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HIGH LEVEL AGRICULTURAL LAND ASSESSMENT

Extension of Glenmore Park

ABN 39 585 269 237
A Level 10, 70 Pitt Street, Sydney NSW 2000 P GPO Box 5013, Sydney NSW 2001
T (02) 9249 4100 F (02) 9249 4111 E info@glnplanning.com.au

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Prepared for

Mirvac Pty Ltd

By

ABN 39 585 262 237

A Level 10, 70 Pitt Street, Sydney 2000 P GPO Box 5013, Sydney NSW 2001

T (02) 9249 4100 F (02) 2949 4111 E info@glnplanning.com.au

ABN 39 585 262 237
A Level 10, 70 Pitt Street, Sydney 2000 P GPO Box 5013, Sydney NSW 2001
T (02) 9249 4100 F (02) 2949 4111 E info@glnplanning.com.au

Planning Institute Australia
Registered Planner

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1 Introduction

This high level agricultural land assessment has been prepared to examine the proposed southward extension of Glenmore Park, converting the existing rural and rural residential land for urban uses. The report has been commissioned by Mirvac Homes Pty Ltd and Vianello Holdings Pty Ltd and has been updated to address further potential agricultural conflicts raised by Council.

The site comprises land located between the existing Glenmore Park Release in the north and Chain-O-Ponds Road in the south, and between The Northern Road in the east and rural residential lot and Mulgoa Nature Reserve in the west. The Penrith Landfill Depot is located further west on Chain-O-Ponds Road and this potential conflict is addressed in the Planning Proposal Report.

The land has been identified for urban investigation under Penrith City Council's Accelerated Housing Program, in the Western City District Plan and in Council's Local Strategic Planning Statement. In discussions to confirm the requirements for Gateway consideration, the Department of Planning and Environment suggested that a high level agricultural land assessment accompany the Planning Proposal addressing the suitability of the land for agricultural use and potential agricultural conflicts should the land be rezoned.

There appears to be no previous agricultural land classification that has been prepared for the land. Agricultural land is classified by evaluating biophysical, social and economic factors that may constrain the use of land for agriculture. In its publication *The land and soil capability assessment scheme – second approximation* by NSW Office of Environment and Heritage (2012), it states that the classification process "provides information on the broad agricultural land uses most physically suited to an area, that is, the uses with the best match between the physical requirements of the use and the physical qualities of the land, and the potential hazards and limitations associated with specific uses over a site."

Whilst this report discusses some of the factors that contribute to the land and soil capability (LSC), it is noted that the final LSC class is based on the most limiting hazard. In other words, the hazards are not applied in an additive way – the single highest hazard results in the overall rating of the site. The Planning Proposal has considered a range of information as well as the results of technical studies which address many of the biophysical factors relevant to determining the suitable of the site for agriculture. These include:

- topography
- underlying soils and geology,
- salinity
- ecology

These reflect limitations on large parts of the parcel for agricultural operations. Additionally, the site is subject to a range of planning controls which have enabled the fragmentation of a large part of the land into relatively small parcels with objectives aligned to Environmental Management rather than agriculture. The majority of the smaller lots are used for rural-residential purposes. The most significant agricultural enterprises include one intensive market garden, one small orchard and one residue parcel used for grazing. With the rezoning, these uses will progressively give way for urban development removing agricultural conflicts. Existing agricultural pursuits opposite on Chain-O-Ponds Road are well removed from the urban release and are unlikely to pose conflicts.

2 Background to the Study Area

The land mostly forms a discrete valley formation with a creek roughly traversing east to west through the centre of the site and another watercourse entering from the south under Chain-O-Ponds Road closer to the western end of the parcel. There are a number of agricultural dams scattered across the parcel.

The land is fragmented (See Figure 1 below). The land fronting Chain-O-Ponds Road and the southern part of The Northern Road is currently zoned E3 Environmental Management under Penrith Local Environmental Plan (LEP) 2010 which has been subdivided into 10 x 10 hectare lots and 9 x 2ha lots. There is a residue parcel from the current approved subdivision comprising 2 lots in single ownership. This land is zoned RU2 Rural Landscapes under Penrith LEP 2010 and has an area of approximately 79ha.

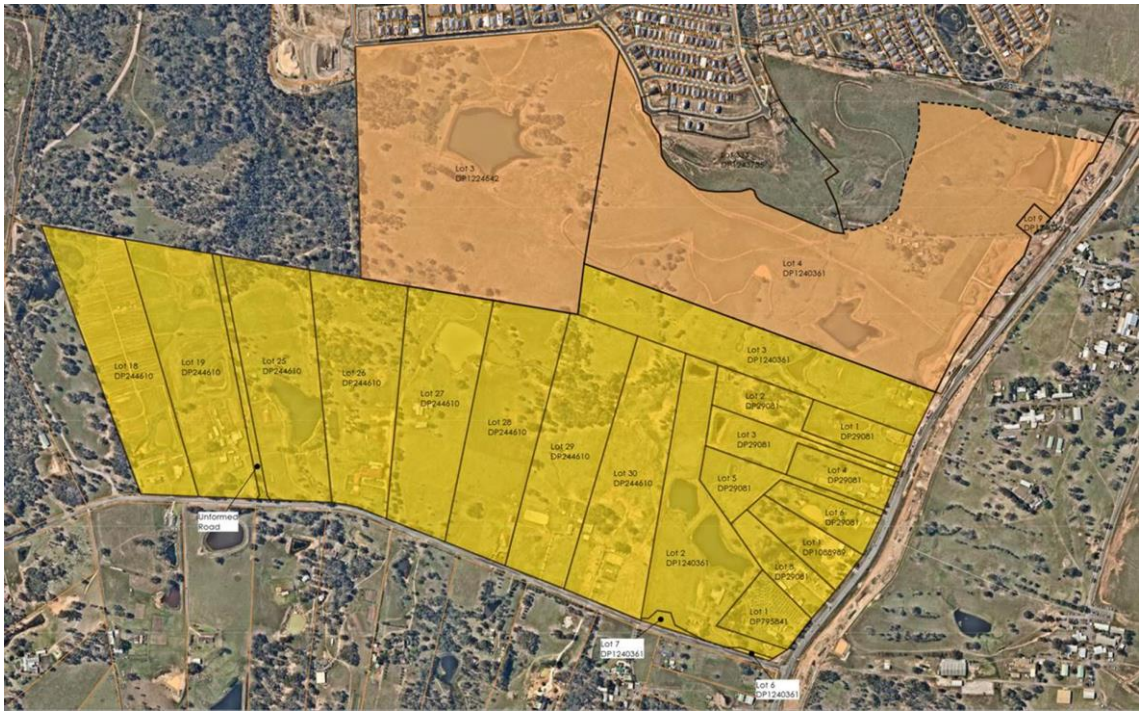

Figure 1. Shows the existing lots that comprise the site.

The land has been substantively cleared as a result of previous agricultural practices to the extent that there are some stands of trees along the watercourses and isolated clumps scattered elsewhere on the land. To the west there is a large area of bushland and the properties to the south contain more remnant vegetation comprising both scattered trees and more substantial stands. Some of the stands on the site are endangered ecological communities being Cumberland Plain Woodland.

Land within the study area used for agricultural production is shown in Table 1 on the following page.

Table 1 Land used for production in study area

Property Description	Land Use
Lot 18 DP 244610	Market garden – intensive horticultural on 10ha
Lot 1 DP 795841	Remnants of an orchard on 2ha
Lot 2 & 3 DP 1224642	Grazing cattle on 79 ha

There is also an equestrian centre on Chain-O-Ponds Road. Other properties contain agricultural sheds with no obvious uses while another appears used for truck storage. Most lots of 10ha or more have dams to provide a water resource.

Figure 2 below is a plan prepared by SESL identifying the existing rural activities and features on the site.

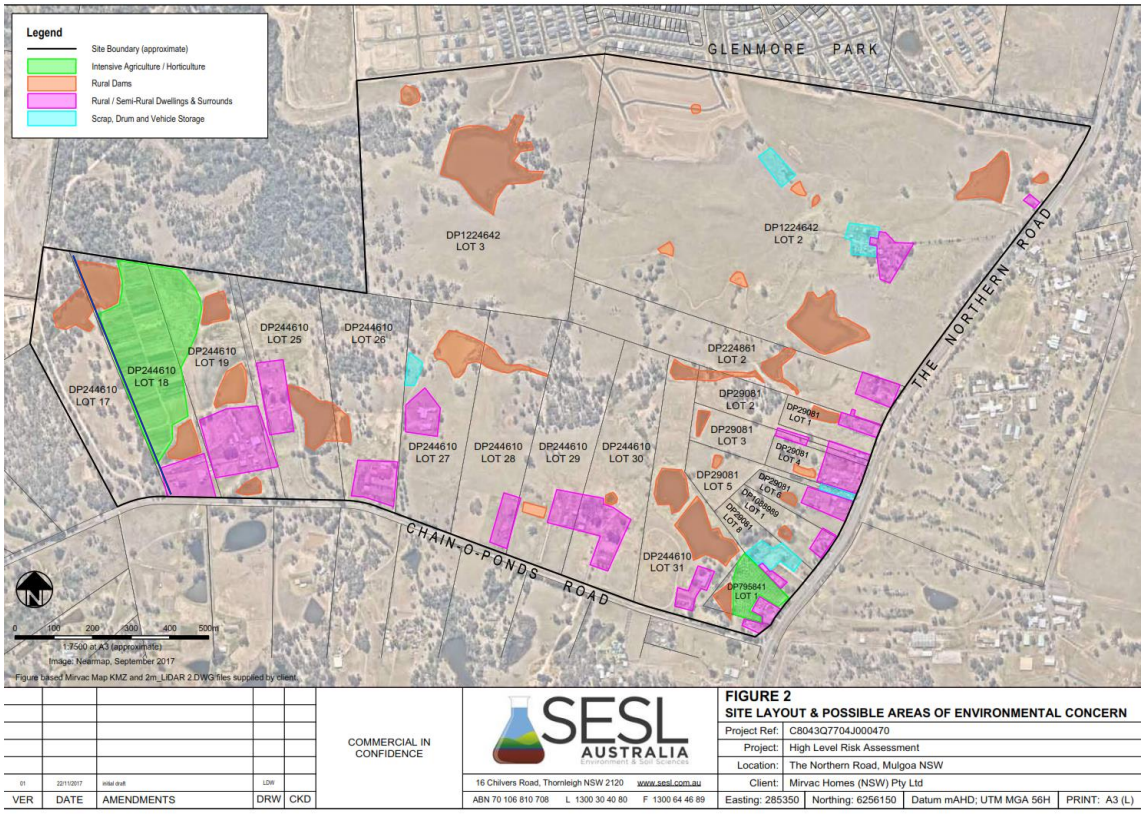

Figure 2 Aerial photograph of the site (Source: SESL)

3 Biophysical Characteristics

A number of investigations have been prepared as part of the Planning Proposal. From these studies the following features are noted in understanding the agricultural suitability of the land.

3.1 Topography

The site has a maximum rise of 40m from the base of the valley to the ridgelines, with the greatest elevations adjacent to the existing Glenmore Park and along The Northern Road. The average slope of the land varies generally between 5% and 10%. The slope range is typical of LSC Class 3 which include slopes of 3 – 10%.

Figure 3 below shows the topography of the site.

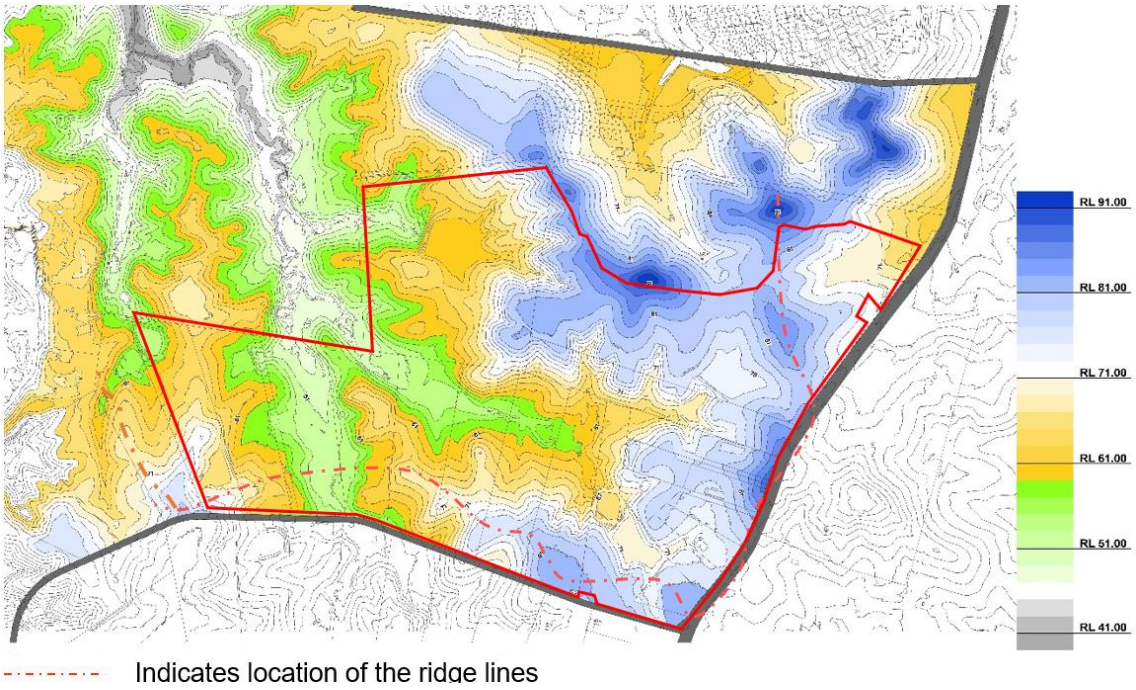

Figure 3 Site Topography

3.2 Soils

The Soil Landscapes of the Penrith 1:100,000 Sheet (Bannerman and Hazelton, 1990) indicates soil across the site is likely to belong to Blacktown (REbt) and Luddenham (ERlu) soil groups.

Blacktown group soils (REbt) are residual soils characterised by a gently undulating topography with shallow to moderately deep (>100cm) hardsetting mottled texture contrasts soils, red and brown podzolic soils on crests grading to yellow podzolic soils on lower slopes on drainage lines. Limitations of Blacktown group soils include localised seasonal waterlogging, localised water erosion hazard, moderately reactive highly plastic subsoil and localised surface movement potential. These are generally adjacent to The Northern Road.

Luddenham group soils (ERu) are erosional soils characterised by undulating to rolling hills with shallow (<100cm) dark podzolic soils or massive earthy clays on crests; moderately deep (70-150cm) red podzolic soils on upper slopes; moderately deep (<150cm) yellow podzolic soils and prairie soils on lower slopes and drainage lines. Limitations of Luddenham group soils include water erosion hazard, localised steep slopes, localised mass movement hazard, localised shallow soils, localised surface movement potential, localised impermeable highly plastic subsoil and are moderately reactive. The soils display some erosion hazard with variable soil depth.

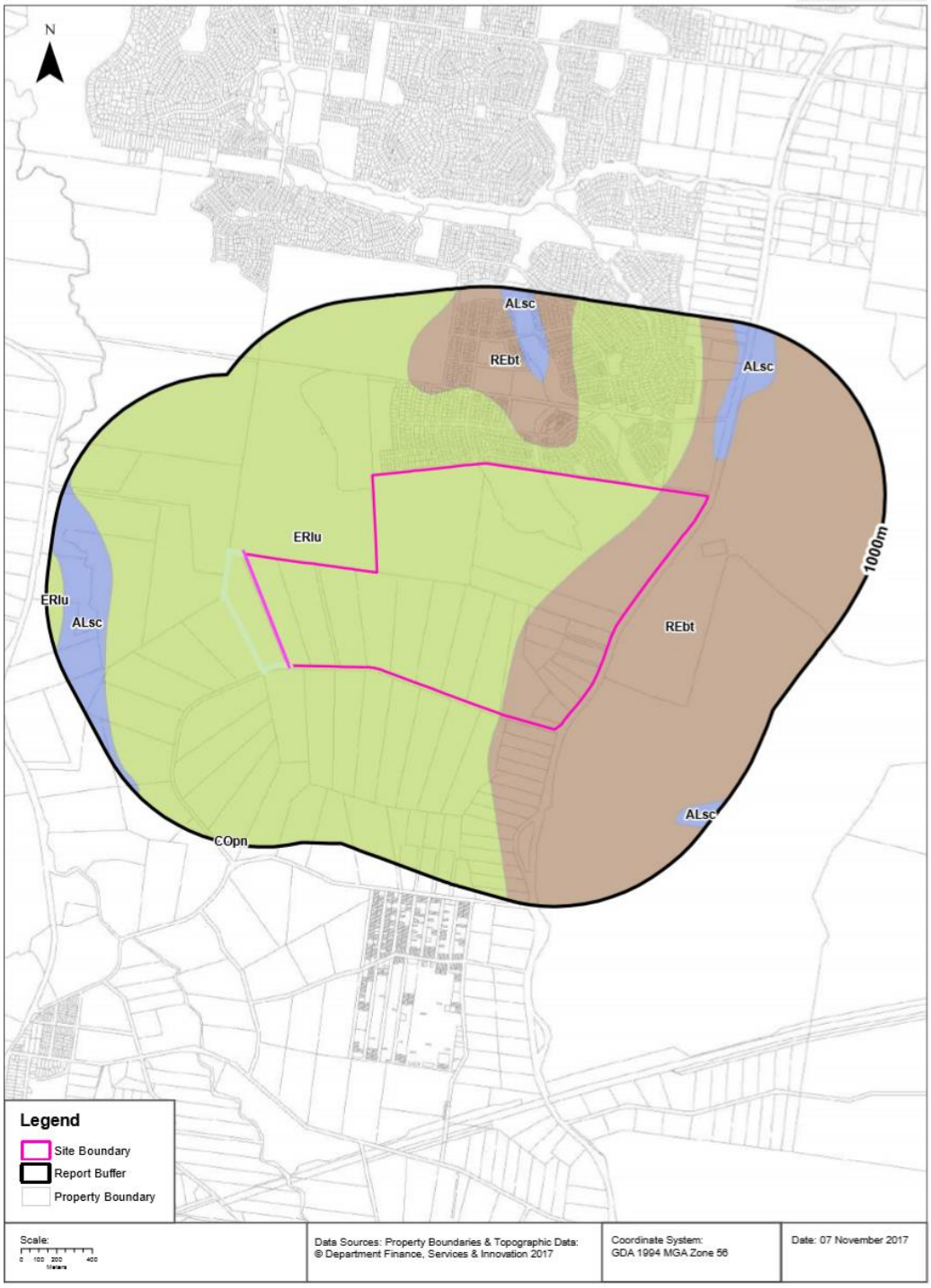

Figure 4 Soil landscapes on site

3.3 Acid Sulfate Soils

SESL undertook a search of the Atlas of Australian Acid Sulfate Soil Categories which revealed that the majority of the site had an Extremely Low (1-5%) probability of occurrence of Acid Sulfate Soils, while the western section of the site had a Low (6-70%) probability of occurrence of Acid Sulfate Soils. Based on the risk maps, geology, soil type and elevation, SESL considers that acid sulfate soils are highly unlikely to be present within the investigation area.

3.4 Salinity

SESL undertook a search of salinity and confirmed the site is mapped having feature ID as 274 which represents an area of moderate salinity potential. If realised this would make the land Class 4. See Figure below.

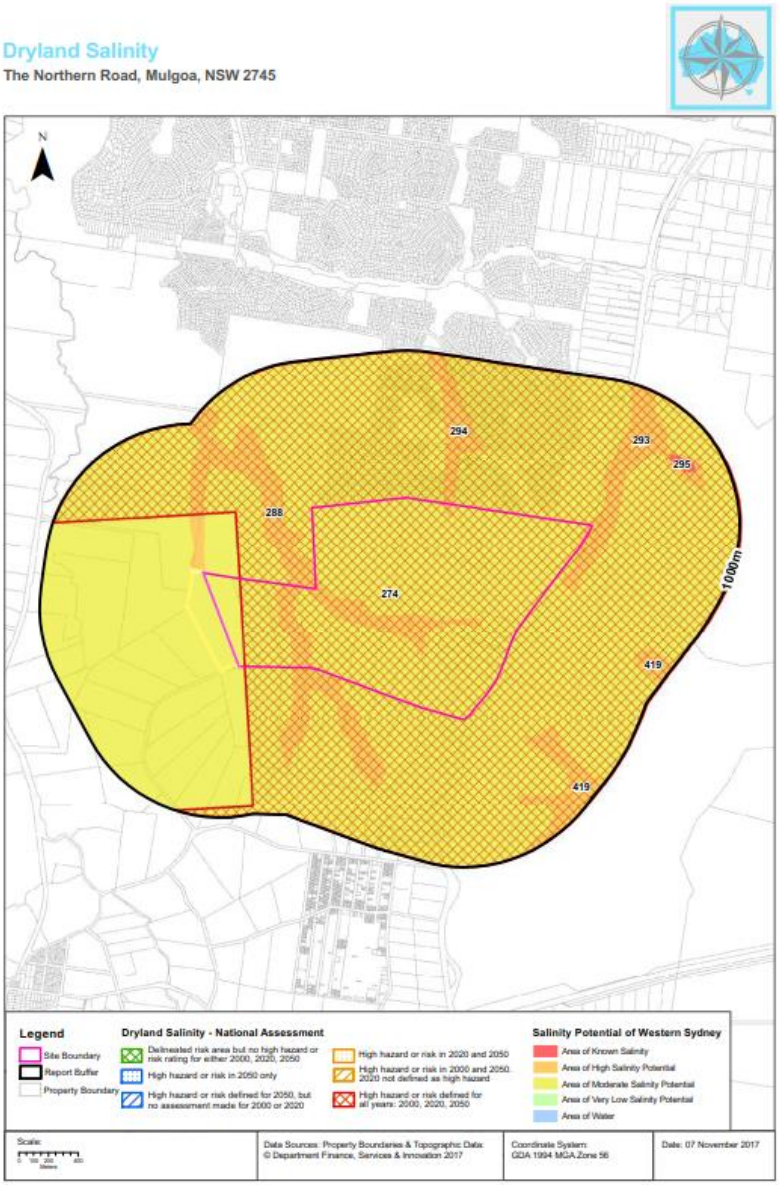

Figure 5 Salinity

Based on the above, the site the subject of the Planning Proposal has an estimated Class 3, i.e. well suited to grazing including use of improved pastures, cultivation limited to cash or forage crop in rotation with pastures. Limitations to production include shallow, stony or eroded soils. There may be localised areas of Class 4 land based on slope.

The potential productivity of the land is additionally constrained by its fragmentation. There appears to be only 3 parcels that are using the land for agricultural production by cultivation or grazing.

It is estimated that the Sydney Region (excluding Wollongong, Gosford, Lithgow and Wingecarribee LGAs) has approximately 150,000ha of Class 3 land (AgEconPlus:2014, p13). Even if all the site was used for agricultural production (which it clearly is not), the rezoning of this land would comprise approximately 0.14% of Class 3 land in the Sydney Region. The existing fragmentation and lack of bona fide agricultural production on a large number of sites reduces further the contribution this site makes to this land category.

4 Agricultural Conflict

The most significant agricultural enterprises on the Planning Proposal parcel include one intensive market garden, one small orchard and one residue parcel used for grazing. With the rezoning, these uses will progressively give way for urban development removing agricultural conflicts.

Agricultural conflict from existing agricultural operations outside the site is limited. The only land potentially used for agricultural purposes is to the south and west of the site on Chain-O-Ponds Road. This land is zoned E3 Environmental Management under Penrith LEP 2010 with a 10ha subdivision size. The land uses to the north are residential, to the west is a nature reserve and Landfill site and to the east on the other side of The Northern Road is owned by the Defence Establishment.

Figure 6 below is an aerial photograph showing land on the southern side of Chain-O-Ponds Road. This area is primarily rural residential in nature and there appears only one lot used for small scale orcharding set well back from the road. It is unlikely that the range of conflicts typically associated with close agriculture and urban land uses will be an issue.

Figure 6 Aerial photograph highlighting orcharding south of Chain-O-Ponds Road

5 Conclusion

The land is fragmented and has limited agricultural production at present. The slope of the land and other constraints make the land estimated as Class 3, but is likely Class 4 in localised steeper areas.

There is an estimated 150,000 ha of Class 3 land in the Sydney Region. If all of the land subject to the Planning Proposal was utilised for agricultural production, rezoning would result in a loss of 0.14% of the total Class 3 land available for agriculture.

There are no immediate agricultural uses on adjoining land to the south opposite on Chain-O-Ponds Road that would raise issues with agricultural conflict.

6 References

Bannerman SM and Hazelton PA. (1990), *Soil Landscapes of the Penrith 1:100,000 Sheet map and report*, Soil Conservation Service of NSW, Sydney

Clarke, M and Ronning,D (2014). *Agricultural investigation of a proposed urban development site - Campbelltown LGA*. Commissioned by S and A Dzonnick, Sydney, Australia: AgEconPlus

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