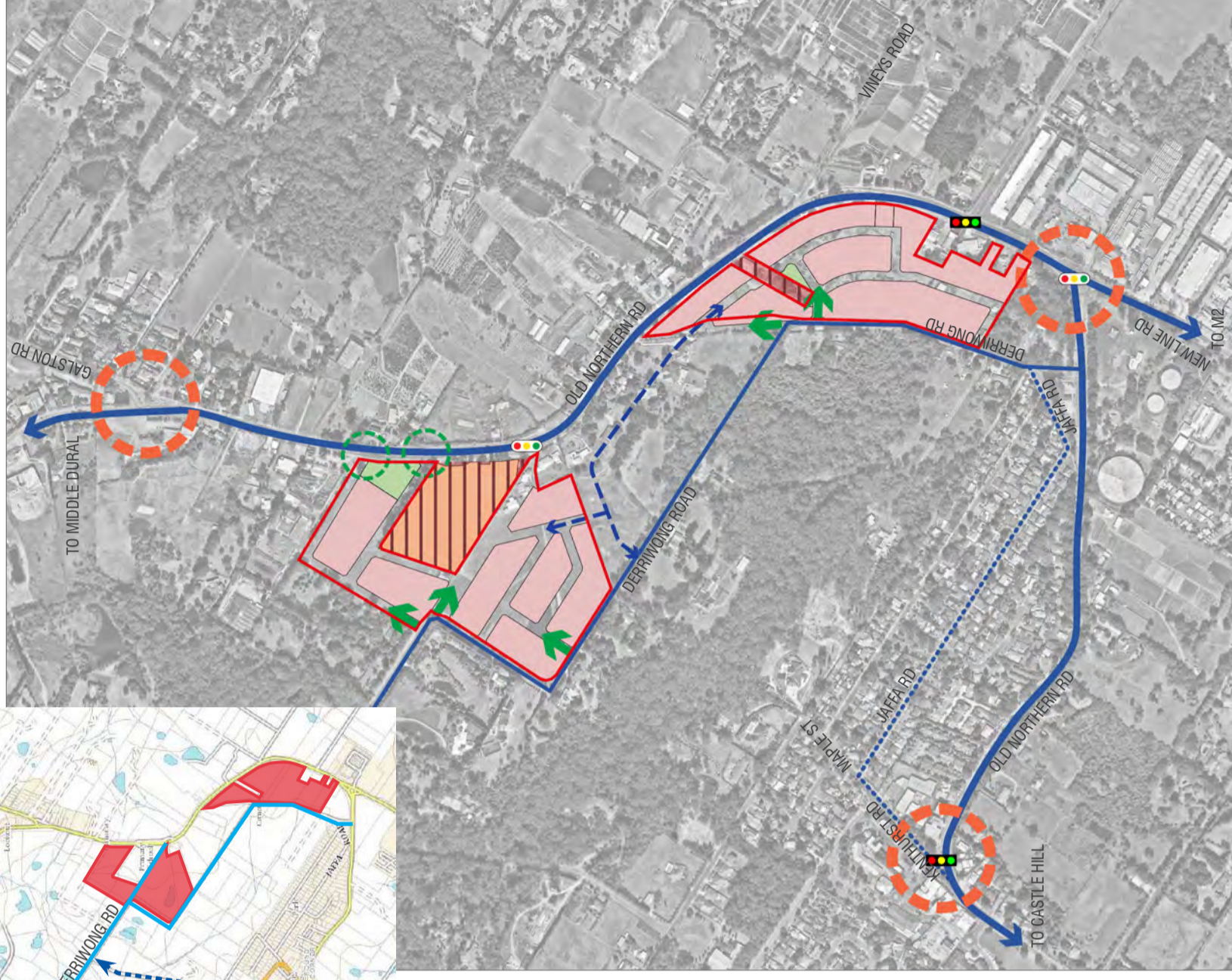


Figure 12: Access and Movement Map

- | | | | | | | | | | | | | | | | | | |
|-------------------------|---------------------|----------------------|----------------------|-------------------|------------|------------------|---|---|-----------|----------------|---------------------|------------------------|---------------------|---|----------------------------------|----------------------------------|----------------------------------|
| Regional Access Options | Proposed Main Roads | Site access option 1 | Site access option 2 | Access & Movement | Study Area | Residential Lots | Potential future development for open space | Existing Facilities Constrained by Access | Main Road | Secondary Road | Cycle friendly road | Potential road network | Major Intersections | Proposed Main Access Point with Left in/ Left out | Existing Signalised Intersection | Proposed Signalised Intersection | Proposed Secondary Access Points |
| | | | | | | | | | | | | | | | | | |

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PUBLIC TRANSPORT

The subject sites are located proximate to a frequently serviced public transportation network, specifically:

- The sites are well located with immediate access to a bus stop that connects user to greater Sydney areas such as to the Sydney CBD, North Sydney, The Hills District and Glenorie.
- The closest train station is Pennant Hills Station and is the primary destination for greater connections regionally for district residents.
- Bus routes to Pennant Hills have a frequency between 40 and 60 minutes with an average commute time of 45 minutes.
- Route 637 connect the sites to Castle Hill in less than 15 minutes.
- Castle Hill is a key destination in the region with the existence of the two shopping centres, Castle Mall Shopping Centre and Castle Towers Shopping Centre, where range of retail shops, restaurants and cafes are located.
- Specifically, Castle Towers Shopping Centre encompasses major retail anchors such as David Jones, Myer, Target, Kmart, Coles and Event Cinemas.
- The new Castle Hill train station adjacent to these retail shopping centres at the intersection of Old Northern Road and McMullen Avenue, is under construction as

part of the Sydney metro north-west. The north-west metro will link Rouse Hill to the CBD through a secured Nambour Crossing and continue on through the south-west metro to Bankstown that potentially can be connected to Liverpool.

- The north-west rail link from Rouse Hill to Chatswood is expected to be completed by 2019.
 - Additionally, Pennant Hills train station is currently the nearest train station located south of the subject sites, with a distance of 10km.
 - The completion of Castle Hill Station that is located 5km away from the sites will reduce commute time of local residents.
 - Moreover, Castle Hill as one of the strategic centres will be a landmark destination for residents of the subject sites.
- With the increasing frequency and availability of public transport options connecting Dural in addition to the market's inclination for well serviced development sites in desirable locations - the site is well positioned to accommodate for this demand.

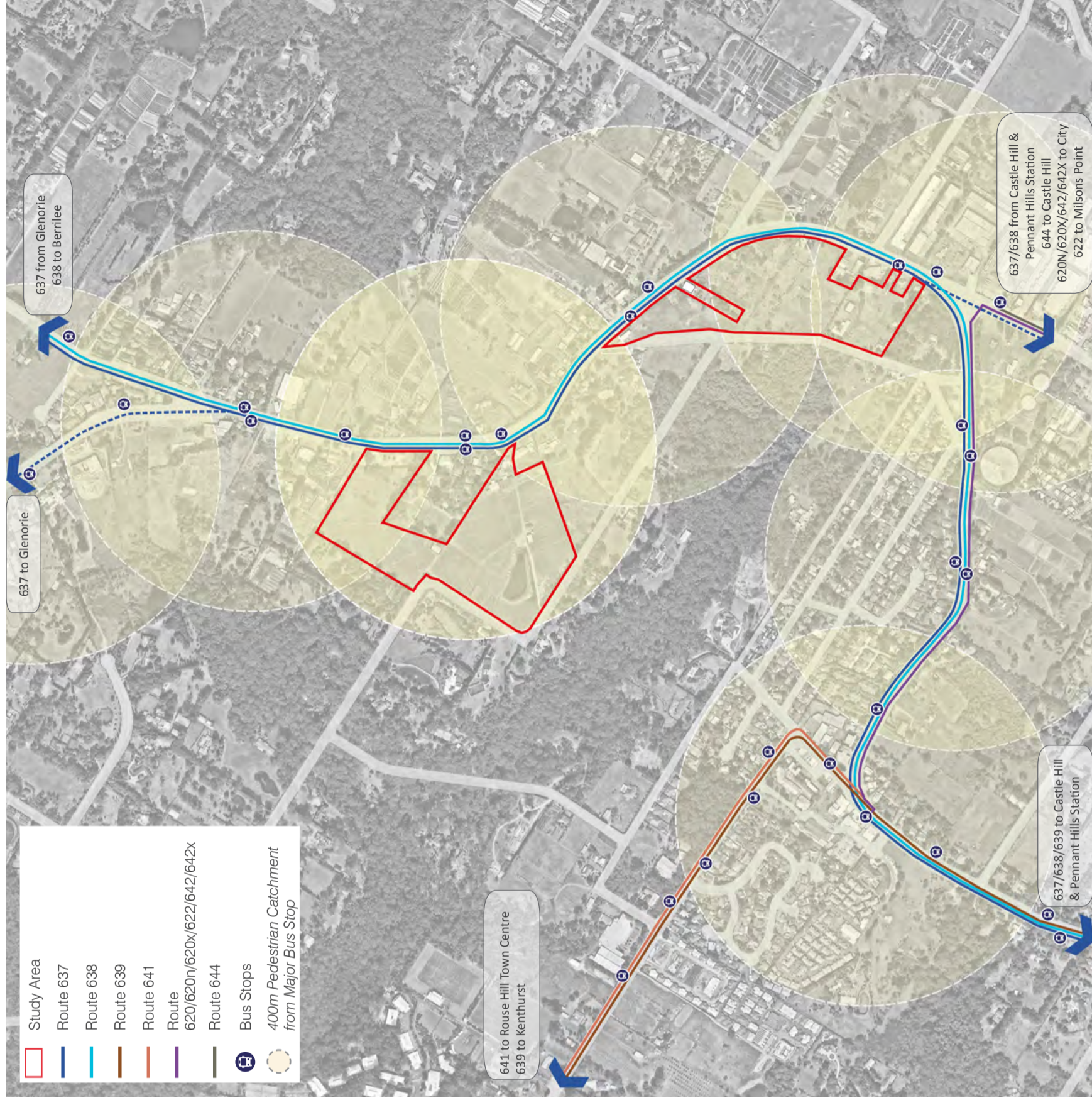


Figure 13: Public Transport Map

4.3 NATURAL ENVIRONMENT

LAND FORM & TERRAIN

The subject sites are located along Old Northern Road which follows the ridgeline and sit at an elevated position descending from this point westwards toward the vegetated corridor and creek.

- Views from the sites are directed towards the O'Haras Creek and the tributary corridor which is densely vegetated
- This dense vegetation creates a natural boundary for urban development to occur westwards.
- It also acts as a vegetated buffer given the mature trees in this area for developments located further west minimising potential visual impact of development for residents that reside around the Round Corner Town Centre precinct.
- The high point of the sites also creates opportunities for views towards the Blue Mountains (west of the sites) on a clear day.

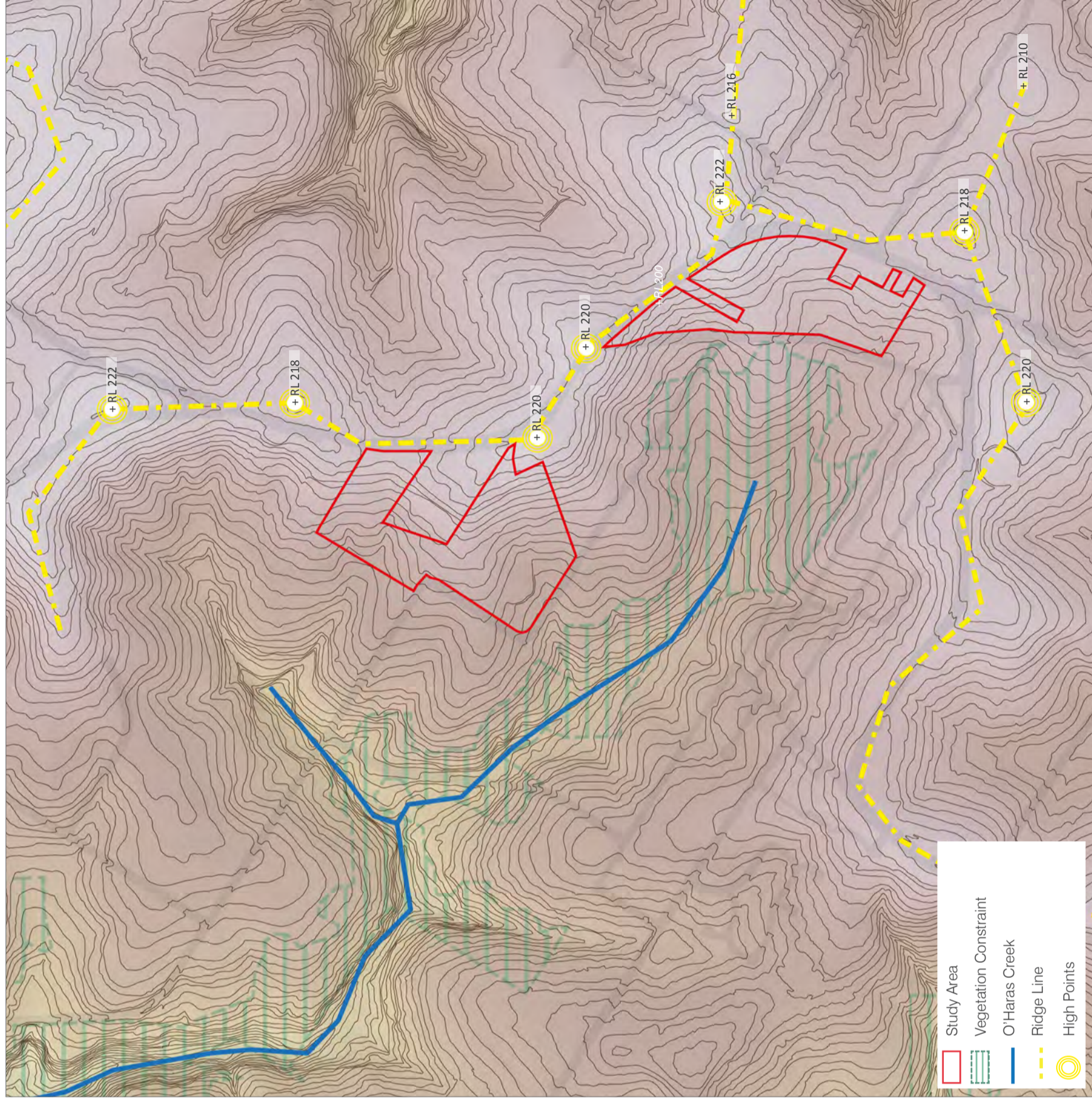


Figure 14: Topography Map

4.4 SUMMARY OF TECHNICAL & CONSULTANT REPORTS

The following technical and consultant documents have been considered in this urban design report:

- Heritage Impact Statement
- Ecological Assessment
- Bush fire Protection Assessment
- Planning and Property (Planning Controls)
- Traffic

HERITAGE

Local heritage items in the locality of the sites are identified as follow

- A12 "Old Northern Road" to the west of both sites is an archaeological item from Glenhaven to the Hawkesbury River at the north with a distance of approximately 40km
- 185 "House" is part of the southern site - Item General. Heritage building will be retained in proposed development.
- 186 "Dural Soldiers Memorial Hall" - Item General is located north of the southern site but is not part of it. The Memorial Hall is surrounded by the Southern site precinct
- 181 "Uniting Church Cemetery" is adjacent to the southern site

Development on the Southern Site can be integrated with both the Dural Soldiers Memorial Hall and the cottage, "House" on Old Northern Road.

There are six items on the other side of Old Northern Road :

- 348 "House" - General Item
- 349 "House" - General Item
- A38 "Cemetery" - Item Archaeological
- 351 "House" (former Uniting Church and Chapel" - General Item
- 448 "Roadside trees" - Item Landscape
- 343 "Street trees and bushland" - Item Landscape

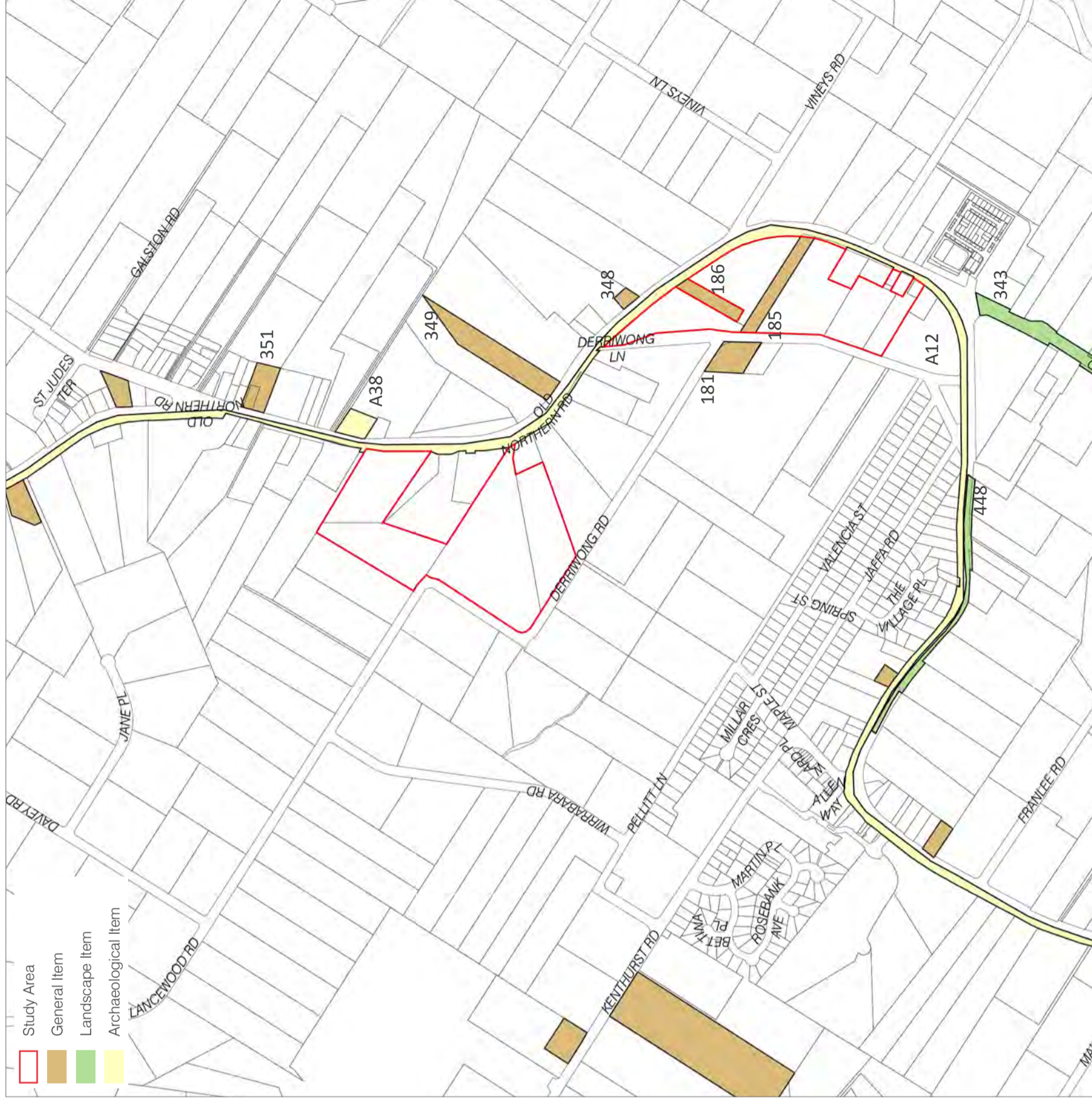


Figure 15: Heritage constraints. (Source: NSW Crown - Planning and Environment)

ECOLOGICAL ASSESSMENT

Some ecological constraints have been identified in both sites.

Northern Site

- Two constraint zones were identified adjacent to the site boundary, which are both under moderate to high category
- There are some small areas with ecological constraints
- However, these constraints have no major impact for the potential development

Southern Site

- Four areas have been identified with
- Three zones under the High constraint classification and
- One identified as moderately constrained

BUSH FIRE PROTECTION ASSESSMENT

There is an adjacent forest to the west of both sites. The bush fire protection assessment indicated two asset protection zones in the northern site and three in the southern site.

- There are two Asset Protection Zones of 25m located along the north-west and south-west edges of the Northern site.
- A 25m Asset protection zone is identified along the western edge of the Southern site boundary
- Two 10m Asset protection zones are located along the west and south edges of Southern site boundary

The impact of these asset protection zones on the potential development is minimised as these zones are on the western and southern edges of the sites. Moreover, location of these zones are in place with new roads.



Figure 16: Constraints Assessment (Ecological). (Source: Ecological Australia)

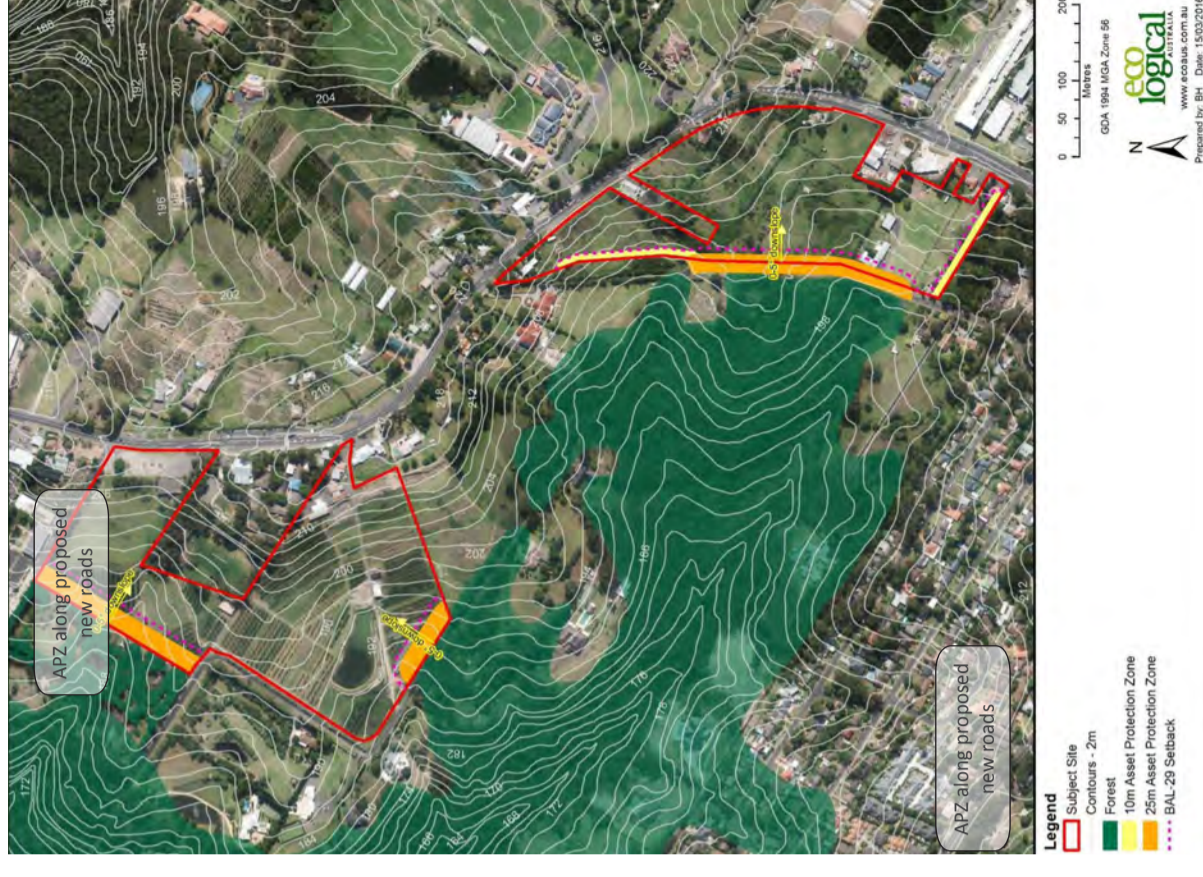


Figure 17: Asset Protection Zones. (Source: Ecological Australia)

SUMMARY OF OPPORTUNITIES

In summary, there is a range of opportunities for the sites, and they are:

- The sites comprise of cleared land with no major impacts from the identified constraints
- Good access to the public transport network
- Proximity to the North-west Metro at Castle Hill Station which will improve the sites' accessibility to employment areas in Norwest, Macquarie Park and Sydney CBD
- Proximity to the Round Corner Town Centre at the west and the Cascade Neighbourhood Centre at the north
- The opportunity to create new public roads to connect Old Northern Road to future development on the sites providing greater permeability and connection
- The potential of future development on the Northern Site to provide improved accessibility to the Dural Public School with new road access
- The potential of northern site to provide community facilities such as sporting fields adjacent to the Public School, which further support the residential uses
- The proximity of the Southern Site to the Round Corner Town Centre has the potential to accommodate more residential land use
- The potential to provide a new open space adjacent to Dural Soldiers Memorial Hall at the Southern site
- The potential to provide pedestrian and cycle connections to surrounding open space from the sites

The sites have demonstrated its 'relationship to the Round Corner Town Centre, Cascade Neighbourhood Centre along with existing residential areas. As an overall, the sites have indicated the potential of future development to enhance the living environment of the precinct as a whole through an improved connectivity within the precinct and an improved access to the greater region.

This summary of opportunities have indicated the role of the sites as part of the development of the precinct, indicating a potential growth corridor that extends from the Round Corner Town Centre across to the Cascade Neighbourhood Centre up North.

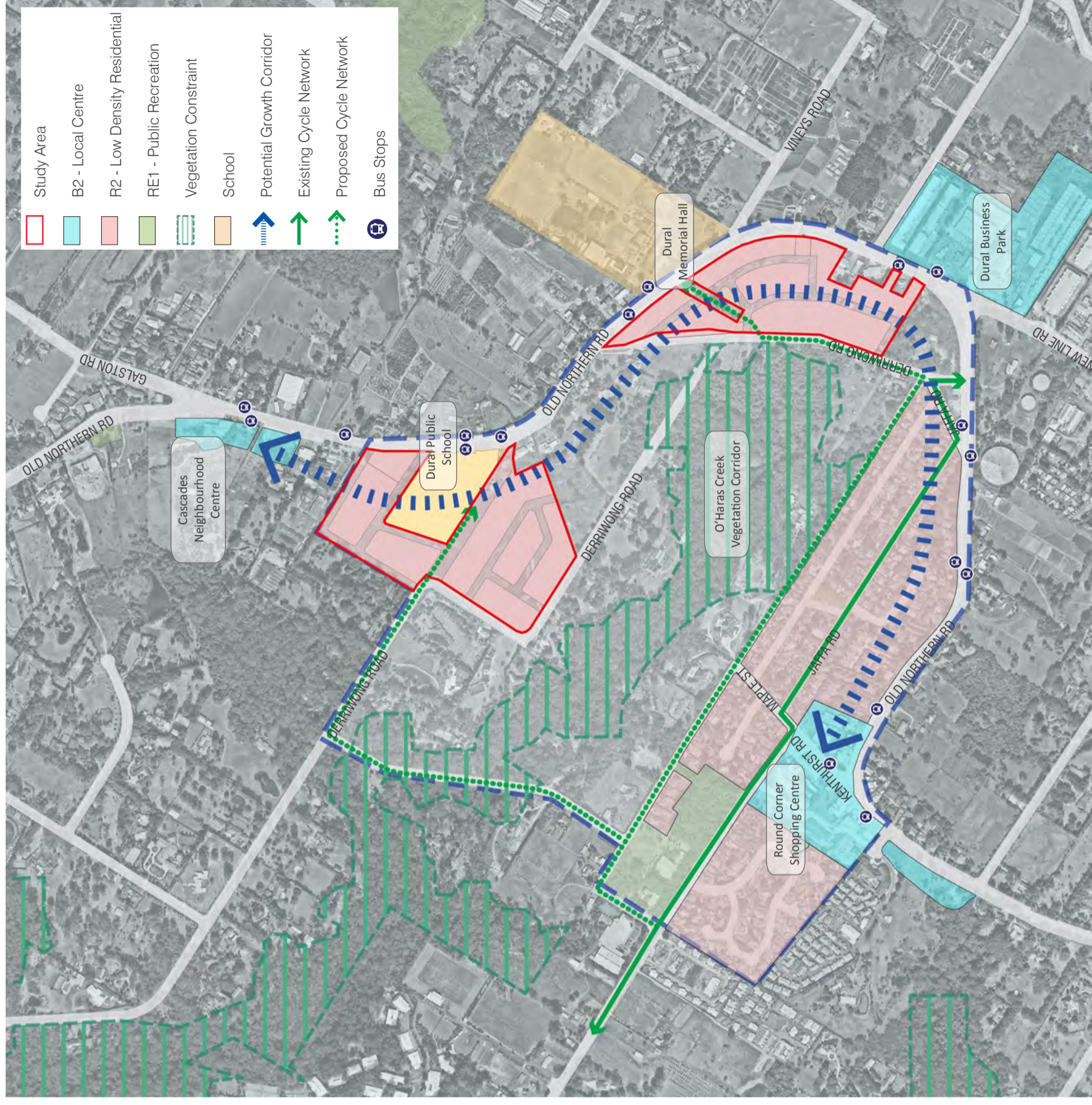


Figure 18: Summary of Opportunities

5.0 CONCEPT PLAN

5.1 NORTHERN SITE

OVERALL PLAN

Low density residential is the predominant land use of the Northern Site. In compliance with the requirements of R2 - Low Density, the plan proposes a subdivision of typically 700m² residential allotments with a combination of 600m² smaller lots at the Northern Precinct.

The key benefits of the proposal for Northern Site include:

- An improved connectivity and permeability of the sites through the provision of new roads and connection to Derriwong Road for the locality.
- The provision of a new perimeter road around the Dural Public School, alleviating traffic issues off Old Northern Road and during peak school periods
- The provision of Left in/ Left out "LiLo" access points from the Old Northern Road

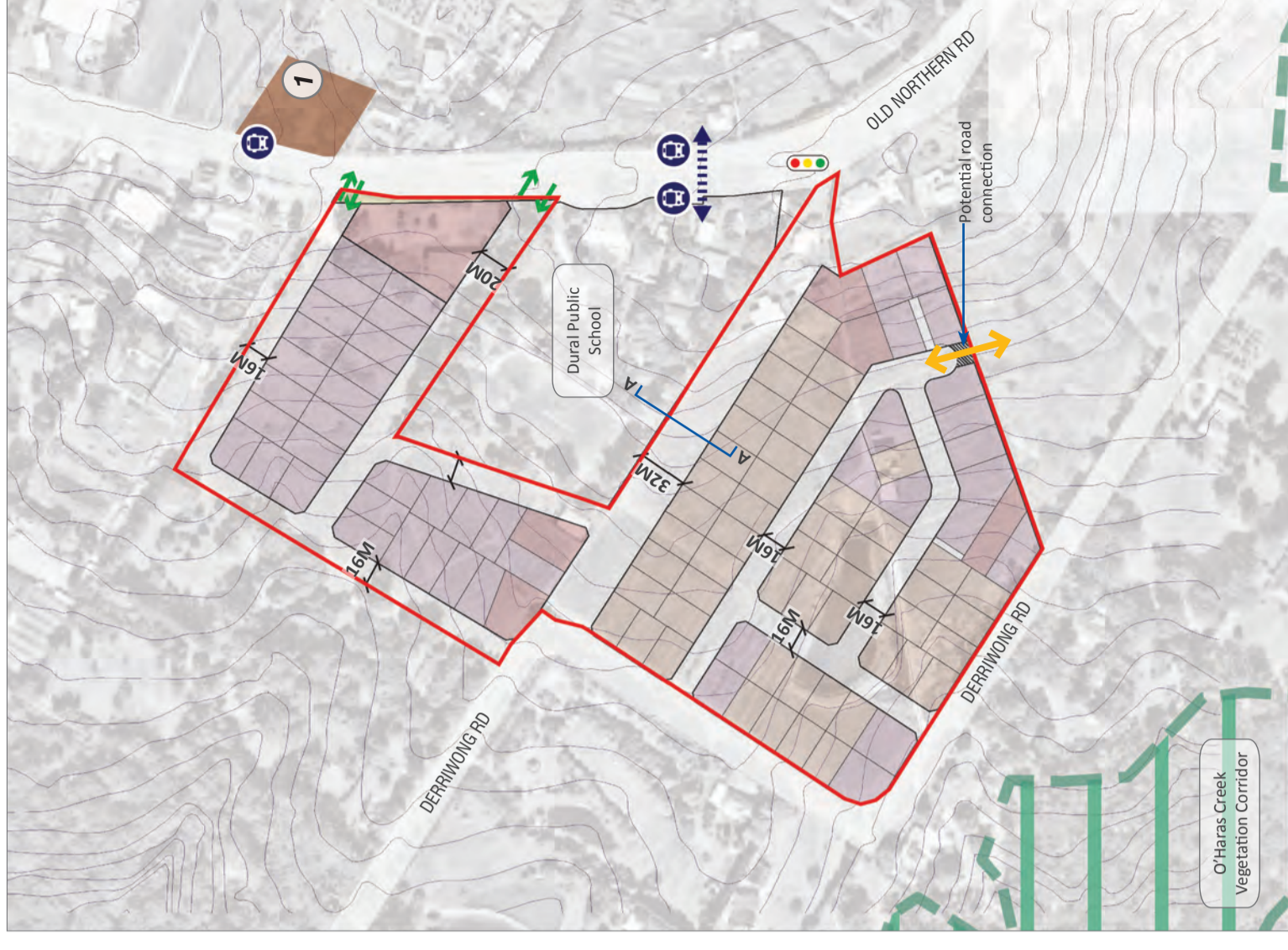
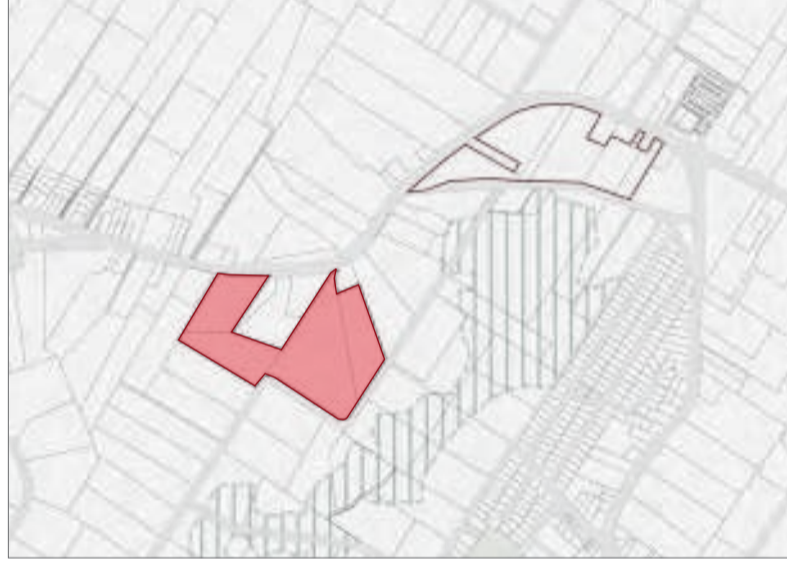


Figure 19: Northern Site Plan

SCALE 1:4,000 @ A3



TYPICAL ROAD SECTION

A proposed road located to the south of Dural Public School is reserved for 32m wide, with two drive lanes and one parking lane in each way. The road width includes a generous footpath at both sides and a vegetation separation in the middle of road. This can facilitate future access requirements within the locality.

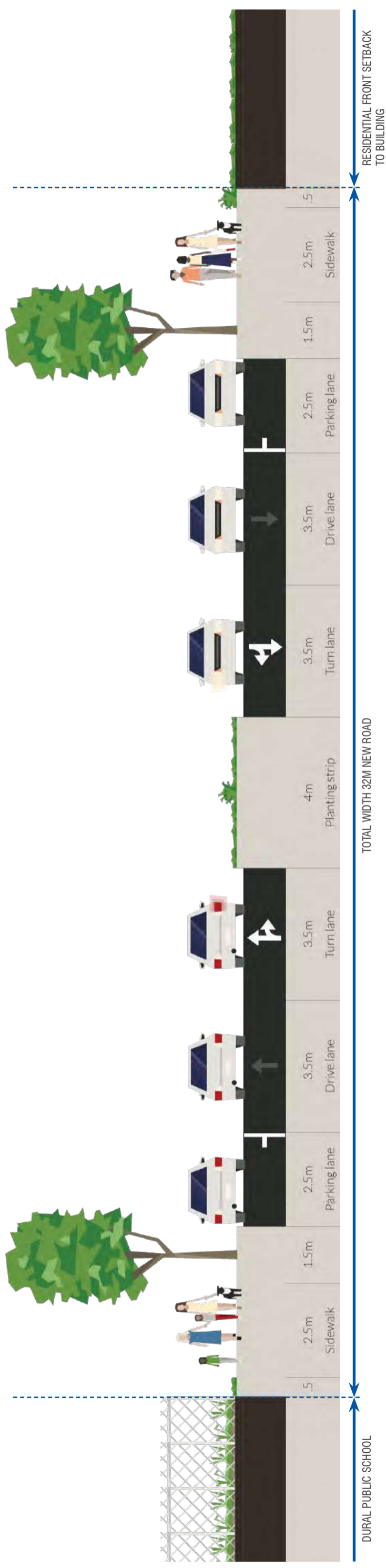


Figure 20: Northern Site Typical Main Road Section A-A

POTENTIAL RECREATION SPACE FOR SCHOOL USE

An opportunity exist to provide an amenity for the Dural Public School as shown on Figure 29. The open space could include:

- Basketball or tennis courts for multifunction uses.
- A children's play and splash area.
- Associated retail and cafe with outdoor seating.
- An area for drop-off and pickup, some car parking variegated with landscaping.
- A landscaped buffer from Old Northern Road providing passive view corridors for both passers by and users of the fields.
- Landscape planting along the edge of the adjacent residential subdivision to the west.



Figure 21: Indicative design of recreation space

5.2 SOUTHERN SITE

OVERALL PLAN

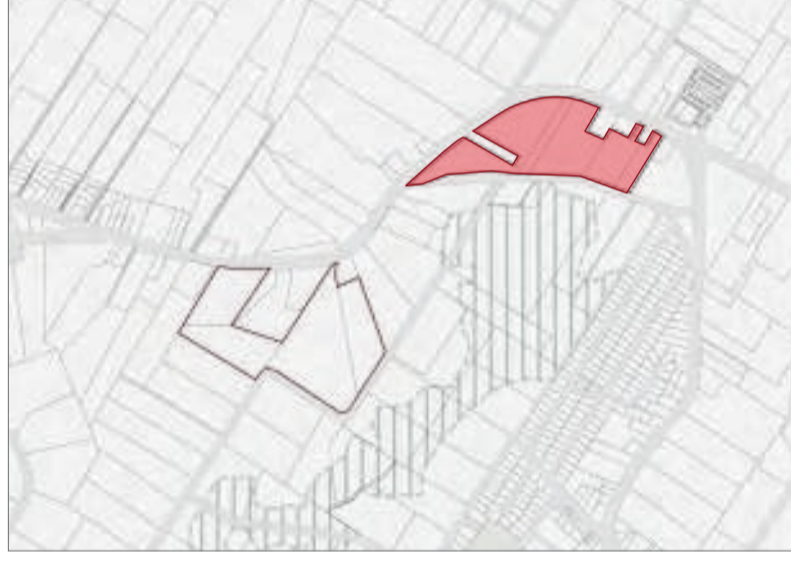
The concept plan for the Southern Site is R2 - Low Density Residential. The plan proposes a subdivision of typically 700m² residential allotments with a combination of over 1000m² larger lots at the Southern Precinct.

- 69 low density residential lots with an average size of 700m²
- 11 large lot residential due to topography constraints
- 1 large residential lot to accommodate the local heritage item for readapt use

NEW CONNECTIONS

A key opportunity that the proposal has identified is to provide additional permeability for the locality, particularly around the Memorial Hall, as follows:

- Include roads to facilitate the potential future road connection directly to the south of the Memorial Hall.
- Provide a residual parcel of land to the south of the Memorial Hall lot to accommodate a potential access point.



Key (1:20,000)

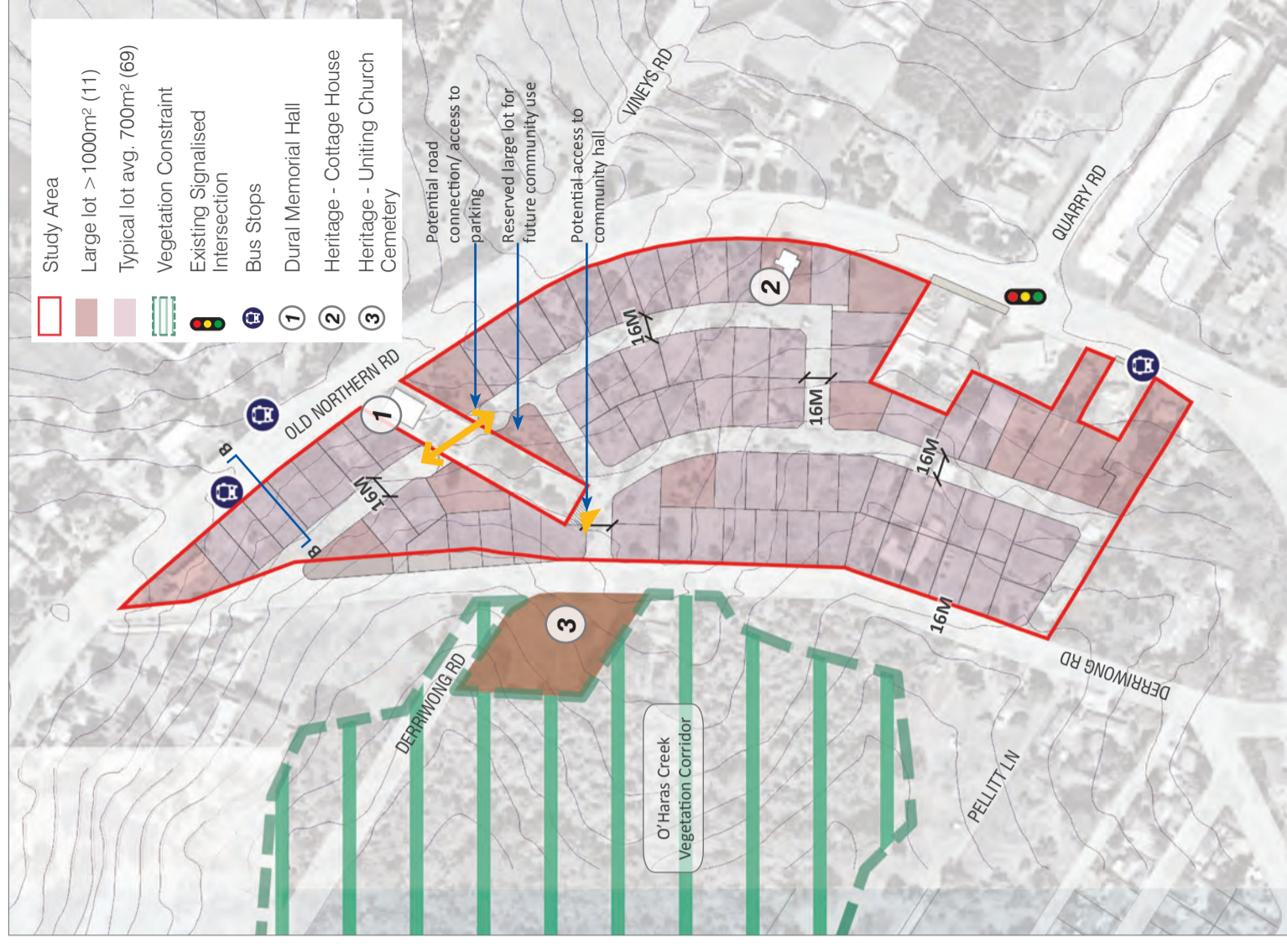


Figure 22: Southern Site Plan

OLD NORTHERN ROAD SECTION

- Lots align with Old Northern Road are designated to have 40m depth for a portion of being landscape buffer to address potential noise impact.
- The typical lot size is average 800m²
- Elevated landscape mounding for 2m high in maximum of 1:3 slope, providing natural privacy screening for overlooking to residential backyard at lower side
- Rear setback for houses adjacent to Old Northern Road is 14m, install 6mm single-glazed windows with sufficient seats at second storey.

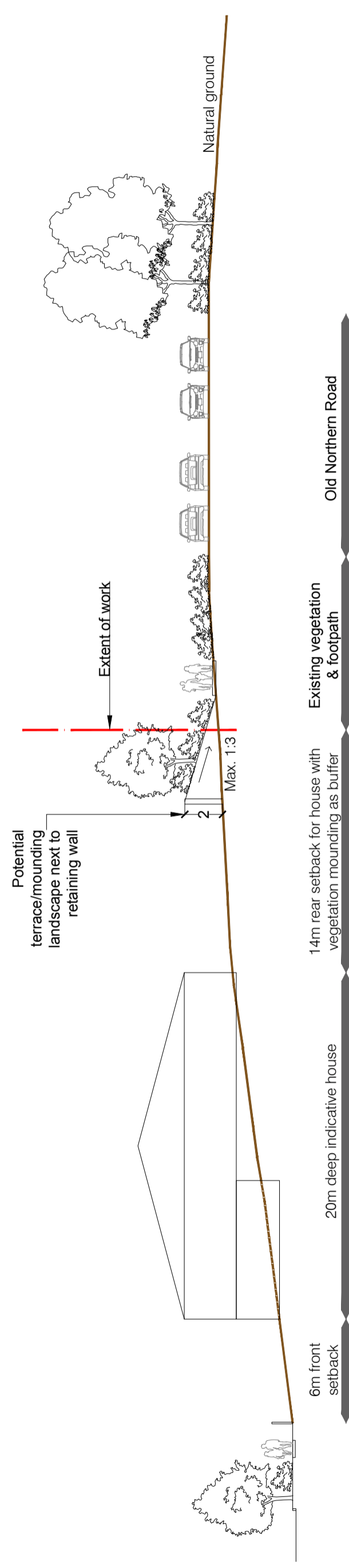


Figure 23: Southern Site Typical Section B-B

6.0 CONCLUSION AND RECOMMENDATION

6.1 CONCLUSION

This urban design report has outlined an analysis of the regional and local context in the midst of the emerging change of character in the locality. The sites are in a desirable location for development given its prominent location in the context of the changing character of Dural along Old Northern Road. The sites present the logical extension of a more urbanised changing character along Old Northern Road given:

- They are now located between increasingly urbanised forms of development such as the rezoning and future character of Cascades to the north of the subject sites, the emerging character of the Round Corner local centre to its south-west and Dural Business Park to the south-east on at the junction of New Line Road and Old Northern Road and the future evolution of urban character in the South Dural proposal.
- A significant area of vegetation west of the sites, known as O'Hara's Creek, identified as an area of biodiversity (The Hills LEP 2012) presents a natural boundary for urban development in the area. Therefore incremental development extending from the Round Corner local centre is limited northwards along Old Northern Road towards the Cascade site.
- The identified heritage items and the environmental constraints have shown no major impacts on the sites. There is further opportunity to protect and improve the condition of the heritage item in the south site with adaptive re-use of the building and the utilisation of the curtilage to enhance its landscape setting to provide good interface with Old Northern Road and the future development..
- The proposed development has incorporated

- advice from technical consultants to minimise the possible impacts of future development to the existing built environment
- The opportunities of the sites illustrate the potential to integrate the future development in line with the future character of the area.
- The proximity of the sites to the new Castle Hill Station indicate the potential of the sites to be better connected to the greater Sydney region with the completion of Sydney Metro Northwest by 2019. This will enable improved access to surrounding employment and education centres

This urban design study has demonstrated that the rezoning and development of the two sites:

- Would represent the logical extension of the low density residential neighbourhood and urban centre Round Corner.
- Improves access of the Dural Public School and the Dural Memorial Hall, enhancing the relationship of the social infrastructure with the surrounding area.
- Will benefit from the sites location proximate to a range of environmental and open space opportunities.
- Will be supported by and provide economic uplift to the two local centres adjacent to the sites.
- Improves vehicular and pedestrian permeability of the area, consolidating the urban fabric of Dural.

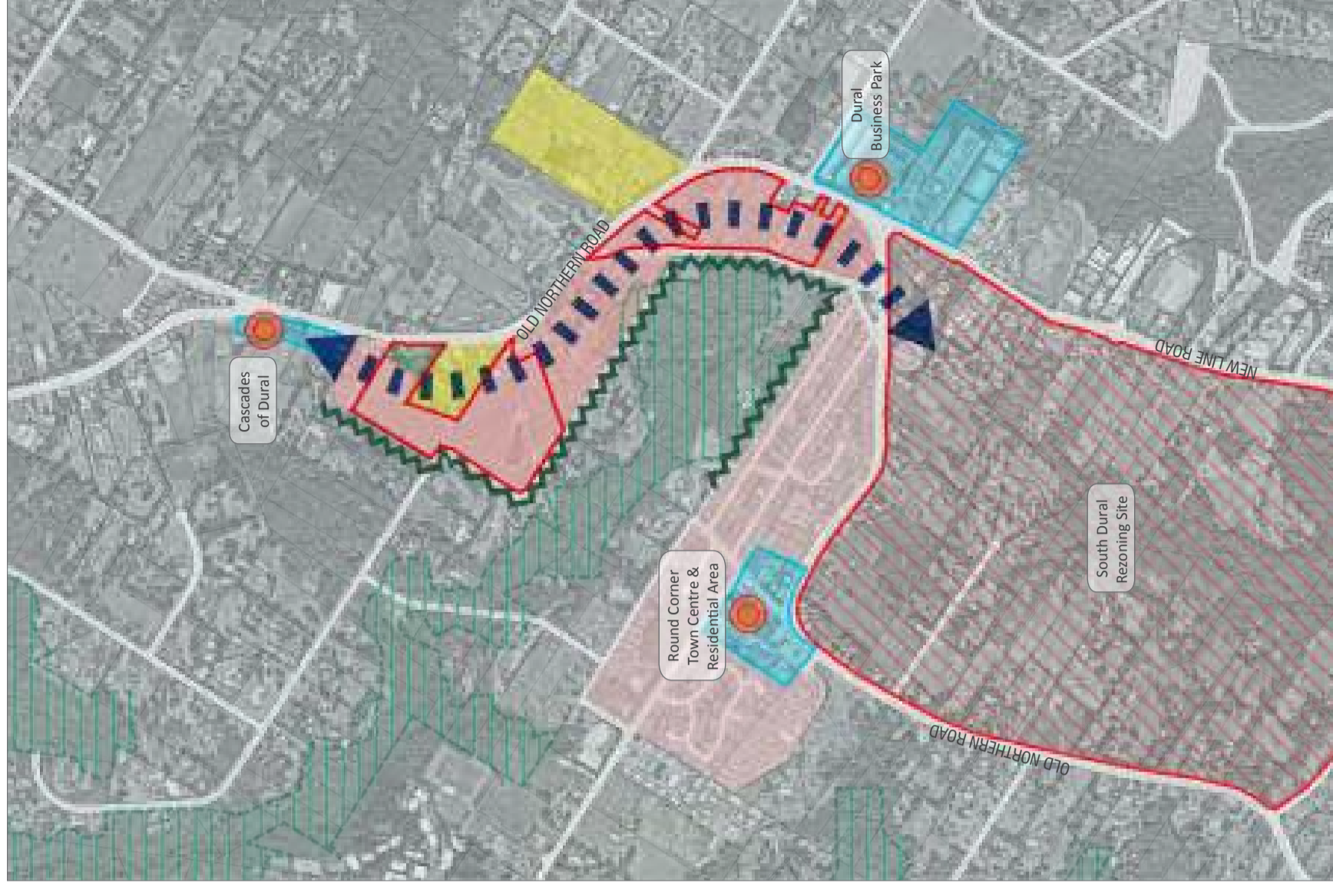


Figure 24: Rezoning Opportunities

6.2 RECOMMENDATION

The urban design analysis has found a potential to increase densities on the subject sites.

Urbis recommends that the Land Zoning Map included in The Hills Local Environmental Plan 2012 be amended to :

- Change of land zone classification from RU6 - Transition to **R2 - Low Density Residential** to consolidate a more urban character, similar to the surroundings of Round Corner Local Centre. This can potentially incorporate the land between the Northern Site and the Southern Site in the future.
- An indicative road layout has been provided in Figure 23 showing how the sites could be connected.

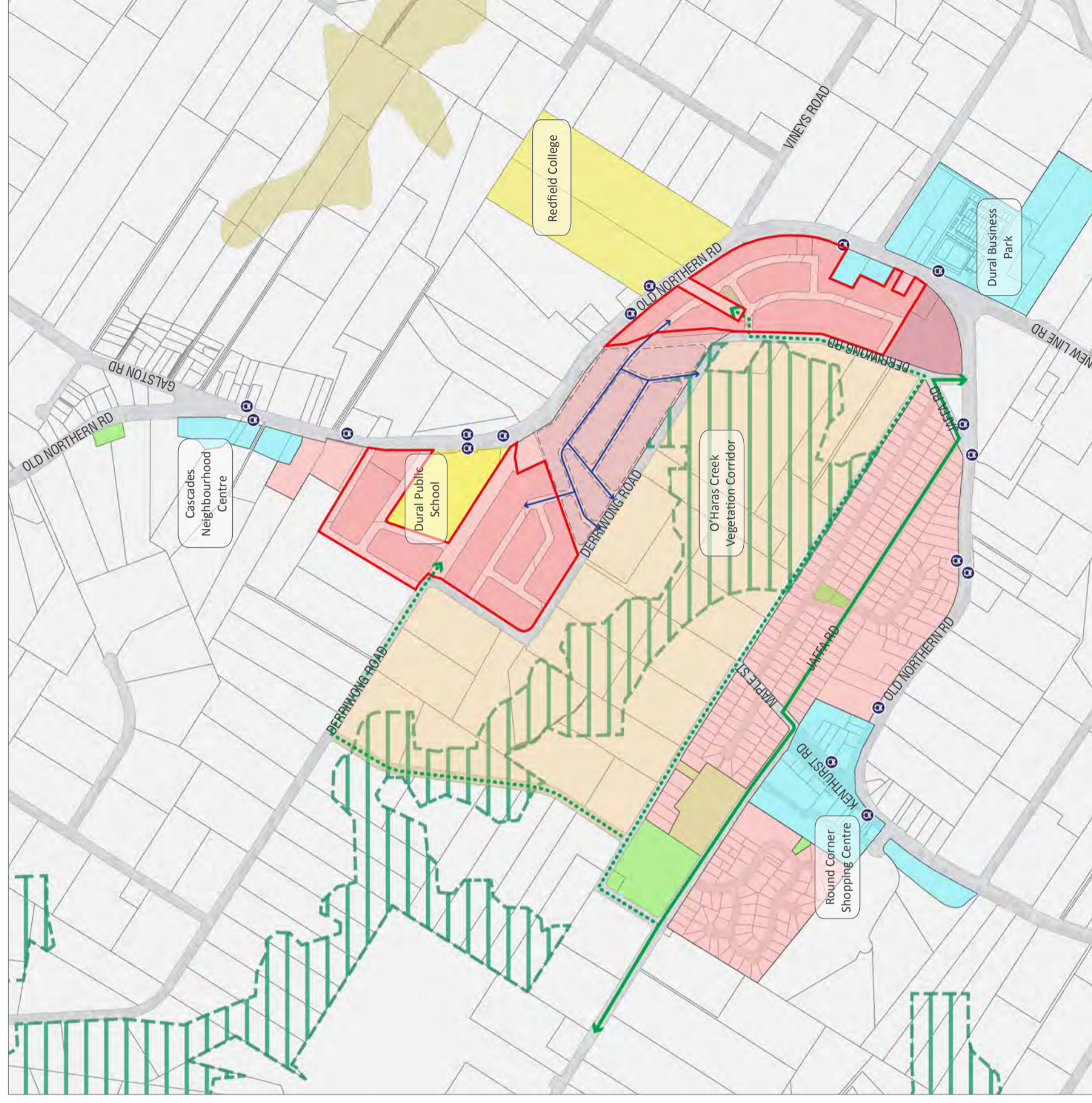


Figure 25: Land Zoning Map

SCALE 1:10,000 @ A3



Sydney

Level 23, Darling Park Tower 2
201 Sussex Street
Sydney, NSW 2000
t 02 8233 9900
f 02 8233 9966

Melbourne

Level 12, 120 Collins Street
Melbourne VIC 3000
t 03 8663 4888
f 03 8663 4999

Brisbane

Level 7, 123 Albert Street
Brisbane QLD 4000
t 07 3007 3800
f 07 3007 3811

Perth

Level 1, 55 St Georges Terrace
Perth WA 6000
t 08 9346 0500
f 08 9221 1779

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Residential Market Assessment

584, 586, 590, 600, 602, 606, 618 & 626 Old
Northern Road and 7, 11, 21 & 27 Derriwong Road,
Dural

February 2016

URBIS STAFF RESPONSIBLE FOR THIS REPORT WERE:

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Report Number	FINAL

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Executive Summary

Urbis has been commissioned to undertake a residential market assessment in respect of a planning proposal to develop residential dwellings on the sites at The Old Northern Road and Derriwong Road, Dural. The report also considers potential ancillary commercial uses on the site.

Key points to note from our residential analysis include:

- Medium density dwellings in the area continue to attract interest mainly from downsizers and retirees who are looking to move from acreage properties in the local area, typically at least one to two acres in size. The rural setting offered in Dural still appeals to these people and hence they don't want to move out of the area
- There has also been some demand for larger residential lots with detached dwellings. Demand is often driven by buyers who were looking in the Castle Hill/ Kellyville areas but have sought better value properties in Dural where the price increases have not been as significant

Overall, there is a need to provide a broader range of residential dwellings in Dural, providing more variety in terms of lot and dwelling size, and cost. The type of residential product in demand ranges from some larger residential lots to more medium density type stock such as townhouses and larger apartments. By providing a range of dwelling types on the site and in the broader area, this will ensure that the needs of the local market are met and that there is sufficient take-up of the residential product.

A variety of dwelling types will also ensure that the residential product in Dural does not become homogenous. The larger lots and detached dwellings dispersed throughout the medium density dwellings will ensure the character of Dural is maintained without contiguous lots of higher density buildings.

The suggested dwelling mix across the site is summarised in the table on the following page. Both low and high density options have been provided in the table, with the higher density option carrying more risk in terms of market supportability.

The majority of the dwellings on the subject site should be detached dwellings and townhouses, with the provision of some apartments. The internal size of the dwellings recommended for the subject site are generously proportioned with mostly three to four bedrooms.

The residential analysis also considers seniors living dwellings. There is a range of seniors living facilities available, often differentiated by the target age groups and the level of care provided. The three broad categories include over 55s facilities, Independent Living Units (ILUs) and aged care facilities. Our analysis indicates that there is likely to be demand in the medium term for seniors living in the local Dural area, more so for ILU and aged care facilities, provided that no other facilities are built prior.

Urbis has also considered the current and future supply of service station, gymnasium, child care centres, recreational facilities and ancillary retail associated with a day surgery/medical centre within the area in order to assess the demand for these types of facilities at the subject site.

Due to current provision, there is expected to be limited demand for service station or commercial gym uses at the site. There is also a significant provision of recreational facilities within the catchment area and considering the relatively limited population in the local area, there is unlikely to be significant demand for further facilities in the near future. Any future open spaces would, however, further improve the amenity for the surrounding and future residents.

In view of the current extensive supply of child care spaces, any proposed new centre should be targeted at meeting the needs of new residents on the site. In this regard, it would be prudent to wait until the residential development is established and to carefully monitor the household profile of new residents to determine whether this generates a demand for child care facilities.

The amount of ancillary retail sustainable within a future day surgery/medical centre on the site depends on the scale and function of the day surgery/medical centre itself. It is likely that a café (catering to staff, patients and visitors) and pharmacy would be supportable, with potentially a florist. A higher provision of beds could generate demand for more services.

Residential Mix Option

SUBJECT SITE

Southern Site

Dwelling Type	Number of Bedrooms	% of Total Dwellings		% of Dwellings by type
		Lower Density Option	Higher Density Option	
Apartment	2			30%
	3			<u>70%</u>
		30%	30%	100%
Townhouse	2			10%
	3			60%
	4			<u>30%</u>
		35%	70%	100%
Detached	3			20%
	4			<u>80%</u>
		35%		100%
		100%	100%	

Northern Site

Dwelling Type	Number of Bedrooms	% of Total Dwellings		% of Dwellings by type
		Lower Density Option	Higher Density Option	
Townhouse	2			10%
	3			60%
	4			<u>30%</u>
		10%	20%	100%
Detached Dwelling	3			20%
	4			<u>80%</u>
		90%	80%	100%
		100%	100%	

*Based on current sale prices

Source : Urbis

Introduction

Urbis has been commissioned to undertake a residential and ancillary commercial market assessment in support of a planning proposal to rezone land at Old Northern and Derriwong Roads, Dural to permit a mix of residential and commercial development.

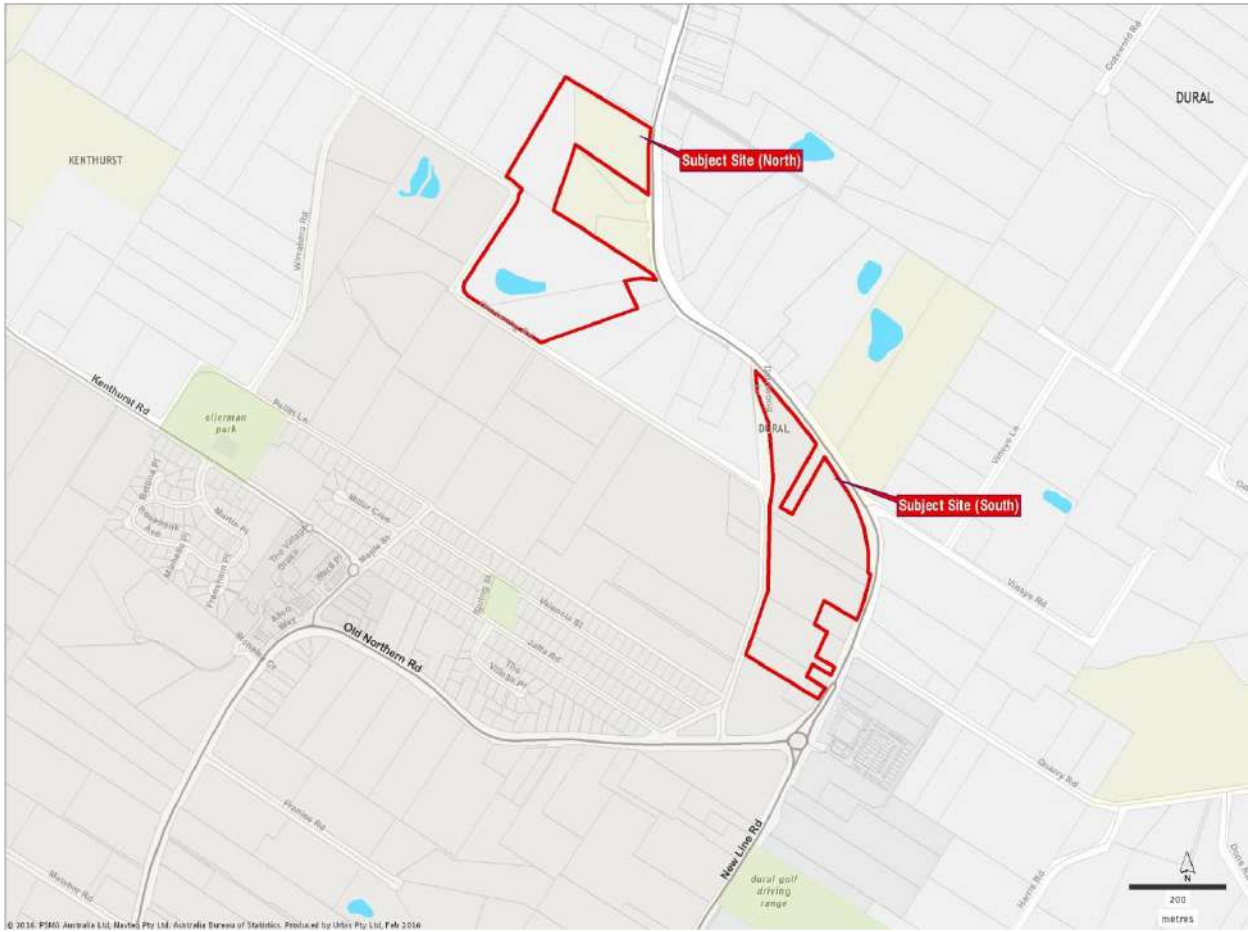
The subject site collectively includes the following land parcels:

- 584 Old Northern Road, Dural
- 586 Old Northern Road, Dural
- 590 Old Northern Road, Dural
- 600 Old Northern Road, Dural
- 602 Old Northern Road, Dural
- 606 Old Northern Road, Dural
- 618 Old Northern Road, Dural (also known as No. 25 Derriwong Road)
- 626 Old Northern Road, Dural
- 7 Derriwong Road, Dural
- 11 Derriwong Road (also known as 600A Old Northern Road), Dural
- 21 Derriwong Road, Dural
- 27 Derriwong Road, Dural

The subject site (referenced as the northern and southern sites throughout this report) is shown on Map 1.1 on the following page.

The remainder of this report is structured as follows:

- Section one provides a residential market analysis considering the local population, existing and proposed supply, the local residential sales market and residential demand drivers. Implications are drawn from this analysis to suggest the most suitable residential product for the subject site. This section also includes an analysis of the local seniors living market and the likely demand for this type of product in the local area.
- Section two provides an overview of the competitive environment for other potential commercial uses at the site, including service stations, gyms, child care centres, recreational facilities and ancillary retail uses associated with day surgery/medical centre uses. We note that a demand assessment for medical facilities is being undertaken separately.



1 Residential Market Analysis

This section provides an overview of the residential market in the Dural region.

1.1 RESIDENTIAL CATCHMENT ANALYSIS

This section examines the current demographic profile of the residential catchment for Dural in order to gain an insight into potential purchasers of residential dwellings at the subject site.

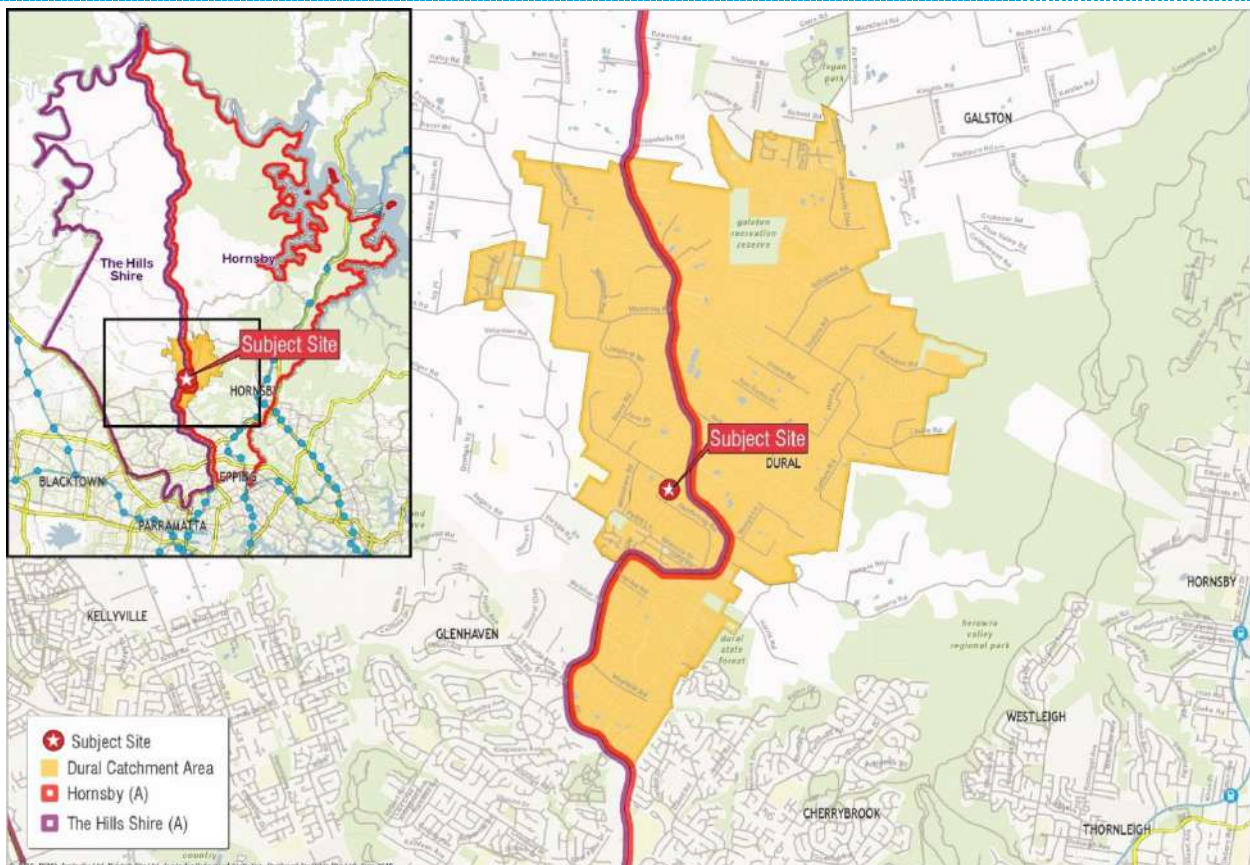
The residential catchment is defined by amalgamating Statistical Area Level 1 geographic areas (SA1s) surrounding the subject site in order to define an area which:

- Includes the subject site and environs to include Dural, Middle Dural to the north, Glenhaven to the south, Kenthurst to the west and Galston to the east
- Ensures that the geographic extent is sufficient to be able to capture areas where recent house building has occurred. Analysis of data from areas of recent house building activity provides the best guide as to the future buyer profile for the subject site.

The residential catchment area is shown in Map 1.1 below.

DURAL CATCHMENT AREA

MAP 1.1



POPULATION FORECASTS

The population of the Dural Catchment Area was approximately 5,800 as at the 2011 Census, after growing by approximately 1,300 persons from 2006 figures. This represented annual growth of 5.2% over the five year period, which was significantly higher than the annual population growth in The Hills Shire LGA (1.5%) and the Hornsby LGA (less than one per cent).

The catchment area is projected to have lower overall growth than both the Hills Shire and Hornsby LGAs moving forward. This is to be expected as the catchment area is less urbanised and has less planned development activity than other areas in the LGAs. Between 2016 and 2021 in the Dural Catchment Area, the population is projected to grow by 344 residents, to 6,100. The annual growth rate over this period is 1.2%, before tapering off to 0.3% to 0.4% to 2031.

Official population projections suggest that the Hills Shire LGA's population will achieve annual growth of 1.5% or above between 2011 and 2026, with growth underpinned by the development as part of the North West Growth Centre, before tapering off to 1.2% between 2026 and 2031.

The Hornsby LGA is projected to experience strong growth from 2011 to 2016 (1.8%) before declining to 0.6% per annum between 2026 and 2031.

Estimated Resident Population

DURAL CATCHMENT AREA, HILLS SHIRE LGA AND HORNSBY LGA

TABLE 1.1

	2001	2006	2011	2016	2021	2026	2031
Dural Catchment Area	4,483	4,468	5,756	5,742	6,086	6,191	6,302
Additional Residents	-	-15	1,288	-14	344	105	111
Average Annual Change (Nominal)	-	-3	258	-3	69	21	22
Average Annual Change (Percent)	-	-0.1%	5.2%	0.0%	1.2%	0.3%	0.4%
The Hills Shire LGA	146,045	165,143	177,536	193,793	210,190	226,191	239,597
Additional Residents	-	19,098	12,393	16,257	16,397	16,001	13,406
Average Annual Change (Nominal)	-	3,820	2,479	3,251	3,279	3,200	2,681
Average Annual Change (Percent)	-	2.5%	1.5%	1.8%	1.6%	1.5%	1.2%
Hornsby LGA	153,197	156,808	157,017	171,883	180,206	186,590	192,048
Additional Residents	-	3,611	209	14,866	8,323	6,384	5,458
Average Annual Change (Nominal)	-	722	42	2,973	1,665	1,277	1,092
Average Annual Change (Percent)	-	0.5%	0.0%	1.8%	1.0%	0.7%	0.6%

Source: ABS 2011 Census; SA Fi population forecasts; Urbis

DEMOGRAPHIC OVERVIEW

This section analyses the key socio demographic characteristics of the catchment of relevance to the assessment of residential uses on the subject site. The following table provides a summary of the key findings from the socioeconomic analysis, with the relevant charts provided on the subsequent pages.

Dural Residential Catchment – Key Demographic Indicators

SUMMARY (BASED ON 2011 CENSUS DATA)

TABLE 1.2

INDICATOR	VALUE	IMPLICATION
Average age	41.6 years	An older population compared to Hills Shire, Hornsby and Greater Sydney benchmarks. Residential development needs to be appropriately designed to cater to an older demographic
Average household income	\$102,189 p.a.	Higher household income than Sydney, but below both benchmark LGAs suggesting the need for a medium quality product
Most common dwelling structure	Detached dwellings	Low and medium density development with larger dwelling sizes continues to be the prevailing dwelling type in the area
Most common dwelling tenure type	Own home outright (42%)	High proportion of home ownership and limited investor activity
Average household size	2.7 persons	In line with Sydney average but below LGA benchmarks suggesting the need for a mix of dwelling sizes
Most common number of cars owned per household	2 cars (38% of households)	The catchment is located on the edge of an urban area and has limited public transport infrastructure resulting in higher private transport dependence. Garage provision will therefore be an important selling point

Age distribution: The average age for the residents of the Dural Catchment Area is 41.6 years, which is considerably higher than both the Hills Shire and Hornsby LGAs, at 36.7 and 38.6 years respectively. The average age of residents in the catchment area is also significantly higher than the average age across the broader Sydney area, which was 37.1 years as at the 2011 Census.

Within the catchment area, 33% of the population is aged over 55 years. This is compared to just 24% in the Hills Shire LGA, 26% in the Hornsby LGA and 24% across the greater Sydney area. This indicates an older population within the catchment area.

Household income profile: The average household income for the catchment area as at 2011 was \$102,189, which is 8.2% above the Sydney average of \$94,428. The average for the catchment area was, however, below the average across the Hills Shire and Hornsby LGAs which were \$119,428 and \$110,487 respectively.

The highest proportion of residents in the catchment area fall within the \$130,000 - \$156,000 income bracket (15%). The income distribution chart however shows that there is a higher than average proportion of residents with incomes between \$15,600 and \$41,600. Lower incomes in this region could be suggestive of part time employment, which given the age distribution could be attributed to retirees, as well as to teenagers.

Dwelling structure: As at 2011, detached houses made up the majority of dwellings in the catchment area, as well as in the Hills Shire and Hornsby LGAs; and across greater Sydney. The catchment area has a significantly higher proportion of detached houses than the Sydney average, with limited higher density dwellings.

The Dural Catchment Area has a much higher proportion of dwellings with four or more bedrooms (47%) than the Sydney average (30%). This is marginally higher than the proportion in the Hornsby LGA (44%), however below the proportion within the Hills Shire LGA (63%). Dwellings with three bedrooms were the second most common dwelling type in the catchment area, making up 34% of dwellings.

Dwelling tenure: The proportion of residents who own their home outright in the catchment area (42%) is higher than the Hills Shire and Hornsby LGAs (36% and 37% respectively) and significantly higher than the Sydney average (31%).

The proportion of catchment area residents who are in the process of purchasing and therefore have a mortgage (37%) is below the average across the Hills Shire and Hornsby LGAs, however marginally higher than the Sydney average.

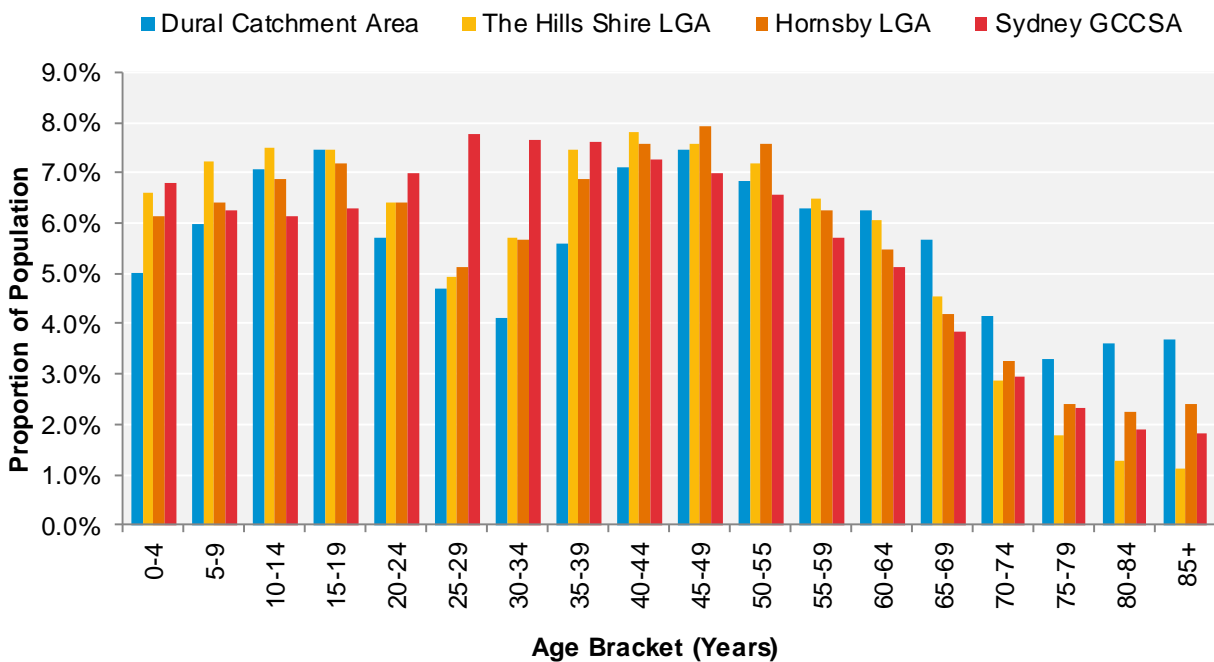
Family size and composition: The average household size for the Dural Catchment Area of 2.7 persons per dwelling is below that of the Hills Shire LGA (3.1 persons) and the Hornsby LGA (2.8 persons), however is in line with the Sydney average.

In terms of family types, couple families with no children is the most common family type within the catchment area (35%), which could represent younger couples without children or older couples who are empty nesters. This category is followed by couple families with children under 15 years of age (31%) which represents the young family households.

Number of cars per household: The majority of dwellings within the catchment area (38%) have two cars. The catchment area also has a higher than average proportion of dwellings with four or more cars (13%). This reflects the location of the catchment area on the edge of an urban area and the limited public transport infrastructure.

Age Distribution

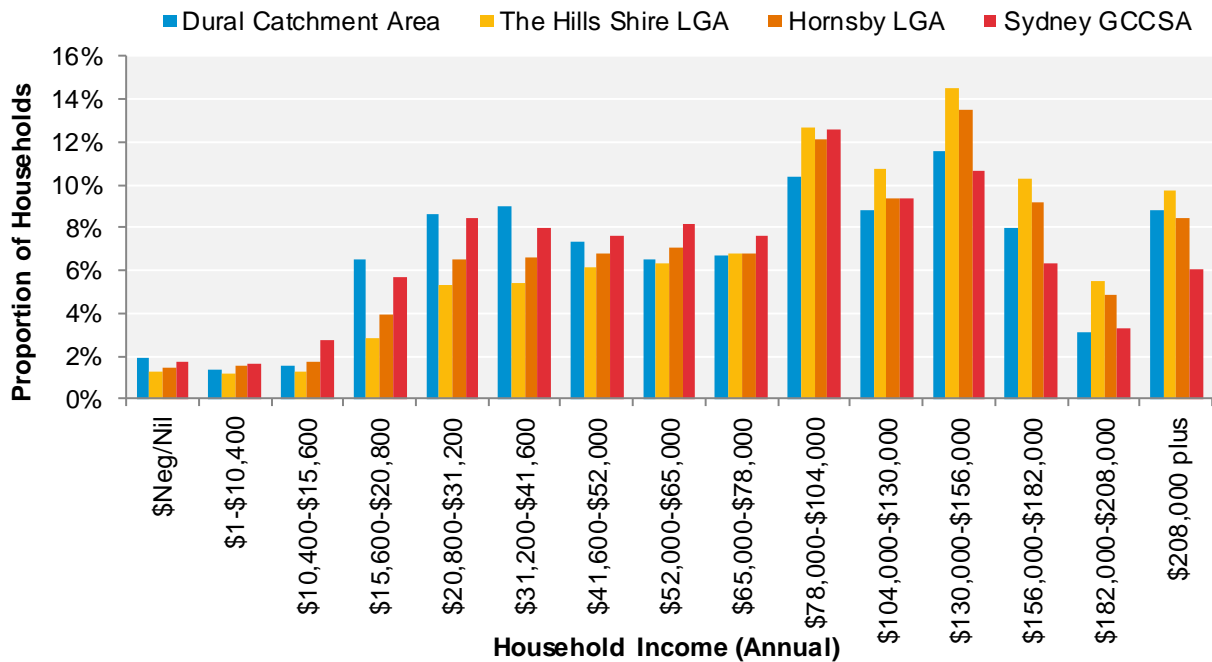
DURAL CATCHMENT AREA, HILLS SHIRE LGA, HORNSBY LGA AND SYDNEY GCCSA CHART 1.1



Source: Australian Bureau of Statistics 2011 Census; Urbis

Household Income

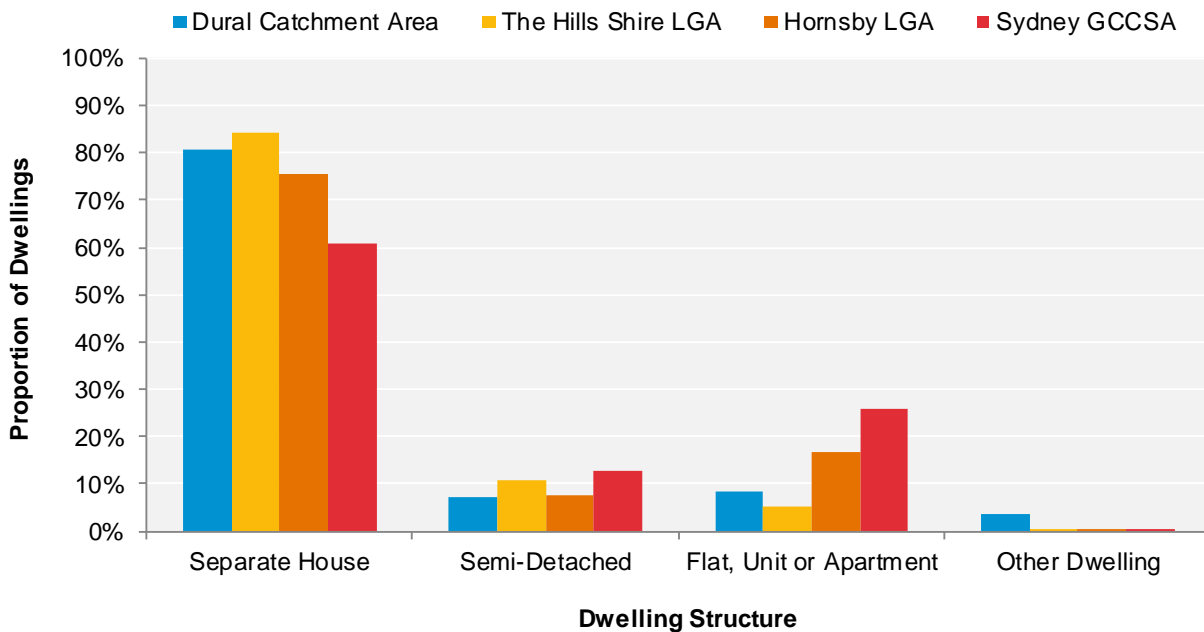
DURAL CATCHMENT AREA, HILLS SHIRE LGA, HORNSBY LGA AND SYDNEY GCCSA CHART 1.2



Source: Australian Bureau of Statistics 2011 Census; Urbis

Dwelling Structure

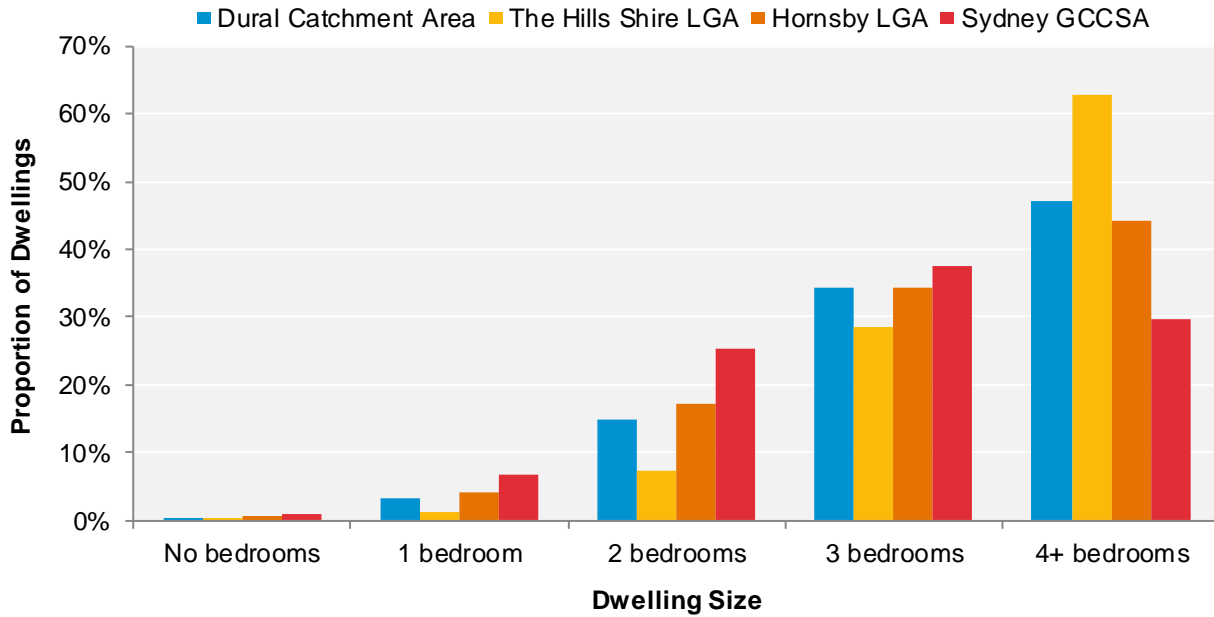
DURAL CATCHMENT AREA, HILLS SHIRE LGA, HORNSBY LGA AND SYDNEY GCCSA CHART 1.3



Source: Australian Bureau of Statistics 2011 Census; Urbis

Dwelling Size

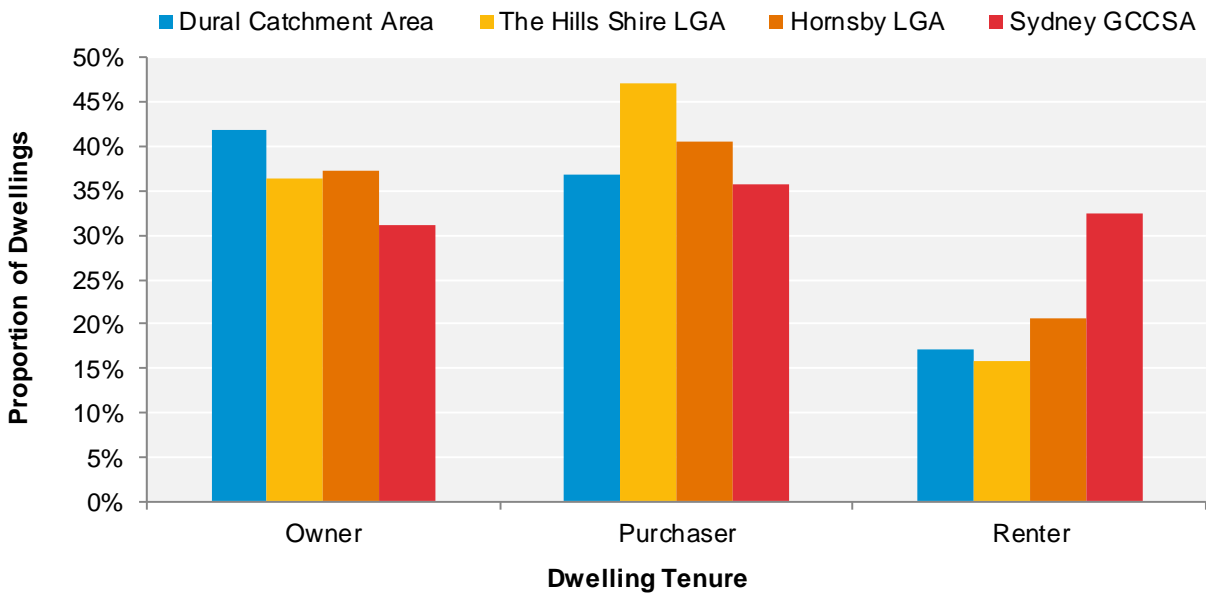
DURAL CATCHMENT AREA, HILLS SHIRE LGA, HORNSBY LGA AND SYDNEY GCCSA CHART 1.4



Source: Australian Bureau of Statistics 2011 Census; Urbis

Dwelling Tenure

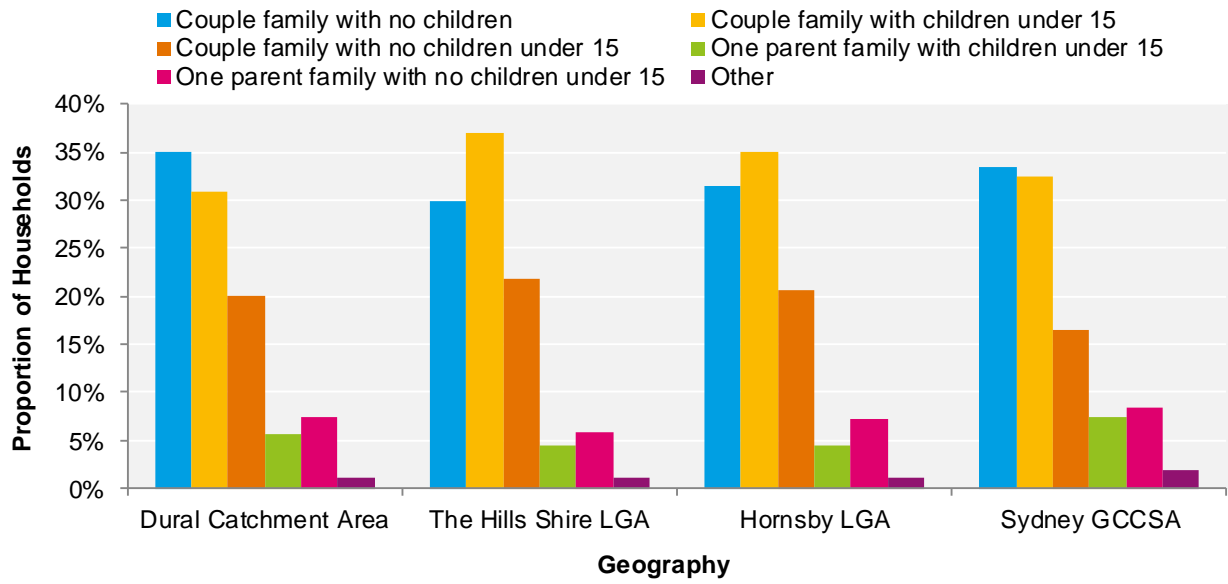
DURAL CATCHMENT AREA, HILLS SHIRE LGA, HORNSBY LGA AND SYDNEY GCCSA CHART 1.5



Source: Australian Bureau of Statistics 2011 Census; Urbis

Family Composition

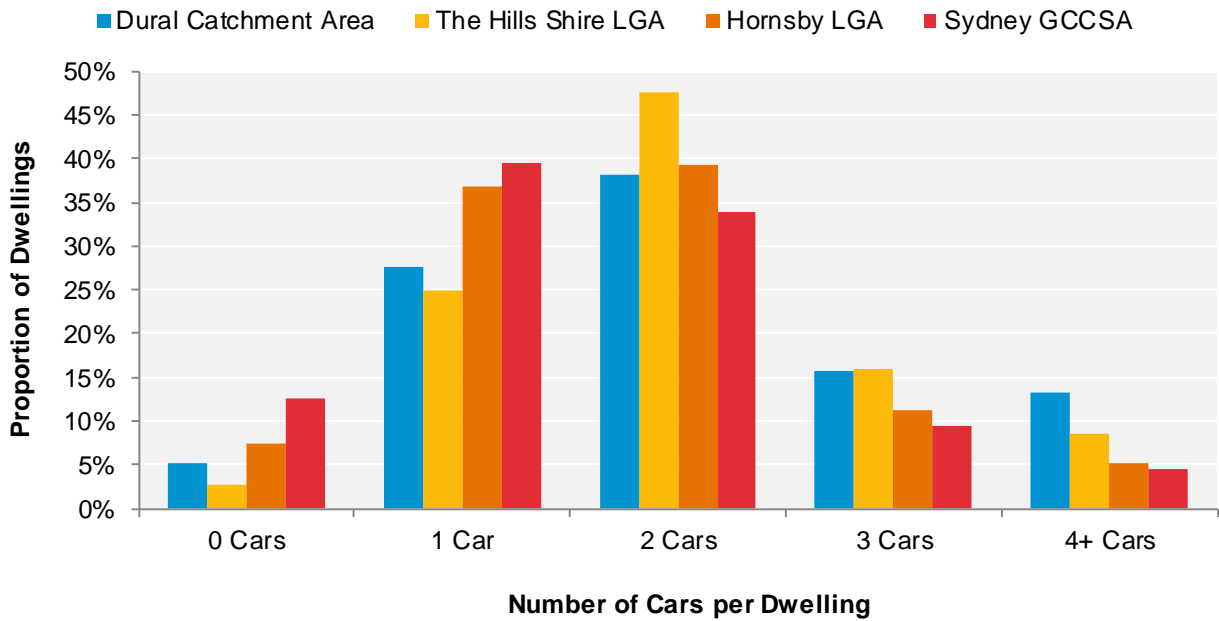
DURAL CATCHMENT AREA, HILLS SHIRE LGA, HORNSBY LGA AND SYDNEY GCCSA CHART 1.6



Source: Australian Bureau of Statistics 2011 Census; Urbis

Number of Cars

DURAL CATCHMENT AREA, HILLS SHIRE LGA, HORNSBY LGA AND SYDNEY GCCSA CHART 1.7



Source: Australian Bureau of Statistics 2011 Census; Urbis

MIGRATION ANALYSIS

For the purpose of a residential assessment, it is important to consider where residents have moved from and hence the type of market that residential dwelling products should be aimed at.

Chart 1.8 below shows the top ten SA2 Statistical Areas where residents of the Dural Catchment Area lived five years prior to the 2011 Census.

The majority of residents lived in the Dural-Kenthurst-Wisemans Ferry SA2 (2,620 residents), the Galston-Laughtondale SA2 (884 residents) and the Glenhaven SA2 (163 residents) five years ago. As the Dural Catchment Area overlaps parts of these three SA2s, these figures would include residents who had not moved or those who had moved locally between 2006 and 2011.

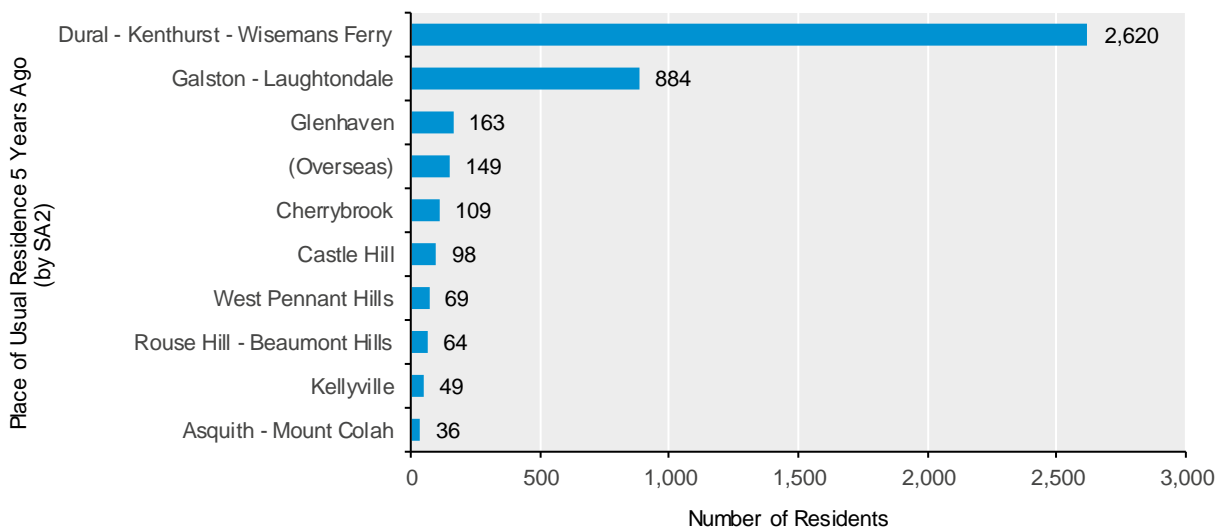
The chart also shows that a significant number of residents (almost 150) lived overseas five years prior to the 2011 Census before residing in the Dural Catchment Area. This is further evidenced in the demographics of the catchment area residents which show that approximately 6% of residents were born in the United Kingdom and 29% have British ancestry.

The remaining SA2s of usual residence are concentrated within the areas surrounding the Dural Catchment Area, such as Cherrybrook, Castle Hill and West Pennant Hills, highlighting that the majority of residents are from a relatively localised region.

Place of Usual Residence

DURAL CATCHMENT AREA, FIVE YEARS AGO (2011 CENSUS)

CHART 1.8



Source : Australian Bureau of Statistics, 2011 Census; Urbis

NEW DWELLING APPROVALS

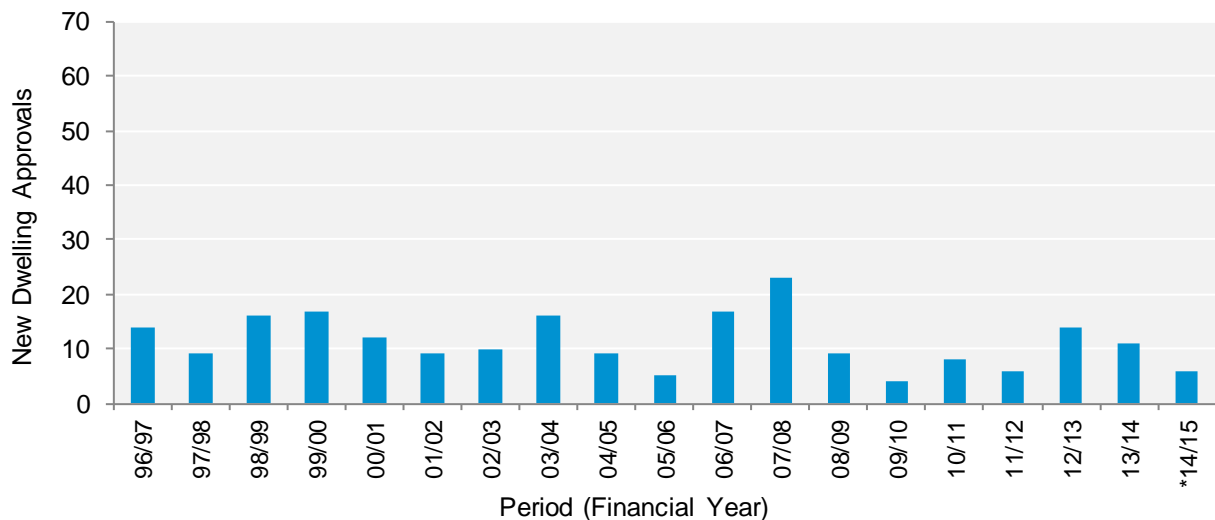
Chart 1.9 and Chart 1.10 show the new dwelling approvals (NDAs) for both houses and 'other dwellings' (including semi-detached, row, or terrace houses or townhouses; flats, units or apartments) within the Dural Catchment Area between 1996 and 2015. The key observations from these charts include:

- The number of NDAs for houses has been more consistent across the period than for other dwellings. The number of other dwelling NDAs has been more sporadic however this is likely to be due to the nature of such developments, whereby multiple dwellings are built in a single development.
- There is no clear preference or growing trend towards a particular dwelling type over the period, with the NDAs for both dwelling types fluctuating significantly.

New Dwelling Approvals – Houses

DURAL CATCHMENT AREA (1996 – 2015)

CHART 1.9

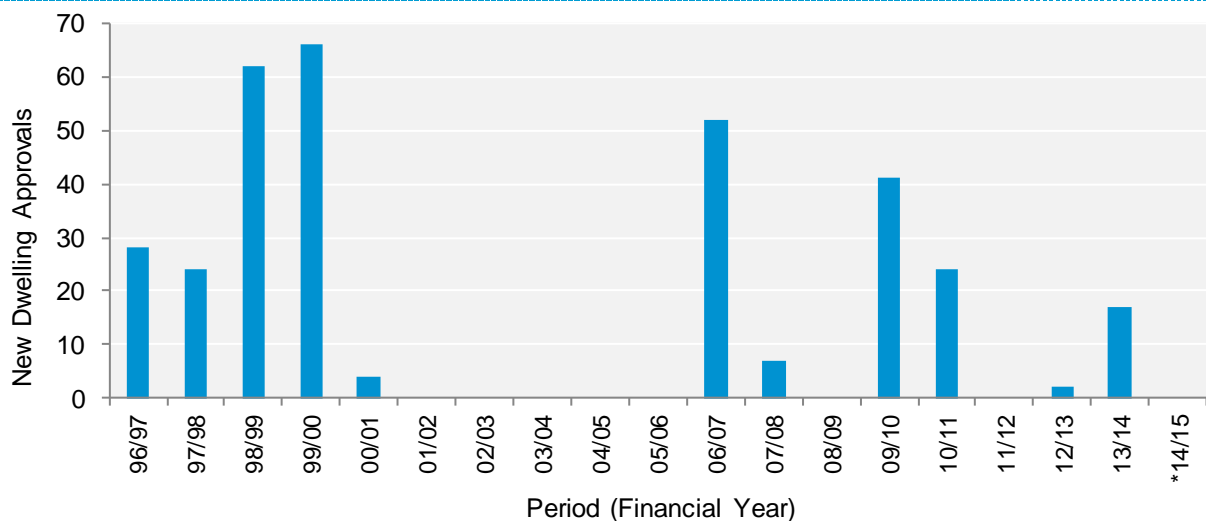


*Note: 2014/15 data is for three quarters only. 2011 data onwards is based on the new 2011 SA1 geography
Source: Australian Bureau of Statistics Census 1996, 2001, 2006 and 2011; Urbis

New Dwelling Approvals – Other Dwellings

DURAL CATCHMENT AREA (1996 – 2015)

CHART 1.10



*Note: 2014/15 data is for three quarters only. 2011 data onwards is based on the new 2011 SA1 geography
Source: Australian Bureau of Statistics Census 1996, 2001, 2006 and 2011; Urbis

IMPLICATIONS FOR THE SUBJECT SITE

The following implications can be drawn out in relation to the development potential on the subject site:

Age distribution: The age distribution of the Dural Catchment Area reflects that of an older population and suggests that there is a high proportion of retirees. This has implications for a potential development on the site which would need to accommodate older residents, with accessibility being important. This also suggests the potential need for seniors living dwellings on the subject site and this will be considered later in this report.

Household income profile: The household income characteristics can have significant implications when considering the pitch and quality of offer of residential uses on the site. The average household income for the Dural Catchment Area is above the Sydney average but below that of the Hills Shire and Hornsby LGA averages.

Lower household incomes in this area could be a reflection of the employment sectors in which people work. Equally however, it could also signify a proportion of households containing retirees and therefore not deriving an income.

The pricing of housing should therefore be pitched towards a medium quality product and have considerable regard to historic and current pricing being achieved within the local market.

Family size and composition: Couple families with no children make up the highest proportion of households in the Dural Catchment Area, indicative of the retiree and empty nester markets. Couple families with children under 15 years are the second most common family type, which indicate a significant young family market.

This implies that residential development on the subject site needs to cater to varying markets, with dwelling sizes ranging from two to four bedrooms, and a mix of dwellings types be more heavily weighted towards lower density dwellings such as detached and semi-detached (e.g. townhouses).

Dwelling structure: Detached houses are the most common dwelling type within the Dural Catchment Area, with semi-detached and unit dwellings making up less than 16% of the total dwellings combined. Furthermore, the average household size for the catchment area is comparatively large, with a high proportion of dwellings with four or more bedrooms (47%).

The region is still a predominantly detached housing market, but strategic planning is making increasing provisions for higher density around town centres (such as Rouse Hill Town Centre). This trend is further being fuelled by housing affordability issues where semi-detached or apartment dwellings are generally more affordable than detached dwellings on large lots of land.

In our view the dwelling mix on the subject site could contain a combination of dwellings types including detached, semi-detached and apartments, with higher density dwelling located closest to retail and services. There should be a high proportion of larger dwellings, to cater to the high average household sizes.

Number of cars per household: Car ownership within the Dural Catchment Area is high and hence this needs to be considered in the provision of car spaces that are provided with the residential dwellings. The socio demographic data suggests that most dwellings on the subject site should have two car spaces.

Migration analysis: The migration analysis suggests that the majority of residents are moving into the Dural Catchment Area from the local area and hence are generally accustomed to larger dwelling sizes and enjoy the lifestyle and amenity offered in this area of Sydney.

1.2 RESIDENTIAL SUPPLY ASSESSMENT

This section considers the existing and proposed supply of residential dwellings in the region surrounding the subject site in suburbs such as Dural, Galston, Glenhaven, Glenorie and Arcadia. Due to the limited amount of residential development activity occurring in the Dural area within the past decade, we have extended the analysis to the surrounding areas to get a better understanding of the residential trends.

MAJOR RESIDENTIAL DEVELOPMENT PROFILES

This section provides a summary of selected completed major residential developments relevant to the subject site. These profiles provide examples of the types of residential developments occurring in the region and consider characteristics such as location, mix, size and sale price, where available.

The table below shows a summary of the major developments selected for profiling, with the detailed development profiles on the subsequent pages and a map showing their location below.

Summary of Selected Major Developments

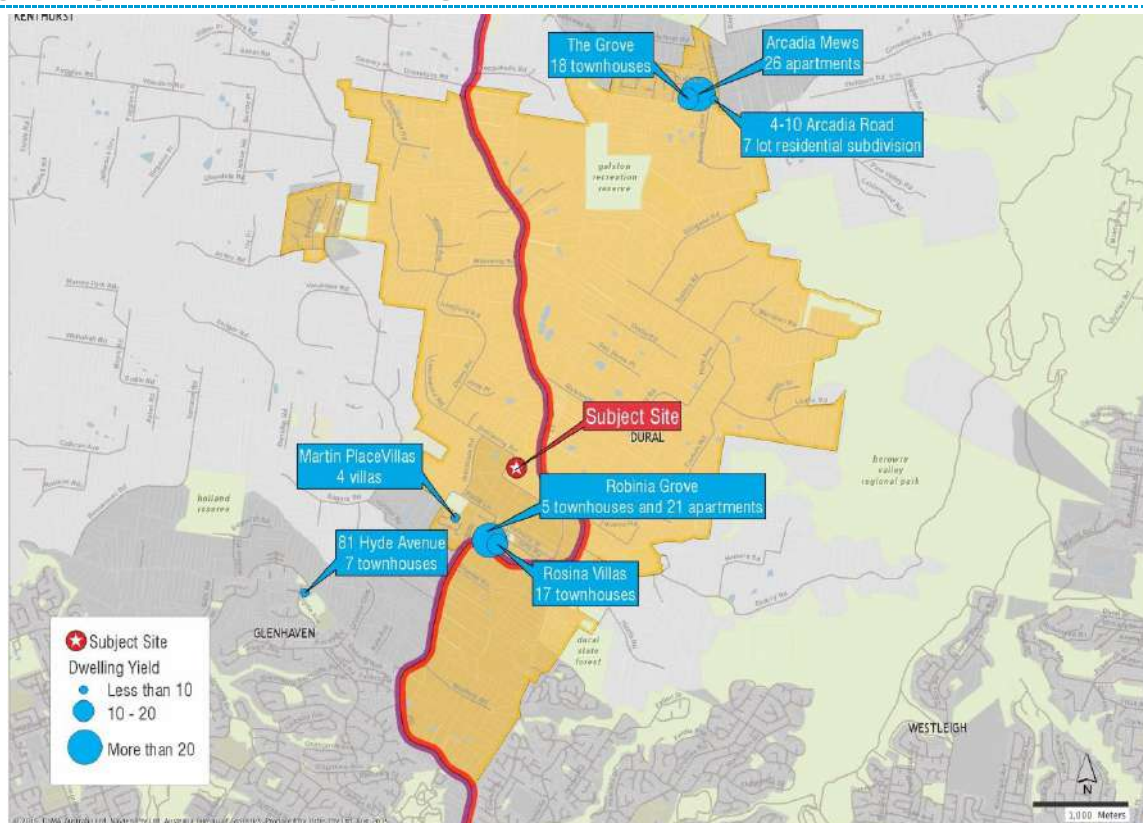
DURAL, GALSTON, GLENHAVEN, GLENORIE AND ARCADIA SUBURBS

TABLE 1.3

DEVELOPMENT	ADDRESS	YIELD
Arcadia Mews	5 Arcadia Road, Galston	26 apartments
Martin Place Villas	6 Martin Place, Dural	4 villas
Rosina Villas	550 Old Northern Road, Dural	17 townhouses
n.a.	4-10 Arcadia Road, Galston	7 lot residential subdivision
n.a.	81 Hyde Avenue, Glenhaven	7 townhouses
Robinia Grove	542-544 Old Northern Road, Dural	5 townhouses and 21 apartments
The Grove	364-368 Galston Road, Galston	18 townhouses

LOCAL RESIDENTIAL DEVELOPMENTS

MAP 1.2



PROJECT NAME	Arcadia Mews
ADDRESS	5 Arcadia Road, Galston
DEVELOPER	Marana Developments Pty Ltd
YEAR BUILT	2010
YIELD	26 apartments
PRODUCT MIX	2 bed: 5 apartments (19%) 3 bed: 21 apartments (81%)
SIZES	2 bed: 80-88 sq.m 3 bed: 92 - 100 sq.m
PRICES	Unit 10 (3 bedroom apartment): Initially sold for \$429,000 in May 2010 and most recently resold in November 2014 for \$470,000 Unit 18 (3 bedroom apartment): Initially sold for \$429,000 in June 2010 and most recently resold in April 2015 for \$628,500 Unit 21 (2 bedroom apartment): Initially sold for \$382,000 in February 2010 and most recently resold in March 2015 for \$585,000
APARTMENT FEATURES	- 2 bathrooms per apartment - 2 secure car spaces per apartment and store rooms in most apartments



Source: realestate.com.au; RPData; Urbis

PROJECT NAME	Martin Place Villas
ADDRESS	6 Martin Place
DEVELOPER	Elim Constructions
YEAR BUILT	2011
YIELD	4 villas
PRODUCT MIX	1 x 1 bedroom, 1 x 2 bedroom, 1 x 3 bedroom and 1 x 4 bedroom villas
SIZES	Unit 1: 57 sq.m Unit 2: 87 sq.m Unit 3: 123 sq.m Unit 4: 229 sq.m
PRICES	Unit 1 (1 bedroom villa): Initially sold for \$430,000 in July 2012 and most recently resold in May 2014 for \$495,000 Unit 2 (2 bedroom villa): Initially sold for \$535,000 in May 2012 and has not been resold since Unit 3 (3 bedroom villa): Initially sold for \$638,000 in August 2011 and has not been resold since Unit 4 (4 bedroom villa): Initially sold for \$680,000 in July 2011 and has not been resold since
FEATURES	- Each villa has 2 car spaces



Source: realestate.com.au; RPData; Urbis

PROJECT NAME	Rosina Villas
ADDRESS	550 Old Northern Road, Dural
DEVELOPER	Hardenbergia Pty Ltd
YEAR BUILT	2011
YIELD	17 villas
PRODUCT MIX	17 x 3 bedroom villas
SIZES	Each villa is approximately 120 sq.m
PRICES	Villas initially sold for \$637,500 to \$655,000 in 2012/ 2013. Unit 15 recently resold in September 2014 for \$782,000
FEATURES	<ul style="list-style-type: none"> - 3 bathrooms - 2 car garage



Source: realestate.com.au; RPData; Urbis

PROJECT NAME	n.a.
ADDRESS	4-10 Arcadia Road, Galston
DEVELOPER	n.a.
YEAR BUILT	2013
YIELD	7 lot residential subdivision (house and land packages)
PRODUCT MIX	House and land packages, mostly 4 bedroom homes
SIZES	Lot 2: 550 sq.m (land size) Lot 4: 523 sq.m (land size), 272 sq.m (building size) Lot 5: 525 sq.m (land size), 272 sq.m (building size)
PRICES	Lot 2: \$648,800 (March 2012) Lot 4: \$694,850 (Feb 2014) Lot 5: \$673,995 (March 2012)
FEATURES	- 3 bathrooms - 2 car garage



Source: realestate.com.au; RPData; Urbis

PROJECT NAME	n.a.
ADDRESS	81 Hyde Avenue, Glenhaven
DEVELOPER	Australand Holdings
YEAR BUILT	2005
YIELD	7 townhouses
PRODUCT MIX	3 and 4 bedroom townhouses
SIZES	Unit 4: 156 sq.m (total floor area) Unit 6: 150 sq.m (total floor area)
PRICES	Unit 1 (4 bedroom townhouse): Initially sold for \$500,000 in July 2005 and most recently resold in February 2013 for \$630,000 Unit 4 (4 bedroom townhouse): Initially sold for \$480,000 in February 2007 and most recently resold in June 2014 for \$820,000 Unit 6 (3 bedroom townhouse): Initially sold for \$499,000 in June 2006 and most recently resold in May 2013 for \$624,400 Unit 7 (3 bedroom townhouse): Initially sold for \$485,000 in December 2005 and most recently resold in May 2013 for \$636,000
FEATURES	<ul style="list-style-type: none"> - 2 bathrooms - 2 car garage



Source: realestate.com.au; RPData; Urbis

PROJECT NAME	Robinia Grove
ADDRESS	542-544 Old Northern Road Dural
DEVELOPER	Yorkcove Pty Ltd
YEAR BUILT	2000
YIELD	26 townhouses and apartments
PRODUCT MIX	5 townhouses (2 x 2 bed, 3 x 3 bed) 21 units (8 x 2 bed, 13 x 3 bed)
SIZES	Unit 9 (2 bedroom unit): 135 sq.m (including garage)
PRICES	Unit 4 (3 bedroom townhouse): Initially sold for \$179,000 in March 1998 and most recently resold in March 2015 for \$775,000 Unit 6 (3 bedroom townhouse): Initially sold for \$361,000 in July 2001 and most recently resold in August 2014 for \$735,000 Unit 9 (2 bedroom apartment): Initially sold for \$252,000 in December 1999 and most recently resold in March 2015 for \$650,000 Unit 18 (2 bedroom apartment): Initially sold for \$245,000 in October 1999 and most recently resold in January 2015 for \$665,000
FEATURES	<ul style="list-style-type: none"> - 2 bathrooms - 1 car space for 2 bedroom dwellings, 2 car spaces for 3 bedroom dwellings



Source: realestate.com.au; RPData; Urbis

PROJECT NAME	The Grove
ADDRESS	364-368 Galston Road, Galston
DEVELOPER	Tristar Ventures Pty Ltd
YEAR BUILT	2001
YIELD	18 townhouses
PRODUCT MIX	18 x 3 bedroom townhouses
SIZES	Approx. 114 – 166 sq.m (total floor area)
PRICES	<p>Unit 2 (3 bedroom townhouse): Initially sold for \$300,000 in October 2001 and most recently resold in December 2014 for \$620,000</p> <p>Unit 4 (3 bedroom townhouse): Initially sold for \$280,000 in August 2001 and most recently resold in November 2014 for \$610,000</p> <p>Unit 5 (3 bedroom townhouse): Initially sold for \$290,000 in August 2001 and most recently resold in August 2013 for \$530,500</p> <p>Unit 17 (3 bedroom townhouse): Initially sold for \$290,000 in November 2001 and most recently resold in October 2013 for \$525,000</p>
FEATURES	<ul style="list-style-type: none"> - 2 bathrooms - 2 car garage



Source: realestate.com.au; RPData; Urbis

PROPOSED RESIDENTIAL DEVELOPMENTS

There is limited residential development activity proposed within the region surrounding the subject site. Table 1.4 below provides a summary of the developments that are proposed within the suburbs of Dural, Galston, Glenhaven, Glenorie and Arcadia.

Two of these proposed developments are residential subdivisions, one of which is a rural residential subdivision which is not directly relevant to the subject site because of the large scale of the lots proposed (4,022 sq.m to 7,099 sq.m).

The Skyline Dural development presents the most significant competition to the development of the subject site if the project is to go ahead. This development is approximately 1.4 kilometres from the subject site along Old Northern Road and proposes a significant number of residential dwellings in addition to other potential competing land uses such as retail and commercial uses.

The Cascades development also presents potential competition to the development of the subject site. The Cascades site is just 250 metres to the north of the subject site and proposes a range of land uses such as residential, retail and commercial uses which may also compete with a development on the subject site.

For the purposes of our analysis, we have assumed that the South Dural precinct development will not proceed within the timeframe considered. We are advised that fragmented land ownership and infrastructure servicing costs are currently limiting the ability for the land to be brought forward for residential development.

Proposed Residential Developments

DURAL, GALSTON, GLENHAVEN, GLENORIE AND ARCADIA SUBURBS

TABLE 1.4

Project Title	Address	Yield	Estimated Completion	Stage	Description
South Dural Subdivision	Bound by Old Northern, New Line & Hastings Roads, Dural	3,000 lots	2025	Rezoning application	Proposed residential subdivision of 3,000 lots with sizes ranging from 250sq.m to 2,000sq.m and to include 3-5 storey dwellings, townhouses & terraces, detached dwellings and large lots
Skyline Dural	488-494 Old Northern Road, Dural	80 apartments and 21 townhouses	2019	Rezoning application	Planning proposal to facilitate the development of a part 4/ part 5 storey residential flat building containing 80 apartments and ground floor retail uses on the southern portion of site. The concept also includes a retail/ commercial building at northern end comprising a supermarket, specialty stores, office suites and 3 levels of basement parking. The proposal also includes 21 townhouses at rear of development
Cascades	636 Old Northern Road, Dural	17 units	2017	Contract let and preferred builder named	Proposed mixed use development with 17 residential apartments (6 x 2 bed, 10 x 3 bed and 1 x 4 bed), a variety of business uses (business premises, shops, restaurants, childcare centre and medical consulting rooms), restaurant and cafes, childcare centre and multi-purpose hall facility
Horizon Estate Subdivision	3050 Old Northern Road, Dural	10 lots	2015	Subdivision approval	Proposed rural residential subdivision of 10 community title lots with lot sizes ranging from 4,022 sq.m to 7,099 sq.m

Source : Cordell Connect; Urbis

1.3 RESIDENTIAL SALES MARKET

This section considers the number of transactions and median sale prices for residential properties (both houses and apartments) in the suburbs surrounding the subject site in order to provide insight into the state of the local residential property market. There is also consideration of the market drivers that are impacting the Sydney residential property market.

INCREASING PRICE GAP BETWEEN HOUSES AND APARTMENTS

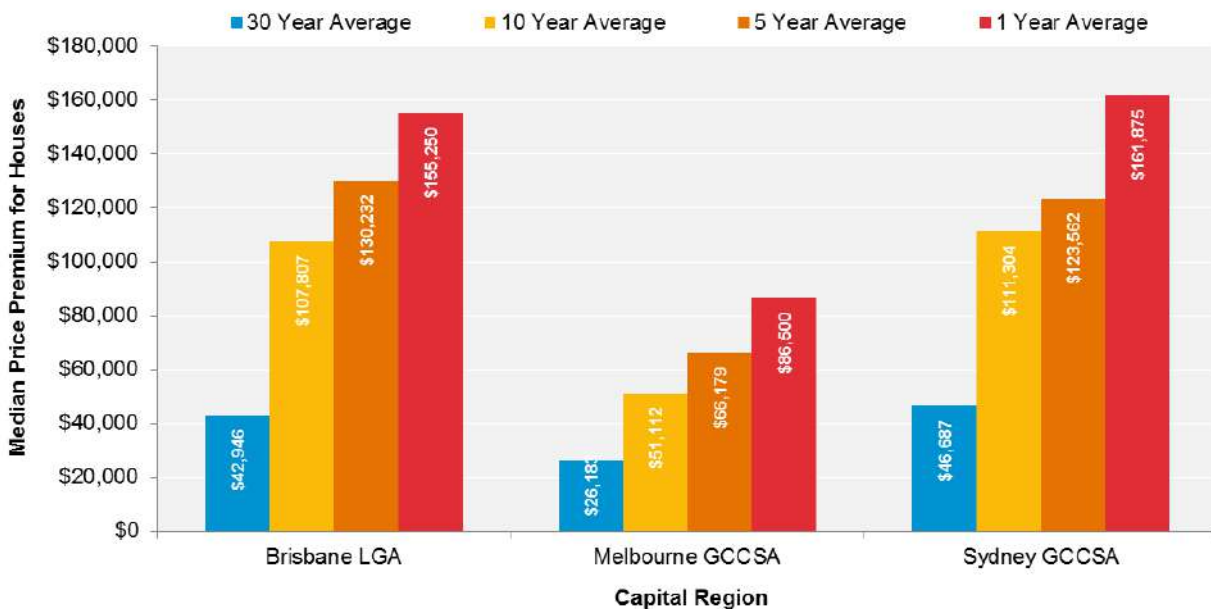
Australian's dream of a white picket fence home is slipping away for a large proportion of the population. The key driver affecting this shift in housing choices and location is affordability.

The chart below demonstrates a major driver behind the shift of dwelling alternatives and the rise of infill development across the country. The graph demonstrates the average price gap between housing and apartments over the past thirty, ten, five and one year periods for Brisbane, Sydney and Melbourne.

Apartment vs. House Price Gap

BRISBANE LGA, MELBOURNE GCCSA, AND SYDNEY GCCSA

CHART 1.11



Source: RP Data; Urbis

- Sydney has one of the largest price gaps on the eastern seaboard of Australia. This is most likely due to it currently having one of the highest median house prices in comparison to Brisbane and Melbourne; and
- A combination of population growth, centralisation and geography has structured the cost of land within Sydney to rise based on scarcity of demand.
- The cost of traditional housing in Sydney is becoming increasingly expensive, and as such still provides a key driver promoting the development of infill or density development as alternative dwelling options.
- The increased costs of housing and demographic shifts are also combining to create a demand for rental accommodation which has further driven the demand for higher density development.
- The housing market within Dural offers a point of difference in that it provides residents with a semi-rural lifestyle whilst being located on the edge of an urban area, as well as offering some more affordable housing options. Residents that choose to live in this area are often motivated by lifestyle choices.

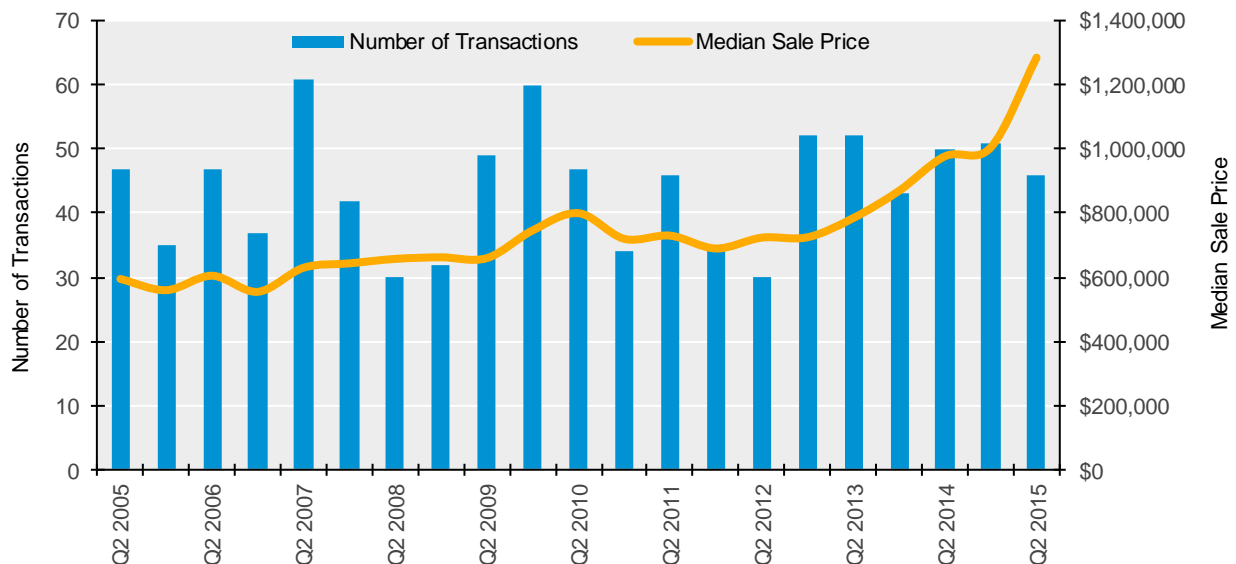
DURAL REGION SALES CYCLE – HOUSES

The sales cycle below depicts the sales volume and median sale price for houses every second and fourth quarter from 2005 to 2015 within the Dural region (i.e. the suburbs of Dural, Galston, Glenhaven, Glenorie and Arcadia).

House Sales Cycle – Q2 2005 to Q2 2015

DURAL, GALSTON, GLENHAVEN, GLENORIE AND ARCADIA SUBURBS

CHART 1.12



Note: Data is based on single residential dwellings

Source : RPData; Urbis

- The median sale price for houses in the Dural region was recorded at \$1,285,000 in the second quarter of 2015, based on 46 settled transactions
- The median price has shown an upward trend since 2012 (despite a small plateau in 2014), recording growth of 78% between the second quarter of 2012 and 2015
- Sydney experienced a period of decline during the Global Financial Crisis from 2008. In an attempt to stabilise the Australian economy, government stimulus packages paid to households prompted investors to capitalise on a subdued housing market, leading the median sale price to increase momentarily in 2009/2010
- Prior to the strong growth from 2012 onwards, the median sale price achieved relatively subdued growth. More recently however, the housing market has been underpinned by the Reserve Bank of Australia keeping the cash rate at historically low levels, with investors accounting for a significant amount of home loans.
- The number of house transactions in the Dural region is relatively limited, with significant fluctuations over the 10 year period. Over the period, the number of transactions in any quarter has ranged from 30 (Q2 2008) to 61 (Q2 2007).
- The median sale price of houses in the local area is elevated by the sale of large residential lots (up to five acres in size).

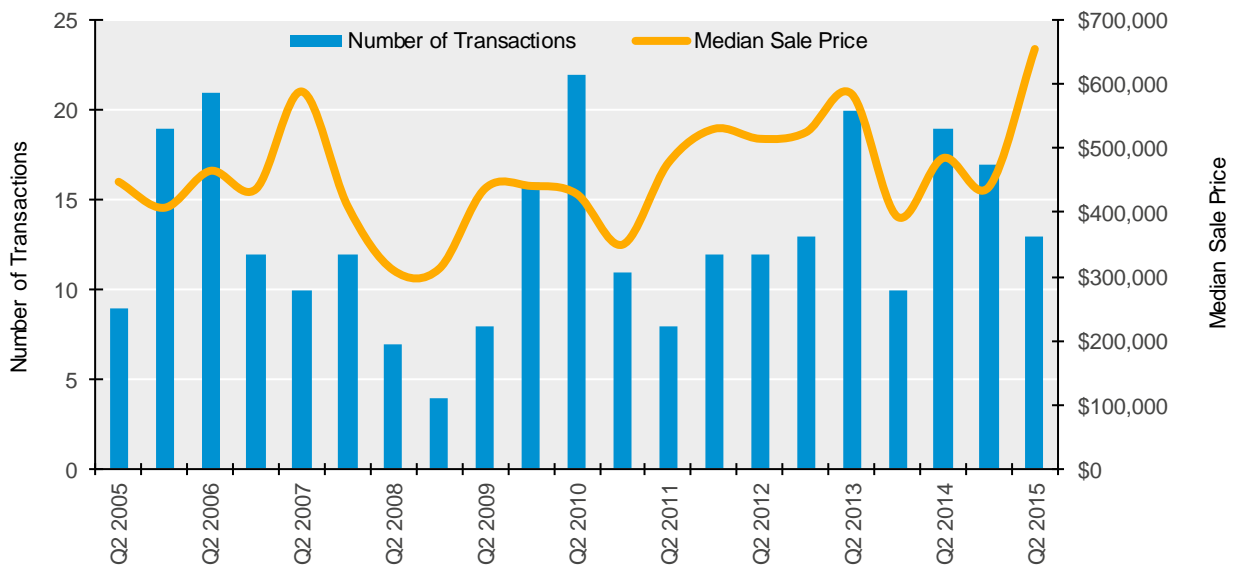
DURAL REGION SALES CYCLE – APARTMENTS

The sales cycle below depicts the sales volume and median sale price for apartments every second and fourth quarter from 2005 to 2015 within the Dural catchment.

Apartment Sales Cycle – Q2 2005 to Q2 2015

DURAL, GALSTON, GLENHAVEN, GLENORIE AND ARCADIA SUBURBS

CHART 1.13



Note: Data is based on residential strata units and multiple residential dwellings

Source : RPData; Urbis

- The median sale price for apartments in the Dural region was recorded at \$655,000 in the second quarter of 2015, based on 13 settled transactions. Over the 10 year period, the highest median sale price was \$755,000 (Q3 2014), also based on 13 transactions
- The median sale price has experienced strong growth over the last half year, however has experienced significant fluctuations over the 10 year period displayed in the chart
- Similarly, the number of transactions has also varied significantly over the period, ranging from just four transactions in Q3 2007 and Q4 2008 to 22 transactions in Q2 2010
- Over this decade, the number of house transactions has exceeded the number of apartment transactions.

RESIDENTIAL DEMAND DRIVERS

We have identified five key drivers of residential housing demand relevant to the subject sites (both the northern and southern sites). These key drivers include access to amenities and employment, transport and infrastructure, population growth and competing supply. The following table provides a brief description of these drivers and implications for the subject sites.

FACTORS	COMMENTS	IMPLICATIONS FOR THE SUBJECT SITE
Access to amenities	Locations that have easy access to shops, public transport, parks, entertainment and dining options, medical facilities and schools will be highly demanded as residential locations. These factors remain high on the priority lists of those looking to rent or buy	<ul style="list-style-type: none"> ▪ Residents will have access to the retail offer at Dural Mall (including a Woolworths supermarket) and the Dural IGA to the north). ▪ For the northern portion of the site additional convenience and food retail options will be available at the possible Cascades development at 636 Old Northern Road and the Skyline development at 488 Old Northern Road. ▪ A range of bulky goods retailers, service providers and fast food restaurants also exist near the intersection of Old Northern Road and New Line Road which is adjacent to the subject site. ▪ The site is located opposite Redfield College, with Dural Public School located approximately 600 metres north-west along Old Northern Road ▪ The site is located approximately 4.7 -5.1 kilometres from Castle Towers Shopping Centre, which is the closest regional shopping centre providing a large discretionary offer for residents. ▪ Residents on the southern site will have direct access to the proposed medical centre/ private day surgery/medical centre on the site. The Round Corner Medical Practice is also located adjacent to the Dural Mall.

FACTORS	COMMENTS	IMPLICATIONS FOR THE SUBJECT SITE
<p>Access to employment</p>	<p>Residents often prefer to live close to work, enabling them to minimise travel times and improve work life balance</p>	<ul style="list-style-type: none"> ▪ The nearest major employment centre is the Norwest Business Park ▪ There are existing employment opportunities within the retail/commercial centres in Dural and its environs (including Round Corner) ▪ Employment options in the local area are generally restricted to the neighbouring retailers, such as the local supermarkets and convenience and bulky goods retailers
<p>Transport and Infrastructure</p>	<ul style="list-style-type: none"> ▪ Access to good public transport and road infrastructure are important to potential purchasers and renters. Particularly, linkages to the CBD, airport and major employment centres. ▪ Future infrastructure projects can revitalise areas, improve connectivity and linkages, create new jobs and reshape the existing community 	<ul style="list-style-type: none"> ▪ The Sydney Metro Northwest will include a station with park and ride facilities at Cherrybrook. This will enhance connections to key employment nodes across Sydney ▪ The Sydney CBD, a major employment node, is marginally more accessible from the southern site due to the bus service that runs from near the intersection of Old Northern Road and New Line Road.
<p>Population growth</p>	<ul style="list-style-type: none"> ▪ Population growth is a key indicator of demand for residential dwellings 	<ul style="list-style-type: none"> ▪ The population of the Dural Catchment Area is expected to experience marginal growth between 2011 and 2031, increasing by a projected 550 residents. The growth rates for the catchment area are generally below the averages seen across the Hills Shire and Hornsby LGAs.

FACTORS	COMMENTS	IMPLICATIONS FOR THE SUBJECT SITE
Competing supply	<ul style="list-style-type: none"> ▪ Competing residential developments provide an indication of market preferences in terms of price points, size, mix and scale of development. ▪ The amount of competing supply, quality and location of other developments in the area can influence demand on the subject site 	<ul style="list-style-type: none"> ▪ The trend in residential dwellings in the Dural Catchment Area shows a clear preference for larger, detached dwellings. It is a lifestyle trend for residents to move to areas like Dural for a semi-rural lifestyle on a large block of land ▪ Some recent developments have been small developments of units and townhouses (or a combination of both). These developments don't generally exceed 30 dwellings however the proposed Skyline development will (80 units and 21 townhouses) ▪ These unit and townhouse developments cater to the residents who enjoy the lifestyle of living in Dural, however choose to downsize so the maintenance of their property is minimised ▪ Recent developments have shown a preference for dwellings of 3-4 bedrooms ▪ Most dwellings, regardless of dwelling type, tend to have at 2 car spaces due to the high usage of private transport (which is a result of the limited public transport infrastructure) ▪ The median house price in the Dural region has recorded strong growth in recent years; however the median apartment prices have experienced more volatility. ▪ Furthermore, the number of house transactions in the local area has generally exceeded the number of apartment transactions.

In summary, the following elements will influence demand for, and type of, residential dwellings on the subject site:

- The southern site is better positioned to accommodate higher density residential dwellings (smaller detached lots, townhouses and apartments) due to its closer proximity to existing and planned amenities as part of the development concept for the land
- Employment options within the local area are somewhat limited; however the choice to move to the Dural area is usually based on lifestyle factors. The Sydney Metro Northwest will improve access to employment with the station located at Cherrybrook which is to include a park and ride facility.
- Public transport infrastructure is limited within the local area, with only bus services being provided. Consequently, most residents will use private motor vehicles and hence most dwellings should include two car spaces.
- Official population growth projections suggest that future population growth within the Dural Catchment Area is moderate and this needs to be considered in the scale of development on the subject sites
- The majority of the dwelling stock within the Dural area is larger detached dwellings with some higher density townhouses. Most of the dwellings have 3 to 4 bedrooms to suit the large family market.
- From discussions with local real estate agents, it is apparent that the majority of people moving into or enquiring about the Dural area are owner occupiers, most of which are young families. These families are often second home buyers.
- There has also been demand from retirees looking to move into the area; however affordability is becoming an increasing barrier for these buyers in the Dural area. According to the local agents, the residential lots of around one acre have been selling for approximately \$1.1 to \$1.7 million, with the five acre lots selling for \$2 to \$3 million. Therefore there is likely to be demand for more affordable residential options within the local area.

1.4 RESIDENTIAL RECOMMENDATIONS

The following section provides a summary of the key recommendations for the proposed development of the subject site in terms of the residential component.

The recommendations are based on the following:

- Demographic trends of those in the Dural region
- Recent sales in the local area
- Recent developments that have occurred or are expected to occur in the local area
- Discussions with local real estate agents.

Table 1.5 following provides a summary of the recommendations for the mix, size and pricing of the residential dwellings on the subject site. Both low and high density options have been provided in the table, with the higher density option carrying more risk in terms of market supportability. Key points to note from our analysis include:

- The majority of the dwellings should be detached dwellings and townhouses. There could also be some smaller dwellings in the form of apartments. As the majority of residents moving into the area are from the local area, they are used to larger dwellings and hence the internal size of the dwellings recommended for the subject site are generously proportioned with mostly three to four bedrooms.
- The southern site should contain a greater proportion of medium density dwellings as these dwellings will be located closer to amenities, which is regarded as a trade-off for individual property sizes
- The demographics also suggest that there is a significant retiree market within the Dural area, many of whom are downsizers and empty nesters. Despite the smaller dwelling size requirements of retirees, it is common for them to want an additional bedroom for family members and friends to stay with them or to accommodate other uses such as studies.
- The pricing of the dwellings is reflective of similar dwellings currently available or recently sold within the local area, as well agents' advice given the current state of the market
- The growing residential population in the Dural region will strengthen the retail spending market in the area, further supporting the existing retailers and service providers at Dural/ Round Corner
- The Dural region is still a predominantly detached housing market, but strategic planning is making increasing provisions for higher density around town centres (such as Rouse Hill Town Centre). This trend is further being fuelled by housing affordability issues where semi-detached or apartment dwellings are generally more affordable than detached dwellings.
- The medium density type dwellings have been receiving interest mainly from downsizers and retirees who are looking to move from acreage properties in the local area. The rural setting offered in Dural still appeals to these people and hence they don't want to move out of the area. We note however that despite the interest in these dwellings, there is currently a limited supply of townhouses in the local area.
- There has also been some demand for larger residential lots with detached dwellings. It is believed that this demand is driven by the price increases for smaller properties in the Castle Hill/ Kellyville areas. Buyers will instead look to the larger properties in the Dural area (where the price increases have not been as significant) where they are able to achieve better value.
- Overall, there appears to be a need to provide a broader range of residential dwellings in the local area, providing more variety in terms of lot size, dwelling size and cost. The type of residential product in demand appears to range from some larger rural residential lots to more medium density type stock such as townhouses and larger apartments. By providing a broad range of dwelling types on the site, this will ensure that the needs of the local market are met and the character of the area is maintained.

Dwelling Mix, Size and Pricing SUBJECT SITES

TABLE 1.5

Dwelling Type	Number of Bedrooms	% of Total Dwellings			Internal Size (sq.m)	Land Area (sq.m)	Indicative Sale Price*
		Lower Density Option	Higher Density Option	% of Dwellings by type			
Apartment	2			30%	80-100	n.a.	\$600,000 - \$650,000
	3			70%	100-120	n.a.	\$700,000 - \$750,000
		30%	30%	100%			
Townhouse	2			10%	100-125	125-175	\$700,000 - \$750,000
	3			60%	125-150	175-225	\$750,000 - \$800,000
	4			30%	150-175	225-275	\$800,000 - \$850,000
		35%	70%	100%			
Detached	3			20%	200-220	450-525	\$950,000 - \$1,100,000
	4			80%	220-240	525-600	\$1,100,000 - \$1,250,000
		35%		100%			
		100%	100%				
Northern Site							
Dwelling Type	Number of Bedrooms	% of Total Dwellings			Internal Size (sq.m)	Land Area (sq.m)	Indicative Sale Price*
Townhouse	2			10%	100-125	125-175	\$700,000 - \$750,000
	3			60%	125-150	175-225	\$750,000 - \$800,000
	4			30%	150-175	225-275	\$800,000 - \$850,000
		10%	20%	100%			
Detached Dwelling	3			20%	200-220	450-525	\$950,000 - \$1,100,000
	4			80%	220-240	525-600	\$1,100,000 - \$1,250,000
		90%	80%	100%			
		100%	100%				

*Based on current sale prices
Source: Urbis

1.5 SENIORS LIVING

In addition to analysing the standard residential dwelling market in the Dural catchment, we have also considered the seniors living residential market in the local area.

There is a broad provision of seniors living facilities available, often differentiated by the target age groups and the level of care provided. The three broad categories of seniors living include over 55s facilities, Independent Living Units (ILUs) and aged care facilities, which have been outlined below.

Over 55s facilities are designed to offer a high-quality resort-style of living to those aged over 55 years, often providing larger villas or apartments and facilities such as swimming pools, golf courses, bowling greens, club houses and restaurants. This type of facility is often suited to active retirees who are looking to downsize but do not yet require a facility that provides care or assistance.

ILUs are a form of retirement living which is generally an accommodation unit (more akin to a flat/ studio) designed for independent retirees aged over 65 years who do not require assistance with day-to-day living or particular aged care services but where support services are available when and if required. They are often located in retirement villages with a range of community facilities and services.

Aged care homes (or nursing homes) are facilities aimed at those residents who generally need more help with day-to-day tasks, personal care and nursing care. There are both low and high care facilities, depending on the needs of the resident, however most facilities will provide 24-hour nursing support via a nurse call system for when it is required. These facilities are generally catered and will often have organised activities for the residents. They can also include specialist facilities, for example wards designated for those suffering from Alzheimer's disease.

EXISTING SENIORS LIVING FACILITIES

Table 1.6 lists the existing seniors living facilities within the local Dural area. The table shows that there is a range of different facilities currently available in the surrounding area, ranging from over 55s facilities to aged care facilities.

Existing Seniors Living Facilities

DURAL, AS AT OCTOBER 2015

TABLE 1.6

Name	Address	Type	Dwellings	Beds
Oaktree Lifestyle Resort	28 Rosebank Ave, Dural	Over 55s	72	n.a.
Mountainview Retreat Retirement Village	1 Stonelea Ct, Dural	Over 55s	40-50 (est.)	80-100 (est.)
Kentgrove Lodge	116B Kenthurst Rd, Kenthurst	Independent Living Units	9	9
Kentgrove Independent Living Village	2C Jones Rd, Kenthurst	Independent Living Units	49	n.a.
Rowland Village	301 Galston Road, Galston	Independent Living Units	135	200
Bupa Aged Care	1 Stonelea Ct, Dural	Aged Care	n.a.	102
Lady of Grace Nursing Home	454 Old Northern Rd, Dural	Aged Care	n.a.	52
Mark Donaldson VC House	301 Galston Road, Galston	Aged Care	n.a.	40
Total			305 - 315	483 - 503

Source : Google Maps, Facility websites; Urbis

PROPOSED SENIORS LIVING FACILITIES

Table 1.7 outlines proposed seniors living facilities planned for the Dural area.

The Lady of Grace Nursing Home proposal is for additions to the existing facility, which will increase the total number of aged care beds in the catchment by 32.

The other proposal is for a new retirement village facility (independent living units) consisting of 70 two and three bedroom villas and units.

Proposed Seniors Living Facilities

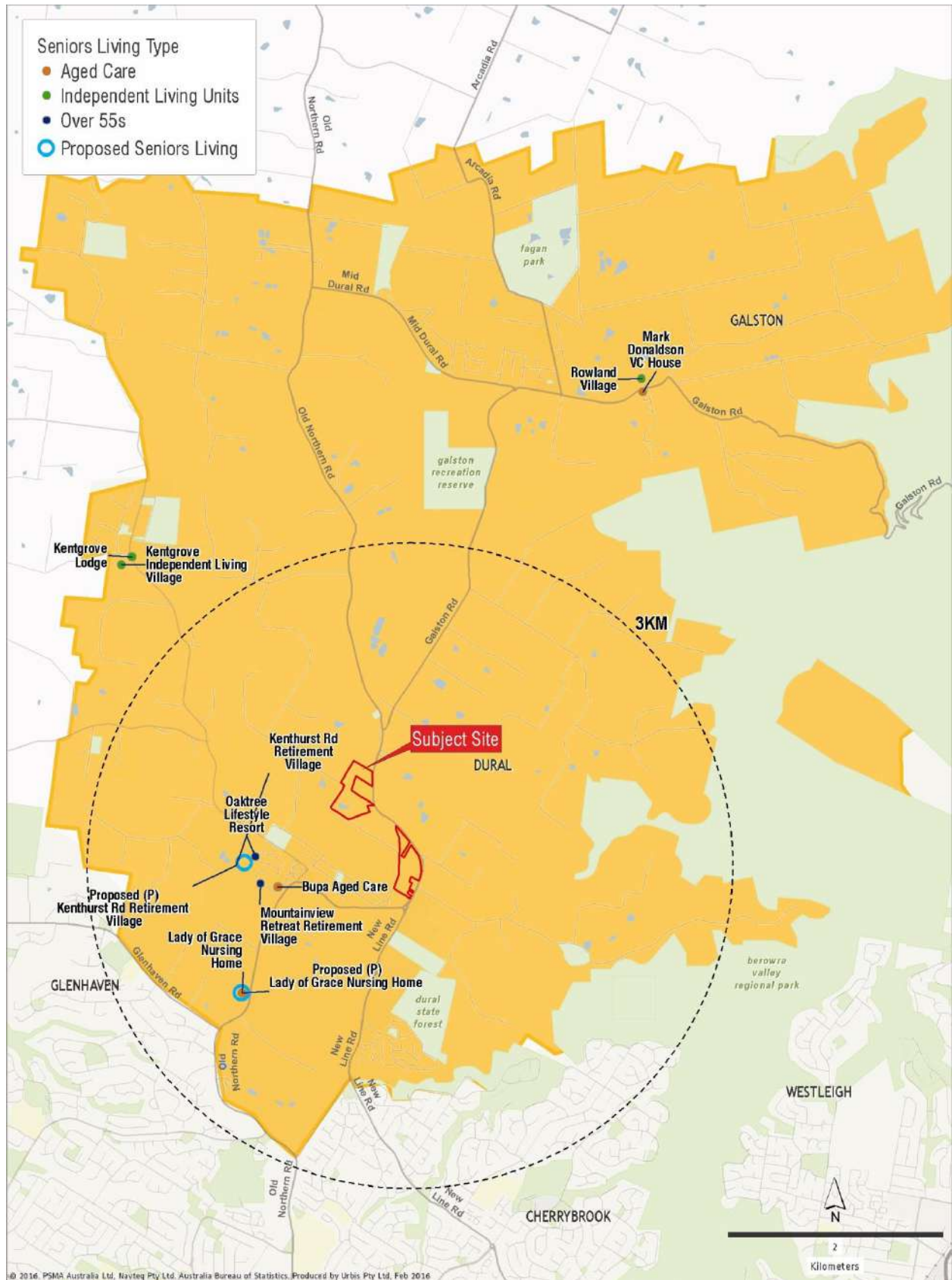
SUBURB OF DURAL, AS AT OCTOBER 2015

TABLE 1.7

Name	Address	Description	Estimated Completion
Lady of Grace Nursing Home	454 Old Northern Road, Dural	Alterations and additions to existing nursing home to increase the number of aged care beds from 52 to 79 plus an additional 5 assisted care units, giving a total of 84 beds.	2017
Kenthurst Road Retirement Village	50 Kenthurst Road, Dural	Construction of a new 70 unit self-care housing development containing 22 x 2/3 bedroom freestanding single storey villas, 48 x 2 bedroom units in 2 storey buildings and additional facilities.	2016

Source : Cordell Connect; Urbis

The existing and proposed seniors living facilities have been shown on Map 1.3 on the following page. The majority of the facilities are located in the south-western corner of Dural, in close proximity to the subject site. This is also the location of the two proposed facilities, with this area being favourable due to its proximity to amenities and facilities.



FORECAST DEMAND FOR SENIORS LIVING

In order to assess the likely demand for the different seniors living facilities, we have considered the demand for the over 55s facilities separate to the facilities that provide some level of support/ care (ILUs and aged care). The ILU and aged care facilities are generally for those aged over 65 years.

Over 55s Facilities:

Table 1.8 summarises the demand projections for over 55s facilities in the Dural area, which is based on the following assumptions:

- As at 2011, 33% of the population was aged over 55 years. This rate has been applied to the population forecasts to determine a conservative view of the potential population of the area aged over 55 years to 2026
- The population of the Dural area aged over 55 years is projected to grow from approximately 3,700 in 2015 to 4,400 by 2026, assuming the proportion of the population in this age group remains unchanged
- At present, there are approximately 112-122 over 55s dwellings in the catchment area, potentially catering for up to approximately 240 residents
- This suggests that just 6.4% of the population aged over 55 years are currently living in over 55s facilities
- If this same rate is applied to the population in 2026, the number of people living in over 55s facilities could reach over 280 residents, suggesting that there is some scope to increase the supply of over 55s dwellings in the local area.

Worth noting is that these projections assume that the proportion of the population aged over 55 years will remain unchanged over the coming years. However, the general trend across the broader Sydney area is of an ageing population which could potentially increase the demand for over 55s dwellings in the local area, particularly as the Dural area is seen as an attractive area for retirees.

Population Aged 55+ Years

DURAL

TABLE 1.8

	2011	2015	2016	2021	2026
Total Population	10,700	11,200	11,300	12,700	13,200
Population aged 55+ years (%)	33%	33%	33%	33%	33%
Population aged 55+ years (no.)	3,579	3,746	3,780	4,248	4,415
Population aged 55+ years in existing facilities (no.)		240	240	240	240
Population aged 55+ years in existing facilities (%)		6.4%	6.4%	6.4%	6.4%
Potential total demand for over 55s facilities		240	242	272	283
Potential unmet demand		0	2	32	43

Source : ABS Census 2011; Urbis

Independent Living Units and Aged Care:

Residents who live in ILUs and aged care facilities are generally aged over 65 years, with these facilities providing some level of support and/ or care for the residents when and if required.

Table 1.9 summarises the demand projections for ILUs and aged care facilities in the Dural area, which is based on the following assumptions:

- In 2011, approximately 20% of the catchment population was aged over 65 years.
- ABS 2011 Census data suggests that approximately 25% of the population of Dural, Galston, Glenorie, Glenhaven and Arcadia aged over 65 years live in ILUs or aged care. The dwelling types from the Census data included in this analysis include those living in retirement villages, nursing homes and accommodation for the retired or aged (not self-contained).
- This proportion has then been applied to the proportion of the Dural population aged over 65 years, resulting in the number of residents potentially living in ILUs or aged care in the catchment.
- When this is compared to the current and proposed supply of ILUs and aged care places in the catchment, there appears to be a reasonable undersupply at present. With the proposed developments being completed in the coming years, the undersupply is expected to contract noticeably, before growing back up to current levels by 2026. This suggests that there is potential demand for ILU and/or aged care facilities in the local area.

However it should be noted that this is assuming no further supply will enter the market prior to a potential development on the subject site and hence the development pipeline should be monitored appropriately. Furthermore, this demand is based on a consistent proportion of the population aged over 65 years living in ILUs and aged care from 2011 to 2026.

Potential ILU and Aged Care Demand

DURAL

TABLE 1.9

	2011	2015	2016	2021	2026
Total Population	10,700	11,200	11,300	12,700	13,200
Population aged 65+ years (%)	20%	20%	20%	20%	20%
Population aged 65+ years (no.)	2,139	2,239	2,259	2,539	2,639
Population aged 65+ in ILUs or aged care (%)	25%	25%	25%	25%	25%
Population aged 65+ in ILUs or aged care (no.)	543	568	573	645	670
Supply of ILUs and aged care	450-480	450-480	520-550	552-582	552-582
Potential unmet demand	63-93	88-118	23-53	63-93	88-118

Source : ABS Census 2011; Google Maps; Facility Websites; Cordell Connect; Urbis

2 Ancillary Commercial Uses

In addition to residential uses on the subject site, we have also given consideration to ancillary commercial land uses such as service stations, leisure uses (gyms) and child care centres. We note that the client is undertaking a separate review of the market supportability of a medical centre/ private day surgery/medical centre on the subject site.

2.1 SERVICE STATIONS

The subject site is located at Old Northern Road, which is one of the main roads through Dural connecting to Wisemans ferry in the north.

Map 6.1 shows the location of existing service station facilities in relation to the subject site.

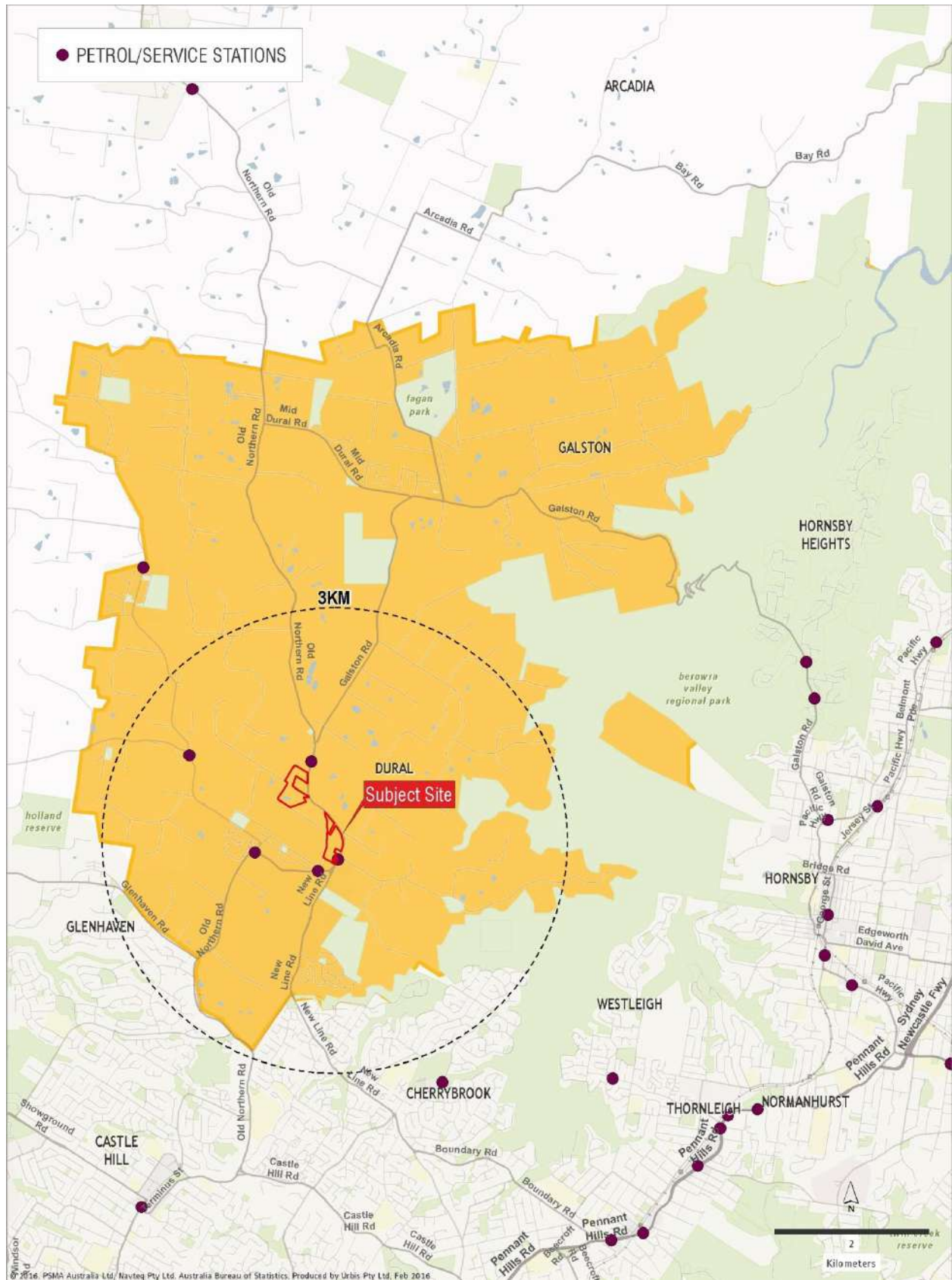
As indicated on the map, a service station (Shell branded) is surrounded by the subject site off Old Northern Road. Another service station (BP branded) is located further south along Old Northern Road, approximately 550 metres from the subject site.

There is a Caltex service station close to the intersection with Old Northern Road and Galston Road opposite the Dural Village retail centre. This is located on the southbound lane of Old Northern Road. There is also a Caltex service station at Round Corner.

We are not aware of any other current proposals for additional service stations within Dural at present.

On balance we do not consider that it would be advantageous to include a service station in the development mix for the following reasons:

- The extent of existing competition within the vicinity of the site
- The amount of land-take and access requirements that would be required to accommodate the use on site
- Potential integration issues with other proposed retail, health and residential uses and the need to satisfy the relevant hazard controls
- The fact that land could be better utilised for the higher value uses (residential, medical and ancillary retail).



2.2 GYMNASIUMS

Table 6.1 lists the name and address of existing gym facilities located within Dural. Map 2.2 opposite shows the location of these gyms in relation to the subject site.

There are eight commercial gyms located within close proximity to the subject site, catering to a broad range of different users and markets.

Within the local area, gyms are currently therefore being provided at a rate of one gym per 1,400 residents. In 2014, Urbis undertook a review of gym provision in Australia which identified that there were 3,313 gyms in Australia in 2011, equal to one gym per 6,500 people.

Based on this benchmark, gym provision in the catchment exceeds the Australia benchmark by a factor of greater than 4.5:1.

We believe that the market is currently well supplied with gym facilities and that an additional commercial gym on the subject site would not be supportable by the market.

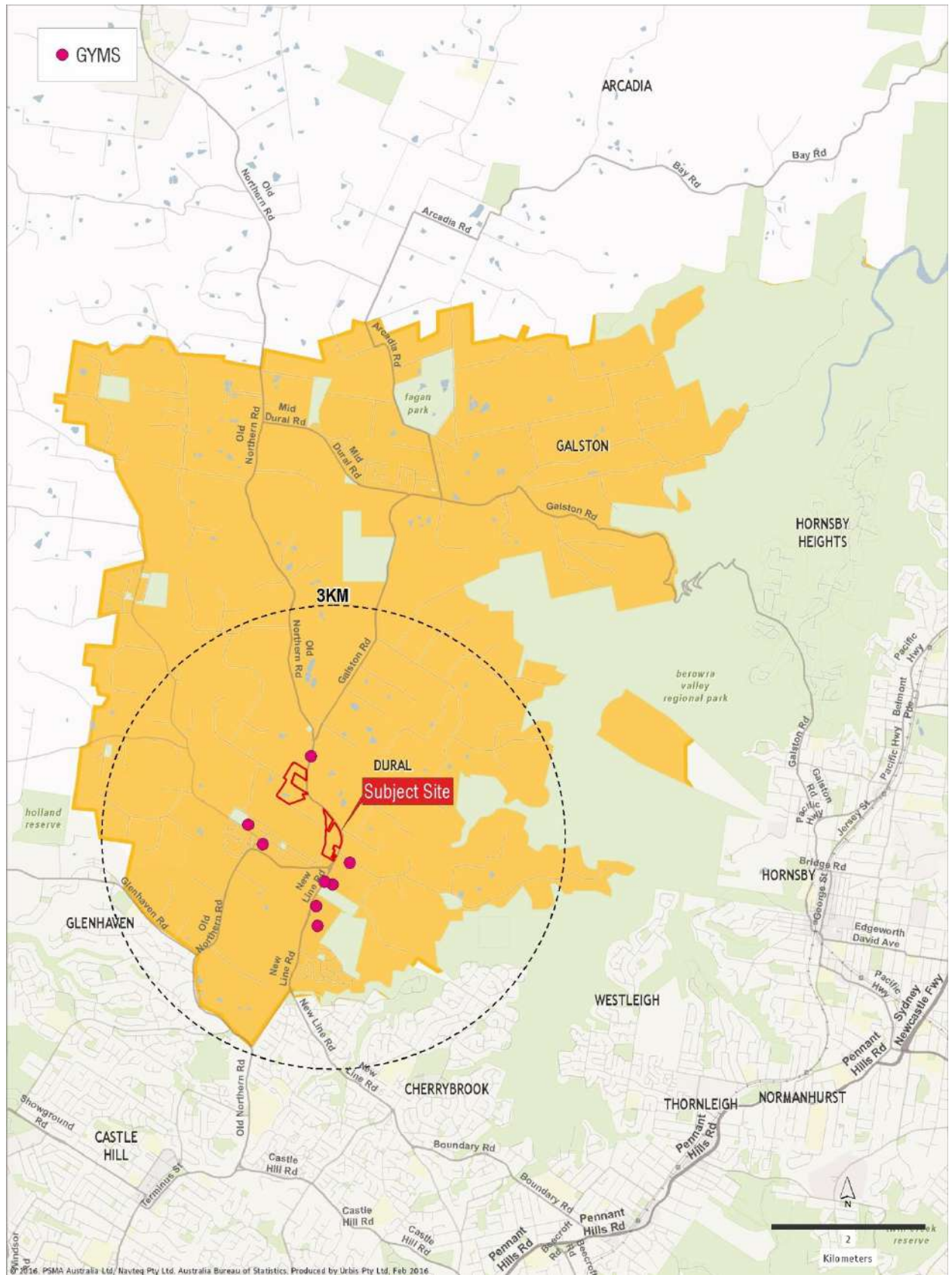
Existing Gym Facilities

DURAL

TABLE 2.1

Name	Address
F45 Training Dural	7/915 Old Northern Road, Dural
Evolution Health and Fitness Studio	25A Kenthurst Road, Dural
CrossFit Norwest	1/7-9 Kenthurst Road, Dural
Plus Fitness	5/829 Old Northern Road, Dural
Anytime Fitness Dural	6/288 New Line Road, Dural
Curves Gym Dural	10/288 New Line Road, Dural
Resolution Fitness for Life	256 New Line Road, Dural
Gym George Training Studio	30/252 New Line Road, Dural

Source : Google Maps; Urbis



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2.3 CHILD CARE CENTRES

Child care centres offer professional care for children aged 0-6 years of age, where the children are generally grouped into rooms according to age and developmental stage.

EXISTING AND PROPOSED CHILD CARE CENTRES

Map 2.3 following shows the existing child care centres in the context of the subject site and the surrounding areas. Table 2.2 lists the existing child care centres within Dural and shows the number of child care places within each facility.

From Map 2.3 and Table 2.2, the following observations can be made:

- There are 12 existing child care centres that fall within the local area, with a capacity of approximately 650 places
- The largest facility is the Fit Kidz Learning Centre Dural North which can accommodate 98 children
- The majority of the existing facilities are located at the southern end of Dural and are likely to service this part of the local area as well as the adjacent residential areas of Glenhaven and Cherrybrook.

Further to this, we note that there is one proposed child care centre within the local area. This facility will be part of the Cascades mixed use development at 636 Old Northern Road Dural, approximately 200 metres north of the subject site. As part of the mixed use development, the proposal includes a 595 sq.m child care centre for 72 children.

Additionally, another development application was submitted in early 2016 for alterations and additions to an existing dwelling to become a childcare centre for 136 children. This project is to be completed in December 2016 and the childcare centre is to be called Wiggle and Giggles Child Care Centre.

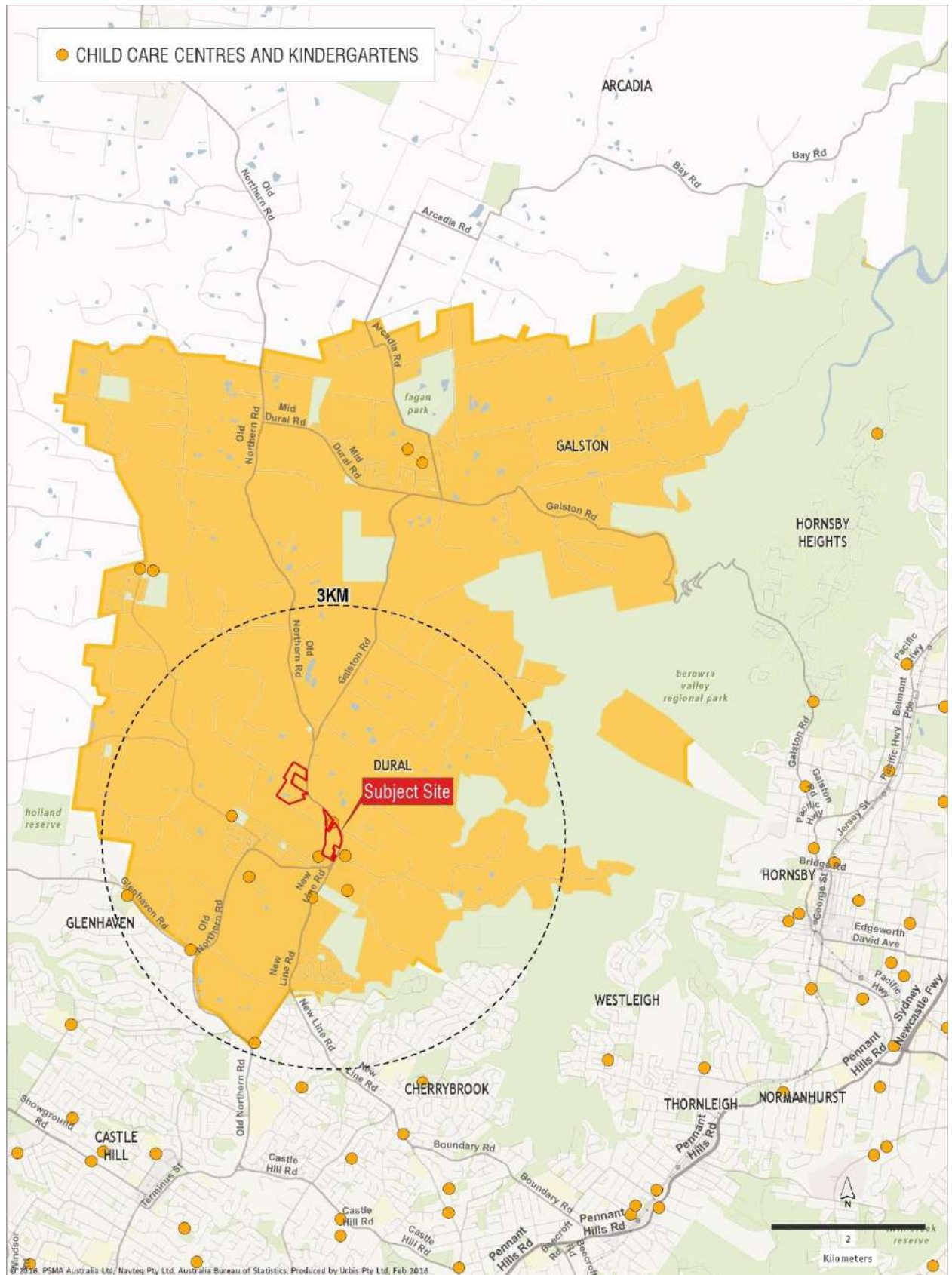
Existing Child Care Centres

DURAL

TABLE 2.2

Name	Number of Places
Galston Long Day Care Centre	40
KU Galston Preschool	40
Elbelle's Early Learning Centre	46
Early Childhood Education Centre Child Care	40
Ellerman Long Day Care Centre	40
Fit Kidz Learning Centre Dural North	98
Wakefield Children's Early Learning Centre	70
Endeavour Early Education	30
First Friends Preschool	39
KU Glenhaven Preschool	43
Kindalin Early Childhood Learning Centre	70
Beehive Castle Hill Childcare	90
Total	646

Source : echildcare.com.au; Urbis



DEMAND ASSESSMENT FOR CHILD CARE CENTRES

Future demand for child care spaces will be driven by population growth, and the proportion of additional children in the 0-6 age category.

Based on the existing population, approximately 7% of the population is aged 0-6 years as at the 2011 Census. This age bracket is the most common user of child care facilities. If this same rate is applied to the population projections, then there could be an additional 140 children of this age in the local area by 2026.

Based on a study conducted by MacroPlan in 2010, 38% of the population aged 0-5 years in the Sydney Statistical Division have all parents working full-time and would require some form of child care. Of these, the report suggests that 73.4% of these children will be placed into formal child care. When this rate is applied to the additional 140 children aged 0-6 year within the area, this would suggest a market of 40 additional children requiring care.

In view of the current extensive supply of child care spaces, any proposed new centre should be targeted at meeting the needs of new residents at the site and its immediate vicinity. In this regard, it would be prudent to wait until the residential development is established and to carefully monitor the household profile of new residents to determine whether this generates a demand for child care facilities. This will also allow the developer to monitor the status of the possible proposed childcare centres mentioned earlier to determine if the market could support additional child care places.

Market Demand for Additional Child Care Centres

DURAL

TABLE 2.3

Resident market	%	Number
Population growth 2015-26		2,000
Population aged 0-6	7%	141
Population aged 0-6 with all parents working full time and requiring formal care	38%	54
Population aged 0-6 with all parents working full time who attend long day child care	73%	40
Total number of children requiring child care		40

Source: ABS Census 2011; Macroplan; City of Sydney; Cordell Connect; Urbis

2.4 RECREATIONAL FACILITIES

'Recreational facilities' is a broad term used to describe a number of indoor and outdoor facilities catering to different sports, activities and interests. Some examples of recreational facilities include sport clubs, bowling centres, parks (local and regional), museums and swimming pools.

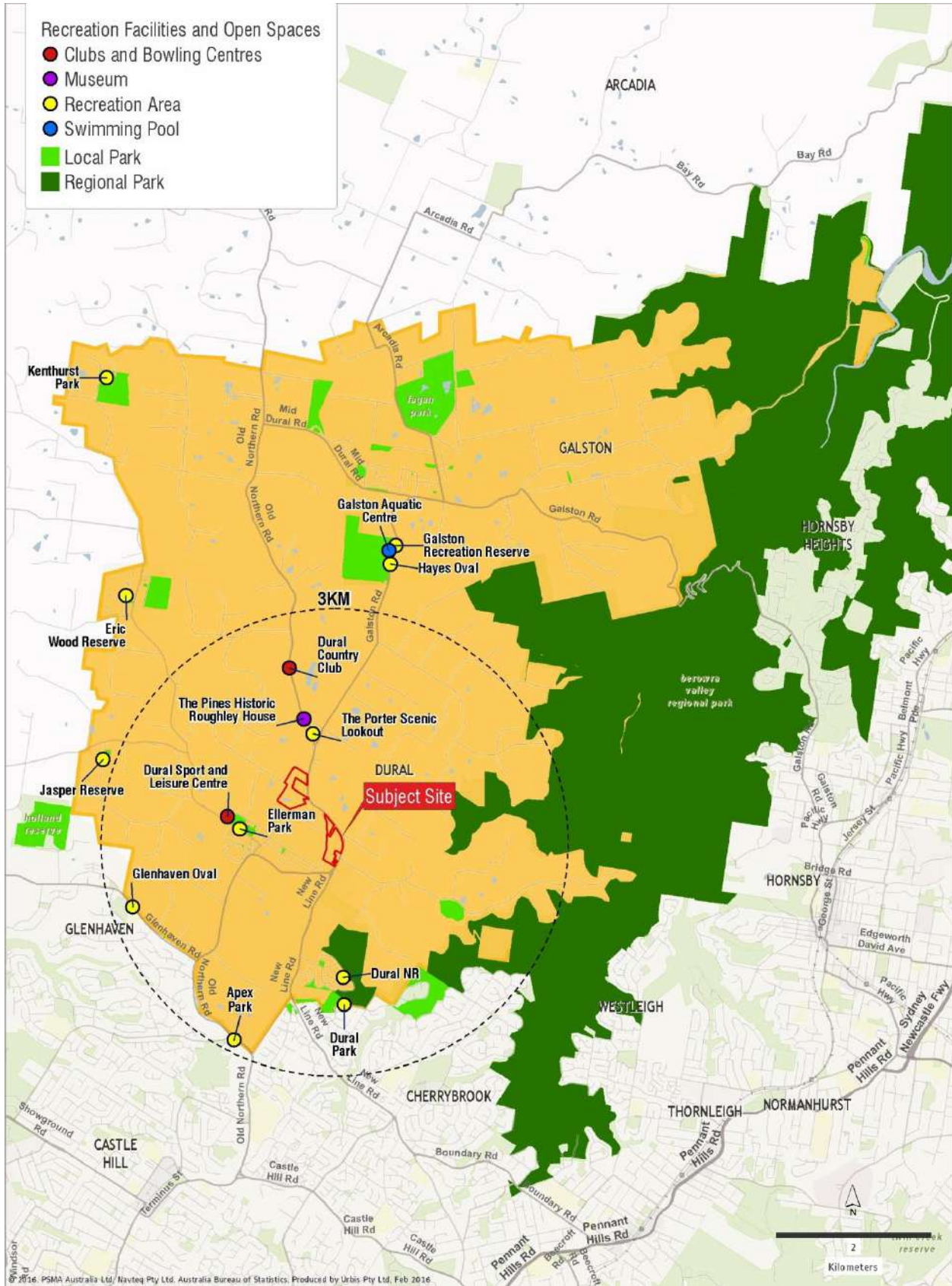
Map 2.4 on the following page shows the location of recreational facilities surrounding the subject site.

From the map it is evident that there is a significant provision of local/ regional parks and recreation areas within the local area, with the closest being the Porter Scenic Lookout to the north of the subject site and Ellerman Park to the west. The provision of parks and open spaces is relatively high compared to many areas of Sydney and hence there would be limited benefit gained from additional park and open space facilities in the local area.

In terms of swimming pools, the only existing one identified in the local area is the Galston Aquatic Centre, which is approximately 3.1 kilometres north of the subject site. Despite this being the only public swimming pool facility, the local area is still well-provisioned in terms of swimming pools as many retirement villages and seniors living facilities have their own private swimming pools for the use of their residents. This would limit the potential demand for additional swimming pool facilities in the local area.

The only museum identified in the local area is The Pines Historic Roughley House which is located just to the north of the subject site along Old Northern Road. This property is now owned by the Hills Shire Council and is a historic home that is open to the public to see an example of colonial life in the local area. With the relatively small population and limited tourism in the area, it is anticipated that there would be limited demand for an additional museum facility.

The Dural Country Club is one of two clubs/ bowling centres identified within the local area, providing dining, entertainment and function spaces, and lawn bowls. The other facility is the Dural Sport and Leisure Centre that provides a range of sporting venues (catering for futsal, netball, indoor cricket, taekwondo and indoor hockey) and function facilities. On this basis, it is unlikely that an additional club or bowling centre would be supportable given the current provision of such facilities and the relatively limited demand for these facilities in the local area.



2.5 ANCILLARY RETAIL ASSOCIATED WITH DAY SURGERY/MEDICAL CENTRE

As part of the overall concept plan, a day surgery/medical centre is being considered as part of the development on the southern portion of the subject site. The demand for ancillary retailing within the day surgery/medical centre has been considered.

Retailing associated with day surgery/medical centres is primarily focused on the worker, visitor and patient market. The scale of retailing that could be supported would need to be commensurate with the role and scale of the day surgery/medical centre. Due to its association with medical facilities it typically offers less potential to attract spending from a resident market.

Day surgery/medical centres represent a significant opportunity for retail-based activity through providing a captive market of patients, visitors and staff. These groups often have time to spend. In addition, due to the circumstances around being in a day surgery/medical centre, we would expect patients and visitors to typically enjoy good propensity to 'treat' themselves and/or loved ones. If good quality retailing could be provided in high profile locations in day surgery/medical centres, these factors would work very much in favour of retailers.

From our experience of undertaking focus groups with day surgery/medical centre workers in large day surgery/medical centres and users in other locations, the following are regularly identified as desirable facilities:

- **Retail:** pharmacy, newsagency, dry cleaning, supermarket, giftware and food and beverage options.
- **Amenities:** gym, child care centre, bank, post office, medical facilities for staff (GP's allied health etc.) and outdoor areas for relaxation and congregation.

In our analysis of major day surgery/medical centres, retail floorspace per bed is typically provided at a rate of 0.6 sq.m per bed to 3.1 sq.m per bed.

As an example, Nepean Hospital, which in 2014 provided 685 beds only provided around 400 sq.m of retail floorspace (a café, newsagent and volunteer shop). At the other end of the scale, Westmead Hospital, providing 900 beds, contains around 2,800 sq.m of retail floorspace with tenants including a food court under single management, cafes, newsagent/ convenience store, mobile phone/electronic hire store, florist, optometrist, jeweller, pharmacy and hair dresser / beautician.

It is clear therefore that the amount of retail that is sustainable depends on the scale and function of the day surgery/medical centre. It is likely that a café (catering to staff, patients and visitors) and pharmacy would be supportable, with potentially a florist. A higher provision of beds could generate demand for additional services.

3 Conclusion

The analysis confirms that there is an underlying demand for additional residential dwellings in the Dural area. The residential dwellings provided on the site should include a variety of dwellings in terms of their lot size, dwelling size and pricing. This could range from larger residential lots with detached dwellings to more medium density type stock such as townhouses and larger apartments. The variety of dwelling types will cater to the diverse demographics of the local residents, whilst also ensuring that all land in the local area is not developed into higher density dwellings and thereby impact the character of the area.

Our analysis also indicates that there is a potential unmet demand for seniors living in the Dural area in the medium term, primarily for ILU and aged care facilities, and for over 55s facilities to a lesser extent.

The current provisioning of service stations and commercial gym uses, combined with the demand for such commercial facilities in the area, suggests that the market would not support additional facilities.

Due to the extensive supply of child care spaces in the local area, the demand for a proposed new centre will predominantly be driven by the needs of the new residents on the site. In this regard, it would be prudent to wait until the residential development is established and to carefully monitor the household profile of new residents to determine whether this generates a demand for child care facilities.

The subject site is also surrounded by recreational facilities and open spaces suggesting that there is unlikely to be significant demand for further facilities in the near future. Any future recreational facilities/open spaces would, however, further improve the amenity for the surrounding residents.

The amount of ancillary retail sustainable within a future day surgery/medical centre on the site depends on the scale and function of the day surgery/medical centre itself. It is likely that a café (catering to staff, patients and visitors) and pharmacy would be supportable, with potentially a florist. A higher provision of beds could generate demand for more services.

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02 November 2016

Ms Clare Brown
Urbis Pty Ltd
Level 23, Tower 2, Darling Park
201 Sussex Street
SYDNEY NSW 2000

Dear Clare,

ASSESSMENT OF NEW AGRICULTURAL ENTERPRISE VIABILITY IN DURAL

The purpose of this letter is to outline our review of the strategic justification for the subject site located at 584-626 Old Northern Road and 7-27 Derriwong Road, Dural to be rezoned from RU6 Transition to R2 Low Density Residential.

SCOPE OF WORK

This review has been prepared to assist in determining the suitability of the site for residential development having regard to its potential for agricultural purposes as envisaged under the current zoning.

This letter has been prepared to address the Section 117 Directions as they relate to the loss of agricultural zoned land, specifically responding to the terms of Section 117 Direction 1.2.

This assessment will identify:

- Whether the sites characteristics (e.g. topography and size) are incompatible with productive agricultural uses
- Whether the site's existing agricultural use is viable given its potential revenue, rental rate and land value
- Given the outcome of both investigations above, whether the site is viable for the purposes of agricultural production and whether it has any agricultural production value.

SUBJECT SITES

The subject properties are located approximately 27 kilometres north west of the Sydney CBD, on the fringe of the established urban areas of Dural.

The areas to the north general comprise rural residential and small agricultural / horticultural operations, whereas land uses to the south include a broader mix of uses for commercial and retail to low density residential subdivisions.



SUITABILITY FOR AGRICULTURAL PRODUCTION

Both sites have been cleared of natural vegetation and have relatively few structural improvements, with the northern site including a small irrigation dam. The northern site has an area of 10.848 hectares and the southern site has an area of 10.617 hectares.

With regards to the historic uses of the site:

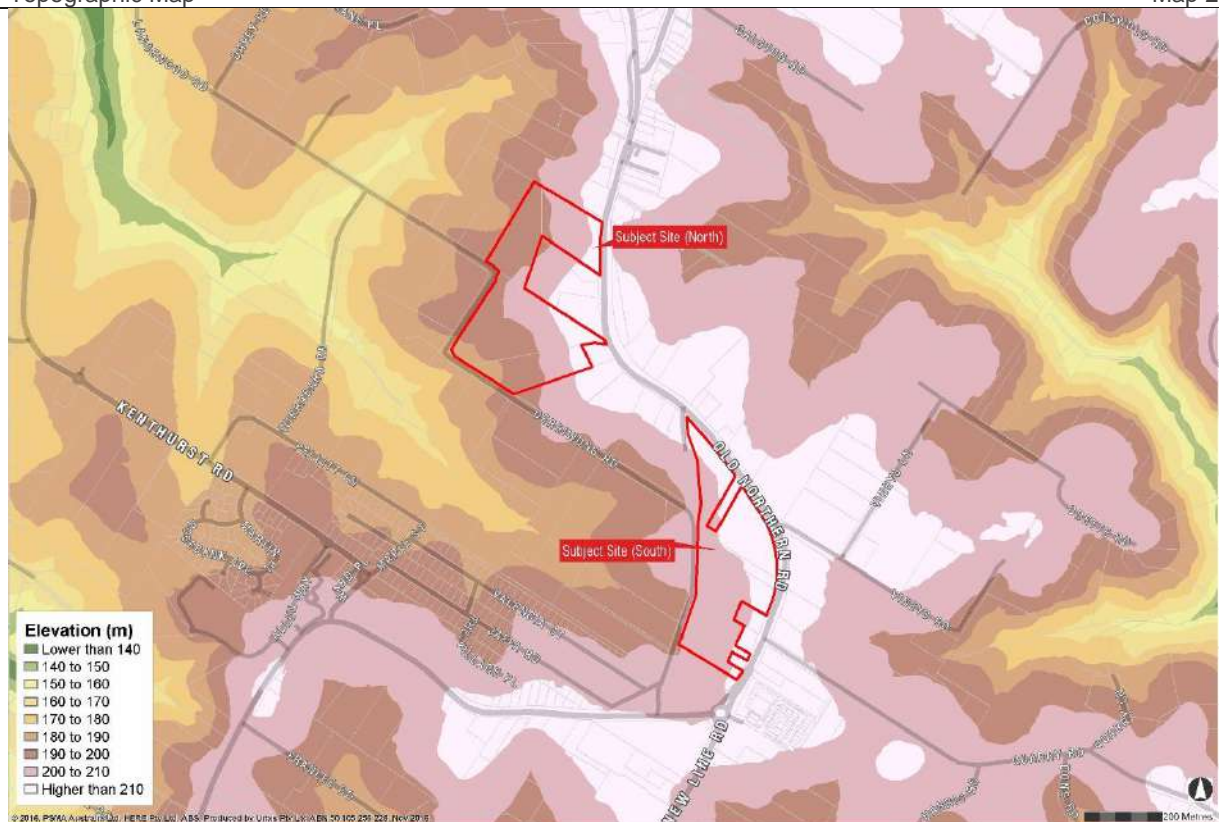
- the northern portion was formerly a peach orchard which ceased operation in mid-2014
- Based on available information, the southern portion has historically been used for rural residential purposes and the keeping of horses, with its northern tip utilised for a small-scale cultivation in late 2009 to mid-2010.

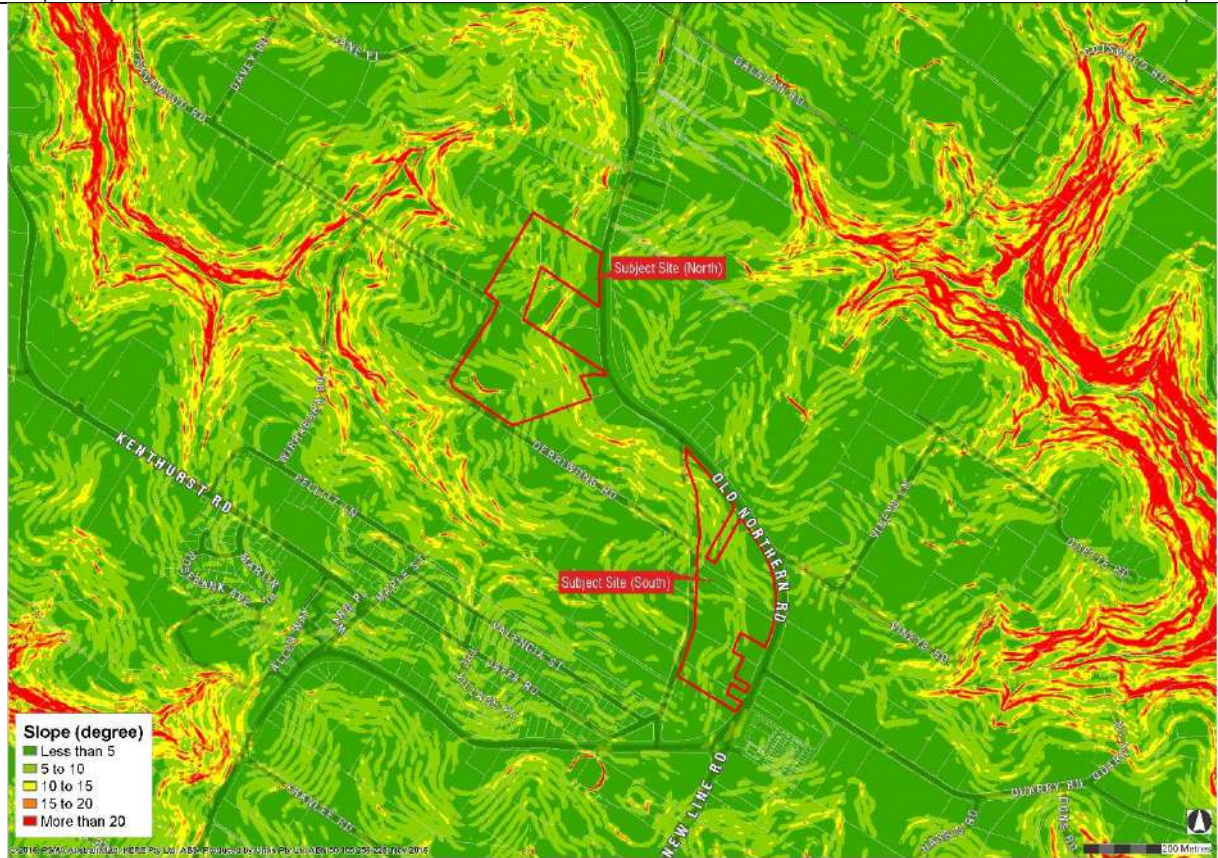
The Southern and Northern sites are characterised by an elevated ridge line along New Line Road, with a cross fall to the west and south. The slope on the sites varies, with some areas of less than 5% fall, however with significant portions of more than 10% and in small pockets over 20%.

Compared to other land holdings to the immediate north and east, the subject sites have more significant cross falls (See Maps 2 and 3). This is relevant in assessing viability of the site relative to the nature of other lands used for primary production purposes in the area.

Topographic Map

Map 2





Land in NSW is commonly classified per its capability to remain stable under certain land uses. The 8-class classification is shown in Table 1.

Table 1 – Land Capability

Broad Category	Class	Description
Land capable of being regularly cultivated (Slope < 10%)	Class 1	No special soil conservation works or practices necessary
	Class 2	Soil conservation practices such as strip cropping, conservation tillage and adequate crop rotation.
	Class 3	Structural soil conservation works such as diversion banks, graded banks and waterways, together with soil conservation practices as in Class 2.
Land not capable of being regularly cultivated	Class 4	Soil conservation practices such as pasture improvement, stock control, application of fertiliser and minimal

Broad Category	Class	Description
but suitable for grazing with occasional cultivation (Slope 10% - 25%)	Class 5	cultivation for the establishment or re-establishment of permanent pastures. Structural soil conservation works such as absorption banks, diversion banks and contour ripping, together with the practices as in Class 4.
Land not capable of being cultivated but suitable for grazing (Slope > 25%)	Class 6	Soil conservation practices including limitation of stock, broadcasting of seed and fertiliser, prevention of fire and destruction of vermin. This class may require some structural works.
	Class 7	Land best protected by green timber.
	Class 8	Cliffs, lakes or swamps and other land incapable of sustaining agricultural or pastoral production.

Source: Cunningham et al 1988

As the subject sites don't fall uniformly into Categories 1 to 3, with significant portions of the sites with a slope over 10%, they are more likely to fulfil a definition of Class 4 land, indicating that it is not capable of being regularly cultivated.

It should be noted that the land capability class may not necessarily be associated with land suitability, especially for agricultural land uses that are less soil dependent (e.g. intensive animal industries such as chicken raising, greenhouses) or for permanent tree crops (e.g. horticulture and forestry).

The slope on the subject sites will limit the nature of agricultural operations that could be considered. Based on the nature of the subject site and having regard to local and nearby rural land uses, the following rural land uses could be considered for the subject sites:

- Fruit orchard
- Cattle grazing
- Horse agistment

Other agricultural uses that are located within the Dural area such as vegetable crop production, flower growing, turf farming and wholesale nursery operations require land included in Classes 1 to 3 that have lower level of slope. These uses also generally provide a higher gross margin compared to those uses that are likely to be suitable for the subject site.

The economic value of agricultural land is often assessed as gross margin per hectare (GM/Ha) or similar unit of measurement that allows comparison between enterprises. GM/Ha is calculated as the total gross income from production less the direct costs of production associated with that enterprise. Whilst providing a broad guide, gross margins do not consider total overheads or running and

financing an agricultural business. Furthermore, they do not consider the total return and critical mass required to generate a sustainable income based on the overall investment.

Table 2 summarises the indicative gross margins for a selection of agricultural uses that have relevance to the Dural area. Gross margins are expressed as very low to high based on analysis of gross margins for agricultural enterprises undertaken by NSW Primary Industries. For example, a beef cattle enterprise on improved pastures would have an indicative gross margin income of \$284/Ha at the upper end of the range as at February 2016. For the subject properties, that would produce a gross margin of \$6,077 per year for the 21.4-hectare site. This is a 'low' gross margin that would require supplementary income from other sources to remain viable for a family working this land.

The scale of the operations on a site of just over 20 hectares is unlikely to be sufficient to support a viable agricultural enterprise. This is particularly the case for sites that are unable to engaging in the highest returning enterprises such as greenhouse based activities.

Table 2 – Gross Margins of Indicative Agricultural Enterprises

Agricultural enterprise	Indicative gross margin
Horse agistment	Very Low
Beef cattle grazing	Low
Dairy cattle	Medium
Fruit/nut trees	Medium to High
Turf farm	High
Vegetable crops	High
Greenhouses (e.g. herbs and flower growing)	High
Poultry	High

Source: based on assessment of DPI NSW published gross margin guidance

The nature of agricultural enterprises and the use of irrigation and spray chemicals can require that appropriate buffers are put in place to protect sensitive adjoining land uses. We note that the subject site to the south is located close to residential land uses whereas the northern site wraps around Dural Public School.

Recommended minimum buffer distances between residential areas and selected agricultural industries are shown in Table 3 and are based on recommendations published in *Living and Working in Rural Areas – A handbook for managing land use conflict issues on the NSW North Coast, 2007*.

As indicated, some of the recommended buffer distances would impact on the useable areas of the subject land for agricultural purposes.



Table 3 – Buffer Distances for Primary Industries and Residential Areas

Industry	Distance (metres)
Grazing of stock	50
Greenhouse & controlled environment horticulture	200
Turf farms	300
Dairy sheds and waste storage	500
Poultry sheds and waste storage	1,000

Furthermore, it is noted that climate change is becoming an important factor in the performance of agricultural enterprises. Since 1900, the average daily maximum temperature in Sydney has demonstrated a noticeable upward trend of around 2 degrees Celsius (Appendix A, Chart 1). Precipitation is also important for all agriculture and as demonstrated in Appendix A, Chart 2, the level of precipitation in Dural over the past 43 years has been variable, demonstrating a slight overall downward trend.

The combination of rising temperatures (which increases evaporation rates) and lower rainfall could place further pressure on the viability of agriculture. This is particularly the case on small agricultural land holdings that depend on very high levels of productivity to sustain viability.

CONCLUSIONS

The combined northern and southern sites are relatively small in scale for agriculture at 10.848 hectares and 10.617 hectares respectively. The sites are also approximately 500 metres apart which reduces the synergies of operating the sites together. The ability to amalgamate these sites with adjoining land holdings to increase the scale of the agricultural enterprise is also constrained by the location of significant vegetation communities on surrounding land (see Appendix B).

The topography of the land is relatively steep in parts and could be classified as Land Capability Class 4. This limits the nature of uses that could be applied to the site, reducing the potential income that can be generated, putting into question the viability of operating the property as an agricultural enterprise.

Development of more intensive agricultural activities will be constrained by its proximity to residential areas to the south and the school immediately adjacent the property to the north, given the need to consider appropriate buffer areas.

As such, despite the loss of agricultural farm land, the rezoning of the site for residential subdivision and development can be justified as future agricultural land uses are unlikely to generate a sufficient return to warrant future investment in agricultural enterprises on the subject land.

If you have any questions please don't hesitate to contact me at costwald@urbis.com.au.



Yours sincerely,

A handwritten signature in black ink, appearing to read "C. Oswald".

Clinton Oswald
National Director

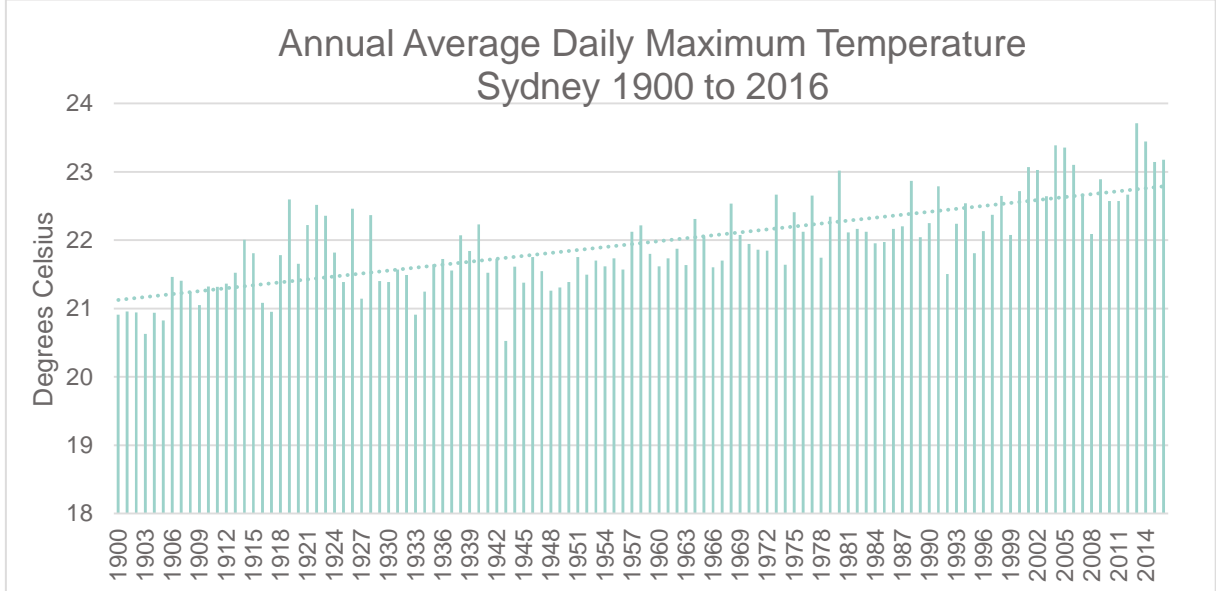


APPENDIX A – TEMPERATURE AND PRECIPITATION CHARTS

Annual Average Daily Maximum Temperature

Sydney – 1900 to 2016

Chart 1

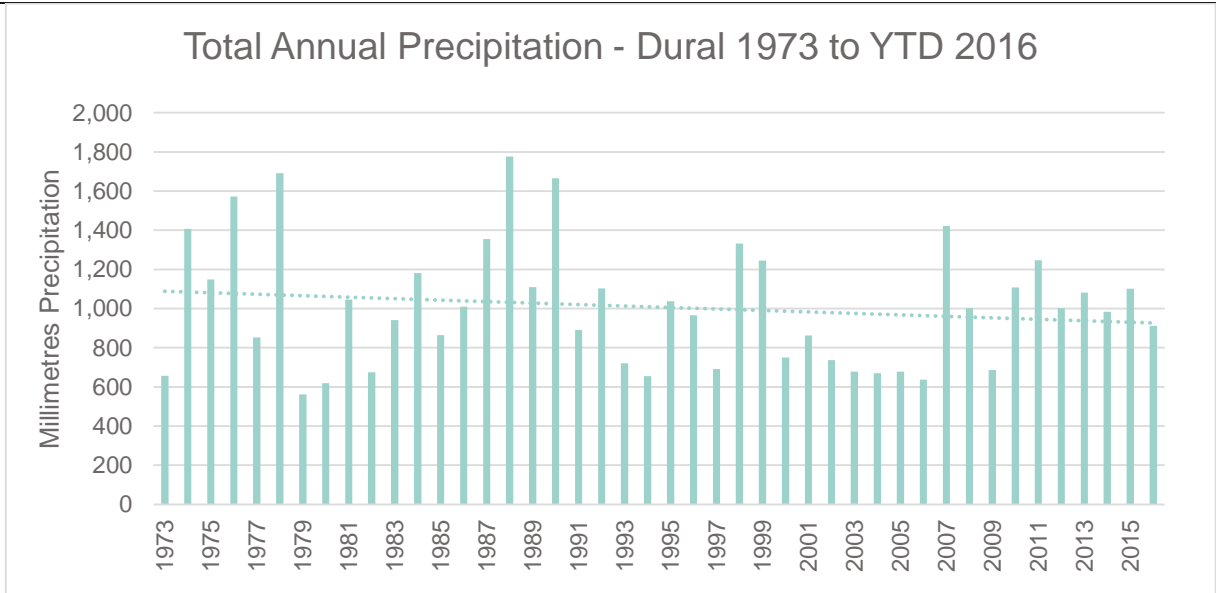


Source: Australian Bureau of Meteorology

Total Annual Precipitation

Dural 1973 to YTD 2016

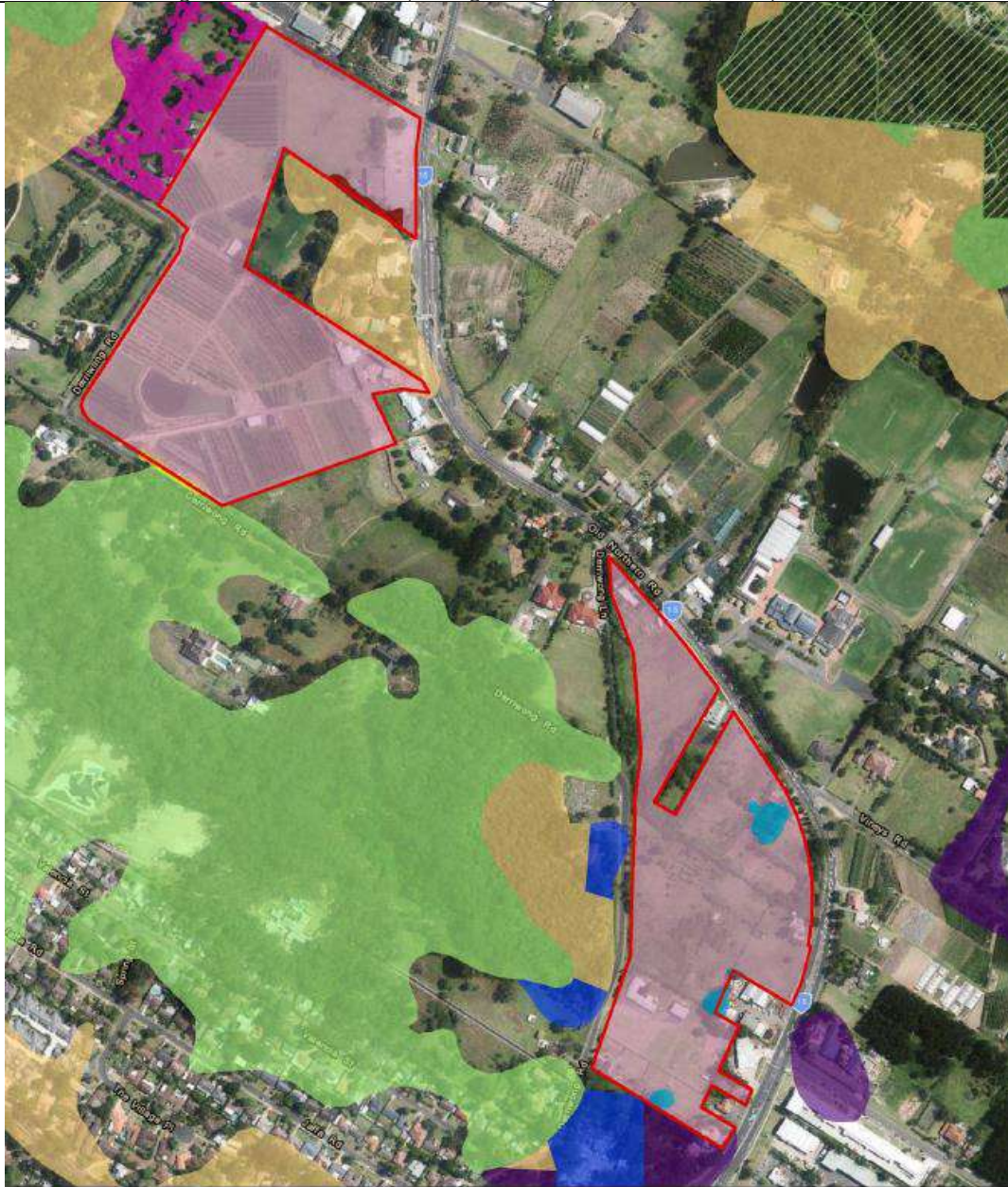
Chart 2



Source: Australian Bureau of Meteorology



APPENDIX B – DISTRIBUTION OF VEGETATION COMMUNITIES



- Legend**
- Subject Site
 - Validated Vegetation (ELA 2015/2016)**
 - Blue Gum High Forest (low condition)
 - Exotics
 - Native Planted
 - Sydney Turpentine Ironbark Forest

- THSC 2008**
- Sydney Turpentine Ironbark Forest
- NPWS 2002**
- Blue Gum High Forest
 - Sydney Turpentine Ironbark Forest
 - Turpentine-Ironbark Margin Forest
 - Western Sandstone Gully Forest
 - Unclassified Vegetation

0 50 100 200
Metres
GDA 1984 MGA Zone 56

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Dural Planning Proposal

Traffic Impact Assessment



Dural Planning Proposal

Traffic Impact Assessment

Client: Urbis

ABN: 501 052 562 28

Prepared by

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Quality Information

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Reviewed by Marcel Cruz

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Revision	Revision Date	Details	Authorised	
			Name/Position	Signature
A	24-Mar-2016	Draft Report	Andy Yung Associate Director	Original signed
B	05-Apr-2016	Draft Report	Andy Yung Associate Director	Original signed
C	18-Apr-2016	Final Report	Andy Yung Associate Director	Original signed
D	05-May-2016	Revised Final Report	Andy Yung Associate Director	Original signed
E	11-Oct-2016	Updated Revised Final Report	Nick Bernard Principal Transport Planner	

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1.0 Introduction

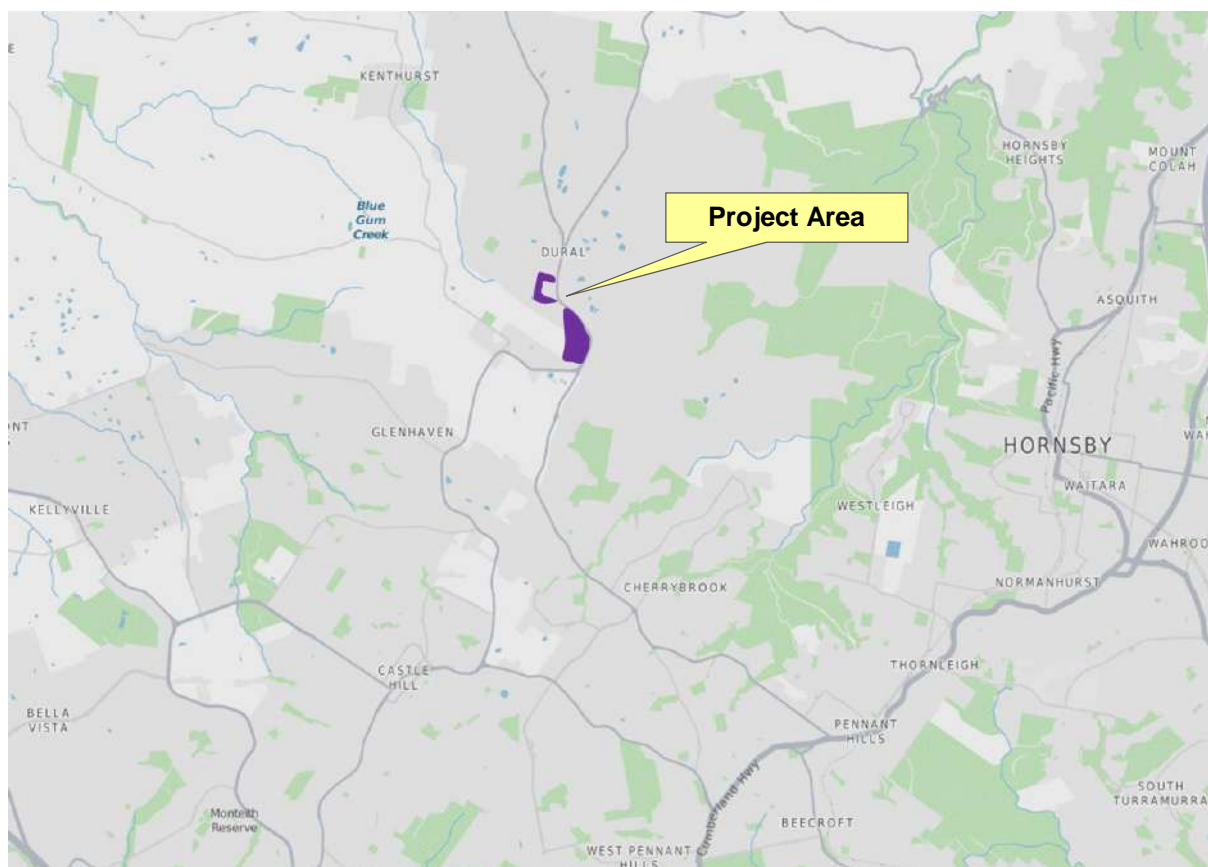
1.1 Background

AECOM has been commissioned by Urbis to prepare a Traffic Impact Assessment (TIA) to support the planning proposal for a proposed development in the Dural area, located approximately 39km north-west of Sydney.

The Dural Planning Proposal intends to provide residential dwellings and open space. The subject site has been divided into two areas; the northern site and southern site.

This TIA has been prepared to understand the likely impacts of the vehicular trips generated by the Dural development on the surrounding local road network and the likely infrastructure upgrade required to mitigate the impacts of the proposal.

Figure 1 Regional context



Source: AECOM, 2016

1.2 Purpose and Scope

The purpose of this report is to provide a review of the potential traffic impacts of the proposed development on the external road network. The assessment involves assessing trip generation of the proposed development within the study area and providing recommendations on the traffic requirements as a result of the development trips.

1.3 Report Framework

The report has been structured into the following sections:

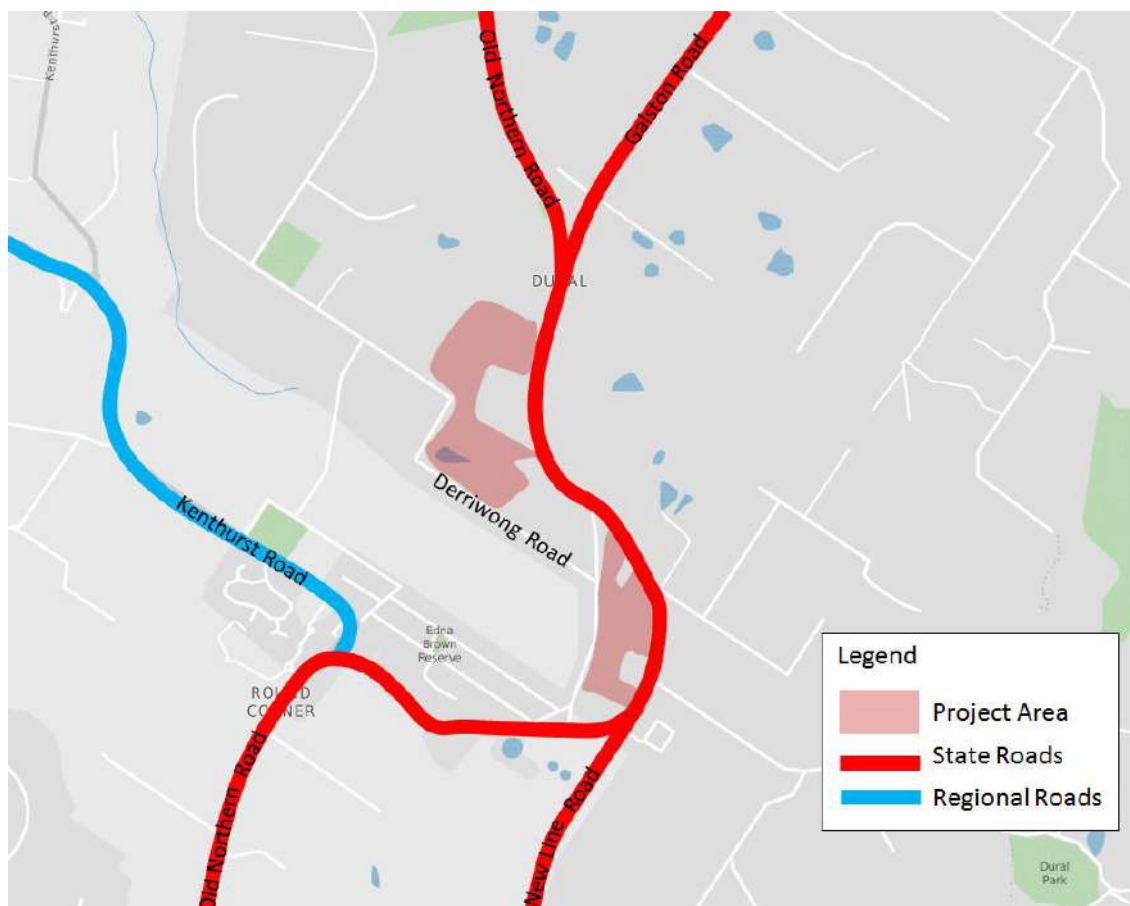
- **Section 2** details the existing transport conditions in the vicinity of the site for all modes of transport.
- **Section 3** reviews the impacts of changes in the traffic flow and road network, prior to the future development being investigated in this assessment.
- **Section 4** describes the details of the proposed development within the study area and the access strategy for the development.
- **Section 5** provides a traffic impact assessment of the proposed development and surrounding road network and identifies appropriate transport infrastructure to cater for the forecast traffic flows.
- **Section 6** provides the summary and conclusions of the report.

2.0 Existing Conditions

2.1 Site Description

The study area is located in Dural within the Local Government Area (LGA) of The Hills Shire. It is generally bounded by Derriwong Road to the west and Old Northern Road to the east. Old Northern Road forms the boundary for two LGAs, The Hills Shire to the west and Hornsby Shire to the east. The location of the study area and the surrounding road network is shown in **Figure 2**.

Figure 2 Location



Source: AECOM, 2016

The study area is currently occupied and surrounded by rural residential dwellings with the remaining area being open grass land and woodland. The northern site borders Dural Public School and Dural Local Centre and low residential dwellings are located to the west. Dural Business Park is located to the southeast.

2.2 Travel Behaviour

Travel characteristics for NSW residents travelling to work are gathered from the journey-to-work data extracted from the Australian Bureau of Statistics (ABS) 2011 census data (2014 release). Journey-to-work data (JTW) includes details of the origin and destination of trips, together with characteristics of the journey such as mode of travel.

The northern and southern sites are contained within Travel Zone 4310 in Dural. Data from the 2011 Journey to Work (JTW) dataset, accessed via the Bureau of Transport Statistics' JTW explorer, has been analysed to determine indicative existing travel mode share for the sites. The existing land use within Travel Zone 4310 includes rural to semi-rural agricultural and residential, low density residential, low to medium density retail and commercial, recreation, and education.

Table 1 shows the mode share of trips travelling to and from the study area travel zones and **Table 2** shows the origins and destinations of trips to and from the study area travel zones.

Table 1 Journey to Work mode split for Travel Zone 4310

Mode	% Mode Share	
	Origin Trips (from TZ 4310)	Destination Trips (to TZ 4310)
Vehicle Driver	79%	85%
Vehicle Passenger	4%	8%
Bus	6%	2%
Train	4%	1%
Walked only	5%	2%
Other mode	1%	1%
Not Stated	1%	2%

Note: Excludes those who did not go to work.

Source: 2011 Journey to Work data, accessed via the BTS JTW Explorer.

The JTW data shows that the majority of trips to and from the study area travel zone are predominantly made by private car. Approximately 93 per cent of people working in study area arrive by car, and approximately 83 per cent of people living in the study area travel to work by car. The data also shows three per cent of persons working in the travel zone arrive by public transport and approximately 10 per cent of residents travel by public transport. This reflects the study area's proximity to the bus corridor along New Line Road and Old Northern Road with high frequency bus services to the City and major town centres, which has a significant influence in encouraging use of public transport in the study area.

Table 2 Journey to Work origins and destinations (all modes) for Travel Zone 4310

SA3	% Mode Share	
	Trips from TZ 4310	Trips to TZ 4310
Dural – Wisemans Ferry	27%	34%
Baulkham Hills	15%	24%
Sydney Inner City	8%	-
Blacktown – North	-	6%
Rouse Hill – McGraths Hill	3%	5%
Blacktown	3%	4%
Parramatta	5%	3%
Hornsby	4%	2%
Mount Druitt	-	2%
Richmond – Windsor	-	2%
Pennant Hills – Epping	-	2%
Ryde – Hunters Hill	3%	-
Strathfield – Burwood – Ashfield	3%	-
Other / no fixed place of work	7%	16%

Note: Excludes those who did not go to work.

Source: 2011 Journey to Work data, accessed via the BTS JTW Explorer.

A high proportion of trips are to or from SA3 areas within The Hills Shire LGA. Of the total JTW trips departing the travel zone, 42 per cent were trips to destinations within The Hills LGA; 27 per cent to Dural – Wisemans Ferry and 15 per cent to Baulkham Hills. More than half the total number of JTW trips to the travel zone originated from SA3 areas within The Hills Shire, with 34 per cent coming from Dural – Wisemans Ferry SA3, and 24 per cent from Baulkham Hills SA3.

2.3 Pedestrian and Cycle Facilities

Pedestrian footpaths are provided intermittently on Old Northern Road, depending on land uses bordering the road. An existing pedestrian footpath extends from Dural Public School to the intersection of Old Northern Road | New Line Road in the south, and continues west along Old Northern Road to the Dural Local Centre at the intersection of Old Northern Road | Kenthurst Road. This footpath provides access between the study area and bus stops along Old Northern Road.

The pedestrian overpass at Dural Public School facilitates the safe crossing of pedestrians over Old Northern Road for the northern site. At the southern site, the signalised intersection at Old Northern Road | Quarry Road provides a signalised crossing for pedestrians on the eastern and southern approaches.

Figure 3 Pedestrian over pass

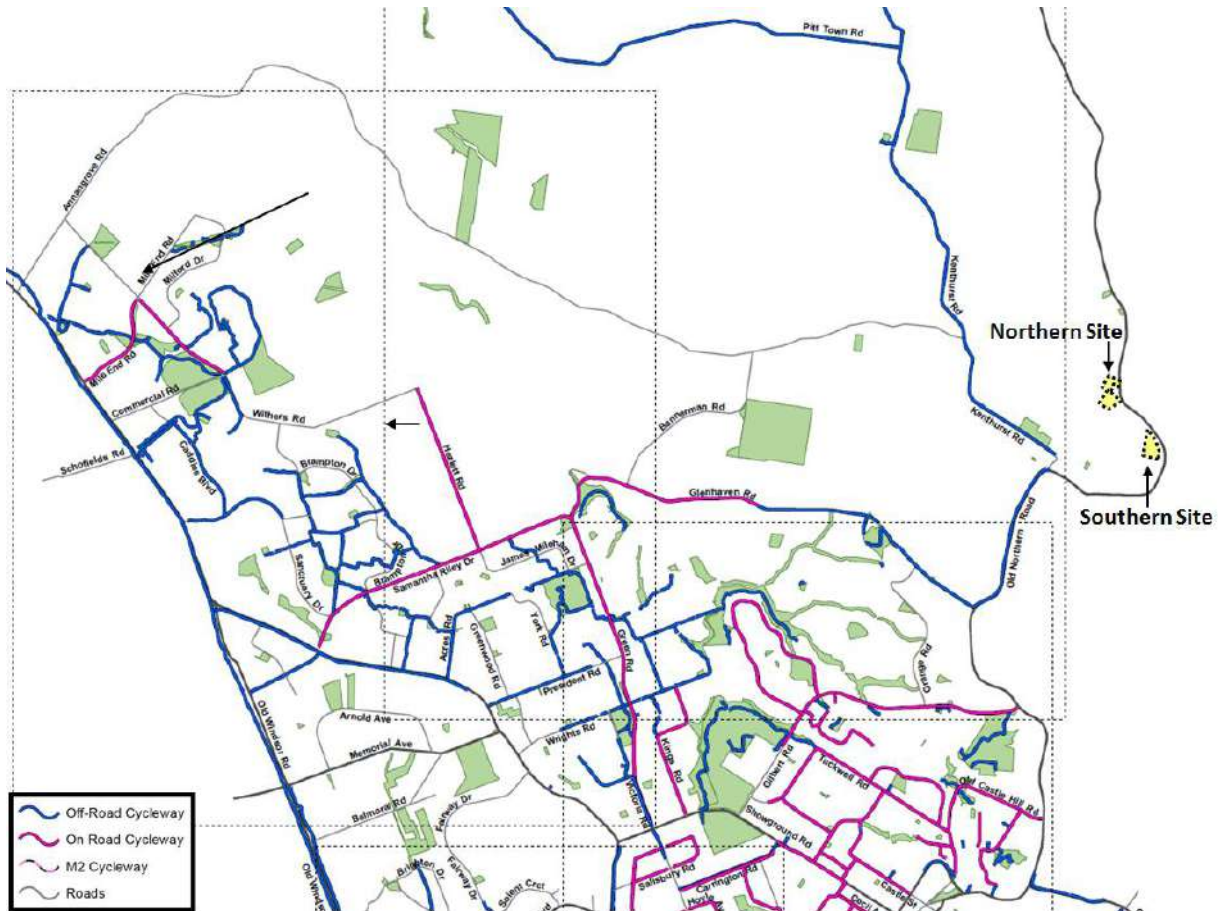


Source: AECOM, 2015

There is currently no footpath provision on Derriwong Road. There are footpath provisions on one side of the residential Jaffa Road and Valencia Street, which are located to the west of the southern site.

In terms of cycling facilities, there are limited cycling links to the study area. The cycle network in the Hills Shire Council, presented in **Figure 4**, shows that there are existing off-road cycle routes near the study area along Kenthurst Road, Old Northern Road between Kenthurst Road and Glenhaven Road, and on Glenhaven Road.

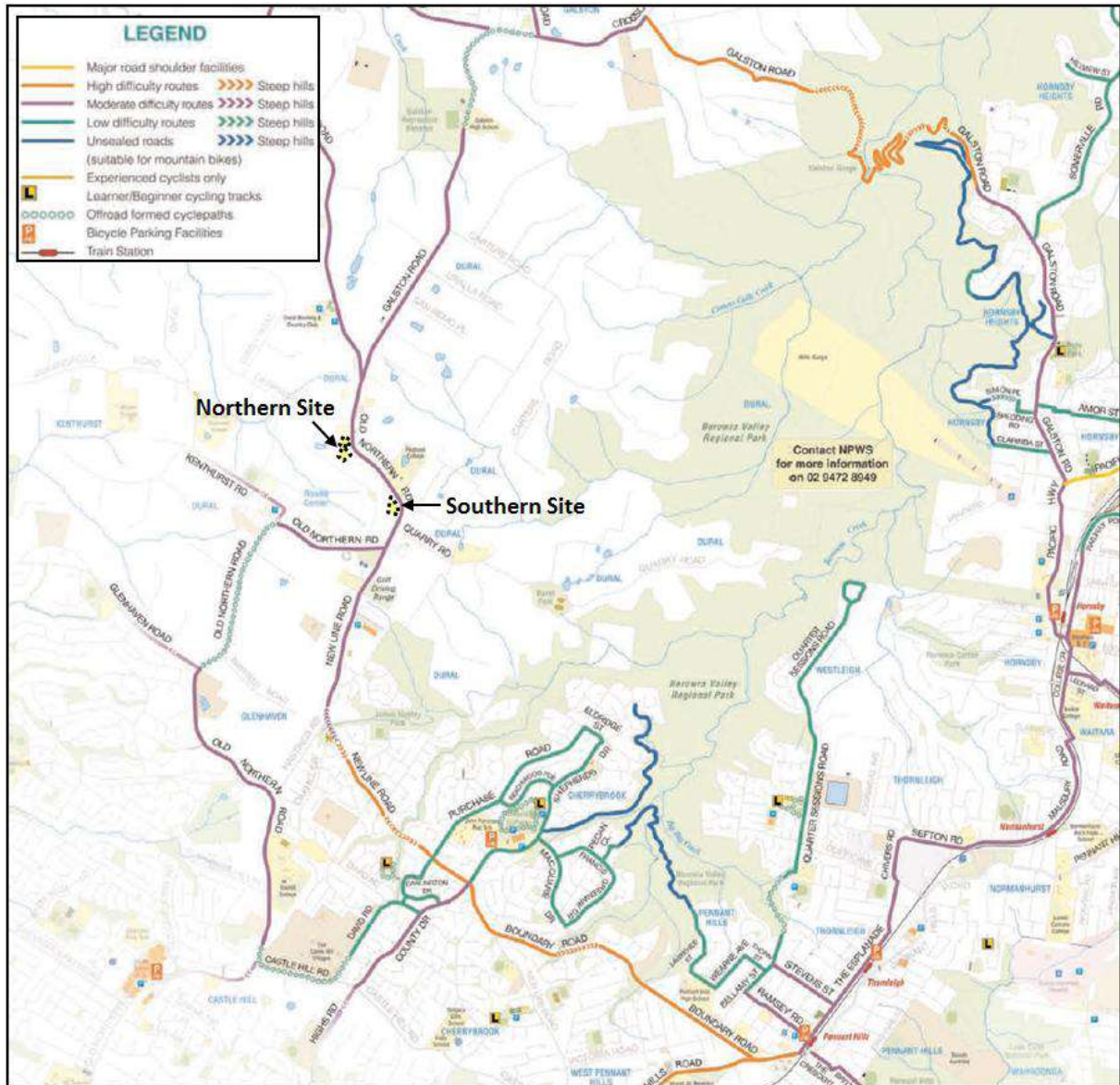
Figure 4 Hills Shire Council cycle network



Source: Hills Shire Council Cycleways map.

The Hornsby Shire Council cycle map, shown in **Figure 5**, identifies a moderate/high difficulty cycle route connecting to Pennant Hills Station which is about a 9km cycle from the proposed development sites. This identified route however contains steep hills and much of the route is recommended for experienced cyclists only.

Figure 5 Hornsby Shire Council cycle network



Source: Hornsby Shire Council Cycling Map, 2008.

2.4 Bus Network

Bus services in the vicinity of the study area are operated by Hillsbus. The study in the context of the local bus network is shown in **Figure 6**.

Figure 6 Existing bus connections to the northern and southern Dural sites



Source: Hillsbus, October 2015.

There are several existing bus routes which have stops located close to the proposed development sites. Local bus routes 637 and 638 can be accessed at bus stops along Old Northern Road, which are walking distance from both the northern and southern sites.

- Bus route 637 is a local bus connection between Glenorie and Castle Hill.
- Bus route 638 is a local bus connection between Berrilee and Pennant Hills Station.

Bus routes 642 and 642X, which provide connections to the City, can be accessed at the bus stop located on Old Northern Road, near Derriwong Road. This bus stop is approximately a 500m walk from the southern site, but would be about a 20 minute walk from the northern site. It was observed that much of the on-street parking on Jaffa Road and Derriwong Road close to this bus stop was occupied, most likely by commuters whom parked their car and then rode the bus in to work.

- Bus route 642 is a regional bus connection between Dural and the City.

Table 3 summarises the bus route frequencies in close proximity to the study area.

Table 3 Bus service provision to the proposed development sites

Bus Route	Route Description	Weekday Frequency (to nearest 5 mins)		
		AM Peak 7-9 am	Off Peak 10 am- 3 pm	PM Peak 4-6 pm
637	Glenorie to Castle Hill	30	100	60
	Castle Hill to Glenorie	60	100	60
638	Berrilee to Pennant Hills	40	-	60
	Pennant Hills to Berrilee	1 service	1 service	60
642 / 642X	Dural to City	10	50 ¹	60
	City to Dural	-	60 ²	25

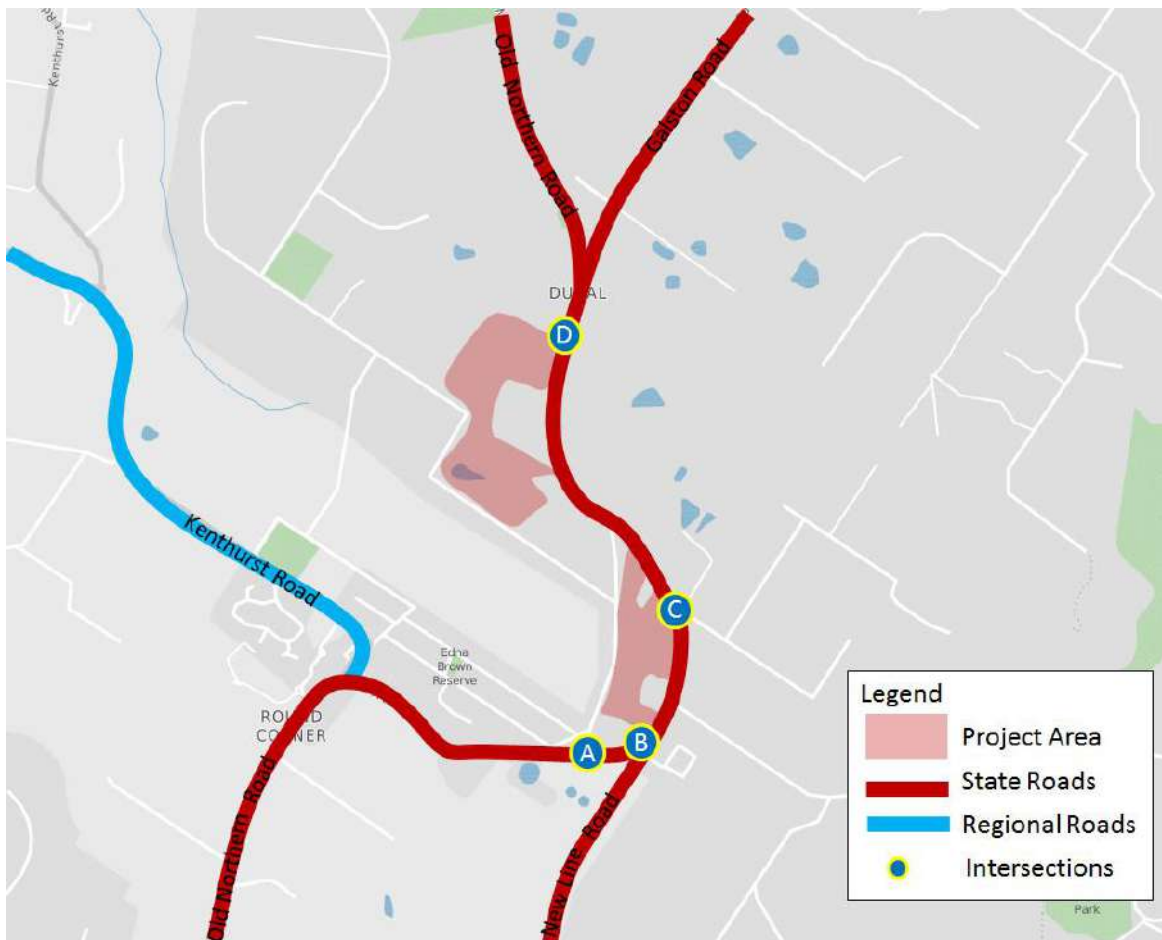
Source: Hillsbus, accessed September 2016.

¹Last 642 service at 2:41pm

²First 642 service at 12:18pm

Figure 7 highlights existing bus stops are within a 400m walking catchment. Bus stops within the 400m walking catchment are served by local bus routes 637 and 638. Additional walking distance is required for regional bus services 642/X.

Figure 7 Bus stops



Source: AECOM, 2016

2.5 Rail Network

The closest train station is Pennant Hills Station which is located approximately 8km southeast of the study area. Pennant Hills Station is served by the T1 North Shore Line which runs between Hornsby and the City via Macquarie University. Bus route 638, described in **Section 2.4**, connects the study area to Pennant Hills Station. Rail services operate between Pennant Hills and City at approximately every 15 minutes. On weekdays, services run via Chatswood and the Lower North Shore, and on weekends run via Strathfield. Pennant Hills Station in the context of the existing rail network is shown in **Figure 8**.

Figure 8 Pennant Hills Station in the context of the Sydney Trains network

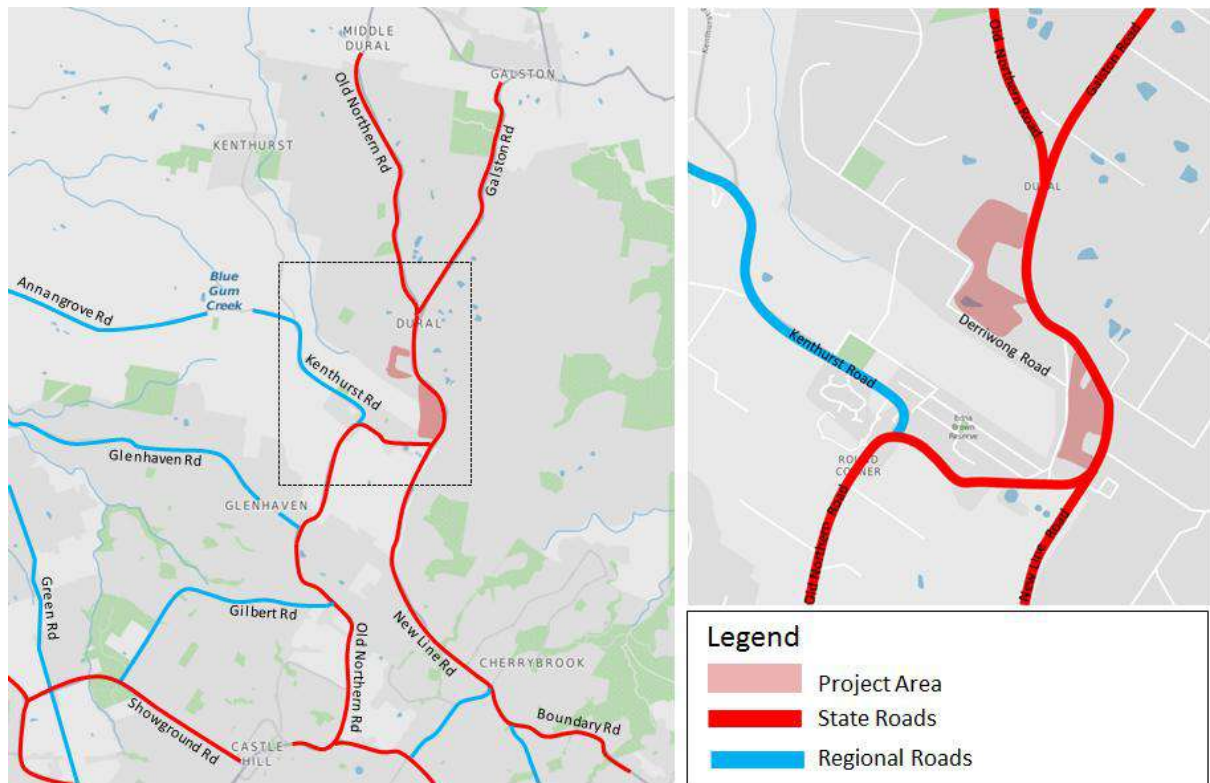


Source: Sydney Trains, accessed November 2015.

2.6 Road Network

The main roads in the vicinity of the proposed development sites are Old Northern Road and New Line Road. Connecting regional links include Glenhaven Road, Kenthurst Road and Galston Road which provides links to Old Northern Road and provide links to the surrounding areas including Kellyville and Galston.

Figure 9 Road network



Source: AECOM, 2016

2.6.1 Old Northern Road

The study area is located along the western side of Old Northern Road, which is a state road in a north-south direction. The road provides links to Glenorie and Wisemans Ferry to the north and Castle Hill and Baulkham Hills to the south.

Old Northern Road is a sealed road with predominantly one lane in each direction in the vicinity of the proposed development sites. The road widens locally to two lanes in each direction at larger intersections. **Figure 10** shows a typical cross-section of Old Northern Road in the vicinity of the study area.

Figure 10 Old Northern Road: typical cross section



Source: AECOM, 2015

Old Northern Road has a sign-posted speed limit of 60km/h close to the study area. A school zone is in operation along much of Old Northern Road close to the proposed development sites, extending from approximately the northern boundary point of the proposed northern site, to the intersection of Old Northern Road and Vineys Road in the south. The school zone reduces the vehicle speed to 40km/hr on school days between 8am and 9.30am and 2.30pm and 4pm.

2.6.2 New Line Road

New Line Road is an arterial road located to the south of the study area. It runs in a north-south direction from Old Northern Road to the Cumberland Highway. The road has one lane in each direction between Old Northern Road and Hastings Road. A roundabout is located at the intersection of New Line Road | Old Northern Road, which also provides access to Dural Business Park. The speed limit along New Line Road is 60km/h. There are no parking lanes along the road. **Figure 11** shows a typical cross-section of New Line Road.

Figure 11 New Line Road south of Old Northern Road



Source: AECOM, 2014

2.6.3 Local access roads

There are limited local access roads close to the study. Existing local access roads include Derriwong Road which currently links to Old Northern Road which provides access to semi-rural land in the area. The intersection of Old Northern Road | Derriwong Road is currently a priority intersection.

Figure 12 Derriwong Road



Source: AECOM, 2015

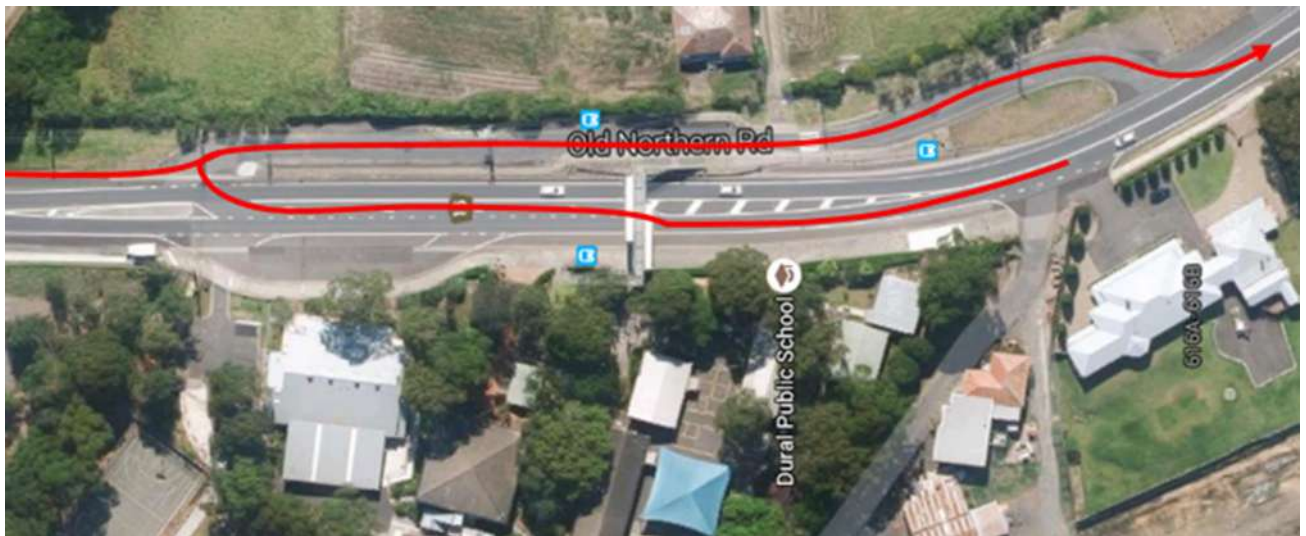
Valencia Street and Jaffa Road, to the west of the southern site, connect low density residential dwellings to Kenthurst Road via Maple Street. These roads provide access to the local properties and are generally sealed, single carriageway, and with a posted speed limit of 50km/hr.

2.6.4 Other infrastructure

A dedicated passenger pick and drop off area is provided along Old Northern Road opposite Dural Primary School. This provides vehicles travelling along Old Northern Road opportunities to safely pick up and drop off passengers.

This dedicated area requires vehicles exiting the area to turn left only allowing vehicles originating from the south to travel southbound on Old Northern Road, however requires vehicles from the north to find other opportunities along Old Northern Road to travel northbound.

Figure 13 Pick-up / drop off area



Source: AECOM, 2016

2.7 Traffic Volumes

2.7.1 Daily Traffic Counts

Traffic volume data has been obtained from Roads and Maritime Services to determine the historical traffic growth in the surrounding area. **Table 4** shows historical Average Daily Traffic (ADT) volumes at stations in the vicinity of the study area.

The location of the stations is shown in **Figure 14**. The traffic data shows that there are approximately 19,500 vehicles per day on Old Northern Road and approximately 30,000 vehicles per day on New Line Road in the vicinity of the study area.

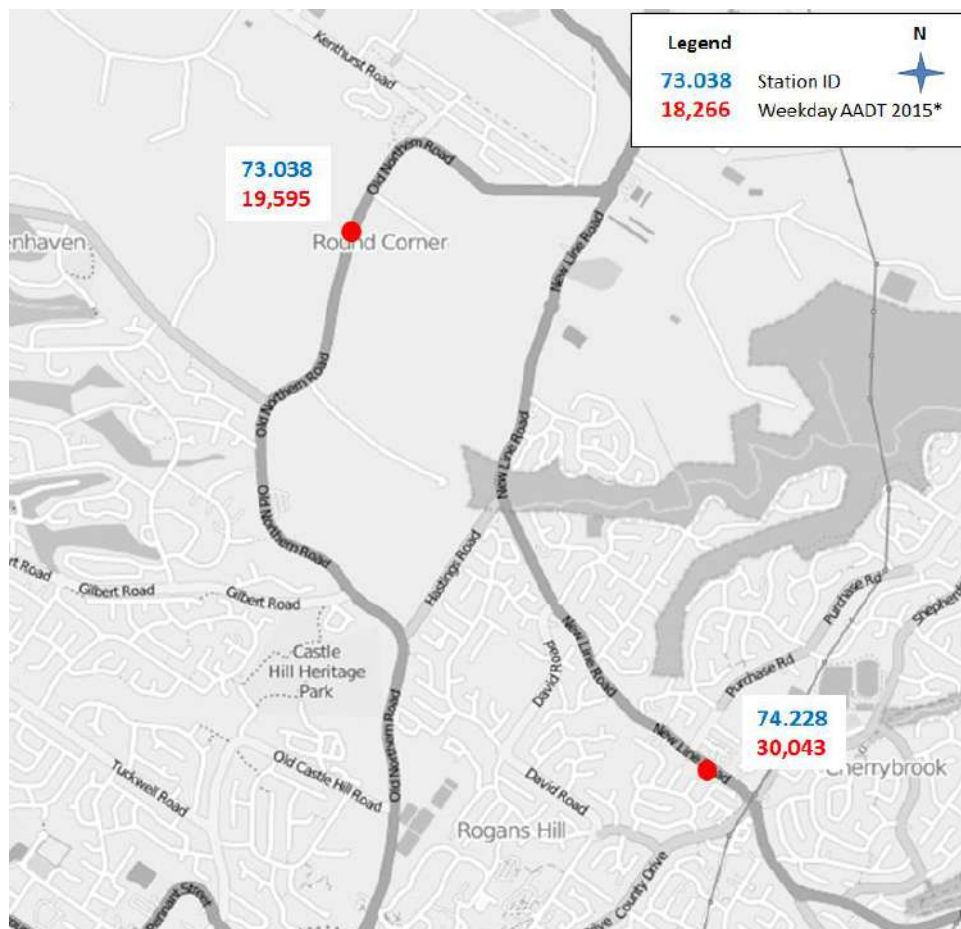
Table 4 Historical weekday traffic volumes and growth

Station #	Location	Weekday AADT					Average growth / year
		2011	2012	2013	2014	2015 ¹	
73038	Old Northern Road, near Malabar Road, Round Corner	18,531	18,841	19,214	18,737	19,595	1.41%
74228	New Line Road, east of Purchase Road, Cherrybrook	30,100	30,063	30,017	30,109	30,043	-0.05%

Source: Roads and Maritime Services, 2015

¹ 2015 Weekday AADT is year to date (to November 2015)

Figure 14 2014 Weekday AADT in the vicinity of the site



Source: Roads and Maritime Services Traffic Volume Data 2015, OpenStreetMap (Base Imagery), 2014.

*2015 Weekday AADT is year to date (to November 2015)

2.7.2 Intersection counts

Classified turning movement counts were undertaken by Trans Traffic Survey during the morning (7am to 9am) and evening (3.00pm to 6.00pm) peak periods on 28 October 2015 at the following intersections:

- Old Northern Road | Derriwong Road (priority)
- Old Northern Road | New Line Road (roundabout)
- Old Northern Road | Nursery Access Road (priority)

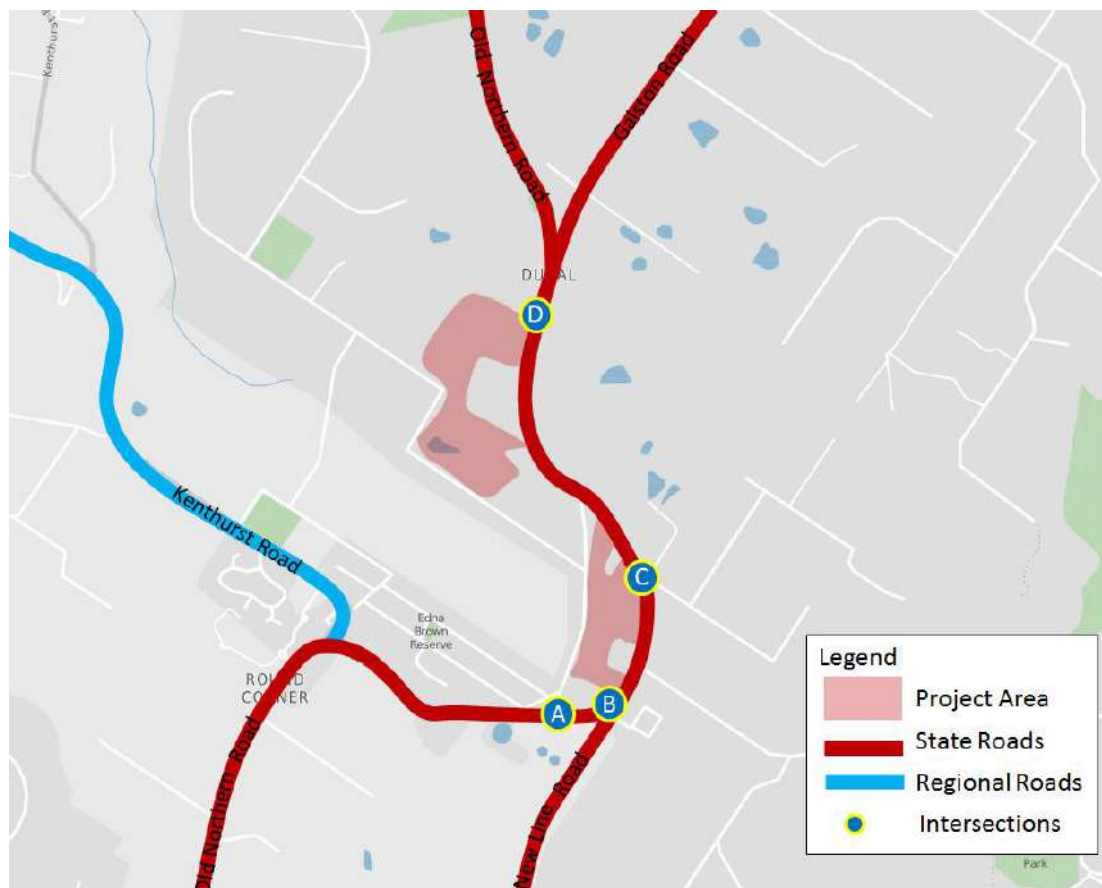
Analysis of the data shows that the AM peak period for the network was between 7.45am and 8.45am and the PM peak was between 3:15pm and 4.15pm, which is driven by the school peak rather than the typical PM commuter peak.

Key intersections assessed include:

- a. Old Northern Road | Derriwong Road (priority)
- b. Old Northern Road | New Line Road (roundabout)
- c. Old Northern Road | Vineys Road
- d. Old Northern Road | Nursery Access Road (priority)

Given the local nature of Vineys Road, traffic volumes at the intersection were estimated based on the assumption that properties that rely on Vineys Road for access generate 0.86 and 0.89 trips during the AM and PM peak respectively.

Figure 15 Key intersections



Source: AECOM, 2016

The traffic count data shows that traffic flow in the peak hour traffic direction on Old Northern Road and New Line Road has exceeded 1,000 veh/hr. This implies that both roads are approaching capacity for a one lane road during the peak hours.

2.8 Intersection Assessment

Intersection assessment based on the surveyed traffic data has been carried out using SIDRA 6.1, a computer based modelling package which calculates isolated intersection performance.

The main performance indicators for SIDRA 6.1 include:

- Degree of saturation (DoS) – a measure of the ratio between traffic volumes and the capacity of the intersection is used to measure the performance of isolated intersections.
- Average delay – how long in seconds the average vehicle waits at the intersection.
- Level of service (LoS) – a measure of the overall performance of the intersection (as explained in **Table 5**).

Table 5 Level of Service criteria for Intersections

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

Source: Roads and Maritime Services, 2002

Table 6 summarises the existing intersection operation in the AM peak period and **Table 7** summarises the existing intersection operation of the PM peak period. More detailed results are presented in **Appendix B**.

Table 6 2015 AM Peak Hour Intersection Performance

Intersection	Intersection Type	Demand Flow (veh/h)	Level of Service	Degree of Saturation (v/c)	Ave Delay ¹ (sec)	95% Back of Queue (m)
Old Northern Road Derriwong Road	Give-way	2,005	B	0.389	27.9	103
Old Northern Road New Line Road	Roundabout	3,804	A	0.814	13.0	79
Old Northern Road Vineys Road	Give-way	2,559	F	1.500	509.5	51
Old Northern Road Nursey Access Road	Give-way	1,851	A	0.583	8.6	1

Source: AECOM, 2016

¹Average delay report is the average delay of the worst intersection approach for giveway and roundabout intersections.

Table 7 2015 PM Peak Hour Intersection Performance

Intersection	Intersection Type	Demand Flow (veh/h)	Level of Service	Degree of Saturation (v/c)	Ave Delay ¹ (sec)	95% Back of Queue (m)
Old Northern Road / Derriwong Road	Give-way	2,186	B	0.579	16.3	107
Old Northern Road / New Line Road	Roundabout	3,993	B	0.836	16.3	88
Old Northern Road / Vineys Road	Give-way	2,402	F	0.642	243.7	2
Old Northern Road / Nursery Access Road	Give-way	1,968	A	0.566	11.6	3

Source: AECOM, 2016

¹Average delay report is the average delay of the worst intersection approach for giveway and roundabout intersections.

The SIDRA results indicate that during the AM and PM peak hour, three of the four intersections assessed in the vicinity of the study area operate satisfactorily.

The intersection of Old Northern Road | Vineys Road operates unsatisfactorily due to delays experienced by vehicles on Vineys Road. It should also be noted at the intersection of Old Northern Road | Derriwong Road, the right turn movement from Derriwong Road experiences significant delays during both the AM and PM peak as vehicles are required to wait for gaps along Old Northern Road to enter the intersection.

3.0 Future Traffic Conditions

3.1 Background Traffic Growth

The historical Roads and Maritimes Services traffic data over the past five years was analysed to estimate the background traffic growth in the vicinity of the study site.

As shown in **Table 4**, since 2011 traffic has increased by approximately 1.4 per cent per year on Old Northern Road, near Malabar Road, and decreased by approximately 0.5 per cent per year on New Line Road, west of Purchase Road. To estimate the growth of traffic along key roads of the study area, an average annual growth of 1.4 per cent was applied.

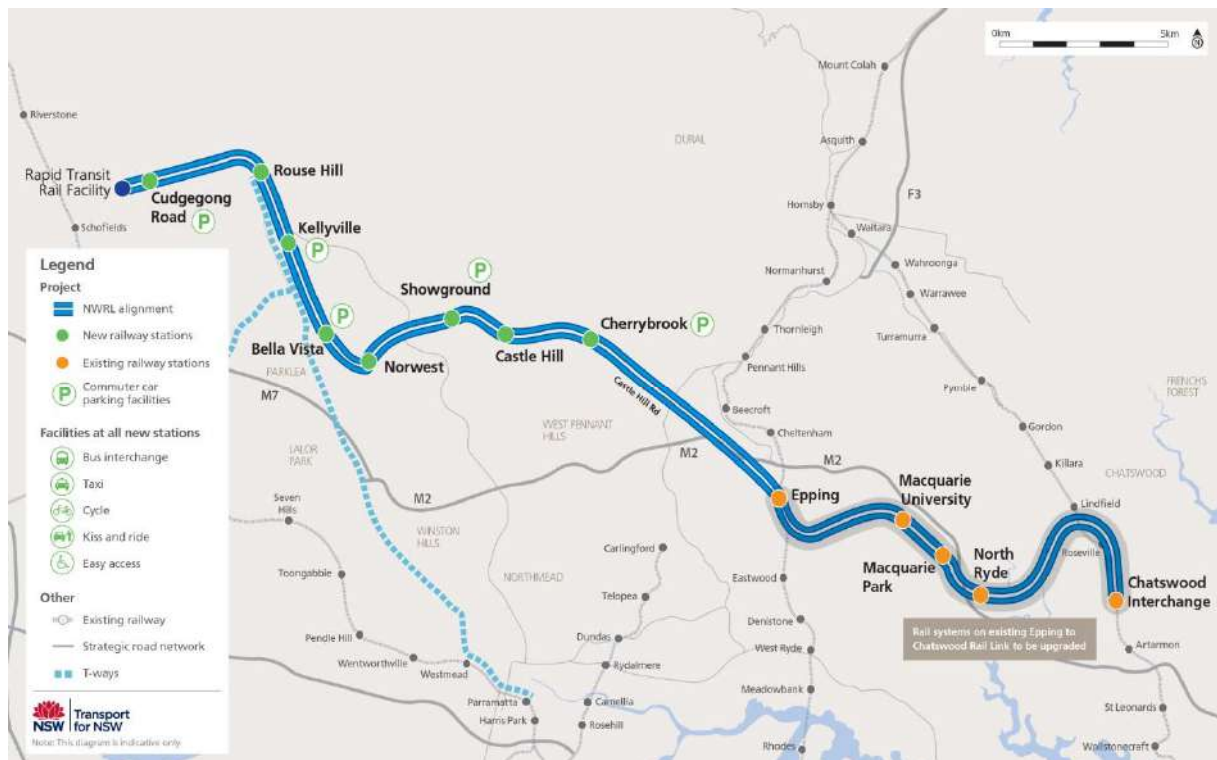
The traffic that would be generated by an approved shopping centre development at 488 Old Northern Road have also been accounted for in the background traffic volumes.

3.2 Planned Infrastructure

North West Rail Link (NWRL), currently under construction and due to commence operation in the first half of 2019, will offer a metro rail transport option for the future residents of the proposed development by providing frequent train services between Rouse Hill and Chatswood. Passengers will be able to interchange at Epping or Chatswood to connect to the rest of Sydney Train network. As part of Sydney Metro, the metro services on NWRL will continue past Chatswood, into the Sydney CBD via a second harbour crossing. The NWRL will include the construction of six new stations as shown in **Figure 16**.

The new stations (Castle Hill and Cherrybrook) are approximately seven to eight kilometres from the study site. It is anticipated that there will be bus connections accessible from the study connecting to the NWRL. The Environmental Impact Statement (EIS) Stage 2 for the NWRL indicates that Castle Hill Station will be a major interchange point for commuters transferring between NWRL and bus services from the central part of the NWRL corridor.

Figure 16 The Northwest Rail Link network



Source: Transport for NSW, 2014

There are currently no planned road infrastructure upgrades around the study area.

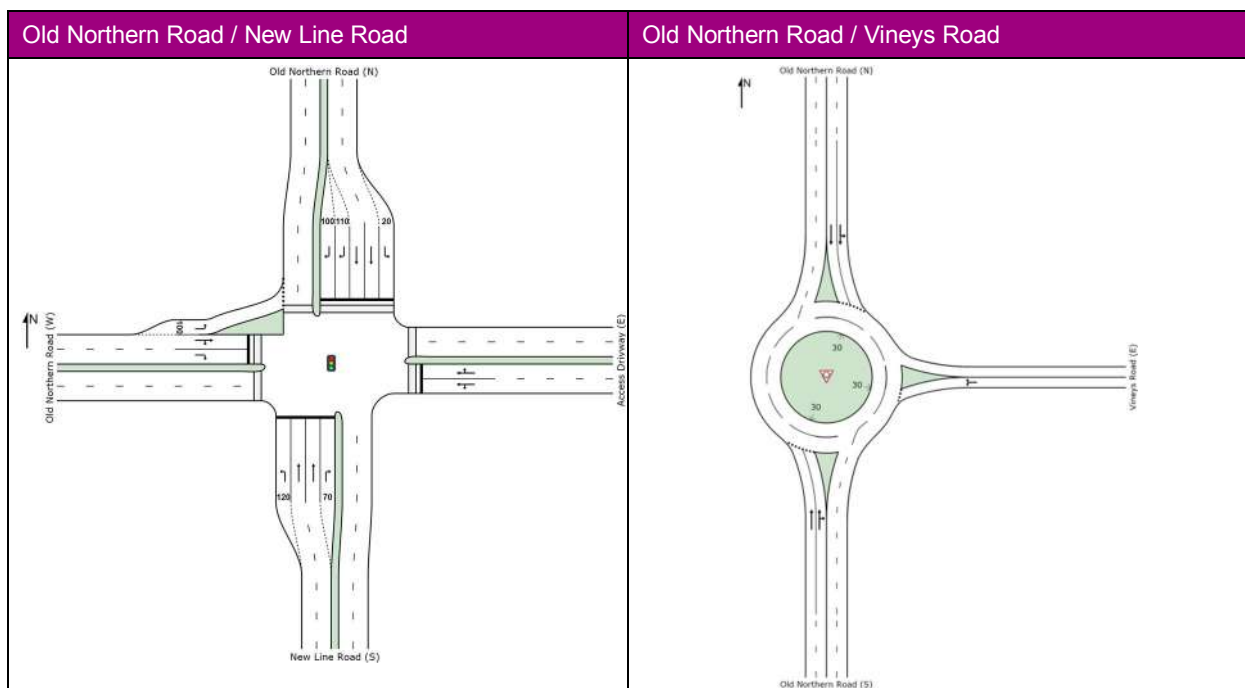
3.3 Mitigation Measures

To cater for the background traffic growth in the vicinity of the study area, local infrastructure upgrades may be required for the road network to continue to operate effectively.

It has been highlighted that existing traffic volumes along Old Northern Road and New Line Road are approaching capacity. It is expected that background traffic growth will trigger the requirement of upgrading these road for additional capacity.

Assessments of intersection performance under the 2026 forecast traffic volumes indicates the intersection of Old Northern Road | New Line Road and Old Northern Road | Vineys Road would need to be upgraded to cope with background traffic growth. Upgrade options are shown in **Figure 17**.

Figure 17 Intersection layout options (2026 Base)



Source: AECOM, 2016

3.4 Intersection Assessment

Table 8 and **Table 9** below summarise both AM and PM intersections performance for future year 2026 without development traffic scenario.

Table 8 2026 AM Peak intersection performance – without proposed development

Intersection	Intersection Type	Demand Flow (veh/h)	Level of Service	Degree of Saturation (v/c)	Ave Delay (sec)	95% Back of Queue (m)
Old Northern Road Derriwong Road	Give-way (existing)	2,347	F	0.511	89.8 ¹	191
Old Northern Road New Line Road	Roundabout (existing)	4,454	F	1.102	70.9	814
	Upgraded to signals	4,454	C	0.833	30.5	160
Old Northern Road Vineys Road	Give-way (existing)	2,995	F	1.500	488.3	49
	Upgraded to a roundabout	2,996	A	0.462	9.2 ¹	31
Old Northern Road Nursery Access Road	Give-way	2,177	A	0.688	11.4 ¹	2

Source: AECOM, 2016

¹Average delay report is the average delay of the worst intersection approach for giveaway and roundabout intersections

Table 9 2026 PM Peak intersection performance – without proposed development

Intersection	Intersection Type	Demand Flow (veh/h)	Level of Service	Degree of Saturation (v/c)	Ave Delay (sec)	95% Back of Queue (m)
Old Northern Road Derriwong Road	Give-way (existing)	2,585	E	0.767	59.4 ¹	182
Old Northern Road New Line Road	Roundabout (existing)	4,709	F	1.116	104.6	1,013
	Upgraded to signals	4,709	C	0.893	35.2	135
Old Northern Road Vineys Road	Give-way (existing)	2,840	F	1.000	2,704.2	16
	Upgraded to a roundabout	2,840	A	0.462	9.6 ¹	29
Old Northern Road Nursery Access Road	Give-way	2,344	B	0.673	17.8 ¹	7

Source: AECOM, 2016

¹Average delay report is the average delay of the worst intersection approach for giveaway and roundabout intersections.

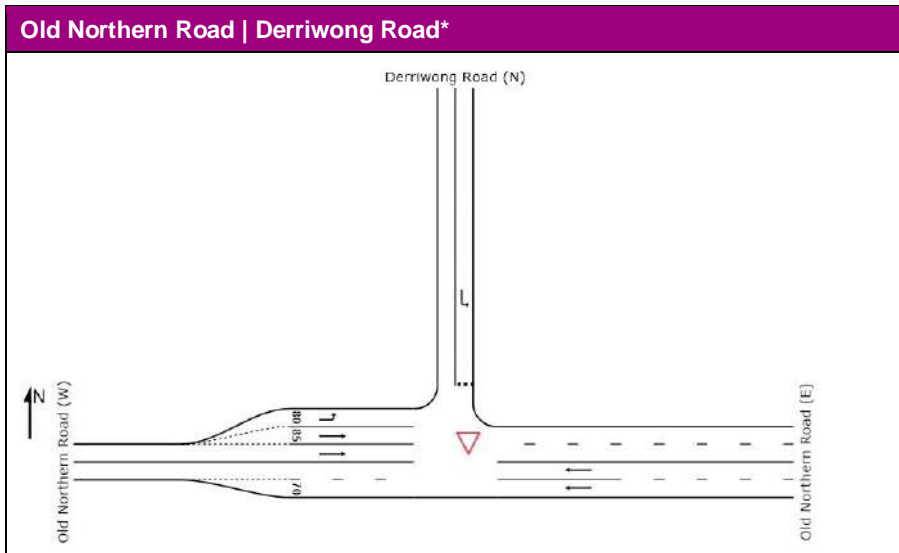
It is noted that during the AM peak, the 95th percentile queue along the west leg of the Old Northern Road | New Line Road intersection extends past the Old Northern Road | Derriwong Road intersection. Modelling also suggests that the priority Old Northern Road | Derriwong Road intersection would fail in 2026 as right turn movements onto Old Northern Road experience significant delays.

As part of the development proposed in this study, new intersections will allow vehicles which either turn right into or out of the Old Northern Road | Derriwong Road intersection, to use alternate points at new northern intersections with Old Northern Road, refer to **Section 4.2**. This would allow movements at this intersection to be restricted to left in left out, improving intersection safety.

Old Northern Road | Derriwong Road is proposed to be converted to a LILO, however this is reliant on a new access point on Old Northern Road provided by the proposed development to allow the banned right turn movements at the intersection an alternate way to access to road network.

The layout for the conversion of Old Northern Road | Derriwong Road to a left-in /left-out (LILO) intersection is shown in **Figure 18**.

Figure 18 Intersection Layout Options (2026 Base)



Source: AECOM, 2016

* requires alternate access point to allow the banned right turn movements to access the road network, which is provided by the proposed development.

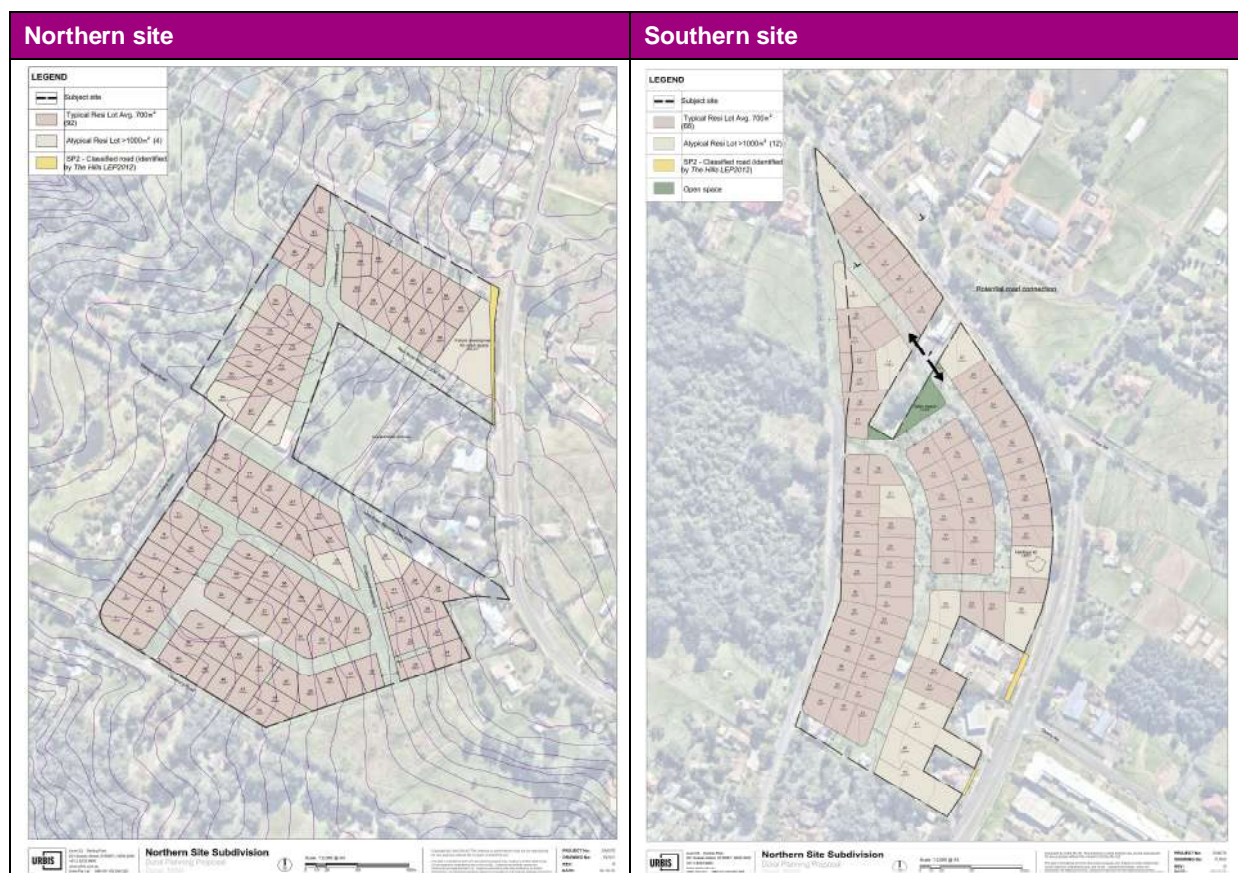
4.0 Proposed Development

4.1 Land Use

The Dural Planning Proposal is for a residential development. The proposed development has been divided into the following two sites:

- The northern site is proposed to consist of approximately 96 low density residential lots and approximately 3,400 m² of open space.
- The southern site is proposed to consist of 80 low density residential lots and 1,250 m² of open space.

Figure 19 Dural Planning Proposal



Source: Urbis, 2016

The development types and quantity of each of the types of residential and commercial development are shown in **Table 10**.

Table 10 Proposed Development Type and Quantity

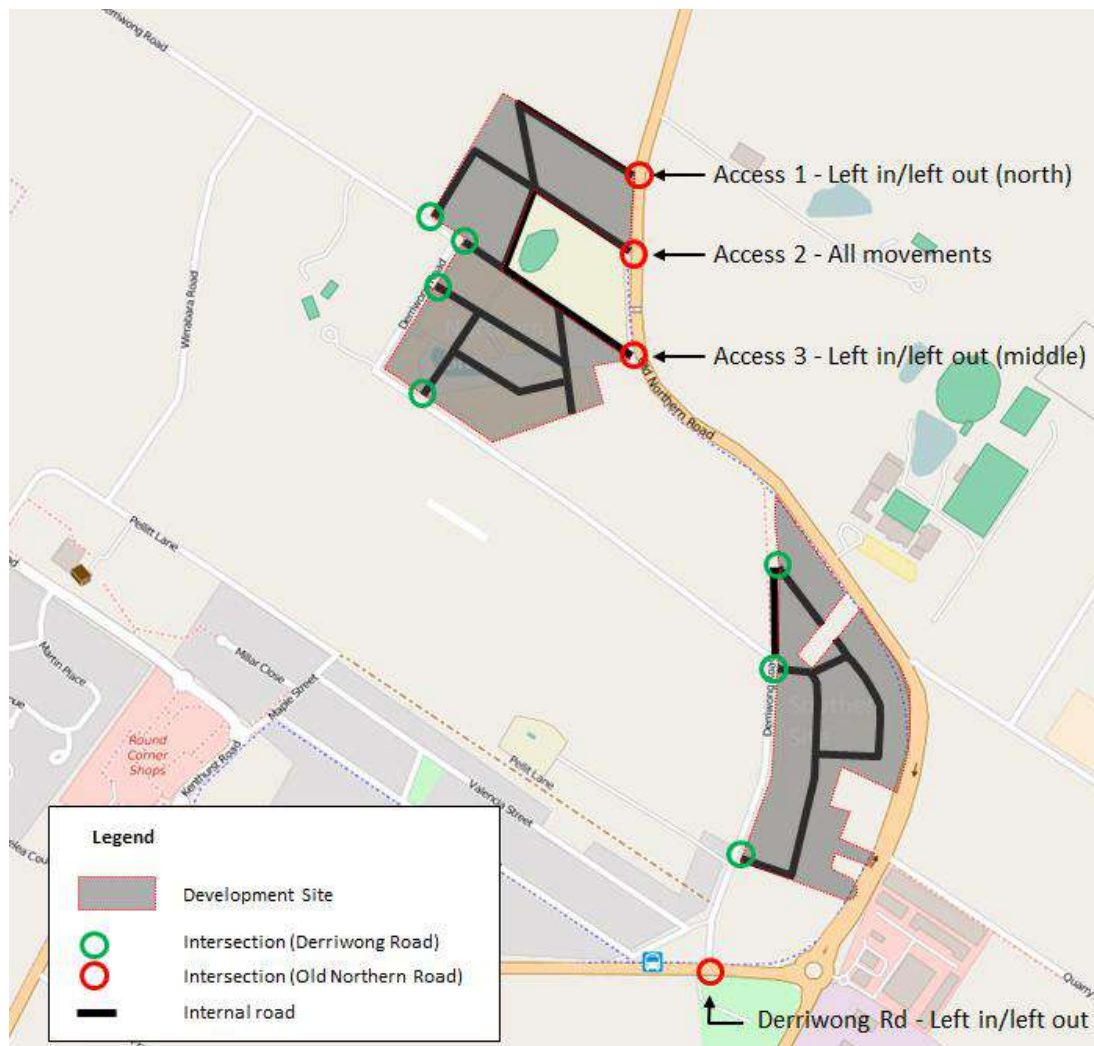
Site	Development Type	Quantity
Northern Site	Low density residential	96 lots
	Open space	3,350 m ²
Southern Site	Low density residential	80 lots
	Open space	1,250 m ²

Source: Urbis, 2016

4.2 Site Access

The indicative location and type of site accesses are shown in **Figure 20**. Primary access to the proposed development is expected to be undertaken at Access 2. Access to the proposed development has been summarised below for the northern and southern sites.

Figure 20 Study site access intersections



Source: Basemap; Openstreetmap, accessed 2016

4.2.1 Northern site

The northern site can be accessed from both Old Northern Road and Derriwong Road. It will have three accesses from Old Northern Road via the two LILO intersections and one intersection allowing all movements listed below:

- Access 1 – conversion of the existing intersection of Old Northern Road | Nursery Access Road to a left in / left out (LILO)
- Access 2 – new intersection allowing all movements
- Access 3 – new LILO.

4.2.2 Southern site

Direct access for the southern site will be from Derriwong Road which vehicles are able to access at intersections along Old Northern Road.

With the intersection of Old Northern Road | Derriwong Road proposed to operate as a LILLO, banned right turn movements are required to use the new access points from Old Northern Road:

- vehicles heading to the west (along Old Northern Road) will be required to use Access 2 (all movements)
- vehicles coming from the south (along New Line Road) will likely use Access 2 or Access 3.

4.3 Internal Road Network

The internal road network for both sites is shown in **Figure 20**. All internal roads should be designed or upgraded to provide safe access and egress for trips generated by the development.

It is envisioned that the proposed site access for the northern site allows an alternative location for pick-up/drop off movements generated by Dural Public School. This will resolve the issue experienced at the existing pick up/drop off location opposite Dural Public School, allowing vehicles from the north to use the internal road network to travel northbound on Old Northern Road, after pick-up/drop off.

4.4 Pedestrians and Cyclists

Internal pedestrian paths will be connected to existing footpaths on Old Northern Road allowing pedestrians to reach existing bus stops in the area. It is envisioned that the internal road network will allow for cyclists to share the roadways with general traffic.

4.5 Public Transport

The majority of the study area will be within the 400m catchment of current bus routes operating on Old Northern Road and New Line Road. Therefore, most of the residents will be within a 400m walking distance of an existing bus route linking to surrounding transport hubs. It is also anticipated that new bus connections to the NWRL stations will be established that are accessible from the study area.

5.0 Traffic Impact Assessment

5.1 Traffic Generation

The Roads and Maritime's *Guide to Traffic Generating Developments: Updated traffic surveys* (TDT 2013/04a) were used to determine the number of trips generated by the proposed development. Given the rural nature of the area, the average trip rate for low density dwellings within Sydney was applied.

Details of the applied trip generation rates and the generation trips for the proposed development are shown in **Table 11**.

Table 11 Total trips generated by proposed development

Site	Development Type	Quantity	AM Peak		PM Peak	
			Trip Rate	Trips Generated	Trip Rate	Trips Generated
Northern Site	Low density residential	96 lots	0.86 per dwelling	83	0.89 per dwelling	86
Southern Site	Low density residential	80 lots	0.86 per dwelling	69	0.89 per dwelling	71
Total			152		157	

Source: AECOM, 2016

In terms of the split between inbound and outbound trips, it was assumed that trips generated by the low density residential will have 90 per cent outbound trips and 10 per cent inbound trips in the AM Peak, with this reversed in the PM Peak.

The future traffic flows generated from both the northern and southern sites are shown in **Table 12**. In the AM peak hour, a total of 152 trips would be generated from the two sites, while in the PM peak hour, a total of 157 trips would be generated from the two sites.

Table 12 Forecast Traffic Flow

Site	AM Peak trips			PM Peak trips		
	In	Out	Total	In	Out	Total
Northern Site	8	75	83	77	9	86
Southern Site	7	62	69	64	7	71
Total	15	137	152	141	16	157

Source: AECOM, 2016

5.2 Traffic Distribution and Assignment

Trip distribution and assignment for the development was determined based on existing Journey to Work patterns for private vehicle trips to and from Travel Zone 4310, within which the study area is located. The access roads that drivers would use to reach their destinations were considered, and this was used to distribute the trips between drivers who would use:

- Old Northern Road north (north of the sites)
- New Line Road
- Kenthurst Road / Old Northern Road west (west of the sites)

The trip distribution to each of these routes for the AM Peak period is shown in **Table 13**. These distributions are assumed to be reversed in the PM Peak period.

Table 13 Distribution of generated traffic to key routes in the AM Peak Period

Route	To/from	% of allocated trips	
		Origin trips	Destination trips
Old Northern Road (north)	North	25%	31%
New Line Road	South / East	25%	35%
Kenthurst Road / Old Northern Road (west)	West	50%	34%
Total		100%	100%

Source: AECOM, 2016

Table 14 provides a summary of the likely traffic distribution for the development between the Old Northern Road and Derriwong Road access road intersections.

Table 14 Traffic splits between access roads

Access Road	AM Peak		PM Peak	
	In	Out	In	Out
Old Northern Road	67%	64%	75%	75%
Derriwong Road	33%	36%	25%	25%
Total	100%	100%	100%	100%

Source: AECOM, 2016

5.3 Intersection Assessment

Table 15 and **Table 16** show the intersection performance of future year together with development traffic for both AM and PM peak hour.

Table 15 2026 AM Peak Intersection Performance – with proposed development

Intersection	Intersection Type	Demand Flow (veh/h)	Level of Service	Degree of Saturation (v/c)	Ave Delay (sec) ¹	95% Back of Queue (m)
Old Northern Road Derriwong Road	Give-way (left in/left out)	2,402	A	0.381	9.1	4
Old Northern Road New Line Road	Signals	4,555	C	0.839	32.4	162
Access 1 (Old Northern Road Nursery Access Road)	Give-way (left in/left out)	2,214	A	0.687	8.6	1
Access 2	Roundabout	2,266	A	0.445	10.7	28
	Signals	2,266	B	0.860	14.7	91
Access 3	Give-way (left in/left out)	2,671	A	0.776	11.5	2

¹Average delay report is the average delay of the worst intersection approach for giveway and roundabout intersections.

Source: AECOM, 2016

Table 16 2026 PM Peak Intersection Performance – with proposed development

Intersection	Intersection Type	Demand Flow (veh/h)	Level of Service	Degree of Saturation (v/c)	Ave Delay (sec)	95% Back of Queue (m)
Old Northern Road Derriwong Road	Give-way (left in/left out)	2,587	A	0.485	8.4	2
Old Northern Road New Line Road	Signals	4,772	C	0.914	36.6	138
Access 1 (Old Northern Road Nursery Access Road)	Give-way (left in/left out)	2,385	B	0.677	16.3	2
Access 2	Roundabout	2,388	A	0.434	11.3	23
	Signals	2,388	A	0.618	8.0	65
Access 3	Give-way (left in/left out)	2,654	B	0.753	16.8	1

¹Average delay report is the average delay of the worst intersection approach for giveway and roundabout intersections.

Source: AECOM, 2016

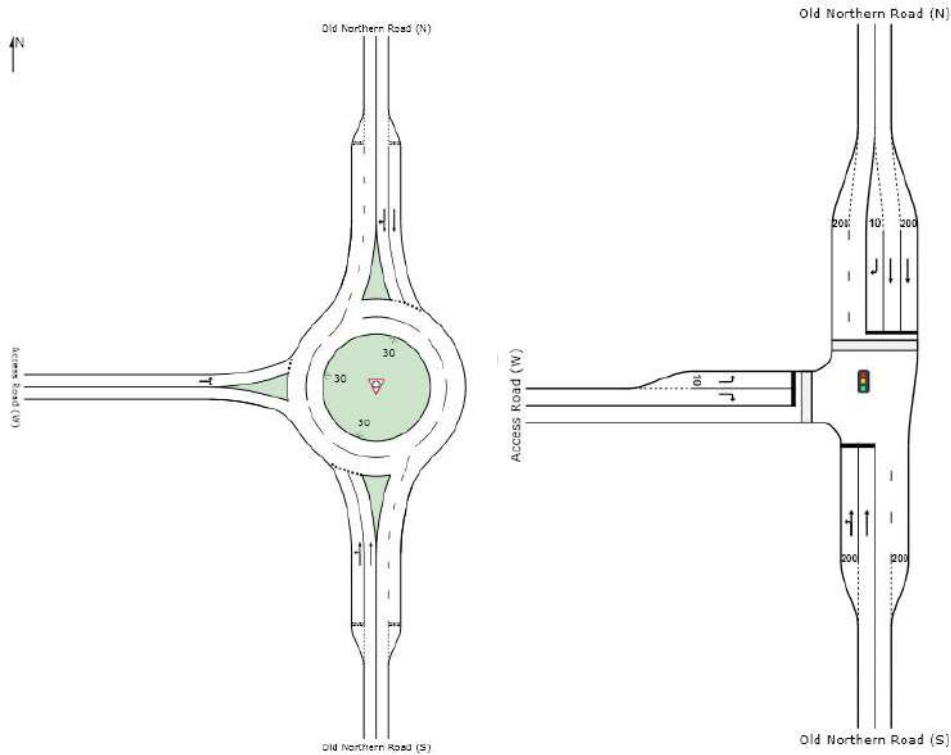
As noted in the intersection assessment that assessed the 2026 background traffic only, at the intersection of Old Northern Road | New Line Road, the left turn movement on the Old Northern Road west leg exceeds the 100m left turn bay provision and queueing extends past the preceding priority intersection at Old Northern Road / Derriwong Road.

It is forecast that minimal traffic would use the intersections along Derriwong Road, which would operate satisfactorily as priority intersections.

The primary intersection providing access to the development has been assessed as a roundabout and as a signalised intersection, given the low likelihood of a priority intersection allowing all movements and operating satisfactorily. This intersection is located near the northern site and would require a new intersection along Old Northern Road.

Figure 21 presents the geometric layout assessed for the intersection. There is potential for both the roundabout and signalised intersection to integrate with the pick-up/drop-off zone subject to detailed design.

Figure 21 Northern site – Access Road 2



Source: AECOM, 2016

5.4 Infrastructure Upgrade Summary

The following infrastructure upgrades are required to accommodate background traffic:

- Upgrade of Old Northern Road and New Line Road to provide additional capacity.
- Old Northern Road | New Line Road to be upgraded to a signalised intersection.
- Old Northern Road | Vineys Road to be upgraded to a roundabout.
- Conversion of Old Northern Road | Derriwong Road to operate as a LILO

Further infrastructure upgrades are required to accommodate the traffic generated by the proposed development:

- Access 1 – conversion of the existing intersection of Old Northern Road | Nursery Access Road to a LILO.
- Access 2 – New roundabout or signalised intersection on Old Northern Road, north of Dural Primary School.
- Access 3 – New LILO intersection on Old Northern Road, south of Dural Primary School.

It is forecast that minimal traffic would use the intersections along Derriwong Road, which would operate satisfactorily as priority intersections.

6.0 Summary and Conclusion

6.1 Proposed development

The Dural Planning Proposal is for a residential development, which is divided into the following two sites:

- The northern site is proposed to consist of approximately 96 low density residential lots and approximately 3,400 m² of open space.
- The southern site is proposed to consist of 80 low density residential lots and 1,250 m² of open space.

6.2 Vehicle Access

Old Northern Road and Derriwong Road will provide vehicular access to both northern and southern sites. Three access points are proposed along Old Northern Road, which include two LLOs and an intersection allowing all movements.

An additional seven access points are proposed along Derriwong Road, which are proposed as priority intersections.

6.3 Transport and Accessibility

All internal roads are to be designed or upgraded to provide safe access and egress for trips generated by the development.

The majority of the study area will be within the 400m catchment of current bus routes operating on Old Northern Road and New Line Road. Therefore, most of the residents will be within a 400m walking distance of an existing bus route linking to surrounding transport hubs. It is also anticipated that new bus connections to the NWRL stations will be established that are accessible from the study area.

Internal pedestrian paths will be connected to existing footpaths on Old Northern Road allowing pedestrians to reach existing bus stops in the area. It is envisioned that the internal road network will allow for cyclists to share the roadways with general traffic.

6.4 Traffic Impacts

The existing intersections assessed indicate three of the four intersections in the vicinity of the study area operate satisfactorily. The intersection of Old Northern Road | Vineys Road operates unsatisfactorily due to delays experienced by vehicles on Vineys Road. The right turn movement from Derriwong Road at the intersection of Old Northern Road | Derriwong Road also experiences significant delays during both the AM and PM peak as vehicles are required to wait for gaps along Old Northern Road to enter the intersection.

Current traffic volumes experienced along Old Northern Road and New Line Road are approaching capacity, with the two roads expected to be upgraded to provide additional capacity to cater for future background traffic.

Forecasted 2026 background traffic volumes indicate the following intersections will need to be upgraded to cope with background traffic growth:

- Old Northern Road | New Line Road upgraded to a signalised intersection
- Old Northern Road | Vineys Road upgraded to a roundabout
- Old Northern Road | Derriwong Road converted to a LLO, however this is reliant on a new access point on Old Northern Road provided by the proposed development to allow the banned right turn movements at the intersection an alternate route to access the road network.

Further infrastructure upgrades are required to accommodate the traffic generated by the proposed development:

- Access 1 – conversion of the existing intersection of Old Northern Road | Nursery Access Road to a LILLO.
- Access 2 – New roundabout or signalised intersection on Old Northern Road, north of Dural Primary School.
- Access 3 – New LILLO intersection on Old Northern Road, south of Dural Primary School.

It is forecast that minimal traffic would use the intersections along Derriwong Road, which would operate satisfactorily as priority intersections.

6.5 Timing and Delivery

It is understood that infrastructure upgrades would be required to provide sufficient capacity within the existing road network to support the delivery and realisation of several planning proposals, which are at various stages of consideration by relevant planning authorities. Other planning proposals in the surrounding area include South Dural, Dural Service Centre and the adjoining Round Corner Timber site.

It is noted that the South Dural planning proposal was granted Gateway Approval on the premise of delivering these infrastructure upgrades and, despite the potential for the Gateway Approval to lapse, the DP&E has provided an extension of time to allow this proposal to be developed and implemented. The South Dural planning proposal, together with the Dural Service Centre, Round Corner Timber Yard and the subject planning proposal, represent an opportunity for a coordinated approach and efficient spending on infrastructure.

The significant progression of the South Dural Planning Proposal, together with the recent extension of time granted to the site, represents a clear commitment to the delivery of the necessary infrastructure works and should be interpreted as certainty that upgrades will be delivered in the near future.

Skye Playfair Redman
Urbis
Level 23, Darling Park Tower 2, 201 Sussex Street
Sydney NSW 2000

ECO LOGICAL AUSTRALIA PTY LTD
ABN 87 096 512 088
www.ecoaus.com.au

Project No. 15GOS_1895

23 March 2016

Dear Skye,

RE: Ecological Assessment – Dural Rezoning

Eco Logical Australia Pty Ltd was commissioned to prepare an Ecological (flora and fauna) and Bushfire Constraints Analysis for the proposed rezoning of multiple parcels of land along Old Northern Road, Dural (**Figure 1**). Although the main focus of the ecological assessment was to identify possible constraints within the parcels of land along Old Northern Road (referred to as the “subject site” - see **Figure 1**), Urbis also requested a desktop review of the broader area surrounding the land (referred to as the “study area” - see **Figure 1**).

This letter outlines the ecological constraints across the subject site, as determined from the desktop literature review and field survey. Potential ecological constraints were assessed in relation to State and Commonwealth legislation, namely the NSW *Threatened Species Conservation Act 1995* (TSC Act) and Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

An initial constraints assessment was conducted for seven lots in late 2015. Another five lots were added in early 2016, and have been combined in a single ecological constraints assessment provided below.

Eco Logical Australia undertook a desktop analysis to refine the field survey. The ecological constraints analysis concluded that despite the subject site being substantially modified, there is a potential that threatened ecological communities persist within the study area. A site investigation was required to validate the presence of threatened ecological communities within the subject site.

Two threatened ecological communities in poor condition were recorded within the subject site as part of the site inspection by Eco Logical Australia. These were Blue Gum High Forest listed as a critically endangered under the TSC Act, and Sydney Turpentine Ironbark Forest listed as endangered under the TSC Act.

The desktop vegetation mapping and a brief visual inspection of the broader study area suggests that the study area may contain patches of Sydney Turpentine Ironbark Forest and Blue Gum High Forest, as well as potential habitat for threatened flora and fauna species. Additional surveys would be required to verify the extent and condition of threatened ecological communities and the presence of threatened species within the study area.

If you have any questions please do not hesitate to contact me (02) 8536 8650 or matthewd@ecoaus.com.au.

Kind Regards,



Matthew Dowle
Senior Ecologist

Site Description

The site is comprised of two cluster lots along Old Northern Road, Dural (**Figure 1**) (referred to as the “subject site”) within The Hills Shire Council (THSC).

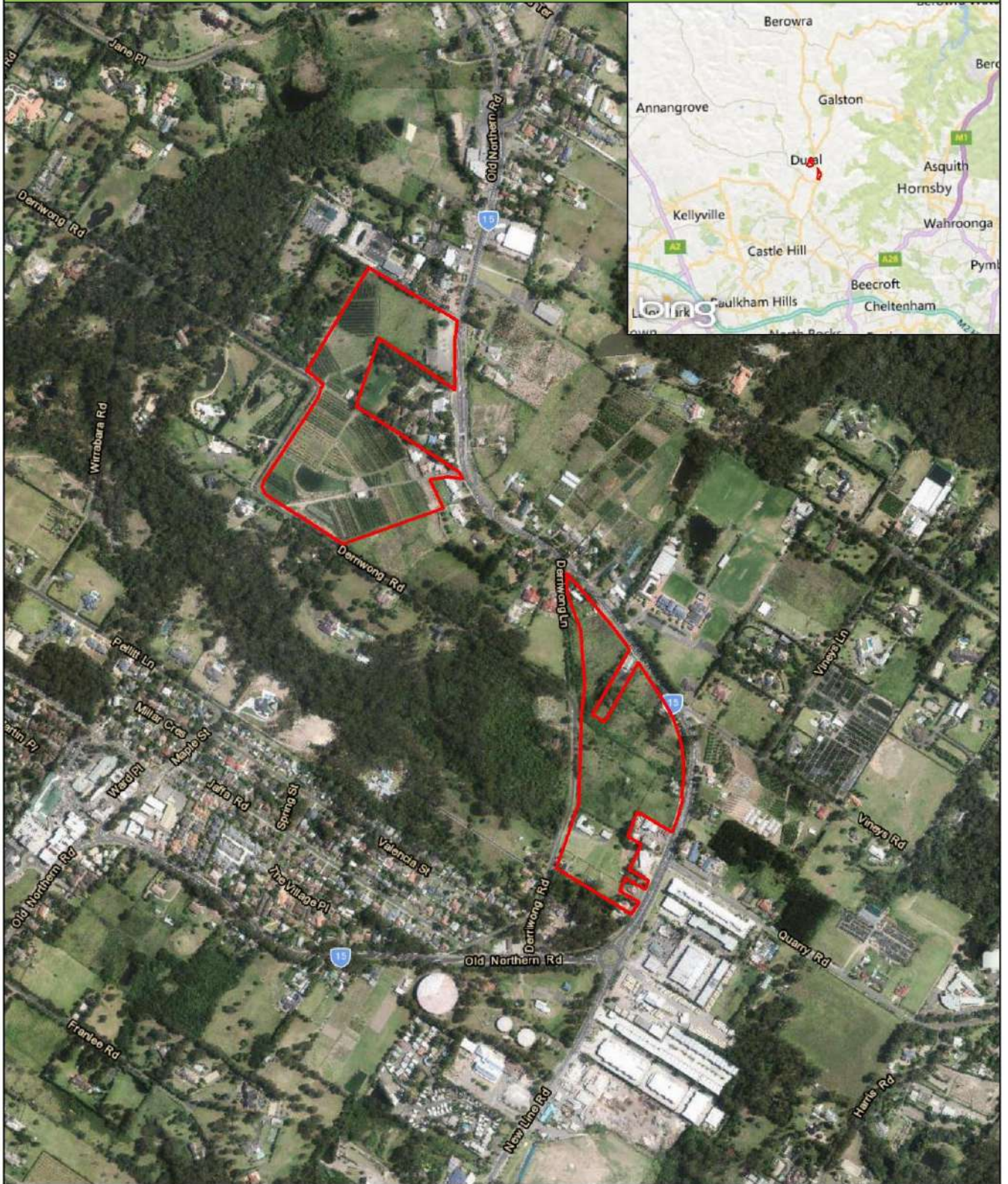
The site includes the following lots:

- Lot 100 and 102 (DP13628)
- Lot 1 (DP656036)
- Lot X (DP501233)
- Lot 2 (DP567995)
- Lot 9 (DP237576)
- Lot 2 (DP541329)
- Lots 101 and 103 (DP713628)
- Lot 1 (DP660184)
- Lot 11 DP866560
- Lot D DP38097
- Lot 1 DP73652
- Lot 12 DP866560.


The entire subject site is zoned as RU6 Transition. The majority of the study area is also zoned RU6 Transition with the exception of a parcel of land to the corner of Derriwong Road, zoned SP2 (Cemetery) and two small linear sections along Old Northern Road in the south of the study area are also zoned SP2 (Classified Road).

A review of The Hills Local Environmental Plan 2012 (HLEP) Terrestrial Biodiversity layer has confirmed that the subject site does not fall within land mapped as ‘biodiversity’. However, the land directly west of Derriwong Road has been mapped as part of the Terrestrial Biodiversity layer. This relates to clause 7.4 Biodiversity (Terrestrial) and requires that certain objectives relating to biodiversity protection be considered when assessing development applications on land that have been shown on the Terrestrial Biodiversity Map.

Location



Legend

 Subject Site

0 100 200 400
Metres

GDA 1994 MGA Zone 56



eco
logical
AUSTRALIA

www.ecoaus.com.au

Prepared by: BH Date: 15/03/2016

Figure 1: study area and subject site

Methodology

The following resources were reviewed during the desktop assessment of the study area:

- NSW BioNet, Atlas of NSW Wildlife database search (5 km) (accessed 27 July 2015)
- EPBC Act Protected Matters Search Tool (5 km) (accessed 27 July 2015)
- *Soil Landscapes of the Sydney 1:100 000 sheet* (Chapman and Murphy 1989)
- Vegetation mapping:
 - Native vegetation of Western Sydney (NSW NPWS 2002)
 - The Hills Shire Council vegetation mapping (THSC 2008) (Sheet 6)
- Local government planning instruments
 - The Hills Local Environmental Plan 2012 (HLEP)
 - The Hills Shire Council Terrestrial Biodiversity Map (Sheet CL1_023)
- Aerial photography.

A review of available literature and database searches was conducted to determine potential ecological constraints and data gaps. This information was used to assist in the assessment of the subject site.

A brief site investigation was originally conducted on 22 October 2015 by Danielle Adams-Bennett to identify the presence and condition of TECs, threatened species and fauna habitat values (i.e. hollow-bearing trees) within the subject site. A follow-up site investigation to incorporate the additional sites was conducted on 17 February 2016. A brief visual assessment from the roadside was conducted to identify vegetation in the broader study area. This method is suitable when trying to conduct broad validation. However, additional field surveys are required to confirm the boundaries of these vegetation communities and the presence of threatened species within the study area that are outside the subject site.

An assessment of the likelihood of occurrence of TECs and threatened flora and fauna species and their habitats was undertaken to determine if these are likely to occur within the study area (**Appendix A**).

Results

Literature review of study area

Hydrology and Soils

Several tributaries of O'haras creek drain away from the subject site and converge with O'haras Creek to the west of the study area. O'haras Creek is a major creek line which is buffered by native vegetation and flows in a north-west direction.

The majority of the site is located within Glenorie soil landscape with a small section on Lucas Heights within the south-eastern portion of Lot X DP 501233 and Lot 2 DP567995. Glenorie soil landscape (erosional) occurs on undulating or rolling hills. It is associated with the Wianamatta Group Shales and has low to moderate fertility and high erosional hazard (Chapman and Murphy 1989). Lucas Heights soil landscape (residual) is generally found on upper slopes or ridgetops and has a low fertility (Chapman and Murphy 1989).

Vegetation communities

The vegetation within the study area has been previously mapped by broad-scale mapping projects (NPWS 2002, THSC 2008). The majority of the subject site was not mapped as native vegetation under these previous projects. Interpretation of aerial photography indicated the presence of market gardens, cleared lands and a modified landscape. However, small stands of native vegetation were mapped within and adjacent to the subject site.

The two vegetation mapping datasets NPWS (2002) and THSC (2008) were inconsistent in the classification of native vegetation types within the subject site and study area (discussed below). Therefore field validation was required to confirm the presence and identity of any native vegetation communities within the subject site.

Additional surveys would be required to validate the vegetation within the study area because the study area was not surveyed in detail beyond the subject site.

Threatened species

Database searches identified seven threatened ecological communities, 31 threatened flora species and 54 threatened fauna species, which are listed under the TSC or EPBC Acts. Fauna included 30 birds (including 12 migratory species), 14 mammals (including nine bats), five amphibians, two fish, two invertebrate and one reptile that have been recorded or are likely to occur within a 5 km radius around the subject site.

An assessment of the likelihood of occurrence for threatened species to occur within the study area is provided in **Appendix A**. The assessment identified that highly mobile fauna species such as microbats and bird species may utilise the study area. Additionally, there are a number of records for one threatened invertebrate *Pommerhelix duralensis* (Dural Land Snail) which may inhabit the study area. There are a number of records for one threatened flora species, *Epacris purpurascens* var. *purpurascens*, within the study area and adjacent lands.

Field surveys were conducted to determine if threatened species occur or whether suitable habitat is present within the subject site.

Field results of subject site inspection

Vegetation communities

The majority of the subject site has been substantially modified. However, small patches of native vegetation were located within Lot 1 (DP 656036) and Lot 11 (DP 866560) in the south. These patches of vegetation were previously mapped by THSC (2008) as Sandstone Gully Forest or Shale/Sandstone Transition Woodland, and by NPWS (2002) as Blue Gum High Forest or Sydney Turpentine Ironbark Forest.

However, three patches were validated as Blue Gum High Forest listed under the TSC Act, due to the presence of *Eucalyptus saligna* (Blue Gum) and *Eucalyptus pilularis* (Blackbutt) (**Figure 2**). *Eucalyptus saligna* and *Eucalyptus pilularis* are key diagnostic species of Blue Gum High Forest listed under the TSC Act. The two northern patches contained mature and regenerating individuals of *Eucalyptus saligna* (**Plate 1**), while the southern patch contained just two mature *Eucalyptus pilularis* (**Plate 2**). Areas of high quality Blue Gum High Forest may also be listed under the EPBC Act. However, these patches do not satisfy the listing criteria under the EPBC Act, due to their small size (less than 1 ha), lack of native species diversity across all strata, and/or they contain a canopy cover less than 10%.

A small linear patch of Sydney Turpentine Ironbark Forest was located along Derriwong Road and may be impacted by the proposed rezoning. Sydney Turpentine Ironbark Forest is listed as an endangered ecological community under the TSC Act. This patch of vegetation along the road does not satisfy the stringent criteria for listing under the EPBC Act due to its poor quality, small patch size (less than 1 ha) and canopy cover less than 10%.

The site inspection outside the subject site also identified key characteristic species of Sydney Turpentine Ironbark Forest or Blue Gum High Forest, suggesting that these communities are located within the broader study area (**Figure 2**). Several *Syncarpia glomulifera* (Turpentine), *Eucalyptus saligna*, *Eucalyptus pilularis* and *Angophora costata* were identified in vegetation patches adjacent to the subject site. These were identified in previous mapping as Blue Gum High Forest or Sydney Turpentine Ironbark Forest by NPWS (2002) and Shale/Sandstone Transition Forest by THSC (2008).



Plate 1: Patch of Blue Gum High Forest in poor condition



Plate 2: Patch of Blue Gum High Forest consisting of two individual *Eucalyptus pilularis*

Threatened Species

One migratory species, *Ardea ibis* (Cattle Egret), listed under the EPBC Act was recorded foraging with livestock. This species is common in disturbed environments. Similar types of habitat were located in semi-rural properties adjacent to the subject site and across the broader study area.

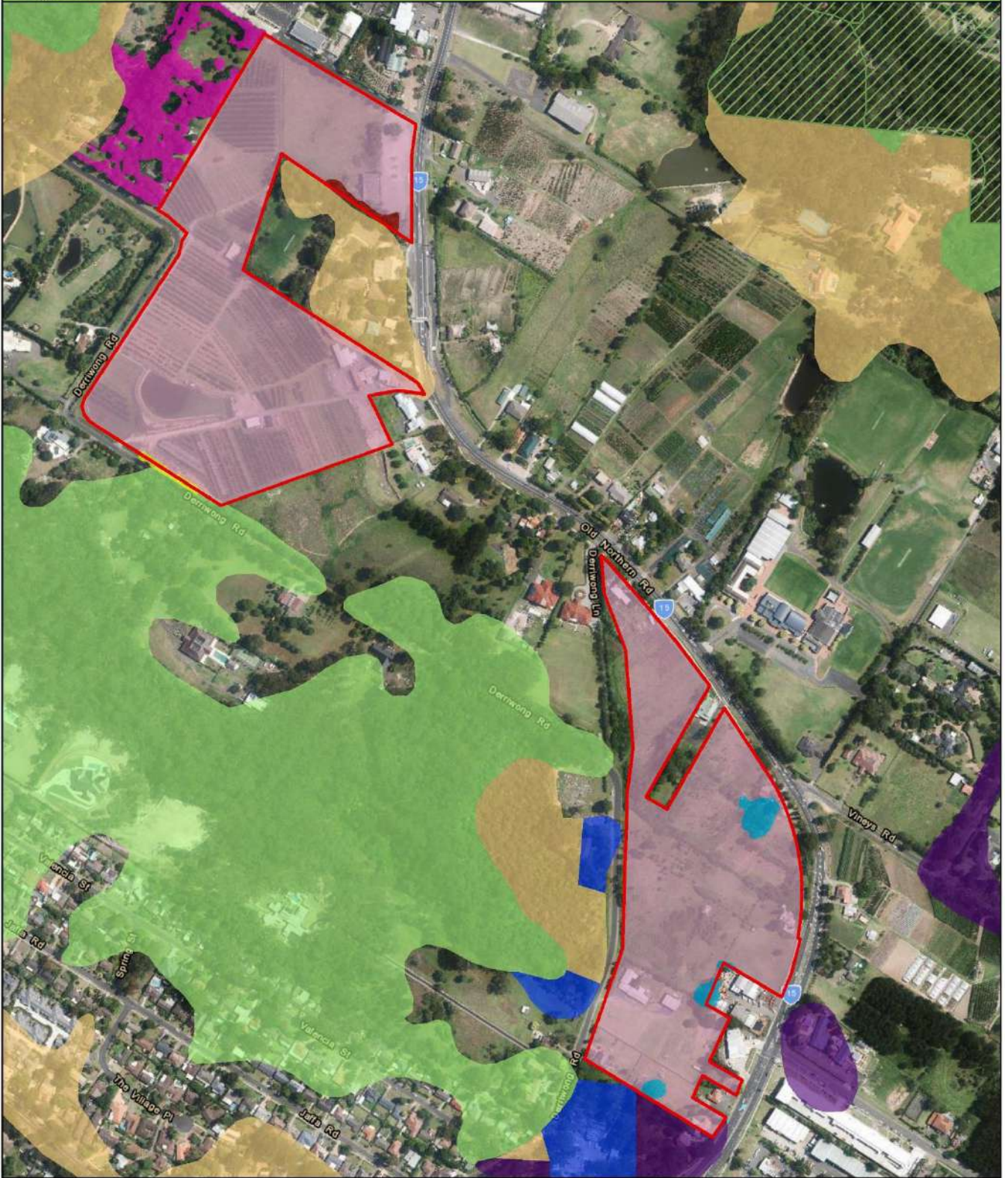
The subject site contained limited fauna habitat values. Fauna habitat values included farm dams and scattered canopy trees. No hollow-bearing trees and only limited foraging habitat for fauna species were recorded within the subject site. Due to the lack of native species within the canopy or shrub layers, there is also limited leaf litter and woody debris in the subject site.

The subject site does not provide habitat for threatened *Pommerhelix duralensis* (Dural Woodland Snail), despite the number of records in the locality. This species prefers forested habitats that have good native cover and woody debris, including fallen bark and leaf litter. These habitat features were largely absent from the subject site, due to current land practices and dominance of exotic species in the understorey. However, there is potential that the vegetation within the broader study area may contain habitat for the Dural Land Snail.

Due to the lack of important habitat features (i.e. hollow-bearing trees and intact native vegetation) the subject site is unlikely to support significant habitat for threatened fauna species. There is potential that highly mobile species such as threatened microbats and birds (e.g. Little Eagle) may utilise the area for occasional foraging or roosting.

No threatened flora species were recorded within the subject site during the field surveys. Furthermore, threatened flora are considered unlikely to occur within the subject site, due its predominately disturbed nature and thereby lack of potential habitat. Targeted surveys would be required to determine if the native vegetation within the broader study area contained threatened flora species.

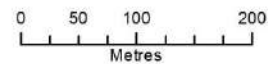
Vegetation Communities



Legend

- Subject Site
- Validated Vegetation (ELA 2015/2016)**
- Blue Gum High Forest (low condition)
- Exotics
- Native Planted
- Sydney Turpentine Ironbark Forest

- THSC 2008**
- Sydney Turpentine Ironbark Forest
- NPWS 2002**
- Blue Gum High Forest
- Sydney Turpentine Ironbark Forest
- Turpentine-Ironbark Margin Forest
- Western Sandstone Gully Forest
- Unclassified Vegetation



GDA 1994 MGA Zone 56



Prepared by: BH/VH Date: 19/02/2016

Figure 2: Vegetation communities

Constraints

An ecological constraint value was assigned to the subject site based on the information from both the desktop review and site inspections. The value relates to potential risk of the rezoning to be constrained by biodiversity. These ecological constraints have been mapped (**Figure 3**) and discussed in the table below.

Table 1: constraints assessment of the subject site

Constraint	Value present on site	Constraint ranking criteria	Recommendation
High	Blue Gum High Forest and Sydney Turpentine Ironbark Forest (both low condition)	<ul style="list-style-type: none"> vegetation communities listed as threatened under the TSC Act whilst not intact, vegetation supports characteristic species of these communities potential foraging habitat for threatened bird species (e.g. Little Eagle) and microbats 	<ul style="list-style-type: none"> retain vegetation if possible and consider assisted revegetation with diagnostic species for the ecological community minimise impacts during development design and construction phase including establishing a buffer area adjacent to the vegetation. it is noted that an interior road network will be required within the subject site to provide sufficient permeability. Should trees within these communities be required to be removed, an impact assessment should be undertaken at the subdivision stage when the road network and lot layout is finalised. educate local community on significance of these ecological communities and threatened species through interpretative signage
Moderate	Native vegetation with a canopy	<ul style="list-style-type: none"> potential foraging habitat for threatened fauna species corridor for native fauna dispersal 	<ul style="list-style-type: none"> retain native vegetation where possible incorporate into landscape planting design if possible
Moderate	Patch of native shrubs	<ul style="list-style-type: none"> contains some native resilience, although it does not represent a native vegetation community potential corridor or shelter for native fauna 	<ul style="list-style-type: none"> suitable for development
Moderate	Planted non-indigenous native vegetation	<ul style="list-style-type: none"> does not represent a native vegetation community potential corridor or shelter for native fauna 	<ul style="list-style-type: none"> suitable for development
Low	Farm dam	<ul style="list-style-type: none"> potential foraging habitat for microbats suitable habitat for native fauna species 	<ul style="list-style-type: none"> conduct dewatering plan and relocation of native fauna species prior to disturbance suitable for development
Low	Exotic vegetation	<ul style="list-style-type: none"> suitable foraging habitat for Little Eagle, microbats and migratory birds such as the Cattle Egret waterbodies support limited vegetation cover for fauna 	<ul style="list-style-type: none"> development should be confined to these areas wherever possible implement management techniques to prevent the dispersal of weed species into adjacent woodland areas particularly during construction

Constraint	Value present on site	Constraint ranking criteria	Recommendation
Low	Landscape gardens	<ul style="list-style-type: none"> • planted tree species • potential foraging habitat for fauna species such as birds, reptiles 	<ul style="list-style-type: none"> • suitable for development

Constraints



Legend

- Subject Site

Constraints

- High
- Moderate
- Low

0 50 100 200
Metres

GDA 1994 MGA Zone 56

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AUSTRALIA
www.ecoaus.com.au

Prepared by: BHV/H Date: 19/02/2016

Figure 3: Constraints assessment

Recommendations and conclusion

Three small patches of Blue Gum High Forest in low condition were recorded within the subject site. A small patch of Sydney Turpentine Ironbark Forest was recorded along Derriwong Road and may be impacted upon under the proposed rezoning. All the Blue Gum High Forest and Sydney Turpentine Ironbark Forest patches were considered to be in low condition as they contained low native species diversity, are highly fragmented and had high weed densities or contained an understorey dominated by exotic species.

The subject site had limited habitat for threatened fauna species. No threatened flora species were recorded within the subject site. According to the literature review and a brief visual inspection, the study area contains potential Blue Gum High Forest and Sydney Turpentine Ironbark Forest vegetation and potential habitat for threatened flora and fauna species. However, additional surveys would be required to validate the vegetation boundaries and confirm the presence of threatened species within the broader study area.

The following recommendations have been provided for the proposed rezoning of the subject site:

- Avoid impact to areas of high ecological constraint, if possible.
- If high ecologically constrained areas are to be impacted by future road networks or lot layouts, further investigations are to be undertaken at the subdivision stage.
- Consider implementing a Vegetation Management Plan (VMP) for the long-term conservation of Blue Gum High Forest and management of weeds to prevent their spread.
- Any plantings as part of future developments incorporate native species indigenous to the study area.
- Prepare a soil and erosion control plan as part of the Development Application process.

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APPENDIX A - Likelihood of occurrence

Searches of the Atlas of NSW Wildlife and EPBC Protected Matters search tool were performed for the study area, based on a 5 km buffer around the study area. Marine species (including whales, seabirds, turtles and seals) have been removed from the list as these species were not considered relevant to the current proposal. The likelihood of occurrence was considered for all listed species, and is provided for each species under the 'likely' column.

Each species likely occurrence was initially informed through a desktop assessment and was used to guide the site inspection. The final assessment of the likelihood of occurrence was completed following the site inspection and was based on database or other records, presence or absence of suitable habitat, features of the study area, results of the field survey and professional judgement.

The terms for likelihood of occurrence are defined below:

- “yes” = the species was or has been observed in the study area
- “likely” = a medium to high probability that a species uses the study area
- “potential” = suitable habitat for a species occurs in the study area, but there is insufficient information to categorise the species as likely to occur, or unlikely to occur
- “unlikely” = a very low to low probability that a species uses the study area, and
- “no” = habitat in the study area and in its vicinity is unsuitable for the species

Those species considered as potentially, likely or known to occur (likelihood of potential, likely or yes) are considered subject species for this project.

The following abbreviations have been used in the likelihood assessment:

- *TSC_Status* = Listing under the NSW Threatened Species Conservation Act 1995
- *EPBC_Status* = Listing under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999
- *CE* = Critically Endangered
- *E* = Endangered
- *E2* = Endangered Population
- *V* = Vulnerable
- *M* = Migratory

SCIENTIFIC NAME	COMMON NAME	TSC ACT	EPBC ACT	HABITAT ASSOCIATIONS	LIKELIHOOD OF OCCURRENCE
Ecological Communities					
Blue Gum High Forest in the Sydney Basin Bioregion	Blue Gum High Forest in the Sydney Basin	CE	CE	Occurs mainly in areas with deep clay soil derived from shale, generally at altitudes greater than 100 m above sea level, and that have an annual rainfall of more than 1050 mm. Also known to occur in isolated valleys on soils associated with localised volcanic intrusions. Remnants mainly occur in the Lane Cove, Willoughby, Ku-ring-gai, Hornsby, Baulkham Hills, Ryde and Parramatta local government areas.	Known
Castlereagh Scribbly Gum and Agnes Banks Woodlands of the Sydney Basin Bioregion	Castlereagh Scribbly Gum and Agnes Banks Woodlands of the Sydney Basin Bioregion	E	E	Occurs on sandy soils of Hawkesbury-Nepean river system typically with low nutrient value and flat topography. The vegetation community contains low woodland, canopy up to 15m tall and dense mid layer of sclerophyll shrubs and scattered sedges. Species include <i>Angophora bakeri</i> , <i>Eucalyptus racemosa</i> , <i>Melaleuca decora</i> and <i>Banksia aemula</i> .	No
Coastal Upland Swamps in the Sydney Basin Bioregion	Coastal Upland Swamps in the Sydney Basin Bioregion	E	E	This ecological community is restricted to the Sydney Basin Bioregion. It occurs on the Hawkesbury sandstone plateaux on acidic soils which are high in organic matter and subject to periodic waterlogging (OEH 2014). The structure of the vegetation may vary from tall open scrubs, tall closed scrubs, closed heaths, open graminoid heaths, sedgelands and fernlands (OEH 2014). This ecological community is associated with shallow groundwater aquifers in the headwaters and impeded drainage lines of streams, and on sandstone benches with abundant seepage moisture (OEH 2014). The floristic assemblage is diverse particularly in the ground layer (OEH 2014).	No
Cooks River/Castlereagh Ironbark Forest in the Sydney Basin Bioregion	Cooks River/Castlereagh Ironbark Forest in the Sydney Basin Bioregion	E	CE	Occurs in western Sydney, with the most extensive stands occurring in the Castlereagh and Holsworthy areas. Smaller remnants occur in the Kemps Creek area and in the eastern section of the Cumberland Plain.	No

SCIENTIFIC NAME	COMMON NAME	TSC ACT	EPBC ACT	HABITAT ASSOCIATIONS	LIKELIHOOD OF OCCURRENCE
Shale/Sandstone Transition Forest		CE	E	Occurs at the edges of the Cumberland Plain, where clay soils from the shale rock intergrade with earthy and sandy soils from sandstone, or where shale caps overlay sandstone. The boundaries are indistinct, and the species composition varies depending on the soil influences. It typically occurs in moderately wet sites, with an annual rainfall of 800-1100mm per year, and on clay soils derived from Wianamatta shale. The tree canopy is dominated by Turpentine and a variety of eucalypt species. Its distribution is mainly on the Cumberland Plain of the Sydney region. Was not recorded during the field surveys.	Potential outside the subject site
Turpentine-Ironbark Forest in the Sydney Basin Bioregion		E	CE	Occurs in areas of moderate annual rainfall 800 – 1100 mm on fertile soils of the Wianamatta Shale including altitude margins of the Cumberland Plain, and on the shale ridge caps of sandstone plateaus. It is distributed between areas of Blue Gum High Forest (which occurs on more fertile soils and higher rainfall areas) and Cumberland Plain Woodland (on flat areas, less fertile soils and less rainfall). Remnants mostly occur in the Baulkham Hills, Hornsby, Ku-ring-gai, Parramatta, Ryde, Sutherland and Hurstville local government areas (OEH 2014).	Known
Western Sydney Dry Rainforest and Moist Woodland on Shale		E	CE	A closed canopy often associated with humid conditions and supports epiphytes, vines and mesic shrubs although this varies according to topography and landform. It is found on shale soil in the Cumberland Plain Sub-region of the Sydney Basin Bioregion in elevations below 300m with a mean annual rainfall between 700-900mm.	No
FISH					
<i>Macquaria australasica</i>	Macquarie Perch	E (under FM Act)	E	Habitat for the Macquarie perch is bottom or mid-water in slow-flowing rivers with deep holes, typically in the upper reaches of forested catchments with intact riparian vegetation. Macquarie perch also do well in some upper catchment lakes. In some parts of its range, the species is reduced to taking refuge in small pools which persist in midland-upland areas through the drier summer periods.	No

SCIENTIFIC NAME	COMMON NAME	TSC ACT	EPBC ACT	HABITAT ASSOCIATIONS	LIKELIHOOD OF OCCURRENCE
<i>Prototroctes maraena</i>	Australian Grayling	-	V	Historically, this species occurred in coastal streams from the Grose River southwards through NSW, VIC and TAS. On mainland Australia, this species has been recorded from rivers flowing east and south of the main dividing ranges. This species spends only part of its lifecycle in freshwater, mainly inhabiting clear, gravel-bottomed streams with alternating pools and riffles, and granite outcrops but has also been found in muddy-bottomed, heavily silted habitat. Grayling migrate between freshwater streams and the ocean and as such it is generally accepted to be a diadromous (migratory between fresh and salt waters) species.	No
FROGS					
<i>Heleioporus australiacus</i>	Giant Burrowing Frog	V	V	Forages in woodlands, wet heath, dry and wet sclerophyll forest (Ehmann 1997). Associated with semi-permanent to ephemeral sand or rock based streams (Ehmann 1997), where the soil is soft and sandy so that burrows can be constructed (Environment Australia 2000).	Unlikely
<i>Litoria aurea</i>	Green and Golden Bell Frog	E	V	This species has been observed utilising a variety of natural and man-made waterbodies (Pyke and White 1996) such as coastal swamps, marshes, dune swales, lagoons, lakes, other estuary wetlands, riverine floodplain wetlands and billabongs, stormwater detention basins, farm dams, banded areas, drains, ditches and any other structure capable of storing water (OEH 2014). Fast flowing streams are not utilised for breeding purposes by this species. Preferable habitat for this species includes attributes such as shallow, still or slow flowing, permanent and/or widely fluctuating water bodies that are unpolluted and without heavy shading (OEH 2014). Large permanent swamps and ponds exhibiting well-established fringing vegetation (especially bulrushes— <i>Typha</i> sp. and spikerushes— <i>Eleocharis</i> sp.) adjacent to open grassland areas for foraging are preferable (Ehmann 1997). Ponds that are typically inhabited tend to be free from predatory fish such as <i>Gambusia holbrooki</i> (Mosquito Fish) (OEH 2014).	No

SCIENTIFIC NAME	COMMON NAME	TSC ACT	EPBC ACT	HABITAT ASSOCIATIONS	LIKELIHOOD OF OCCURRENCE
<i>Litoria littlejohni</i>	Littlejohn's Tree Frog, Heath Frog	V	V	<p>Littlejohn's Tree Frog has a distribution that includes the plateaus and eastern slopes of the Great Dividing Range from Watagan State Forest (90 km north of Sydney) south to Buchan in Victoria (OEH 2014). It occurs along permanent rocky streams with thick fringing vegetation associated with eucalypt woodlands and heaths among sandstone outcrops. It appears to be restricted to sandstone woodland and heath communities at mid to high altitude (OEH 2014). It forages both in the tree canopy and on the ground, and it has been observed sheltering under rocks on high exposed ridges during summer (OEH 2014). It hunts either in shrubs or on the ground. Breeding is triggered by heavy rain and can occur from late winter to autumn, but is most likely to occur in spring when conditions are favourable.</p> <p>Males call from low vegetation close to slow flowing pools. Eggs and tadpoles are mostly found in slow flowing pools that receive extended exposure to sunlight, but will also use temporary isolated pools (OEH 2014).</p>	No
<i>Mixophyes balbus</i>	Stuttering Frog	E	V	<p>A variety of forest habitats from rainforest through wet and moist sclerophyll forest to riparian habitat in dry sclerophyll forest (OEH 2014) that are generally characterised by deep leaf litter or thick cover from understorey vegetation (Ehmann 1997). Breeding habitats are streams and occasionally springs. Not known from streams disturbed by humans (Ehmann 1997) or still water environments (NSW Scientific Committee 2002).</p>	No

SCIENTIFIC NAME	COMMON NAME	TSC ACT	EPBC ACT	HABITAT ASSOCIATIONS	LIKELIHOOD OF OCCURRENCE
<i>Pseudophryne australis</i>	Red-crowned Toadlet	V	-	Red-crowned Toadlets are found in steep escarpment areas and plateaus, as well as low undulating ranges with benched outcroppings on Triassic sandstones of the Sydney Basin (OEH 2014). Within these geological formations, this species mainly occupies the upper parts of ridges, usually being restricted to within about 100 metres of the ridgetop. However they may also occur on plateaus or more level rock platforms along the ridgetop (OEH 2014). Associated with open forest to coastal heath (Ehmann 1997). Utilises small ephemeral drainage lines which feed water from the top of the ridge to the perennial creeks below for breeding, and are not usually found in the vicinity of permanent water (Ehmann 1997). Breeding sites are often characterised by clay-derived soils and generally found below the first sandstone escarpment in the talus slope (NPWS 1997).	Unlikely
DIURNAL BIRDS					
<i>Anthochaera phrygia</i> (aka <i>Xanthomyza phrygia</i>)	Regent Honeyeater	E	E and M	Associated with temperate eucalypt woodland and open forest including forest edges, wooded farmland and urban areas with mature eucalypts, and riparian forests of River Oak (<i>Casuarina cunninghamiana</i>) (Garnett 1993). Areas containing Swamp Mahogany (<i>Eucalyptus robusta</i>) in coastal areas have been observed to be utilised (NPWS 1997). The Regent Honeyeater primarily feeds on nectar from box and ironbark eucalypts and occasionally from banksias and mistletoes (NPWS 1995). As such it is reliant on locally abundant nectar sources with different flowering times to provide reliable supply of nectar (Environment Australia 2000).	Unlikely
<i>Botaurus poiciloptilus</i>	Australasian Bittern	V	-	Terrestrial wetlands with tall dense vegetation, occasionally estuarine habitats (Marchant and Higgins 1993). Reedbeds, swamps, streams, estuaries (Simpson and Day 2004).	No
<i>Callocephalon fimbriatum</i>	Gang-gang Cockatoo (population in Hornsby and Ku-ring-gai LGAs)	V-E2	-	During summer in dense, tall, wet forests of mountains and gullies, alpine woodlands (Morcombe 2004). In winter they occur at lower altitudes in drier more open forests and woodlands, particularly box-ironbark assemblages (Shields and Chrome 1992). They sometimes inhabit woodland, farms and suburbs in autumn/winter (Simpson and Day 2004).	Potential

SCIENTIFIC NAME	COMMON NAME	TSC ACT	EPBC ACT	HABITAT ASSOCIATIONS	LIKELIHOOD OF OCCURRENCE
<i>Calyptorhynchus lathamii</i>	Glossy Black-Cockatoo	V	-	Associated with a variety of forest types containing <i>Allocasuarina</i> species, usually reflecting the poor nutrient status of underlying soils (Environment Australia 2000; NPWS 1997; OEH 2014). Intact drier forest types with less rugged landscapes are preferred (OEH 2014). Nests in large trees with large hollows (Environment Australia 2000).	No
<i>Daphoenositta chrysoptera</i>	Varied Sittella	V	-	Distribution includes most of mainland Australia except deserts and open grasslands. Prefers eucalypt forests and woodlands with rough-barked species, or mature smooth-barked gums with dead branches, mallee and Acacia woodland. Feeds on arthropods from bark, dead branches, or small branches and twigs.	Potential
<i>Dasyornis brachypterus</i>	Eastern Bristlebird	E	E	Habitat is characterised by dense, low vegetation including heath and open woodland with a heathy understorey; in northern NSW occurs in open forest with tussocky grass understorey; all of these vegetation types are fire prone. Age of habitat since fires (fire-age) is of paramount importance to this species; Illawarra and southern populations reach maximum densities in habitat that has not been burnt for at least 15 years; however, in the northern NSW population a lack of fire in grassy forest may be detrimental as grassy tussock nesting habitat becomes unsuitable after long periods without fire; northern NSW birds are usually found in habitats burnt five to 10 years previously.	No
<i>Glossopsitta pusilla</i>	Little Lorikeet	V	-	In New South Wales Little Lorikeets are distributed in forests and woodlands from the coast to the western slopes of the Great Dividing Range, extending westwards to the vicinity of Albury, Parkes, Dubbo and Narrabri. Little Lorikeets mostly occur in dry, open eucalypt forests and woodlands. They have been recorded from both old-growth and logged forests in the eastern part of their range, and in remnant woodland patches and roadside vegetation on the western slopes. They feed primarily on nectar and pollen in the tree canopy, particularly on profusely-flowering eucalypts, but also on a variety of other species including melaleucas and mistletoes. On the western slopes and tablelands White Box <i>Eucalyptus albens</i> and Yellow Box <i>E. melliodora</i> are particularly important food sources for pollen and nectar respectively.	Potential

SCIENTIFIC NAME	COMMON NAME	TSC ACT	EPBC ACT	HABITAT ASSOCIATIONS	LIKELIHOOD OF OCCURRENCE
<i>Hieraaetus morphnoides</i>	Little Eagle	V	—	The Little Eagle is widespread in mainland Australia, central and eastern New Guinea. The Little Eagle is seen over woodland and forested The population of Little Eagle in NSW is considered to be a single population (OEH 2014). This species was recently listed as vulnerable due to a moderate reduction in population size based on geographic distribution and habitat quality (OEH 2014).lands and open country, extending into the arid zone. It tends to avoid rainforest and heavy forest (OEH 2014).	Potential
<i>Lathamus discolor</i>	Swift Parrot	E	E	Breeds in Tasmania between September and January. Migrates to mainland in autumn, where it forages on profuse flowering Eucalypts (Blakers <i>et al.</i> 1984; Schodde and Tidemann 1986). Hence, in this region, autumn and winter flowering eucalypts are important for this species. Favoured feed trees include winter flowering species such as Swamp Mahogany (<i>Eucalyptus robusta</i>), Spotted Gum (<i>Corymbia maculata</i>), Red Bloodwood (<i>C. gummifera</i>), Mugga Ironbark (<i>E. sideroxyton</i>), and White Box (<i>E. albens</i>) (OEH 2014). Predominantly associated with box-ironbark association woodlands and River Red Gum (NSW Scientific Committee 2001). Also associated with drier coastal woodlands of the Cumberland Plain and the Hunter, Richmond and Clarence Valleys (NSW Scientific Committee 2001).	Unlikely
<i>Melithreptus gularis gularis</i>	Black-chinned Honeyeater (eastern subspecies)	V	-	Occurs from the coast to the inland slopes in NSW. After breeding (July-Jan), some disperse to the lower valleys and plains of the tablelands and slopes, and may appear as far west as the eastern edges of the inland plains in autumn and winter. Primarily resides in dry eucalypt forests and woodlands, with usually open and grassy understorey, with scattered shrubs. Abundant logs and fallen timber are important habitat components. In autumn and winter many Scarlet Robins live in open grassy woodlands, and grasslands or grazed paddocks with scattered trees, and may join mixed flocks of other small insectivorous birds.	Unlikely
<i>Petroica boodang</i>	Scarlet Robin	V	-	Flame Robins are found in a broad coastal band around the south-east corner of the Australian mainland, from southern Queensland to just west of the South Australian border. The species is also found in Tasmania. Flame Robins prefer forests and woodlands up to about 1800 m above sea level.	Unlikely

SCIENTIFIC NAME	COMMON NAME	TSC ACT	EPBC ACT	HABITAT ASSOCIATIONS	LIKELIHOOD OF OCCURRENCE
<i>Rostratula australis</i> (a.k.a. <i>R. benghalensis</i>)	Painted Snipe (Australian subspecies)	E	V	Prefers fringes of swamps, dams and nearby marshy areas where there is a cover of grasses, lignum, low scrub or open timber (OEH 2014). Nests on the ground amongst tall vegetation, such as grasses, tussocks or reeds (ibid.). Breeding is often in response to local conditions; generally occurs from September to December (OEH 2014). Roosts during the day in dense vegetation (NSW Scientific Committee 2004). Forages nocturnally on mud-flats and in shallow water (OEH 2014). Feeds on worms, molluscs, insects and some plant-matter (ibid.).	Unlikely
<i>Stagonopleura guttata</i>	Diamond Firetail	V	—	Typically found in grassy eucalypt woodlands, but also occurs in open forest, mallee, Natural Temperate Grassland, and in secondary grassland derived from other communities (OEH 2014). It is often found in riparian areas and sometimes in lightly wooded farmland (OEH 2014). Appears to be sedentary, though some populations move locally, especially those in the south (OEH 2014).	Unlikely
NOCTURNAL BIRDS					
<i>Ninox connivens</i>	Barking Owl	V	-	Associated with a variety of habitats such as savanna woodland, open eucalypt forests, wetland and riverine forest. The habitat is typically dominated by Eucalypts (often Redgum species), however often roosts in dense foliage in large trees such as River She-oak (<i>Allocasuarina cunninghamiana</i>), other Casuarina and Allocasuarina, eucalypts, Angophora, Acacia and rainforest species from streamside gallery forests. It usually nests near watercourses or wetlands in large tree hollows with entrances averaging 2-29 metres above ground, depending on the forest or woodland structure and the canopy height (Debus 1997).	Unlikely
<i>Ninox strenua</i>	Powerful Owl	V	-	Powerful Owls are associated with a wide range of wet and dry forest types with a high density of prey, such as arboreal mammals, large birds and flying foxes (Environment Australia 2000). Large trees with hollows at least 0.5m deep are required for shelter and breeding (Environment Australia 2000).	Potential

SCIENTIFIC NAME	COMMON NAME	TSC ACT	EPBC ACT	HABITAT ASSOCIATIONS	LIKELIHOOD OF OCCURRENCE
<i>Tyto novaehollandiae</i>	Masked Owl	V	-	Associated with forest with sparse, open, understorey, typically dry sclerophyll forest and woodland (OEH 2014) and especially the ecotone between wet and dry forest, and non-forest habitat (Environment Australia 2000). Known to utilise forest margins and isolated stands of trees within agricultural land and heavily disturbed forest where its prey of small and medium sized mammals can be readily obtained.	Unlikely
<i>Tyto tenebricosa</i>	Sooty Owl	V	-	Sooty Owls are associated with tall wet old growth forest on fertile soil with a dense understorey and emergent tall Eucalyptus species (Environment Australia 2000). Pairs roost in the daytime amongst dense vegetation, in tree hollows and sometimes in caves. The Sooty Owl is typically associated with an abundant and diverse supply of prey items and a selection of large tree hollows (Garnett 1993).	Unlikely
MAMMALS (EXCLUDING BATS)					
<i>Dasyurus maculatus</i> <i>Dasyurus maculatus maculatus</i>	Spotted-tailed Quoll Spotted-tailed Quoll (SE Mainland Population)	V -	- E	The Spotted-tailed Quoll inhabits a range of forest communities including wet and dry sclerophyll forests, coastal heathlands and rainforests (OEH 2014), more frequently recorded near the ecotones of closed and open forest. This species requires habitat features such as maternal den sites, an abundance of food (birds and small mammals) and large areas of relatively intact vegetation to forage in (OEH 2014). Maternal den sites are logs with cryptic entrances; rock outcrops; windrows; burrows (Environment Australia 2000).	Unlikely
<i>Isoodon obselus</i> <i>obselus</i>	Southern Brown Bandicoot	V	E	This species is associated with heath, coastal scrub, sedgeland, heathy forests, shrubland and woodland on well drained, infertile soils, within which they are typically found in areas of dense ground cover. Suitable habitat includes patches of native or exotic vegetation which contain understorey vegetation structure with 50–80% average foliage density in the 0.2–1 m height range. This species is thought to display a preference for newly regenerating heathland and other areas prone to fire, but requires a mosaic of burnt and unburnt areas for survival.	Unlikely
<i>Petrogale penicillata</i>	Brush-tailed Rock-wallaby	E	V	Rocky areas in a variety of habitats, typically north facing sites with numerous ledges, caves and crevices (Strahan 1998).	No

SCIENTIFIC NAME	COMMON NAME	TSC ACT	EPBC ACT	HABITAT ASSOCIATIONS	LIKELIHOOD OF OCCURRENCE
<i>Phascolarctos cinereus</i>	Koala	V-E2	-	Associated with both wet and dry Eucalypt forest and woodland that contains a canopy cover of approximately 10 to 70% (Reed et al. 1990), with acceptable Eucalypt food trees. Some preferred Eucalyptus species are: <i>Eucalyptus tereticornis</i> , <i>E. punctata</i> , <i>E. cypellocarpa</i> , <i>E. viminalis</i>	Unlikely
<i>Pseudomys novaehollandiae</i>	New Holland Mouse	-	V	A small burrowing native rodent with a fragmented distribution across Tasmania, Victoria, New South Wales and Queensland. Inhabits open heathlands, open woodlands with a heathland understorey and vegetated sand dunes. A social animal, living predominantly in burrows shared with other individuals. The home range of the New Holland Mouse ranges from 0.44 ha to 1.4 ha and the species peaks in abundance during early to mid-stages of vegetation succession typically induced by fire	No
MAMMALS (BATS)					
<i>Chalinolobus dwyeri</i>	Large-eared Pied Bat	V	V	The Large-eared Pied Bat has been recorded in a variety of habitats, including dry sclerophyll forests, woodland, sub-alpine woodland, edges of rainforests and wet sclerophyll forests (Churchill 1998; OEH 2014). This species roosts in caves, rock overhangs and disused mine shafts and as such is usually associated with rock outcrops and cliff faces (Churchill 1998; OEH 2014).	Unlikely
<i>Falsistrellus tasmaniensis</i>	Eastern False Pipistrelle	V	—	Prefers moist habitats with trees taller than 20m (OEH 2014). Roosts in tree hollows but has also been found roosting in buildings or under loose bark (OEH 2014).	Potential
<i>Miniopterus australis</i>	Little Bent-wing Bat	V	-	Prefers well-timbered areas including rainforest, wet and dry sclerophyll forests, Melaleuca swamps and coastal forests (Churchill 1998). This species shelter in a range of structures including culverts, drains, mines and caves (Environment Australia 2000). Relatively large areas of dense vegetation of either wet sclerophyll forest, rainforest or dense coastal banksia scrub are usually found adjacent to caves in which this species is found (OEH 2014). Breeding occurs in caves, usually in association with <i>M. schreibersii</i> (Environment Australia 2000, OEH 2014).	Potential

SCIENTIFIC NAME	COMMON NAME	TSC ACT	EPBC ACT	HABITAT ASSOCIATIONS	LIKELIHOOD OF OCCURRENCE
<i>Miniopterus schreibersii oceanensis</i>	Eastern Bent-wing Bat	V	-	Associated with a range of habitats such as rainforest, wet and dry sclerophyll forest, monsoon forest, open woodland, paperbark forests and open grassland (Churchill 1998). It forages above and below the tree canopy on small insects (Dwyer 1995). Will utilise caves, old mines, and stormwater channels, under bridges and occasionally buildings for shelter (Environment Australia 2000, Dwyer 1995).	Potential
<i>Mormopterus norfolkensis</i>	East Coast Freetail Bat	V	-	Most records of this species are from dry eucalypt forest and woodland east of the Great Dividing Range (Churchill 1998). Individuals have, however, been recorded flying low over a rocky river in rainforest and wet sclerophyll forest and foraging in clearings at forest edges (Environment Australia 2000; Allison and Hoyer 1998). Primarily roosts in hollows or behind loose bark in mature eucalypts, but have been observed roosting in the roof of a hut (Environment Australia 2000; Allison and Hoyer 1998).	Potential
<i>Myotis macropus</i>	Southern Myotis	V	-	The Large-footed Myotis is found in the coastal band from the north-west of Australia, across the top-end and south to western Victoria. It is rarely found more than 100 km inland, except along major rivers. Will occupy most habitat types such as mangroves, paperbark swamps, riverine monsoon forest, rainforest, wet and dry sclerophyll forest, open woodland and River Red Gum woodland, as long as they are close to water (Churchill 1998). While roosting (in groups of 10-15) is most commonly associated with caves, this species has been observed to roost in tree hollows, amongst vegetation, in clumps of Pandanus, under bridges, in mines, tunnels and stormwater drains (Churchill 1998). However the species apparently has specific roost requirements, and only a small percentage of available caves, mines, tunnels and culverts are used (Richards 1998). Forages over streams and pools catching insects and small fish by raking their feet across the water surface. In NSW females have one young each year usually in November or December (OEH 2014)	Potential
<i>Pteropus poliocephalus</i>	Grey-headed Flying-Fox	V	V	Inhabits a wide range of habitats including rainforest, mangroves, paperbark forests, wet and dry sclerophyll forests and cultivated areas (Churchill 1998). Camps are often located in gullies, typically close to water, in vegetation with a dense canopy (Churchill 1998).	Potential

SCIENTIFIC NAME	COMMON NAME	TSC ACT	EPBC ACT	HABITAT ASSOCIATIONS	LIKELIHOOD OF OCCURRENCE
<i>Saccolaimus flaviventris</i>	Yellow-bellied Sheath-tail-bat	V	-	Found in almost all habitats, from wet and dry sclerophyll forest, open woodland (Churchill 1998), open country, mallee, rainforests, heathland and waterbodies. Roosts in tree hollows; may also use caves; has also been recorded in a tree hollow in a paddock (Environment Australia 2000) and in abandoned sugar glider nests (Churchill 1998). The Yellow-bellied Sheath-tail-bat is dependent on suitable hollow-bearing trees to provide roost sites, which may be a limiting factor on populations in cleared or fragmented habitats (Environment Australia 2000).	Potential
<i>Scoteanax rueppellii</i>	Greater Broad-nosed Bat	V	-	Associated with moist gullies in mature coastal forest, or rainforest, east of the Great Dividing Range (Churchill 1998), tending to be more frequently located in more productive forests (Hoye and Richards 1998). Within denser vegetation types, use is made of natural and man-made openings such as roads, creeks and small rivers, where it hawks backwards and forwards for prey (Hoye and Richards 1998).	Unlikely
INVERTEBRATE					
<i>Meridolum corneovirens</i>	Cumberland Plain Land Snail	V	-	Associated with open eucalypt forests, particularly Cumberland Plain Woodland. Found under fallen logs, debris and in bark and leaf litter around the trunk of gum trees or burrowing in loose soil around clumps of grass, or rubbish (NPWS 1997).	Unlikely
<i>Pommerhelix duralensis</i>	Dural Woodland Snail	-	E	This species is endemic to NSW. It has a narrow distribution and its habitat is specifically shale-influenced which occur along the transition of shale-sandstone landscape (TSCC 2014). Its known distribution ranges from St Albans. Moving southwest from St Albans, East Kurradjong and along the footslopes of the Blue Mountains as far south as Mulgoa (TSCC 2014).	Potential

SCIENTIFIC NAME	COMMON NAME	TSC ACT	EPBC ACT	HABITAT ASSOCIATIONS	LIKELIHOOD OF OCCURRENCE
REPTILE					
<i>Hoplocephalus bungaroides</i>	Broad-headed Snake	E	V	Typical sites consist of exposed sandstone outcrops and benching where the vegetation is predominantly woodland, open woodland and/or heath on Triassic sandstone of the Sydney Basin (OEH 2014). They utilise rock crevices and exfoliating sheets of weathered sandstone during the cooler months and tree hollows during summer (Webb and Shine 1998). Some of the canopy tree species found to regularly co-occur at known sites include <i>Corymbia eximia</i> , <i>C. gummifera</i> , <i>Eucalyptus sieberi</i> , <i>E. punctata</i> and <i>E. piperita</i> (OEH 2014).	No
MIGRATORY TERRESTRIAL SPECIES LISTED UNDER EPBC ACT					
<i>Apus pacificus</i>	Fork-tailed Swift	-	M	Sometimes travels with Needletails. Varied habitat with a possible tendency to more arid areas but also over coasts and urban areas (Simpson and Day 1999).	Unlikely
<i>Hirundapus caudacutus</i>	White-throated Needletail	-	M	Forages aerially over a variety of habitats usually over coastal and mountain areas, most likely with a preference for wooded areas (Marchant and Higgins 1993; Simpson and Day 1999). Has been observed roosting in dense foliage of canopy trees, and may seek refuge in tree hollows in inclement weather (Marchant and Higgins 1993).	Potential
<i>Merops ornatus</i>	Rainbow Bee-eater	-	M	Resident in coastal and subcoastal northern Australia; regular breeding migrant in southern Australia, arriving September to October, departing February to March, some occasionally present April to May. Occurs in open country, chiefly at suitable breeding places in areas of sandy or loamy soil: sand-ridges, riverbanks, road-cuttings, sand-pits, occasionally coastal cliffs (Ibid). Nest is a chamber at the end of a burrow, up to 1.6 m long, tunneled in flat or sloping ground, sandy back or cutting.	Unlikely
<i>Monarcha melanopsis</i>	Black-faced Monarch	-	M	Rainforest and eucalypt forests, feeding in tangled understorey.	Unlikely
<i>Monarcha trivirgatus</i>	Spectacled Monarch	—	M	Wet forests, mangroves (Simpson and Day 1999).	Unlikely
<i>Myiagra cyanoleuca</i>	Satin Flycatcher	-	M	Wetter, denser forest, often at high elevations (Simpson and Day 2004).	Unlikely

SCIENTIFIC NAME	COMMON NAME	TSC ACT	EPBC ACT	HABITAT ASSOCIATIONS	LIKELIHOOD OF OCCURRENCE
<i>Rhipidura rufifrons</i>	Rufous Fantail	-	M	The Rufous Fantail is a summer breeding migrant to southeastern Australia (Morcombe 2004). The Rufous Fantail is found in rainforest, dense wet eucalypt and monsoon forests, paperbark and mangrove swamps and riverside vegetation (Morcombe 2004). Open country may be used by the Rufous Fantail during migration (Morcombe 2004).	Unlikely
<i>Xanthomyza phrygia</i>	Regent Honeyeater	E	E, M	SEE DIURNAL BIRDS ABOVE	See diurnal birds above
MIGRATORY WETLAND SPECIES LISTED UNDER EPBC ACT					
<i>Ardea alba</i>	Great Egret	-	M	The Great Egret is common and widespread in Australia (McKilligan 2005). The Eastern Great Egret has been reported in a wide range of wetland habitats (for example inland and coastal, freshwater and saline, permanent and ephemeral, open and vegetated, large and small, natural and artificial). These include swamps and marshes; margins of rivers and lakes; damp or flooded grasslands, pastures or agricultural lands; reservoirs; sewage treatment ponds; drainage channels; salt pans and salt lakes; salt marshes; estuarine mudflats, tidal streams; mangrove swamps; coastal lagoons; and offshore reefs (Marchant and Higgins 1993; Martínez-Vilalta and Motis 1992). The species usually frequents shallow waters. It forages in a wide range of wet and dry habitats including permanent and ephemeral freshwaters, wet pasture and estuarine mangroves and mudflats (McKilligan 2005).	Potential
<i>Ardea ibis</i>	Cattle Egret	-	M	Cattle Egrets forage on pasture, marsh, grassy road verges, rain puddles and croplands, but not usually in the open water of streams or lakes and they avoid marine environments (McKilligan 2005). Some individuals stay close to the natal heronry from one nesting season to the next, but the majority leave the district in autumn and return the next spring. Cattle Egrets are likely to spend the winter dispersed along the coastal plain and only a small number have been recovered west of the Great Dividing Range (McKilligan 2005).	Yes

SCIENTIFIC NAME	COMMON NAME	TSC ACT	EPBC ACT	HABITAT ASSOCIATIONS	LIKELIHOOD OF OCCURRENCE
<i>Gallinago hardwickii</i>	Latham's Snipe	-	M	A variety of permanent and ephemeral wetlands, preferring open fresh water wetlands with nearby cover (Marchant and Higgins 1993). Occupies a variety of vegetation around wetlands (Marchant and Higgins 1993) including wetland grasses and open wooded swamps (Simpson and Day 1999). Latham's Snipe sometimes occur in habitats that have saline or brackish water, such as saltmarsh, mangrove creeks, around bays and beaches, and at tidal rivers. These habitats are most commonly used when the birds are on migration. They are regularly recorded in or around modified or artificial habitats including pasture, ploughed paddocks, irrigation channels and drainage ditches, ricefields, orchards, saltworks, and sewage and dairy farms. They can also occur in various sites close to humans or human activity (e.g. near roads, railways, airfields, commercial or industrial complexes).	No
<i>Pandion cristatus</i> (<i>Pandion haliaetus</i>)	Eastern Osprey	V	Ma, M	Associated with waterbodies including coastal waters, inlets, lakes, estuaries, beaches, offshore islands and sometimes along inland rivers (Schodde and Tidemann 1986). Osprey may nest on the ground, on sea cliffs or in trees. Osprey generally prefer emergent trees, often dead or partly dead with a broken off crown.	Unlikely
<i>Rostratula benghalensis</i> (a.k.a. <i>R. australis</i>)	Painted Snipe	-	M	See: <i>Rostratula australis</i>	No
FLORA SPECIES					
<i>Acacia bynoeana</i>	Bynoe's Wattle	E	V	<i>Acacia bynoeana</i> is found in central eastern NSW, from the Hunter District (Morisset) south to the Southern Highlands and west to the Blue Mountains, and has recently been found in the Colymea and Parma Creek areas west of Nowra. It is found in heath and dry sclerophyll forest, typically on a sand or sandy clay substrate, often with ironstone gravels (OEH 2014).	No
<i>Acacia gordonii</i>	-	E	E	<i>Acacia gordonii</i> is restricted to the north-west of Sydney, occurring in the lower Blue Mountains in the west, and in the Maroota/Glenorie area in the east, within the Hawkesbury, Blue Mountains and Baulkham Hills local government areas. Grows in dry sclerophyll forest and heathlands amongst or within rock platforms on sandstone outcrops (OEH 2014).	No

SCIENTIFIC NAME	COMMON NAME	TSC ACT	EPBC ACT	HABITAT ASSOCIATIONS	LIKELIHOOD OF OCCURRENCE
<i>Acacia pubescens</i>	Downy Wattle	V	V	<i>Acacia pubescens</i> occurs on the NSW Central Coast in Western Sydney, mainly in the Bankstown-Fairfield-Rookwood area and the Pitt Town area, with outliers occurring at Barden Ridge, Oakdale and Mountain Lagoon. It is associated with Cumberland Plains Woodlands, Shale / Gravel Forest and Shale / Sandstone Transition Forest growing on clay soils, often with ironstone gravel (NPWS 1997; Benson and McDougall 1994).	Potential
<i>Allocasuarina glauca</i>	-	E	E	<i>Allocasuarina glauca</i> is primarily restricted to the Richmond district on the north-west Cumberland Plain, with an outlier population found at Voyager Point. It grows in Castlereagh woodland on lateritic soil (OEH 2014).	Unlikely
<i>Asterolasia elegans</i>	<i>Asterolasia elegans</i>	E	E	<i>Asterolasia elegans</i> is restricted to a few localities on the NSW Central Coast north of Sydney, in the Baulkham Hills, Hawkesbury and Hornsby LGAs. It is found in sheltered forests on mid- to lower slopes and valleys, in or adjacent to gullies (OEH 2014).	Unlikely
<i>Cryptostylis hunteriana</i>	Leafless Tongue Orchid	V	V	<i>Cryptostylis hunteriana</i> is known from a range of vegetation communities including swamp-heath and woodland (OEH 2014). The larger populations typically occur in woodland dominated by Scribbly Gum (<i>Eucalyptus sclerophylla</i>), Silvertop Ash (<i>E. sieberi</i>), Red Bloodwood (<i>Corymbia gummifera</i>) and Black Sheoak (<i>Allocasuarina littoralis</i>); where it appears to prefer open areas in the understorey of this community and is often found in association with the Large Tongue Orchid (<i>C. subulata</i>) and the Tartan Tongue Orchid (<i>C. erecta</i>) (OEH 2014).	Unlikely
<i>Darwinia biflora</i>	<i>Darwinia biflora</i>	V	V	<i>Darwinia biflora</i> is an erect or spreading shrub to 80 cm high associated with habitats where weathered shale capped ridges intergrade with Hawkesbury Sandstone, where soils have a high clay content (NPWS 1997).	Potential
<i>Darwinia peduncularis</i>	<i>Darwinia peduncularis</i>	V		<i>Darwinia peduncularis</i> occurs as local disjunct populations in coastal NSW in the Blue Mountains, Brooklyn, Berowra, Galston Gorge, Hornsby, Bargo River, Glen Davis, Mount Boonbourwa and Kings Tableland, and usually grows on or near rocky outcrops on sandy, well drained, low nutrient soil over sandstone (OEH 2014).	Unlikely

SCIENTIFIC NAME	COMMON NAME	TSC ACT	EPBC ACT	HABITAT ASSOCIATIONS	LIKELIHOOD OF OCCURRENCE
<i>Epacris purpurascens</i> var. <i>purpurascens</i>	<i>Epacris purpurascens</i> var. <i>purpurascens</i>	V	-	<i>Epacris purpurascens</i> var. <i>purpurascens</i> has been recorded between Gosford in the north to Avon Dam in the south, in a range of habitats, but most have a strong shale soil influence (OEH 2014).	Potential
<i>Eucalyptus camfieldii</i>	Camfield's Stringybark	V	V	<i>Eucalyptus camfieldii</i> is associated with shallow sandy soils bordering coastal heath with other stunted or mallee eucalypts, often in areas with restricted drainage and in areas with laterite influenced soils, thought to be associated with proximity to shale (OEH 2014).	Unlikely
<i>Eucalyptus nicholii</i>	Narrow-leaved Peppermint	V	V	<i>Eucalyptus nicholii</i> naturally occurs in the New England Tablelands of NSW, where it occurs from Nundle to north of Tenterfield. Grows in dry grassy woodland, on shallow and infertile soils, mainly on granite (OEH 2014). This species is widely planted as an urban street tree and in gardens but is quite rare in the wild (OEH 2014). Plantings undertaken for horticultural and aesthetic purposes are not considered threatened species under the TSC Act.	No
<i>Eucalyptus scoparia</i>	Wallangarra White Gum	E	V	Known in NSW only from the Tenterfield district where it is very uncommon. Grows on rocky hillsides in shrubby woodland close to granite outcrops.	No
<i>Eucalyptus</i> sp. Cattai	<i>Eucalyptus</i> sp. Cattai	E	-	<i>Eucalyptus</i> sp. Cattai occurs in the area between Colo Heights and Castle Hill, north western Sydney. It occurs as a rare emergent in scrub, heath and low woodland on sandy soils, usually as isolated individuals or occasionally in small groups. The sites at which it occurs are generally flat and on ridge tops and associated soils are laterised clays overlying sandstone (OEH 2014).	No

SCIENTIFIC NAME	COMMON NAME	TSC ACT	EPBC ACT	HABITAT ASSOCIATIONS	LIKELIHOOD OF OCCURRENCE
<i>Galium australe</i>	Tangled Bedstraw	E		<i>Galium australe</i> is known from the Towamba Valley near Bega, Lake Yarrunga near Kangaroo Valley, Cullendulla Creek Nature Reserve near Batemans Bay, Conjola National Park, Swan Lake near Swanhaven, and the Big Hole in Deua National Park. Tangled Bedstraw was recorded historically from the Clyde River near Batemans Bay and the Mongarlowe area near Braidwood (OEH 2014). The species also occurs beside Lake Windemere in Jervis Bay, is widespread in Victoria and is also found in South Australia and Tasmania (OEH 2014). In NSW <i>Galium australe</i> has been found in moist gullies of tall forest, <i>Eucalyptus tereticornis</i> forest, coastal <i>Banksia</i> shrubland, and <i>Allocasuarina nana</i> heathland, while in other states the species is found in a range of near-coastal habitats, including sand dunes, sand spits, shrubland and woodland.	Unlikely
<i>Genoplesium baueri</i>	Bauer's Midge Orchid	V		Known from coastal areas from northern Sydney south to the Nowra district. Previous records from the Hunter Valley and Nelson Bay are now thought to be erroneous. Grows in shrubby woodland in open forest on shallow sandy soils.	Unlikely
<i>Grammitis stenophylla</i>	Narrow-leaf Finger Fern	E		In NSW, <i>Grammitis stenophylla</i> has been found on the south, central and north coasts, and as far west as Mount Kaputar National Park near Narrabri, in moist places, usually near streams, on rocks or in trees, in rainforest and moist eucalypt forest (OEH 2014).	Unlikely
<i>Hibbertia superans</i>	-	E	-	<i>Hibbertia superans</i> mainly occurs in the north west Sydney region between Baulkham Hills and Wisemans Ferry, with a disjunct occurrence near Mt Boss (inland from Kempsey) on the Mid North Coast of NSW. In the Sydney region it occurs in dry sclerophyll forest on sandstone ridgetops while the northern occurrence is on granite (OEH 2014).	Potential
<i>Lasiopetalum joyceae</i>	<i>Lasiopetalum joyceae</i>	V	V	<i>Lasiopetalum joyceae</i> grows in ridgetop woodland, heath, woodland or open scrub, often with a clay influence (NPWS 1997).	Unlikely

SCIENTIFIC NAME	COMMON NAME	TSC ACT	EPBC ACT	HABITAT ASSOCIATIONS	LIKELIHOOD OF OCCURRENCE
<i>Leptospermum deanei</i>	Deane's Tea-tree	V	V	<i>Leptospermum deanei</i> has been recorded in Hornsby, Warringah, Ku-ring-gai and Ryde LGAs, in woodland on lower hill slopes or near creeks, at sites with sandy alluvial soil or sand over sandstone (OEH 2014). It has also been recorded in riparian scrub dominated by <i>Tristaniopsis laurina</i> and <i>Baeckea myrtifolia</i> ; woodland dominated by <i>Eucalyptus haemastoma</i> ; and open forest dominated by <i>Angophora costata</i> , <i>Leptospermum trinervium</i> and <i>Banksia ericifolia</i> (OEH 2014).	Unlikely
<i>Leucopogon fletcheri</i> subsp. <i>fletcheri</i>	<i>Leucopogon fletcheri</i> subsp. <i>fletcheri</i>	E	-	<i>Leucopogon fletcheri</i> subsp. <i>fletcheri</i> is restricted to north-western Sydney between St Albans in the north and Annangrove in the south, within the local government areas of Hawkesbury, Baulkham Hills and Blue Mountains. It occurs in dry eucalypt woodland or in shrubland on clayey lateritic soils, generally on flat to gently sloping terrain along ridges and spurs (OEH 2014).	No
<i>Melaleuca biconvexa</i>	Biconvex Paperbark	V	V	<i>Melaleuca biconvexa</i> occurs in coastal districts and adjacent tablelands from Jervis Bay north to the Port Macquarie district. It grows in damp places often near streams.	No
<i>Melaleuca deanei</i>	Deane's Paperbark	V	V	Found in heath on sandstone (OEH 2014), and also associated with woodland on broad ridge tops and slopes on sandy loam and lateritic soils (Benson and McDougall 1998).	Potential
<i>Pelargonium</i> sp. <i>Striatellum</i>	Omeo Stork's-bill	E	E	In NSW, <i>Pelargonium</i> sp. (G.W. Carr 10345) is known from the Southern Tablelands. Otherwise, only known from the shores of Lake Omeo near Benambra in Victoria where it grows in cracking clay soil that is probably occasionally flooded.	No
<i>Persoonia hirsuta</i>	Hairy Geebung	E	E	<i>Persoonia hirsuta</i> occurs from Singleton in the north, south to Bargo and the Blue Mountains to the west (OEH 2014). It grows in dry sclerophyll eucalypt woodland and forest on sandstone	No
<i>Persoonia mollis</i> subsp. <i>maxima</i>	<i>Persoonia mollis</i> subsp. <i>maxima</i>	E	E	Deep gullies or on the steep upper hillsides of narrow gullies incised from Hawkesbury Sandstone, characterised by steep sideslopes, rocky benches and broken scarps, with creeks fed by small streams and intermittent drainage depressions. Occurrences of this plant have been recorded on the dry upper-hillsides of gullies and in more exposed aspects (Scribbly Gum <i>E. haemastoma</i> , Grey Gum (<i>E. punctata</i>).	Potential

SCIENTIFIC NAME	COMMON NAME	TSC ACT	EPBC ACT	HABITAT ASSOCIATIONS	LIKELIHOOD OF OCCURRENCE
<i>Pimelea curviflora</i> var. <i>curviflora</i>	<i>Pimelea curviflora</i> var. <i>curviflora</i>	V	V	<i>Pimelea curviflora</i> var. <i>curviflora</i> is confined to the coastal area of Sydney between northern Sydney in the south and Maroota in the north-west. It grows on shaley/lateritic soils over sandstone and shale/sandstone transition soils on ridgetops and upper slopes amongst woodlands (OEH 2014). Associated with the Duffys Forest Community, shale lenses on ridges in Hawkesbury sandstone geology.	Unlikely
<i>Pimelea spicata</i>	Spiked Rice-flower	E	E	In western Sydney, <i>Pimelea spicata</i> occurs on an undulating topography of well-structured clay soils, derived from Wianamatta shale (OEH 2014). It is associated with Cumberland Plains Woodland (CPW), in open woodland and grassland often in moist depressions or near creek lines (Ibid.). Has been located in disturbed areas that would have previously supported CPW (Ibid.).	Unlikely
<i>Pterostylis saxicola</i>	Sydney Plains Greenhood	E	E	Terrestrial orchid predominantly found in Hawkesbury Sandstone Gully Forest growing in small pockets of soil that have formed in depressions in sandstone rock shelves (NPWS 1997). Known from Georges River National Park, Ingleburn, Holsworthy, Peter Meadows Creek, St Marys Tower (NSW Scientific Committee 2011).	Unlikely
<i>Syzygium paniculatum</i>	Magenta Lilly Pilly	V	V	This species occupies a narrow coastal area between Bulahdelah and Conjola State Forests in NSW. On the Central Coast, it occurs on Quaternary gravels, sands, silts and clays, in riparian gallery rainforests and remnant littoral rainforest communities. In the Ourimbah Creek valley, <i>S. paniculatum</i> occurs within gallery rainforest with <i>Alphitonia excelsa</i> , <i>Acmena smithii</i> , <i>Cryptocarya glaucescens</i> , <i>Toona ciliata</i> , <i>Syzygium oleosum</i> with emergent <i>Eucalyptus saligna</i> . At Wyrabalong NP, <i>S. paniculatum</i> occurs in littoral rainforest as a co-dominant with <i>Ficus fraseri</i> , <i>Syzygium oleosum</i> , <i>Acmena smithii</i> , <i>Cassine australe</i> , and <i>Endiandra sieberi</i> . It is also report that this species appears absent from Terrigal formation shales, on which the gully rainforests occur. <i>S. paniculatum</i> is summer flowering (November-February), with the fruits maturing in May (OEH 2014).	Unlikely

SCIENTIFIC NAME	COMMON NAME	TSC ACT	EPBC ACT	HABITAT ASSOCIATIONS	LIKELIHOOD OF OCCURRENCE
<i>Tetradlea glandulosa</i>	<i>Tetradlea glandulosa</i>	V	V	Associated with ridgetop woodland habits on yellow earths, also in sandy or rocky heath and scrub (NPWS 1997). Often associated with sandstone / shale interface where soils have a stronger clay influence (NPWS 1997). Flowers July to November.	Potential
<i>Thesium australe</i>	Austral Toadflax	V	V	Widespread throughout the eastern third of NSW but most common on the North Western Slopes, Northern Tablelands and North Coast. Occurs in grassland or grassy woodland. Often found in damp sites in association with Kangaroo Grass (<i>Themeda australis</i>) (OEH 2014). The preferred soil type is a fertile loam derived from basalt although it occasionally occurs on metasediments and granite.	Unlikely

Disclaimer: Data extracted from the Atlas of NSW Wildlife and EPBC Protected Matters Report are only indicative and cannot be considered a comprehensive inventory. 'Migratory marine species' and 'listed marine species' listed on the EPBC Act (and listed on the protected matters report) have not been included in this table, since they are considered unlikely to occur within the study area due to the absence of marine habitat.

V = Vulnerable, E = Endangered, CE = Critically Endangered, M = migratory, Ma = Marine



Bushfire Protection Assessment

Proposed Rezoning – Dural

Prepared for
Urbis Pty Ltd

15 March 2016



DOCUMENT TRACKING

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1 Introduction

1.1 Description of proposal

Urbis commissioned Eco Logical Australia Pty Ltd (ELA) to prepare a bushfire protection assessment (BPA) for a proposed rezoning of a number of large allotments in Dural.

The lots are currently zoned as rural land being RU6-Transition with one lot being effected by a split zoning of RU6 and SP2-Infrastructre. Under the proposed rezoning, *The Hills Shire Local Environmental Plan 2012* (LEP) will be amended to allow for R2 Low Density Residential zone with areas of private/public open space (RE1 or RE2. There is also potential for special uses including medical, commercial and ancillary development. A separate ecological (flora and fauna) assessment has been undertaken by ELA.

This report relates to 14 lots within the proposed rezoining however it also considers the wider area of Dural, north of the Dural town centre.

1.2 Study area

The study area is located approximately 1 to 1.5 km from Dural town centre, within the The Hills Shire Council. There are currently existing dwellings or structures located within some lots within the subject area as shown in **Figure 1**.

The existing lots captured by the proposal are:

- Lot 100 and 102 DP13628
- Lot 1 DP656036
- Lot X DP501233
- Lot 2 DP567995
- Lot 9 DP237576
- Lot 2 DP541329
- Lots 101 and 103 DP713628
- Lot 1 DP660184
- Lot 11 DP866560
- Lot D DP38097
- Lot 1 DP73652
- Lot 12 DP866560.

The study area is separated into two clusters, separated by existing large lot residential land with dwellings and associated ancillary buildings. The main access to the lots is off Old Northern Road to the east and Derriwong Road to the west of the southern cluster of lots. The majority of the vegetation within the lots has been cleared except where scattered trees remain.

1.2.1 Aim and structure of report

ELA has been engaged to investigate the current bushfire risk of the study area and the appropriate combination of bushfire protection measures to mitigate this risk in support of the rezoning. Specifically, this analysis responds to the requirements of *Planning for Bush Fire Protection 2006* (PBP), *Australian Standard AS 3959 Construction of buildings in bushfire-prone areas* (AS3959) and the requirements of The Hills LEP. This report details the outcomes of these investigations in the context of the proposed land use.

The overarching objective of this report is to identify all potential bushfire constraints to the future urban development of the study area. The results of this assessment will directly support the preparation of necessary planning documentation. As such the objectives of this report are to:

- Ensure the statutory requirements for bushfire protection are identified and can be adequately met; and
- Implement suitable management frameworks for bushfire protection, whilst having consideration of the vegetation and ecological issues for the study area, enabling long term conservation and management of these environmental values while facilitating safe urban development outcomes.
- Consider the likely rehabilitation of ecological issues and the recommendations of the flora and fauna study to preserve and enhance ecological communities on the subject land.

This report assesses the potential bushfire hazard across the study area, in the context of existing vegetation (refer to **Figure 2** for vegetation coverage). It then identifies planning requirements as per PBP. Management of future asset protection zones (APZ) and environmental areas are also considered.

Future subdivision of land and the construction of buildings will require an assessment against PBP. As such the provisions of this report are to be considered in the planning and design of any development following the rezoning process.

1.3 Legislative requirements

1.3.1 Environmental Planning and Assessment Act 1979

The *Environmental Planning and Assessment Act 1979* (EP&A Act) is the principal planning legislation for NSW, providing a framework for the overall environmental planning and assessment of development proposals. A variety of other legislation and environmental planning instruments, such as the *Threatened Species Conservation Act 1995* (TSC Act), *Water Management Act 2000* and *Rural Fires Act 1997* (RF Act), are integrated with the EP&A Act.

1.3.2 Threatened Species Conservation Act 1995

The TSC Act aims to protect and encourage the recovery of threatened species, populations and communities listed under the Act. The TSC Act is integrated with the EP&A Act and requires consideration of whether a development (assessed under Part 4 of the EP&A Act) is likely to significantly affect threatened species, populations and ecological communities or their habitat.

1.3.3 Rural Fires Act 1997

Bushfire suppression and management is regulated by the RF Act. Both the EP&A Act and the RF Act were modified by the *Rural Fires and Environmental Assessment Legislation Amendment Act 2002* to enhance bushfire protection through the development assessment process. Key requirements of the RF Act include:

- The need for a bushfire safety authority to be issued by the RFS under section 100B of the RF Act for any development applications for subdivision (therefore considered integrated development);
- All landowners to exercise a duty of care to prevent bushfire from spreading on or from their land under section 63 of the RF Act. This relates to the appropriate provision and maintenance of APZs, landscaping and any retained vegetation when developing land.

1.3.4 Direction 4.4 Planning for Bush Fire Protection

Direction 4.4 Planning for Bushfire Protection identifies matters for consideration for planning proposals that will affect, or are in proximity to land mapped as bush fire prone. In particular a planning proposal where development is proposed must:

- have regard to *Planning for Bush Fire Protection 2006* (PBP),
- provide an Asset Protection Zone (APZ) incorporating at a minimum:
 - an Inner Protection Area (IPA) bounded by a perimeter road or reserve which circumscribes the hazard side of the land intended for development and has a building line consistent with the incorporation of an APZ, within the property, and
 - an Outer Protection Area (OPA) managed for hazard reduction and located on the bushland side of the perimeter road,
- for infill development (that is development within an already subdivided area), where an appropriate APZ cannot be achieved, provide for an appropriate performance standard, in consultation with the NSW Rural Fire Service (RFS). If the provisions of the planning proposal permit Special Fire Protection Purposes (as defined under section 100B of the RF Act), the APZ provisions must be complied with,
- contain provisions for two-way access roads which links to perimeter roads and/or to fire trail networks,
- contain provisions for adequate water supply for fire fighting purposes,
- minimise the perimeter of the area of land interfacing the hazard which may be developed,
- introduce controls on the placement of combustible materials in the Inner Protection Area.

Consideration must also be given to NSW RFS *Practice Note 2/12 Planning Instruments and Policies*. It is expected that the RFS, in its assessment of the proposal will consider the requirements of this Practice Note.

1.3.5 Planning for Bush Fire Protection 2006

Rezoning proposals require consultation with the NSW RFS as the lead agency for managing bushfire. As such the requirements of *Planning for Bush Fire Protection* (NSW RFS, 2006) are to be addressed. This includes having regard to the following planning principles of PBP:

- Provision of a perimeter road with adequate two way access which delineates the extent of the intended development;
- Provision, at the urban bushland interface, for the establishment of adequate asset protection zones for future housing;
- Specifying minimum residential lot depths to accommodate asset protection zones for lots on perimeter roads;
- Minimising the perimeter of the area of land, interfacing the hazard, which may be developed;
- Introduction of controls which avoid placing inappropriate developments in hazardous areas; and
- Introduction of controls on the placement of combustible materials in asset protection zones.

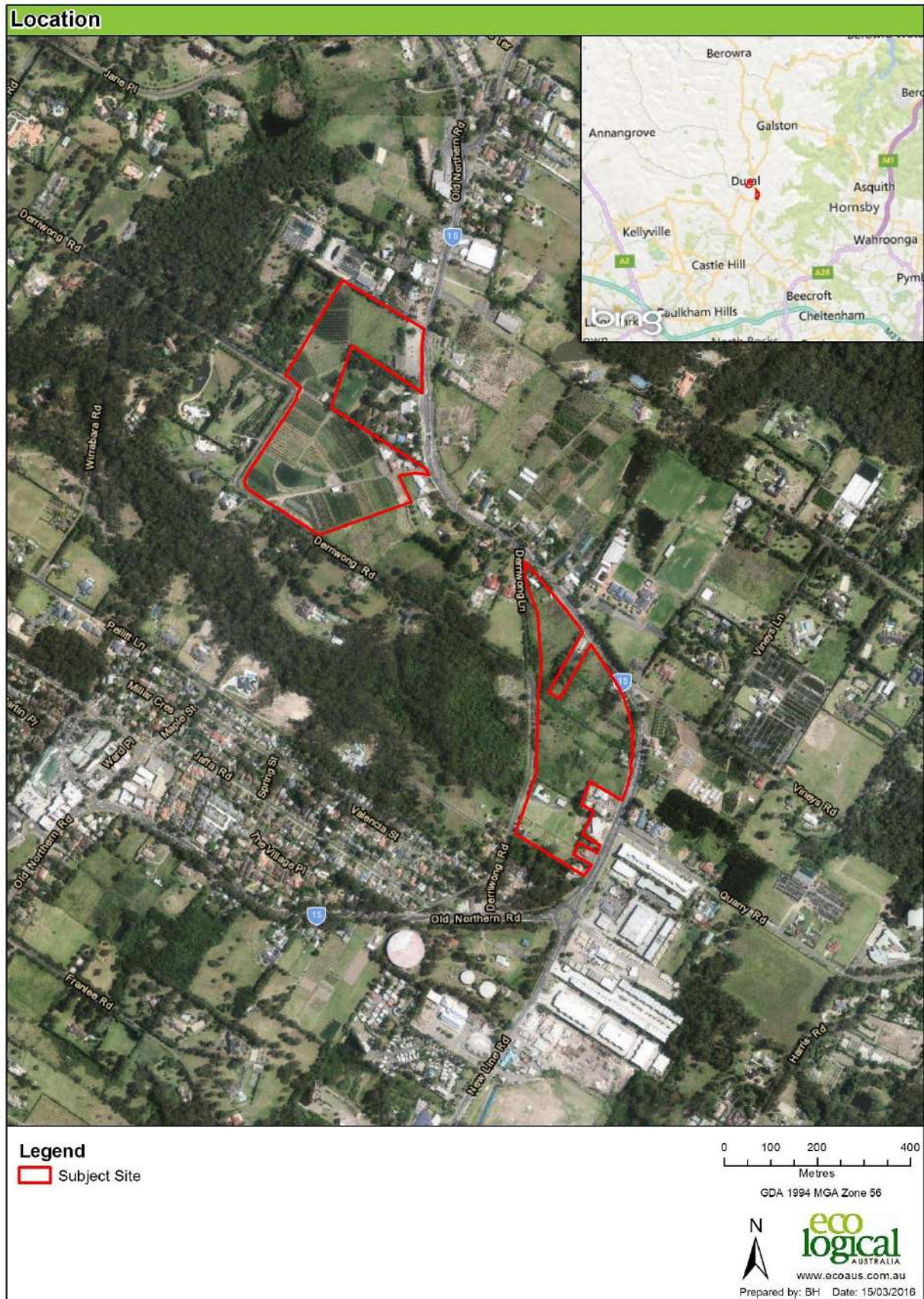


Figure 1: Study area

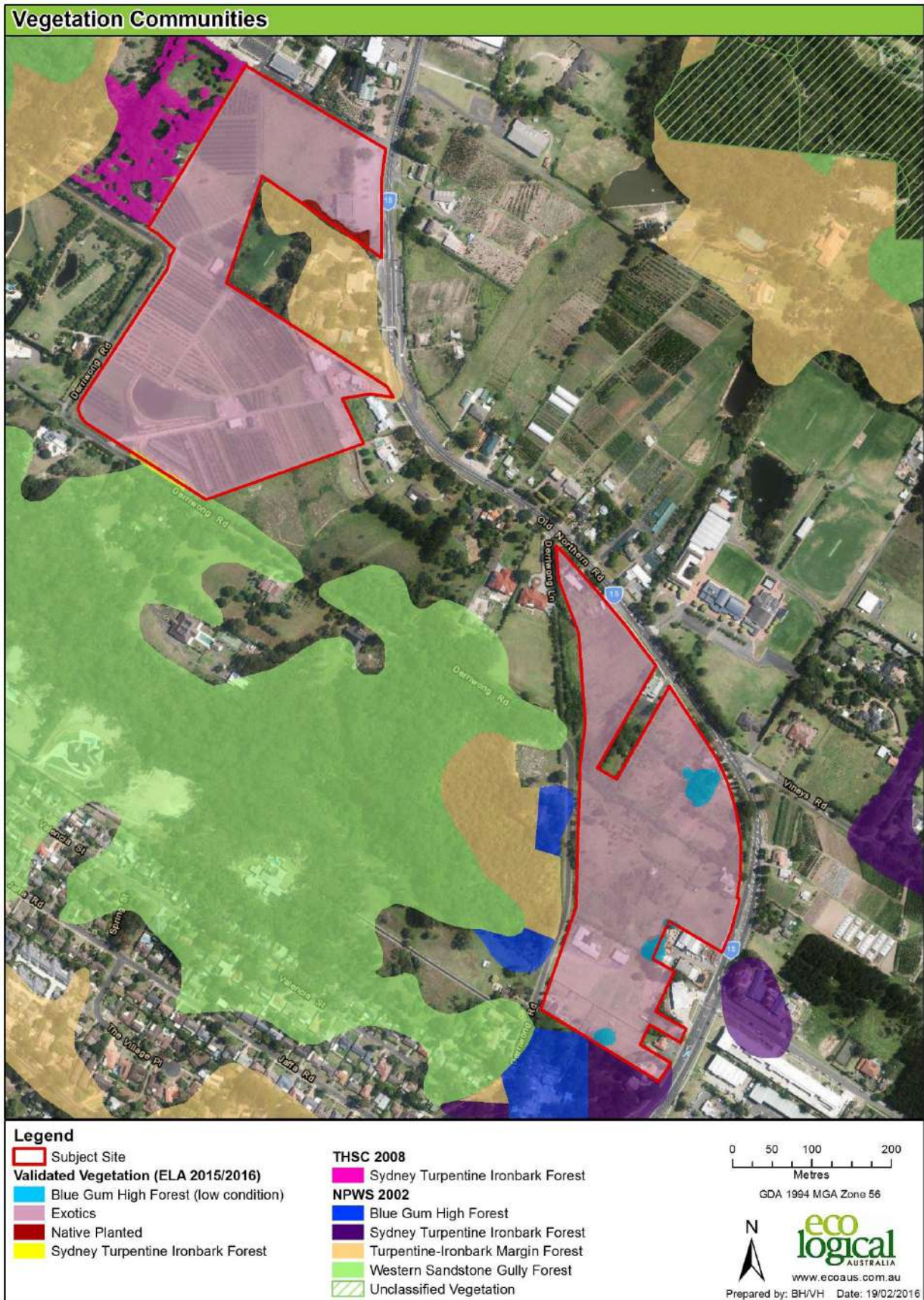


Figure 2: Vegetation Communities

2 Bushfire threat assessment

An assessment of the bushfire hazard is necessary to determine the application of bushfire protection measures such as asset protection zone location and dimension. This section provides a detailed account of the vegetation communities (bushfire fuels) and the topography (effective slope) that combine to create the bushfire hazard that may affect bushfire behaviour at the study area.

The concept of bushfire risk as influenced by fire history and current and past bushfire issues has little bearing on the determination of bushfire protection strategies for rezoning and future development within the study area. This is due to the fact that PBP assesses bushfire protection based purely on vegetation and slope (i.e. hazard and not risk), making the assumption that a fire may occur in any patch of bushland at a worst-case scenario (based on a set design fire).

Notwithstanding this, the *The Hills Bush Fire Risk Management Plan* (BFRMP) was reviewed to gain a greater understanding of the bushfire environment, hazard and risk issues that affect the study area.

The development of the study area is situated to the north east of the Dural town centre. The proposed development will provide further asset protection for existing development surrounding the study area by creating increased separation from bushfire hazards. The BFRMP does not affect the bushfire protection measures required for future development within the study area, but should be updated following development of the study area (**Figure 3**).

2.1 Bushfire protection measures

PBP requires the assessment of a suite of bushfire protection measures that in total afford an adequate level of protection. The measures required to be assessed for rezoning are listed in **Table 1** and are discussed in detail in this section. This section demonstrates that the study area can accommodate the required bushfire protection measures and achieve the Direction 4.4 objectives and RFS requirements.

Table 1: PBP bushfire protection measures

Bushfire Protection Measure	Considerations
Asset Protection Zones (APZ)	Location and dimension of APZ setbacks from vegetation including prescriptions of vegetation management within the APZ.
Access	Assessment to include access and egress in and out of a developable area such as alternate access, operational response and evacuation options. APZ perimeter access to be considered as is design standards of public roads and any fire trails.
Water supply and other utilities	List requirements for reticulated water supply and hydrant provisions, and any static water supplies for fire fighting.
Building construction standards	Provide a guide on the application of construction standards for future buildings.

2.2 Vegetation types

In accord with PBP, the predominant vegetation class has been assessed within the proposed lots and calculated for a distance of at least 140 m out from the proposed development. The predominant vegetation and effective slope assessments are shown **Table 3**.

Vegetation mapping shows Western Sandstone Gully Forest to the west of the southern cluster of lots with smaller pockets of Blue Gum High Forest, Turpentine-Ironbark Margin Forest, and Sydney

Turpentine-Ironbark Forest to the west and south. These vegetation formations also occur around the northern cluster of lots. In accordance with PBP the predominant vegetation is 'forest'.

Vegetation to the south of the southern cluster of lots is highly fragmented as a result of practices related to the timber supply yard and is a 'low hazard' in accordance with PBP.

The remaining vegetation within the study area consists of land used for intensive agriculture or land that is cleared and managed.

2.3 Effective slope

In accord with PBP, the slope that would most significantly influence fire behaviour was determined over a distance of 100 m from the boundary of the subject land where the vegetation was found (measuring the worst-case scenario). This assessment was made with 10 m contours and slope classes are listed in **Table 2**.

The land slopes down to the water course to the west. Slopes vary across the site and within the bushfire hazard and range from >0-15 degrees downslope and are shown in **Figure 3**.

Table 2: PBP slope classes

Upslope or Downslope	PBP Slope Class
Upslope / Flat Land	Flat land and all upslope land leading away from the development
Downslope	>0-5 degrees downslope leading away from the development
	>5-10 degrees downslope leading away from the development
	>10-15 degrees downslope leading away from the development
	>15-18 degrees downslope leading away from the development

3 Asset protection zones

Table A2.4 of PBP has been used to indicate the required APZ dimensions for future residential development within the subject land using the vegetation and slope data identified in **Section 2**. The APZ calculation is tabulated below and shown in **Figure 3**.

It is best practice to provide an APZ dimension that achieves a building construction standard under *AS 3959-2009 Construction of buildings in bushfire-prone areas* (Standards Australia 2009) of Bushfire Attack Level (BAL)-29 for residential development to ensure future home owners are not impacted by the additional costs associated with construction of a dwelling at BAL-40. **Table 3** lists the current minimum APZ and best practice APZ related to BAL-29 (refer to **Section 4** for more information on AS 3959-2009). Special Fire Protection Purpose (SFPP) developments will require an increase in APZ to provide a higher level of bushfire protection.

It is important to note that the APZ calculations quoted in this assessment are indicative only and have been determined at a landscape scale. This level of detail is suitable for a rezoning assessment where the aim is to demonstrate whether a parcel of land can accommodate the bushfire hazard, the expected APZ and future development. The final APZ dimensions for any future subdivision or development depends on the accuracy of a slope assessment undertaken at a site-specific level. The APZ dimensions quoted in this assessment should not be relied on to approve a future subdivision; they may be used as a guide only.

3.1 APZ maintenance plan

The following fuel management specifications will need to be considered in the provision of APZ fo future development:

- No tree or tree canopy is to occur within 2 m of the dwelling roofline.
- The presence of a few shrubs or trees in the APZ is acceptable provided that they:
 - are well spread out and do not form a continuous canopy
 - are not species that retain dead material or deposit excessive quantities of ground fuel in a short period or in a danger period
 - are located far enough away from the building so that they will not ignite the building by direct flame contact or radiant heat emission.
- Any landscaping or plantings should preferably be local endemic mesic species or other low flammability species.

3.2 Staging of development for APZ

Staging of future development should give consideration to the provision of an APZ to manage any potential bushfire hazard within adjoining future development areas to ensure that future dwellings are not impacted by unnecessary construction standards. This could occur through the provision of temporary APZ for earlier stages which will be automatically extinguished once the land where the APZ operates is developed and the hazard is permanently removed.

3.3 Perimeter access within APZ

An APZ may require a perimeter road depending on the significance of the bushfire threat. The assessment of perimeter access is provided in the following **Section 5.3**.

Table 3: Threat assessment, APZ and category of bushfire attack

Direction from envelope	Slope ¹	Vegetation ²	PBP required APZ ³	BAL-29 APZ AS3959	Comments
Northern cluster					
West and south	0-5 ⁰ downslope	Forest	25 m 70 m (SFPP)	32 m	Provided within property boundaries
South	0-5 ⁰ downslope	Grassland	10 m	10 m	
All other directions	Managed land				
Southern cluster					
West	0-5 ⁰ downslope	Forest	25 m 70 m (SFPP)	32 m	Provided by Derriwong Road and within property boundaries
West	0-5 ⁰ downslope	Grassland	10 m	10 m	Provided within property boundaries
South	0-5 ⁰ downslope	Low hazard	10 m 30 m (SFPP)	14 m	
All other directions	Managed land				

¹ Slope most significantly influencing the fire behaviour of the site having regard to vegetation found. Slope classes are according to PBP.

² Predominant vegetation is identified, according to PBP and "Where a mix of vegetation types exist the type providing the greater hazard is said to be predominate".

³ Assessment according to Table A2.4 of PBP

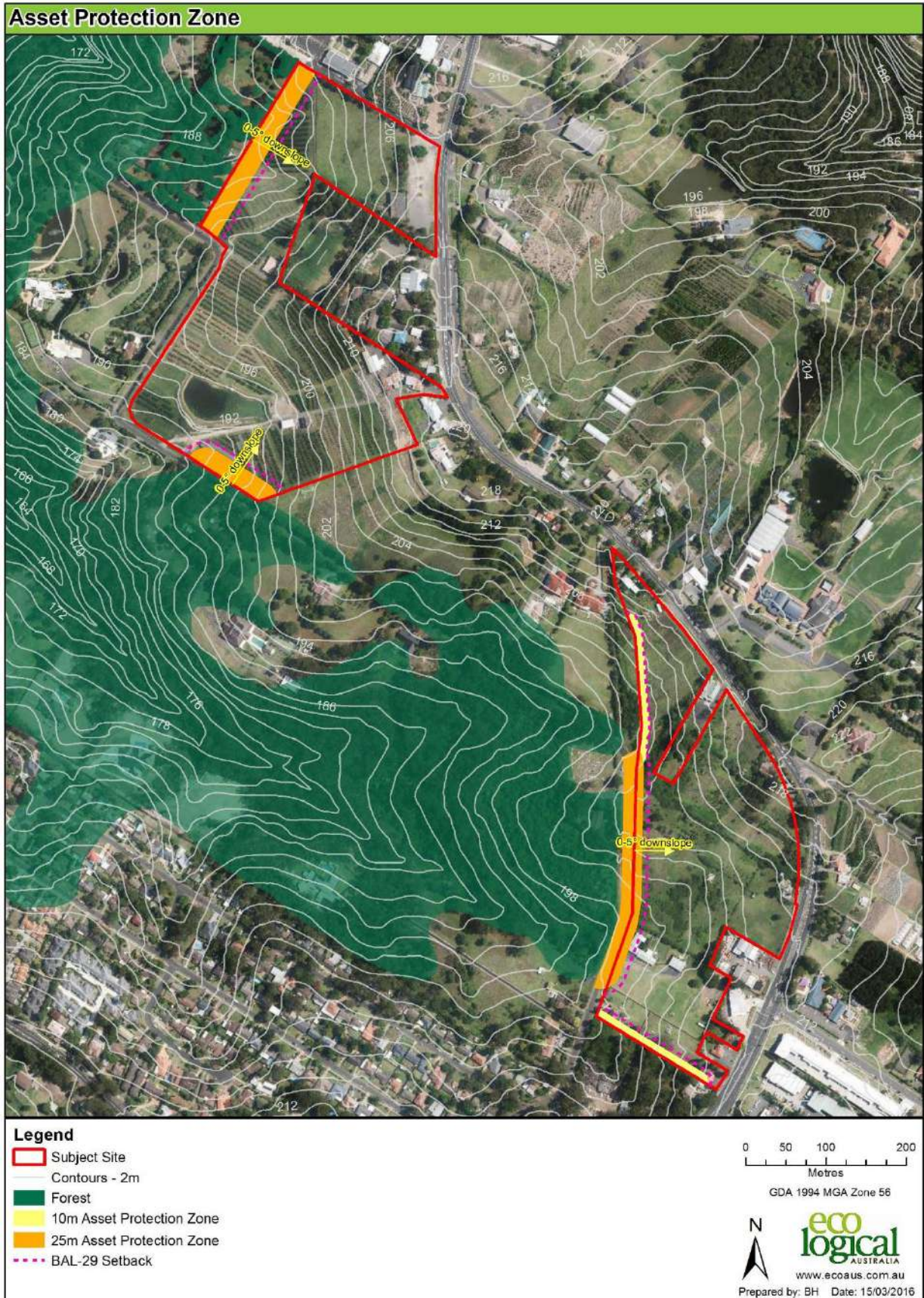


Figure 3: Asset protection zones

4 Construction standard

The application of building construction standards for bushfire protection under *AS 3959-2009 Construction of buildings in bushfire-prone areas* (Standards Australia 2009) is to be considered at the development application stage for individual dwellings and buildings. An assessment under AS 3959-2009 is not required at the rezoning or subdivision stages. The following is a brief introduction on AS 3959-2009.

AS 3959-2009 contains six Bushfire Attack Levels (BAL), each with a prescribed suite of design and construction specifications aimed at preventing ignition during the passing of a bushfire front. The BALs are outlined below:

- BAL-Low: The threat does not warrant application of construction standards. Developments with BAL-Low are generally not within bushfire prone land (greater than 100 m from bushland)
- BAL-12.5: Addresses background radiant heat at lower levels and ember attack
- BAL-19: Addresses mid-range radiant heat and ember attack
- BAL-29: Addresses high range radiant heat and ember attack
- BAL-40: Addresses extreme range of radiant heat and potential flame contact and ember attack
- BAL-FZ: Addresses construction within the flame zone. New subdivided lots are not permitted within the flame zone in NSW.

NSW has a minor variation to AS 3959-2009 which requires consideration in future development applications. The variation is contained within the document '*PBP Appendix 3 Addendum*' (RFS 2010).

5 Utilities and access

5.1 Water supply

Future lots will likely be serviced by reticulated water infrastructure suitable for fire fighting purposes. With the exception of rural residential subdivision, the furthest point from any future dwellings to a hydrant is to be less than 90 m (with a tanker parked in-line) in accordance with *Australian Standard 2419.1 – 2005 Fire Hydrant Installations - System Design, Installation and Commissioning* (Standards Australia 2005). The reticulated water supply is to comply with the following acceptable solutions within Section 4.1.3 of PBP:

- Reticulated water supply to use a ring main system for areas with perimeter roads;
- Fire hydrant spacing, sizing and pressures comply with AS 2419.1 – 2005;
- Hydrants are not located within any road carriageway;
- All above ground water and gas service pipes external to the building are metal, including and up to any taps; and
- The PBP provisions of parking on public roads are met.

5.2 Gas and electrical supplies

In accordance with PBP, electricity should be underground wherever practicable. Where overhead electrical transmission lines are installed:

- Lines are to be installed with short pole spacing, unless crossing gullies
- No part of a tree should be closer to a powerline than the distance specified in the *ISSC 3 Guideline for Managing Vegetation Near Power Lines* (Industry Safety Steering Committee, 2005).

Any gas services are to be installed and maintained in accordance with *Australian Standard AS/NZS 1596 'The storage and handling of LP Gas'* (Standards Australia 2008).

5.3 Access

All bushfire prone areas should have an alternate access or egress option. This is usually achieved by providing more than one public road into and out of a precinct. The need for an alternative road and its location depends on the bushfire risk, the density of the development, and the chances of the road being cut by fire. All precincts within the study area should allow for an alternative public access road.

The proposed access arrangements within the study area are in accordance with the intent and principles of PBP regarding the provision of safe access and egress for both residents and fire fighters.

5.3.1 Safe access and egress

All bushfire prone areas should have an alternate access or egress option. An internal road system supporting future development is to comply with Section 4.2.7 of PBP.

5.3.2 Road design and construction

Depending on the bushfire risk, all bushland interface areas containing an APZ for a significant bushfire hazard should feature a perimeter public road within the APZ. It is acceptable for some areas not to have a perimeter road or have a perimeter trail instead. These include areas of lower bushfire risk (such as grassland or low hazard remnants or areas where it may not be feasible to provide a continuous road due to the shape of the interface or the terrain. These areas should have some other access strategy such as regular access points and good access to a hydrant network.

Provision of a simple layout with perimeter roads and frequent direct access to the internal road system will provide sufficient access/egress in the case of an emergency. Public roads should provide safe operational access to structures and water supply. Perimeter roads will be required at APZ bushland interface locations where a significant bushfire hazard exists. However, minor drainage corridors and the setbacks provided within larger 'lifestyle lots' present a lower risk scenario and, therefore, may not require implementation of perimeter roads. Property access roads will also need to provide safe access for emergency services and provide protection to properties and occupants during a bushfire

The design details (PBP acceptable solutions) of public roads are shown in **Table 4**.

Table 4: Performance criteria for proposed public roads

Intent may be achieved where:	Acceptable solutions
<ul style="list-style-type: none"> firefighters are provided with safe all weather access to structures (thus allowing more efficient use of firefighting resources) 	<ul style="list-style-type: none"> public roads are two-wheel drive, all weather roads
<ul style="list-style-type: none"> public road widths and design that allows safe access for firefighters while residents are evacuating an area 	<ul style="list-style-type: none"> urban perimeter roads are two-way, that is, at least two traffic lane widths (carriageway 8 metres minimum kerb to kerb), allowing traffic to pass in opposite directions. Non perimeter roads comply with Table 4.1 – Road widths for Category 1 Tanker (Medium Rigid Vehicle) the perimeter road is linked to the internal road system at an interval of no greater than 500 metres in urban areas traffic management devices are constructed to facilitate access by emergency services vehicles public roads have a cross fall not exceeding 3 degrees public roads are through roads. Dead end roads are not recommended, but if unavoidable, dead ends are not more than 200 metres in length, incorporate a minimum 12 metres outer radius turning circle, and are clearly sign posted as a dead end and direct traffic away from the hazard curves of roads (other than perimeter roads) are a minimum inner radius of six metres maximum grades for sealed roads do not exceed 15 degrees and an average grade of not more than 10 degrees or other gradient specified by road design standards, whichever is the lesser gradient there is a minimum vertical clearance to a height of four metres above the road at all times the capacity of road surfaces and bridges is sufficient to carry fully loaded firefighting vehicles (approximately 15 tonnes for areas with reticulated water, 28 tonnes or 9 tonnes per axle for all other areas). Bridges clearly indicated load rating
<ul style="list-style-type: none"> the capacity of road surfaces and bridges is sufficient to carry fully loaded firefighting vehicles 	<ul style="list-style-type: none"> public roads greater than 6.5 metres wide to locate hydrants outside of parking reserves to ensure accessibility to reticulated water for fire suppression
<ul style="list-style-type: none"> roads that are clearly sign posted (with easy distinguishable names) and buildings / properties that are clearly numbered 	<ul style="list-style-type: none"> public roads between 6.5 metres and 8 metres wide are No Parking on one side with the services (hydrants) located on this side to ensure accessibility to reticulated water for fire suppression public roads up to 6.5 metres wide provide parking within parking bays and located services outside of the parking bays to ensure accessibility to reticulated water for fire suppression
<ul style="list-style-type: none"> there is clear access to reticulated water supply 	<ul style="list-style-type: none"> one way only public access roads are no less than 3.5 metres wide and provide parking within parking bays and located services outside of the parking bays to ensure accessibility to reticulated water for fire suppression parking bays are a minimum of 2.6 metres wide from kerb to kerb edge to road pavement . No services or hydrants are located within the parking bays
<ul style="list-style-type: none"> parking does not obstruct the minimum paved width 	<ul style="list-style-type: none"> public roads directly interfacing the bush fire hazard vegetation provide roll top kerbing to the hazard side of the road

6 Recommendations and conclusion

Bushfire hazard has been assessed across the subject study area and found to be acceptable based on the ability to provide compliant APZ within the subject site. On the basis of this assessment, indicative asset protection zone requirements have been mapped across the proposed rezoning area.

A number of strategies have been provided in the form of planning controls such that the risk from bushfire can be minimised and future rezoning or development approval processes can be streamlined. Further, it has been found that development of the anticipated land uses within the subject study area, from a bushfire planning perspective, are considered suitable.

A number of strategies have been provided in this report such that the risk from bushfire can be mitigated. The main strategies suggested include:

- Ensure adequate setback from bushfire prone vegetation (APZs)
- Integrate non-combustible infrastructure within APZs such as roads, easements and parking areas. The majority of APZs should be contained within perimeter roads and front yard setbacks
- Ensure adequate access and egress from the study area through a well-designed road system
- Consider the adequacy of water supply and the delivery of other services (gas and electricity)
- Provide temporary APZs during any staged development
- Provide for effective and ongoing management of APZs; and
- Consider construction standards (AS3959) implications for future developments depending on development type (25 and 70 metre APZs).

The rezoning has been prepared based on the advice and constraints contained within this report. In relation to the furthering of the planning processes as they relate to the future uses of the study area, it is considered appropriate that more detailed assessment and consideration of the relevant bushfire protection strategies should be undertaken at the development application stage. This further assessment should include a more comprehensive review of the road and lot layout and subsequent planning controls, to ensure they are well designed in terms of bushfire protection outcomes.

The wider area of consideration has similar characteristics as the subject site and as such should have similar capacity to provide the required suite of bushfire protection measures for future rezoning investigations at the wider scale.

6.1 Statement of capability

This bushfire assessment demonstrates that the subject land is capable of accommodating future development and associated land use with the appropriate bushfire protection measures and bushfire planning requirements prescribed by s.117 (2) Direction 4.4 – *‘Planning for Bush Fire Protection’* and PBP.

If further information is required, please contact Mark Hawkins on 4302 1222.

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Heritage Impact Statement

Multiple Properties along Old Northern Road and
Derriwong Road, Dural

February 2016

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Executive Summary

The following Heritage Assessment was prepared to assess the heritage impacts of proposed subdivision of properties on Old Northern Road and Derriwong Road, Dural. These properties are herein collectively referred to as 'subject site':

A planning proposal is currently being planned for the rezoning of the subject site to allow for residential and neighbourhood scale commercial/retail development. The subject site incorporates, or is in the vicinity of a number of locally listed heritage items on The Hills Local Environmental Plan 2012 and Hornsby Local Environmental Plan 2013. These include:

- House, 600A Old Northern Road (Item No. I85) The Hills LGA
- Dural Soldiers Memorial Hall, 604 Old Northern Road (Item No. I86) The Hills LGA
- Uniting Church Cemetery, Derriwong Road (Item No. I81) The Hills LGA
- House, 857 Old Northern Road, Dural (Item No.348) Hornsby LGA
- House, 873 Old Northern Road, Dural (Item No.349) Hornsby LGA
- Old Northern Road, between Dural and Wiseman's Ferry (Item A12, archaeological) The Hills LGA
- Street trees listed on Old Northern Road in the Hornsby LGA (item 448).

This report is principally concerned with the impacts to the Spanish Mission style Dural Memorial Hall at 604 Old Northern Road, constructed in 1925 and the Victorian weatherboard house, 600A Old Northern Road constructed between 1880 and 1900. The subject proposal has been assessed in relation to the relevant controls and provisions contained within The Hills LEP 2012 and The Hills DCP 2012.

Based on the results of this assessment, it has been determined that overall, the proposed low density residential subdivision is unlikely to impact on the heritage significance of both the heritage listed items within the proposed subdivision area as well as items in the vicinity. Both the house and hall are located very close to Old Northern Road and the visual prominence of the buildings within the streetscape will be maintained. Existing views to and from the principal (front) elevations of the items will not be obscured or adversely impacted.

- It is recommended that a heritage curtilage be formed for the house at 600A Old Northern Road to protect the impacts of potential future development. This is identified in Figure 17.
- Consider restoration of the house as part of the proposed works so that the principal house form is wholly retained. This would ultimately conserve and enhance the heritage significance of the item.
- If developed, it is recommended that lower-scale residences (one to two storey) in the vicinity of the heritage items would be in keeping with other development in the area and would not impact on views and the heritage significance of the item. Development in the vicinity of the items must respond appropriate to their form and scale.

1 Introduction

1.1 BACKGROUND

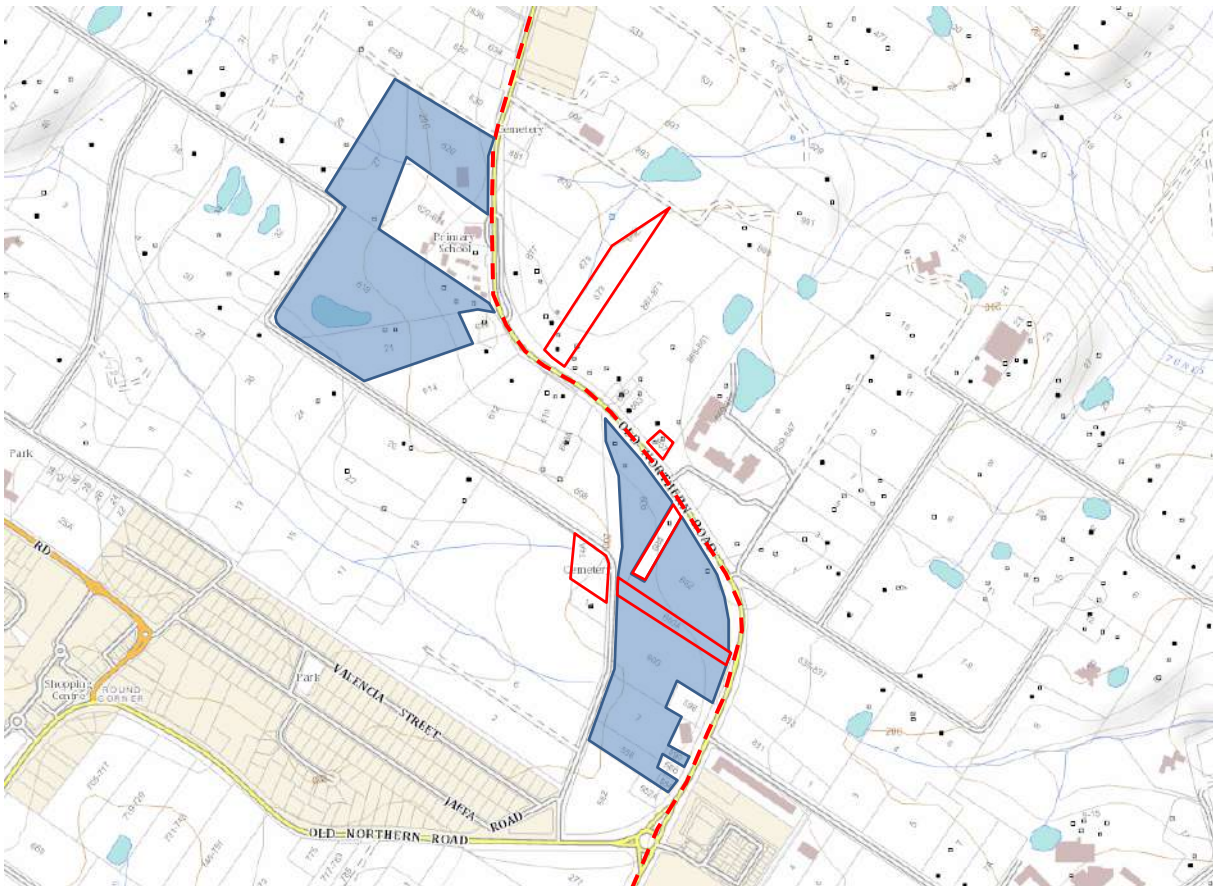
Urbis has been engaged HLA Group to prepare the following Heritage Assessment. This report was prepared to assess the heritage impacts of the proposed subdivision of properties in two areas between Old Northern Road and Derriwong Road, Dural, NSW.

The multiple properties contained within the subject site are currently predominately zoned as RU6 Transition, with Lot 2 DP 541329 being split zoned as both RU6 and SP2 Infrastructure. A planning proposal is currently being prepared for the rezoning of the subject site to allow for residential and neighbourhood scale commercial/retail development.

The subject site incorporates, or is in the vicinity of a number of locally listed heritage items in The Hills Local Environmental Plan 2012 and Hornsby Local Environmental Plan 2013. These include;

- House, 600A Old Northern Road (Item No. I85) The Hills LGA
- Dural Soldiers Memorial Hall, 604 Old Northern Road (Item No. I86) The Hills LGA
- Uniting Church Cemetery, Derriwong Road (Item No. I81) The Hills LGA
- House, 857 Old Northern Road, Dural (Item No.348) Hornsby LGA
- House, 873 Old Northern Road, Dural (Item No.349) Hornsby LGA
- Old Northern Road, between Dural and Wiseman's Ferry (Item A12, archaeological) The Hills LGA
- Street trees listed on Old Northern Road in the Hornsby LGA (item 448).

FIGURE 1 – SUBJECT SITE RELATED TO THIS REPORT OUTLINED BLUE AND HERITAGE ITEMS IN RED



SOURCE: SIX MAPS 2015

1.2 SITE LOCATION

The subject properties considered in this report are outlined in the below table.

TABLE 1 – LIST OF PROPERTIES INCLUDED IN THIS ASSESSMENT

STREET ADDRESS	LEGAL DESCRIPTION
584 Old Northern Road, Dural	Lot 1 DP660184
586 Old Northern Road, Dural	Lot 11 DP866560
590 Old Northern Road, Dural	Lot D DP38097
600 Old Northern Road, Dural	Lot 100 and Lot 102 DP713628
602 Old Northern Road, Dural	Lot 1 DP656036
606 Old Northern Road, Dural	Lot 1 DP73652
618 Old Northern Road, Dural (also known as No. 25 Deriwong Road)	Lot X DP 501233
626 Old Northern Road, Dural	Lot 2 DP541329
7 Derriwong Road, Dural	Lot 12 DP866560
11 Derriwong Road (also known as 600A ONR)	Lots 101 and 103 DP713628
21 Derriwong Road, Dural	Lot 2 DP567995
27 Derriwong Road, Dural	Lot 9 DP237576

The location of these properties in relation to listed heritage items or archaeological items in the vicinity is shown in (Figure 1).

1.3 METHODOLOGY

This Heritage Assessment has been prepared in accordance with the NSW Heritage Branch guideline 'Assessing Heritage Significance' (2001). The philosophy and process adopted is that guided by the *Australia ICOMOS Burra Charter 1999* (revised 2013).

Site constraints and opportunities have been considered with reference to relevant controls and provisions contained within The Hills Local Environmental Plan 2012 and the The Hills Development Control Plan 2012.

1.4 AUTHOR IDENTIFICATION

The following report has been prepared by Karyn McLeod (Heritage Consultant). Stephen Davies (Director) has reviewed and endorsed its content.

Unless otherwise stated, all drawings, illustrations and photographs are the work of Urbis.

1.5 THE PROPOSAL

The multiple properties contained within the subject site are currently predominately zoned as Zone RU6 Transition, with Lot 2 DP 541329 being split zoned as both RU6 and SP2 Infrastructure.

A planning proposal is currently being planned for the rezoning of the subject site to allow for residential and neighbourhood scale commercial/retail development.

The following properties, which are subject to the subdivision proposal include:

- 584 Old Northern Road, Dural
- 586 Old Northern Road, Dural
- 590 Old Northern Road, Dural
- 600 Old Northern Road, Dural
- 602 Old Northern Road, Dural
- 606 Old Northern Road, Dural
- 618 Old Northern Road, Dural (also known as No. 25 Deriwong Road)
- 626 Old Northern Road, Dural
- 7 Derriwong Road, Dural
- 11 Derriwong Road (also known as 600A ONR)
- 21 Derriwong Road, Dural
- 27 Derriwong Road, Dural

This report is principally concerned with the impacts to the heritage items located at 600A Old Northern Road (also known as 11 Derriwong Road) and 604 Old Northern Road, Dural. The Memorial Hall at 604 Old Northern Road is not part of the proposed subdivision; however it is surrounded by land that is within the proposal.

As no physical works are currently proposed, there is no identified risk of harm to Old Northern Road, which is identified in part as an archaeological item under the Hills LEP 2012.

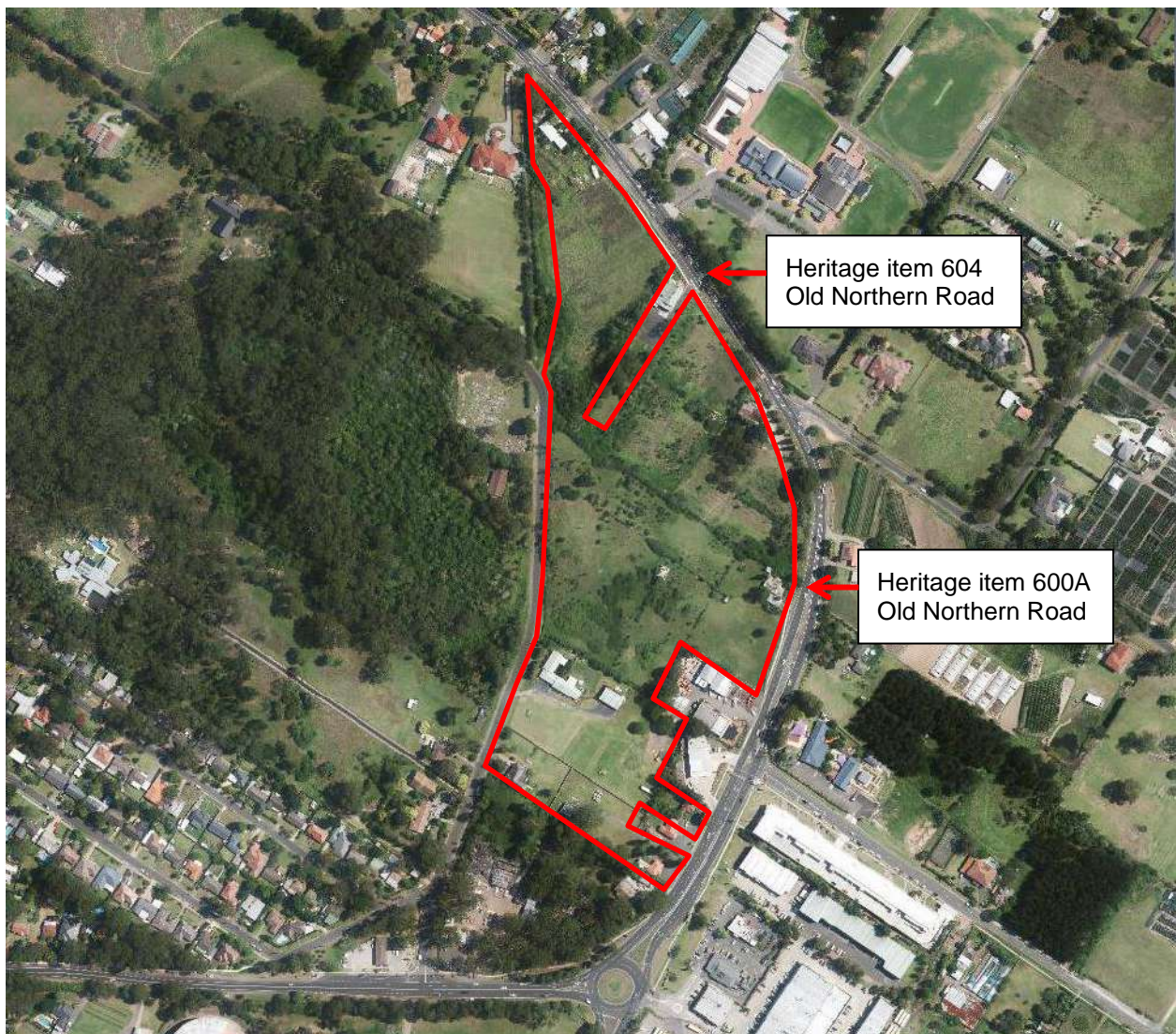
2 Site Description

2.1 THE SITE

Dural is a semi-rural suburb, 36 kilometres north-west of the Sydney central business district in the Local Government Areas (LGA) of Hornsby Shire and The Hills Shire. Dural is part of the Hills District, in North Western Sydney. The site is located between Old Northern Road and Derriwong Road and is mostly rural.

The subject site is located to the north of the Round Corner and contains a number of private residences and commercial properties fronting Old Northern Road. The land is largely cleared and vacant and contains remnant fruit trees from the orchards that dominated the area in the past. Orchards, plant nurseries and market gardens are common in the area, however low density housing development is located to the south west of the subject site and a large commercial and industrial precinct is located to the south east. Redfield College, an Independent Catholic boys' school is located opposite the site on the eastern side of Old Northern Road. The Dural Memorial Hall allotment has been excluded from the proposed subdivision, but is surrounded by land which is part of the proposal.

FIGURE 2 – THE SUBJECT SITE INDICATED IN RED OUTLINE



SOURCE: SIX MAPS 2015

2.2 HERITAGE ITEMS

2.2.1 600A OLD NORTHERN ROAD

The item is a beaded weatherboard cottage on brick footings with corrugated iron, hipped roof that flows to a verandah. It is symmetrical at the front, has a hipped projection to the rear and there are a number of later weatherboard and fibro additions to the rear. The rear verandah has been infilled, the doors are not original and a non-original iron railing has been added to the front and rear verandahs. The building has two brick chimneys with terracotta pots and Victorian style shutters. There is a garage and access to the Old Northern Road on the southern side of the house and remnant fencing that appears to separate what was originally an orchard at the rear. The house appears to have been constructed in the late Victorian period possibly between 1880 and 1900. It is located very close to the road separated by a high timber paling fence and footpath. The fencing and grounds are in poor condition and the house is uninhabited. The condition of the interior of the house is unknown as access was not possible.

Several mature non-native trees are located around the house and fence lines and the garden and orchard are overgrown. The land surrounding the listed property is cleared former orchard (stone fruit) and slopes down gently to the west to Derriwong Road. The property to the south (No. 600) is vacant and is currently being used for grazing horses and cattle. Commercial properties fronting Old Northern Road are also located to the south. A brick house constructed in the 1950s is located on 602 Old Northern Road to the north.

2.2.2 DURAL MEMORIAL HALL, 604 OLD NORTHERN RD

The Memorial Hall was constructed in the Spanish mission Style in 1925 and funded by the local residents. It is located very close to the road separated by a timber picket fence and has an addition to the north that houses a kitchen and disabled entrance. An iron arch at the front that states *1914 Lest We Forget 1918* and a plaque that states *In Loving Memory of Our Boys who fought in the Great War. 1914-1919*. The hall has a stage, seats approximately 200 and is used by the community for functions, theatre and musical performances. A driveway is located on the northern side of the building and an asphalt car park at the rear. The long allotment is located between Old Northern Road and Derriwong Road and is mostly vacant apart from some mature native trees to the rear of the building.

2.2.3 DURAL UNITING CHURCH CEMETERY

The small rural cemetery has been cleared from the bush that surrounds O'Haras Creek, a tributary of Cattai Creek to the north west. The land slopes from the south down to north and the graves lie in rows down this slope facing east. The cemetery was previously known as the Methodist Cemetery and was established in 1857 when part of Thomas Williams' grant was bought by a group of local Methodists. There are numerous graves dating to the 1870s including those of early local land owning families including Roughley, Cusbert and Mobbs. The cemetery is still in use. It is locally significant for its historic and aesthetic representative values.

FIGURE 3 – FRONT OF LISTED HOUSE AND GARAGE AT 600A OLD NORTHERN ROAD.



FIGURE 4 – REAR OF LISTED HOUSE 600A OLD NORTHERN ROAD.



FIGURE 5 – REAR 602 AND 600A OLD NORTHERN ROAD FROM DERRIWONG ROAD.



Pedestrian survey of the grounds of 600, 600A, 602 and 604 Old Northern Road found the properties to be covered in thick grasses and remnant orchards. There were also two derelict timber and iron sheds located at the rear of 600A which were of unknown function. The land has been previously cleared and used for a variety of agricultural uses and there is little likelihood of *in situ* Aboriginal objects being present on the site. The site also has low potential for the remains of significant historic archaeological features or deposits.

FIGURE 6 – VACANT LAND AT 600 OLD NORTHERN ROAD AND COMMERCIAL PROPERTIES TO THE SOUTH .



FIGURE 7 – PREVIOUS ORCHARD (STONE FRUIT) AT THE REAR OF 600A OLD NORTHERN ROAD.



FIGURE 8 – DURAL MEMORIAL HALL, 604 OLD NORTHERN ROAD, DURAL.



FIGURE 9 – THE REAR OF THE MEMORIAL HALL AND THE VACANT ALLOTMENT AT 606 OLD NORTHERN ROAD (LEFT)



FIGURE 10 – UNITING CHURCH CEMETERY ON THE WESTERN SIDE OF DERRIWONG ROAD

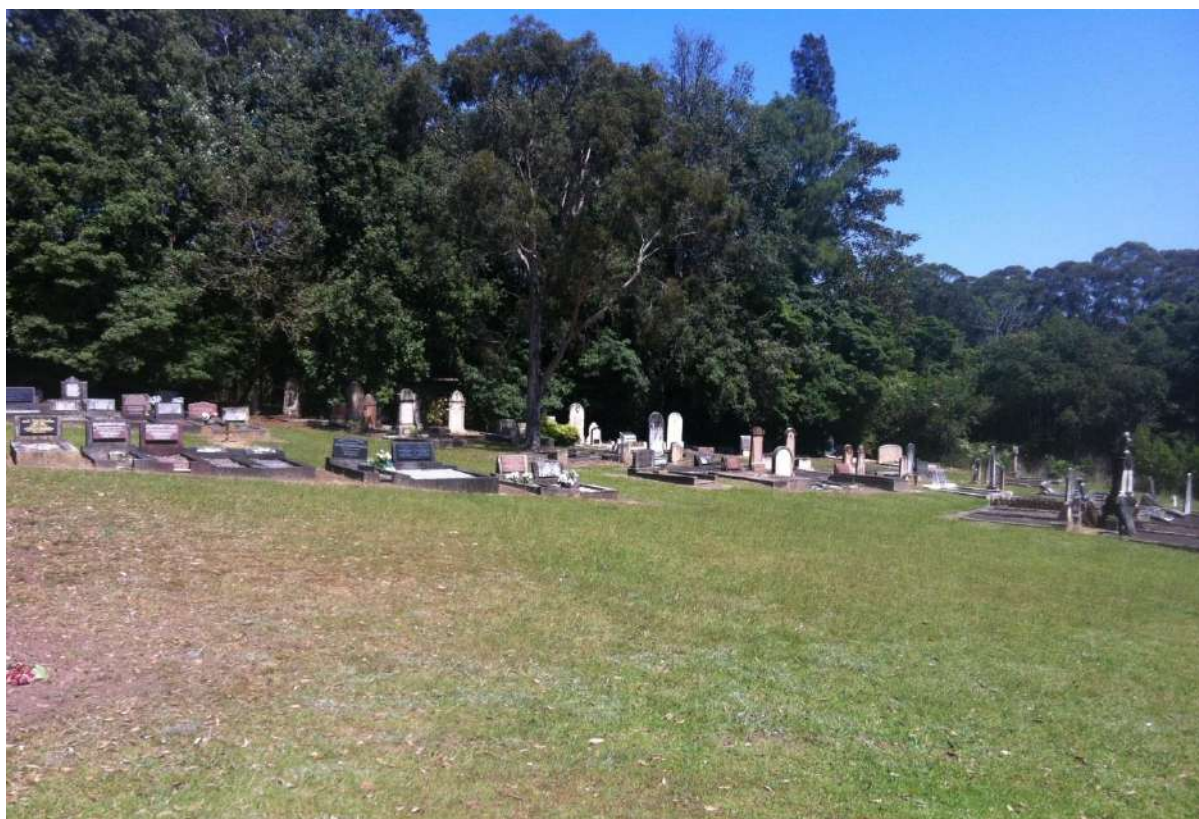


FIGURE 11 – SURROUNDING AREA.



PICTURE 1 – THE OLD NORTHERN ROAD VIEW NORTH



PICTURE 2 – LISTED HOUSE 600A OLD NORTHERN ROAD



PICTURE 3 – THE OLD NORTHERN ROAD VIEW SOUTH WITH COMMERCIAL PROPERTIES LEFT



PICTURE 4 – CAR PARK AT THE REAR OF THE MEMORIAL HALL AND DERRIWONG RD BEHIND



PICTURE 5 – DERRIWONG ROAD VIEW NORTH EAST WITH REAR OF 606, 604 AND 602 IN THE BACKGROUND



PICTURE 6 – DERRIWONG ROAD VIEW SOUTH EAST TOWARD THE REAR OF THE COMMERCIAL PROPERTIES

3 Historical Overview

3.1 AREA HISTORY

It has been claimed that Dural is an Aboriginal word used by the local Dharug language group meaning 'gully' or 'valley'. A map by surveyor James Meehan, dated 1817, shows the location for Dural as 'Doora', and a similar word appears in the Sydney Gazette in 1805. The Reverend WB Clarke gives Dural the meaning of 'valley' in his diary entry of November 1840. His informant was Nurragingy, a traditional owner of the land, who was then living at North Rocks.¹

In 1817 James Meehan surveyed and marked out a road between Castle Hill and Dural, but it remained a bush track until 1825, when work commenced on the Great North Road. The Great North Road, surveyed in 1825 and completed in 1836, was constructed using convict labour and spanned 264 km, connecting Sydney to the settlements of the Hunter Valley. The Great North Road commences at Parramatta Road, Five Dock, crossing the Parramatta River it passed through Ryde and Dural before reaching the Hawkesbury River at Wisemans Ferry, 100 km (62 mi) to the north. It then traverses rugged terrain to provide access to Singleton via Broke and Cessnock, Maitland and on to Newcastle.²

FIGURE 12 – CASTLE HILL PARISH AND PART OF GIDLEY, FIELD OF MARS, SOUTH COLAH, NELSON, ST. MATTHEW [AND] PROSPECT 1840. CASTLE HILL ROAD AND STUDY AREA INDICATED.



SOURCE: STATE LIBRARY OF NEW SOUTH WALES Z/M2 811.13/1840/1

The earliest settlers to make a living from the Dural district were timber-getters who cut timber from the forest to service the growing needs of Sydney. The forests of the Dural area stretched from Castle Hill across to Windsor and included ironbark, blue gum, turpentine, cedar, blackbutt, mahogany and wattle trees. The first land grants were given to 30 settlers, including 600 acres to George Hall in 1819. John Hall still owned property in the area in the 1880s. Another early landowner in the area was George Best,

¹ Dictionary of Sydney - Dural

² OEH – Convict History

whose farm became a well-known landmark after the Great North Road was built through his property and he established the 'Half-Way Inn' at Middle Dural in 1831.³

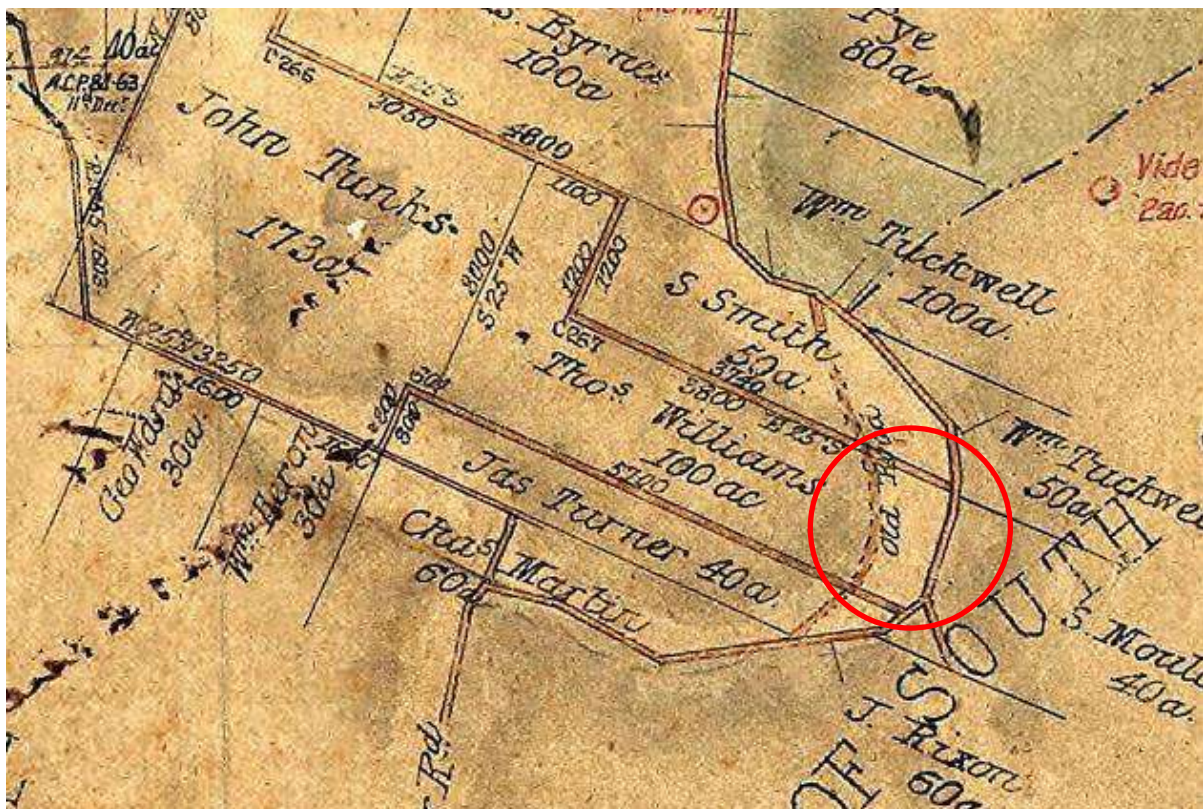
Other pioneers of this time were the Fagan, Waddell, Moulds, Hunt and Roughly families, many of their descendants still live in the region today. James Roughley donated land to be used for the building of a church. A sandstone chapel, known as St Jude's Church, was built on Old Northern Road circa 1846, with a vestry, apse and shingle roof, plus a bell turret on the western gable. A porch was added soon after. Prior to the construction of the church, services were held in a timber school building where St Jude's parish hall now stands. Some of the building materials from the old school were used in the building of the parish hall.⁴

Other settlers followed and the cleared land and the rich soils proved ideal for growing crops and later citrus. By 1870 there were dozens of citrus orchards, which drew a large number of workers to the area. As the population increased, additional schools, churches and a police station were established and the Dural Post Office opened in 1864.

Hornsby and Pennant Hills railway stations, located on the Main Northern line, opened on 17 September 1886. In 1893 there was a planned train line from Rosehill to Dural that would have taken in part of Thomas Williams land along the southern end boundary of Dural Road, however it was not completed. Castle Hill and Cherrybrook stations will be constructed as part of the North West Rail Link to be completed in 2019.

Dural is now a semi-rural area with orchards, market gardens and remnant forest. Land blocks average five acres (two hectares) and are popular as hobby farms.⁵

FIGURE 13 – PARISH OF NELSON COUNTY OF CUMBERLAND 1878 APPROXIMATE SITE INDICATED



SOURCE: DEPARTMENT OF LANDS - HLRV VIEWER 2015

³ Dural and Round Corner Chamber of Commerce - Dural History

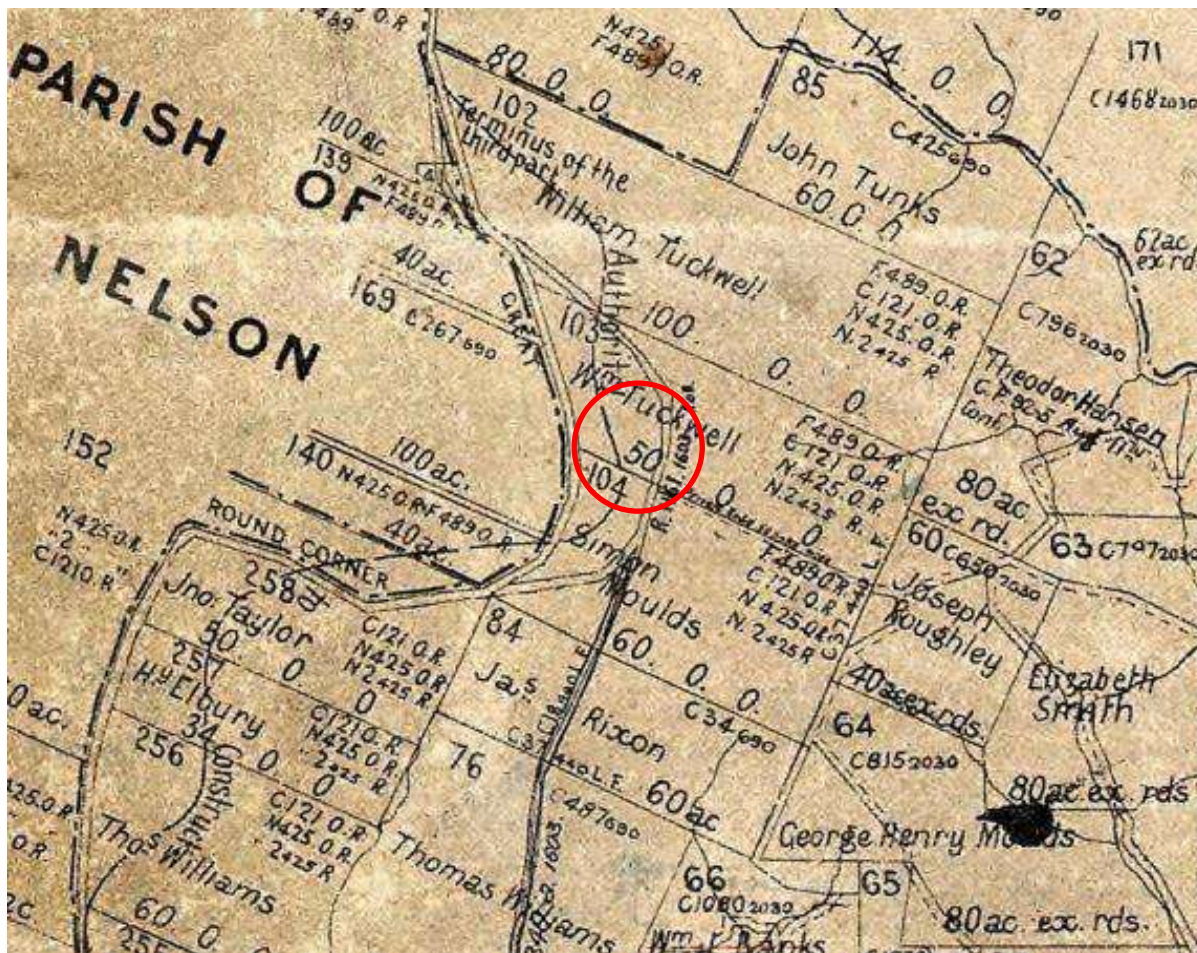
⁴ Dural District Anglican Churches – St Judes

⁵ Rowland, J 2008 Dural Dictionary of Sydney [electronic resource]

3.2 SITE HISTORY

While a large part of The Hills and Hornsby district had been granted in 1840 and the Old Northern Road was the boundary between properties. The Parish map of 1840 shows the subject site in the Parish of South Colah was located on a 50 acre property granted to William Tuckwell, just to the north of Round Corner. Tuckwell had also been granted the adjoining 100 acres to the north. Thomas Williams was granted 100 acres on the opposite side of the Old North Road sometime after 1840. Williams sold 21 acres of his property to a group of Methodists in 1857 for the establishment of a cemetery. Simon Moulds was granted the 60 acres to the south. The current Quarry Road is the boundary between Tuckwell and Mould's property.

FIGURE 14 – 1897 PARISH OF SOUTH COLAH THE SUBJECT SITE IS INDICATED



SOURCE: DEPARTMENT OF LANDS - HLRV VIEWER 2015

Sometime before the 1870s, the Northern Road was extended to the east through Tuckwell and Mould's properties (Figure 14) to join a new line of road from the south. The New Line Road was surveyed as early as 1829, but remained an unsealed track well into the 20th century. By the 1870s the area was increasingly populated and new roads through large grants were required to transport fruit and vegetables grown in the area to Sydney. The previous western alignment of the Old North Road became part of Derriwong Road (Figure 13). The remainder of Derriwong Road was formed as the boundaries between properties to the north and west. Most of the properties in the area at this time were between 40 and 200 acres and primarily dedicated to orchard growing.

According to Parish maps of Nelson and South Colah the large allotments remained relatively unchanged until after 1907. Around 1915 the subject site was subdivided from the large Tuckwell allotment and the eight acres became portion 479 which includes 600 and 600A Old Northern Road. The property was in the ownership of T. Parker at this time who sold it to M. T. Pahlow around 1923. By 1931 Vera Martha Lamb was the owner of the property together with the adjoining portion 359 to the west. She and her daughter Vera and granddaughter Daphne held the property until 1975. 602, 604 and 606 Old Northern

3.3 PROPERTY OWNERS 600 AND 600A OLD NORTHERN ROAD

Table 1 lists owners of the subject property from known historical records.

TABLE 2 – PROPERTY OWNERS

DATE	OWNER
10/01/1986	Franc and Guiseppa Burgio Part excised by Commissioner of Main Roads.
17/05/1979	Franc and Guiseppa Burgio
18/02/1975	JA Pope (Pastoral) PtyLtd
13/10/1972	Daphne Ellen Pender and Harry Greenfields (grand children of Martha Lamb)
10/07/1969	Vera Daphne Lamb (Daughter of Martha)
1931	Vera Martha Lamb
1923	MT Pahlow
1915	T Parker (Subject site subdivided from large allotment)
1907	William Tuckwell
1840	William Tuckwell

3.4 DATE OF CONSTRUCTION

Stylistically, the house appears to have been constructed between the 1880s -1900. No historical information has been found to confirm this. It is currently in poor condition and uninhabited.

The Dural Memorial Hall was constructed in 1925 on land that was subdivided from 602 Old Northern Rd.

3.5 ALTERATIONS AND ADDITIONS

Alterations and additions to the property include the addition of a carport/garage adjoining the south of the house, additions to the rear which are possibly a bathroom and laundry (post 1940), infilling of the rear veranda, new doors, addition of iron railing to the front and rear verandahs, construction of sheds in the rear and addition of an above ground pool.

600 Old Northern Road was subdivided to form the current allotments in 1979.

4 Heritage Significance

4.1 WHAT IS HERITAGE SIGNIFICANCE?

Before making decisions to change a heritage item, an item within a heritage conservation area, or an item located in proximity to a heritage listed item, it is important to understand its values and the values of its context. This leads to decisions that will retain these values in the future. Statements of heritage significance summarise a place's heritage values – why it is important, why a statutory listing was made to protect these values.

4.2 SIGNIFICANCE ASSESSMENT

The Heritage Council of NSW has developed a set of seven criteria for assessing heritage significance, which can be used to make decisions about the heritage value of a place or item. There are two levels of heritage significance used in NSW: state and local.

The following assessment of heritage significance for 600A Old Northern Road has been prepared in accordance with the 'Assessing Heritage Significance' (2001) guides.

CRITERIA	SIGNIFICANCE ASSESSMENT
<p>A – Historical Significance</p> <p><i>An item is important in the course or pattern of the local area's cultural or natural history.</i></p>	<p>The house at 600A Old Northern Road is the first building on the property and is located on part of one of the early land grants in the area. The building and allotment is associated with farming and orcharding in the area and has been subdivided from a much larger allotment. The property is located close to the Old Northern Road which was important for moving produce to Sydney for sale.</p> <p>The Hall was built by the community as a memorial to the local soldiers of the first world war.</p> <p>Successive stages of subdivision in the area are evident and both buildings remain in their original position close to the road and the adjoining allotment boundary.</p> <p>The subject site therefore has historic significance.</p>
<p>Guidelines for Inclusion</p> <ul style="list-style-type: none"> ▪ shows evidence of a significant human activity <input type="checkbox"/> ▪ is associated with a significant activity or historical phase <input type="checkbox"/> ▪ maintains or shows the continuity of a historical process or activity <input checked="" type="checkbox"/> 	<p>Guidelines for Exclusion</p> <ul style="list-style-type: none"> ▪ has incidental or unsubstantiated connections with historically important activities or processes <input type="checkbox"/> ▪ provides evidence of activities or processes that are of dubious historical importance <input type="checkbox"/> ▪ has been so altered that it can no longer provide evidence of a particular association <input type="checkbox"/>
<p>B – Associative Significance</p> <p><i>An item has strong or special associations with the life or works of a person, or group of persons, of importance in the local area's cultural or natural history.</i></p>	<p>The house at 600A Old Northern Road does not appear to have any association with any particular person, or group of persons although the house was home to several generations of the Lamb family for 44 years. The property also has associations with orcharding which was characteristic of the area and is likely to be associated with the subdivision of the large land parcels from the 1880s onward.</p> <p>The memorial hall has associations with the local community, but the hall and its allotment of land is not included in the proposed subdivision.</p> <p>The site has associative significance.</p>
<p>Guidelines for Inclusion</p> <ul style="list-style-type: none"> ▪ shows evidence of a significant human occupation <input checked="" type="checkbox"/> 	<p>Guidelines for Exclusion</p> <ul style="list-style-type: none"> ▪ has incidental or unsubstantiated connections with historically important people or events <input type="checkbox"/>

CRITERIA	SIGNIFICANCE ASSESSMENT
<ul style="list-style-type: none"> ▪ is associated with a significant event, person, or group of persons <input type="checkbox"/> 	<ul style="list-style-type: none"> ▪ provides evidence of people or events that are of dubious historical importance <input type="checkbox"/> ▪ has been so altered that it can no longer provide evidence of a particular association <input type="checkbox"/>
<p>C – Aesthetic Significance</p> <p><i>An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in the local area.</i></p>	<p>The house is in poor condition and has a number of alterations. There are numerous timber weatherboard houses in the area.</p> <p>The memorial hall has some aesthetic significance, but is not included in the subdivision proposal.</p> <p>The property does not fulfil this criterion.</p>
<p>Guidelines for Inclusion</p> <ul style="list-style-type: none"> ▪ shows or is associated with, creative or technical innovation or achievement <input type="checkbox"/> ▪ is the inspiration for a creative or technical innovation or achievement <input type="checkbox"/> ▪ is aesthetically distinctive <input type="checkbox"/> ▪ has landmark qualities <input type="checkbox"/> ▪ exemplifies a particular taste, style or technology <input type="checkbox"/> 	<p>Guidelines for Exclusion</p> <ul style="list-style-type: none"> ▪ is not a major work by an important designer or artist <input checked="" type="checkbox"/> ▪ has lost its design or technical integrity <input type="checkbox"/> ▪ its positive visual or sensory appeal or landmark and scenic qualities have been more than temporarily degraded <input type="checkbox"/> ▪ has only a loose association with a creative or technical achievement <input type="checkbox"/>
<p>D – Social Significance</p> <p><i>An item has strong or special association with a particular community or cultural group in the local area for social, cultural or spiritual reasons.</i></p>	<p>The house is likely to have some connection with the local community however it is unlikely that the property is esteemed but the community.</p> <p>The memorial hall is likely to be esteemed by the community as a memorial, meeting place and music venue, but is not included in the subdivision proposal.</p> <p>The property does not fulfil this criterion.</p>
<p>Guidelines for Inclusion</p> <ul style="list-style-type: none"> ▪ is important for its associations with an identifiable group <input type="checkbox"/> ▪ is important to a community's sense of place <input type="checkbox"/> 	<p>Guidelines for Exclusion</p> <ul style="list-style-type: none"> ▪ is only important to the community for amenity reasons <input type="checkbox"/> ▪ is retained only in preference to a proposed alternative <input checked="" type="checkbox"/>
<p>E – Research Potential</p> <p><i>An item has potential to yield information that will contribute to an understanding of the local area's cultural or natural history.</i></p>	<p>A survey of the site did not reveal any evidence of previous archaeological structures or features. It is possible the site retains below ground historical archaeological features or deposits such as cesspits, wells and rubbish pits however these features and deposits are common and unlikely to be significant.</p> <p>The site was thickly vegetated and there was no evidence of aboriginal occupation of the site. The closest natural water source is some distance away and the site is likely to have been only infrequently visited by Aboriginal people in the past. The site has been cleared and subject to agricultural uses and it is unlikely that undisturbed Aboriginal objects would be present.</p> <p>The property does not fulfil this criterion.</p>
<p>Guidelines for Inclusion</p> <ul style="list-style-type: none"> ▪ has the potential to yield new or further substantial scientific and/or archaeological information <input type="checkbox"/> ▪ is an important benchmark or reference site or type <input type="checkbox"/> ▪ provides evidence of past human cultures that is unavailable elsewhere <input type="checkbox"/> 	<p>Guidelines for Exclusion</p> <ul style="list-style-type: none"> ▪ the knowledge gained would be irrelevant to research on science, human history or culture <input type="checkbox"/> ▪ has little archaeological or research potential <input checked="" type="checkbox"/> ▪ only contains information that is readily available from other resources or archaeological sites <input type="checkbox"/>

CRITERIA	SIGNIFICANCE ASSESSMENT
<p>F – Rarity</p> <p><i>An item possesses uncommon, rare or endangered aspects of the local area’s cultural or natural history.</i></p>	<p>Late Victorian weatherboard houses are common in the area.</p> <p>Memorial Halls are not uncommon in the Hills Shire.</p> <p>The site does not fulfil this criterion.</p>
<p>Guidelines for Inclusion</p> <ul style="list-style-type: none"> ▪ provides evidence of a defunct custom, way of life or process <input type="checkbox"/> ▪ demonstrates a process, custom or other human activity that is in danger of being lost <input type="checkbox"/> ▪ shows unusually accurate evidence of a significant human activity <input type="checkbox"/> ▪ is the only example of its type <input type="checkbox"/> ▪ demonstrates designs or techniques of exceptional interest <input type="checkbox"/> ▪ shows rare evidence of a significant human activity important to a community <input type="checkbox"/> 	<p>Guidelines for Exclusion</p> <ul style="list-style-type: none"> ▪ is not rare <input checked="" type="checkbox"/> ▪ is numerous but under threat <input type="checkbox"/>
<p>G – Representative</p> <p><i>An item is important in demonstrating the principal characteristics of a class of NSWs (or the local area’s):</i></p> <ul style="list-style-type: none"> ▪ <i>cultural or natural places; or</i> ▪ <i>cultural or natural environments.</i> 	<p>The timber weatherboard house is typical of vernacular dwellings of the late Victorian period in this area. The house could also be considered part of a group which collectively illustrates the settlement and development of farming and agricultural activities on the fringes of Sydney.</p> <p>The hall is also representative of the memorialisation of war and community engagement.</p> <p>The site is considered to have representative significance.</p>
<p>Guidelines for Inclusion</p> <ul style="list-style-type: none"> ▪ is a fine example of its type <input type="checkbox"/> ▪ has the principal characteristics of an important class or group of items <input type="checkbox"/> ▪ has attributes typical of a particular way of life, philosophy, custom, significant process, design, technique or activity <input type="checkbox"/> ▪ is a significant variation to a class of items <input type="checkbox"/> ▪ is part of a group which collectively illustrates a representative type <input checked="" type="checkbox"/> ▪ is outstanding because of its setting, condition or size <input type="checkbox"/> ▪ is outstanding because of its integrity or the esteem in which it is held <input type="checkbox"/> 	<p>Guidelines for Exclusion</p> <ul style="list-style-type: none"> ▪ is a poor example of its type <input type="checkbox"/> ▪ does not include or has lost the range of characteristics of a type <input type="checkbox"/> ▪ does not represent well the characteristics that make up a significant variation of a type <input type="checkbox"/>

4.3 STATEMENT OF SIGNIFICANCE

The house at 600A Old Northern Road has historical significance as it is located on part of one of the early land grants in the area and is associated with the early development and subdivision of the area. The site is associated with one family for many years and with orcharding which is characteristic of the area. The timber weatherboard house is typical of vernacular dwellings of the late Victorian period and is representative of this period of rural dwellings.

5 Impact Assessment

5.1 HERITAGE LISTING

Numbers 600A and 604 Old Northern Road are heritage listed items under The Hills Local Environmental Plan 2012. Numbers 600, 602 and 606 Old Northern Road are located immediately adjacent to the heritage items.

FIGURE 16 – THE HILLS AND HORNSBY LEP HERITAGE MAPS 23 AND THE HORNSBY LOCAL ENVIRONMENTAL PLAN (LEP) 2013 SHOWING HERITAGE LISTED ITEMS IN AND WITHIN THE VICINITY OF THE SUBJECT SITE (OUTLINED RED).



PICTURE 7 – THE HILLS LEP 2012 HERITAGE MAP 23



PICTURE 8 – THE HORNSBY LEP 2013 HERITAGE MAP

5.2 STATUTORY CONTROLS

5.2.1 THE HILLS LOCAL ENVIRONMENTAL PLAN 2012

The proposed works are addressed in the table below in relation to the relevant clauses in the LEP.

TABLE 3 – RELEVANT LEP CLAUSES

CLAUSE	DISCUSSION
<p>5.10 Heritage conservation</p> <p>Note. Heritage items (if any) are listed and described in Schedule 5. Heritage conservation areas (if any) are shown on the Heritage Map as well as being described in Schedule 5.</p> <p>(1) Objectives</p> <p>The objectives of this clause are as follows:</p> <p>(a) to conserve the environmental heritage of The Hills,</p> <p>(b) to conserve the heritage significance of heritage items and heritage conservation</p>	<p>As set out in the table below, it is considered that the proposed subdivision would not diminish the significance of the subject site. A curtilage is proposed around the heritage item at 600A Old Northern Road so that subdivision of the land will not detract from or obscure views to the item and those in the vicinity (Figure 17).</p>

CLAUSE	DISCUSSION
<p>areas including associated fabric, settings and views,</p> <p>(c) to conserve archaeological sites,</p> <p>(d) to conserve Aboriginal objects and Aboriginal places of heritage significance.</p>	
<p>(2) Requirement for consent</p> <p>Development consent is required for any of the following:</p> <p>(a) demolishing or moving any of the following or altering the exterior of any of the following (including, in the case of a building, making changes to its detail, fabric, finish or appearance):</p> <p>(i) a heritage item</p> <p>(ii) an Aboriginal object,</p> <p>(iii) a building, work, relic or tree within a heritage conservation area,</p> <p>(b) altering a heritage item that is a building by making structural changes to its interior or by making changes to anything inside the item that is specified in Schedule 5 in relation to the item,</p> <p>(c) disturbing or excavating an archaeological site while knowing, or having reasonable cause to suspect, that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed,</p> <p>(d) disturbing or excavating an Aboriginal place of heritage significance, (e) erecting a building on land:</p> <p>(i) on which a heritage item is located or that is within a heritage conservation area, or</p> <p>(ii) on which an Aboriginal object is located or that is within an Aboriginal place of heritage significance,</p> <p>(f) subdividing land:</p> <p>(i) on which a heritage item is located or that is within a heritage conservation area, or</p> <p>(ii) on which an Aboriginal object is located or that is within an Aboriginal place of heritage significance.</p>	<p>The proposal concerns the subdivision of land that includes a heritage item and therefore requires approval from The Hills Council. As such, this HIS has been prepared to assess the heritage impact of the proposed subdivision on the subject site and the proximate heritage items.</p>
<p>(4) Effect of proposed development on heritage significance</p> <p>The consent authority must, before granting consent under this clause in respect of a heritage item or heritage conservation area, consider the effect of the proposed development on the heritage significance of the item or area concerned. This subclause applies regardless of whether a heritage management document is prepared under subclause (5) or a heritage conservation management plan is submitted under subclause (6).</p>	<p>No development is proposed at this time. It is generally considered that the proposed subdivision would be sympathetic to the significance of the heritage items.</p> <p>Urban zoning for the area would be in keeping with other development in the district. The site is located in an area of changing character, in particular the existing commercial development to the south.</p> <p>Subdivision and rezoning should aim to retain the same character and scale as that which is existing to the south at Round Corner and a curtilage separating the listed item from any new development would minimise impacts of future development.</p>

CLAUSE	DISCUSSION
<p>(5) Heritage assessment</p> <p>The consent authority may, before granting consent to any development:</p> <p>(a) on land on which a heritage item is located, or</p> <p>(b) on land that is within a heritage conservation area, or</p> <p>(c) on land that is within the vicinity of land referred to in paragraph (a) or (b), require a heritage management document to be prepared that assesses the extent to which the carrying out of the proposed development would affect the heritage significance of the heritage item or heritage conservation area concerned.</p>	<p>This report has been prepared to fulfil this requirement.</p>
<p>(6) Heritage conservation management plans</p> <p>The consent authority may require, after considering the heritage significance of a heritage item and the extent of change proposed to it, the submission of a heritage conservation management plan before granting consent under this clause.</p>	<p>Not Applicable - the site does not require a Conservation Management Plan</p>
<p>(7) Archaeological sites</p> <p>The consent authority must, before granting consent under this clause to the carrying out of development on an archaeological site (other than land listed on the State Heritage Register or to which an interim heritage order under the <i>Heritage Act 1977</i> applies):</p> <p>(a) notify the Heritage Council of its intention to grant consent, and</p> <p>(b) take into consideration any response received from the Heritage Council within 28 days after the notice is sent.</p>	<p>Not Applicable - the site is not considered to be an archaeological site.</p> <p>As no physical works are currently proposed, there is no identified risk of harm to Old Northern Road, which is identified in part as an archaeological item under the Hills LEP 2012.</p> <p>There are therefore no identified archaeological constraints to the current proposal.</p>
<p>(8) Aboriginal places of heritage significance</p> <p>The consent authority must, before granting consent under this clause to the carrying out of development in an Aboriginal place of heritage significance:</p> <p>(a) consider the effect of the proposed development on the heritage significance of the place and any Aboriginal object known or reasonably likely to be located at the place by means of an adequate investigation and assessment (which may involve consideration of a heritage impact statement), and</p> <p>(b) notify the local Aboriginal communities, in writing or in such other manner as may be appropriate, about the application and take into consideration any response received within 28 days after the notice is sent.</p>	<p>Not Applicable - the site is not considered to be a place of Aboriginal significance.</p>
<p>(9) Demolition of nominated State heritage items</p> <p>The consent authority must, before granting consent under this clause for the demolition of a nominated State heritage item:</p> <p>(a) notify the Heritage Council about the application, and</p>	<p>Not Applicable - demolition is not proposed.</p>

CLAUSE	DISCUSSION
(b) take into consideration any response received from the Heritage Council within 28 days after the notice is sent.	
<p>(10) Conservation incentives</p> <p>The consent authority may grant consent to development for any purpose of a building that is a heritage item or of the land on which such a building is erected, or for any purpose on an Aboriginal place of heritage significance, even though development for that purpose would otherwise not be allowed by this Plan, if the consent authority is satisfied that:</p> <p>(a) the conservation of the heritage item or Aboriginal place of heritage significance is facilitated by the granting of consent, and</p> <p>(b) the proposed development is in accordance with a heritage management document that has been approved by the consent authority, and</p> <p>(c) the consent to the proposed development would require that all necessary conservation work identified in the heritage management document is carried out, and</p> <p>(d) the proposed development would not adversely affect the heritage significance of the heritage item, including its setting, or the heritage significance of the Aboriginal place of heritage significance, and</p> <p>(e) the proposed development would not have any significant adverse effect on the amenity of the surrounding area.</p>	Not applicable

5.2.2 THE HILLS DEVELOPMENT CONTROL PLAN 2012

The proposed works are addressed in the table below in relation to the relevant provisions in the DCP.

TABLE 4 – DEVELOPMENT CONTROL PLAN

PROVISION	DISCUSSION
<p>3.2 Subdivision</p> <p>Objective</p> <p>To ensure that the subdivision of land on which a heritage building is located does not isolate the building from its setting or context, or adversely affect its amenity or privacy.</p> <p>Controls</p> <p>(a) Proposals for subdivision should define an appropriate setting or 'curtilage' for the heritage building as part of the heritage impact statement or conservation management plan.</p> <p>(b) In determining the curtilage of a heritage building consideration is to be given to the following:</p> <ul style="list-style-type: none"> The type of structure and original form and function of the heritage building should be reflected in the curtilage. 	<p>A heritage curtilage should be imposed on the property at 600A old Northern Road that includes the current fence lines surrounding the house and rear yard. These fence lines are likely to date from the 1970s when the allotment was subdivided from 600 Old Northern Road. The house, however, maintains its relationship to the street and the surrounding allotments.</p> <p>The mature trees surrounding the house and within the</p>

PROVISION	DISCUSSION
<ul style="list-style-type: none"> Gardens, Trees, Fencing, Gates and Archaeological Sites that are considered valuable in interpreting the history and setting of a building should be retained within the curtilage; The likely development expected to occur on the lots proposed to be created which will adjoin the heritage site shall have regard to setting, overshadowing and the views to and from the heritage site; It is desirable to retain where possible the original access arrangements to the site. The manner in which a heritage building is orientated in respect to public roads contributes to its significance. Council may impose restrictions upon lots adjoining a heritage item including height limitations, building setbacks, access arrangements, building orientation, and presentation to the streetscape; Visual Links such as street frontage, garden settings, important vegetation, outbuildings, stables, water features, or distant topographical features should be retained within the curtilage and should not be obscured by new work. 	<p>proposed curtilage or on the northern fence line should be maintained as a means of maintaining the setting of the heritage item.</p> <p>It is noted that the curtilage proposed in this figure does not reflect the current lot boundaries of the item; however, the current lot boundaries are considered generous, as the majority of the lot to the rear of the item does not contribute to the setting of the house, which is primarily derived from its street-front position. Rather, the existing item curtilage reflects only the legal lot boundaries, and does not necessarily reflect an appropriate curtilage for the item.</p> <p>Development to the rear of the house and outside of the curtilage shown in Figure 17 may be appropriate, provided that it is designed with regard to the scale and form of the heritage item. The curtilage identified in Figure 17 should be considered in the further stages of this proposal.</p> <p>Access to the property from Old Northern Road should be maintained although the existing garage is a late addition and obscures the view to side and rear of the building from the street.</p> <p>There are no outbuildings or archaeological sites that should be retained.</p> <p>Visual links to the site are unlikely to be impacted as the heritage items are located very close to the road.</p>

5.3 HERITAGE OFFICE GUIDELINES

The proposed works are addressed in relation to relevant questions posed in the Heritage Office's 'Statement of Heritage Impact' guidelines

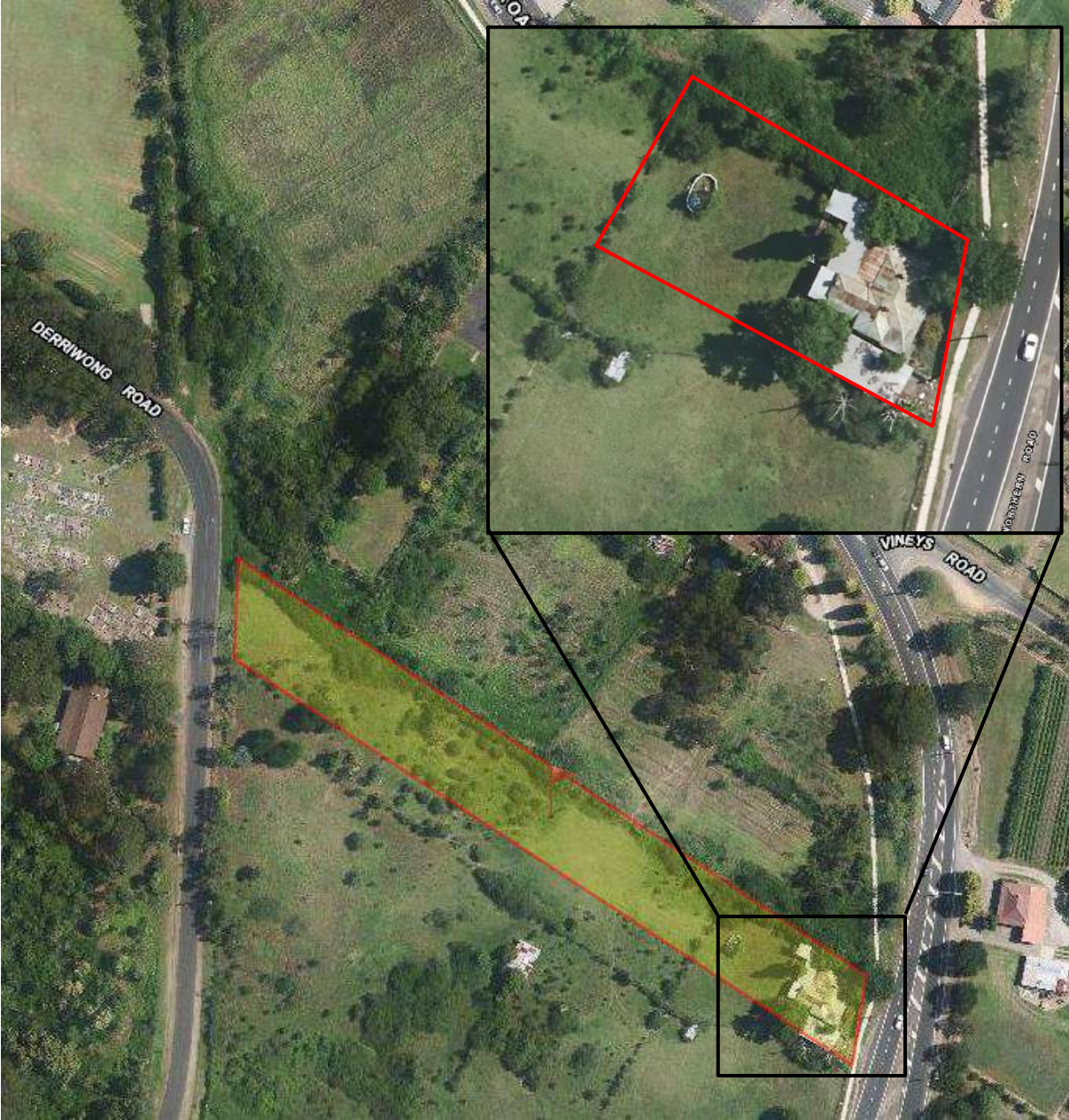
TABLE 5 – RELEVANT QUESTIONS

QUESTION	DISCUSSION
<p>The following aspects of the proposal respect or enhance the heritage significance of the item or conservation area for the following reasons:</p>	<p>Subdivision for low density residential purposes within the study area would be in keeping with the residential development already existing in the neighbourhood and the changing character of the semi- rural district.</p>
<p>The following aspects of the proposal could detrimentally impact on heritage significance. The reasons are explained as well as the measures to be taken to minimise impacts:</p>	<p>Residential development in the vicinity of the listed items may obscure the historic and rural character of the house and hall.</p>

QUESTION	DISCUSSION
	<p>A curtilage around the heritage listed house to separate it from future development would be appropriate. Subdivision and future development should not physically encroach on the curtilage of the heritage item that is shown in Figure 17.</p> <p>It is noted that the curtilage proposed in this figure does not reflect the current lot boundaries of the item; however, the current lot boundaries are considered generous, as the majority of the lot to the rear of the item does not contribute to the setting of the house, which is primarily derived from its street-front position. Rather, the existing item curtilage reflects only the legal lot boundaries, and does not necessarily reflect an appropriate curtilage for the item.</p> <p>Development to the rear of the house and outside of the curtilage shown in Figure 17 may be appropriate, provided that it is designed with regard to the scale and form of the heritage item. The curtilage identified in Figure 17 should be considered in the further stages of this proposal.</p> <p>The proposed subdivision should be designed with regard for the amenity and significance of the heritage item and neighbouring items.</p>
<p>The following sympathetic solutions have been considered and discounted for the following reasons:</p>	<p>N/A</p>
<p>Change of use</p> <p>Has the advice of a heritage consultant or structural engineer been sought?</p> <p>Has the consultant's advice been implemented? If not, why not?</p> <p>Does the existing use contribute to the significance of the heritage item?</p> <p>Why does the use need to be changed?</p> <p>What changes to the fabric are required as a result of the change of use?</p> <p>What changes to the site are required as a result of the change of use?</p>	<p>The subject site and surrounding land will be rezoned from rural to low density residential. This is considered appropriate as there is similar development in the area.</p>
<p>New development adjacent to a heritage item</p> <p>How does the new development affect views to, and from, the heritage item?</p> <p>What has been done to minimise negative effects?</p> <p>How is the impact of the new development on the heritage significance of the item or area to be minimised?</p> <p>Why is the new development required to be adjacent to a heritage item?</p> <p>How does the curtilage allowed around the heritage item</p>	<p>Plans for future development of the site are unknown. A curtilage is proposed around the heritage listed house that contributes to the retention of its heritage significance. The existing front fence and garage currently presents a visual barrier to the front and side of the building.</p> <p>It is noted that the curtilage proposed in this figure does not reflect the current lot boundaries of the item;</p>

QUESTION	DISCUSSION
<p>contribute to the retention of its heritage significance?</p> <p>Is the development sited on any known, or potentially significant archaeological deposits?</p> <p>If so, have alternative sites been considered? Why were they rejected?</p> <p>Is the new development sympathetic to the heritage item?</p> <p>In what way (e.g. form, siting, proportions, design)?</p> <p>Will the additions visually dominate the heritage item?</p> <p>How has this been minimised?</p> <p>Will the public, and users of the item, still be able to view and appreciate its significance?</p>	<p>however, the current lot boundaries are considered generous, as the majority of the lot to the rear of the item does not contribute to the setting of the house, which is primarily derived from its street-front position. Rather, the existing item curtilage reflects only the legal lot boundaries, and does not necessarily reflect an appropriate curtilage for the item.</p> <p>Development to the rear of the house and outside of the curtilage shown in Figure 17 may be appropriate, provided that it is designed with regard to the scale and form of the heritage item. The curtilage identified in Figure 17 should be considered in the further stages of this proposal.</p> <p>No subdivision is proposed on the Dural Memorial Hall site and therefore the item will not be impacted.</p>
<p>Subdivision</p> <p>How is the proposed curtilage allowed around the heritage item appropriate?</p> <p>Could future development that results from this subdivision compromise the significance of the heritage item? How has this been minimised?</p> <p>Could future development that results from this subdivision affect views to, and from, the heritage item?</p> <p>How are negative impacts to be minimised?</p>	<p>Low density residential subdivision is already present in the area and is considered appropriate for the site. A curtilage surrounding the listed house conforming to the previous property boundaries would separate the new development from physical or visual impact on the heritage item. The existing front fence and garage of the house currently presents a visual barrier to the front and side of the building.</p>
<p>Tree removal or replacement</p> <p>Does the tree contribute to the heritage significance of the item or landscape?</p> <p>Why is the tree being removed?</p> <p>Has the advice of a tree surgeon or horticultural specialist been obtained?</p> <p>Is the tree being replaced? Why? With the same or a different species?</p>	<p>Several large mature trees are present close to the house and should be retained as they contribute to the Character of the house and the Old Northern Road. Several mature pine trees are located on the opposite side of the Old Northern Road. Trees on the northern boundary of the listed site separate the house from the adjoining property.</p>

FIGURE 17 – SUGGESTED HERITAGE CURTILAGE AROUND THE HERITAGE ITEM AT 600A OLD NORTHERN ROAD (IN INSET) SHOWN IN COMPARISON TO THE EXISTING LISTING CURTILAGE



SOURCE: GOOGLE MAPS 2015

6 Conclusion and Recommendations

Urbis was engaged to prepare this HIS for proposed subdivision of the subject site, located between Derriwong Road and old Northern Road, Dural. The subject site incorporates, or is in the vicinity of a number of locally listed heritage items on The Hills Local Environmental Plan 2012. These include a 'House' located at 600A Old Northern Road (Item No. I85) and the Dural Soldiers Memorial Hall located at 604 Old Northern Road (Item No. I86). In addition, the site is located in the immediate vicinity of the Uniting Church Cemetery on Derriwong Road (Item No. I81).

600A Old Northern Road is a beaded weatherboard cottage on brick footings with corrugated iron hipped roof that flows to a verandah. Stylistically the house appears to have been constructed between 1880 and 1900 and was associated with orcharding which was characteristic of the area. The study area was originally part of a land grant acquired by William Tuckwell prior to 1840. The current listed property was subdivided from 600 Old northern Road around 1979.

The subject proposal has been assessed in relation to the relevant controls and provisions contained within The Hills LEP 2012 and The Hills DCP 2012. Based on the results of this assessment, it has been determined that overall, the proposed low density residential subdivision is unlikely to impact on the heritage significance of any of the listed items on site or within the vicinity. Both the house and hall are located very close to the road and the visual prominence of the buildings within the streetscape will be maintained, and existing views to and from the principal (front) elevations of the items will not be obscured or adversely impacted. As no physical works are currently proposed, there is no identified risk of harm to Old Northern Road, which is identified in part as an archaeological item under the Hills LEP 2012.

- It is recommended that a heritage curtilage be formed for the house to protect the impacts of potential future development. This is identified in Figure 17.
- The house should be retained and restored as part of the proposed works so that the principal house form is wholly retained. This would ultimately conserve and enhance the heritage significance of the item, which is currently uninhabited.
- If developed, it is recommended that lower-scale residences (one to two storey) in the vicinity of the heritage items would be in keeping with other development in the area and would not impact on views and the heritage significance of the item. Development in the vicinity of the items must respond appropriate to their form and scale.

An appropriate, revised curtilage around the heritage item is shown in Figure 17, above. This curtilage is considered appropriate to maintain and conserve the significance of the item as well as to ensure that potential future development does not encroach on or negatively impact its setting.

7 Bibliography and References

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[Note: Some government departments have changed their names over time and the above publications state the name at the time of publication.]

Disclaimer

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This report has been prepared with due care and diligence by Urbis and the statements and opinions given by Urbis in this report are given in good faith and in the reasonable belief that they are correct and not misleading, subject to the limitations above.

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11 October 2016

Dear Sir,

Old Northern Road, Dural Subdivision Engineering Advice Note – Services Connections Feasibility

This letter provides Arup's engineering advice in reference to the options for service utility connections to the proposed subdivision at Old Northern Road, Dural.

Arup's advice is limited to reviewing the existing local utility infrastructure and the feasibility of providing connections to service the proposed development as proposed by Urbis (refer to attached plans). This preliminary investigation will be developed in coordination with the relevant services utility providers during the subsequent stages of design development.

1 Existing Utility Services Connections

The following sections detail Arup's commentary on each utility service:

1.1 Water

There are four water mains beneath the verges of the Old Northern Road, arranged such that there is a trunk main and a service main on each side. On the western/southern verge closest to the site there is a 500mm trunk main and a 200mm service main. There is an additional smaller 150mm diameter water main below Derriwong Road. This arrangement is illustrated on Sydney Water record drawings provided in the appendix and also on the excerpt.

Advice provided by Sydney Water in their feasibility letter reference 154616 (as provided in the Appendix) indicates there is sufficient capacity with the existing network to service the proposed development. Sydney Water have advised a preference for both development sites to be connected to the existing 200mm service main. The size of the mains off take will be subject to the forecast demands of the development and in particular the public/private open space which may require special approvals due to larger off takes.



The water network reticulation serving the proposed development is likely to consist of two connections for each site (north and south) off the existing 200mm cast iron cement lined water main situated alongside Old Northern Road. A new water main would be reticulated within each site to form a loop from the two connection points in order to offer redundancy in supply and options for isolation during maintenance. Creating mains loops is also important for providing good quality water.

In summary, there is sufficient capacity within the local water mains network and flexibility in where to provide the connection points and loop reticulation. To develop the design further, it is common to discuss these matters with Sydney Water through a Sydney Water Servicing Coordinator (WSC) once a Development Application (DA) has been secured.

1.2 Sewerage

There are several nearby gravity sewerage assets owned by Sydney Water, the closest of which services the subdivision to the south. There is a 225mm sewer running parallel to the creek within privately owned land and another smaller diameter sewer running along Pellit Lane. This is illustrated in Figure 2.

In addition there is a 180mm HDPEP (High Density Polyethylene) effluent pressure main located below Old Northern Road alternating between the eastern and western verges. This is illustrated in Figure 1.



Figure 1. Extract from DBYD records illustrating the water mains (shown in blue) and the newly constructed rising main (shown in orange) with reference to the northern site boundary (shown in red)

This effluent pressure main conveys wastewater from the north to south along Old Northern Road. It discharges sewage from two pumping stations located to the north of the development, one in Glenorie and the other in Galston.

The pressure main was recently constructed, and is currently undergoing assessment for potential capacity upgrades. Results of this assessment will be released in Q4 2016. Feasibility of connections to this pressure main will largely depend on the results of the assessment and consultation with Sydney Water.

Whilst a connection to the pressure main is feasible, Arup does not consider this a preferred option as this approach would require a pumping station to be built to lift sewage from the lowest point on each site up to the higher elevation of Old Northern Road. Additional telemetry equipment to time the release of the site discharge into the Sydney Water pressure main would also be required. Whilst technically feasible, this solution is likely to add capital cost and complicate the approval process with Sydney Water.

A preferred approach would involve the installation of pressure main to connect the northern site and a gravity main to connect the southern site to the existing sewer south of O'Hara's creek. This would necessitate the construction of one less pumping station than the approach above and would offer flexibility in the alignment of the rising main from the northern site.

As a further development of this approach it may also be possible to install a new gravity connections from both developments which would connect to the existing 225mm sewer main situated to the South of the Creek. There are several options for the alignment of these new gravity sewers which can be considered further in the subsequent stages of design development in consultation with Sydney Water. A preliminary option for the alignment is shown in Figure 2:

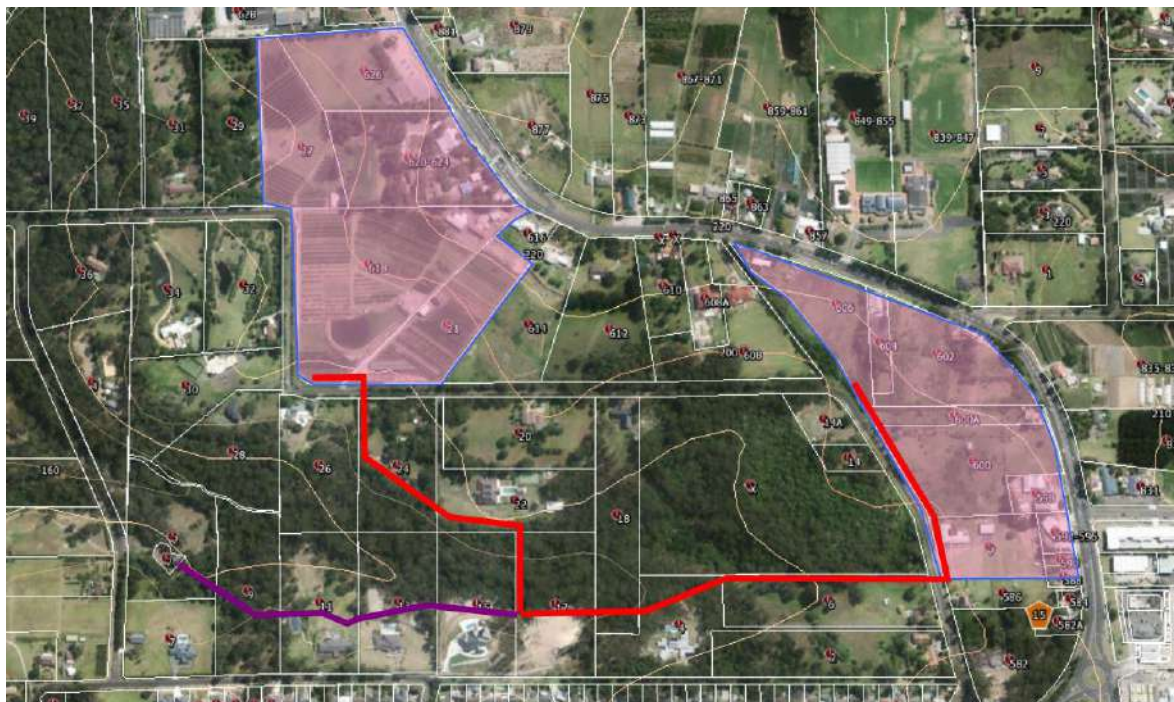


Figure 2. Arup proposal for future gravity sewer alignments (shown in red) to discharge the sewage from the two development sites (outlined in pink) into the existing gravity sewer (shown in purple)

The gravity lead-in sewer connection for the northern site is likely to be the more complex of the two branches due to the requirement to cross O'Hara's Creek and the topographic constraints this will impose on the pipe invert levels. Arup have made a preliminary assessment of the feasibility of this connection using invert levels provided by Sydney Water and topographic information available on Google Earth. These are presented below:

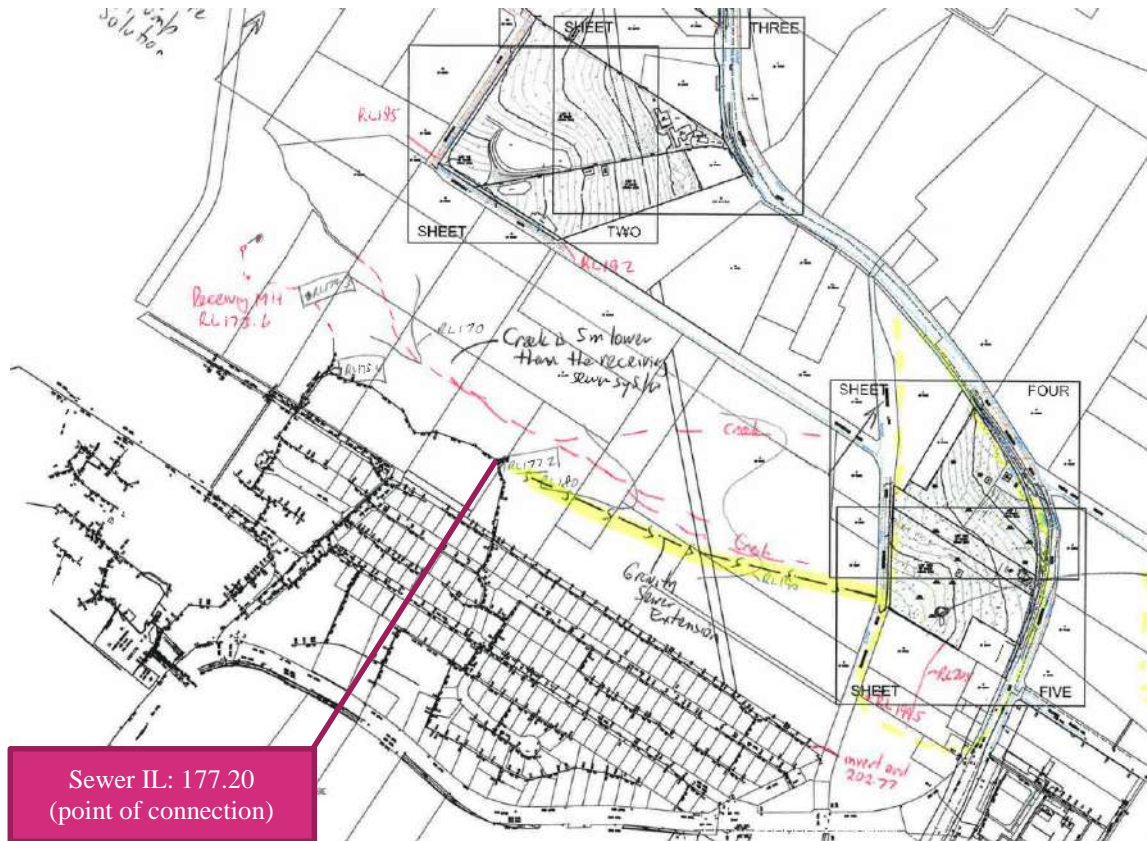


Figure 3. Extract of sketch information received from Sydney Water showing the existing sewer invert levels.

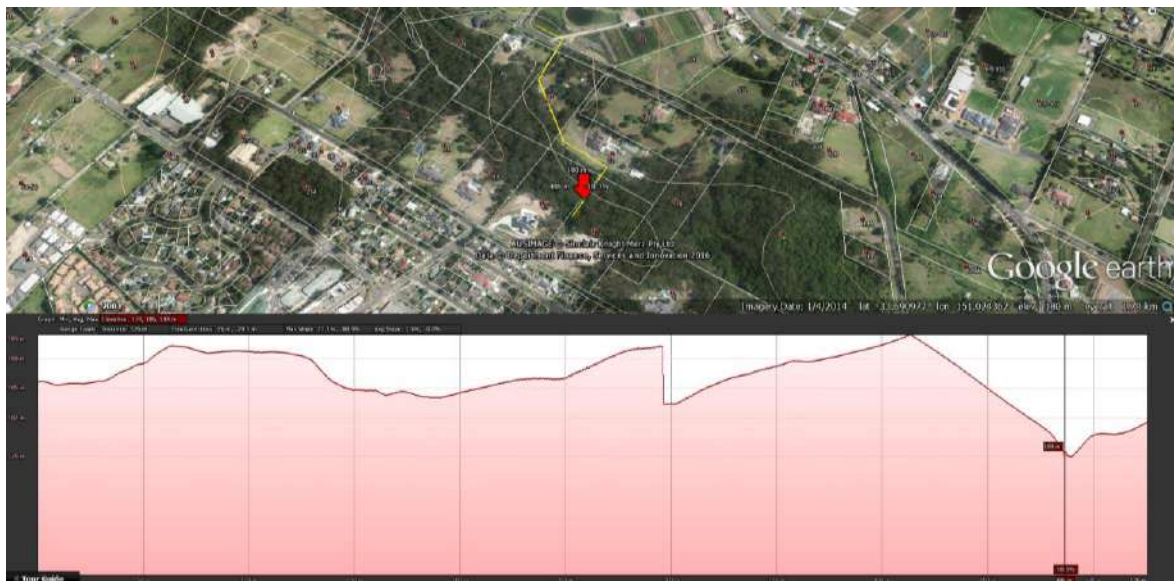


Figure 4. Cross sectional information for the proposed sewer alignment for the northern site taken from Google Earth. It should be noted this information is indicative only and must be verified with detailed topographic survey.

Figure 3 shows the existing sewer invert level at the point of connection is 177.20m and Figure 4 indicates that the invert level of the creek is approximately RL: 180m indicating

that it may be possible to make a gravity connection below the creek. However, it is noted that detailed topographic survey information will be required at the lowest point of the creek to verify this approach.

Whichever approach is adopted, sewage from the two development sites will be directed to an existing Sydney Water sewage pumping station that conveys water to the South via an existing pressure main. The capacity of this sewage pumping station will be reviewed with Sydney Water once the total catchment flows are understood in subsequent stages of the planning process. However, Arup considers that as a function of new Sydney Water specification requirements for sewerage design, the proposed development lots will be serviced by modern, low groundwater infiltration sewer systems. This will ultimately reduce the quantity of water discharged to the sewage pumping station than when it was previously designed. This will open up some residual capacity and provides the opportunity for the proposed development to be connected to the existing pumping station.

In summary, Arup considers the gravity lead-in sewers are preferred over that of the pumping station and pressure main approach, predominantly to simplify installation. Consultation with Sydney Water to clarify the lead-in details are ongoing and will inform the design development.

1.3 Power

Arup is working closely with Endeavour Energy Accredited Service Provider Level 3 (ASP3) designer Poles and Underground (P&U) on this project to review the contestable connections. The P&U notes several key observations in relation to the proposed development.

The development sites have an adequate provision of local high voltage (HV) power infrastructure and will need to make provision for padmount substations to supply the sites with low voltage (LV) electricity as suggested below:

Site	Estimated Electrical Demand	No. of Padmount Substations	Size of Padmount Easement
Northern	743 kVA	2 no. 500 kVA	2750mm x 5500mm
Southern	600 kVA	2 no. 500 kVA	2750mm x 5500mm

The subdivision layouts have adequate space to accommodate the inclusion of these substations which require spatial provisions as described in detail in the P&U reports. The location of substations will be further refined at the subdivision DA stage.

The P&U report also provides advice about the 66kV overhead transmission which runs through the northern site for approximately 800m. It offers 3 options for how to manage/relocate this overhead network which can be summarised as follows:

1. The first option is to avoid relocation by aligning a proposed development road alignment with the existing transmission. This will make the road corridor wider as the electrical assets would be centred on a new nature strip (approximately 5-10m wide) which will enhance maintenance access. The overall electrical easement required would be 18-25m and practically the 20m road corridor width provided is likely to be adequate subject to consultation with Endeavour Energy. An additional 4.5m-5.0m setback to the properties either side of the road would be required for cable “blow out” which is swinging of the cables driven by strong winds.

2. The alternative option is to relocate the overhead transmission to match the proposed road alignment. The same approach above in relation to easements widths, setbacks and enhanced access would be required.
3. The third option is to underground the cable which would require a 9.5m cable easement (5m for the cable plus 4.5m right of access).

In summary there is adequate local provision of HV electrical infrastructure to service the proposed development. Likewise there are options for managing the existing transmission infrastructure which can be considered in the subsequent stages of the planning process.

1.4 Gas

A 160mm Jemena gas main is situated below Old Northern Road adjacent to the development sites. In addition, Arup has also identified the following gas utilities:

- 50mm Nylon Main connection crossing the Old Northern Road adjacent to Dural Public School
- 110mm Nylon Main along the western verge of Old Northern Road, which appears to transition from the 160mm PE pipe

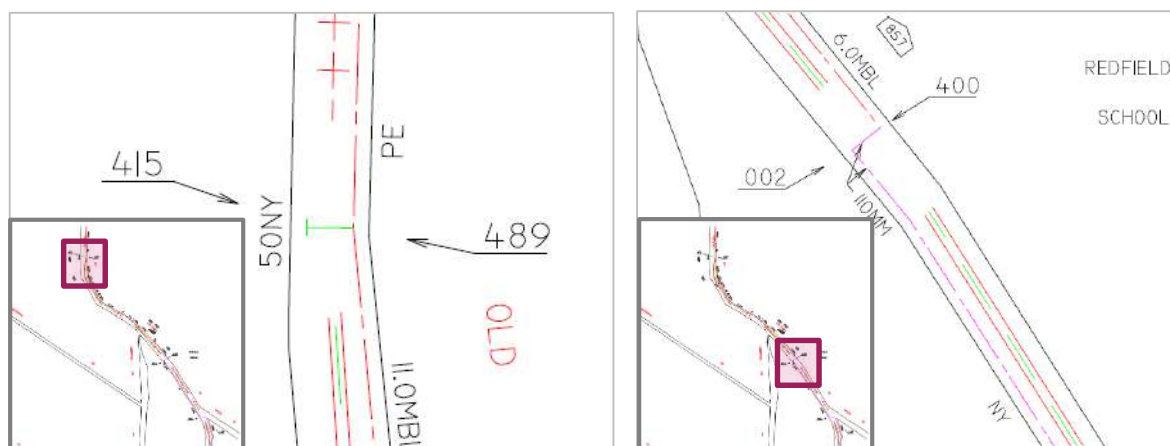


Figure 5. Extract from DBYD records illustrating the presence of a 50mm Nylon main (left: as green 'T') and 110mm Nylon gas main (right: in pink) both located alongside the western verge of Old Northern Road

Arup understands some preliminary consultation has been undertaken with Jemena and it is considered likely that there is capacity within the existing network to service the proposed developments.

As with the water supply, a connection to the gas network would be best created in a loop configuration requiring two connections per site from one of the Old Northern Road mains. This would provide redundancy in supply and options for isolation during maintenance.

In summary there is capacity in the network to supply the proposed subdivision with gas.

1.5 Communications

‘Dial Before you Dig’ indicate Telstra conduits and cables are located below Old Northern Road, Derriwong Road and overhead cables in Derriwong Lane immediately South of Dural Public School. Additionally Arup has identified the presence of Optus fibre optic telecommunications located along the eastern verge of Old Northern Road as shown below:

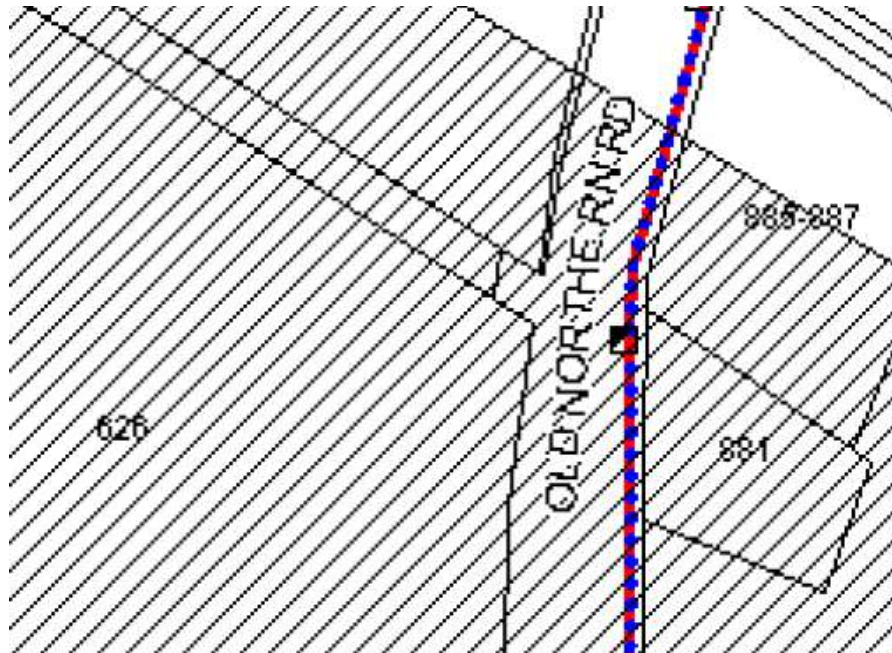


Figure 6. Extract from DBYD plans indicating the presence of Optus assets adjacent to development site

Arup have also identified the potential presence of a Telstra cable at the southern end of the South site as shown on Figure 7:

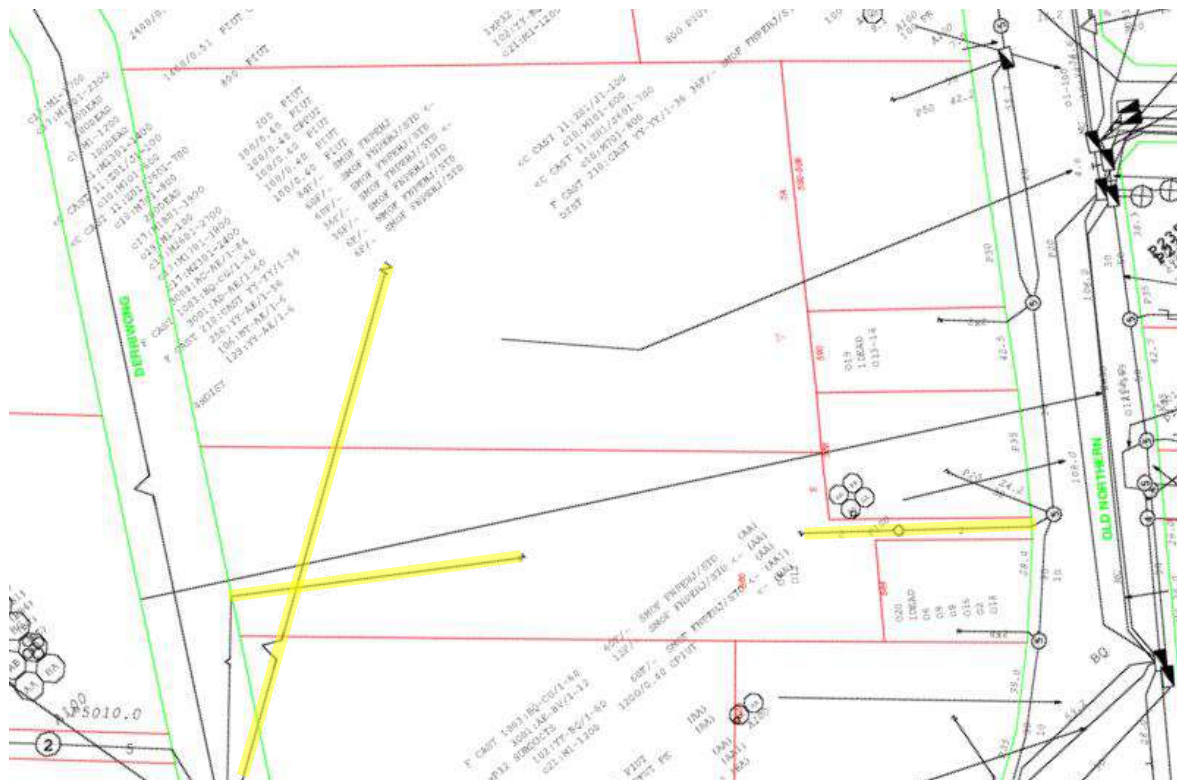


Figure 7. Existing Telstra cables located at the southern end of the South site (highlighted in yellow)

These existing telecommunications assets will either be avoided or are able to be diverted. The overhead cable along Derriwong Lane will likely need to be diverted underground or alternatively diverted elsewhere through the development subject to consultation with Telstra.

It is noted that there are good opportunities to provide connections to any and all of these existing communications networks (including the fibre optic network) to service the proposed development. Such infrastructure connections should help to increase the value of the private lots.

1.6 Stormwater

There is currently no formal in-ground pit and pipe drainage provision currently available on either site and that existing runoff flows overland towards O'Hara's Creek. Owing to increased impermeability and site regrading, the proposed development is likely to require new purpose built pit and pipe infrastructure to collect and drain surface water runoff to the creek. Additionally, the design of this site infrastructure will be subject to the Hills Shire Council DCP in relation to off-site discharge rates and water quality.

These requirements necessitate the provision of on-site detention (OSD) to temporarily store and attenuate the rate of surface water discharge from the site. The development proposals must take account of the ground slope, especially as flat (terraced) areas will require additional storage within OSD systems.

A more accurate slope can be measured when design is further advanced. It is noted that these storage volumes are commonly provided using one of two methods for sub-divisions:

1. Provide site wide OSD, normally in the form of a basin to detain water in one (or more) location/s. Typically this is provided in parks and can form an aesthetic addition to the landscaping.
2. Provide lot-by-lot OSD storage, normally in the form of an underground tank to detain water at source (i.e. within the lot) before release into the site network. This will necessitate a tank within each lot which can add cost but is more efficient from a precinct planning perspective and can be combined with rainwater harvesting (see Section 0).

It is also possible to combine the two approaches for each site e.g. provide option 2 for each lot and option 1 for the road corridor catchments.

Arup note that the sub-division layouts have adequate space to accommodate the inclusion of these site-wide OSD features and can offer several different configurations. Further calculations of the requirements for and provision of OSD systems will be considered in the subsequent stages of design development.

1.7 Water Quality

To achieve Council’s requirements for water quality, Arup supports an integrated approach to Water Sensitive Urban Design (WSUD). Such measures can be integrated with OSD features and the drainage of landscape areas. In addition, it is also recommended that multiple methods of WSUD be implemented to create a “treatment train” of measures to remove possible water contaminants.

As with OSD, this can be provided on a site-wide basis or at source within each lot. Similarly, there are synergies that can be exploited with each option e.g. if lot-by-lot OSD is selected in the form of tanks in each development lot, this can be complemented with rainwater harvesting tanks which can store water for reuse (e.g. for irrigation) to reduce water demand. These integrated tanks offer multiple benefits in addressing water quality and quantity requirements in an efficient footprint and can also help reduce the overall requirement for OSD subject to consultation with Council.

In summary there are technically feasible approaches available for the treatment of surface water prior to discharge from site.

2 Summary

Arup considers from our assessment of current information available that the land can be readily serviced for future redevelopment following the rezoning process. For all services there is both an existing network nearby and sufficient capacity thereby enabling new connections.

There are existing services within the site curtilage that will need to be diverted or managed as part of future redevelopment. It is considered technically feasible to undertake these modifications.





Yours sincerely,

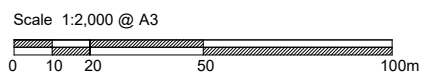







Duncan Crook
Senior Civil Engineer

Appendix

- Urbis Preliminary Subdivision Development Plans
- Sydney Water Feasibility Advice
- “Dial Before You Dig” record information

LEGEND	
	Subject site
	Typical Resi Lot Avg. 700m ² 92%
	Atypical Resi Lot $\geq 1000\text{m}^2$ 4%
	SP2 - Classified road identified by The Hills LEP2012



LEGEND	
	Subject site
	Typical Resi Lot Avg. 700m ² 68
	Atypical Resi Lot 1000m ² 12
	SP2 - Classified road identified by The Hills LEP2012
	Open space



1 July 2016

Urbis Pty Ltd
c/- MGP BUILDING & INFRASTRUCTURE SERVICE PL

FEASIBILITY LETTER

Developer: Urbis Pty Ltd
Your reference: SY07366
Development: Old Northern Road and Derriwong Road, Dural
(Lots 11 & 12 DP 866560, Lot 2 DP 567995, Lot 1 DP 73652, Lot 1 DP 656035, Lot 1 DP 656036, Lot 1 DP 564716, Lot 1 DP656034, Lots 100 & 101 DP 713628, Lot 11 DP 825077, Lot 2 DP 565718, Lot D DP 38097, Lot X DP 501233 and Lot Y DP 39261)

Development Description: A seniors living area is proposed comprising a day surgery/ medical centre of 3,000m² GFA, a seniors independent living village of 56 units and a residential aged care facility of approx. 150 beds. The development will also comprise a total of 170 residential lots in the remainder of the areas highlighted averaging 700m² in area.

Your application date: 10 June 2016

Dear Applicant

This Feasibility Letter (Letter) is a guide only. It provides general information about what Sydney Water's requirements could be if you applied to us for a Section 73 Certificate (Certificate) for your proposed development. **The information is accurate at today's date only.**

If you obtain development consent for that development from your consent authority (this is usually your local Council) they will require you to apply to us for a Section 73 Certificate. You will need to submit a new application (and pay another application fee) to us for that Certificate by using your current or another Water Servicing Coordinator (Coordinator).

Sydney Water will then send you either a:

- Notice of Requirements (Notice) and Developer Works Deed (Deed) or
- Certificate.

These documents will be the definitive statement of Sydney Water's requirements.

There may be changes in Sydney Water's requirements between the issue dates of this Letter and the Notice or Certificate. The changes may be:

- if you change your proposed development eg the development description or the plan/site layout, after today, the requirements in this Letter could change when you submit your new application; and
- if you decide to do your development in stages then you must submit a new application (and pay another application fee) for each stage.

What You Must Do To Get A Section 73 Certificate In The Future.

To get a Section 73 Certificate you must do the following things. You can also find out about this process by visiting www.sydneywater.com.au > Plumbing, building & developing > Developing > Land development.

1. **Obtain Development Consent from the consent authority for your development proposal.**
2. **Engage a Water Servicing Coordinator (Coordinator).**

You must engage your current or another authorised Coordinator to manage the design and construction of works that you must provide, at your cost, to service your development. If you wish to engage another Coordinator (at any point in this process) you must write and tell Sydney Water.

For a list of authorised Coordinators, either visit www.sydneywater.com.au > Plumbing, building & developing > Developing > Providers > Lists or call **13 20 92**.

The Coordinator will be your point of contact with Sydney Water. They can answer most questions that you might have about the process and developer charges and can give you a quote or information about costs for services/works (including Sydney Water costs).

3. **Developer Works Deed**

After the Coordinator has submitted your new application, they will receive the Sydney Water Notice and Developer Works Deed. You and your accredited Developer Infrastructure Providers (Providers) will need to sign and lodge both copies of the Deed with your nominated Coordinator. After Sydney Water has signed the documents, one copy will be returned to the Coordinator.

The Deed sets out for this project:

- your responsibilities;
- Sydney Water's responsibilities; and
- the Provider's responsibilities.

You must do all the things that we ask you to do in that Deed. This is because your development does not have water and sewer services and you must construct and pay for the following works extensions under this Deed to provide these services.

Note: The Coordinator must be fully authorised by us for the whole time of the agreement.

4. **Water and Sewer Works**

4.1 **Water**

Your development must have a frontage to a water main that is the right size and can be used for connection. The following information is provided to assist in planning the servicing

needs of the development, based on the information supplied:

- Strategic investigation shows that the trunk water has adequate capacity to service this development area.
- The preferred connection for each portion of the development is the DN 200 mm in Old Northern Road.
- This advice is not a formal approval of our servicing requirements. Formal requirements for servicing the developments will be determined as part of the Section 73 application phase. More information about the Section 73 application process is available on our web page in the [Land Development Manual](#).

4.2 Sewer

Your development must have a sewer main that is the right size and can be used for connection. That sewer must also have a connection point within your development's boundaries.

Sydney Water has assessed your application and found that:

- The development site currently is not serviced by a Sydney Water wastewater system. The nearest wastewater reticulation main is located in Pellit Lane. It is recommended that the flow is transferred by gravity to the existing sewer main in Pellit Lane.

There are two following options:

1. Build a new sewer main along the Pellit Lane and connect it to the 225mm main construed under WO 48473.
 2. Connect to the existing reticulation sewer main across the Derriwong Rd at the southern end of the development site. If this option is utilized, upsizing of the system may be required. Sizing of the mains must be in accordance with the Sewerage Code of Australia.
- The consultant will need to assess the options and come up with a suitable servicing strategy that meets all of Sydney Water requirements and submit it to Sydney Water for its review, at or prior to Section 73 application.
 - This advice is not a formal approval of our servicing requirements. Formal requirements for servicing the developments will be determined as part of the Section 73 application phase. More information about the Section 73 application process is available on our web page in the [Land Development Manual](#).
 - **You must construct a waste water main extension to serve your development.** The terms of the Deed define this extension as 'Major Works'.

- You must use Sydney Water's new **Technical Specifications for Leak Tight Sewer Systems** to plan, design and construct the sewer. This specification must be used in conjunction with (and have precedence over) the Sewerage Code of Australia, WSA02-2002 (Sydney Water Edition).

Funding of works

Under Sydney Water's 'Funding of infrastructure to service growth' policy we may agree to contribute towards a portion of the cost of the works you are required to build. This is done either by Sydney Waters Schedule of Rates or via the Procurement process. Your Water Service Coordinator can advise you in relation to this policy, the likelihood of Sydney Water sharing a portion of the cost and the process you need to satisfy Sydney Water's probity requirements.

If you do choose to request a quote through the Schedule of Rates for Sydney Water's contribution you will avoid going through the full procurement process. Your WSC can advise you of this option.

The funding assessment will be made at the detailed design stage, prior to any construction works commencing. A firm commitment would not be made by Sydney Water until we:

- Have reviewed the detailed design and;
- Have reviewed the detailed construction quotations needed to meet our probity requirements and;
- Come to an agreement on the amount.

5. Ancillary Matters

5.1 Asset adjustments

After Sydney Water issues this Notice (and more detailed designs are available), Sydney Water may require that the water main/sewer main/stormwater located in the footway/your property needs to be adjusted/deviated. If this happens, you will need to do this work as well as the extension we have detailed above at your cost. The work must meet the conditions of this Notice and you will need to complete it **before we can issue the Certificate**. Sydney Water will need to see the completed designs for the work and we will require you to lodge a security. The security will be refunded once the work is completed.

5.2 Entry onto neighbouring property

If you need to enter a neighbouring property, you must have the written permission of the relevant property owners and tenants. You must use Sydney Water's **Permission to Enter** form(s) for this. You can get copies of these forms from your Coordinator or the Sydney Water website. Your Coordinator can also negotiate on your behalf. Please make sure that you address all the items on the form(s) including payment of compensation and whether there are other ways of designing and constructing that could avoid or reduce their impacts. You will be responsible for all costs of mediation involved in resolving any disputes. Please allow enough time for entry issues to be resolved.

5.3 Costs

Construction of these **future** works will require you to pay project management, survey, design and construction costs **directly to your suppliers**. Additional costs payable to Sydney Water may include:

- water main shutdown and disinfection;
- connection of new water mains to Sydney Water system(s);
- design and construction audit fees;
- contract administration, Operations Area Charge & Customer Redress prior to project finalisation;
- creation or alteration of easements etc; and
- water usage charges where water has been supplied for building activity purposes prior to disinfection of a newly constructed water main.

Note: Payment for any Goods and Services (including Customer Redress) provided by Sydney Water will be required prior to the issue of the Section 73 Certificate or release of the Bank Guarantee or Cash Bond.

Your Coordinator can tell you about these costs.

OTHER THINGS YOU MAY NEED TO DO

Shown below are other things you need to do that are NOT a requirement for the Certificate. They may well be a requirement of Sydney Water in the future because of the impact of your development on our assets. You must read them before you go any further.

Approval of your building plans

Please note that your building plans must be approved. This can be done at Sydney Water Tap inTM. Visit www.sydneywater.com.au > Plumbing, building & developing > Building > Sydney Water Tap inTM or call 13 20 92.

This is not a requirement of the Certificate but the approval is needed because construction/building works may impact on existing Sydney Water assets (e.g. water and sewer mains). In any case, these works **MUST NOT** commence until Sydney Water has granted approval.

Your Coordinator can tell you about the approval process including:

- Possible requirements;
- Costs; and
- Timeframes.

Note: You must obtain our written approval before you do any work on Sydney Water's systems. Sydney Water will take action to have work stopped on the site if you do not have that approval. We will apply Section 44 of the *Sydney Water Act 1994*.

Disused Sewerage Service Sealing

Please do not forget that you must pay to disconnect all disused private sewerage services and seal them at the point of connection to a Sydney Water sewer main. This work must meet Sydney Water's standards in the Plumbing Code of Australia (the Code) and be done by a licensed drainer. The licensed drainer must arrange for an inspection of the work by a NSW Fair Trading Plumbing Inspection Assurance Services (PIAS) officer. After that officer has looked at the work, the drainer can issue the Certificate of Compliance. The Code requires this.

Soffit Requirements

Please be aware that floor levels must be able to meet Sydney Water's soffit requirements for property connection and drainage.

Requirements for Business Customers for Commercial and Industrial Property Developments

If this property is to be developed for Industrial or Commercial operations, it may need to meet the following requirements:

Trade Wastewater Requirements

If this development is going to generate trade wastewater, the property owner must submit an application requesting permission to discharge trade wastewater to Sydney Water's sewerage system. You must wait for approval of this permit before any business activities can commence.

The permit application should be emailed to Sydney Water's Business Customer Services at businesscustomers@sydneywater.com.au

It is illegal to discharge Trade Wastewater into the Sydney Water sewerage system without permission.

A **Boundary Trap** is required for all developments that discharge trade wastewater where arrestors and special units are installed for trade wastewater pre-treatment.

If the property development is for Industrial operations, the wastewater may discharge into a sewerage area that is subject to wastewater reuse. Find out from Business Customer Services if this is applicable to your development.

Backflow Prevention Requirements

Backflow is when there is unintentional flow of water in the wrong direction from a potentially polluted source into the drinking water supply.

All properties connected to Sydney Water's supply must install a testable **Backflow Prevention Containment Device** appropriate to the property's hazard rating. Property with a high or medium hazard rating must have the backflow prevention containment device tested annually. Properties identified as having a low hazard rating must install a non-testable device, as a minimum.

Separate hydrant and sprinkler fire services on non-residential properties, require the installation

of a testable double check detector assembly. The device is to be located at the boundary of the property.

Before you install a backflow prevention device:

1. Get your hydraulic consultant or plumber to check the available water pressure versus the property's required pressure and flow requirements.
2. Conduct a site assessment to confirm the hazard rating of the property and its services. Contact PIAS at NSW Fair Trading on **1300 889 099**.

For installation you will need to engage a licensed plumber with backflow accreditation who can be found on the Sydney Water website:

<http://www.sydneywater.com.au/Plumbing/BackflowPrevention/>

Water Efficiency Recommendations

Water is our most precious resource and every customer can play a role in its conservation. By working together with Sydney Water, business customers are able to reduce their water consumption. This will help your business save money, improve productivity and protect the environment.

Some water efficiency measures that can be easily implemented in your business are:

- Install water efficiency fixtures to help increase your water efficiency, refer to WELS (Water Efficiency Labelling and Standards (WELS) Scheme, <http://www.waterrating.gov.au/>
- Consider installing rainwater tanks to capture rainwater runoff, and reusing it, where cost effective. Refer to <http://www.sydneywater.com.au/Water4Life/InYourBusiness/RWTCalculator.cfm>
- Install water-monitoring devices on your meter to identify water usage patterns and leaks.
- Develop a water efficiency plan for your business.

It is cheaper to install water efficiency appliances while you are developing than retrofitting them later.

Contingency Plan Recommendations

Under Sydney Water's [customer contract](#) Sydney Water aims to provide Business Customers with a continuous supply of clean water at a minimum pressure of 15meters head at the main tap. This is equivalent to 146.8kpa or 21.29psi to meet reasonable business usage needs.

Sometimes Sydney Water may need to interrupt, postpone or limit the supply of water services to your property for maintenance or other reasons. These interruptions can be planned or unplanned.

Water supply is critical to some businesses and Sydney Water will treat vulnerable customers, such as hospitals, as a high priority.

Have you thought about a **contingency plan** for your business? Your Business Customer Representative will help you to develop a plan that is tailored to your business and minimises

productivity losses in the event of a water service disruption.

For further information please visit the Sydney Water website at: <http://www.sydneywater.com.au/OurSystemsandOperations/TradeWaste/> or contact Business Customer Services on **1300 985 227** or businesscustomers@sydneywater.com.au

Fire Fighting

Definition of fire fighting systems is the responsibility of the developer and is not part of the Section 73 process. It is recommended that a consultant should advise the developer regarding the fire fighting flow of the development and the ability of Sydney Water's system to provide that flow in an emergency. Sydney Water's Operating Licence directs that Sydney Water's mains are only required to provide domestic supply at a minimum pressure of 15 m head.

A report supplying modelled pressures called the Statement of Available pressure can be purchased through Sydney Water Tap inTM and may be of some assistance when defining the fire fighting system. The Statement of Available pressure, may advise flow limits that relate to system capacity or diameter of the main and pressure limits according to pressure management initiatives. If mains are required for fire fighting purposes, the mains shall be arranged through the water main extension process and not the Section 73 process.

Large Water Service Connection

A water main will be available, once you have completed your drinking water main construction to provide your development with a domestic supply. The size of your development means that you will need a connection larger than the standard domestic 20 mm size.

To get approval for your connection, you will need to lodge an application with Sydney Water Tap inTM. You, or your hydraulic consultant, may need to supply the following:

- A plan of the hydraulic layout;
- A list of all the fixtures/fittings within the property;
- A copy of the fireflow pressure inquiry issued by Sydney Water;
- A pump application form (if a pump is required);
- All pump details (if a pump is required).

You will have to pay an application fee.

Sydney Water does not consider whether a water main is adequate for fire fighting purposes for your development. We cannot guarantee that this water supply will meet your Council's fire fighting requirements. The Council and your hydraulic consultant can help.

Disused Water Service Sealing

You must pay to disconnect all disused private water services and seal them at the point of connection to a Sydney Water water main. This work must meet Sydney Water's standards in the Plumbing Code of Australia (the Code) and be done by a licensed plumber. The licensed

plumber must arrange for an inspection of the work by a NSW Fair Trading Plumbing Inspection Assurance Services (PIAS) officer. After that officer has looked at the work, the drainer can issue the Certificate of Compliance. The Code requires this.

Other fees and requirements

The requirements in this Notice relate to your Certificate application only. Sydney Water may be involved with other aspects of your development and there may be other fees or requirements. These include:

- plumbing and drainage inspection costs;
- the installation of backflow prevention devices;
- trade waste requirements;
- large water connections and
 - council fire fighting requirements. (It will help you to know what the fire fighting requirements are for your development as soon as possible. Your hydraulic consultant can help you here.)

No warranties or assurances can be given about the suitability of this document or any of its provisions for any specific transaction. It does not constitute an approval from Sydney Water and to the extent that it is able, Sydney Water limits its liability to the reissue of this Letter or the return of your application fee. You should rely on your own independent professional advice.

END

CLIENT

URBIS

DETAIL SURVEY

OF
LOT 1 IN DP 656036, LOT 100
& LOT 101 IN DP 713628
OLD NORTHERN ROAD
DUAL

NOTES
The site boundaries shown herein were not checked at the time of survey and have been determined by plan dimensions only and not by field survey. It is noted that the boundaries shown herein have been located where possible by field survey. If not able to do so, certain boundaries have been located from the records of relevant authorities where available and have been noted accordingly on the plan. The surveyor is not responsible for any errors or omissions which may have been made in the preparation of this plan, nor for any consequences which may arise therefrom. It is noted that the surveyor is not responsible for any errors or omissions which may have been made in the preparation of this plan, nor for any consequences which may arise therefrom. It is noted that the surveyor is not responsible for any errors or omissions which may have been made in the preparation of this plan, nor for any consequences which may arise therefrom.

APP/CF	LPI	DD/MM/YY	COMMENT

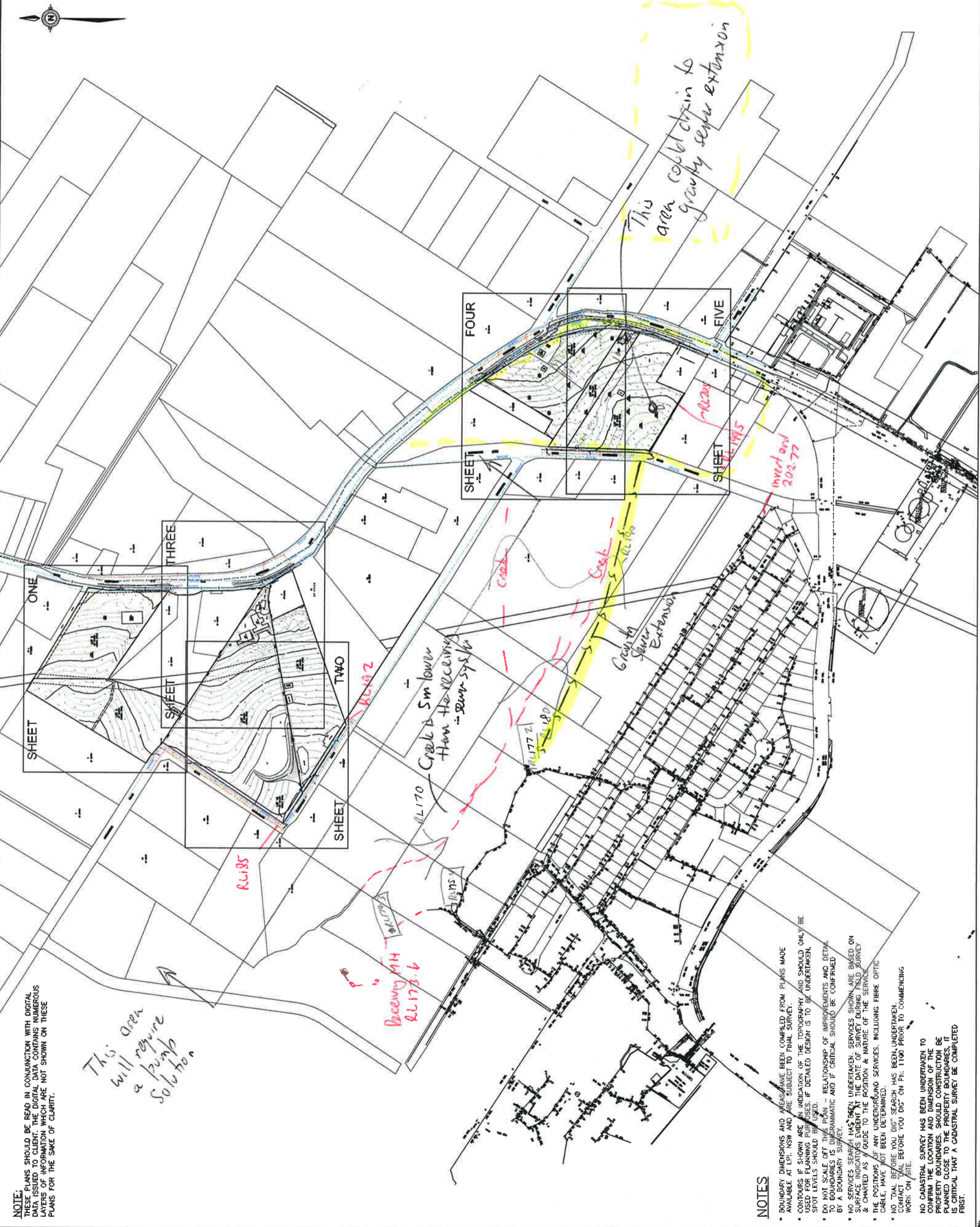
Surveyors should not be held liable for any errors or omissions which may have been made in the preparation of this plan, nor for any consequences which may arise therefrom.



Survey Office
1001 Great South Road
P.O. Box 1144
Dunedin 9102
New Zealand
www.landpartners.com.au

HEIGHT DATUM	SCALE	DATE OF SURVEY
AHD	1:3000 (A1)	01/07/15
HEIGHT DATUM	SSM 72130 RL 184.959	DATE
HEIGHT DATUM	SSM 72130 RL 184.959	DATE
HEIGHT DATUM	SSM 72130 RL 184.959	DATE
HEIGHT DATUM	SSM 72130 RL 184.959	DATE

SHEET OVERALL
SY073666.000



NOTE:
THESE PLANS SHOULD BE READ IN CONJUNCTION WITH DIGITAL DATA ISSUED TO CLIENT. THE DIGITAL DATA CONTAINS NUMEROUS LAYERS OF INFORMATION WHICH ARE NOT SHOWN ON THESE PLANS FOR THE SAKE OF CLARITY.

This area will require a pump solution

This area could drain to gravelly sewer extension

Creek 5m lower than the receiving sewer s/s

- NOTES
- BOUNDARY DIMENSIONS AND MEASUREMENTS HAVE BEEN COMPILED FROM PLANS MADE AVAILABLE AT LPI, NSW AND ARE SUBJECT TO FINAL SURVEY.
 - CONTOURS IF SHOWN ARE AN INDICATION OF THE TOPOGRAPHY AND SHOULD ONLY BE USED FOR PLANNING PURPOSES. IF DETAILED DESIGN IS TO BE UNDERTAKEN, SPOT LEVELS SHOULD BE USED.
 - DO NOT SCALE OFF THIS PLAN - RELATIONSHIP OF IMPROVEMENTS AND DETAIL TO BOUNDARIES IS DIAGRAMMATIC AND IF CRITICAL SHOULD BE CONFIRMED BY A BOUNDARY SURVEY.
 - NO SERVICES SEARCH HAS BEEN UNDERTAKEN. SERVICES SHOWN ARE BASED ON SURFACE INDICATORS EVIDENT AT THE DATE OF SURVEY DURING FIELD SURVEY & CHARTED AS A GUIDE TO THE POSITION & NATURE OF THE SERVICES.
 - THE POSITIONS OF ANY UNDERGROUND SERVICES, INCLUDING FIBRE OPTIC CABLE, HAVE NOT BEEN DETERMINED.
 - NO 'DIAL BEFORE YOU DIG' SEARCH HAS BEEN UNDERTAKEN.
 - CONTACT 'DIAL BEFORE YOU DIG' ON PH: 1100 PRIOR TO COMMENCING WORK ON SITE.
 - NO CADASTRAL SURVEY HAS BEEN UNDERTAKEN TO CONFIRM THE LOCATION AND DIMENSION OF THE PROPERTY BOUNDARIES. SHOULD CONSTRUCTION BE PLANNED CLOSE TO THE PROPERTY BOUNDARIES, IT IS CRITICAL THAT A CADASTRAL SURVEY BE COMPLETED FIRST.

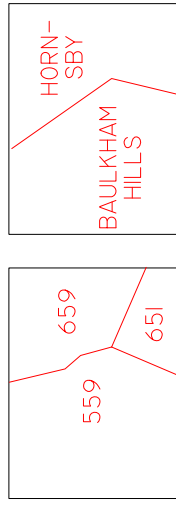
DURAL 4B



THIS MAP UPDATED ON 16/12/2015
THIS PLAN IS DIAGRAMATIC ONLY. DISTANCES
SCALED FROM THIS PLAN MAY NOT BE ACCURATE.
DATE ALTERED:..... BY:.....

DIC	DID	D2C
D4A	D4B	D5A
D4C	D4D	D5C

ADJOINING MAPS



Jemena

KEY

- MAX ALLOWABLE OPERATING PRESSURE
- TRUNK PIPELINE 7000 kPa
 - PRIMARY MAIN 3500 kPa
 - SECONDARY MAIN 1050 kPa
 - NETWORK MAIN 400 kPa
 - NETWORK MAIN 300 kPa
 - NETWORK MAIN 210 kPa
 - NETWORK MAIN 100 kPa
 - NETWORK MAIN 30 kPa
 - NETWORK MAIN 7 kPa
 - NETWORK MAIN 2 kPa
 - PROPOSED MAINS

- STEEL MAIN PROJECT NUMBER
- PRESSURE MONITORING STATION
- VALVE
- SYSTEM PRESSURE REGULATOR
- SIPHON
- NETWORK NODE
- NETWORK VALVE NODE
- VALVE NUMBER
- 6 INCH CAST IRON MAIN
- 150MM STEEL MAIN
- 110MM POLYETHYLENE/NYLON MAIN
- 50MM NYLON INSERTED INTO
- 6NB MAIN CAST IRON MAIN
- DISTANCE IN METRES OF MAIN FROM BOUNDARY LINE
- YEAR LAID
- MUNICIPALITY BOUNDARY
- NETWORK BOUNDARY
- HOUSE NUMBER

DURAL 4B



E	D	C	B	A
1	2	3	4	5

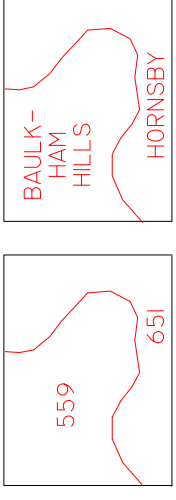
DURAL 4D



THIS MAP UPDATED ON 11/12/2014.
THIS PLAN IS DIAGRAMATIC ONLY. DISTANCES
SCALED FROM THIS PLAN MAY NOT BE ACCURATE.
DATE ALTERED:..... BY:.....

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D4C	D4D	D5C
D7A	D7B	D8A

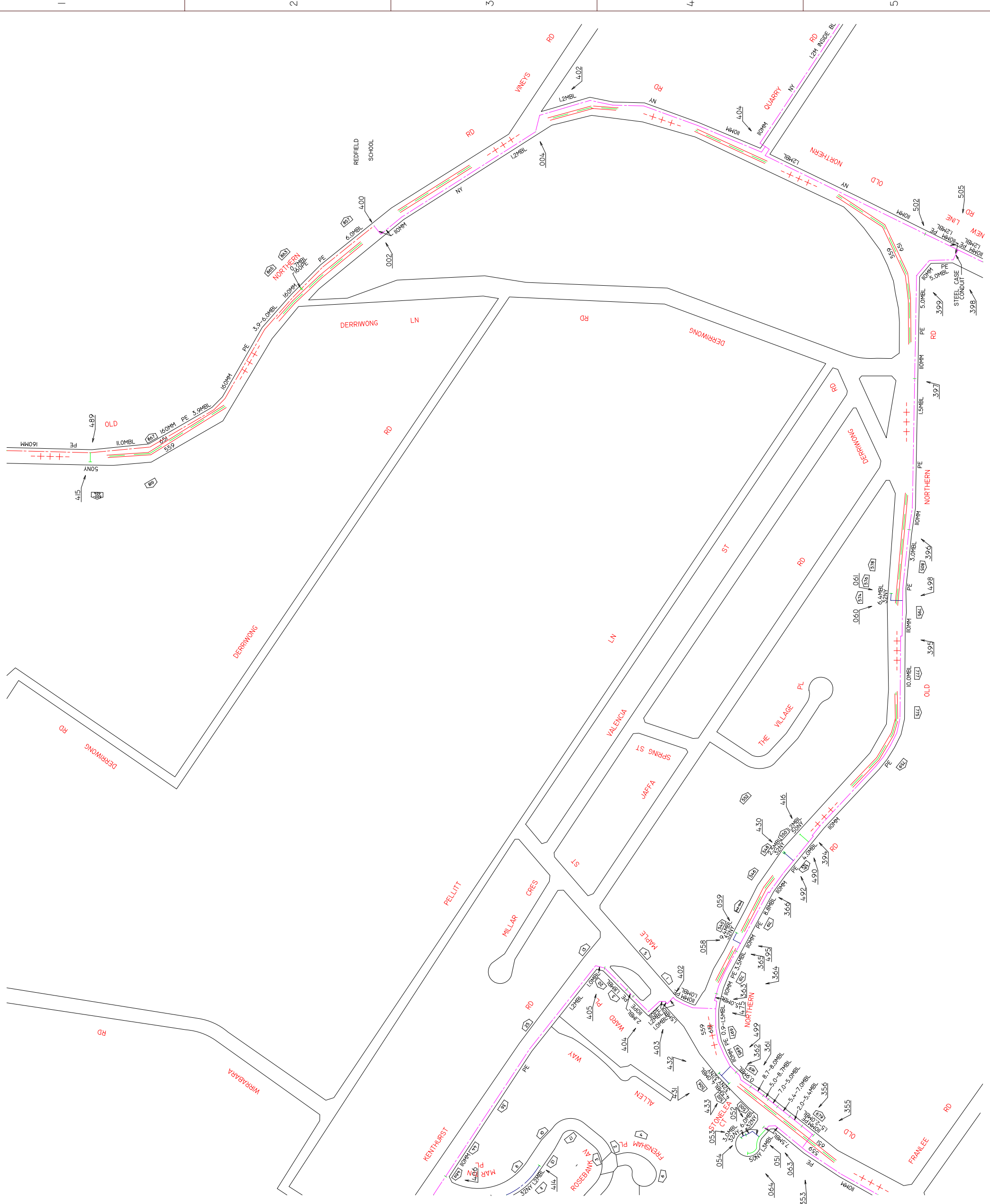
ADJOINING MAPS

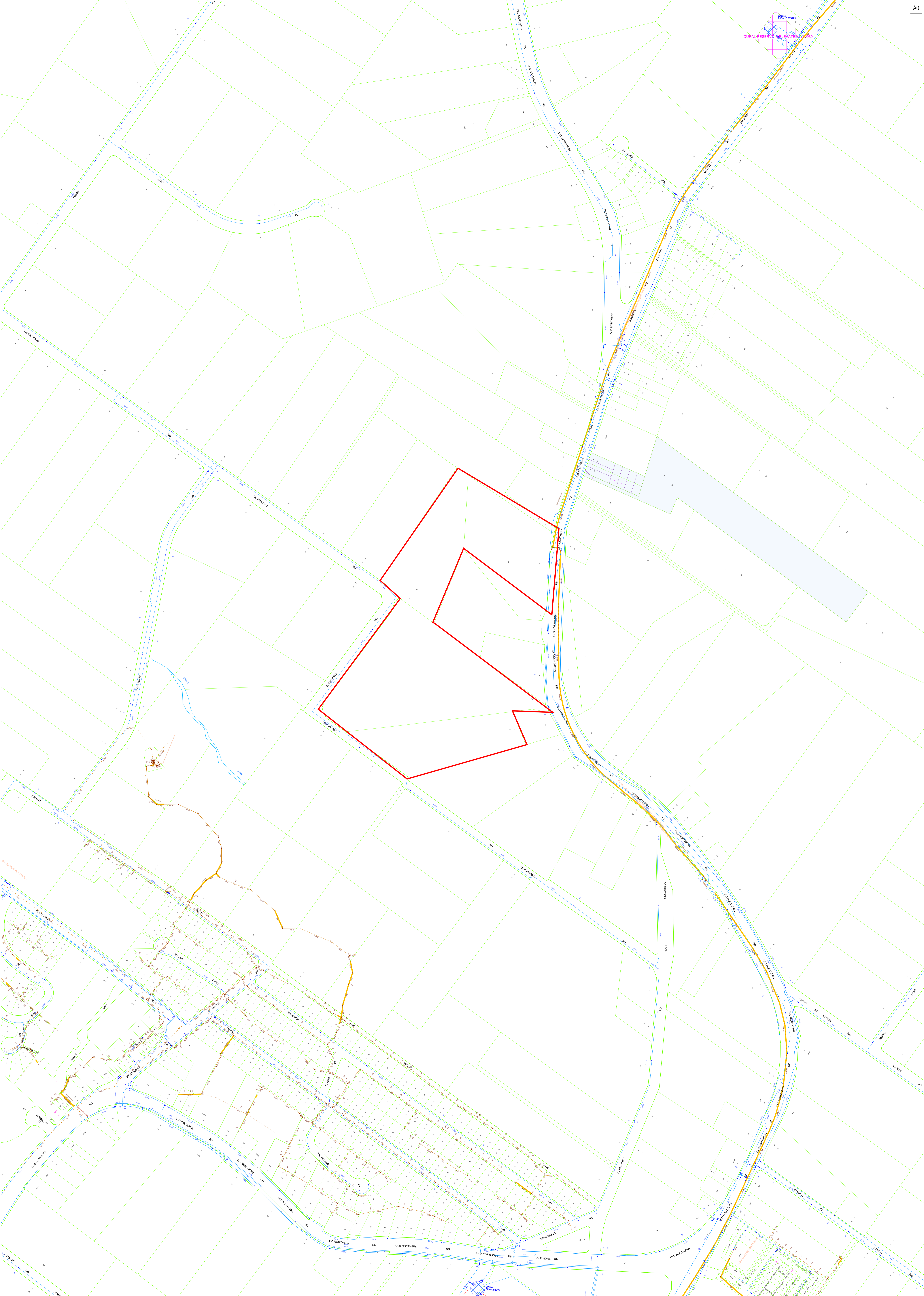


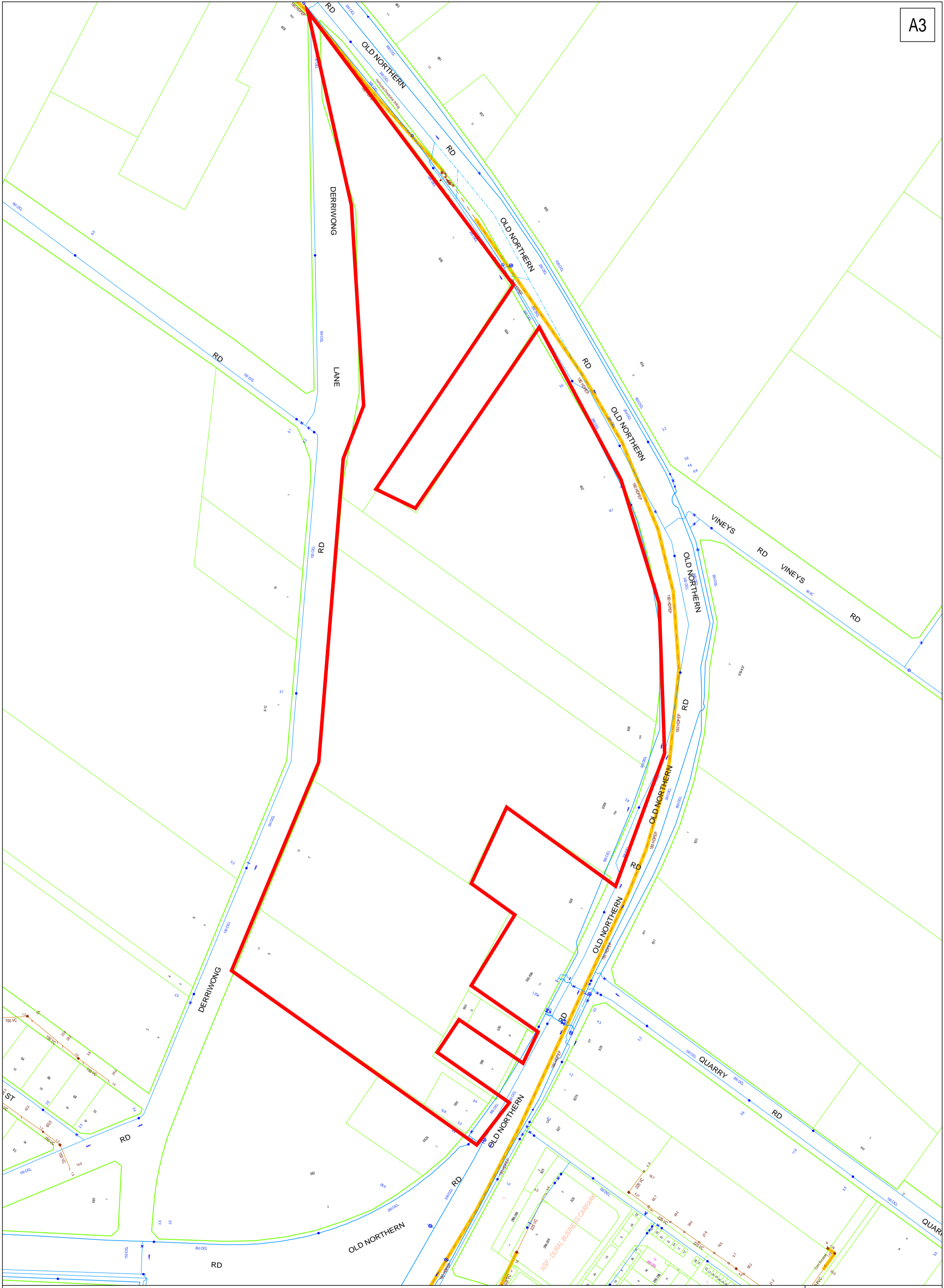
Jemena

KEY

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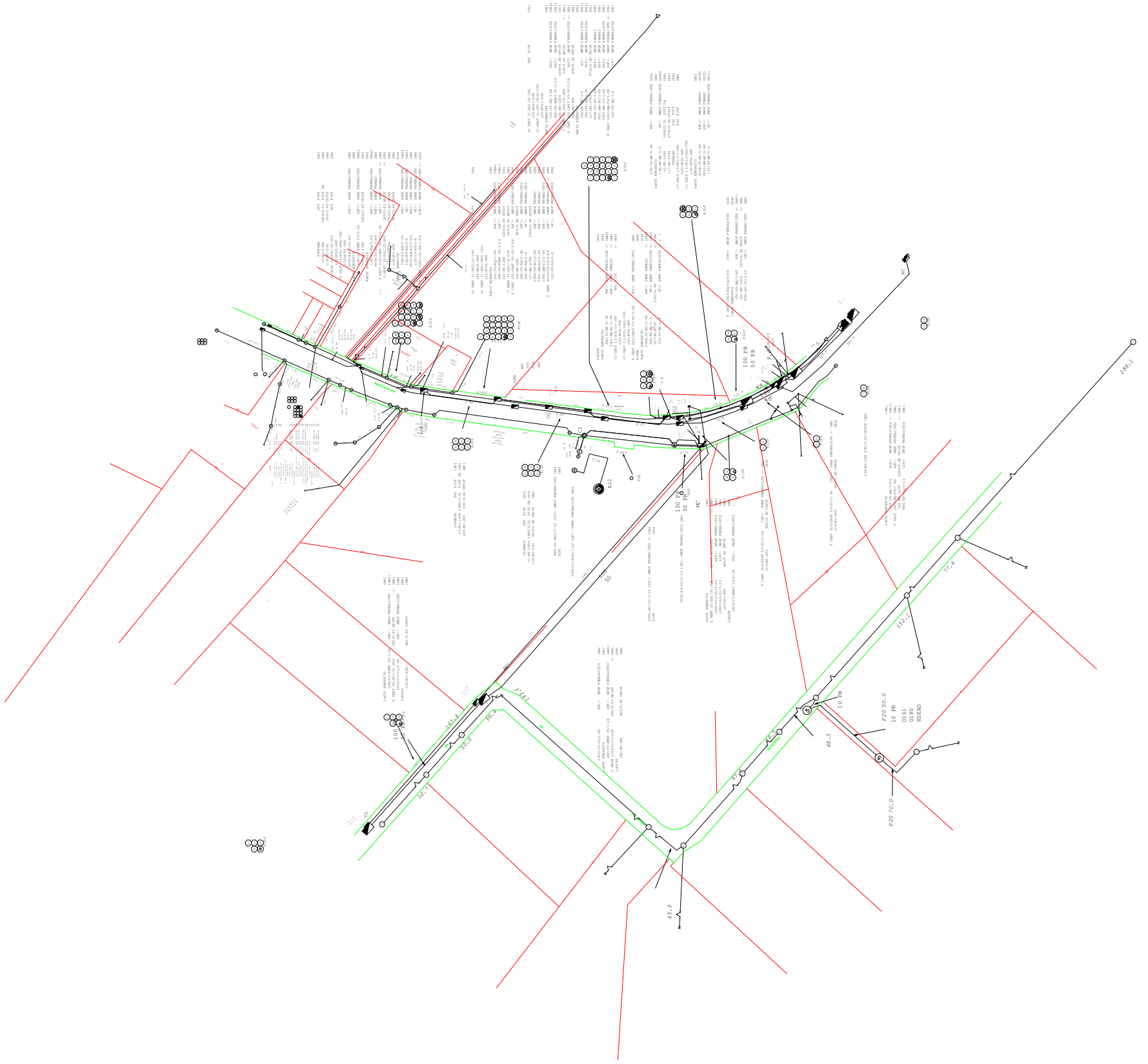
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Dural NSW 2158

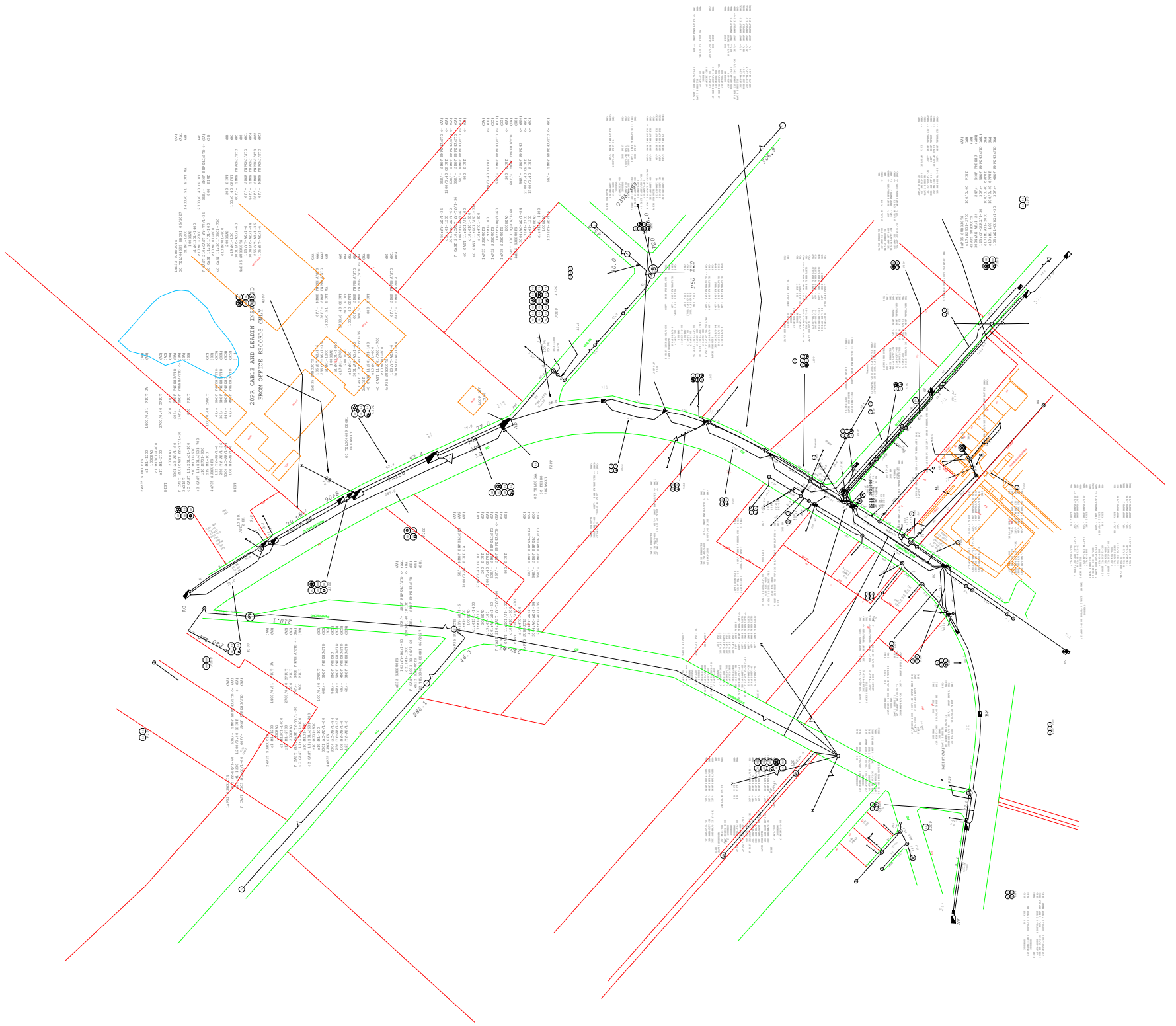
DBYD Job No: 10965331
DBYD Sequence No: 54262111

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Date of Production: 15/07/2016









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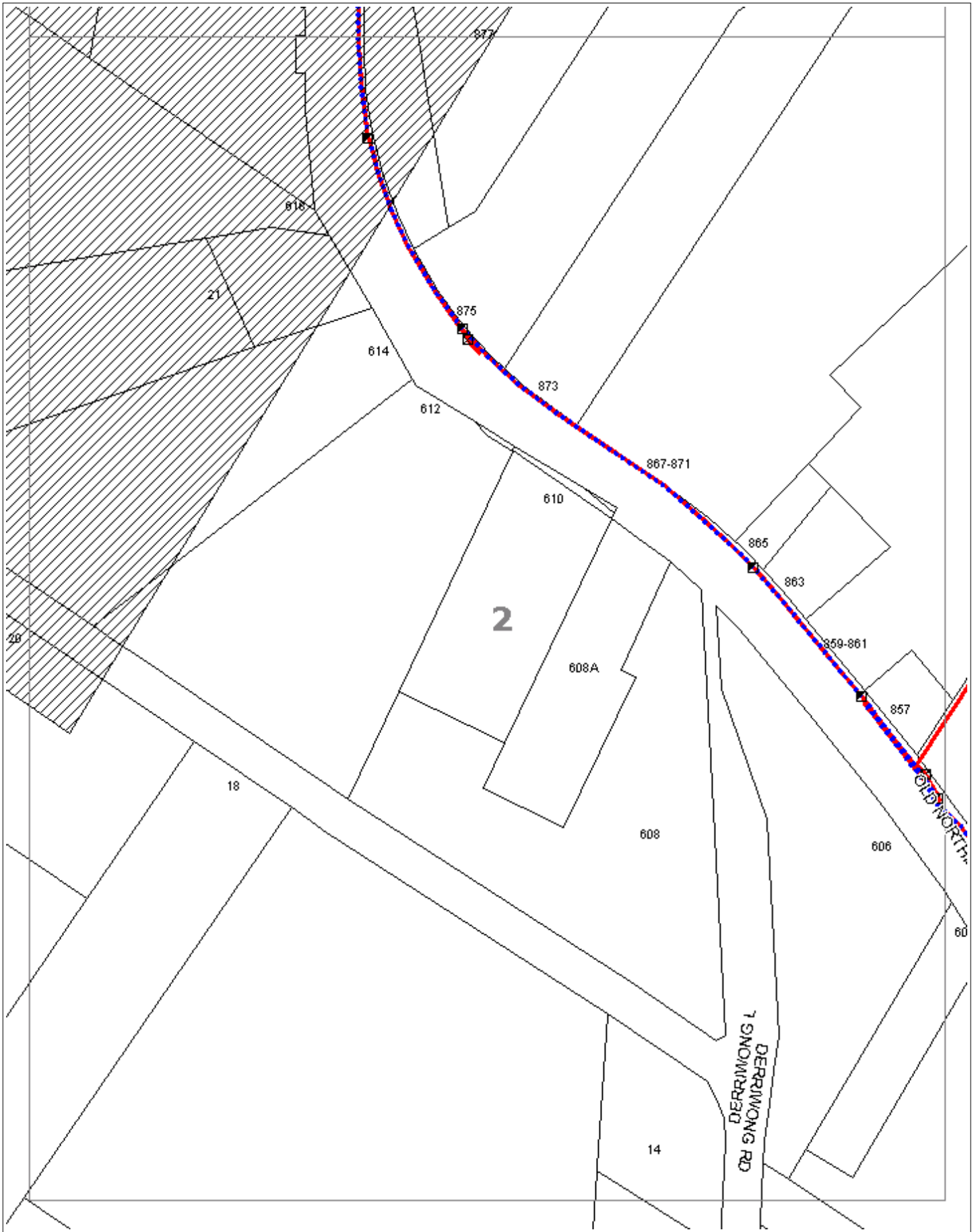
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 For urgent onsite assistance contact 1800 505 777
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 Optus Limited ACN 052 833 208



DURAL DEVELOPMENT MANAGEMENT SERVICES PTY LTD

Old Northern Road, Dural

DA ACOUSTIC ASSESSMENT

SEPTEMBER 2016

Old Northern Road, Dural

DA ACOUSTIC ASSESSMENT

Dural Development Management Services Pty Ltd

REV	DATE	DETAILS
00	23/09/2016	Issue

AUTHOR, REVIEWER AND APPROVER DETAILS

Prepared by:	A Morris	Date: 23/09/2016	Signature: 
Reviewed by:	K Lloyd	Date: 23/09/2016	Signature: 
Approved by:	A Campbell	Date: 23/09/2016	Signature: 

WSP | Parsons Brinckerhoff

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Filename: 2304730PA-160922-ARM-DA ASSESSMENT



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EXECUTIVE SUMMARY

WSP | Parsons Brinckerhoff Acoustics has recently conducted an acoustic assessment of the proposed subdivision on Old Northern Road, Dural. Two sites are proposed to contain residential lots with an approximate size of 700 m².

Unattended noise logging was conducted along Old Northern Road in locations representative of future residences. Noise levels during the Day period (7am – 10pm) were measured at 61-66 dBA L_{Aeq 15h}, and during the Night period (10pm – 7am) a level of 56-62 dBA L_{Aeq 9h} was recorded.

Noise goals were calculated with reference to Australian Standard AS 2107, which defines a recommended design level for various building types. A 'satisfactory' level for residences, as defined by the Standard, is 30 dBA within the room during both the Day and Night periods.

To meet the noise goal of 30 dBA within the dwelling, mitigation will be required. For ground floor receivers, this may be achieved using a solid barrier at the boundary (such as a Colorbond or capped-and-lapped fence) and single-glazed, sealed windows that meet a rating of 30 dB R_w. Second storey receivers will require glazing such as 10mm single glazing or double glazing, with seals that ensure a rating of 30 dB R_w is achieved.

1 INTRODUCTION

WSP | Parsons Brinckerhoff has been appointed to provide an acoustic assessment of a subdivision located on Old Northern Road, Dural. The purpose of this report is to assess the impact of noise from Old Northern Road on future residences within the subdivision.

1.1 Site and project description

The development consists of two sites, both bound by Old Northern Road and Derriwong Road. The northern site is located between 630 Old Northern Road (Hargraves Nursery) and 616 Old Northern Road, and surrounds Dural Public School. The southern site is situated between 600 Old Northern Road and 584 Old Northern Road, and lies between Old Northern Road and Derriwong Road. Both sites are to contain residential dwellings set back at least 14 meters from the boundary adjacent to Old Northern Road. Figure 1-1 provides an overview of the site.

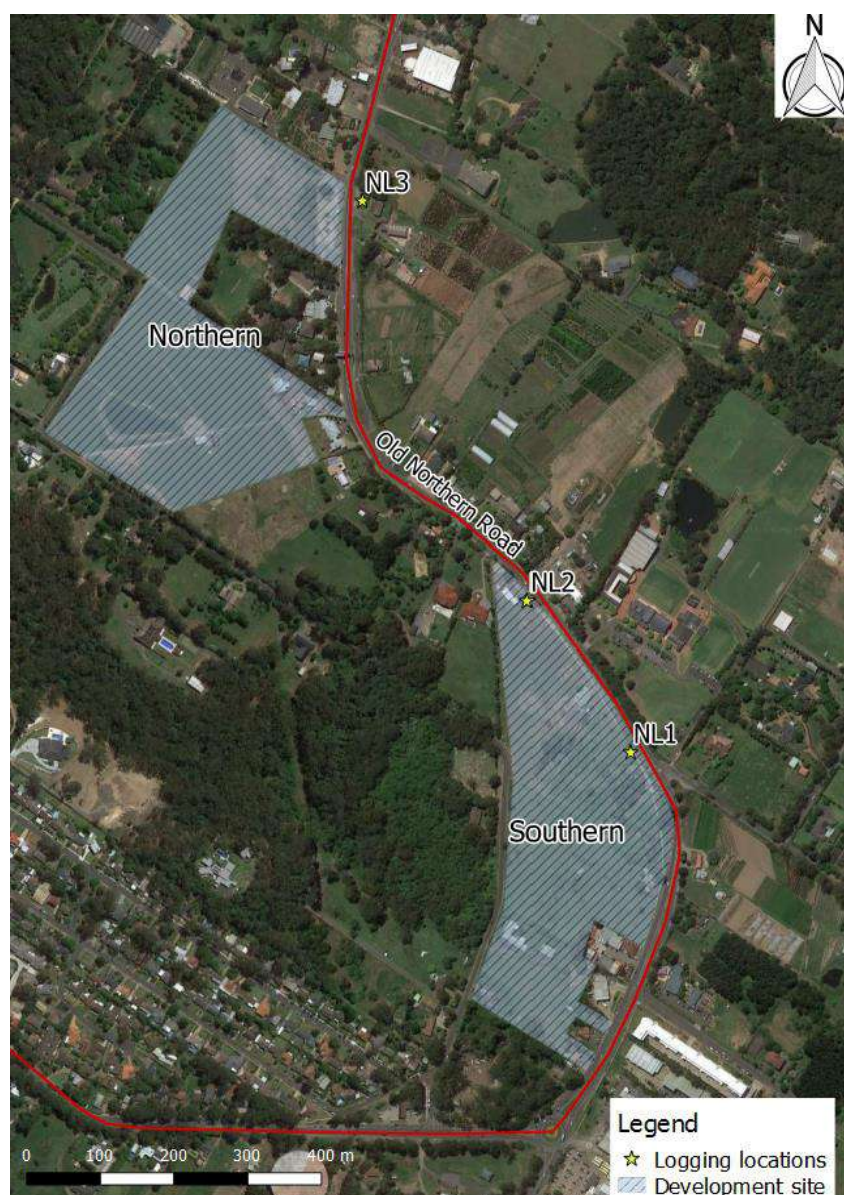


Figure 1-1 – Site Overview

2 NOISE SURVEY

2.1 Site conditions and measurement location

Noise logging sound level meters were deployed at three locations along Old Northern Road, which are summarised in Table 2-1. The units were set to A-weighted and Fast, and recorded 15 minute statistical levels.

Table 2-1 – Measurement locations

Logger ID	Address	Development area	Approximate distance from Old Northern Road lane edge, meters
N1	600 Old Northern Road, Dural	Southern	19
N2	606 Old Northern Road, Dural	Southern	16
N3	881 Old Northern Road, Dural	Northern	15

Analysis of the Bureau of Meteorology's daily weather data from the Terrey Hills weather station (the nearest weather station to the monitoring location) during the monitoring period indicated that the conditions were generally dry with relatively calm winds during the monitoring period and did not adversely affect the measurement results.

The noise environment consisted primarily of road traffic noise from Old Northern Road, and no other distinct sources could be identified when traffic was absent.

2.2 Methodology and equipment

The noise survey was conducted in accordance with AS1055.1 "Acoustics – Description and measurement of environmental noise Part 1: General Procedures" and guidance in *Environmental Protection Agency (Noise) regulations 1997*.

The microphones was located in a free-field position at least 3.5m away from any reflecting wall and at least 1.2m above the ground.

The sound level meters were field-calibrated using a Pulsar Model 105 acoustic calibrator both before and after noise measurements to monitor drifts in calibration. No drifts in excess of 1 dBA were noted throughout the monitoring exercise.

The sound level meters and calibrator were in current National Association of Testing Authorities (NATA) calibration at the time of use. Serial numbers and laboratory calibration due dates are shown below in Table 2-2.

Table 2-2 – Equipment details

	Equipment description	Manufacturer and type no.	Serial no.	Calibration due date
NL1	Sound Level Meter	Svan 977	36172	04/09/2017
	Microphone	7052E	56445	04/09/2017
NL2	Sound Level Meter	Svan 977	36818	21/06/2018
	Microphone	7052E	43609	21/06/2018
NL3	Sound Level Meter	Svan 958	36659	16/10/2017

Equipment description	Manufacturer and type no.	Serial no.	Calibration due date
Microphone	7052E	47642	16/10/2017
Calibrator	-	Pulsar - Model 105	55041
			19/11/2016

2.3 Noise survey results

A summary of the averaged measured noise levels is presented in Table 2-3. Results have been presented in accordance with the NSW INP time period classifications. Time history graphs of the noise logging results are presented in Appendix A.

Table 2-3 – Summary of measured noise levels

Logging location	Ambient noise level		Rating background level		
	dBA L_{eq} period		dBA L_{90} 15-minute		
	Day 7am – 10pm	Night 10pm – 7am	Day 7am – 6pm	Evening 6pm – 10pm	Night 10pm – 7am
NL1	61	56	53	43	30
NL2	63	58	56	46	30
NL3	66	62	57	48	30

3 NOISE CRITERIA AND ASSESSMENT

3.1 Noise Goals - AS 2107

Australian Standard AS 2107 recommends design noise levels for within various spaces, including residences. A summary of the relevant design levels is provided in Table 3-1.

Table 3-1 – AS 2107 internal noise levels

Type of occupancy/activity	Recommended design sound level, dBA L_{eq} 15-minute	
	Satisfactory	Maximum
Houses and apartments near minor roads – Living areas	30	40
Houses and apartments near minor roads – Sleeping areas	30	35

The noise goal for residences within the development is summarised below in Table 3-2, and is based on the 'satisfactory' recommended design sound levels outlined in AS 2107.

Table 3-2 – Internal noise goals

Land usage	Applicable time period	Internal noise criteria dBA L_{eq} 15-minute
Residential buildings	Day, Night	30

3.2 Assessment of Road Traffic Noise

Table 3-3 shows the levels predicted for the closest house to Old Northern Road in each development area, with a setback of 14 metres from the boundary and without mitigation.

Table 3-3 – Predicted road noise levels at residential façades

Development site and land use	Setback from boundary, metres	Distance to Old Northern Road, metres	Predicted level at façade, dBA L_{eq} period		Required reduction to meet internal noise goal, dBA
			Day 7am – 10pm	Night 10pm – 7am	
Northern	14	39	63	59	29
Southern	14	17	63	58	28

For residences with a setback of 14 meters, the following mitigation may be considered to meet the noise goal:

- Ground floor: 1.8 metre solid barrier, such as a Colorbond or a capped-and-lapped fence, on the boundary adjacent to Old Northern Road. Windows are to meet R_w 30 dB, which may be achieved using 6mm single glazing and sufficient seals to meet this rating.
- First floor: windows are to have sufficient seals and glazing to meet R_w 35 dB, which may be achieved using a double-glazed construction or 10mm single glazing.

Figure 3-1 shows an example of a Colorbond fence, Figure 3-2 illustrates a capped-and lapped fence construction, and Figure 3-3 depicts a block fence. These three constructions are examples of materials that can be used to form barriers.



Figure 3-1 – Colorbond fence. Source: jnlandscapes.com.au



Figure 3-2 – Capped and lapped fence. Source: fencescape.com.au



Figure 3-3 – Block wall. Source: arizonafencebuilders.com

4 SUMMARY

WSP | Parsons Brinckerhoff has conducted an acoustic assessment in support of a Development Application for the proposed subdivision on Old Northern Road, Dural. Unattended noise monitoring was conducted at representative locations to determine the road traffic noise contribution from Old Northern Road. Noise goals were formed with reference to recommended design levels contained within Australian Standard AS 2107.

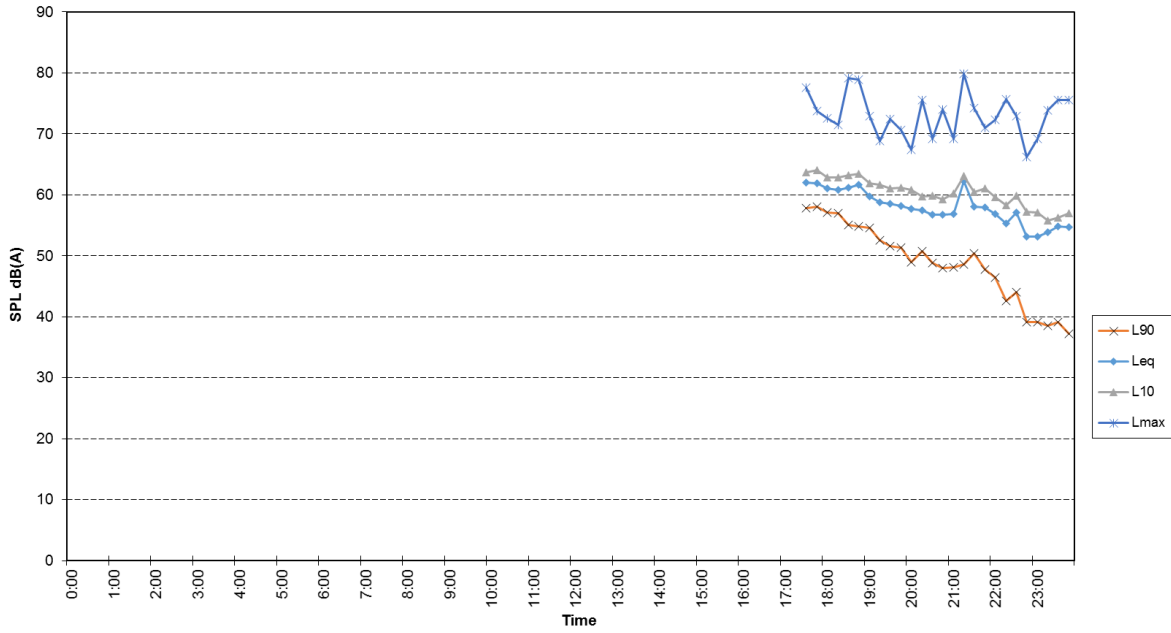
For houses adjacent to Old Northern Road, with a setback of 14 meters from the lot boundary, mitigation will be required to meet the noise goal of 30 dBA within the house. This goal may be achieved for ground-floor receivers through the installation of a solid barrier (such as a Colorbond or capped-and-lapped fence) and 6mm single-glazed windows with sufficient seals to ensure an R_w of 30 dB is achieved. For receivers on the second storey, the noise goal will be accomplished using a construction such as 10mm single glazing or double-glazed windows, with sufficient seals to ensure an R_w of 35 dB is achieved.

Appendix A

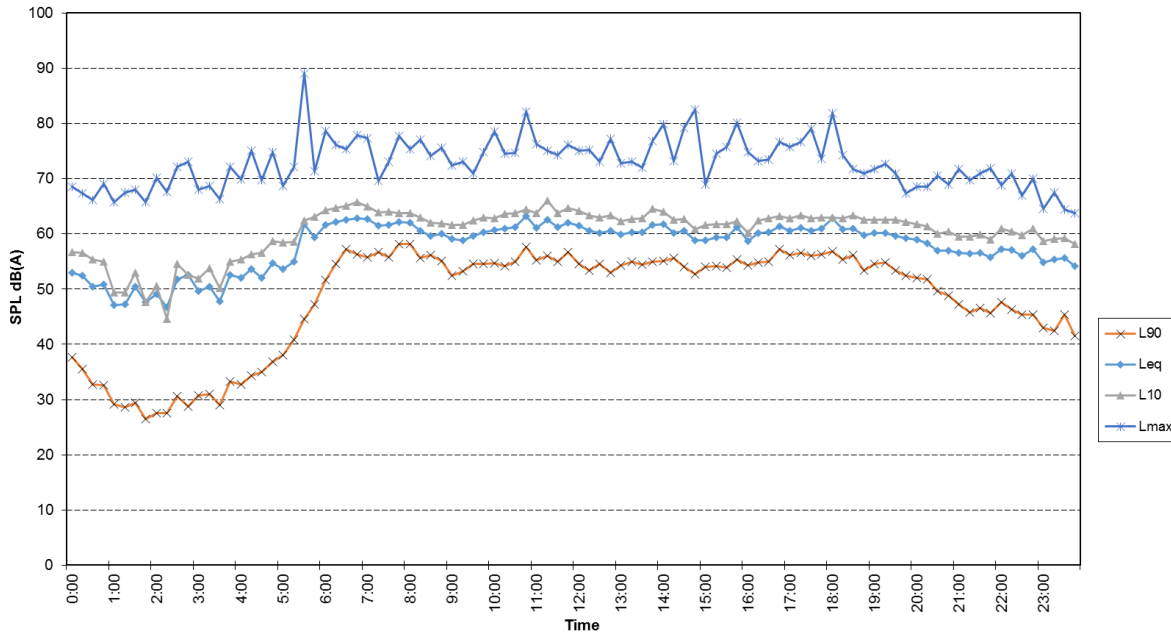
NOISE MEASUREMENT RESULTS

NL1: 600 Old Northern Road, Dural

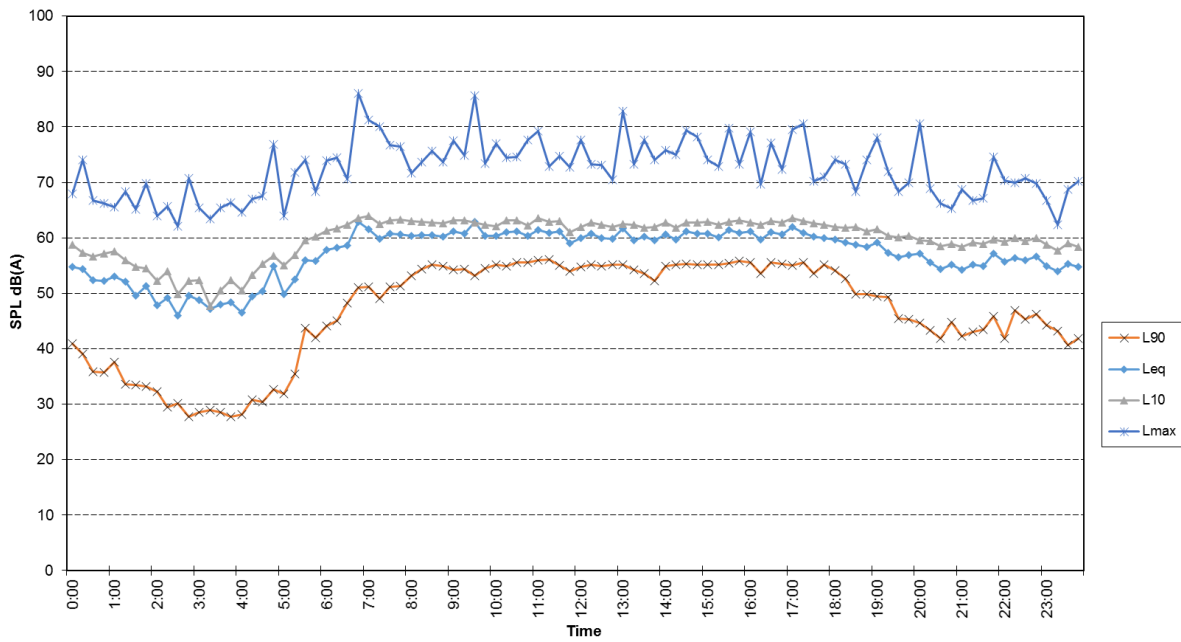
Location - NL1
 Measured Noise Levels - Thursday 15/09/2016



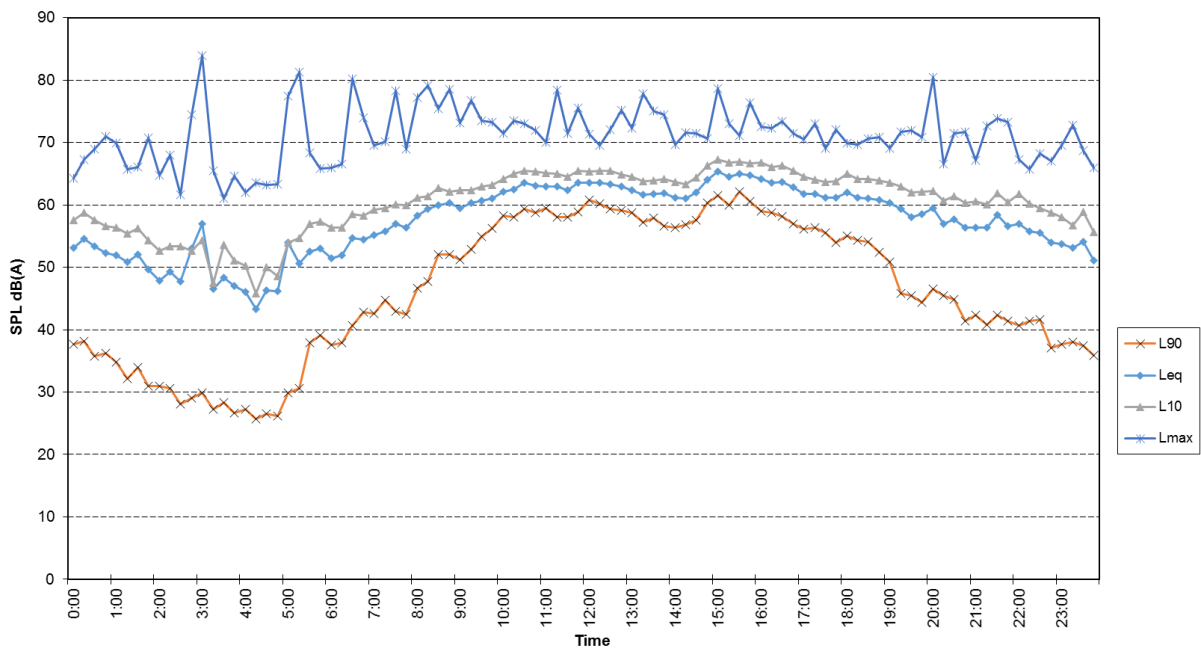
Location - NL1
 Measured Noise Levels - Friday 16/09/2016



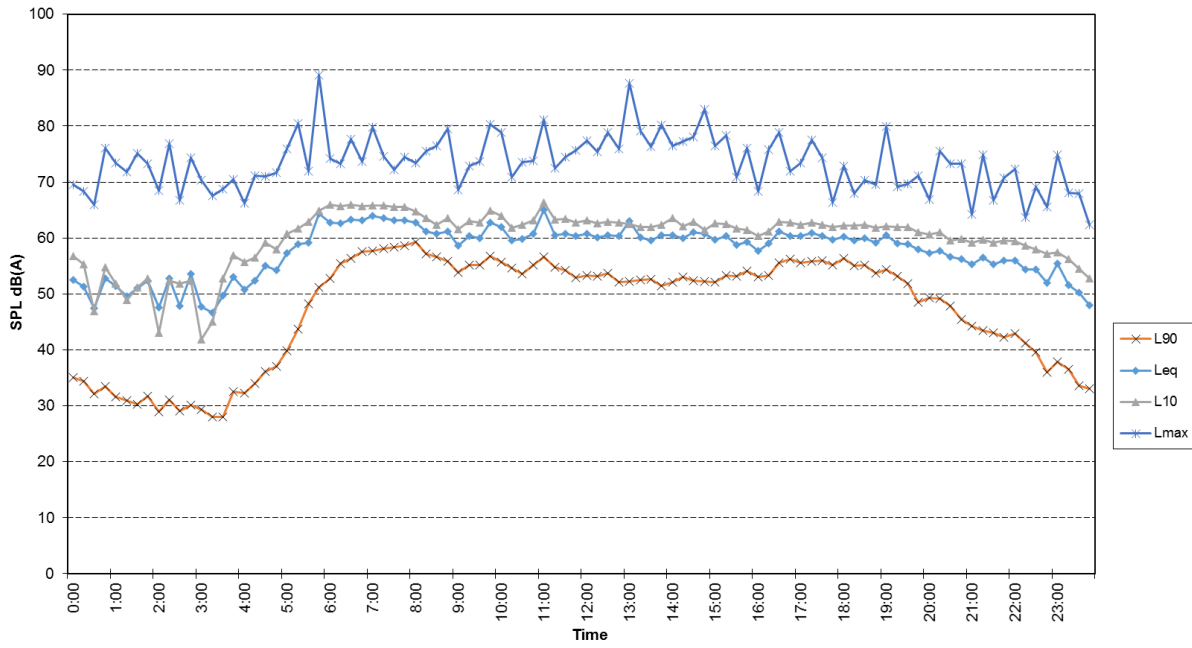
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Measured Noise Levels - Saturday 17/09/2016



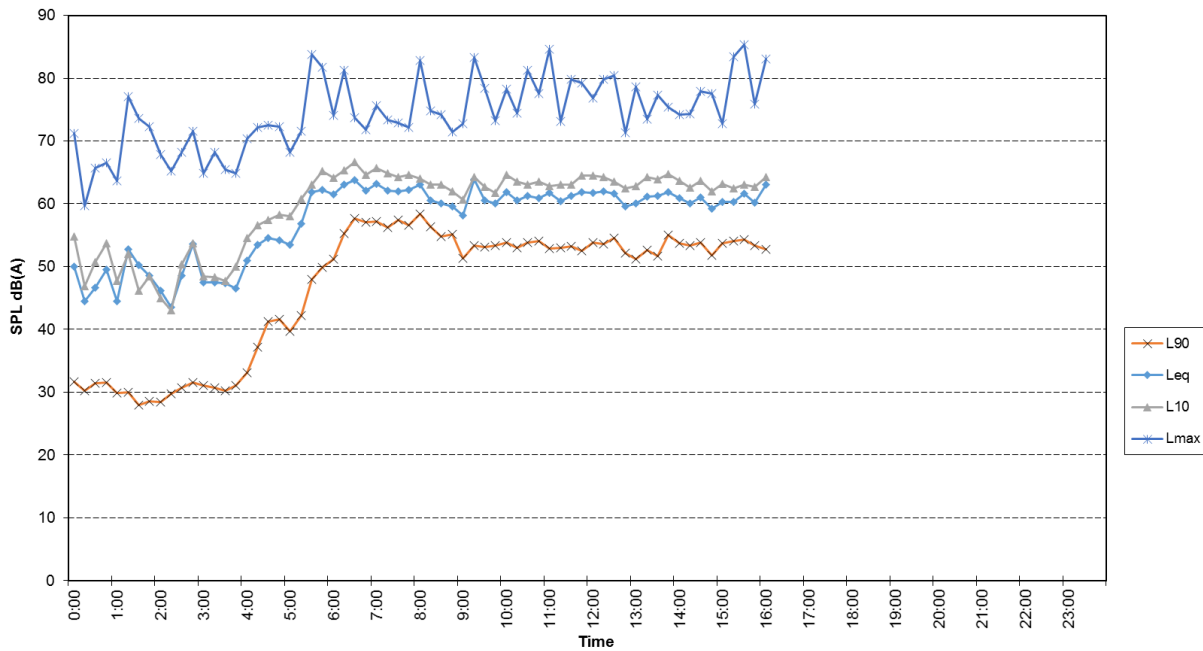
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Measured Noise Levels - Sunday 18/09/2016



Location - NL1
Measured Noise Levels - Monday 19/09/2016

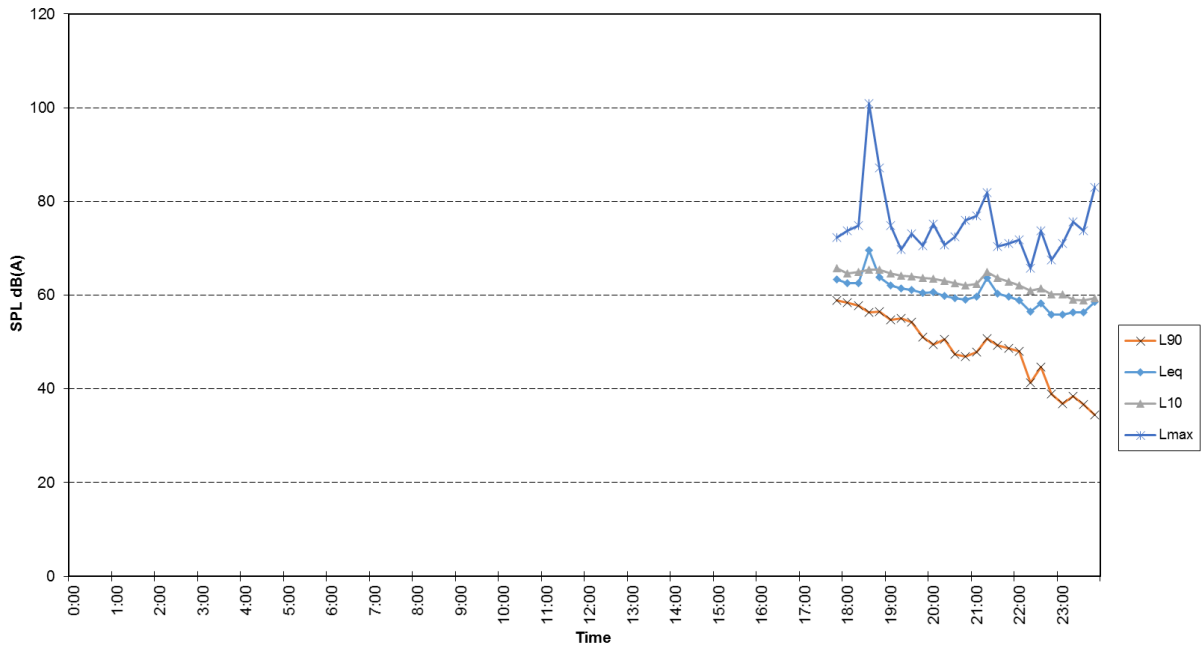


Location - NL1
Measured Noise Levels - Tuesday 20/09/2016

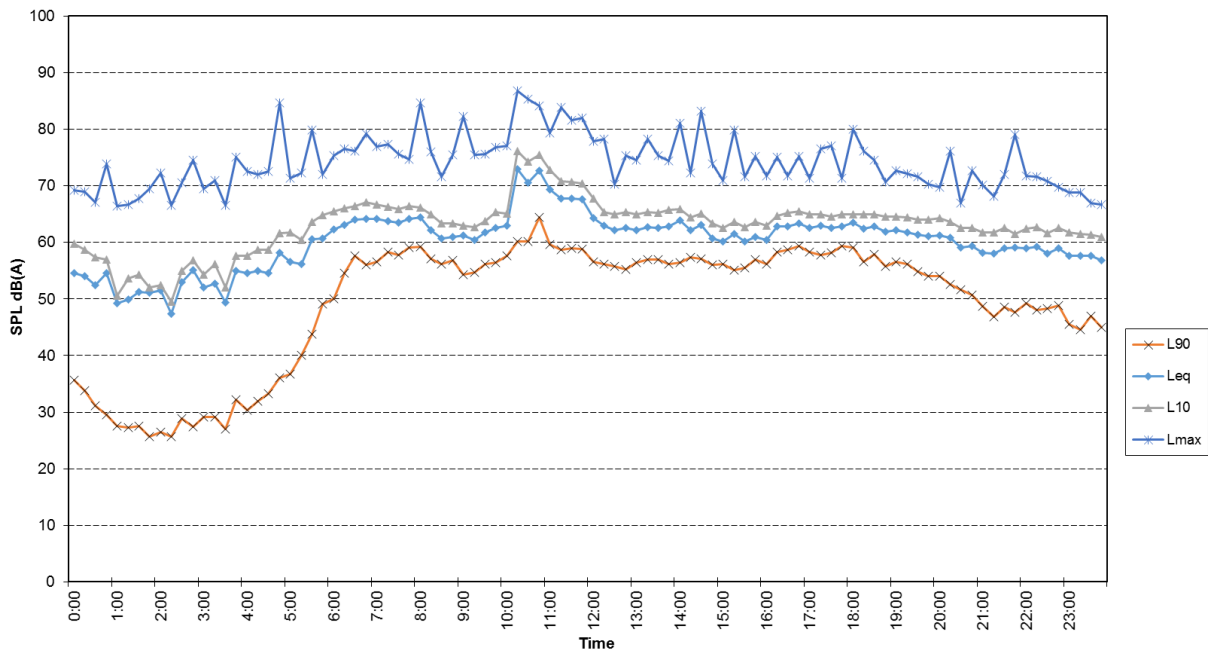


NL2: 606 Old Northern Road, Dural

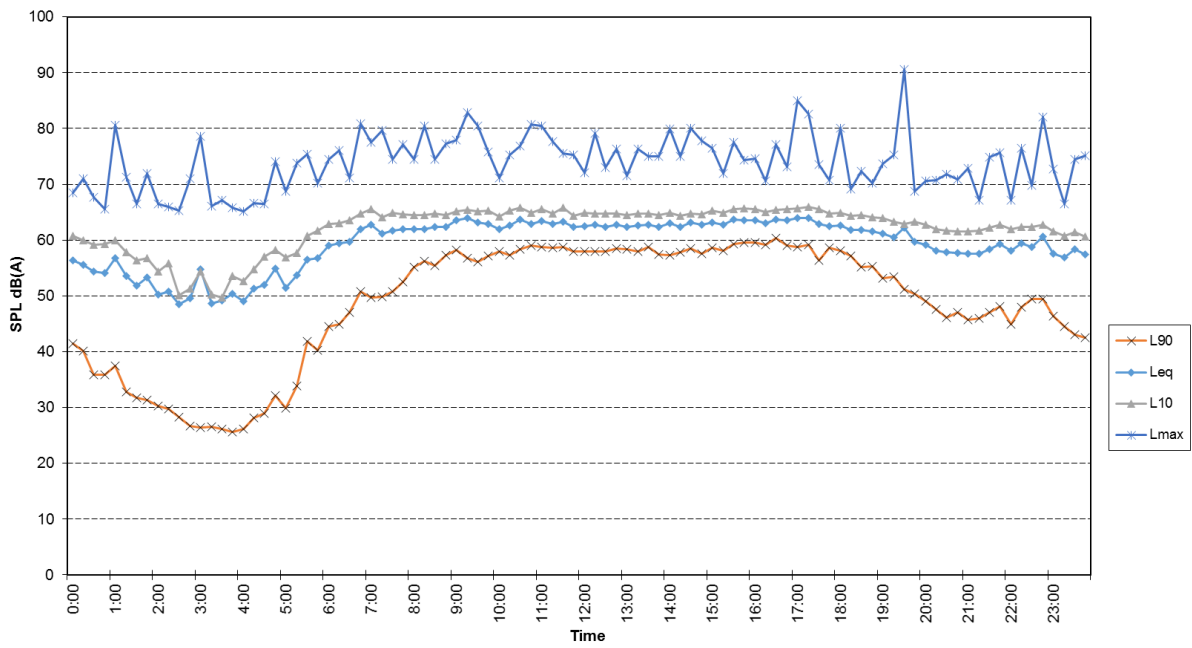
Location - NL2
 Measured Noise Levels - Thursday 15/09/2016



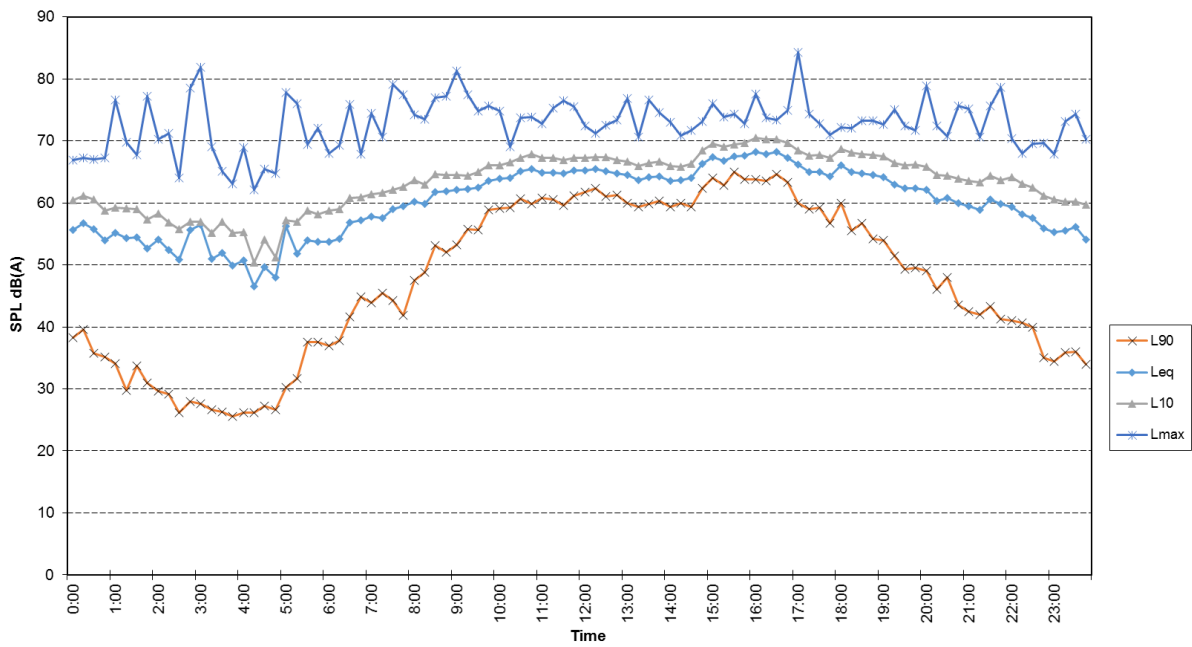
Location - NL2
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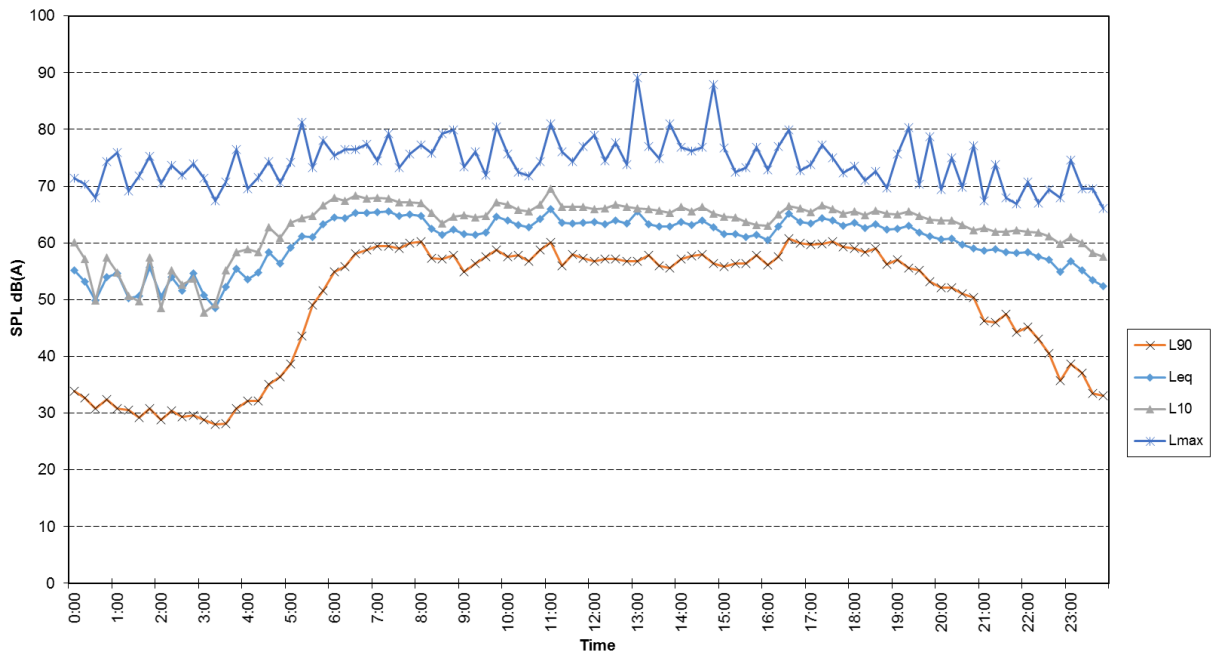
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 Measured Noise Levels - Saturday 17/09/2016



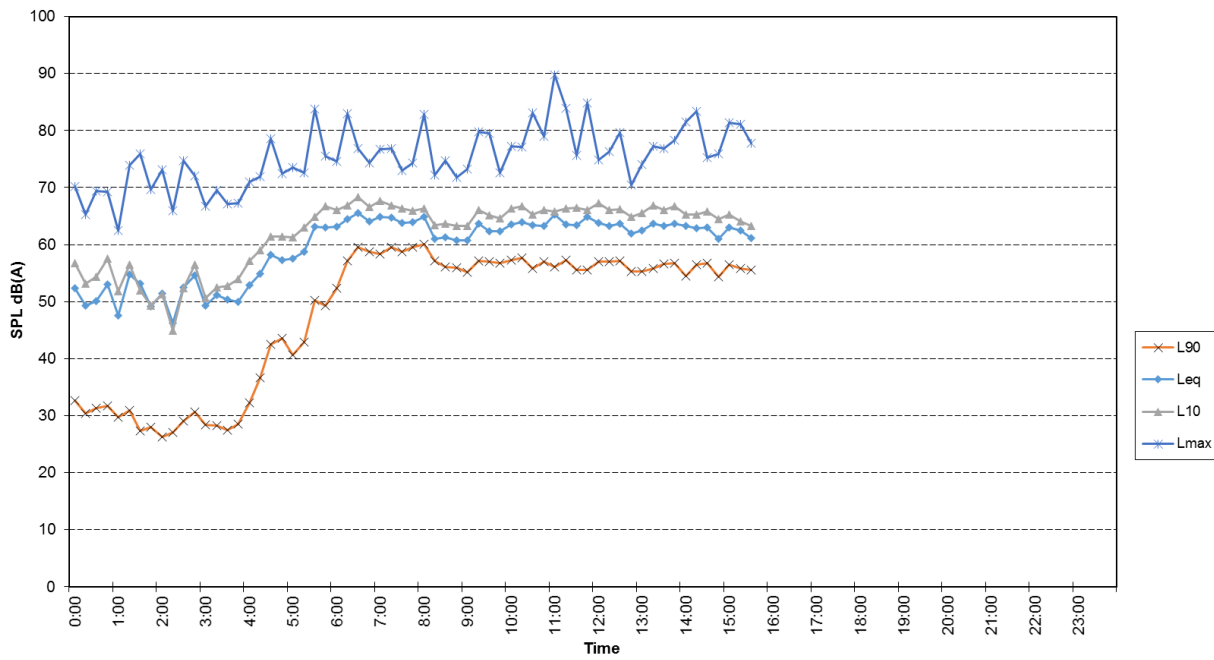
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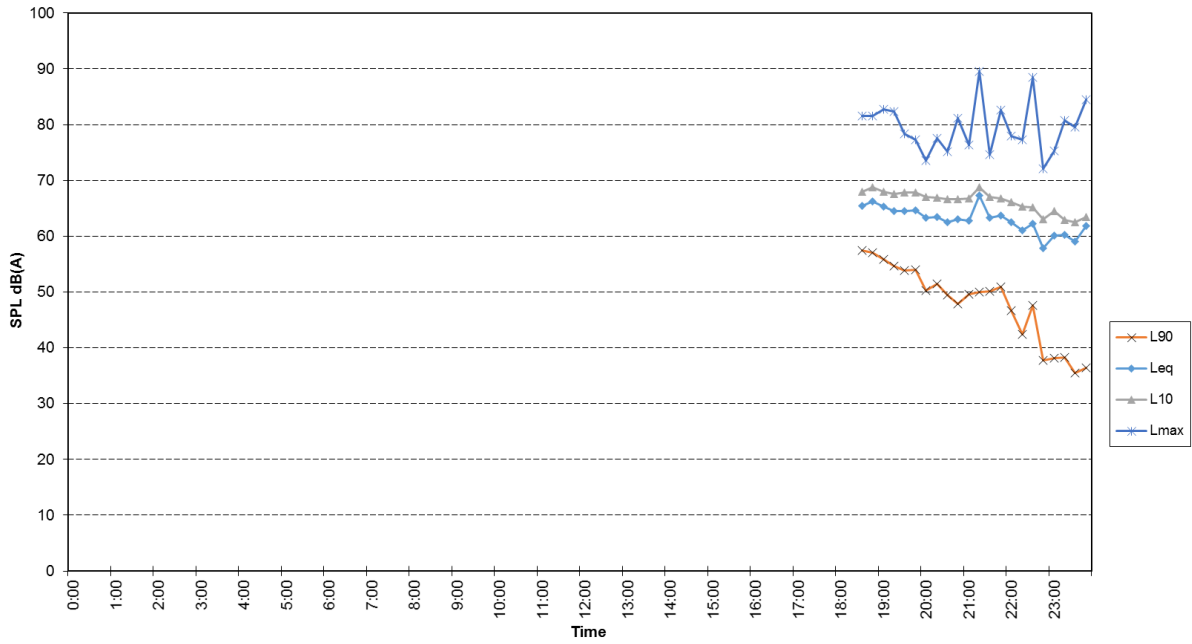


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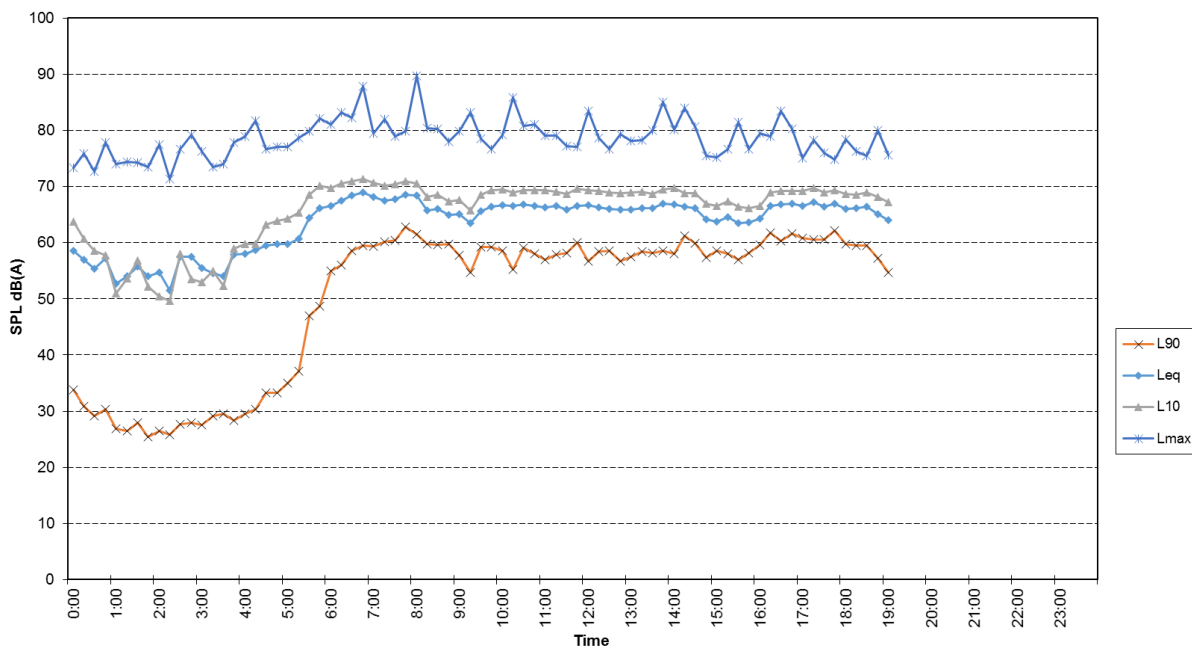


NL3: 881 Old Northern Road, Dural

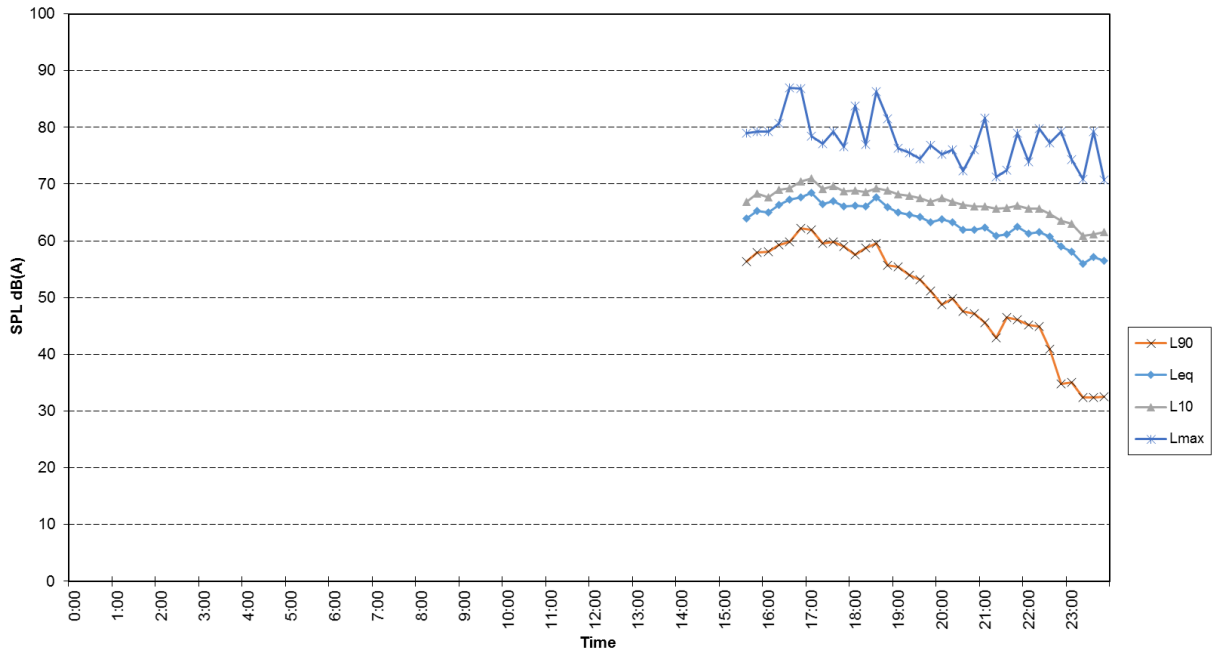
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Measured Noise Levels - Thursday 15/09/2016



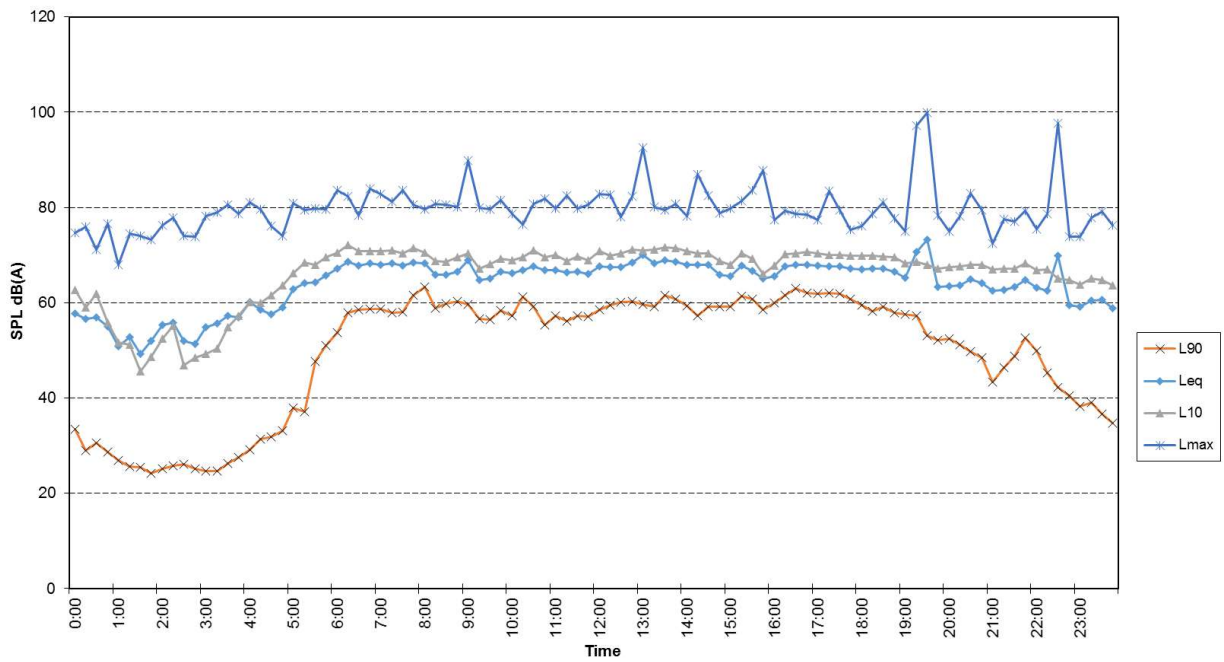
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Measured Noise Levels - Friday 16/09/2016



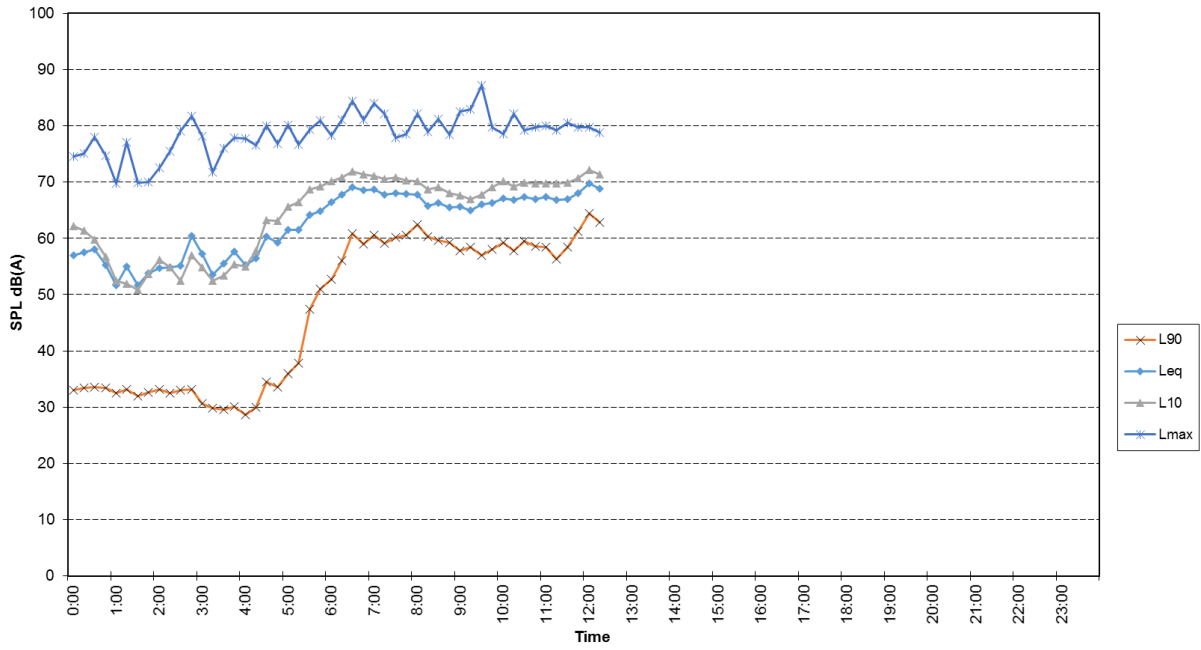
Location - NL3
 Measured Noise Levels - Tuesday 20/09/2016



Location - NL3
 Measured Noise Levels - Wednesday 21/09/2016



Location - NL3
Measured Noise Levels - Thursday 22/09/2016



PLANNING PROPOSAL

OLD NORTHERN ROAD, DURAL

URBIS STAFF RESPONSIBLE FOR THIS REPORT WERE:

Director	Clare Brown
Senior Consultant	Rachel Snape
Assistant Planner	Kate Ryan
Project Code	SA6076
Report Number	Final

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EXECUTIVE SUMMARY

This Planning Proposal has been prepared on behalf the owners of the subject land. This Planning Proposal provides justification to The Hills Shire Council to commence the process of transforming rural land into urban land for the purposes of delivering additional residential dwellings and open space.

The land, subject to this proposal comprises a total of 12 lots divided between two (2) parcels referred to as the Northern and Southern sites, each legally described in **Table 1**. The land is bound to the east and west (front and rear) by Old Northern Road and Derriwong Road, respectively, to the north of Round Corner Town Centre. Old Northern Road forms the boundary between The Hills Local Government Area (LGA) and Hornsby Shire Council LGA.

The land naturally grades in a south, southwest direction towards Derriwong Road and O'Hara's Creek beyond. The site is predominantly cleared of any substantial vegetation with only sporadic and fragmented vegetation patches remaining. Existing uses are predominantly rural residential in nature, with the majority of allotments currently zoned RU6 Transition under *The Hills Local Environmental Plan 2012* (THLEP 2012).

The Planning Proposal seeks to rezone the land to R2 Low Density Residential. Combined with the change in land use zoning, the Planning Proposal seeks to amend the following development standards applying to the land:

- Minimum lot size requirement from 2 hectares to 700m², with an additional clause under Part 7 of THLEP 2012 to permit a maximum of 101 residential lots within the northern parcel with a minimum lot size of 600m².
- Amend the maximum building heights from 10 metres to 9 metres.

The Planning Proposal is supported by an urban design study which supports the logical expansion of the urban fringe, demonstrating compatibility of future land use zones (on land not included in this request) and a suitable urban layout and form that accommodates future road connections.

Support for this Planning Proposal is justified based on the following:

- The proposed rezoning is consistent with the emerging and anticipated urban character of the area and the existing pattern of density for development within adjacent urban centres;
- Compatibility and integration of the proposed land uses and urban form with Round Corner and provision for future connectivity with adjacent lands (not included in this proposal);
- The land is not currently used for agricultural purposes. The potential use of the land for agriculture is constrained due to the proximity of urban land and the potential for intensive agriculture to generate adverse environmental impacts;
- The rezoning and future redevelopment would support the continued growth of Round Corner through increasing proximate residential yields;
- The proposal will not dilute the primacy of adjacent urban centres, but reinforce and support their growth through the increased residential density and worker populations within retail catchments;
- The rezoning reflects a logical extension and infill of urban land uses, bookended between two (2) existing centres that are the subject of continuing growth and development; and
- The residential subdivision will deliver new residential land to meet demand of existing and potential residents, in an identified market gap for downsizers and young families.

Taking into account the detailed consideration of the emerging character and trends towards urbanisation of land surrounding Round Corner, the request to rezone the land subject of this proposal is considered supportable. It is requested that Council endorse the proposal and request the Department of Planning and Environment to issue a gateway determination to commence the process to amend the relevant planning maps of *The Hills Local Environmental Plan 2012* to permit an extension to the urban fringe

1. INTRODUCTION

1.1. OVERVIEW

This report has been prepared on behalf of Dural Investments Holdings Pty Ltd and supports their request to The Hills Shire Council, as the relevant planning authority, to prepare a Planning Proposal. The request is for an amendment of the land use zoning and development standards that currently apply under *The Hills Local Environmental Plan 2012* (THLEP 2012) for the land described in Table 1.

The intent of the request is to rezone the land for urban purposes to permit the delivery of residential dwellings and future open space. The amendment would extend the existing urban fringe northward by rezoning the land from RU6 Transition to R2 Low Density Residential. The rezoning of the land for urban purposes would permit redevelopment of underutilised and poor quality agricultural land for low density residential blocks.

The envisaged future development is consistent with the proposed R2 Low Density Residential zoning and aligns with broad direction and intent of the metropolitan strategy, *A Plan for Growing Sydney*.

The proposal presents a significant opportunity to increase the diversity of residential land options within Dural, responding to market demand of both an aging demographic looking to downsize and young families seeking a more affordable residential option. The proposal is a logical extension of the existing urban fringe that responds to recent gateway determinations supporting the rezoning of land to the south from rural to urban, combined with the growth of both Round Corner and Dural Centres. In this regard, the proposal places a key emphasis on accommodating population growth, which will support the economic development of nearby local centres without diluting or detracting from the centres hierarchy.

The proposed amendment will make a positive contribution to the growth and revitalisation of the local area in a manner that contributes to housing variety and affordability.

1.2. PROPOSED LEP AMENDMENTS

The Planning Proposal requests amendments to the land use zone, minimum lot sizes and height of building development standards applying under THLEP 2012.

A high level master plan has been prepared for the subject sites and land immediately adjacent and surrounding, in order to indicate how the land would connect and relate to surrounding urban areas. The proposed changes to the adopted provisions of THLEP 2012 are outlined in Parts 2 Explanation of Provisions and Part 4 Mapping, contained within this proposal.

The amendments are influenced by a number of key factors which are addressed in this report. These include:

- Orderly and economic use of the land that is otherwise under-utilised and undesirable for agricultural purposes;
- No additional or new impacts on the ecological sensitivities of the site or the surrounding and adjacent land;
- A development of the site that is consistent with and achieve key directions for the area and locality as expressed in the metropolitan plan *A Plan for Growing Sydney*, in particular an increase in the quantum of housing and variety of housing typologies; and
- The design has been informed by detailed consideration of market demands and needs, combined with the physical characteristics of the land, the urban design analysis contained within the report demonstrates the redevelopment of the site is capable of achieving suitable streetscape and context consistency despite the change in density.

1.3. SUPPORTING DOCUMENTATION

This report is accompanied by the following documentation:

- Architectural Built Form and Massing Study prepared by Urbis dated November 2016;
- Traffic and Transport Impact Assessment prepared by AECOM dated 13 October 2016;
- Ecological Report prepared by Eco Logical Australia dated 23 March 2016;
- Bushfire Report prepared by Eco Logical Australia dated March 21016;
- Residential Market Analysis prepared by Urbis dated February 2016;
- Assessment of New Agricultural Enterprise Viability in Dural prepared by Urbis dated November 2016;
- Heritage Impact Statement prepared by Urbis dated February 2016;
- Preliminary Site Investigations Reports prepared by ADE Consulting;
- Services Connections Report prepared by Arup dated 11 October 2016;
- Survey prepared by Land Partners dated 17 July 2015; and
- Acoustic Assessment prepared by WSP Parsons Brinkerhoff dated September 2016.

1.4. REPORT STRUCTURE

This Planning Proposal is structured as follows:

- **Section 1:** Introduction
- **Section 2:** Description and analysis of the site and local context with reference to metropolitan strategic planning and infrastructure projects;
- **Section 3:** Overview of Current Planning Controls;
- **Section 4:** The Planning Proposal, including the
 - **Part 1:** Objectives and intended outcomes of the planning proposal;
 - **Part 2:** Explanation of the provisions of the proposed amendment to the LEP;
 - **Part 3:** Justification of the Planning Proposal and Concept Urban Layout and Form;
 - **Part 4:** Mapping;
 - **Part 5:** Consideration of the community consultation likely to be associated with the Planning Proposal; and
 - **Part 6:** Project Timeline.
- **Section 5:** Conclusion

2. CONTEXT AND THE SITES

2.1. REGIONAL CONTEXT

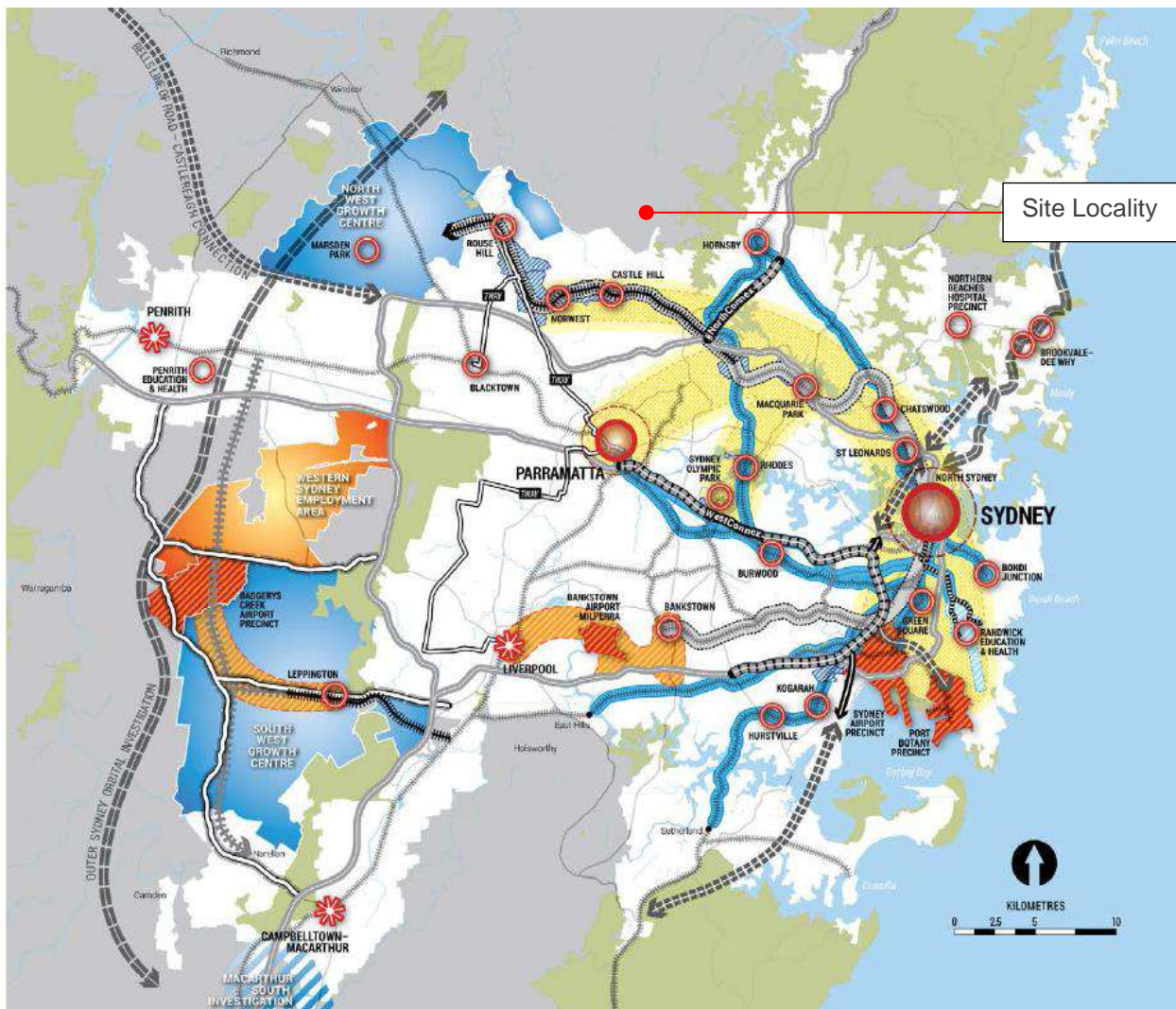
The land, subject to this planning proposal, is located north west of the Sydney Metropolitan Region and beyond the urban fringe in the The Hills Local Government Area (LGA), which is located approximately 30 kilometres from the Sydney CBD (GPO). Refer to **Figures 1** and **2**.

The Hills LGA covers an area of approximately 40km² and is home to approximately 192,230 people (ABS, 2015). The predominant character of residential development across the LGA is low density housing, reflected in overall population density of 4.8 persons per hectare.

While the ABS (2016) reported growth in high and medium density housing over the period of 2006 to 2011, single dwellings are still preferred, accounting for 60.9% of housing growth in the LGA, a high percentage of which (92.4%) are owner occupied.

This is likely to change following the completion of the North West rail link, which will encourage increased densities within the established centres around key future transport nodes.

Figure 1 – A Plan for Growing Sydney (Source: www.planning.nsw.gov.au)



Population demographics for The Hills LGA reflect dominant cohorts in the younger workforce (25 to 34) and parents and homebuilders (35 to 49). As with many areas throughout Sydney and NSW, there is an aging population, with approximately 16.7% of the residents between the age of 60 – 85+.

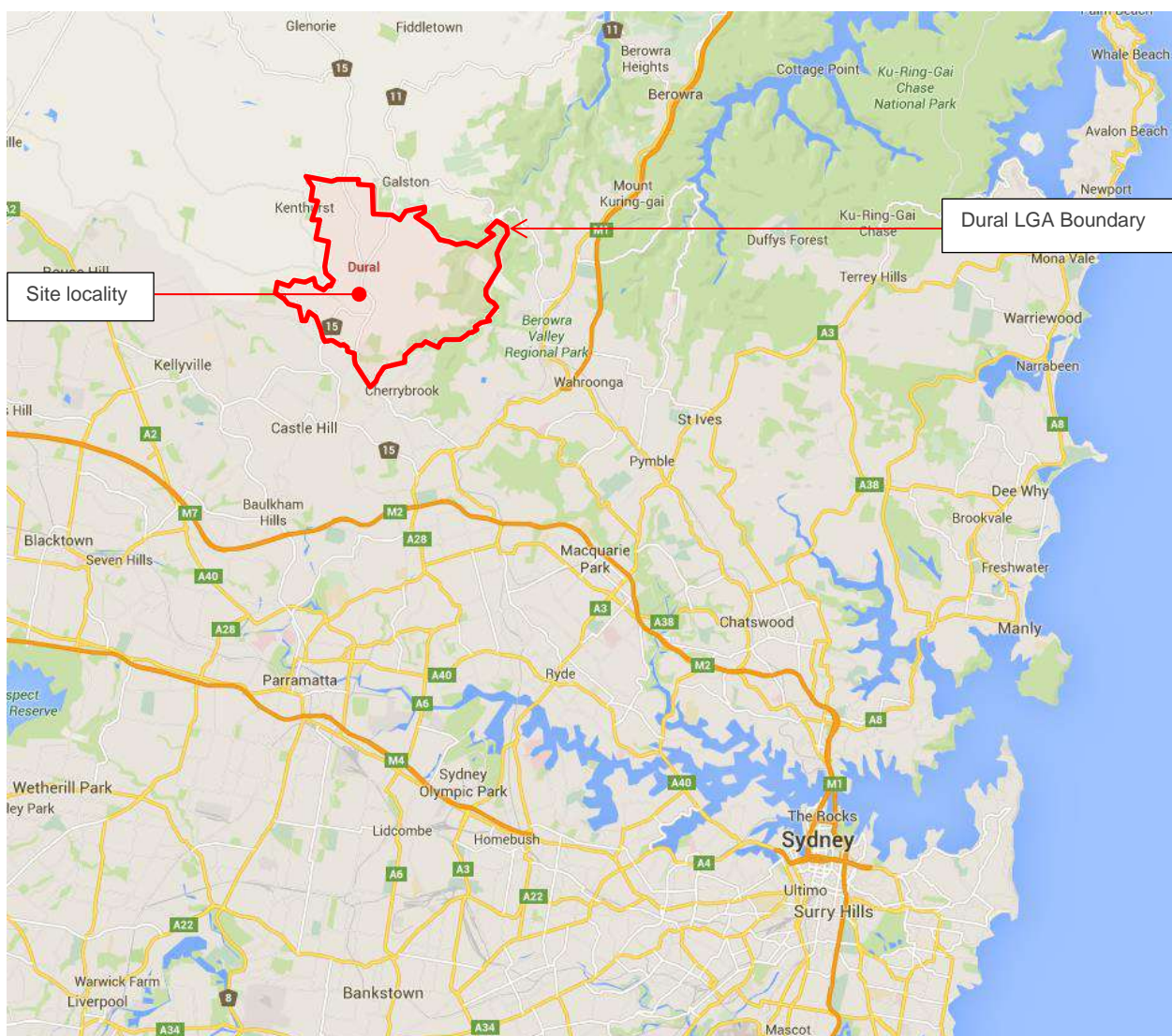
Reflective of the dominant cohorts (moving into and within the parents and homebuilders phase) combined with the delivery of rail infrastructure contributing to increased residential opportunities and densities, population is estimated to grow by 33.47% over the next 15 years to 2031, to 248, 899 people. 25.2% of this population will be aged between 55 and 85 +.

2.2. LOCAL CONTEXT

Dural covers an area of approximately 1,462 hectares (or 15km²) and in 2011 was home to 2,832 residents with a population density of 1.94 persons per hectare. In general, the population of Dural has remained stable since 2001 due to the limited residential land stock and release. 94% of residents in Dural are private owner/occupiers, with the majority of residents aged 35 to 49 falling within the service age group described as parents and homebuilders.

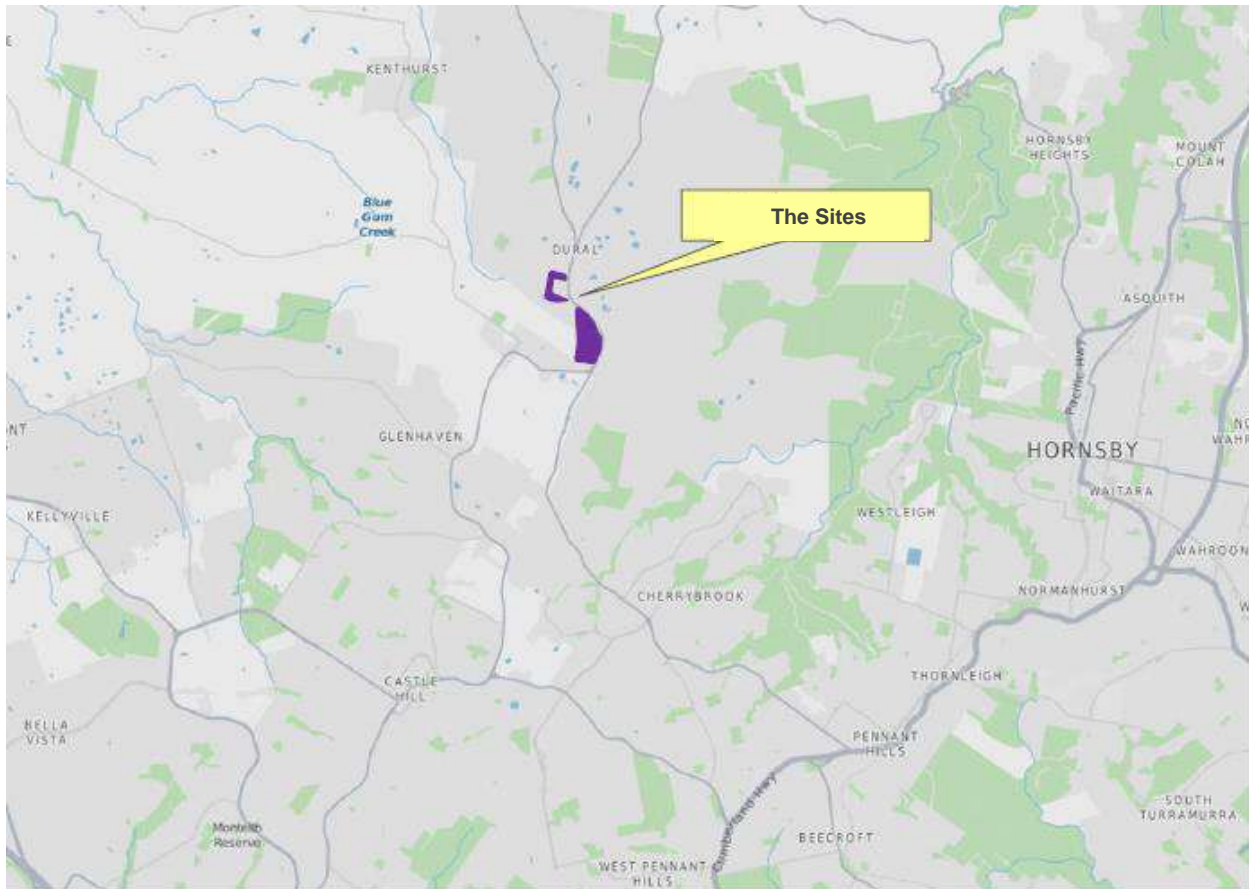
Rural land with the LGA is used mainly for hobby farms, nurseries and orchards, especially citrus fruits.

Figure 2 – Dural Locality Map (Source: www.google.com)



The immediate context of the land that makes up the northern and southern land holdings is shown in **Figure 5**. The prevailing context would be presently described as peri urban, reflecting a mix of urban and rural character, denoting the site and its surrounds as an area in transition.

Figure 3 – Regional Context of the Sites (Source: AECOM, 2016)



The sites are bookended by urban development forms, including Round Corner to the South and the Dural Neighbourhood Centre to the north. Both urban areas are presently being expanded by recent approvals for development and rezoning applications that will have transformative influences on built form character and density. Furthermore, the locality in the short to medium term will be influenced by significant planning proposals and Development Approvals that are being considered by The Hills and Hornsby Councils, including:

- Former Timber Yard;
- South Dural;
- Dural Service Centre; and
- The Cascades Development.

FORMER TIMBER YARD, OLD NORTHERN ROAD, DURAL

A Planning Proposal to rezone land at Nos. 582 and 582A Old Northern Road, Dural was submitted to The Hills Shire Council on 23 October 2014, seeking to rezone the land from RU6 Transition to R3 Medium Density Residential (7/2015/PLP). The location of the land subject of the proposal is shown in **Figure 4**

The Planning Proposal seeks to facilitate redevelopment of the site to deliver the following:

- Six (6) x two (2) bedroom townhouses;
- 47 x three (3) bedroom townhouses; and
- Four (4) x four (4) bedroom townhouses;

Future redevelopment under the current concept plan, will also deliver supporting areas of open space.

Figure 4 – Plans Relating to Old Northern Road Planning Proposal (Source: RTP,2016)



Picture 1 – Location of Site



Picture 2 – Concept Layout

SOUTH DURAL: PLANNING PROPOSAL

A Planning Proposal to rezone existing rural land for urban purposes as shown in **Figure 5** received Gateway Approval on 7 March 2014.

The objective of the proposal is to facilitate comprehensive redevelopment of the land for urban purposes, including residential and mixed use developments. The proposal includes employment uses and the delivery of new infrastructure to support anticipated growth. The proposal seeks to amend the local zoning maps as well minimum lot sizes and height of buildings to reflect a low density urban form.

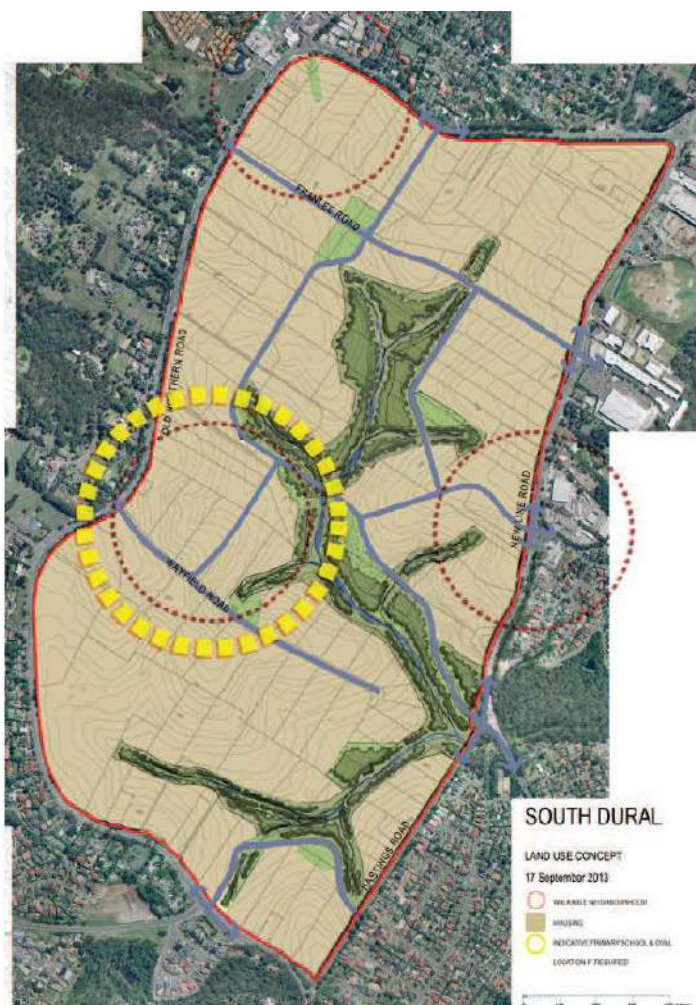
The South Dural Urban Investigation Area, Retail and Commercial Potential Report, prepared by Don Fox Planning (2008), submitted in support of the Planning Proposal indicates that the following the rezoning, future redevelopment could achieve:

- A maximum of 2,900 new residential dwellings; and
- Between 1,300m² and 3,000m² retail and commercial floor space (dependant on the delivery of a small supermarket).

The economic report indicated that the increase in residential density may also contribute to an increased demand in medical, child care and education services within the locality.

Despite the above figures (taken from the supporting Retail and Commercial Potential Report prepared by Don Fox Planning), the proposal, at the time of receiving Gateway Determination, was not supported by detailed plans stipulating the future potential yield with respect to dwellings numbers and non-residential floor space. A copy of the submitted concept plan, detailing the extent of land to which the proposal relates is provided at **Figure 5**. The proximity of the subject sites to the land, subject of the South Dural Planning Proposal is shown in **Figure 6**.

Figure 5 – South Dural: Indicative Concept Plan (Source: Shire Council Website)



DURAL SERVICE CENTRE: NEW LINE ROAD, DURAL

The Planning Proposal seeks to rezone the subject properties from IN2 Light Industrial to B2 Local Centre, in support of a retail development. No amendment was proposed for changes to the adopted building height (10.5 metres) and floor space ratio (0.7:1). The proposal envisages the expansion of the Dural Business Park to the south to facilitate the delivery of a new shopping centre including supermarket, medical centre and commercial space.

The proposal was reported to Hornsby Council on 13 April 2014 and received a recommendation of support for referral to the Department of Planning and Environment for Gateway Approval.

2.3. THE SITES

The land to which the Planning Proposal relates is made up of multiple individual land parcels that are broadly divided into the Northern and Southern Sites. The general location of these unconsolidated holdings is shown in **Figure 6** and summarised in **Table 1**.

Figure 6 – Aerial View of the Southern and Northern Sites and Surrounding Context (Source: Urbis, 2016)

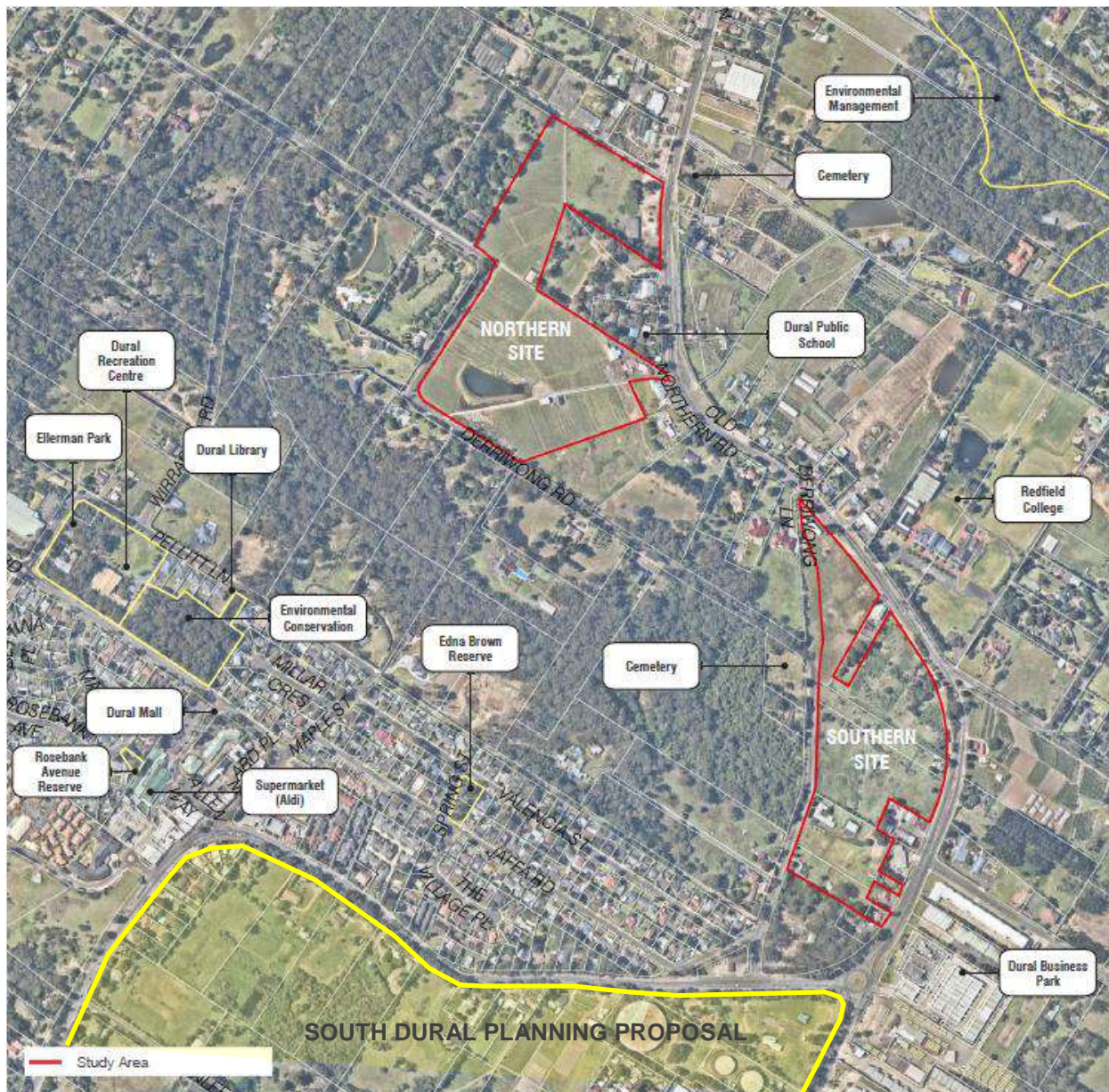


Table 1 – Summary of Landholdings

Northern Site	Southern Site
626 Old Northern Road, legally described as Lot 2 in DP 541329 (2.023 hectares)	606 Old Northern Road, legally described as Lot 1 in DP73652 (1.622 hectares)
27 Derriwong Road, legally described as Lot 9 in DP237576 (2.025 hectares)	602 Old Northern Road, legally described as Lot 1 in DP 656036 (1.967 hectares)
618 Old Northern Road, legally described as Lot X in DP 501233 (4.777 hectares)	600A Old Northern Road, legally described as Lot 101 in DP713628 (6,331m ²)
21 Derriwong Road, legally described as Lot 2 in DP567995 (2.023 hectares)	600 Old Northern Road, legally described as Lot 100 in DP 713628 (2.211 hectares)
	5 Derriwong Road (also described as 586 Old Northern Road), legally described as Lot 11 DP866560 (6,024m ²).
	7 Derriwong Road, legally described as Lot 12 in DP 866560 (1.211 ha)
	590 Old Northern Road, legally described as Lot D in DP38097 and Lot D in DP39261 (859.9m ²)
	584 Old Northern Road, legally described as Lot 1 DP660184 (746.1m ²)
Total area: 10.848 hectares (108,480m²)	Total area: 10.617 hectares (106,171m²)

2.3.1. Topography

The northern site slopes away from Old Northern Road towards Derriwong with a variable gradient ranging from 6-8%. While the southern site also has south, southwest slope away from Old Northern Road towards Derriwong the gradient is much lower ranging between 3-5%.

A detailed survey showing local landform of each of the lots is provided at **Appendix I**.

2.3.2. Hydrology

SURFACE WATER FLOW

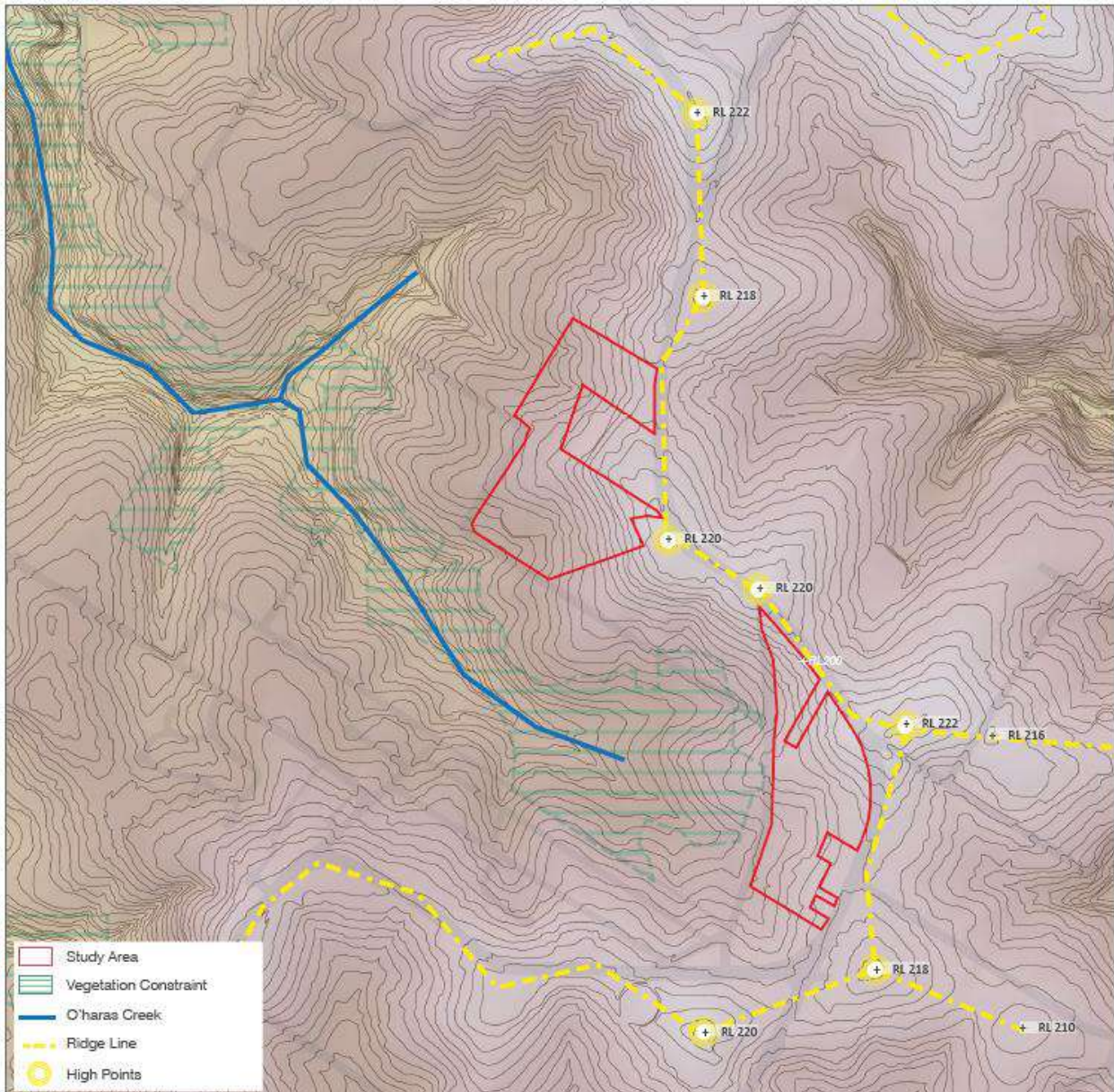
As outlined in section 2.2.1 the land generally slopes away from Old Northern Road in a west, south west direction towards the natural drainage lines and permanent water courses.

Eco Logical Australia have undertaken an assessment of the sites and the surrounding lands, identifying that several tributaries of the O'Hara Creek drain away from the sites and converge at the O'Hara Creek to the west and south-west of the site. O'Hara's Creek is identified as a major creek line by Eco Logical (refer to **Appendix D**), the creek flows in a north-west direction (**Figure 7**) and is buffered by existing and established native vegetation refer to **Figure 8**).

GROUNDWATER FLOWS

The presence of groundwater flows is anticipated given the presence of a series of streams and creek lines within the immediate context of the sites. ADE Consulting (**Appendix G**) anticipates that local groundwater is likely to flow in a westerly direction towards O'Hara Creek which is located approximately 200 metres to the west, flowing south to north.

Figure 7 – Local Topography and Hydrology Lines



2.3.3. Local Geology

SOILS

ADE Consulting Group have undertaken preliminary site investigations and determined that the sites are located on a Glenorie Soil Landscape (gn) as indicated on the Sydney Soil Landscape Map prepared by the Soil Conservation Services of NSW.

The geology of the Glenorie Soil Landscape is underlain by Wianamatta Group Ashfield Shale and Bringelly Shale formations. The Ashfield Shale is comprised of laminate and dark grey shale. Bringelly Shale consists of shale, calcareous claystone, laminate and fine to medium grained lithic-quartz stone.

Soils are shallow to moderately deep (< 100cm) with variability across upper slopes and drainage gullies. The topsoil (A1 Horizon) consists of a friable dark brown loam, with moderately to strongly pedal structure, pedal single-grained structure and porous sandy fabric. The pH ranges from strongly acid (pH 4.0) to slightly acid (pH 6.0).

Beneath this layer occurs the B Horizon consisting of hard setting clay loam. The pH ranges between strongly acid (pH 4.0) to slightly acid (pH 6.5). The B Horizon is brown strongly pedal medium clay. The pH

varies from strongly acid (pH 4.5) to moderately acid (pH 6.5). Strongly weathered sandstone fragments are common. Roots and charcoal fragments are rare.

It should be noted that the area occurs close to a transition between Glenorie and Lucas Heights soil landscapes and therefore transitional phases may occur and vary depending on the exact location.

ACID SULPHATE SOILS

The sites are identified on the adopted planning maps as low risk and unlikely to contain acid sulphate soils.

2.3.4. Flora and Fauna

The sites have been substantially cleared and consist mainly of grassed land that is currently unutilised for any agricultural purposes.

Land to the south, forming the riparian lands, around the O'Hara's Creek line and tributaries contain significant areas of vegetation.

2.3.4.1. Flora (Species and Vegetation Communities)

Assessment of existing vegetation mapping was undertaken by Eco Logical Australia and ground-truthed by site inspections of land subject of this proposal. Land adjacent to and surrounding the sites subject of the proposal was also the subject of desk top review.

Eco Logical concludes that while the majority of the site has been substantially modified to support historical use as market gardens, pockets of native vegetation are present both on the site and on land adjacent and surrounding. The distribution of identified vegetation communities is shown in **Figure 8**.

The majority of all the sites, subject of this proposal, support exotic species with the notable exception of:

- Sporadic patches in the southern lot that contains *Eucalyptus saligna* (Sydney Blue Gum), including mature specimens and regenerating saplings. *Eucalyptus saligna* (Sydney Blue Gum) is a key diagnostic species of the Blue Gum High Forest (BGHF) listed as a critically endangered ecological community under the *Threatened Species Conservation Act 1995* (TSC Act).
- A small linear patch of Sydney Turpentine Ironbark Forest (STIF) located in the northern site along the western boundary to Derriwong Road. STIF is listed as an endangered ecological Community under the TSC Act.

Land within the broader study area may also support STIF and BGHF, indicated by the presence of key characteristic species such as *Syncarpia glomulifera* (Turpentine) and *Eucalyptus saligna*. Refer to **Figure 8**.

Despite the presence of protected vegetation communities, no individual threatened flora species were recorded.

2.3.4.2. Fauna

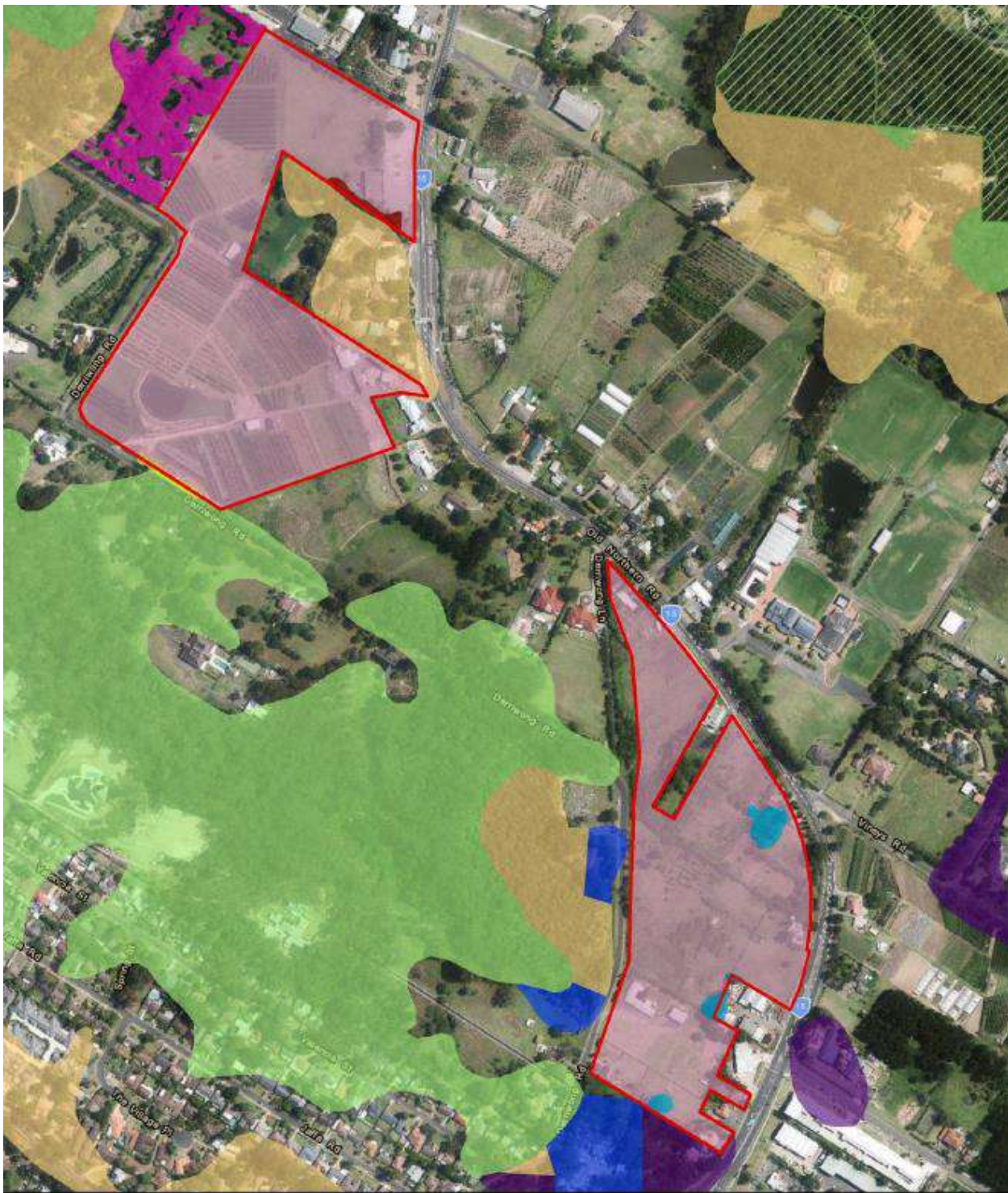
Eco Logical having undertaken a high level mapping assessment of vegetation combined with field validation determining that the site contains limited faunal habitat or foraging availability owing to:

- Limited availability (presence) of farm dams, canopy and hollow bearing trees recorded within the sites;
- Limited presence of native species in the under or canopy storey layers limiting the generation of leaf litter and woody debris to provide faunal habitat.

Consequently the site is unlikely to support significant permanent faunal species communities and where present they are likely to be highly mobile, such as threatened micro bats and birds (such as Little Eagle) that may utilise the area for occasional foraging and roosting.

Notwithstanding, during the site inspection Ecological recorded one migratory species, *Ardea ibis* (Cattle Egret) foraging on the site with livestock. The species is listed under the *Environmental Biodiversity Conservation Act 2000* as being present on the site and is common in disturbed environments.

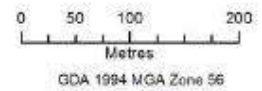
Figure 8 – Distribution of Vegetation Communities (Ecological Report, November, 2015)



Legend

- Subject Site
- Validated Vegetation (ELA 2015/2016)**
- Blue Gum High Forest (low condition)
- Exotics
- Native Planted
- Sydney Turpentine Ironbark Forest

- THSC 2008**
- Sydney Turpentine Ironbark Forest
- NPWS 2002**
- Blue Gum High Forest
- Sydney Turpentine Ironbark Forest
- Turpentine-Ironbark Margin Forest
- Western Sandstone Gully Forest
- Unclassified Vegetation



N

www.ecoaus.com.au
 Prepared by: BHVH Date: 19/02/2016

2.3.5. Bushfire

The land is identified as being located within the vegetation buffer (100 metres and 30 metres) on Council's adopted bushfire prone land planning maps (**Figure 9**).

Figure 9 – Extract of Bushfire Planning Map (Source: Hills Shire Council)



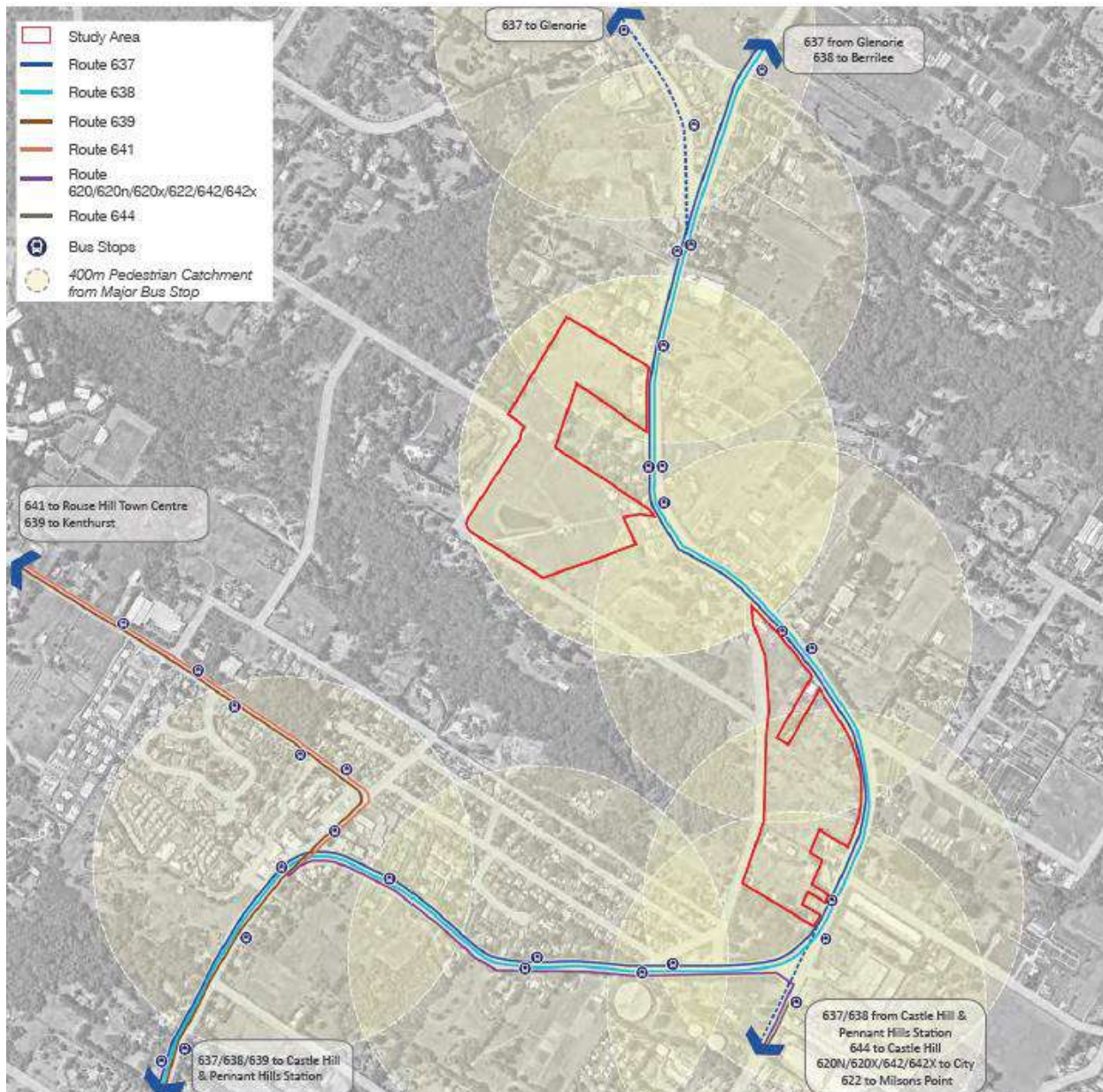
2.3.6. Access and Movement

2.3.6.1. Public Transport

The sites are accessible via public transport, with regular bus services available along Old Northern Road. Both sites are immediately adjacent to the north bound service stop with south bound services available on the opposite side of Old Northern Road accessible via the pedestrian over pass or traffic controlled intersection. South bound services connect to Pennant Hills and Castel Hill. While north bound service connect to Glenorie.

The location of bus stops along Old Northern Road in relation to the sites is shown in **Figure 10**.

Figure 10 – Public Transport Connections and Routes Servicing the Sites

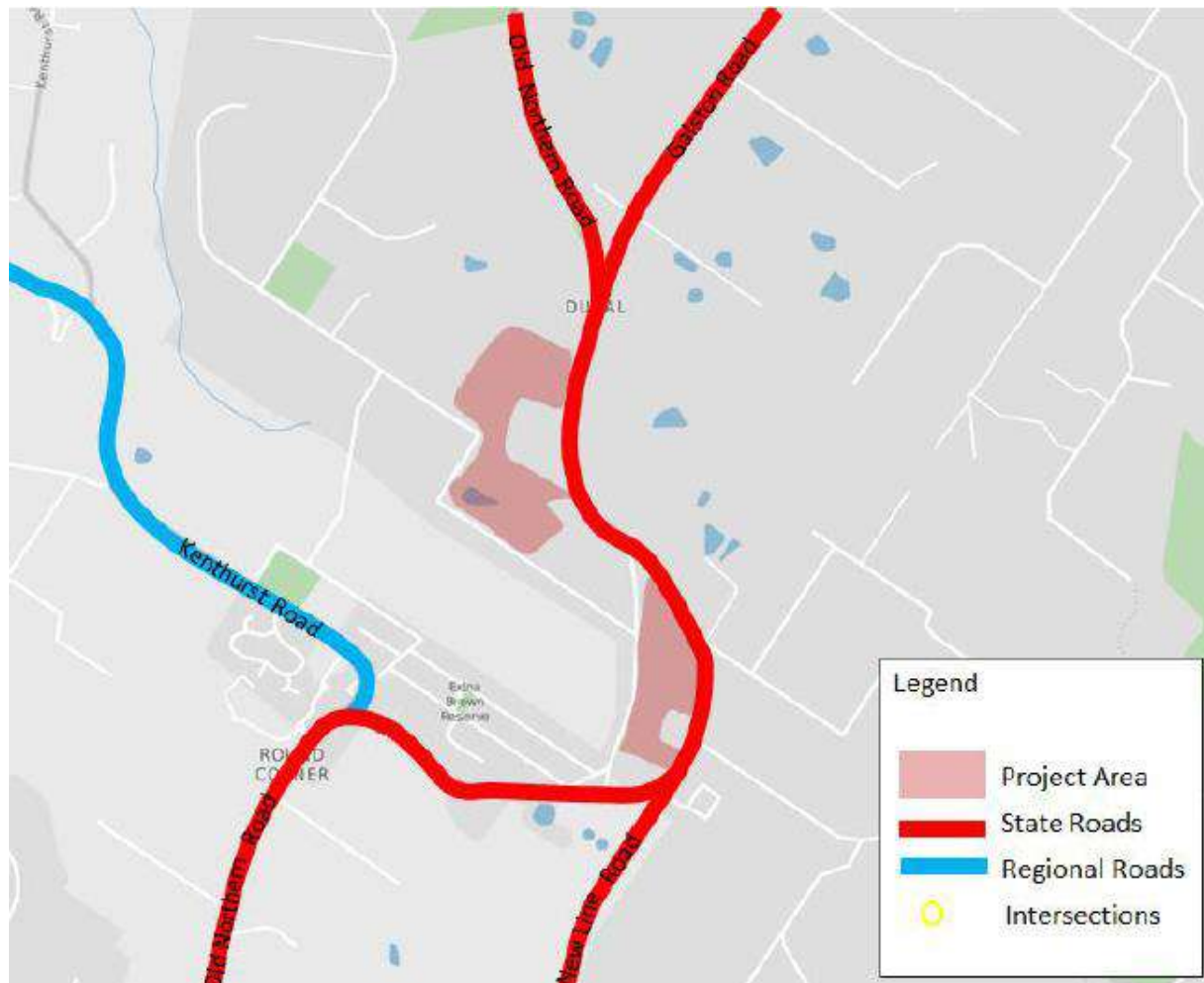


2.3.6.2. Vehicle Access

The existing local road network currently supports the following vehicle access, egress and movements:

- **Old Northern Road/New Line Road:** A two way, classified road, serving and the main vehicle movement route into and out of Dural and connecting the sites to Round Corner and Dural Centres.
- **Derriwong Road** is a minor two way collector/local road to the west of the sites that is accessed via Old Northern Road.

Figure 11 – Existing Road Network (Source: AECOM, 2016)

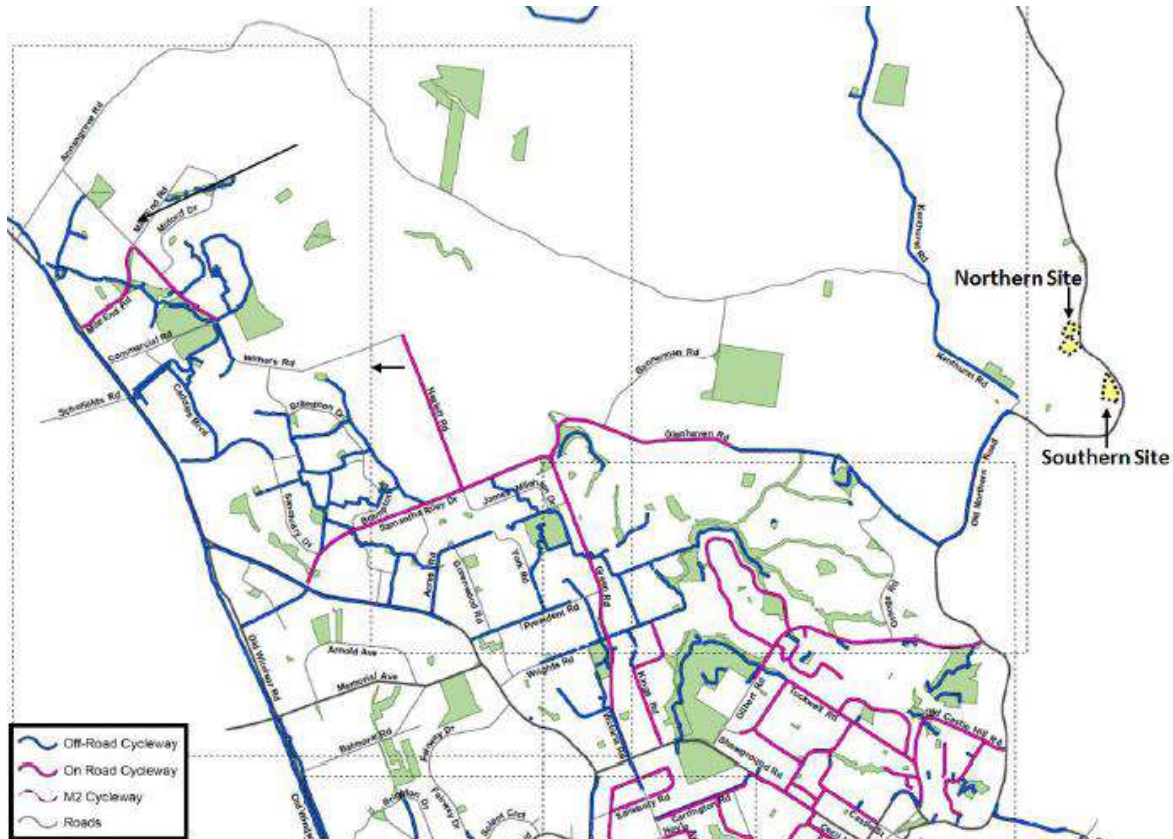


2.3.6.3. Pedestrian and Cycleway Access

Formal pedestrian footpaths are provided along the western side of Old Northern Road, connecting the sited to Round Corner in the south and the Memorial Hall and Dural Public School to the north. There is currently no footpath provision on Derriwong Road.

An extensive cycleway network is available, on road and off throughout the Hills extending throughout Dural including the sites (**Figure 12**).

Figure 12 – Existing Cycle Way Routes (Source: AECOM, 2016)



Source: Hills Shire Council Cycleways map.

2.3.7. Social Infrastructure

The sites are located between two (2) urban centres, Round Corner to the south and the Dural Neighbourhood Centre to the north. These urban centres offer a range of services including:

- Banking institution (Commonwealth Bank Branch);
- Post office;
- A range of specialty retail premises; and
- Supermarket.

Beyond the urban, retail and commercial centres, the sites are well located with respect to local schools including, Dural Public School, Redfield College, The Hills Grammar and Pacific Hills Christian School.

2.3.8. Services and Utilities

Preliminary investigations into the availability of services and utilities have been undertaken by AT&L (**Appendix H**) and Arup (**Appendix I**). The investigations identified the following:

- Water services are available within the area to service the sites;
- The land is not presently serviced by sewer mains, existing services south of the site will need to be extended (and potentially) upgraded to support the new residential development and increased density;
- Electricity is available to the site, the utility can be upgraded to meet anticipate additional loads.
- Gas is currently available within the area, by Jemena.
- Telecommunications cables are currently available.
- Owing to the current rural character of the site, there is limited formal infrastructure within the sites. Each is capable of gravity drainage to an adjacent street that connects to the existing Council stormwater system.

3.1.2. Floor Space Ratio

As shown in **Figure 14** land for residential purposes is unconstrained by FSR controls, land within the B2 Local Centre is subject to a maximum FSR of 0.5:1.

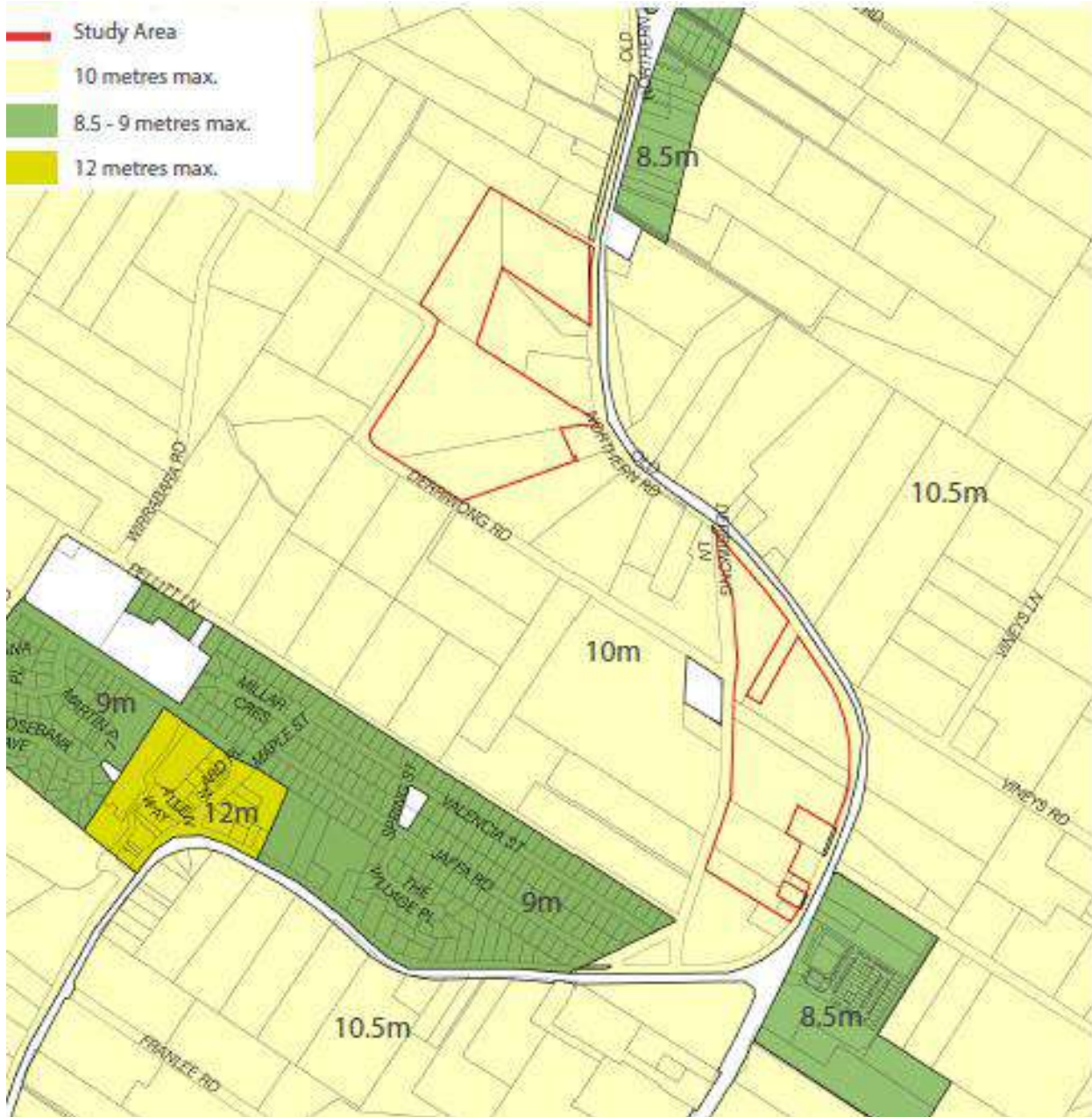
Figure 14 – Existing FSR Planning Map



3.1.3. Height of Buildings

The Height of Buildings planning map permits buildings up to 10 metres on the sites. Urban land to the south of the site in Round Corner Town Centre is permitted building of between 8.5 metres and 12.0 metres in height, with the variable heights reflecting the change in land use with higher building forms up to 12 metres permitted on land zoned B2 Local Centre.

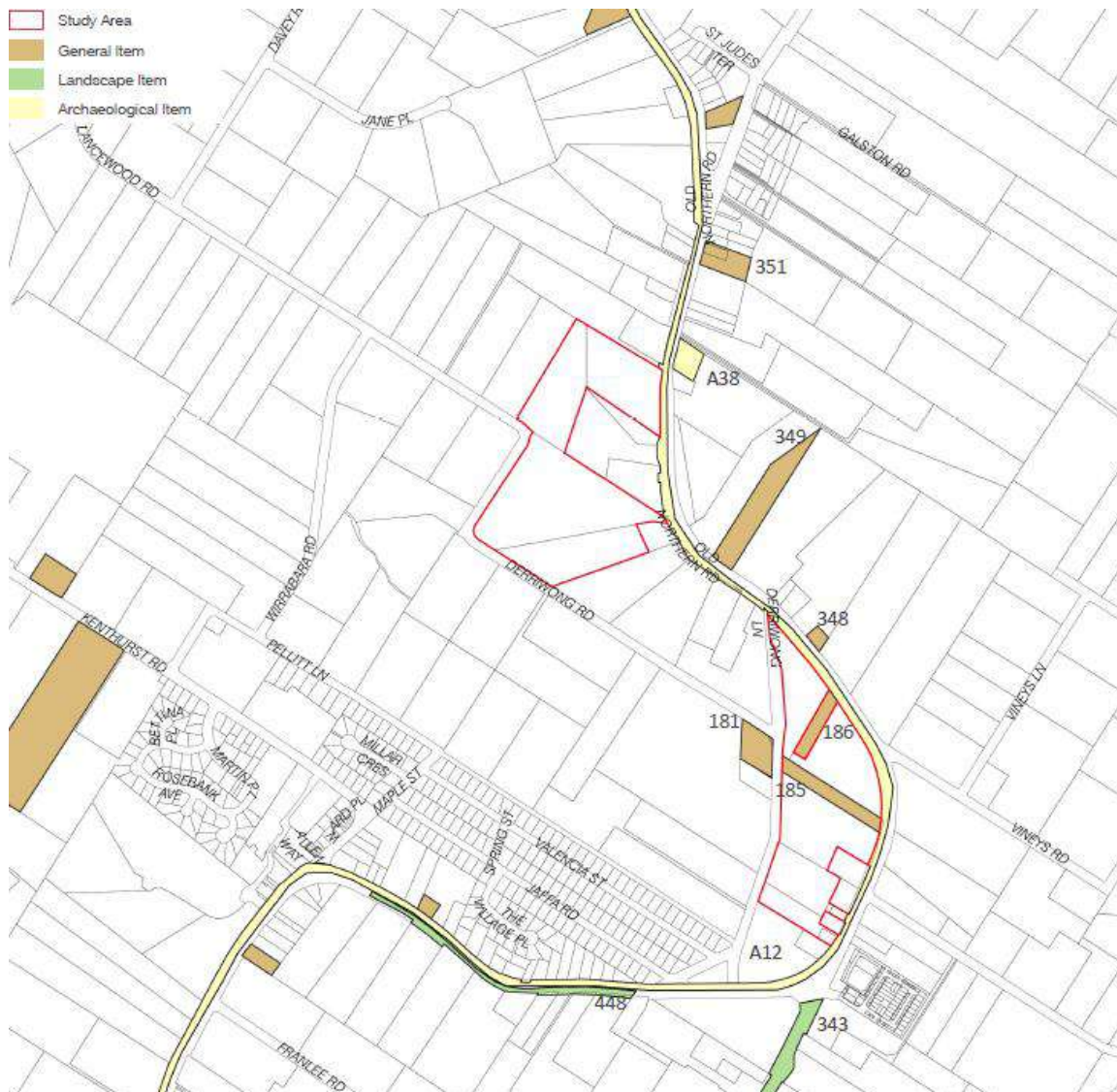
Figure 15 – Existing Height of Building Map



3.1.4. Heritage

The site is located within proximity five (5) identified heritage items within and immediately adjacent to the sites, as well as Old Northern Road extending along the eastern boundary, listed as an item of archaeological significance. The Planning Proposal does not seek to amend the heritage planning map.

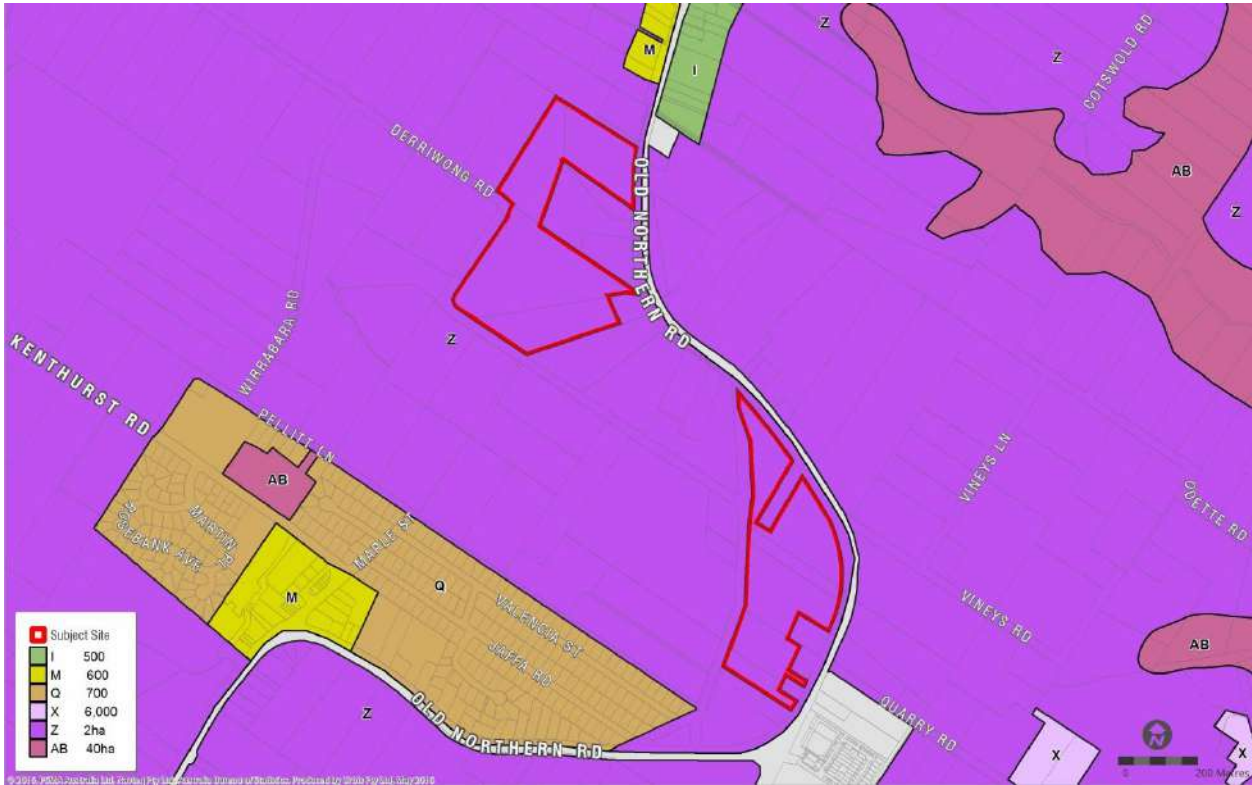
Figure 16 – Heritage Planning Map THLEP 2012 and HELP 2013



3.1.5. Minimum Lot Size

The minimum lot size applying to the land is 2 ha (2,000m²). Land to the south of the site in Round Corner is permitted to be a minimum of between 600m² and 700m². Increase density, reflected in the reduction of minimum lots sizes to 600m² is permitted within the Round Corner Town Centre and Dural Neighbourhood Centres where land is zoned B2 Local Centre and B1 Neighbourhood Centre. Refer to **Figure 17**.

Figure 17 – Existing Minimum Lot Size Map



4. THE PLANNING PROPOSAL

This Planning Proposal has been prepared in accordance with Section 55 of the *Environmental Planning and Assessment Act 1979* with consideration of the Department of Planning and Environment's *A guide to preparing planning proposals* dated August 2016.

The Planning Proposal is addressed in the following six (6) parts:

- **Part 1:** A statement of the objectives and intended outcomes of the proposed instrument;
- **Part 2:** An explanation of the provisions that are to be included in the proposed instrument;
- **Part 3:** The justification for those objectives, outcomes and the process for their implementation;
- **Part 4:** Mapping;
- **Part 5:** Details of community consultation that is to be undertaken for the planning proposal;
- **Part 6:** Project Timeline.

Discussion for each of the above parts is outlined in the following sections.

PART 1 – OBJECTIVES AND INTENDED OUTCOMES

OBJECTIVES

The primary objectives of the Planning Proposal specific to the site are as follows:

- Rezone the land from rural to urban purposes to allow for the delivery of low density residential lots;
- Support orderly and economic use of otherwise underutilised rural land;
- Provide a height control that responds appropriately to the variable development forms while ensuring compatibility with the context the transitioning context;
- Deliver a suitable urban layout and structure that will provide for future and logical connections with existing and future urban land, allowing for improved permeability;
- Improve the access and safety of vehicle movements around the existing Dural Public School;
- Ensure that new development is appropriate to the surrounding and likely future built form context and provides an acceptable transition the (new) rural edge; and
- Ensure that the development provides an appropriate relationship to and protection of existing heritage items.

INTENDED OUTCOMES

The intended outcomes of the Planning Proposal are as follows:

- To rezone the land from rural to urban to facilitate the delivery of increased residential density; and
- Amend the appropriate development standard maps, for height of buildings and minimum lot size shown at Part 2 of this Planning Proposal.

The intended overall outcome of the Planning Proposal is to facilitate the redevelopment of the site to accommodate low density residential uses which will aid in meeting housing demand and whilst also contributing to housing diversity within the locality. In doing so, the proposal will contribute to the NSW State Government's vision to increase the delivery of housing within proximity to existing centres aimed at strengthening their economic viability and growth.

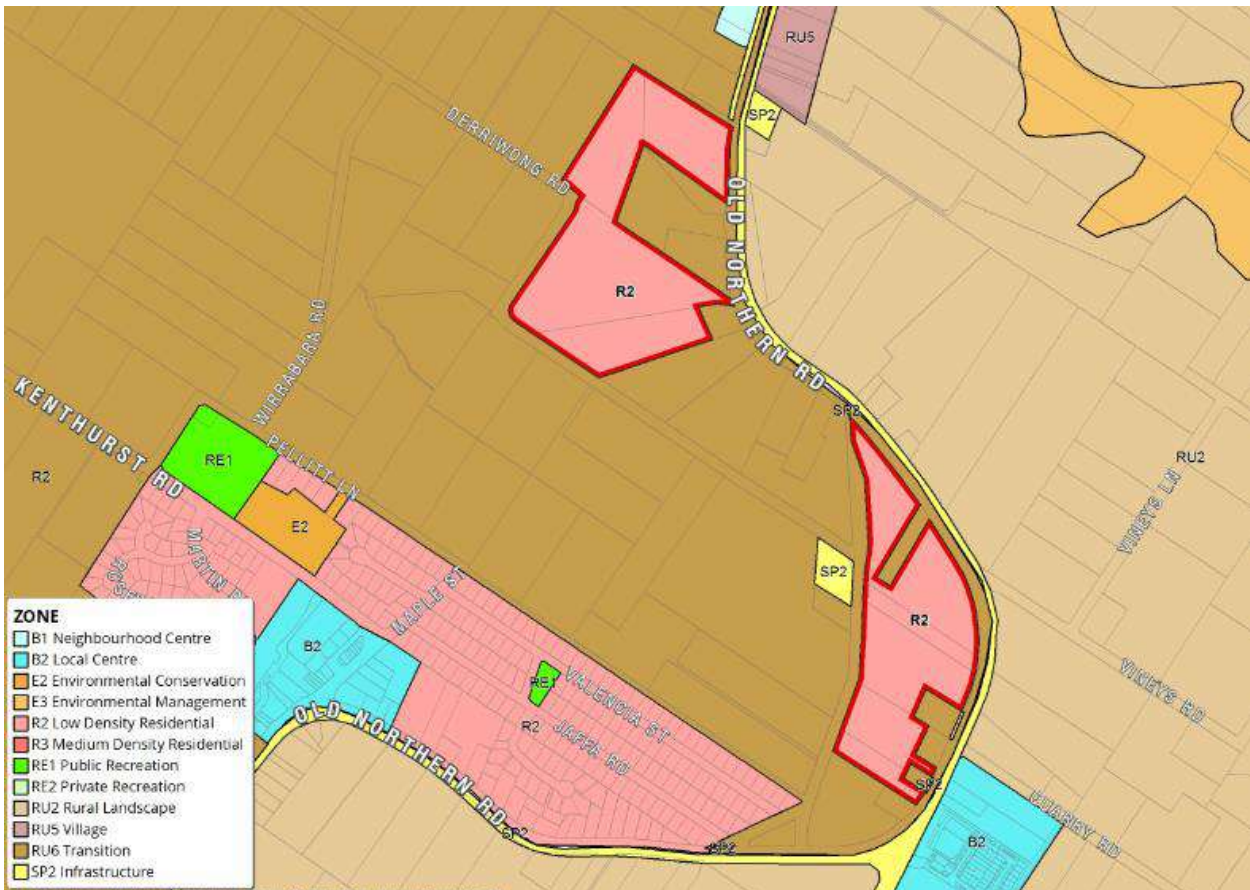
PART 2 – EXPLANATION OF PROVISIONS

The objectives and intended outcomes of the Planning Proposal will be achieved by amending the zoning, minim lot size and building height maps of THLEP 2012 as they apply to the sites, as outlined in the following sections.

LAND ZONING MAP

The proposed amendment seeks to a rezone the existing RU6 Transition zone to the R2 Low Density Residential zone as indicated in **Figure 18**.

Figure 18 – Proposed Zoning Map



HEIGHT OF BUILDINGS

Amendment of the LEP 2012 Height of Buildings Map in accordance with the proposed height map is shown in **Figure 19**, which indicates a maximum permissible 9.0 metre limit height across the site. The 9.0 metre height control is consistent with the adopted development standards for residential development with Round Corner.

Figure 19 – Proposed Height of Buildings Map



MINIMUM LOT SIZE

Amendment of the LEP 2012 Minimum Lot Size map in accordance with the proposed minimum lot size map is shown in **Figure 20** is 700m².

The proposed minimum lot size for residential subdivision is consistent with the minimum lot size adopted under the provision of THELP 2012 for residential land within Round Corner.

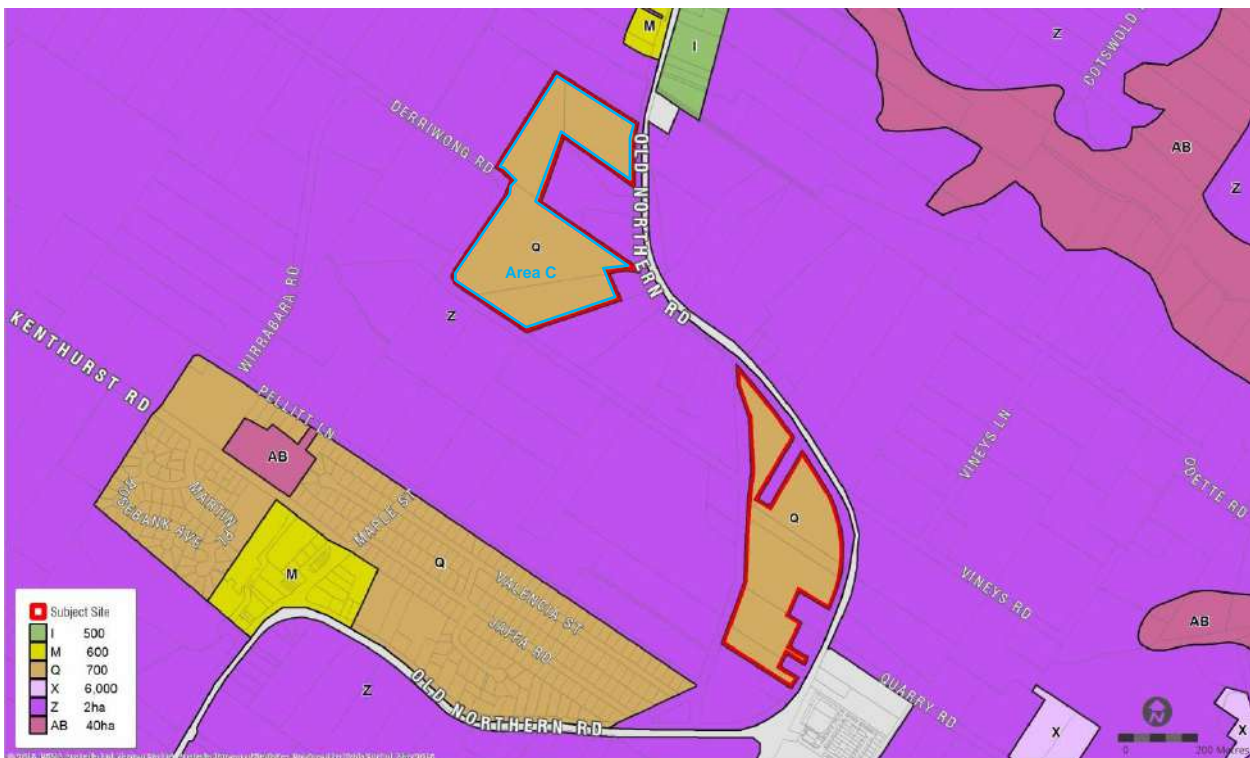
We understand that it is in Council's long term strategy to provide an additional east-west connection from Annangrove Road through to Old Northern Road. To facilitate a wider road reserve to accommodate a future connection, an additional clause is proposed to be added under Part 7 of THLEP to allow lots within the northern portion (identified as Area C in Figure 20 below) to have a minimum lot size of 600m². The clause would require that development in this area would result in more than 101 residential lots, which is the yield achieved based on regular road reserve widths.

A draft clause under Part 7 is provided as follows:

"7.12 Residential development yield on certain land in Dural

- (1) *The objectives of this clause are as follows:*
 - (a) *to facilitate the provision of a road reserve to accommodate future road networks,*
 - (b) *to ensure development does not place an unreasonable burden on the provision of services, facilities and infrastructure in the area to which this clause applies.*
- (2) *This clause applies to land identified as "Area C" on the Key Sites Map.*
- (3) *The consent authority may consent to the subdivision of land to provide a maximum of 101 residential lots.*
- (4) *Development consent must not be granted to the subdivision of land to which this clause applies if the development has minimum lot sizes of less than 600m².*

Figure 20 – Proposed Minimum Lot Size Map



PART 3 – JUSTIFICATION FOR THE PLANNING PROPOSAL

SECTION A – NEED FOR A PLANNING PROPOSAL

Is the Planning Proposal a result of any strategic study or report?

No. The Planning Proposal is a proponent initiated change that responds to the outcomes of a market analysis of the area undertaken by Urbis (Economics and Market Research) that identified:

- Existing and continued demand for residential properties including:
 - Existing and continued demand for smaller lots, including townhouses and larger apartments by existing residents looking to down size from acreage who do not want to leave the Dural area and
 - Demand for larger lots in areas outside Kellyville and Castle Hill, due to lower market entry prices.

A comprehensive urban design study (**Appendix A**) has been undertaken to support this Planning Proposal and provides context to the proposal including future connectivity with surrounding land in terms of land use zoning as well as urban form, connectivity and layout (i.e. precinct structure planning)

In preparing this Planning Proposal, alternate development options have been examined and tested in regards to the layout of the street network and built form to ensure that future development is appropriate to the context of the site and the locality. This is addressed in Section C of this Planning Proposal and **Appendix A** containing the Urban Design Report. Urban form and layout has been developed to respond, where possible, to site constraints including bushfire, ecology (flora and fauna) and heritage. The Planning Proposal is also supported by a Traffic Impact Assessment was prepared by AECOM Consultants (**Appendix C**).

The Planning Proposal details how amendments to the current controls of THLEP 2012 can be realised with minimal adverse environmental impacts.

Is the Planning Proposal the best means for achieving the objectives or intended outcomes or is there a better way?

A Planning Proposal is the most appropriate mechanism of achieving a rezoning of the land from rural to urban. There is no other alternative that would permit the residential uses with proposed lot size and building height.

SECTION B – RELATIONSHIP TO STRATEGIC PLANNING FRAMEWORK

Is the Planning Proposal consistent with the objectives and actions of the applicable regional or subregional strategy?

In December 2014 the NSW Government published *A Plan for Growing Sydney*. Consistency with *A Plan for Growing Sydney* and the directions for the *West Central Subregion* is discussed below.

A PLAN FOR GROWING SYDNEY (2034)

A *Plan for Growing Sydney* sets the high level strategic vision to guide the development of the Sydney Metropolitan Region. The plan is framed around Key Directions and Actions to inform productivity, environmental management and liveability (Refer to **Figure 1**).

Dural is located in the northwest of the Metropolitan Region and is identified on the high level strategy map as forming part of the Metropolitan Rural Area approximately 3 kilometres from the Metropolitan Urban Area .

Despite the location of the sites beyond the urban fringe, recent gateway and development approvals on land to north and south of the sites are contributing to transition in the nature, density and scale of development. The cumulative outcome of the recent approvals will extend the urban fringe and contribute to the increasingly urbanised character of the area.

The site, while not specifically identified in the metropolitan strategy, *A Plan for Growing Sydney*, it is located within proximity to strategic growth centres and corridors including Rouse Hill, Castle Hill and Hornsby. The

proposal to rezone land within the immediate proximity to the urban fringe would support key directions and actions of the metropolitan plan as outlined in **Table 2**.

Table 2 – Consideration of the Planning Proposal against the relevant directions and actions

Direction / Action	Comment / Consistency
Goal 1: Sydney’s Competitive Economy	
Direction 1.10: Plan for education and health services to meeting Sydney’s growing needs.	The Planning Proposal seeks to rezone the land for residential purposes in a location proximate to a number of existing and planned health and education facilities. These facilities are located within Dural Neighbourhood Centre and Round Corner as outlined in Section 2.3.7.
Action 1.11.3: Undertake long term planning for social infrastructure to support growing communities.	The indicative subdivision plan allows for future open space to be co-located with compatible land uses including the existing school and public hall to support a range of future recreational opportunities for a broad cross section of the community (existing and future).
Goal 2: A City of housing choice, with homes that meet our needs and lifestyles; Sydney’s Housing Choice	
Direction 2.1: Accelerate housing supply across Sydney to deliver 664,000 new dwellings by 2031.	Dural, while currently located with the Metropolitan Rural Area, is located only 1.6 kilometres north of urban zoned land and 3km from the metropolitan urban fringe.
Action 2.1.1: Accelerate housing supply and local housing choices	<p>The social demographic of Dural is families and over 55’s. Strategic housing and economic investigation demonstrates a demand for smaller housing lots driven by relative affordability for young families as well as demand generated by empty nesters and retirees looking to remain in the village like area but wanting to down size from 2 hectare properties.</p> <p>The proposal is consistent with current demand for an alternate housing product within a homogenous supply environment combined with planning for long term growth up to 20 years in the future.</p>
Direction 2.3: Improve housing choice to suit different needs and lifestyles.	This proponent initiated Planning Proposal has examined local demographics and market demand to determine the need and desire of existing and future residents to provide for housing supply and choice.
Action 2.3.1 Require Local Housing Strategies to Plan for range of housing types.	In particular the proposal will facilitate the delivery of smaller land holdings within a desirable location to support couples, families looking to upscale (i.e. 2nd or 3rd time buyers) who cannot afford to purchase in strategic growth centres and need larger family lots and older residents looking to downsize from 2 ha holdings and age in place. The delivery of an in between residential product would support the 50 per cent of the aging population would prefer to remain within their existing community while allowing for housing choice to provide Universal Housing allowing aging in place.

Direction / Action	Comment / Consistency
Goal 4: Sydney's sustainable and resilient environment	
<p>Direction 4.1: Protect our natural environment and biodiversity.</p> <p>Action 4.1.1: Protect and deliver a network of high conservation value land by investing in green corridors and protecting native vegetation and biodiversity.</p>	<p>The sites have been substantially cleared of vegetation. An extensive vegetation corridor (located outside the site boundaries) is located to the south/southwest and follows the O'Hara Creek Line.</p> <p>An ecological assessment of the land and surrounds has been undertaken and identified the presence of endangered and threatened flora communities within the sites.</p> <p>The current concept plan for development of the southern site will require the removal of the identified flora community. Assessment of their condition by ELA has concluded, the surveyed species are in a poor condition and highly fragmented.</p> <p>Notwithstanding this, the species may be present throughout the extensive vegetation corridor located to the south/southwest that will not be affected by the proposal. Detailed consideration of the potential for environmental impact is considered in Part 3, Section C of this Proposal and the attached ELA report. It is considered that there are alternatives that may overcome the potential for adverse impacts.</p>
<p>Action 4.1.2: Prepare a strategic framework for the metropolitan rural area to enhance and protect its broad range of environmental, economic and social assets.</p>	<p>The land is located within an Agricultural cluster as depicted on Figure 25 of APFGS.</p> <p>The Planning Proposal is not considered to result in a loss of commercially viable or productive agricultural land. Surrounding land uses are predominantly urban in nature including local centres to north and south providing services such as educational establishments and retail and commercial operations. The nature of the surrounding uses compromise its ability to be utilised for agricultural purposes. Rezoning the land from rural to urban purposes may provide for the following:</p> <ul style="list-style-type: none"> • Boost the economy and support the growth of Round Corner and Dural Centres; and • Improve access to Dural Public School.
<p>Direction 4.2: Building Sydney's resilience to natural hazards.</p> <p>Action 4.2.3: Map Natural Hazard Risks to inform land use planning decisions.</p>	<p>The Planning Proposal has been informed by mapping of local constraints and opportunities including ecological characteristics, flooding and fire hazard.</p> <p>As discussed in Part 3, Section C of this Planning Proposal, investigations conclude that existing environmental sensitivities can be appropriately and adequately managed to ensure suitability of the land for residential purposes.</p>

West Central District

The Hills LGA forms part of the West Central District that provides for contained growth of Sydney Region. The Metropolitan Plan has identified that the West Central Subregion will be the focus of significant infrastructure, including the extension of the rail network.

The West Central District is anticipated to experience population growth of approximately 1.9 per cent to 2031, 0.3 per cent above the average of the Sydney Metropolitan Region. Of this growth 3.5 per cent will be persons aged over 65 years of age, double the current population proportion. The highest anticipated growth by household type is lone person households reflecting 2.6 per cent.

The priorities of the Subregion are generally focused on delivering priority precincts. While the subject land is located outside these precincts, the proposal will play a role in delivering housing and diversity of housing stock within an otherwise homogenous residential area.

Priority Statement: Accelerate housing supply and choice through the identification of suitable land for housing and employment growth coordinated with infrastructure.

Response: The Planning Proposal will provide for the delivery of additional housing. The delivery of housing in this location will respond to a measured market demand for smaller lifestyle lots (i.e. below 2 hectares) allowing for existing residents to down size or growing families an affordable residential lot within the peri-urban setting with access to schools, village centres and public transport connections.

Is the Planning Proposal consistent with the local Council's community strategic plan, or other local strategic plan?

The Hills Local Strategy (2008)

The Hills Local Strategy is underpinned by a series of eight (8) Directions Papers, each containing key directions for achieving the developmental goals of the Shire. The consistency of the proposal against each of the relevant actions of the Directions Papers has been considered in the following sections.

The Hills Residential Directions (2008)

The Hills Residential Directions Paper was adopted on 10 June 2008 to inform the development of The Hills LEP 2012. The Directions Strategy is based on four (4) key directions, including:

- Accommodating Population Growth;
- Respond to changing housing needs;
- Provide a sustainable living environment; and
- Facilitate quality housing outcomes.

The Directions Paper recognises that achieving the key directions (or goals) is a challenge due to the following:

- Maintaining the garden image of the Hills Shire while delivering housing mix and providing affordability (delivering a homogenous housing stock to provide large garden settings);
- Encouraging timely delivery of residential development;
- Accommodating an aging population;
- Fostering and maintaining a safe and secure communities; and
- Balancing urban growth with the preservation of ecological and environmental objectives.

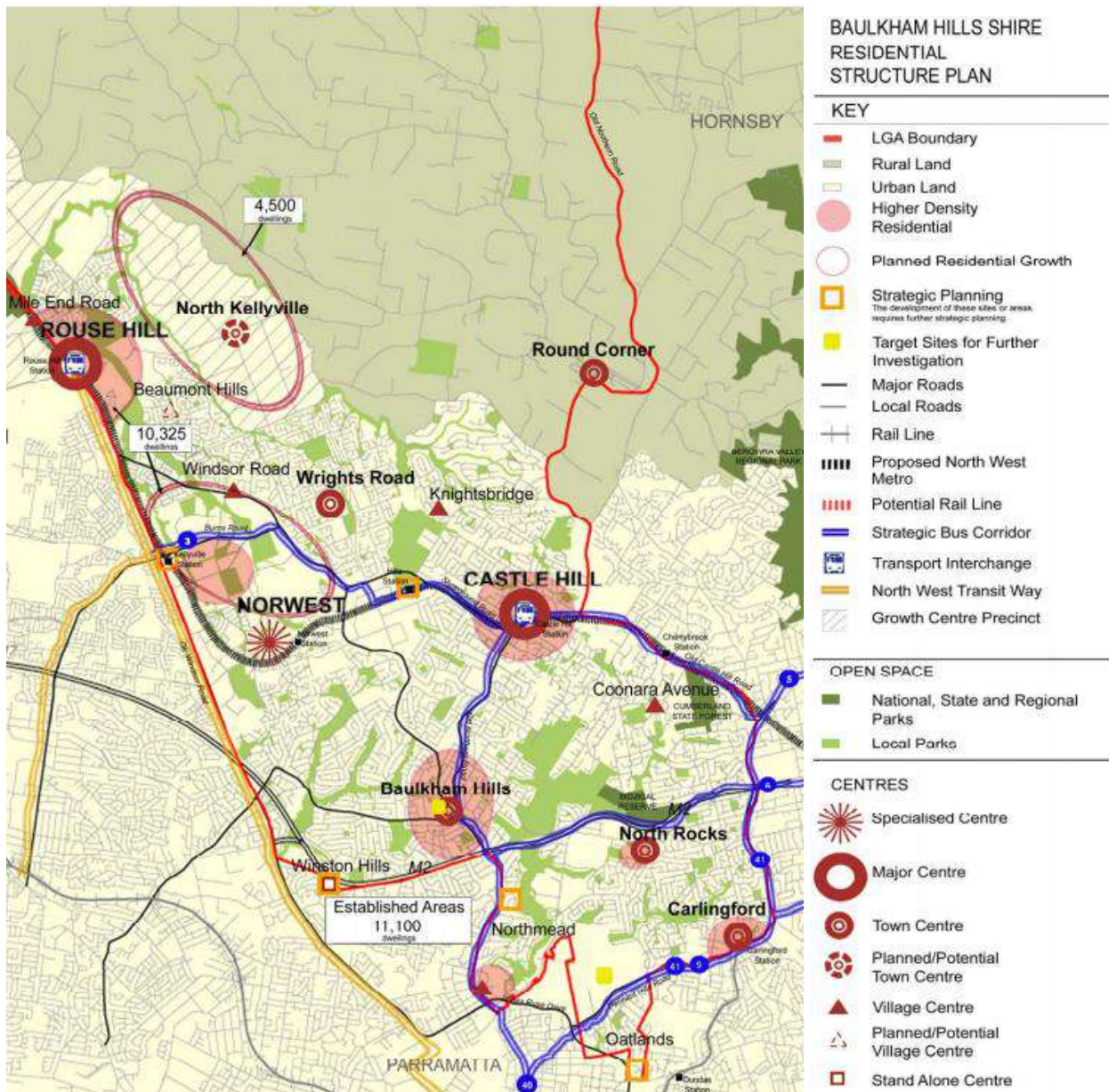
The aims and objectives of the Residential Directions Paper align with the former Metropolitan Plan for Sydney and Northwest Subregional Strategy. The Discussion Paper examined the outcomes of the previous Residential Development Strategy 1997, which introduced residential density uplift across 16 target sites and adopted a Residential Structure Plan to support the delivery of new and intensified residential development (refer to Figure 20).

The subject sites of the Planning Proposal are located in the north of The Hills LGA and are identified as rural land within close proximity and between urban zoned centres including of Round Corner Town Centre (including residential zoned land) and Dural Neighbourhood Centre.

In 2008, residential growth priorities focused on development within established urban areas (centres). Development focuses were predominantly aimed at delivering apartments within Baulkham Hills, Castle Hills and Carlingford. At this time there was a slow take up on the opportunity to develop townhouses in Dural, including land within the town centre of Round Corner. The paper concluded that one of the key challenges in facilitating higher density development within this form of development had been access to jobs, transport and facilities.

Notably in the intervening eight (8) years since the paper was adopted by Council, published demand trends have significantly altered, with Urbis' market analysis indicating a significant increase in the demand for town house and smaller lot style residential development within the area. Consequently, despite the status of this strategic vision paper the directions are inconsistent with current market demand.

Figure 21 – Residential Structure Plan (Source: The Hills Residential Discussion Paper, 2008)



Despite inconsistency between these older strategies and the current market demand assessment, the proposal has been considered against the relevant key directions of the Hills Residential Directions Paper, concluding the following;

Key Direction 2.1.2: Housing Needs: As demonstrated in the urban design report (Appendix A) careful site planning has considered the potential interface issues combined with massing and scale to ensure compatibility with the peri-urban/fringe locations of the sites. The proposed R2 Low Density Residential land will accommodate development of a scale subordinate to the rural aesthetic of the locality.

Whilst it is acknowledge that the development will contribute to an extension of the metropolitan boundary into current rural land, the sites and their immediate surrounds are bookended by current urban zoned centres that have been the focus of recent approvals to expand their capacity. It is therefore considered that the infill of this area reflects a logical extension of existing urban areas on land that has otherwise been deemed unsuitable for meaningful agricultural purpose.

Key Direction 2.1.3 and 2.2.1: Housing Diversity and Affordability: The proposal will deliver greater housing diversity within market that currently presents a largely homogenous housing offering. There is also limited land for development, with ABS statistics indicating that there has been marginal increase in land availability in the past 10 years due to limited supply. Residents looking to down size are required to relocate to urbanised areas where prices are rapidly escalating and where market re-entry is competitive.

The proposal will deliver a desirable product that aims to fill a current market gap . A market analysis of demand for residential properties by type has been undertaken by Urbis (Appendix B) and concludes that there is demand for new residential land in the area.

The Hills Scenic Directions Paper

The Hills Centres Direction Paper provides overall strategic context for the planning and management of the development and growth of centres within the Hills Shire to 2031. The residential proposal will support the viability commercial growth within existing centres, in addition to recent significance applications discussed below.

The sites are located between two (2) nearby centres identified in the Discussion Paper, Round Corner to the south identified as a Town Centre and Dural to the north, identified as a neighbourhood/rural centre. Under the THLEP 2012, the centres are zoned B2 Local Centre and B1 Neighbourhood Centre, respectively.

The relevant outcomes of the discussion paper in relation to the sites and surrounding locality include:

- A recommendation to restrict rezoning or expansion of the Dural Centre (north of the site) due to the potential for impact on the primacy of Round Corner; and
- Identification of limited growth demand for the retail centres of Round Corner or Dural, to specialty retail outlets.

Notwithstanding, in the intervening eight (8) years to 2016 the residential market and demand for increased density has grown and The Hills Council have supported the following significant applications that have altered retail opportunities within the locality:

- **Cascades:** 636 Old Northern Road, Dural that will deliver 17 residential apartments, 5,421m² of gross leasable floor area containing a mix of business, shops, medical, restaurants, cafes, child care centre and recreation space.
- **Planning Proposal:** 488-494 Old Northern Road, Dural - Rezoning from RU6 Transition to part B2 Local Centre & part R3 Medium Density Residential & that a floor space ratio standard of 0.75:1 be implemented over the land zoned B2. Approved at gateway.

The planning proposal does not include a commercial component, rather it is envisaged that the future residential population will support the viability of existing and planned retail activity in the locality.

Environmental AND Leisure Directions Paper

The Environmental and Leisure Directions Paper sets a framework of six (6) key directions for achieving Council's desired approach to the planning, protection and management of the Shire's environment and leisure spaces (private and public). These include:

1. Protecting and managing the Shire's environment and leisure spaces.
2. Providing high quality spaces for community recreation and enjoyment.
3. Improving the accessibility and connectivity of environment and leisure spaces.

4. Providing for public domain spaces that encourage community interaction.
5. Conserving the Shire's unique diversity of plants and animals.
6. Protecting Aboriginal cultural heritage.

The Planning Proposal is considered to deliver outcomes consistent with Council's policy direction for the delivery and preservation of open space, in particular the envisaged urban form and layout of the each land parcel has achieved the following:

- Preservation of heritage items and curtilage combined with adequate separation to moderate any potential interface impacts;
- Consideration of the broader context and connectivity to adjoining land, in particular land to the south forming part of a O'Hara Creek riparian corridor
- Delivery of high quality open spaces with respect to size, configuration, access and context.

Waterways Directions

The Waterways Direction is built around three (3) priorities for achieving, protection, management and maintenance of the Shire's waterways. These include:

1. Effective Stormwater Planning;
2. Effective Stormwater Management; and
3. Management of Natural Waterways.

Future development of the land is capable of achieving consistency with the strategic aims and directions of the Waterways Policy. The sites are capable of connections to existing stormwater infrastructure and water sensitive urban design (WSUD) elements would be developed and implemented at DA stage following the Planning Proposal process.

O'Hara's Creek is located to the south, south-west of the sites. The land subject of this proposal is outside the riparian corridor and as such is unlikely to have a direct influence on water quality or protection. Notwithstanding this, as outlined above it is envisaged that WSUD elements would be implemented as part of any future development, contributing to reduced nutrient and sediment loads of water reaching the natural and manmade water system.

Consideration of stormwater capacity and connections of the land to existing infrastructure has been undertaken and is discussed in detail in Part C of this proposal. The resolution of preliminary investigations is that the land is capable of being serviced.

Rural Lands Strategy (2003)

The Rural Lands Strategy provides a strategic framework for the Shire's rural lands to, amongst other objectives achieve the following:

- Protect and enhance the existing and future rural economy – including employment and future investment opportunities;
- Avoid land use conflict; and
- Respond to social needs and preserve social values of the rural community.

The Planning Proposal seeks to transform the land from rural to urban land. In considering the consistency of the proposal against this strategy regard has been given to the implications of pending or recently approved application and proposals for urban development within the immediate locality, including:

- South Dural Planning Proposal: Approved at Gateway, supporting the rezoning of rural to urban land and the potential delivery of 2,900 dwellings and 3,000m² non-residential floor space;
- Dural Service Centre Planning Proposal: Supported by Hornsby Council and proposing rezoning that south of the existing Dural Business Park from IN2 Light Industrial to B2 Local Centre. The Planning Proposal, if approved, will facilitate the delivery of a new shopping centre anchored by a supermarket, retention of bulky goods retailing, medical centre and commercial space;

- Rezoning of on 488 – 494 Old Northern Road, Dural by the Hills Shire, to increase residential density to R3 Medium Density and expand the B2 Local Centre (Round Corner);
- Approval of the Cascades development to the north of the site, expanding the service and retail offerings in the Dural Neighbourhood Centre; and
- Planning Proposal for the former timber yards at Nos. 582 and 582A Old Northern Road, Dural for medium density residential (pending support from Council)

It is evident from both the number and nature of uses sought across the various proposal and applications that the character of the area is transforming. The subject sites are bookended by the two (2) centres of Dural to the north and Round Corner to the south and reflect a logical extension to the urban fringe.

The land is not currently and has not in recent years been utilised for agricultural purposes and its proximity to Round Corner and other urban activities make it unsuitable for agriculture use due to the potential for land use conflict associated with noise, odour, dust and the like.

Accordingly, the Planning Proposal reflects a logical extension of existing urban land that does not contribute to or cause a loss of viable agricultural land or undermine the objectives of the Rural Lands Strategy.

Is the Planning Proposal consistent with applicable state environmental planning policies?

The Planning Proposal is consistent with all relevant state environmental planning policies (SEPPs) as assessed in **Table 3** below.

Table 3 – Consideration of relevant state planning instruments

Policy	Consistency
<i>State Environmental Planning Policy No. 55 – Remediation of Land</i>	A preliminary site investigation has been undertaken for all lots the subject of this Planning Proposal that concludes while the presence of contaminants have been detected, all sites are capable of being made suitable for their intended future purpose. Refer to Appendix G .
<i>State Environmental Planning Policy (Infrastructure) 2007</i>	<p>The following provisions of ISEPP are relevant:</p> <ul style="list-style-type: none"> • Old Northern Road is an RMS controlled road. The proposed amendment will require new intersections to be constructed to facilitate access and permeability; these are discussed and assessed for future performance in the Traffic and Transport Report prepared by AECOM (Appendix C). • Design measures can be incorporated to mitigate potential road traffic noise impacts, as discussed in Section C and the Acoustic Report Prepared by WSP Parsons Brinkerhoff (Appendix L). <p>Future development envisaged by the Planning Proposal is capable of complying with the relevant provisions of the ISEPP.</p>
<i>State Environmental Planning Policy (Rural Lands) 2008</i>	<p>Baulkham Hills, now known as The Hills Shire Council is listed under clause 4 as land to which the SEPP applies.</p> <p>The proposal seeks to rezone existing rural lands to allow for urban purposes. In this regard, as the Planning Proposal is a request to amend a LEP, the application should demonstrate consistency with Part 2 clause 7 Rural Planning Policies. Notwithstanding the implicit loss of rural lands as a consequence of the planning proposal, the LEP amendment demonstrates consistency with the principles of the SEPP on the basis of the following:</p> <p>(a) The land is not currently used and has not been used in recent</p>

Policy	Consistency
	<p>years for agricultural purposes. The current land use and zoning of surrounding land fragments these holdings from other areas of agricultural land to the north. Furthermore the landholdings are effectively bookended by urban purposes that further limit the viability of land for any agricultural purpose due to the inherent potential for land use conflicts.</p> <p>(b) As noted above, the land is fragmented from extensive areas of agricultural land to the north and primarily serves as large rural lifestyle lot or is undeveloped/unoccupied vacant land. Despite demands in the region for some smaller hobby farms, the land is not currently used for agricultural purposes.</p> <p>(c) As noted above the land is not used for rural purposes and therefore provides no social or economic value in its current state.</p> <p>(d) The Planning Proposal has taken into account the natural, ecological and biodiversity characteristics of the land and responded with appropriate zones and lots sizes to manage environmental sensitivities.</p> <p>(e) The land is presently zoned RU6 Transition and is located immediately north of the urban fringe. Proximity to land uses such as petrol stations and commercial developments results in an unfavourable rural lifestyle image.</p> <p>(f) Necessary services, utilities and infrastructure will be extended and augmented to provide for the increased density.</p> <p>The land is not presently utilised for agricultural purposes and is not identified in schedule 2 as being state significant agricultural land .</p>
<p><i>Sydney Regional Plan No. 20 – Hawkesbury Nepean River (No. 2 – 1997)</i></p>	<p>Baulkham Hills, now known as The Hills Shire Council is listed under clause 2 as land to which the SREP applies.</p> <p>The Nepean River is to the southwest of Dural in the lower catchment of the Hawkesbury River that divides to form the Nepean and Grose Rivers.</p> <p>The proposal has been considered against the relevant key principles as follows:</p> <ul style="list-style-type: none"> • There are no rivers, streams or wetlands present on the sites and the future development is considered unlikely to have direct or significant impact on the river and aquatic health. • The rezoning and future development is capable of managing water quality and quantity. • The Planning Proposal and envisaged future development has sought to protect and integrate local heritage items into the future urban layout. • The sites have been disturbed by former agricultural activity or land clearing and currently only support sporadic and highly fragmented vegetation patches that have limited structural complexity and no habitat value. Despite flora species being identified as part of an endangered ecological community, they have limited capability of being connected to

Policy	Consistency
	<p>other more significant corridors of vegetation to the south west.</p> <ul style="list-style-type: none"> • The sites and adjacent land within the immediate context is not utilised for any significant agricultural purpose. The context of the site is increasing urbanised character with Round Corner to the south and the increasing local centre to the north that would further restrict the use of the land for any agricultural purpose. • The proposal includes the provision of local open space and recreation facilities to support new and existing residents. • The Planning Proposal will facilitate the delivery approximately 176 low density residential lots. Preliminary servicing investigations have been undertaken to support the delivery of sewer to the area, it is not intended to provide onsite effluent disposal. A total water cycle management plan can be developed at DA stage. <p>The future redevelopment of the land (following rezoning) is unlikely to have an adverse impact on water quality within the catchment. The future subdivision pattern and dwellings across the site will be designed in an appropriate manner to ensure the preservation of water quality, including the delivery of WSUD to ensure appropriate water quality can be achieved within subdivision design.</p>

Is the Planning Proposal consistent with applicable ministerial directions?

The following Ministerial Directions are considered applicable:

Table 4 – Consideration of relevant Section 117 directions

Direction	Consistency
1. Employment Resources	
1.2 Rural Zones	<p>No. The proposal seeks to rezone existing rural land within an LGA listed under clause (2) (b) of the Ministerial Direction. Notwithstanding, the proposal is not inconsistent with the objective of the direction to protect land of value to agricultural production.</p> <p>The subject land is not used for agricultural purposes, nor is land within close proximity to the subject sites. Therefore there is limited potential for the introduction of rural land use conflict resulting from the proposal. The land is located within close proximity of existing urban land used for residential, commercial/retail and educational land uses. The proximity to urban uses combined with the fragmented nature of the land ownership and lot size is inconsistent with agricultural production.</p> <p>Despite the loss of agricultural farm land, the rezoning of the site for residential subdivision and development can be justified as future agricultural land uses are unlikely to generate a sufficient return to warrant future investment in agricultural enterprises on the subject land (refer to Appendix C for further discussion).</p> <p>The Planning Proposal reflects a logical extension of the urban zone from Round Corner in the south to the Dural Neighbourhood Centre in the north.</p>

Direction	Consistency
1.5 Rural Lands	<p>No. Notwithstanding the inconsistency of the proposal with the Direction, the proposal is not inconsistent with the objectives of the zone to:</p> <p>(a) Protect the agricultural production value of rural land;</p> <p>(b) Facilitate orderly and economic development of rural lands for rural and related purposes.</p> <p>As outlined above and throughout the Planning Proposal the land and immediately surrounding lands are not used for any rural or agricultural purpose. Furthermore the subjects land's proximity to urban land uses makes it unsuitable for any such rural endeavour due to potential land use conflicts. The changing residential and commercial character of surrounding land to the north and south further supports the logical potential for rezoning the sites.</p>
2.Environment and Heritage	
2.3 Heritage Conservation	Yes. The Planning Proposal is consistent with the Ministerial Directions and does not seek to remove existing provisions to protect items of environmental heritage.
3.Housing, Infrastructure and Urban Development	
3.1 Residential Zones	Yes. The Planning Proposal is consistent with the Ministerial Directions relating to Residential zones, aiming to improve housing choice within the Dural area and deliver services and infrastructure to support the same.
3.3 Home Occupations	Yes. The proposed residential zoning will permit home occupations to be carried out in dwelling houses without the need for development consent.
3.4 Integrating Land Use and Transport	Yes. The Planning Proposal to create new urban land is consistent with the Ministerial Direction. A detailed Urban Design Study has been prepared and provides an appropriate urban structure and form that is close to public transport routes along Old Northern Road and is located adjacent to an existing town centre. All future residents are located within a 400m walking catchment of bus stops along Old Northern Road that connect to large urban centres such as Castle Hill.
4.Hazard and Risk	
4.4 Planning for Bushfire Protection	Yes. The Planning Proposal is consistent with the Ministerial Directions. Future development is capable of achieving adequate protection in accordance with the guidelines Planning for Bushfire Protection. A detailed bushfire assessment has been undertaken and is provided at Appendix E.
6.Local Plan Making	
6.1 Approval and Referral Requirements	Yes. The Planning Proposal is consistent with the Ministerial Directions.
6.2 Reserving Land for Public Purpose	Yes. The Planning Proposal is consistent with the Ministerial Directions.

Direction	Consistency
6.3 Site Specific Provisions	Yes. The Planning Proposal is consistent with the Ministerial Directions.
7. Metropolitan Planning	
7.1 Implementation of A Plan for Growing Sydney	Yes. The Planning Proposal is consistent with the Ministerial Directions. Refer to Table 2.

SECTION C – ENVIRONMENTAL, SOCIAL AND ECONOMIC FRAMEWORK

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?

Eco Logical Australia (ELA) undertook a flora and fauna assessment of the site and broader locality to determine the likelihood, presence and absence of critical habitat, threatened species or populations or ecological communities or their habitats.

The ecological assessment was based on preliminary desktop searches and follow-up site surveys the confirmed the presence of the following:

- Two (2) threatened ecological flora communities were identified, including:
 - Blue Gum High Forest, listed a critically endangered under the *Threatened Species Conservation Act 1993* (TSC Act); and
 - Turpentine Ironbark Forest, listed as endangered under the TSC Act.
- One (1) potential threatened flora species, *Epacris purpurascens var. purpurascens* was identified as being present.
- The potential for the following fauna species to be present:
 - Highly mobile micro bats and bird species; and
 - The potential presence within the study area of a threatened invertebrate *Pommerhelix duralensis* (Dural land snail)

Vegetation, communities and flora species

The distribution of the two (2) ecological vegetation communities, combined with broader vegetation mapping for the sites and the broader locality is shown in **Figure 8**.

It is evident from the vegetation map that the surveyed areas of ecological sensitivity are small patches that are highly fragmented and located within large and expansive areas of highly modified and altered landscapes dominated by exotic vegetation species. ELA has concluded that both EECs surveyed on site are in poor condition .

The Planning Proposal and future redevelopment of the land may impact on these communities requiring the removal of the mature and regenerating *Eucalyptus saligna* (Blue Gum) trees and removal of two (2) mature *Eucalyptus pilularis* (Blackbutt) both a key diagnostic species of the Blue Gum High Forest, listed under the TSC Act. Notably the size (<1 ha) and quality of these vegetation patches excludes them from qualification for protection under the *Environmental Protection and Biodiversity Act 1999*.

Notwithstanding the above, as TSC Act listed species, the trees have been mapped as high constraints by ELA (refer to **Appendix D**) and prior to their removal a test of significance will need to be undertaken to determine the scope of impact of development on the vegetation community.

ELA have indicated that there is potential for the Blue Gum High Forest Community to be more wide spread throughout the locality that may have the potential to mitigate any loss of the highly degraded and

fragmented patches on the sites. This would be the subject of further targeted studies at DA stage, to confirm the presence and extent of the community in the area and the completion of a seven part test to determine significance. In the event that the preferred design layout cannot be implemented, design alternatives may be explored as well as opportunities to transplant trees or collect, seeds to support revegetation elsewhere within the immediate area.

The potential impact has feasible alternatives that may be explored at DA stage.

Fauna and flora habitat

Based on the ELA assessment (**Appendix D**) the potential for the rezoning and future redevelopment to adversely affect fauna species is considered low, owing to the limited habitat value of the site.

ELAs survey of the site identified extensive and dominant presence of exotic flora species combined with a lack of structural complexity within the vegetation surveyed (i.e. no canopy, mid and ground cover storey) reducing the availability of faunal habitat in the form of hollow bearing trees, leaf litter and woody debris.

Fauna identified as present or likely to be present by ELA is unlikely to be adversely affected by the proposal, on the basis of the following:

- the site does not contain forest habitat to support the presence of the *Pommerhelix duralensis* (Dural land snail) and it is therefore considered unlikely to be present within the sites;
- A migratory species, *Adrea ibis* (Cattle egret) was surveyed as being present on the site. However, the species is common to disturbed environments and similar habitat is exists within proximity to the site that will not be disturbed as a result of the proposal;
- Dewatering of the existing dam may encounter fauna species (not surveyed at the time of the ELA inspection). Potential impacts can be mitigated at DA/construction stage with the preparation of a pre-clearing fauna management plan;
- Roosting or foraging by highly mobile micro bats and birds is potentially limited by the significantly low number of trees present on the site. Particularly when viewed in the context of the large expanse of continuous trees and habitat to the south and southwest of the site along O'Hara Creek.

It is reasonable to conclude that where the potential for impact has been identified that there are suitable means and options for managing and potentially overcoming the effects of future redevelopment.

Are there any other likely environmental effects as a result of the Planning Proposal and how are they proposed to be managed?

The preparation of the Planning Proposal to rezone the land has considered the potential effects of the proposal on the following environmental matters:

- Urban Design and Built Form;
- Land use interfaces;
- Heritage;
- Traffic and Transport
- Water Quality;
- Bushfire; and
- Site Contamination.

Urban design, layout and form

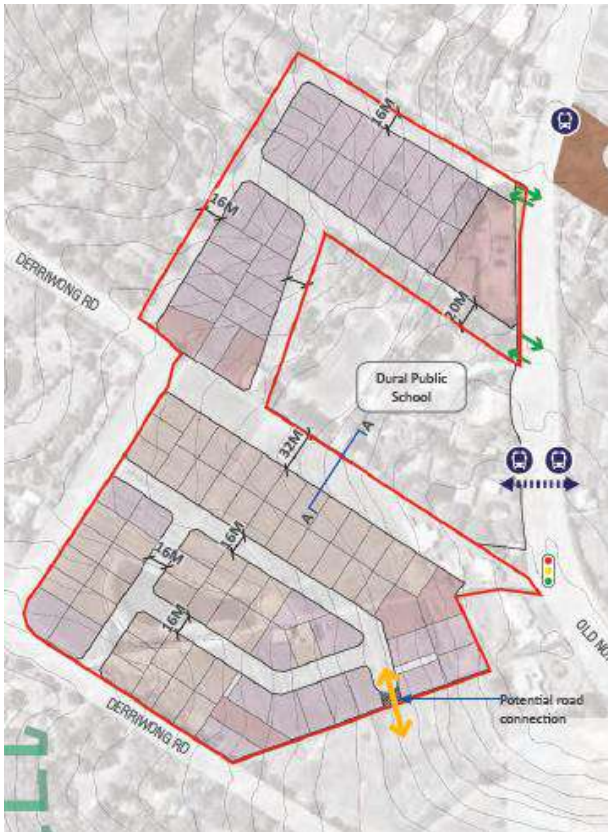
An Urban Design Report has prepared by Urbis and provided in **Appendix A** which identifies:

- A future potential urban layout and form, including street network and subdivision pattern;
- Building footprint, public domain areas and pedestrian/cycle linkages;
- Proposed building mass and heights; and
- Street setbacks.

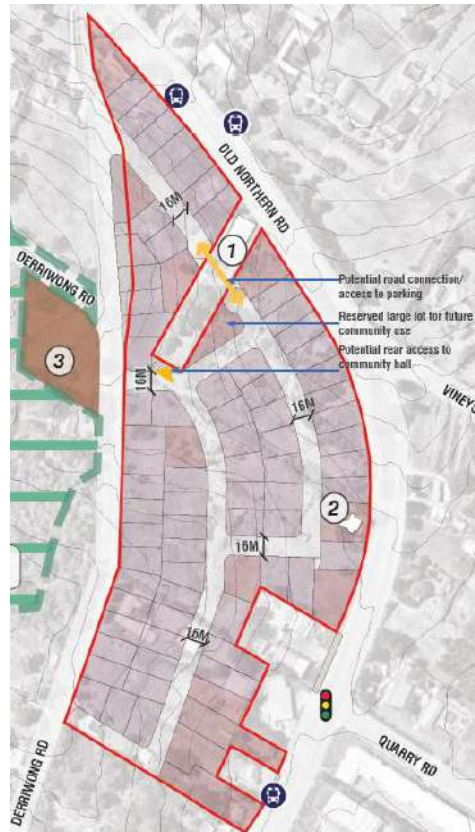
The detailed Urban Design Report outlines the design approach to the development at precinct and development site level to demonstrate the capability of the site and the potential connectivity to and consistency with the broader area.

The residential subdivision plan responds to the existing site context, in addition to facilitating future connections within the sites and to surrounding sites. As detailed below, the subdivisional plan and landscaping treatments have been designed to ensure high levels of future residential amenity. Traffic noise associated with Old Northern Road will be moderated through generous setbacks and landscape buffers. The layout plans have been developed to respond to adjacent heritage items through the establishment of generous curtilage.

Figure 22 – Indicative subdivision plans



Picture 3 – Northern Site



Picture 4 – Southern Site

Street layout / network

Local street patterns and block size (width and length) are determinates of liveability. Despite the peri urban nature of the locality a typical urban layout and block length and width has been adopted to encourage pedestrian movement (in particular to promote use and access to the public transport routes along Old Northern Road). Street widths and frontage depths have been based on the prevailing pattern of development through The Hills that seeks to reinforce feelings of open landscaped settings.

Site specific factors that have influenced the urban form and street layout include:

- Utilise, where possible, the road network to establish a suitable separation from bushfire sources (i.e. provide a ring road);
- Access to sites provided from Derriwong Road, limiting the number of new crossings onto Old Northern Road;
- Achieve a logical street network to limit the number of residential battle-axe blocks.
- Provide logical and effective connections to the existing road network and where possible enhance access and operation of intersections through upgrades;

- Achieve a flexible and adaptable road layout that will support future extension and integration of adjacent land holdings between sites and further to the south;
- Allow for future road connections between lots to limit cul-de-sacs;
- Enhance safety and access around Dural Public School;
- Promote safety, accessibility and connectivity of all road users.

The outcome of these design drivers can be seen in the envisaged urban layout shown in Figures 26 and 30, contained in the urban design report provide at Appendix A.

The following street widths have been adopted to reinforce street hierarchy:

- **Main Road:** 32m; and
- **Local Collector Roads:** 20 metres; and
- **Residential Streets:** 16 metres.

Building heights

The proposed nine (9) metre building height retains and reinforces the local character of existing low density housing within the adjacent urban areas.

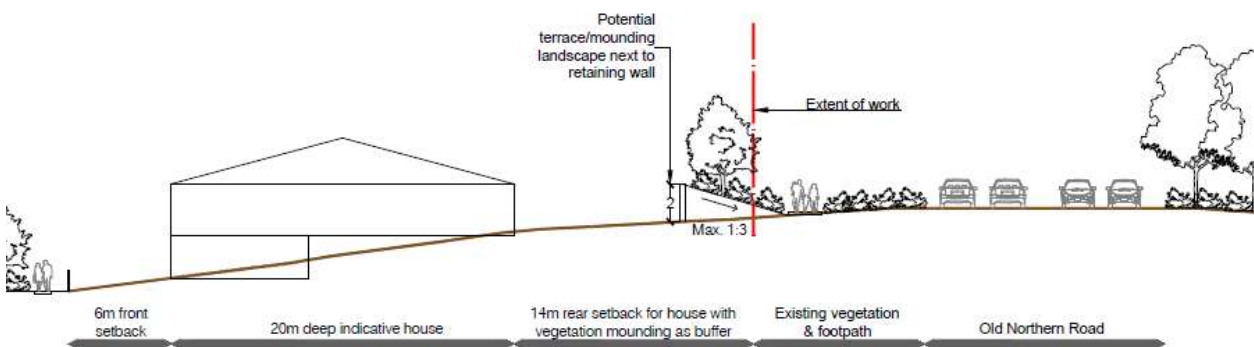
Setbacks

The urban layout has been developed to achieve future setbacks consistent with Council’s DCP and the prevailing urban context. In this regard, the following setbacks can be achieved:

- **Old Northern Road:** 14 metres to road verge
- **All other streets:** 6 metres.

The most visible elements of any future development will be those along Old Northern Road. Of particular relevance to the Southern Site, the layout has been established to ensure a generous setback can be achieved for lots abutting Old Northern Road. Generous setbacks can accommodate tree planting and landscaped mounding, as indicated in **Figure 23**, to ensure appropriate screening of the development in addition to enhancing residential acoustic amenity.

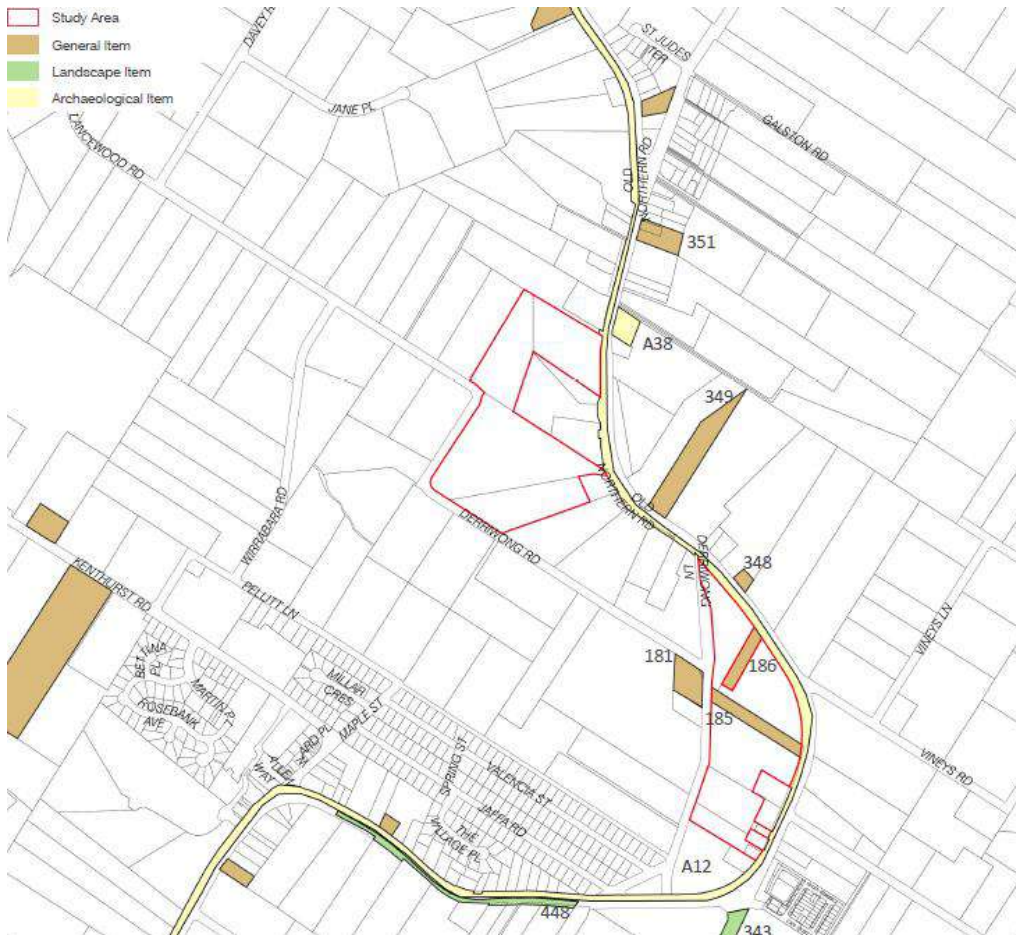
Figure 23 – Section through Southern site



Heritage

As outlined in Section 1, Old Northern Road forms the LGA boundary between The Hills Shire and Hornsby Council. Accordingly the sites are located within proximity to environmental heritage items listed under THLEP 2012 and the Hornsby Local Environmental Plan 2013 (HLEP 2013) as indicated in the heritage map extract at **Figure 24**. The proposal will facilitate built forms and heights of similar scales to adjacent and nearby heritage items, aiding in the retention of the existing visual character of the locality and the spatial relationship of buildings.

Figure 24 – Extract of THLEP 2012 Heritage Map (Source: Urbis, 2016)



A Heritage Impact Statement (HIS), prepared by Urbis (Heritage) (**Appendix F**) has considered the relationship of future built form of the land and relevant heritage items. The HIS addresses all heritage items within proximity to the site, shown in **Figure 24** and summarised by LGA in **Table 5**.

Table 5 – Summary of Heritage items by LGA

The Hills Shire	Hornsby Council
Item: 86: The Dural Soldiers Memorial, located at 604 Old Northern Road	Item 348: Dwelling, located at 857 Old Northern Road
Item: 85: Dwelling, located at, located at 600A Old Northern Road	Item 349: Dwellings located at 873 Old Northern Road, Dural
Item 81: Uniting Church Cemetery, Derriwong Road	Item 448: Street Trees located along the eastern side of Old Northern Road.
Item A12 (Archaeological item): Old Northern Road, between Dural and Wiseman's Ferry.	

The potential for impact arising from the rezoning or future development on items located on the opposite side of Old Northern Road in the Hornsby LGA is limited due to the separation and distance provided by Old Northern Road. Equally, the rezoning and future redevelopment is considered unlikely to have direct or indirect impacts on the heritage value, context or setting of the cemetery located on the south-western side of Derriwong Road (Item I81, in **Figure 25**).

Accordingly the assessment of potential impact has focused on those items listed under The Hills LEP 2012 located within the immediate vicinity of the site. In particular the following

- **Item 85, Dwelling:** a weatherboard cottage (circa 1880 – 1900) constructed on the former Tuckwell land grant. The house and curtilage, despite significant degradation, have been assessed as having historical, associative and representative significant under the NSW Assessing for Significant Guidelines (2001). Refer to **Figure 25, Picture 5**.
- **Item 86: Memorial Hall:** a Spanish mission style building (1925) built by the community as a memorial to local soldiers of the first world war and as such of local significance. However, they are common throughout The Hills. Refer to **Figure 25, Picture 6**.

Figure 25 – Picture of THLEP 2012 Heritage items within Vicinity of the Site



Picture 5 – Item 85: 600A Old Northern Road



Picture 6 – Item 86: 604 Old Northern Road

Items 85 and 86 will adjoin land to be rezoned for low density residential purposes, which will be supported by changes in lot size and building heights. Changes in urban and built form will alter the spatial relationships of the buildings and has the potential to alter the curtilage of the sites and their visual prominence within the streetscape. However, future development will be of a similar scale and height to these heritage items.

Urbis (Heritage) provided recommendations aimed at mitigating any effects of the transitioning urban form on the heritage item at 600A Old Northern Road, a summary of these issues is provided in Table 6.

Table 6 – Consideration of Heritage Recommendations (Item 85)

Heritage Recommendation	Urban Design Response
A heritage curtilage be formed for the house at 600A Old Northern Road to protect the impacts of potential future development.	No. 600A Old Northern Road is intended to be retained as a standalone lot, i.e. dwelling and curtilage preserved. The site has been integrated into the urban form as shown in Figure 10.
Consider restoration of the house as part of the proposed works so that the principal house form is wholly retained. This would ultimately conserve and enhance the heritage significance of the item.	The envisaged future form and layout of lots surrounding the heritage item will not encumber the ability to restore the house in the future.
When developed, it is recommended that lower-scale residences (one to two storeys) in the vicinity of the heritage items would be in keeping with other development in the area and would not	Future dwelling houses will be subject to a maximum building height of 9m, which presents a similar form and scale to the heritage item. More the preservation of the curtilage and suitable setback will provide landscaping

Heritage Recommendation	Urban Design Response
impact on views and the heritage significance of the item. Development in the vicinity of the items must respond appropriate to their form and scale.	opportunities to further enhance and integrate any future development.

While no specific recommendations were made by Urbis (Heritage) in relation to the Memorial Hall, the planning proposal, in relation to distribution urban form and layout has considered future interface and spatial relationships. Notably the urban design analysis and direction has sought to integrate the memorial hall into the new urban form and provide complimentary layout aimed at enhancing the site both visually and practically through the following:

- Co-location of public open space that achieves a longitudinal connectivity from Old Northern Road, the Memorial Hall extending southward through a proposed park (public open space) and the adjacent cemetery (refer to Figure 22);
- Allowance for a new and alternative site entry (removing the need to enter and exit from Old Northern Road);
- Flexible street layout to allow for a future internal road connection through the heritage site;
- Large side setbacks to support landscaping along boundaries aimed at preserving the ‘garden setting’.

Traffic and Transport

The Dural Planning Proposal will facilitate the delivery of the following:

- The northern site is proposed to consist of approximately 96 low density residential lots and land for future open space.
- The southern site will support up to 86 low density residential lots and land for future open space

Delivery of the expanded urban zone will also involve the construction of new road networks and connections to Old Northern Road, altering and contributing to local traffic flows.

A traffic and transport study undertaken by AECOM Consultants (**Appendix C**) to establish the existing level of service at intersections and capacity within the road network, potential impacts of the post-development traffic flows on the on the existing traffic network and the suitability of the proposed development and intersection design.

Traffic Volumes

Roads and Maritime Traffic Data indicates that the primary access roads to Dural and the sites, Old Northern Road and New Line Road, carry approximately 19,500 and 30,000 vehicles per day respectively. AECOM suggest that this road network link is approaching capacity. Within the immediate vicinity of the site, this is in part reflected in the operation of key intersections.

Figures 26 and 27, detail the AM and PM peak hour vehicle movements and indicate that three (3) of the five (5) existing intersections with Old Northern Road operate satisfactorily, with the remaining two (2) experiencing significant delays or failing.

Figure 26 – Existing AM peak intersection performance (Source: AECOM, 2016)

Intersection	Intersection Type	Demand Flow (veh/h)	Level of Service	Degree of Saturation (v/c)	Ave Delay (sec)	95% Back of Queue (m)
Old Northern Road Derriwong Road	Give-way (left out)	2,347	F	0.511	89.8 ¹	191
Old Northern Road New Line Road	Roundabout	4,454	F	1.102	70.9	814
	Signals	4,454	C	0.833	30.5	160
Old Northern Road Vineys Road	Roundabout	2,996	A	0.462	9.2 ¹	31
Old Northern Road Nursery Access Road	Give-way	2,177	A	0.688	11.4 ¹	2

Figure 27 – Existing PM peak intersection

Intersection	Intersection Type	Demand Flow (veh/h)	Level of Service	Degree of Saturation (v/c)	Ave Delay (sec)	95% Back of Queue (m)
Old Northern Road Derriwong Road	Give-way (left out)	2,585	E	0.767	59.4 ¹	182
Old Northern Road New Line Road	Roundabout	4,709	F	1.116	104.6	1,013
	Signals	4,709	C	0.893	35.2	135
Old Northern Road Vineys Road	Roundabout	2,840	A	0.462	9.6 ¹	29
Old Northern Road Nursery Access Road	Give-way	2,344	B	0.673	17.8 ¹	7

Based on the future development profile, AECOM estimate that the development sites would generate the following additional trips as indicated in **Figure 28** below.

Figure 28 – Total trips generated by proposed development

Site	Development Type	Quantity	AM Peak		PM Peak	
			Trip Rate	Trips Generated	Trip Rate	Trips Generated
Northern Site	Low density residential	96 lots	0.86 per dwelling	83	0.89 per dwelling	86
Southern Site	Low density residential	80 lots	0.86 per dwelling	69	0.89 per dwelling	71
Total			152		157	

These additional traffic flows, though objectively minor in nature, have implications for the operation of the local traffic network including the major distributor (classified) road of Old Northern Road and New Line Road, as well as the proposed intersections. These implications and the potential mitigation works are outlined in the following sections and the Traffic and Transport Report provided at Appendix C.

Vehicle Access

Vehicle access will be provided from Old Northern Road and Derriwong Road as indicated in **Figure 29** below.

The northern site can be accessed from both Old Northern Road and Derriwong Road. It will have three accesses from Old Northern Road via the two LILO intersections and one intersection allowing all movements listed below:

- Access 1 – conversion of the existing intersection of Old Northern Road | Nursery Access Road to a left in left out (LILO)
- Access 2 – new intersection allowing all movements
- Access 3 – new LILO.

Direct access for the southern site will be from Derriwong Road which vehicles are able to access at intersections along Old Northern Road. With the intersection of Old Northern Road and Derriwong Road proposed to operate as a LILO, banned right turn movements are required to use the new access points from Old Northern Road:

- Vehicles heading to the west (along Old Northern Road) will be required to use Access 2 (all movements)
- Vehicles coming from the south (along New Line Road) will likely use Access 2 or Access 3.

Management of the anticipated traffic flows from the future subdivision onto Old Northern Road, have been used to inform the urban design report and road layout. AECOM have recommended that to manage the increased flows the following upgrades are required:

- Upgrade of Old Northern Road and New Line Road to provide additional capacity.
- Old Northern Road and New Line Road to be upgraded to a signalised intersection.
- Old Northern Road and Vineys Road to be upgraded to a roundabout.
- Conversion of Old Northern Road and Derriwong Road to operate as a LILO
- Access 1 – conversion of the existing intersection of Old Northern Road and Nursery Access Road to a LILO.
- Access 2 – New roundabout or signalised intersection on Old Northern Road, north of Dural Primary School.
- Access 3 – New LILO intersection on Old Northern Road, south of Dural Primary School.

The proposed concept includes the provision of a 32 metre-wide road reserve to the south of the Dural Public School to accommodate a potential location for the future extension of Annangrove Road through to Old Northern Road.

The existing and proposed road network together with intersection upgrades are shown in **Figure 29**.

Figure 29 – Envisaged urban layout including new road connections/intersections



In relation to the broader traffic network and in particular the operation of the major collector roads, Old Northern Road/New Line Road south of the site, it is understood that infrastructure upgrades will be required to provide sufficient capacity to support the delivery and realisation of several planning proposals including South Dural, Dural Service Centre and the adjoining Round Corner Timber site.

South Dural Planning Proposal was granted Gateway Approval on the premise of delivering these infrastructure upgrades and, despite the potential for the gateway approval to lapse, the DP&E has provided an extension of time to allow this proposal to be developed and implemented. The South Dural Planning Proposal, together with the Dural Service Centre, Round Corner Timber Yard and the subject Planning Proposal, represent an opportunity for a coordinated approach and efficient spending on infrastructure. The significant progression of the South Dural Planning Proposal, together with the recent extension of time granted to the proponent, represents a clear commitment to the delivery of the necessary infrastructure works and should be interpreted as certainty that upgrades will be delivered in the near future.

The Proponent for this Planning Proposal is willing to contribute a fair and equitable proportion of upgrade costs associated with improving local road infrastructure to support the delivery of the proposal.

Transport and Accessibility

The proposed urban layout and street network has been designed to achieve the following:

- A new road network that supports safe and suitable movement for cars and cyclists;
- Promote an active walking catchment and use of public transport;
- A road layout that support a high level of permeability and connectivity and safety for vehicles and pedestrians; and
- The majority of the sites will be within the 400m catchment of current bus routes operating on Old Northern Road and New Line Road. Therefore, most of the residents will be within a 400m walking distance of an existing bus route linking to surrounding transport hubs.
- It is also anticipated that new bus connections to the NWRL stations will be established that are accessible from the study area. Local and Regional Road Infrastructure is capable of being upgraded to meet the increased demands of additional traffic flows.

Acoustic Impacts

An acoustic assessment has been undertaken by WSP Parsons Brinckerhoff and is attached at Appendix L. The assessment included logging unattended noise along Old Northern Road at locations representative of future residential development, incorporating the stipulated 14m site boundary setback. Noise was logged during the day (7am – 10pm) and in during the night (10pm – 7am).

The Australian Standards assign a satisfactorily internal noise level for residential properties as 30 dBA. Contained within the table at Figure x below, is the noise levels predicated at residential facades.

Figure 30 – Predicted road noise levels at residential facades

Development site and land use	Setback from boundary, metres	Distance to Old Northern Road, metres	Predicted level at façade, dBA _{Leq period}		Required reduction to meet internal noise goal, dBA
			Day 7am – 10pm	Night 10pm – 7am	
Northern	14	39	63	59	29
Southern	14	17	63	58	28

As indicated within the above table, the survey locations indicate noise levels above the satisfactory noise goal. The above data represents ambient noise recordings, whereas the noise goal refers to internal areas. The report concludes that the internal noise goal can be met through the following mitigation measures:

- *Ground floor: 1.8 metre solid barrier, such as a Colorbond or a capped-and-lapped fence, on the boundary adjacent to Old Northern Road. Windows are to meet Rw 30 dB, which may be achieved using 6mm single glazing and sufficient seals to meet this rating.*
- *First floor: windows are to have sufficient seals and glazing to meet Rw 35 dB, which may be achieved using a double-glazed construction or 10mm single glazing.*

To provide a better streetscape appearance, the concept includes a landscaped earth mound adjacent to Old Northern Road, and within private property, in lieu of a fence (see Figure 23 above).

Bushfire

ELA has undertaken a Bushfire Fire Assessment identifying all potential bushfire constraints to the future urban development within the study area, classification of hazard and planning requirements to ensure appropriate management and future asset protection (**Appendix E**).

In accordance with the NSW Policy of Planning for Bushfire Protection (BPB), the predominant vegetation class and effective slope of the sites as key indicators of bushfire threat have been determined to establish potential bushfire affectation and risk, expressed as Bushfire Attack Levels (BAL). The outcome of this assessment is summarised in **Figures 31** and **32**.

The land, subject of this proposal, has been identified to having a BAL of 29. Within this zone primary focus is given to the protection of buildings from ember attack and burning debris ignited by wind borne embers and radiant heat. Impact may be managed through the establishment of Asset Protection Zones (APZs) providing separation between a potential source of fire threat and development.

Figure 31 – BAL and APZ Requirements

Direction from envelope	Slope ¹	Vegetation ²	PBP required APZ ³	BAL-29 APZ AS3959	Comments
Northern cluster					
West and south	0-5 ⁰ downslope	Forest	25 m 70 m (SFPP)	32 m	Provided within property boundaries
South	0-5 ⁰ downslope	Grassland	10 m	10 m	
All other directions	Managed land				
Southern cluster					
West	0-5 ⁰ downslope	Forest	25 m 70 m (SFPP)	32 m	Provided by Derriwong Road and within property boundaries
West	0-5 ⁰ downslope	Grassland	10 m	10 m	Provided within property boundaries
South	0-5 ⁰ downslope	Low hazard	10 m 30 m (SFPP)	14 m	
All other directions	Managed land				

¹ Slope most significantly influencing the fire behaviour of the site having regard to vegetation found. Slope classes are according to PBP.

² Predominant vegetation is identified, according to PBP and "Where a mix of vegetation types exist the type providing the greater hazard is said to be predominate".

³ Assessment according to Table A2.4 of PBP

Figure 32 – Recommended APZS (Source: ELA, 2016)



The recommendations of ELA and how they have incorporated into the potential future subdivision design and layout is summarised in **Table 7**.

Table 7 – Consideration of Recommendations of ELA

ELA Recommendation	Response
Use of perimeter roads to create separation between fire source and future development	The existing and extended urban layout provides for perimeter roads to the south and west to provide separation between existing forest and future residential development.
Provision of alternative access and egress for fire service vehicles	The future urban layout will improve permeability and provide alternative entry and egress points to Old Northern Road
Ensure adequate setback from bushfire prone vegetation (APZs) Integrate non-combustible infrastructure within APZs such as roads, easements and parking areas. The majority of APZs should be contained within perimeter roads and front yard setbacks	Development will be subject to development controls adopted under the existing DCP that promote 10 metre front setbacks. These setbacks when combined with the existing street widths (approximately 16 metres) should provide adequate separation.
Ensure adequate access and egress from the study area through a well-designed road system	As above for fire service vehicle access, the development will improve vehicle permeability by providing more road controlled connections through to Old Northern Road.
Consider the adequacy of water supply and the delivery of other services (gas and electricity)	Services and utilities will be augmented, upgraded and expanded as necessary. Refer to later discussion and Appendix H.
Provide temporary APZs during any staged development	This may be addressed as part of a future DA and Construction Management Plan.
Provide for effective and ongoing management of APZs.	May be achieved through the registration of notices of titles to raise awareness of construction requirements for potential purchasers.
Consider construction standards (AS3959) implications for future developments depending on development type (25 and 70 metre APZs).	May be achieved through the registration of notices of titles to raise awareness of construction requirements for potential purchasers.

Taking into account the above, the identified sensitivities can be appropriately managed to ensure protection of the future land uses.

Water Quality

The Planning Proposal is unlikely to have adverse effects on local or catchment level water quality. Future redevelopment of the site would involve the integration of WSUD elements in accordance with the local development controls and connection of the land to reticulated sewer and stormwater systems.

The combination of these measures would feasibly improve water quality in relation to the removing sources of ground water contaminants (such as on site effluent disposal systems) and reduce sediment and nutrient loads of run off reaching O'Hara's Creek.

Detailed design of water quality measures would be undertaken as part of a development application following gazettal of the planning proposal.

Site Contamination

ADE Group Pty Ltd has undertaken preliminary site investigations (PSI) for all the individual title lots that make up the northern and southern sites of the subject of this Planning Proposal. A summary of each is provided in Table 8.

Table 8 – Summary of PSI Findings

Lot No. & DP	Findings	Recommendations
Lot 2 in DP 567995 (No. 21 Derriwong Road)	<ul style="list-style-type: none"> • Presence of invalidated fill along the eastern boundary; • Visible stockpiling of asbestos and asbestos conduits; • Previous use and remaining structural elements indicate potential use of the site to involve fuel storage and chemicals associated with former agricultural production; • Presence of an onsite waste water treatment tank (bacteria and heavy metals); and • Contamination arising from the former use of the site for agricultural purposes arising from crop spraying (pesticides and herbicides – low to moderate risk). 	<p>Past use and existing development indicate the potential for contamination to be present on the site. Further detailed testing is required prior to use for residential purposes.</p> <p>ADE indicates that if contaminants are encountered they will be capable of remediation such that the site can be made suitable for its intended use.</p>
Lot 9 in DP 237576 (No. 27 Derriwong Road)	<ul style="list-style-type: none"> • Contamination arising from the former use of the site for agricultural purposes arising from crop spraying (pesticides and herbicides – low to moderate risk); • Potential for asbestos to be present on the site in the existing building fabric. 	<p>Low potential for contaminant of concern to pose a risk to the proposed future users of the site, limited investigation is required to determine risk.</p> <p>ADE indicate that if contaminants are encountered they will be capable of remediation such that the site can be made suitable for its intended use</p>

Lot No. & DP	Findings	Recommendations
<p>Lot 100 in DP 713628 (No. 600 Old Northern Road)</p>	<ul style="list-style-type: none"> • Previous use and remaining structural elements indicate potential use of the site to involve fuel storage and chemicals associated with former agricultural production; • Presence of an onsite waste water treatment tank (bacteria and heavy metals); • Contamination arising from the former use of the site for agricultural purposes arising from crop spraying (pesticides and herbicides – low to moderate risk); • Proximity of the site to Old Northern Road there is a low to moderate potential for contamination arising from runoff • Proximity of the site to an operating petrol station may have exposed the site to point source contamination from underground storage tanks (risk is considered low due to the potential directional flow westward of ground water) 	<p>ADE concludes that there is the potential for contaminants of concern to pose a risk to the proposed future users of the site and that further investigation into the nature and extent of contamination (if present) is required.</p>
<p>Lot 1 in DP 656036 (602 Old Northern Road)</p>	<ul style="list-style-type: none"> • Previous use and remaining structural elements indicate potential use of the site to involve fuel storage and chemicals associated with former agricultural production; • Presence of an onsite waste water treatment tank (bacteria and heavy metals); • Contamination arising from the former use of the site for agricultural purposes arising from crop spraying (pesticides and herbicides – low to moderate risk); • The site during inspection by ADE was identified as being used for the storage of rubbish including chemicals (petrol, chlorine residential grade chemicals), imported (invalidated) fill materials and 44 gallon drums with unknown chemical materials. 	<p>ADE concludes that there is potential for contaminants of concern to pose a risk to the proposed future users of the site and that a limited investigation into the nature and extent of contamination (if present) is required. In particular:</p> <ul style="list-style-type: none"> • Areas observed to contain motor oil, chlorine and unknown chemical storage; • Onsite effluent tanks etc. <p>Notwithstanding, ADE indicate that if contaminants are encountered they will be capable of remediation such that the site can be made suitable for its intended use.</p>

Lot No. & DP	Findings	Recommendations
Lot X in DP 501233 (No. 618 Old Northern Road)	<p>This site has an extensive history of use that may have contributed to the presence of contaminants requiring remediation. In particular the following:</p> <ul style="list-style-type: none"> • Use of the site as a former market garden; • Presence of an existing dam (constructed using imported fill material), combined with in-ground pipes of unknown material; • Use of imported fill across the site to construct car parking combined with stockpiles • Potential chemical spills and leaks associated with machinery use and repair; • Use of asbestos construction materials; • Presence of above ground storage tank and hydrocarbon staining on soil service 	<p>ADE concludes that there is the potential for contaminants of concern to pose a risk to the proposed future users of the site and that further investigation into the nature and extent of contamination (if present) is required.</p> <p>Notwithstanding, ADE indicate that if contaminants are encountered they will be capable of remediation such that the site can be made suitable for its intended use.</p>
Lot2 DP541329 (No. 626 Old Northern Road)	<p>The conceptual site model for the site has identified the following potential sources of contamination on the site:</p> <ul style="list-style-type: none"> • Importation of controlled fill material to establish a carpark (Heavy metals, BTEX, PAHS etc.); • Leakages from unknown sources; • Presence of a former commercial building leading to introduction of uncontrolled fill and asbestos. 	<p>ADE concludes that there is the potential for contaminants of concern to pose a risk to the proposed future users of the site and that further investigation into the nature and extent of contamination (if present) is required. Notwithstanding, ADE indicate that if contaminants are encountered they will be capable of remediation such that the site can be made suitable for its intended use.</p>
Lot 11 DP 866560 (5 Derriwong Road)	<p>The conceptual site model for the site has identified the following potential sources of contamination on the site:</p> <ul style="list-style-type: none"> • Uncontrolled fill material under dwelling slabs; • Construction materials (asbestos, lead paint etc.) existing dwelling and the footprint of a former shed; • Organic contaminants and metals from septic tanks/sewage; and • Seepage (leaking USTs) from adjacent service station. 	<p>ADE concludes that there is the potential for contaminants of concern to pose a risk to the proposed future users of the site and that further investigation into the nature and extent of contamination (if present) is required. Notwithstanding, ADE indicate that if contaminants are encountered they will be capable of remediation such that the site can be made suitable for its intended use.</p>

Lot No. & DP	Findings	Recommendations
7 Derriwong Road (Lot 12 in DP 866560)	<p>The site has historically been used for grazing purposes and is located within proximity to agriculture since the 1920s. Currently the site adjoins a service station with USTs.</p> <p>The conceptual site model for the site has identified the following potential sources of contamination on the site:</p> <ul style="list-style-type: none"> • Uncontrolled fill material in stockpiles and areas of altered profile (i.e. carparks) • Leakages and spills associated with the former agricultural maintenance facility; • Organic contaminants and metals from septic tanks/sewage; and • Seepage (leaking USTs) from adjacent service station. <p>All potential contamination sources and pathways have been identified as a low, moderate and likely.</p>	<p>ADE concludes that there is the potential for contaminants of concern to pose a risk to the proposed future users of the site and that further investigation into the nature and extent of contamination (if present) is required.</p> <p>Targeted sampling of the site can be undertaken to determine the extent of contamination and remediation necessary to render the land suitable for residential use.</p>
584 Derriwong Road (Lot 1 DP 660184)	<p>The conceptual site model for the site has identified the following potential sources of contamination on the site:</p> <ul style="list-style-type: none"> • Uncontrolled fill material under dwelling slabs; • Construction materials (asbestos, lead paint etc.) existing dwelling and the footprint of a former shed; • Seepage (leaking USTs) from adjacent service station; and • Leakages and spills of fields etc. 	<p>ADE concludes that there is the potential for contaminants of concern to pose a risk to the proposed future users of the site and that further investigation into the nature and extent of contamination (if present) is required. Notwithstanding, ADE indicate that if contaminants are encountered they will be capable of remediation such that the site can be made suitable for its intended use.</p>
590 Derriwong Road (Lot D DP 38097)	<p>The conceptual site model for the site has identified the following potential sources of contamination on the site:</p> <ul style="list-style-type: none"> • Uncontrolled fill material under dwelling slabs; • Construction materials (asbestos, lead paint etc.) existing dwelling and the footprint of a former shed; • Seepage (leaking USTs) from adjacent 	<p>ADE concludes that there is the potential for contaminants of concern to pose a risk to the proposed future users of the site and that further investigation into the nature and extent of contamination (if present) is required. Notwithstanding, ADE indicate that if contaminants are encountered they will be capable of remediation such that the site</p>

Lot No. & DP	Findings	Recommendations
	service station; and <ul style="list-style-type: none"> • Organic contaminants and metals from septic tanks/sewage. 	can be made suitable for its intended use.
606 Old Northern Road (Lot 1 DP 73652)	The conceptual site model for the site has identified the following potential sources of contamination on the site: <ul style="list-style-type: none"> • Previous use as an orchard would have contributed to wide spread potential contamination of the site. • Organic contaminants and metals from septic tanks/sewage; • Uncontrolled fill material under dwelling slabs; and • Construction materials (asbestos, lead paint etc.) existing dwelling and the footprint of a former shed. 	ADE concludes that there is the potential for contaminants of concern to pose a risk to the proposed future users of the site and that further investigation into the nature and extent of contamination (if present) is required. Notwithstanding, ADE indicate that if contaminants are encountered they will be capable of remediation such that the site can be made suitable for its intended use.

With the exception of No. 606 Old Northern Road that has a history of use as an orchard, the nature of the contaminant sources and migration pathways identified in the various conceptual site models, if sites are contaminated it is likely to be limited to hot spots. As outlined above and detailed in the PSI Reports, each of the sites despite exposure to contaminant sources owing to historical agricultural use can be made suitable for residential use.

How has the Planning Proposal adequately addressed any social and economic effects?

The proposed amendment is considered to make a positive social and economic contribution to the immediate locality and broader LGA. The positive implications associated with the amendment and likely future development is outlined in the following section.

The proposal will provide an increase in total dwelling yield and will diversify local housing typologies, contributing to increased housing choice.

Residential redevelopment of the site, as facilitated by this Planning Proposal will deliver a number of social and economic benefits including greater housing choice, a new public street network and more pedestrian connections through the area which will encourage a more vibrant and activated public domain generally.

SECTION D – STATE AND COMMONWEALTH INTERESTS

Is there adequate public infrastructure for the Planning Proposal?

INFRASTRUCTURE AND UTILITIES

The proposal will require the expansion, augmentation and upgrade to existing public infrastructure, including:

- Electricity;
- Telecommunications;
- Sewer; and
- Water.

Preliminary investigations have been undertaken by AT&L and Arup, to determine available service connection points and identify potential service routes (where expended networks are required). These investigations have identified several options for the delivery of services to the land which are currently being discussed with service providers to confirm feasibility and support.

The investigation reports, identifying the location of current services and connections points are provided in Appendix I and Appendix K, with details of the options for connection, expansion and upgrade. AT&L and Arup have concluded that all the land the subject of the Planning Proposal can be adequately serviced by the necessary infrastructure and utilities.

SOCIAL INFRASTRUCTURE

The Planning Proposal can facilitate the delivery of future open space, including:

- 3,364m² within the northern site to be dedicated to the Department of Education and used in association with Dural Public School, such as parking and/or sports courts(as indicated in Figure 33 below); and
- 1,177m² in the southern site adjacent to the Memorial Hall.

The indicative areas of open space can be delivered as either private or public recreation facilities. In the event the facilities are dedicated to Council, a formal offer by way of Voluntary Planning Agreement will be submitted and advertised in accordance with the provisions of the EP&A Act 1979.

The delivery of expanded recreational opportunities to the local and wider community is considered to make a positive social impact.

Figure 33 – Potential uses of land adjacent to Dural Public School



What are the views of state and commonwealth public authorities consulted in accordance with the gateway determination?

Appropriate consultation with relevant government agencies would be undertaken by Council following a gateway determination. A preliminary list of agencies that would be consulted as part of the exhibition of the proposal is included below.

- Endeavour Energy;
- Telstra;
- Sydney Water;
- Roads and Maritime Services;
- Transport for New South Wales;
- Office of Environment and Heritage; and
- NSW Office of Water.

A final list of all relevant agencies will be determined as part of the Gateway Determination. Following the Gateway determination, all relevant agencies will be consulted.

PART 4 - MAPPING

This Planning Proposal seeks to amend the following planning maps contained in *The Hills Local Environmental Plan 2012* as they apply to the sites:

- Land Zoning;
- Height of Buildings;
- Minimum Lot Sizes; and
- Key Sites.

Copies of the proposed planning maps are provided in Part 2 explanation of the provisions.

PART 5 – COMMUNITY CONSULTATION

Public consultation will be undertaken in accordance with the requirements of the Environmental Planning and Assessment Act 1979 and Council's policies for community consultation. It is anticipated that public exhibition of the Planning Proposal would involve:

- Publishing of the proposal and supporting technical reports on The Hills website;
- Publishing of a Public Notice in in the Sydney Morning Herald and/or a relevant local newspaper; and
- Direct Notice, in writing to the owners and occupiers of adjoining and nearby properties and relevant community groups.

The Planning Proposal will be publicly exhibited for a period of between 14 and 28 days in accordance with Council's policies. Exhibition material will be made available on Council's Website and at Council's administration centre.

The Proponent would welcome the opportunity to engage with Council following the lodgement of this planning proposal. This would include briefing councillors and Council staff to inform the process and to provide for a better understanding of the Planning Proposal prior to it being considered for gateway determination.

PART 6 – PROJECT TIMELINE

The following project timeline will assist with tracking the progress of the planning proposal through its various stages of consultation and approval. It is estimated that this amendment to *The Hills Local Environmental Plan 2012* will be completed by April 2017.

Table 9 – Project Timeline

Stage	2016				2017							
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Submit Planning Proposal to Council	█											
Council exhibit Planning Proposal		█										
Council assess PP, consider submissions and report to Council for endorsement		█	█	█								
PP referred to DPE for gateway determination					█	█						
DPE consider PP and issue gateway determination					█	█	█					
Community consultation								█	█			
Final assessment of PP including consideration of submissions									█	█		
Making of LEP											█	█

5. CONCLUSION

The Planning Proposal has been prepared in accordance with section 55 of the EP&A Act and the relevant guidelines prepared by the NSW Department of Planning including A Guide to Preparing Local Environmental Plans and A Guide to Preparing Planning Proposals.

The Planning Proposal provides a comprehensive justification of the proposed amendment to THLEP 2012, and is supported on the following grounds:

- The proposed rezoning is consistent with the emerging and anticipated urban character of the area and the existing pattern of density for development within adjacent urban centres;
- The proposed residential urban form is compatible and integrate with Round Corner and will provide for future connectivity with adjacent lands (not included in this proposal);
- The land is not presently used for agricultural purposes and the potential use of the land for agriculture is constrained due to the proximity of urban land and the potential for intensive agriculture to generate adverse environmental impacts;
- The rezoning and future development would support the continued growth of Round Corner local centre with increased proximate residential density;
- The proposal will not dilute the primacy of adjacent urban centres, but reinforce and support their growth through the increased residential density and worker populations within the retail catchment;
- The rezoning reflects a logical extension and infill of urban land uses, bookended between two (2) existing centres that are the subject of continuing growth and development;
- The proposal represents orderly and economic use of otherwise underutilised land that cannot be used for meaningful agricultural production;
- The residential subdivision will deliver new residential land to meet demand of existing and potential residents, in an identified market gap for downsizers and young families
- The proposed road network will deliver increased permeability in the locality; and
- The proposal will result in positive social and economic impacts on the local community through the delivery of expanded recreational opportunities and new job creation.

Overall, it is considered that the Planning Proposal has a range of positive benefits, and it is requested The Hills Shire Council take the necessary steps to enable it to proceed to Gateway Determination under Section 56 of the EP&A Act.

DISCLAIMER

This report is dated 3 November 2016 and incorporates information and events up to that date only and excludes any information arising, or event occurring, after that date which may affect the validity of Urbis Pty Ltd's (**Urbis**) opinion in this report. Urbis prepared this report on the instructions, and for the benefit only, of Development Management Services Pty Ltd (**Instructing Party**) for the purpose of Planning Proposal (**Purpose**) and not for any other purpose or use. To the extent permitted by applicable law, Urbis expressly disclaims all liability, whether direct or indirect, to the Instructing Party which relies or purports to rely on this report for any purpose other than the Purpose, and to any other person which relies or purports to rely on this report for any purpose whatsoever (including the Purpose).

In preparing this report, Urbis was required to make judgements which may be affected by unforeseen future events, the likelihood and effects of which are not capable of precise assessment.

All surveys, forecasts, projections and recommendations contained in or associated with this report are made in good faith and on the basis of information supplied to Urbis at the date of this report, and upon which Urbis relied. Achievement of the projections and budgets set out in this report will depend, among other things, on the actions of others over which Urbis has no control.

In preparing this report, Urbis may rely on or refer to documents in a language other than English, which Urbis may arrange to be translated. Urbis is not responsible for the accuracy or completeness of such translations and disclaims any liability for any statement or opinion made in this report being inaccurate or incomplete arising from such translations.

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This report has been prepared with due care and diligence by Urbis and the statements and opinions given by Urbis in this report are given in good faith and in the reasonable belief that they are correct and not misleading, subject to the limitations above.

APPENDIX A URBAN DESIGN REPORT

APPENDIX B RESIDENTIAL MARKET ASSESSMENT

APPENDIX C ASSESSMENT OF NEW AGRICULTURAL ENTERPRISE VIABILITY IN DURAL

APPENDIX D

TRAFFIC AND TRANSPORT ASSESSMENT

APPENDIX E ECOLOGICAL ASSESSMENT

APPENDIX F BUSHFIRE ASSESSMENT

APPENDIX G HERITAGE ASSESSMENT

APPENDIX H PRELIMINARY SITE INVESTIGATION

APPENDIX I SERVICING AND UTILITIES INVESTIGATIONS

APPENDIX J SITE SURVEYS

APPENDIX K SERVICE CONNECTIONS REPORT

APPENDIX L ACOUSTIC ASSESSMENT



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