

Landscape Character and Visual Impact Assessment

Oxley Ridge Residential Development
South Creek West Sub-Precinct 5 & Adjoining Landholdings
COBBITTY, NSW

prepared for:



Always Consulting Pty Ltd

Project Ref: 19-24
Revision B - 27.09.24

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1 Introduction

1.1 Definitions

<i>The subject lands</i>	a. South Creek West Cobbitty Sub-Precinct 5 Release Area b. Heartfruit Ave (Lot 212 DP 1281016 but not limited to) c. Wainwright Drive (Lot 25 DP1288963 but not limited to)
<i>The subject site</i>	The proposed development on Oxley Ridge (within a.b. & c. above.)

1.2 Background

distinctive Living Design were engaged by the project managers, Always Consulting Pty Ltd, on behalf of the landowners, to undertake a Landscape Character and Visual Impact Assessment (LVIA) to investigate the visual impacts of residential lots backing onto Oxley Ridge from both aspects of the dominant ridge.

The lands under review are located in conjunction with The Northern Road, in the suburbs of both Cobbitty and Bringelly. The subject lands are located within the Camden Local Government Area (LGA), and measures a total area of about 195 Ha. For the purpose of this report, the subject lands consist of 3 identified zones. Firstly, the primary area to the north is known as *South Creek West Cobbitty Sub-Precinct 5* (urban release area). Sub-precinct 5 sits to the west of Oxley Ridge, and is currently under a well-advanced planning proposal assessment for a range of land zonings concentrated around a small Local Centre with expansive public open space amenity. The other 2 areas are associated with existing residential subdivision to the east of the ridge. They shall be known as the *Heartfruit Avenue Site* and the *Wainwright Drive Site* representing proposed subdivision lands backing onto the ascending ridge and tied to the existing development and road structure in place. The subject lands sit on undulating terrain, steep in parts, flat in parts, rural pastoral landscape that has been cleared mostly with evidence of previous livestock grazing and some erosional degradation. Scatterings of endemic trees are evident throughout the pasture mainly to the west but a larger grouping of trees exists to the east.

On the subject site, featuring Oxley Ridge, a new water storage reservoir facility is under construction characterised by two giant 25 megalitre water tanks on the highest elevated zone of the ridge. The ascending slopes are dominated by an infestation of African Olive weed vegetation covering a considerable area on the upper slopes and crest. Most notably the subject lands are located within a regional road corridor (The Northern Road) and within close distance to the regional urban centre of Oran Park Town.

This LVIA has been prepared by Mark Santangelo (Registered Landscape Architect #1951), and endorsed by Dean Boone (Expert Witness & Director) of distinctive Living Design.

1. Spatial Information Exchange NSW - September 2024
2. Camden Council, 2010, Local Environmental Plan (LEP)

1.3 Purpose of the Report

The aim of this report is to analyse the landscape visual character, conduct a visual sensitivity assessment, and test the visual impacts of C4 Environmental Living residential living allotments backing onto the ridge incline, and provide context to the broader regional scenic Landscape. *Specifically, the report will;*

- Map the existing landscape, visual and scenic qualities of the site and surrounding area;
- Assess the subject lands in relation to the landscape values and landscape visual connections to the immediate and broader landscape;
- Provide a landscape analysis and visual sensitivity survey that will inform the current rezoning application under review;
- Provide generalised visual impact ratings of the proposed development on the Ridge;
- Identify areas which are considered suitable or not suitable for development from a scenic and landscape amenity perspective;
- If suitable, provide any mitigation measures on how the proposed development could be improved from a visual and landscape perspective;
- Provide detailed recommendations and timeframes for mitigation applications.

1.4 Regional and Local Context

Regionally, the subject lands are sited within the South West Growth Area (SWGA) sanctioned by the NSW State Planning structure of the broader Western Parkland City (WPC). It lies centrally within the Camden Local Government Area (LGA), within both the suburbs of Cobbitty and Bringelly. The subject lands lie on the urban fringe of current development construction encroaching from the south as part of the zoned Oran Park Land Release Area. To the north the Lowes Creek Maryland release area is undeveloped however has been green light rezoned with construction to follow in the near future. To the east the Pondicherry release area is under planning review but not yet approved for rezoning. South Creek West sub-precinct 5 is also under planning review and forms the vast majority of the subject lands referred to in this report. The subject lands are 1.5km north-west of the Oran Park Town Centre. They are immediately west of The Northern Road arterial commuter corridor linking Camden to Penrith via the emerging Western Sydney Aerotropolis. 3.8km to the west is the Nepean River and floodplain landscape, including Cobbitty Creek, that remain mostly undeveloped rural farming lands. These lands are beyond the western extent of the SWGA, meaning the subject lands will not interface with concentrated development to the west. Cobbitty Hills including the Cut Hill Ridegline provide the most elevated visual landscape feature directly to the west. 2km to the east is the primary South Creek riparian corridor. Further west lies the Burragorang Conservation Area and the Blue Mountains plateau rising above it as the dominant geological formation visible on clear day from any elevated position in the Camden LGA.

Locally, the subject lands relate to 4 key east-west sub-arterial roads; Cobbitty Road to the south, Maryland Link Rd No.2 to the north, and traversing the site will be Dick Johnson Drive and Maryland Link Rd No.1. To the south-east, the subject lands have a direct interface with the Oran Park North sub-area capturing the Arcadian Hills development. This zone captures the two areas subject to the assessment of this report (*Heartfruit Avenue* and *Wainwright Drive Sites*). Two (2) State Heritage listed items are located in close proximity to the lands, both to the north (Maryland House) and to the south (Denbigh House). The dominant Ridge group is known as *The Northern Road Ridgelines* that Oxley Ridge (subject site) falls within.

See Figures 1.2 and 1.3 Regional and Local Context Diagrams

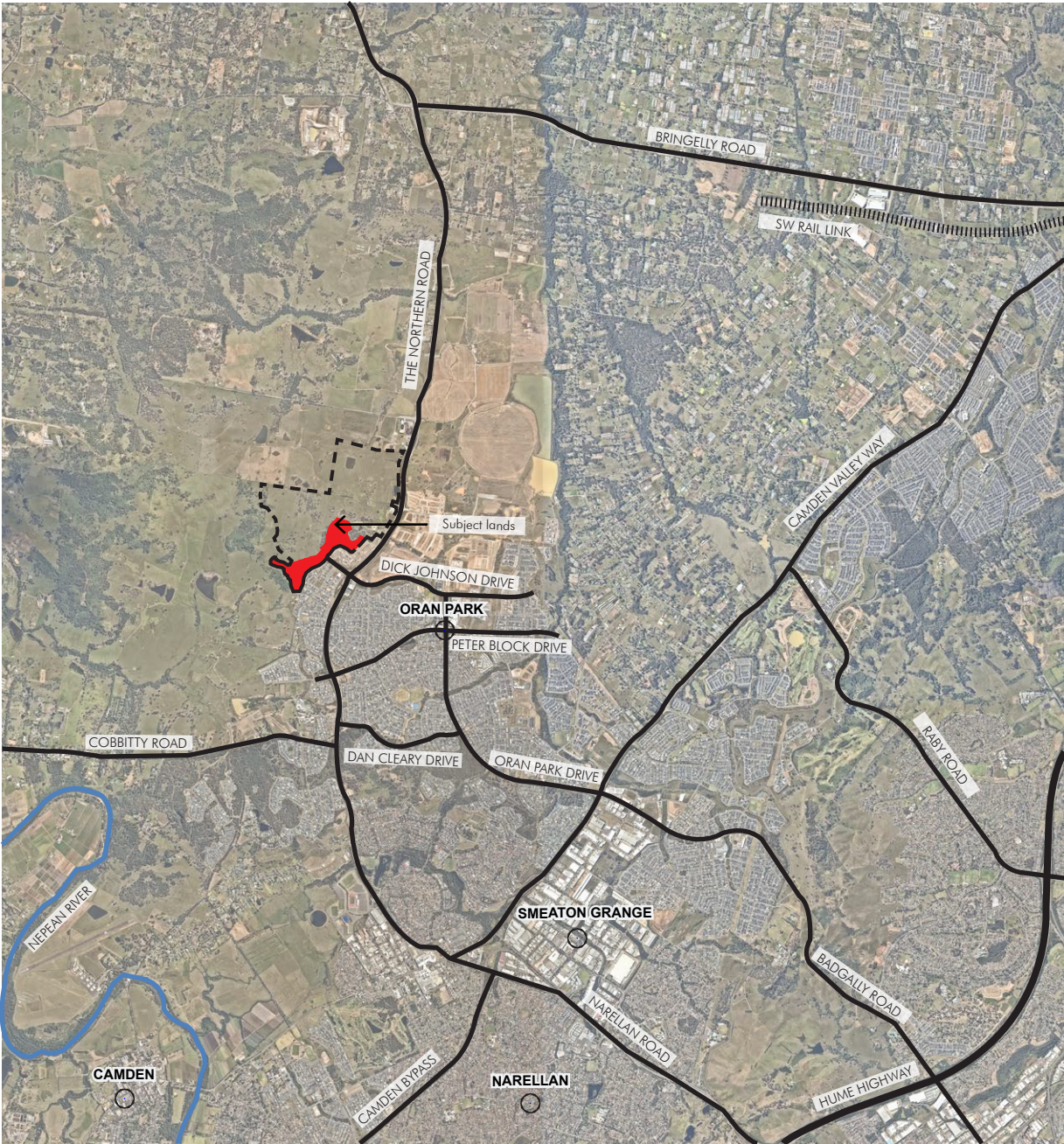


Figure 1.1 Location Map (Nearmap, 2024)

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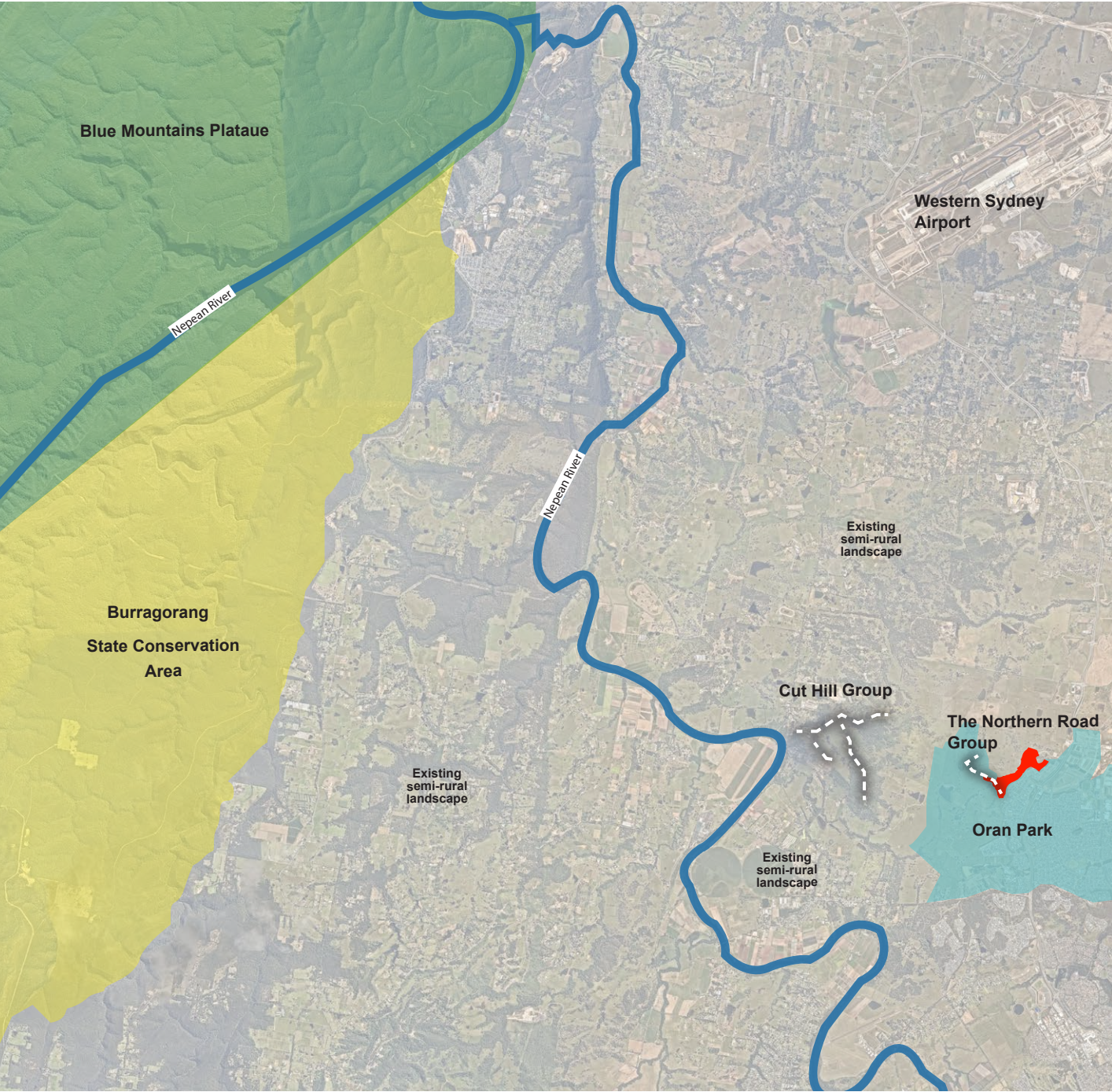


Figure 1.2 Greater Regional Landscape Character Diagram (Nearmap, 2024)

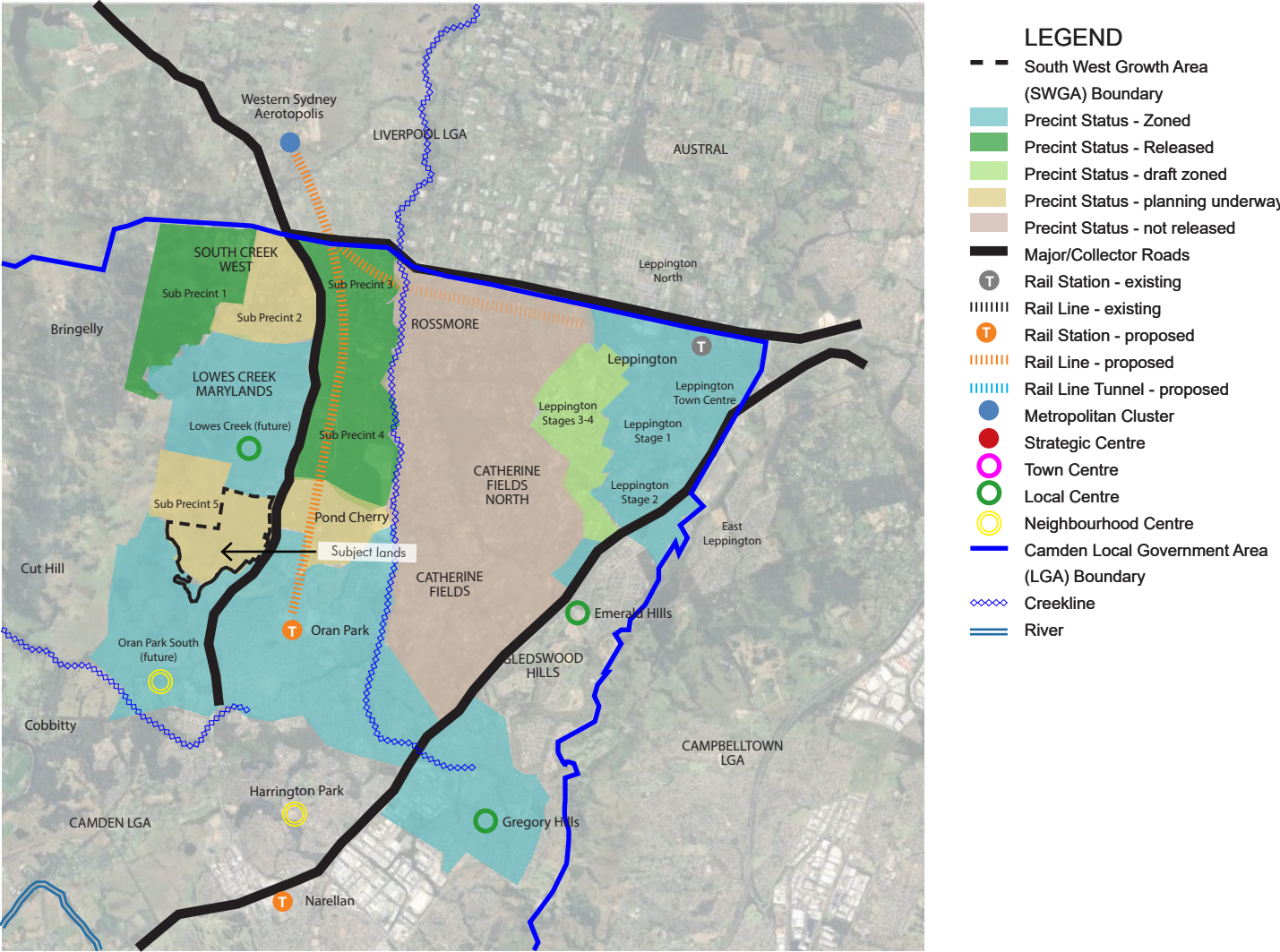
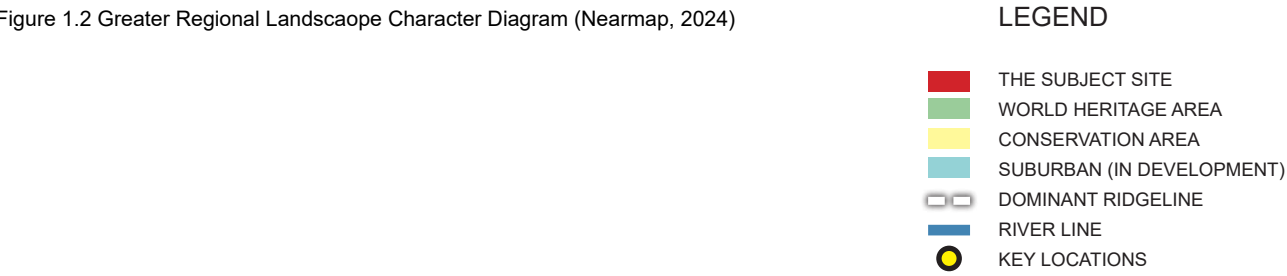


Figure 1.3 Regional Context Diagram (Nearmap, 2024)



1.5 Understanding Visual Amenity

Other than the *Scenic Hills Cultural Landscape*, which is not applicable to this site, Camden Council does not have a visual amenity policy or specific guideline that outlines how visual amenity is assessed and responded to in the local character of Camden. A draft study is currently in production at the time of this report, but not publicly accessible. We therefore rely on two (2) expert sources recognised by the NSW Land & Environment Court; 1) *Professional skill set, training, obtained by of bachelor qualification of Landscape Architecture*; and 2). *The industry standard and methodology structure set out by the Governing Body, Australian Institute of Landscape Architects (AILA)* – refer to 1.8 Methodology.

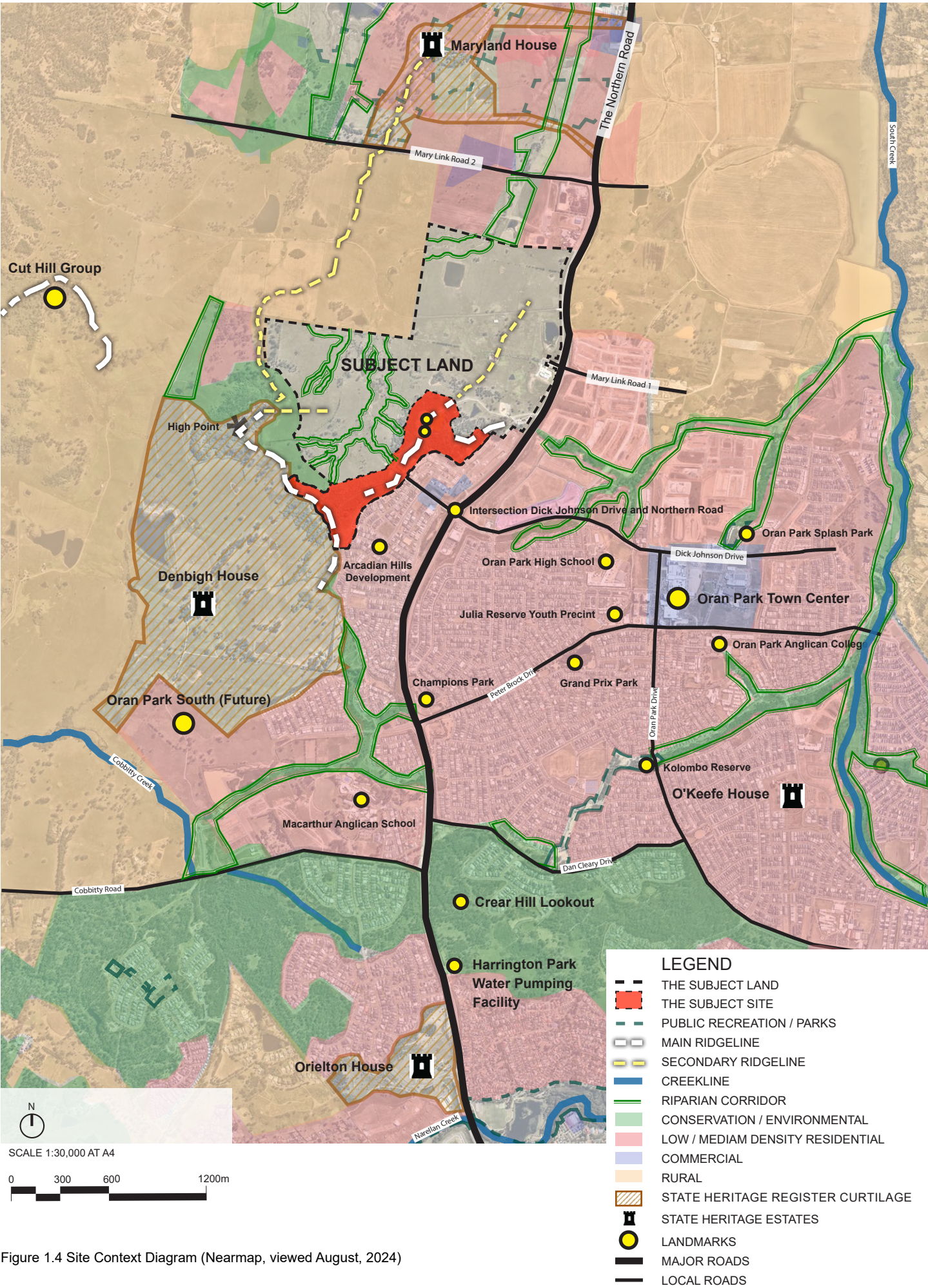


Figure 1.4 Site Context Diagram (Nearmap, viewed August, 2024)

1.6 Existing Zoning

Under the *Camden Local Environment Plan 2010* zoning of the subject lands (SP5) are RU1 (Primary Production)². A re-zoning application prepared by URBIS is currently under assessment with proposed land zoning of C2, C4, E1, MU1, R2, R3, RE1, and SP02 proposed. On the northern side of Oxley Ridge, the subject site is zoned C4 Environmental Living. On the southern side of Oxley Ridge, the subject site is also zoned C4 Environmental Living limiting any lots on those lands to a minimum of 2ha. These allotments will allow a building envelope for each dwelling house. The adjoining lands are zoned R1 (General Residential). This recognises the need to assess the subject site on a merits basis and that further planning studies and assessment, including this Landscape Character and Visual and Impact Assessment, is needed to enable determination of the subject site in terms of potential suitability for the proposed development and any preservation of any areas or views.

See Figures 1.4

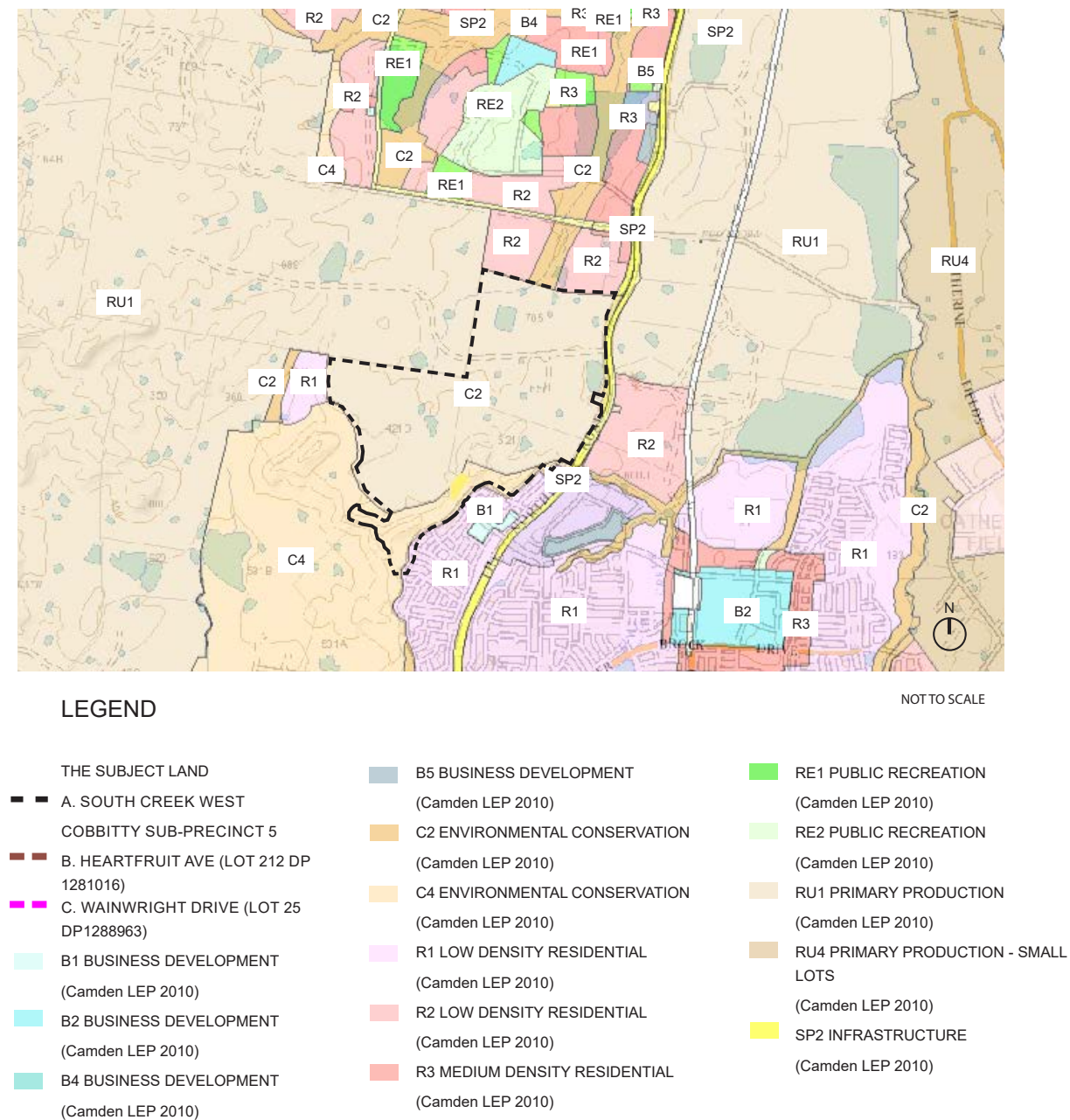


Figure 1.5 Subject Land Zoning Map - LEP 2010 (NSW Planning Portal, viewed August, 2024)
Source: Adapted from Camden City Council 2010 & NSW Planning Portal

2. Camden Council, 2010, Local Environmental Plan (LEP)
8

1.7 Landscape and Visual Impact Objectives

- Objective;
- To identify, assess and document the preliminary visual and landscape qualities of the land within the study area;
 - To ensure any proposed development of the land adequately takes into account localised and sub-regional visual impacts;
 - To provide the framework for future landscape management plans that may be required as a result of the outcomes of this study.

1.8 Methodology

The methodology employed is consistent with, and makes reference to, the industry standard for assessing visual amenity, as set out in the *Australian Institute of Landscape Architects, Guidance Note for Landscape and Visual Assessment, 2018*, and as follows:

1.8.1 Landscape Analysis

- Review of available studies of other areas related to the site
- Review of available Camden Council documents relevant to the subject land
- Review climate
- Review of topographical maps and aerial photography
- Review vegetation, soils, and geology maps
- Review fire and flood prone land maps
- Review heritage maps and reports
- Review existing services, easements, and restrictions burdening the lands
- Review any other maps relative to the landscape by any relevant authority or government department, local or state
- Prepare site analysis diagrams including topography, hydrology, aspect, slope, vegetation, and soils & geology, and landscape character
- Analysis the sites existing character

1.8.2 Visual Survey and Impact Assessment

- Detail visual site survey and photography of the subject land from various viewpoints surrounding the subject land
- Identify and map prominent landscape elements
- Examine photographs and plot visibility of the site from the defined viewpoints
- Assessment of each view point to determine the visual sensitivity of viewpoint
- Assessment of each view point to determine the visual impact of the proposed development

1.8.3 Conclusions

- Define all findings that are demonstrated by the Landscape and Visual Impact Assessment process. Provide conclusions for the proposed development.

1.8.4 Recommendations

- Provide any mitigation measures to ensure the landscape and visual integrity of the subject lands and greater sub-regional environment are maintained in the context of the proposed development.

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2 Landscape Analysis

2.1 Site Context

The subject lands are located on farmed agricultural lands, forming a ‘*piece of the zigsaw puzzle*’ that connects to land releases from the south, east, and north. The west of the site demarks the frontier of planned development. A series of mapped riparian corridors on the site link downstream to adjoining landholdings to the north and east. Contextually a grouping of linked ridgelines form part what’s known as *The Northern Road Ridgelines* spreading south of the subject lands providing a physical divide to the Benbigh House historical estate curtilage. Oxley Ridge form part of *The Northern Road Ridgelines* grouping. The two (2) sides of Oxley Ridge (east & west) provide a very distinct divide of the subject lands both visually but also geographically. The two water reservoirs on the hilltop provides a physical and visual presence, landmarking both from within the site and from a distance. The subject lands are anchored by The Northern Road running north-south to directly east of the lands.

See Figure 1.3 Local and Site Context Map

2.2 Climate

The climate at Cobbitty and Bringelly consists of mild to warm summers with a mean maximum of 29.5 degrees celsius in January and mean minimum of 15.1 degrees celsius in December. Winters are mild with a mean maximum of 19.0 degrees celsius in August and mean minimum of 3.0 degrees celsius in July. The annual mean rainfall is 766.5mm with the driest months being July to September with monthly rainfall of about 40mm and the highest rainfall occurring in February of over 100mm per month³.

2.3 Topography and Elevation

The subject lands are characterised by some extremes in topography. Mapped contours indicate elevation ranges between 85m AHD and 145m AHD across the entire site. Oxley Ridge provides the most dramatic topographic incline, although not steep, in a south-west to north-east orientation within the southernmost portion of the subject lands. At 146 AHD, at the highest elevation sits the two giant water reservoirs. Two (2) spurs make up the dominant ridge divided by a ‘saddle’ midway, a notable depression on the ridgeline. For the purpose of this report they are referred to the *Northern Spur* and *Southern Spur*. Several other off-shoots spurs from the dominant ridge are evident providing a dynamic topographic form. The ridge itself does not rise disproportionately high in the surrounding landscape context. Just east of the subject site is a knoll rising above the dominant ridge to 152 AHD. The northern portion of the site (SP05) is characterised by some relatively flat lands sloping northerly towards the creekline. The southern portion of the site (SP5) sit nestled in a topographic ‘valley’ of lower elevated descending slopes, also sloping in a northerly direction. On the other side of Oxley Ridge (*Heartfruit Avenue* and *Wainwright Drive Sites*), the topography is limited to the ascending slopes rising to the ridge crest.

See Figure 2.1 Topography & Elevation Analysis Diagram

2.4 Hydrology

The concentration of hydrological features is in the western portion of the site, on the SP5 lands. The surrounding protruding ridges surrounding the ‘valley’ as described in 2.3 *Topography and Elevation*, resulting in corresponding drainage lines, starting from minor 1st order riparian corridors higher up in the catchment to 3rd order riparian corridor running centrally in ‘valley’, all showing signs of erosional degradation. Two (2) catchments are evident, firstly to the west and north and shaped by the ‘valley’ providing the greater land area catchment. Secondly the pocket of land in the far east drainage to the largest farm dam and pushing east under The Northern Road. A series of constructed farm dams are extensive on the site, ranging in size from small to very large. These are primarily on the eastern portion of the site, on lower less sloping land, away from the concentrated riparian corridors. On the other side of Oxley Ridge (*Heartfruit Avenue* and *Wainwright Drive Sites*), only minor drainage lines are evident draining east into the existing residential catchment system.

See Figure 2.2 Hydrology Analysis Diagram

2.5 Aspect and Slope

As identified in section 2.2 *Topography and Elevation*, the subject lands exhibit a strong defined south-west to north-east protruding ridgeline (Oxley Ridge), and minor gullies running perpendicular to this. Consequently, this translates into a predominantly strong north-westerly aspect range (W-NW-N) on the western side of the Ridge, and south-eastern aspect range (S-SE-E) on the eastern side of the ridge. Slope on the ridge slopes are strong, ranging from 15 to as steep as 25 %. Strong aspects and steep slopes, as characterised here, generally strengthen the visual exposure of the landscape from the opposing direction, in this case from both the North-west and South-east. In the topographic ‘Valley’ in the western portion of the site captures the full range of dominate aspects except South, as the valley opens up and levels out towards the south. Slopes here are moderate, ranging from 5 to 15%. The northern and eastern portion of the subject lands, where topography decreases in scale, aspects again range the full spectrum albeit less so from the South. Slopes here are minor, ranging from 5% to shallower than 5% in some parts.

See Figure 2.3 Aspect Analysis Diagram
See Figure 2.4 Slope Analysis Diagram

2.6 Soils and Geology

Bty – Blacktown – Residual (Erosional); The landscape is typically characterised as having low hills and rises, with extensively cleared woodland on Wianamatta Group Shale (shale, sandstone lithic and sandstone quartz) in the Cumberland plain. Local relief 10-50m; Slopes 0-9%; rock outcrop nil. The soil is composed of Red Kurosols (Red and Brown Podzolic Soils), Red and Yellow Sodosols (Soloths), Yellow Chromosols (Yellow Podzolic Soils), Red Chromosols, Red Dermosols and Red Ferrosols (Krasnozems) on iron-rich parent material. The vegetation is comprised of dry sclerophyll forest, dominated by Shale Plains Woodland. It has a generally smaller tree stratum, a shrub stratum and groundcover stratum. Land use is diverse, including grazing pasture, productive growing, orchards/cropping, rural residential, urban, and industrial. There is increasing pressure for more urban development in this landscape. Land degradation includes some saline scalds that occur mainly at breaks in slope and in lower slope positions where drainage has been significantly altered.⁷

Luz- Luddenham – Erosional; The landscape is characterised as having low hills on Wianamatta Group Bringelly Shale (shale, sandstone-lithic and siltstone/ mudstone) in the Cumberland Plain. Local relief 30-100m; altitude 10-404m; slopes 5-20%; rock outcrop nil; extensively cleared woodlands. The soil is composed of Red Kurosols and Chromosols (Red Podzolic Soils) on crests and slopes, Red Kandosols (Red Earths) on sandstone members, Brown Sodosols (Yellow Solodic Soils) on foot slopes and lower slopes and Brown Dermosols on siltstone/mudstone members. The landscape has a mixture of Shales Hills Woodland and Shale Plains Woodland (NPWS, 2000) Land use in this area is dominated by improved pastures, but there is

significant urban and rural residential development. On less steep slopes (<10%) there is vegetable and vine growing, there are also small areas of parkland. Land degradation includes moderate gully erosion on steep slopes. Sheet erosion is moderate, slopes are unstable and mass movement can occur. There are small patches of salt in low lying, lower slope positions.⁷

See Figure 2.5 Geology Analysis Diagram
See Figure 2.6 Soils Analysis Diagram

2.7 Vegetation

The subject site is largely cleared agricultural land (approx. 85%) on shallower sloped lands, particularly in the eastern sections of the site higher in elevation. Agricultural lands present pastoral grasslands in terms of vegetative cover. Grasses range relating to past practices on specified fenced paddocks. Exotic grass cover is predominated in the northern portion of the site, while the remaining southern portion of the site is predominately Native Grassland (CPW derived). Canopy vegetated land (approx. 15%) exists on the subject lands within two (2) landform characters; *Firstly*, in a distinctive ‘band’ correlating to the dominate ridgelines, namely Oxley Ridge on the subject site, on the steeper slopes excluding the saddle, particularly on the northern, western, and eastern sections of the ascending slopes, and dominated by problematic weed infestations of African Olive. Dotted throughout the infestation are native trees towering above the weed canopy; *Secondly* are non-contiguous ‘patches’ of good rated Cumberland Plain Woodland (CPW), on the northern and southern slopes of the minor ridge descending from the dominant ridge. On the lower less steep slopes further non-contiguous ‘patches’ of good rated CPW exist and somewhat relating to the water courses (riparian and drainage lines) and steeper, less suitable grazing land. (reference: *Ecological Australia, Biodiversity Assessment, South Creek West Precinct 5, 5th April 2024*)⁶. Formalised identification, significance, and health of any endemic vegetation within the subject site (not within SP5 covered by the abovementioned ecologist report) is however for ecological assessment by a qualified Ecologist. The potential risks of bushfire (pre-development) affect the site and are mapped according. Post development impacts would be limited to vegetated riparian zones (VRZ) and any vegetation maintain on Oxley ridge to preserve the ridgeline values.

See Figure 2.7 Vegetation Analysis Diagram
See Figure 2.8 Bush Fire Prone Land Analysis Diagram

2.8 Easements, Services, Restrictions, Heritage

Electricity Transmission Easement
An energy provider manages a 60m wide easement for 330kV above ground transmission lines (poles and wires) crossing the central portion of the subject lands in an east-west orientation. A series of large stanchions mark the landscape where the transmission lines run.

Building Height Restrictions
The current planning proposal for SP5 currently under assessment, identifies zoning and related building heights. The local centre nominates a maximum height of 22.9m, while adjoining medium density residential nominates 12.9m. All other areas of low density residential have a 9.9m maximum building height.

Water Reservoir & Treatment Plant
Two (2) 25 megalitre tanks constructed of steel sit on the Oxley Ridge hilltop within a water treatment facility owned and operated by Sydney Water. A service road straddles the ridge (Oxley) from Dick Johnson Drive up to the facility.

See Figure 2.9 Easements, Services, and Restrictions Analysis Diagram
See Figure 2.10 Building Height Analysis Diagram
See Figure 2.11 Heritage Analysis Diagram

4. Bureau of Meteorology - August 2024
5. Strahler System - August 2024

6. Sharing and Enabling Environmental Data in NSW, (2015)

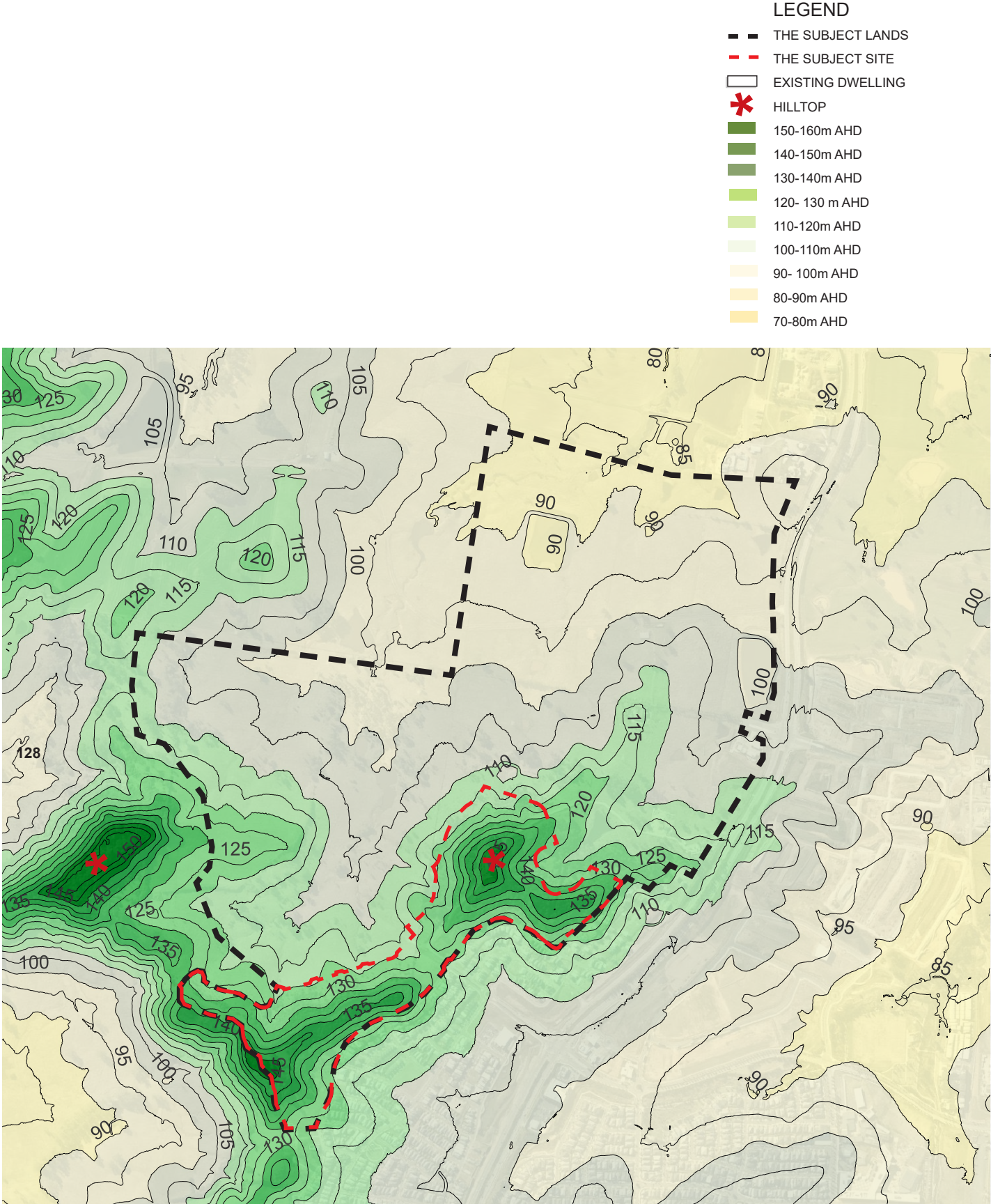


Figure 2.1 Topography & Elevation Analysis Diagram (Nearmap, viewed 04 September,

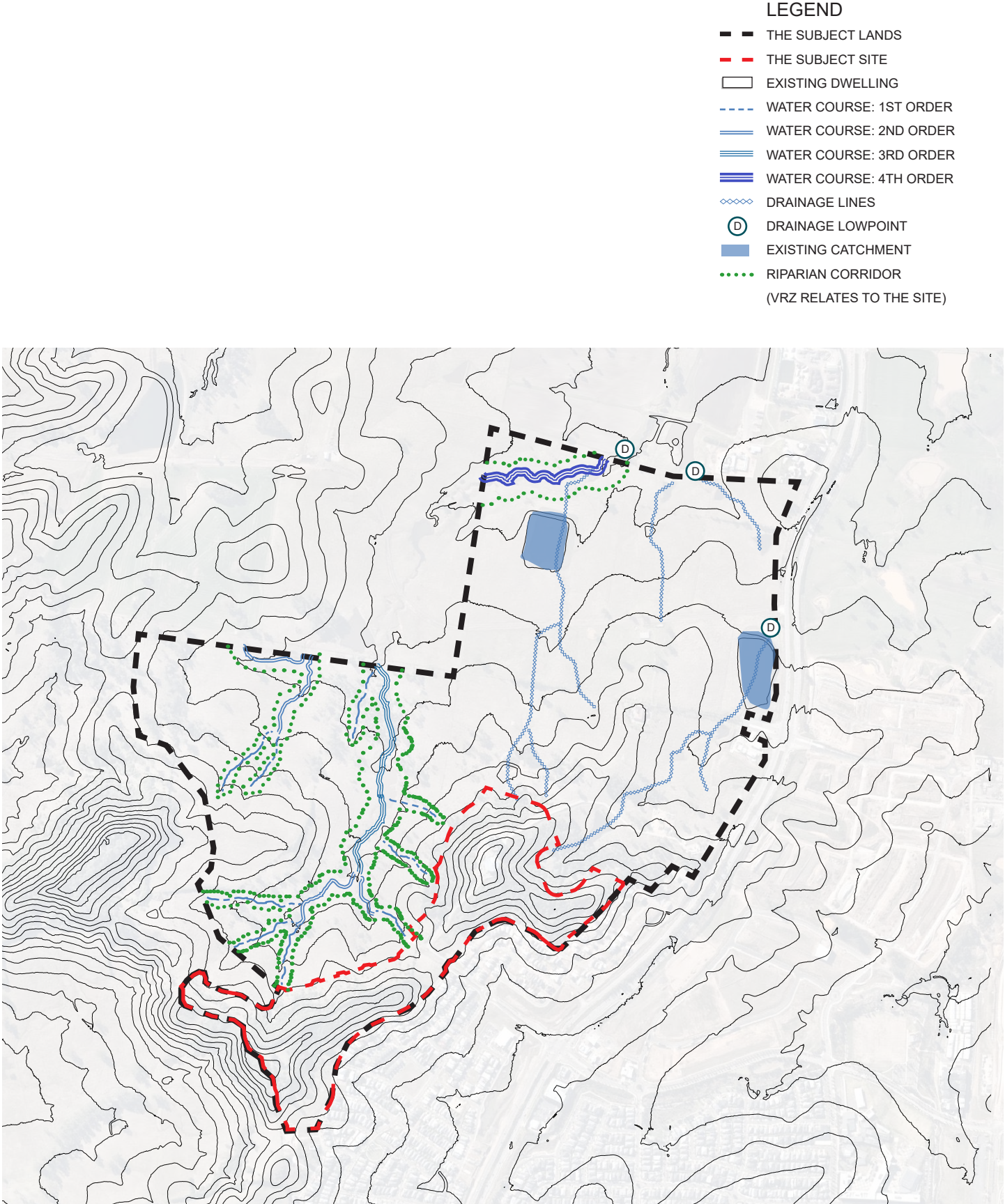
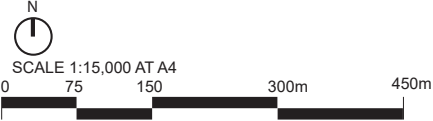


Figure 2.2 Hydrology Analysis Diagram (Nearmap, viewed 04 September, 2024))



LEGEND

- THE SUBJECT LANDS
- THE SUBJECT SITE
- EXISTING DWELLING

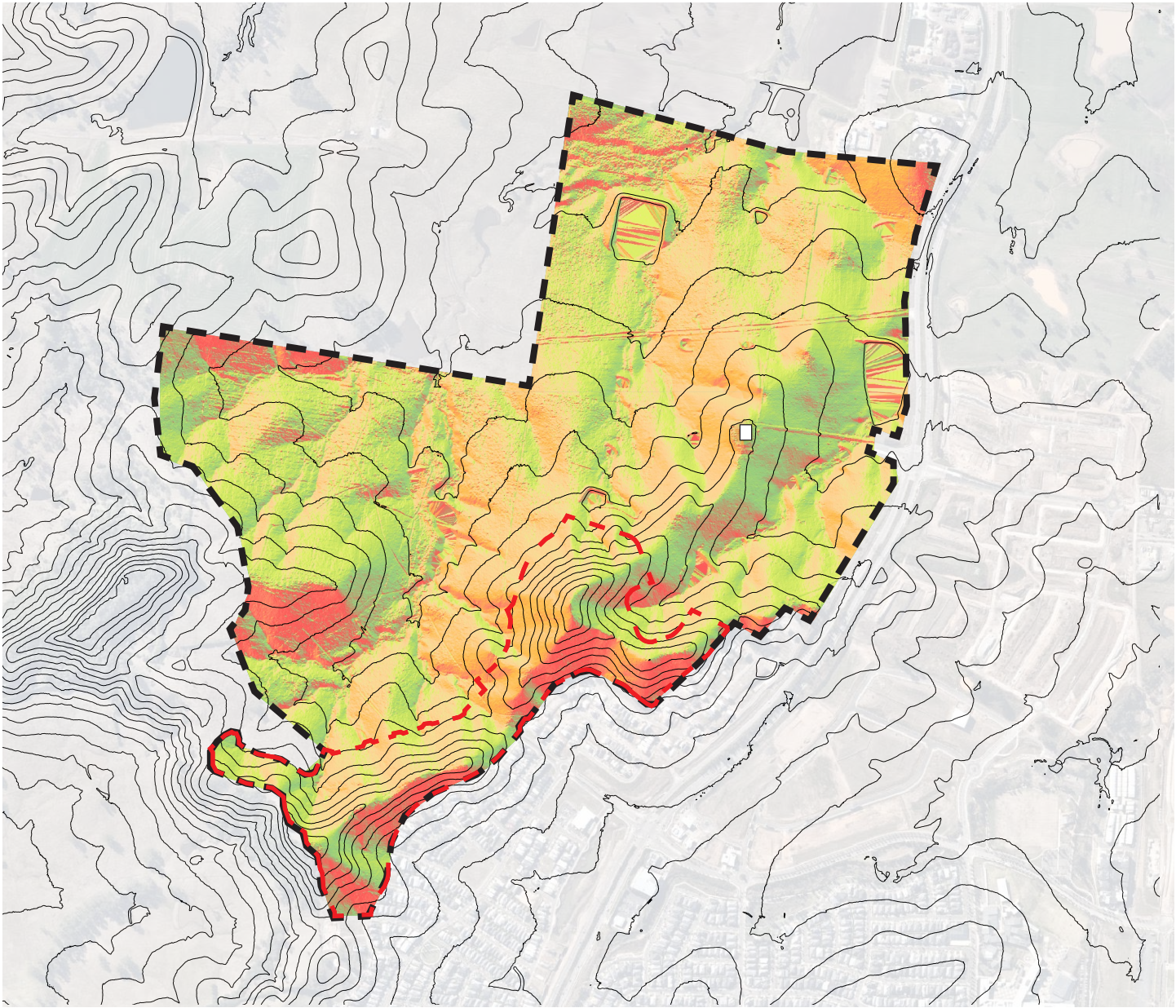
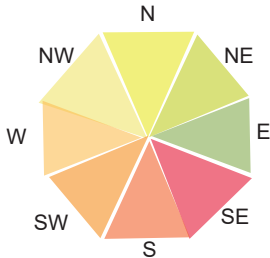
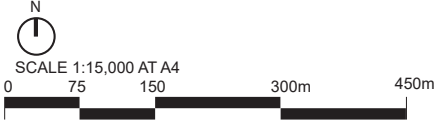


Figure 2.3 Aspect Analysis Diagram (Nearmap, viewed 04 September, 2024)



LEGEND

- THE SUBJECT LANDS
- THE SUBJECT SITE
- EXISTING DWELLING

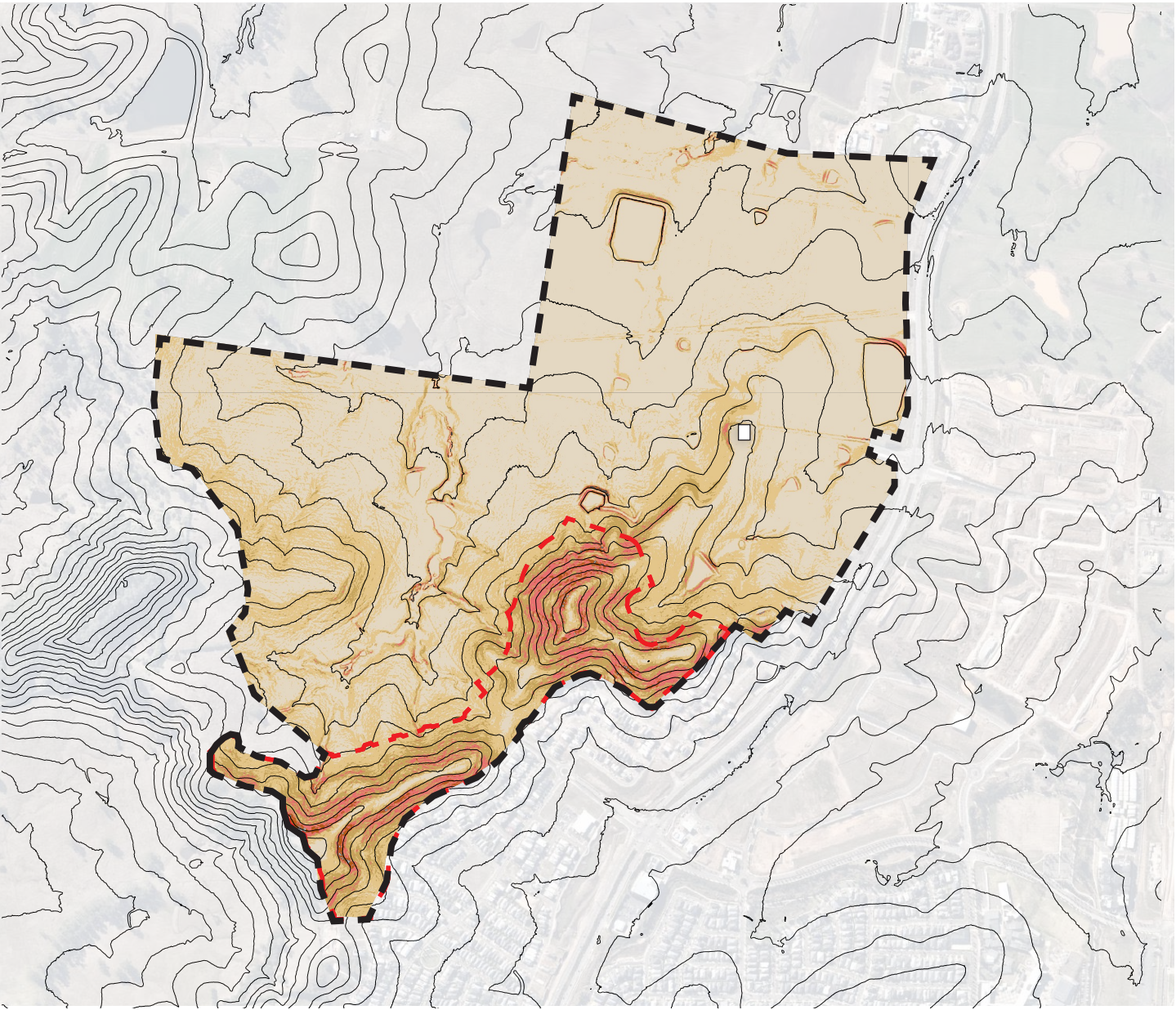
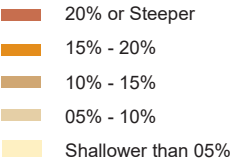
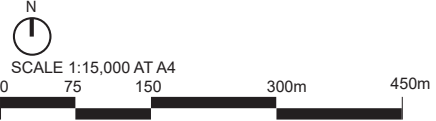


Figure 2.4 Slope Analysis Diagram (Nearmap, viewed 04 September, 2024)



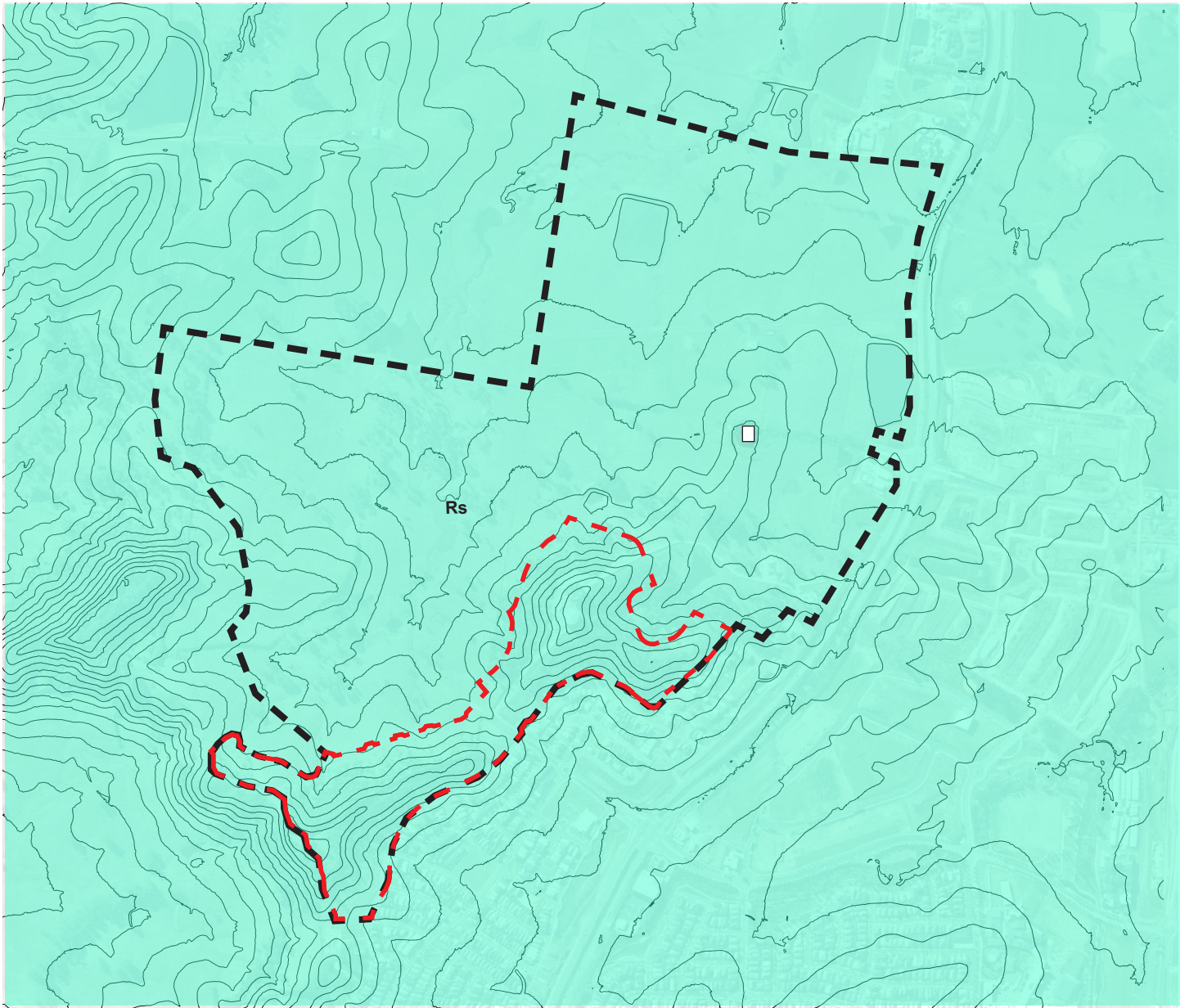
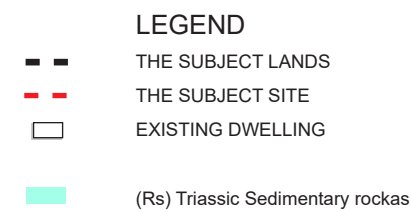


Figure 2.5 Geology Diagram (Nearmap, viewed 04 September, 2024)
Source: Adapted from Geoscience 2021

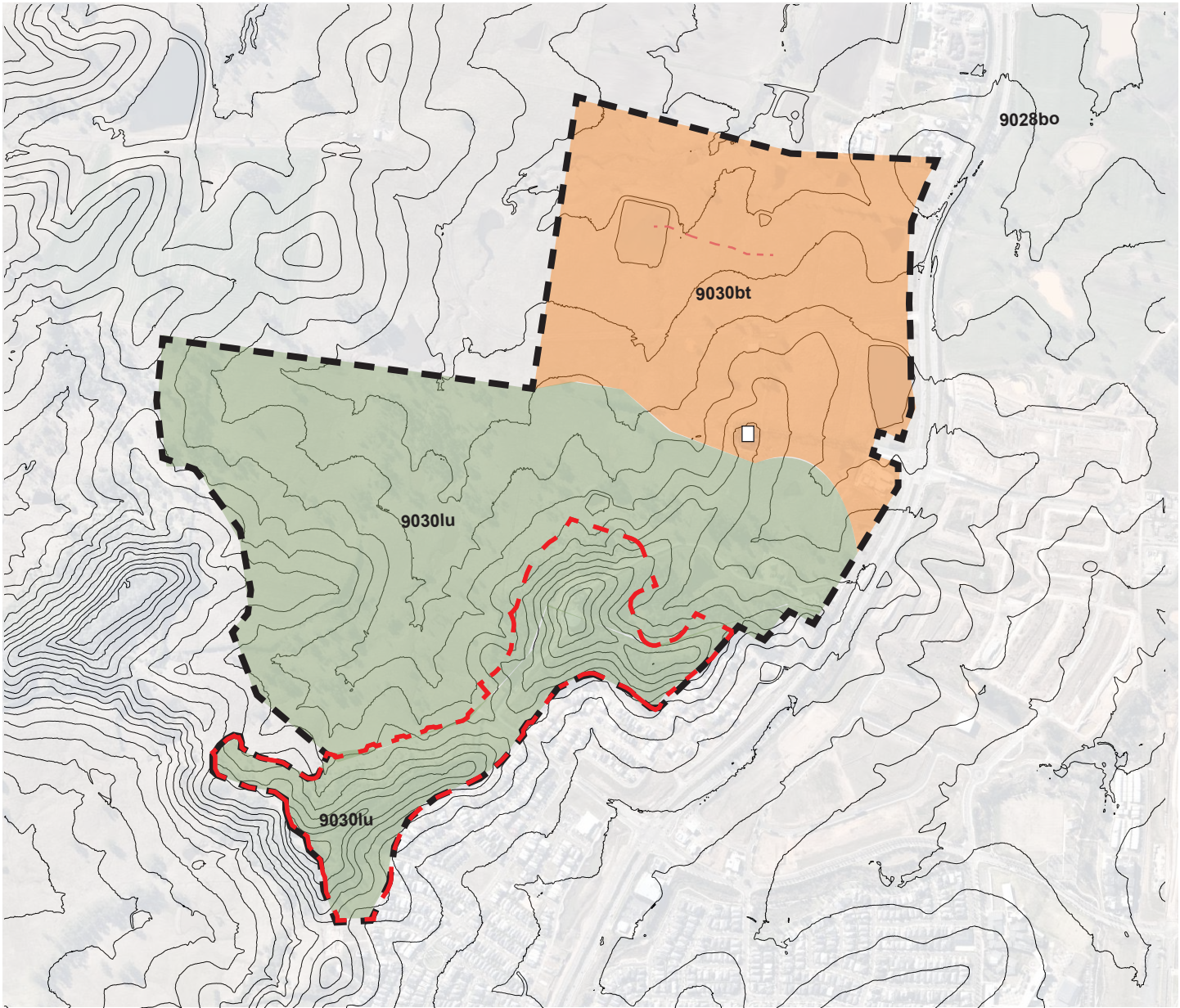
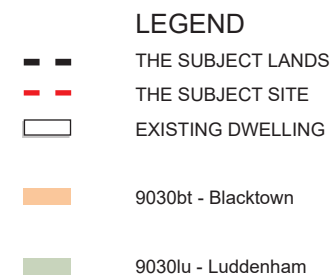
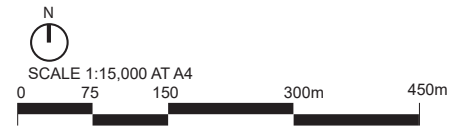
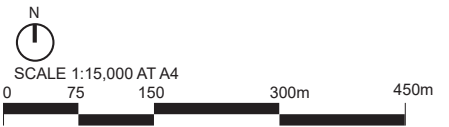
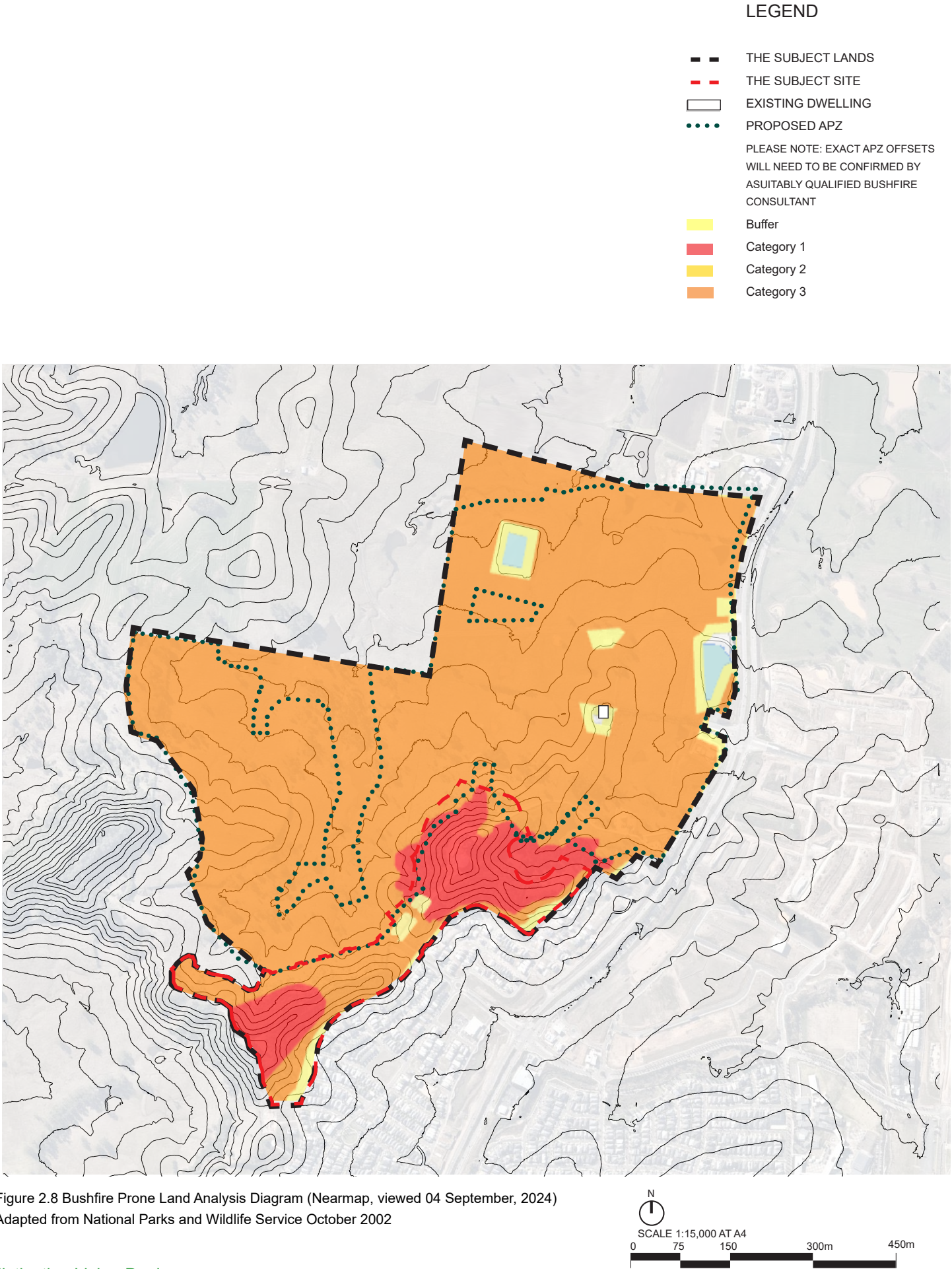
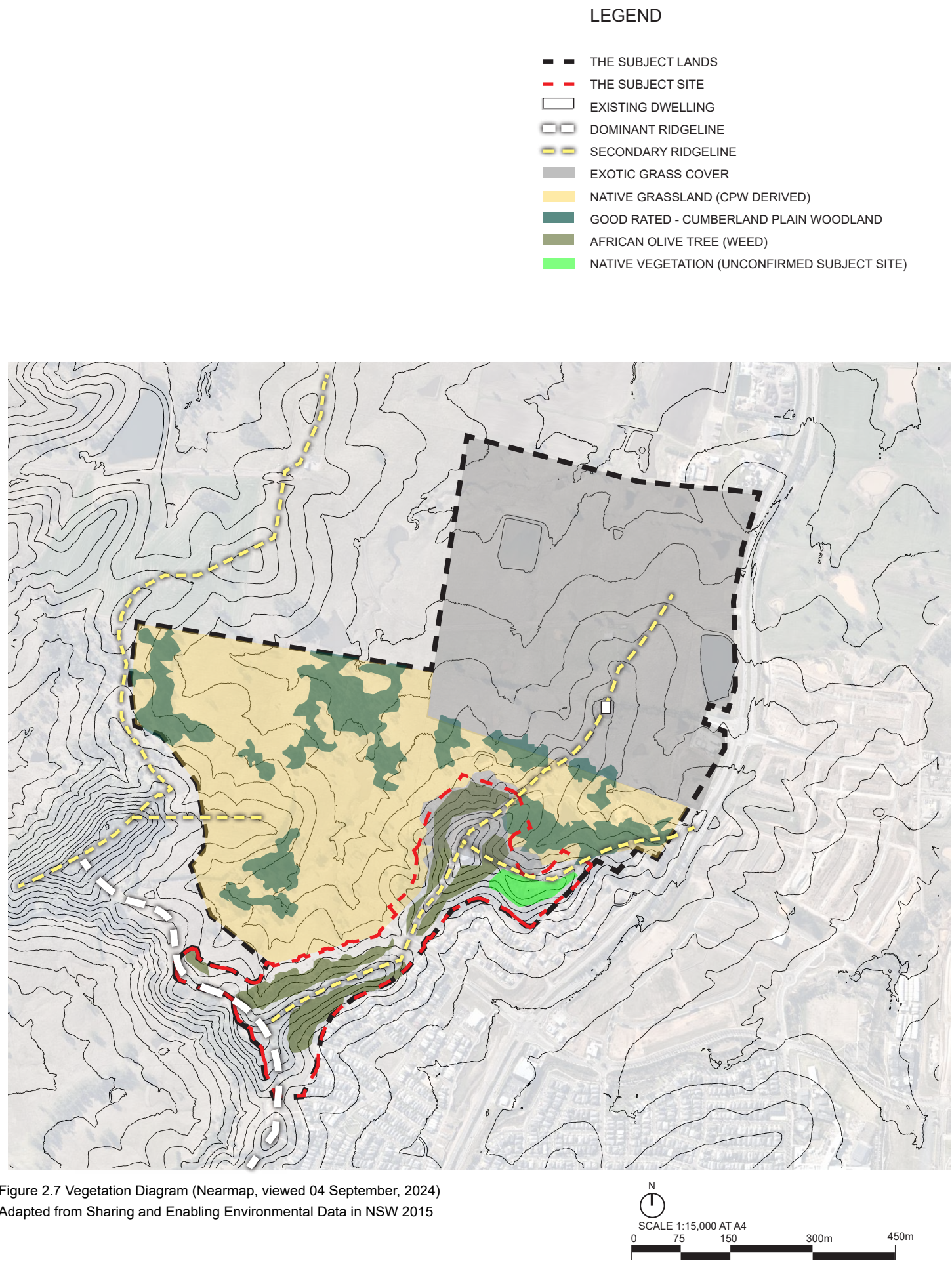


Figure 2.6 Soils Diagram (Nearmap, viewed 04 September, 2024)
Source: Adapted from eSPADE 2020





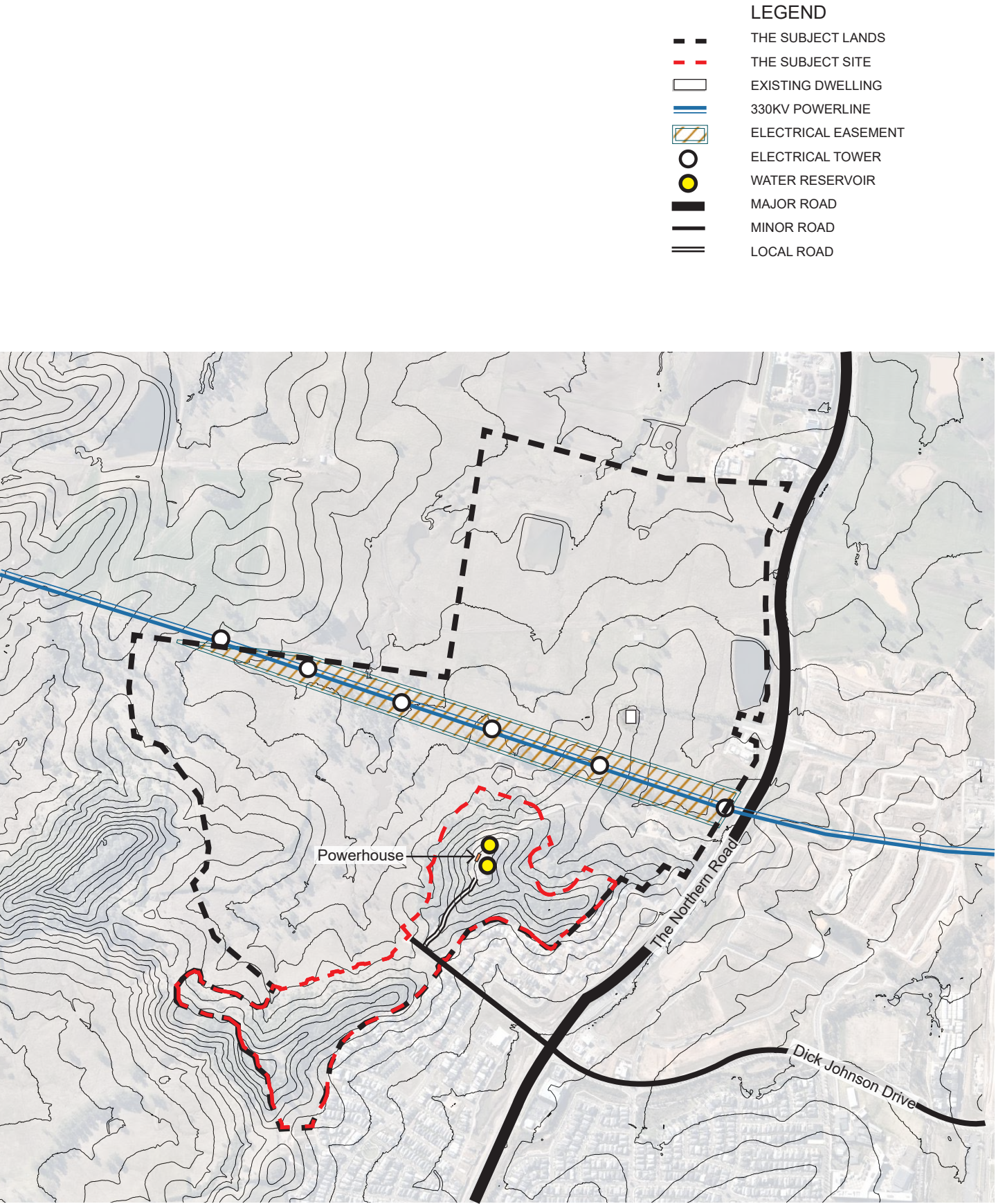


Figure 2.9 Easement, Services and Restrictions Diagram (Nearmap, viewed 04 September, 2024)
Adapted from Sharing and Enabling Environmental Data in NSW 2015

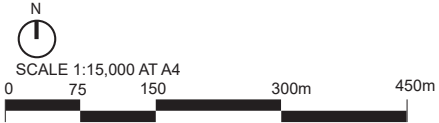
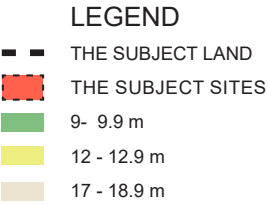
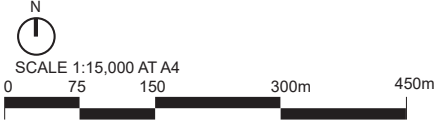
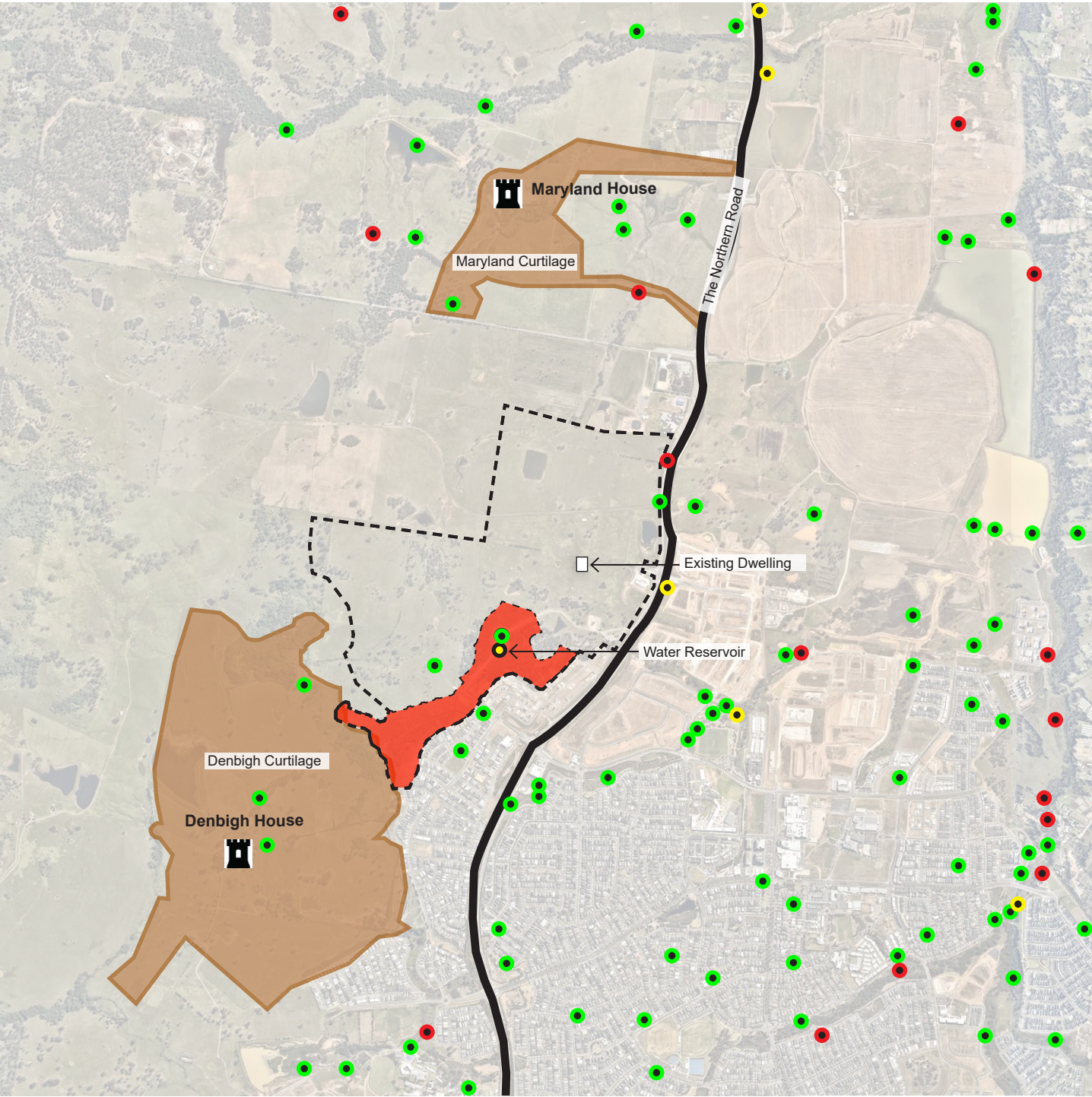


Figure 2.10 Building Height Restrictions Diagram (Nearmap, viewed 04 September, 2024)



LEGEND

- THE SUBJECT LANDS
- THE SUBJECT SITES
- NSW STATE HERITAGE ACT CURTILAGE
- NSW STATE HERITAGE ITEMS (EUROPEAN)
- ARTEFACT (ABORIGINAL)
- ARTEFACT, POTENTIAL ARCHEOLOGICAL DEPOSIT (ABORIGINAL)
- POTENTIAL ARCHEOLOGICAL DEPOSIT (PAD) (ABORIGINAL)

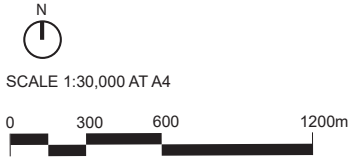


Figure 2.11 Heritage Diagram
Source: NSW Planning Spatial Viewer, 2024

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2.9 The Proposed Development

The proposal seeks to provide a suitable subdivision of C4 zoned land on the ascending slopes of Oxley Ridge, both from the west side (*SCW Sub Precinct 5*) and the east side (*Heartfruit Avenue and Wainwright Drive Sites*). Building envelopes located on the low side of lots would ensure built form is less visually bearing on the ridgeline particularly from distant views, as houses would be constructed below the ridge crest. On the eastern side of the ridge an existing local road structure would service all lots from the low side of the slope, and integrate with the residential fabric of adjoining low-density housing. On the western side of the ridge, the same scenario is proposed where the street network of *CW Sub Precinct 5* would service from the low side of the slopes.

See Figure 2.12 Indicative Subdivision Layout Plan

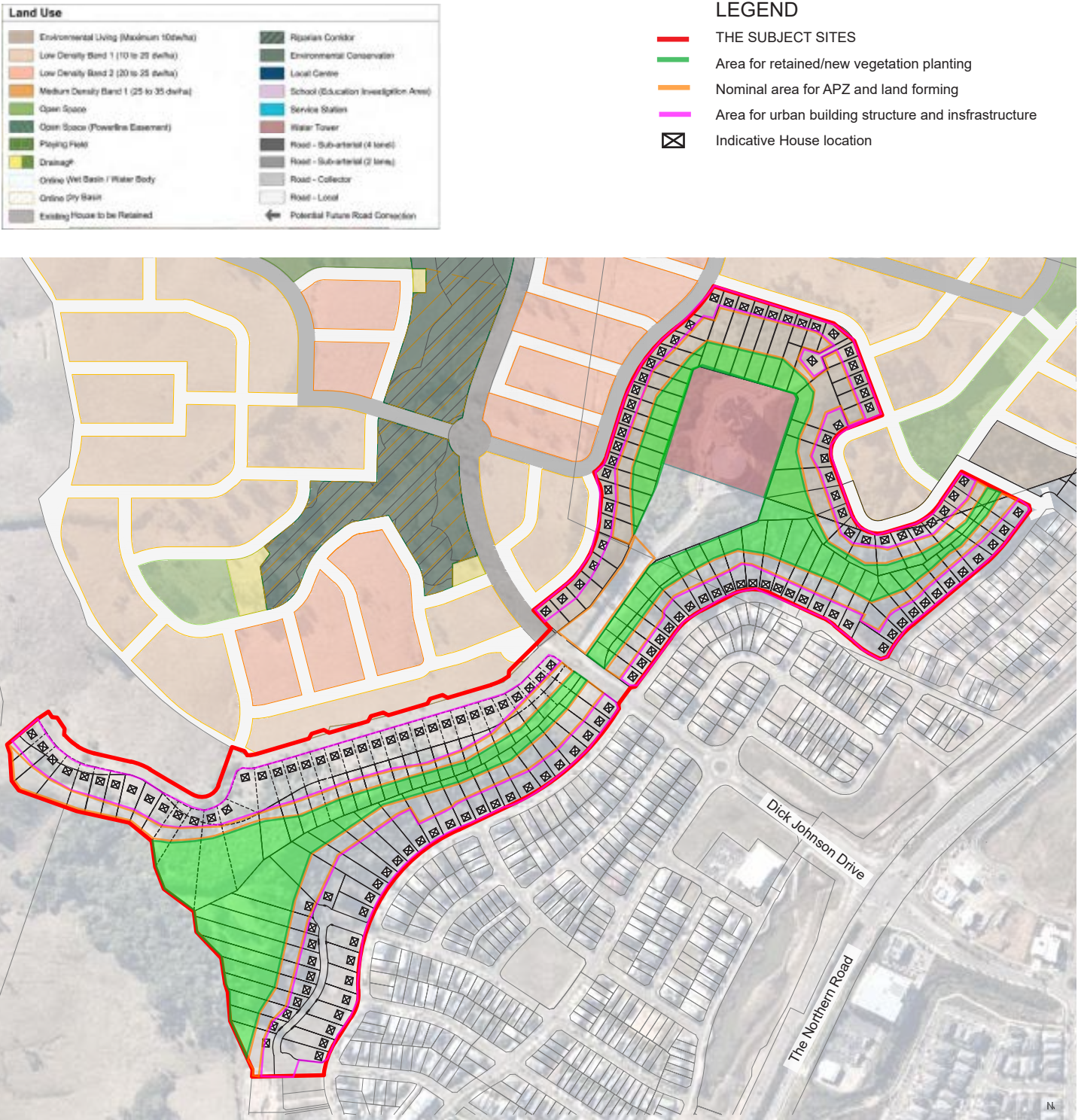


Figure 2.1 The Proposed Development Plan
Maker Engineering, (Concept Layout & Constraint Plan) 09.11.21

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3 Visual Survey and Impact Assessment

3.1 Terminologies

- Viewpoint** - The specific location of a view used for assessment purposes.
- Receptor** - A place, route, viewer audience or interest group which may receive an effect and require assessment.
- Viewshed** - Areas visible from a particular location (may be modelled or field-validated).
- Visual Amenity** - The attractiveness of a scene or view.
- Visual Sensitivity** – The ability of a view to absorb change relative to the visual amenity and relationship of key scenic protection areas, heritage, and any other valuable landscape or built structure or urban form.
- Visual Representation** - Graphic representation of a proposal in context showing its likely appearance and scale. Not applicable in this VIA
- Photomontage** - An accurate visual representation of a proposal from a particular receptor viewpoint, on a photographic base.
- Scenic Amenity** - A measure of the relative contribution of each place to the collective appreciation of the landscape. The term scenic amenity has a specific meaning to a combination of visual exposure and scenic preference.
- Magnitude of Change** - The extent of change that will be experienced by receptors. This change may be adverse or beneficial. Factors that could be considered in assessing magnitude are: the proportion of the view / landscape affected; extent of the area over which the change occurs; the size and scale of the change; the rate and duration of the change; the level of contrast and compatibility.
- Mitigation** - Measures to avoid, reduce and manage identified potential adverse impacts.

3.2 Impact Definitions

- Nil** - No adverse change to the existing visual resource in the landscape and with no viewer response to change in the visual environment ¹⁰.
- Low** - Minor adverse change to the existing visual resource in the landscape, with low viewer response to change in the visual environment. New development may or may not require mitigation using conventional practices such as architectural design, recessive exterior finishes, building height controls, landscaping ¹⁰.
- Moderate** - Moderate adverse change to the visual resource in the landscape with moderate viewer response. Impact can be mitigated within five years using conventional practices ¹⁰.
- Moderately High** - Moderate adverse visual resource change with high viewer response or high adverse visual resource change in the landscape, with moderate viewer response. Extraordinary mitigation practices may be required. Landscape treatment required will generally take longer than five years to mitigate ¹⁰.

High - A high level of adverse change to the resource or a high level of viewer response to visual change in the landscape such that architectural design and landscape treatment cannot mitigate the impacts. Viewer response level is high. An alternative project design may be required to avoid highly adverse impacts ¹⁰.

Reference: The above has been adapted from the US Federal Highway Administration visual analysis methodology for suggested scale of sensitivity/visual impact; US Department of Transportation, Federal Highway Administration, Guidelines for the Visual Impact Assessment of Highway Projects.

3.3 Survey Method

This section of the report concentrates on the visual survey of the subject land and an analysis of the visibility of the site and visual sensitivity from existing adjoining public lands, nearby roads or intersections, important views, landmarks, heritage items, trig points, vista locations, and residential areas. The method used to determine visibility of the site was to undertake a detailed visual survey of the site on a clear day to identify areas around the subject land from where significant views to the site could be obtained.

A number of visually prominent landmark points, such as existing buildings, stanchions, ridgelines, and roads were identified nearby or on the subject land. Viewpoints to the subject land were identified through a broad understanding of the Camden local environment and driving throughout the surrounding areas to ascertain the visibility of the subject land.

Further to this, Camden Council specifically requested 3 viewpoints be studied which capture regional views from some key lookout points on public land. These were, One Tree Hill Lookout, Public Reserve (Orielson House), and Crear Hill Lookout, all within Harrington Park (Viewpoints 9, 10, and 11).

Refer Figure 3.1 Surrounding Landmark Location Plan.
Refer Figure 3.2 Viewpoint Location Plan.

Photographic points were identified and single frame images in landscape orientation were taken looking from the viewpoint towards the subject site. A Full Frame Sensor (FFS) Digital SLR Camera was used to take the photographs. Using a 50mm lens provides a Focal Length of around 22mm, that best represents the human eye, and a Field of View (FoV) of around 60 degrees that captures the full 3-dimentional primary focus of the human eye excluding all peripheral vision. A total of 11 Viewpoints were identified and studied around the subject lands.

Each viewpoint photo was analysed and visible areas of the site and surrounds were noted on a topographic map of the subject land and surrounds.

Each of the topographic plans was then overlayed to determine the most visible areas of the site. The most visible areas being those areas viewed from most viewpoints.

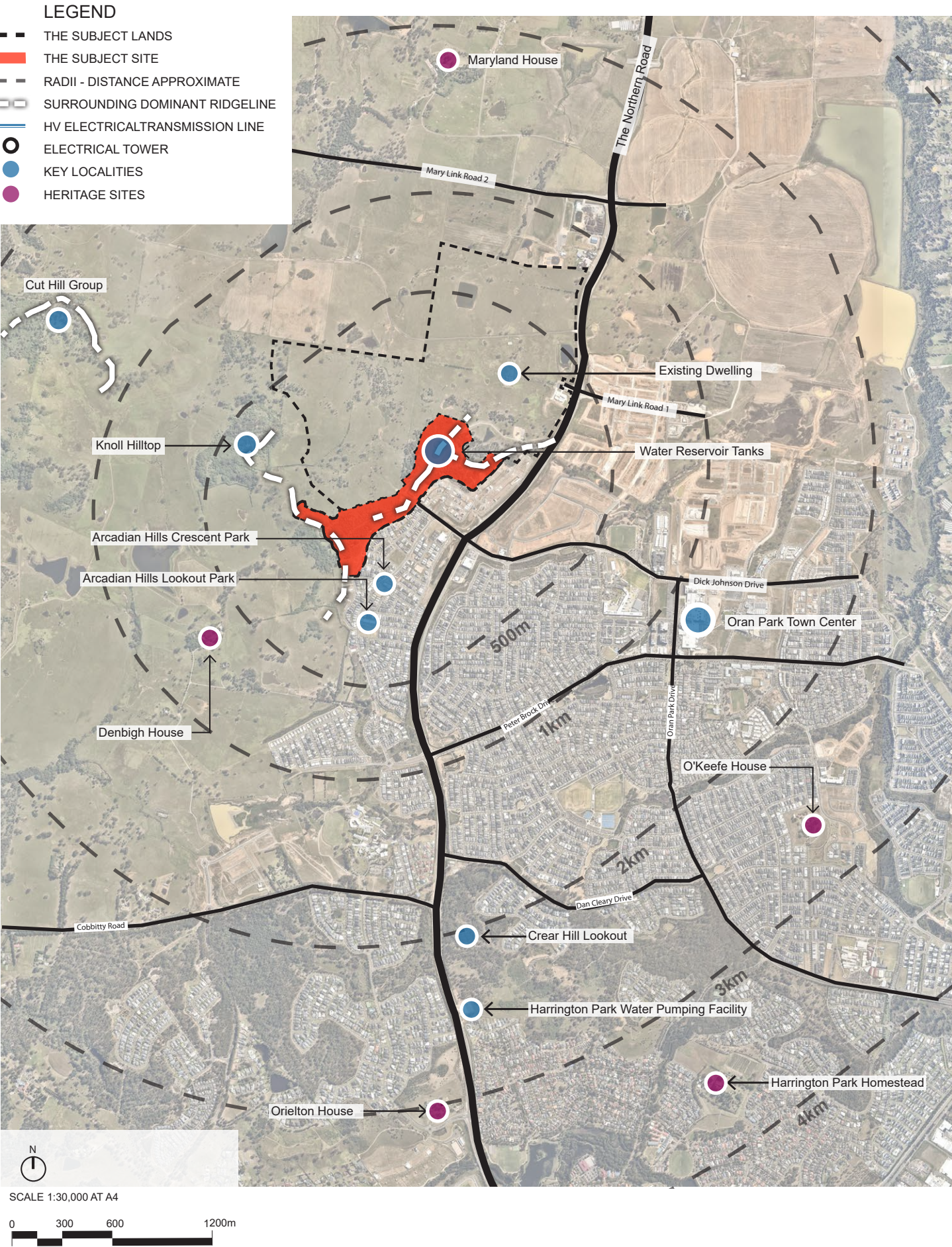


Figure 3.1: Surrounding Landmark Location Plan (Nearmap, viewed 30 August, 2024)

3.4 Identification of View Points

LOCALISED	TO SUBJECT LANDS*
1. The Northern Road (southbound), Bringelly	a.) Ridge West
2. Future Village Centre, Bringelly	a.) Ridge West
3. Future Creek Parklands, Cobbitty	a.) Ridge West
4. Dick Johnson Dr / The Northern Rd Intersection, Oran Park	b.) & c.) Ridge East
5. Arcadian Hills Lookout Park, Cobbitty	b.) & c.) Ridge East
REGIONAL	
6. Denbigh House, Cobbitty	a.), b.) and c)
7. Oran Park Town Centre, Oran Park	b.) & c.) Ridge East
8. Maryland Link Rd (Maryland House) Bringelly	a.) Ridge West
9. One Tree Hill Lookout Harrington Park	b.) & c.) Ridge East
10. Public Reserve (Orielson House) Harrington Park	b.) & c.) Ridge East
11. Crear Hill Lookout Harrington Park	b.) & c.) Ridge East
**	a.) SCW Sub-Precinct 5 Release Area b.) Heartfruit Ave Site c.) Wainwright Drive Site

3.5 GPS Coordinates

1. -33.981302, 150.734209 -33° 58' 53", 150° 44' 3"	7. -33.999379, 150.739870 -33° 59' 58", 150° 44' 24"
2. -33.982711, 150.726201 -33° 58' 58", 150° 43' 34"	8. -33.974884, 150.721322 -33° 58' 30", 150° 43' 17"
3. -33.987670, 150.717597 -33° 59' 16", 150° 43' 3"	9. -34.026001, 150.718978 -34° 1' 34", 150° 43' 8"
4. -33.995201, 150.726342 -33° 59' 43", 150° 43' 35"	10. -34.023267, 150.725195 -34° 1' 24", 150° 43' 31"
5. -33.999820, 150.719945 -33° 59' 59", 150° 43' 12"	11. -34.017441, 150.730376 -34° 1' 3", 150° 43' 49"
6. -34.002633, 150.708840 -34° 0' 9", 150° 42' 32"	

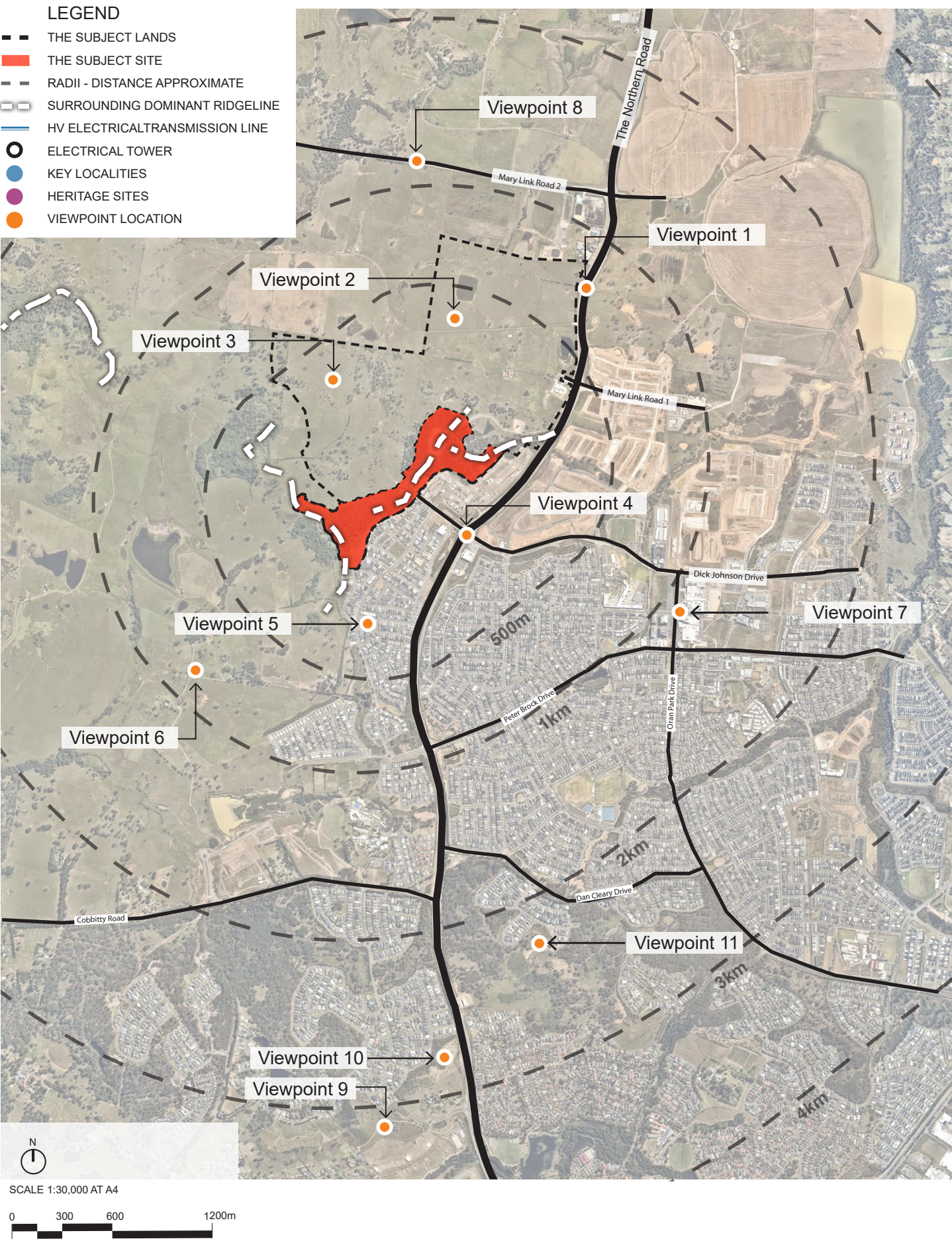


Figure 3.2: Viewpoint Location Plan (Nearmap, viewed 30 August, 2024)

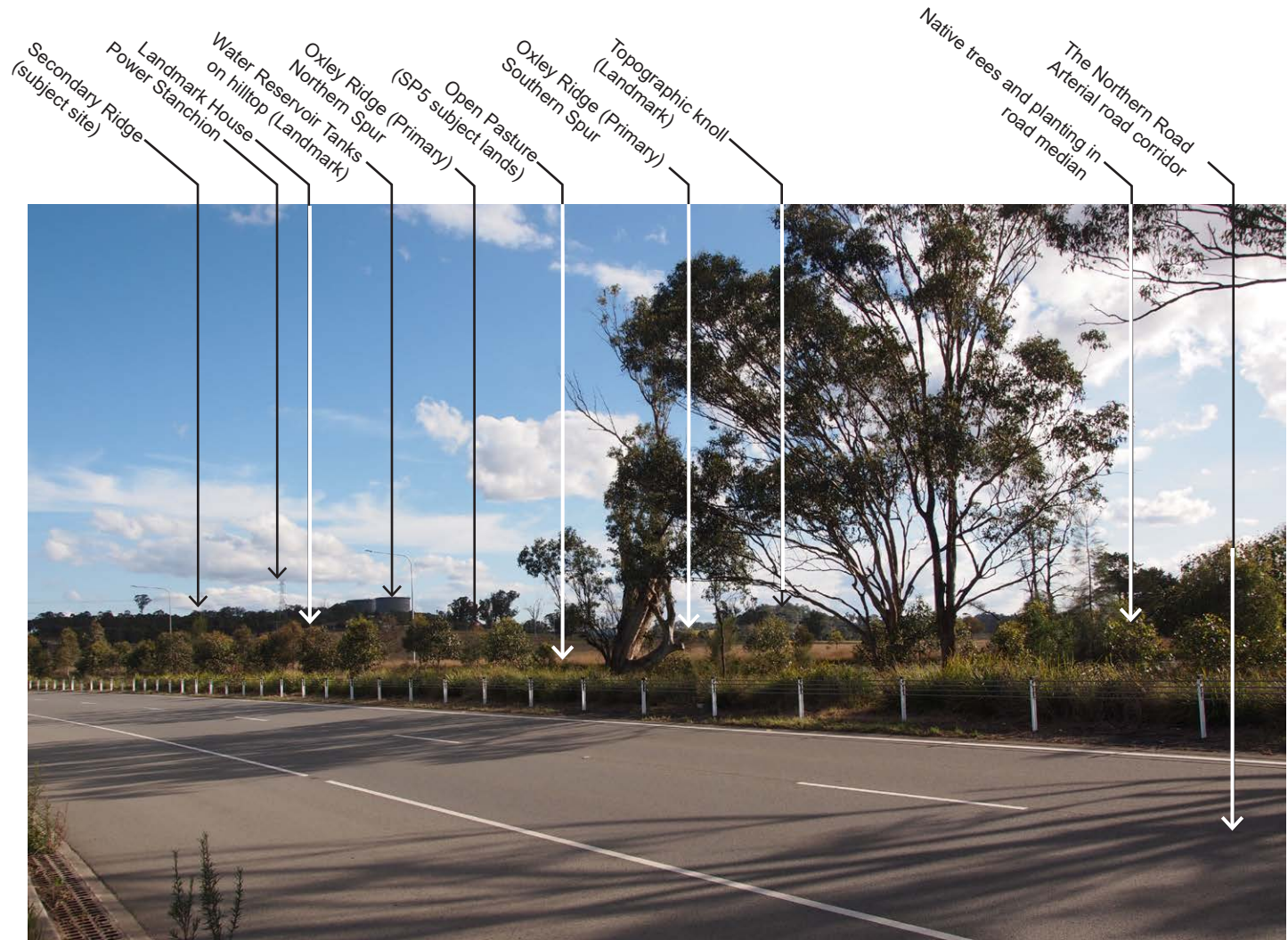


Figure 3.3: Viewpoint 1 Location and Viewshed Diagram (Nearmap, viewed September 2024)

Viewpoint 1 – 900m north-east of subject site from The Northern Road (southbound), Bringelly			
Description of view	Visual sensitivity of view	Visual impact of site development	Rating*
The viewpoint is taken from a southbound direction on the major Arterial route of The Northern Road. A sightline opens up to the south-west through native vegetation in the road median. The road and median can be observed in the foreground. In the mid-ground are the open rural pastoral lands of sub-precinct 5 (subject lands) characterised by gently undulating grasslands, farm dams, stock fences, cattle, and sporadic native trees. The Landmark house can be seen left of view just below the ridge. The transmission easement identified by the stanchion breaching the ridgeline, can be observed running across the viewshed. In the background the dominant Oxley Ridge is observed centre left of view and identified by the two enormous water tanks on the ridge apex of the northern spur. A band of native tree canopies wrapping the Northern aspects (NE-N-NW) of the ridge spur provides ascending vegetative demarking it. To the right of view the topographic knoll on the subject lands can be seen demarking the future Creek Parklands area.	A small portion of the subject site is visible from this viewpoint, primarily associated with the northern spur of Oxley Ridge. The southern spur isn't visible due the viewline direction and sightline being impeded by the topographic position of the northern spur. This viewpoint would be observed almost entirely by southbound motorists (receptor group) as no footpaths or public open space exists along this stretch of the road corridor, and would be limited to a brief glimpse while in motion providing a low exposure rate. Visual sensitivity would in time be diminished, due to the fact the viewshed will capture the new residential dwellings (R2 low and R3 medium density) of sub-precinct 5 on the lower elevated lands. Further, in the local context of this viewpoint, no views other significant scenic landscape or features are captured beyond the immediate dominant ridgeline and therefore visual sensitivity therefore is rated as low.	Views to any lot dwellings on the ascending slopes of the subject site from this location, although distant, will be visible, however likely heavily obscured by the vegetation band of native tree canopies. Dwellings positioned on the low side of lots would ensure built form does not breach the ridgeline diminishing any impacts. Visual impacts are diminished further due to the fact existing residential dwellings (SP5) will be observed in the viewshed, and therefore the Visual Impact is rated as low.	low

*Visual Impact Rating - refer to definitions

Table 3.1 Viewpoint 01 Assessment Table



Extent of Proposed Development
Viewpoint 1 (Photo only)



Viewpoint 1 (Photomontage)

distinctive Living Design

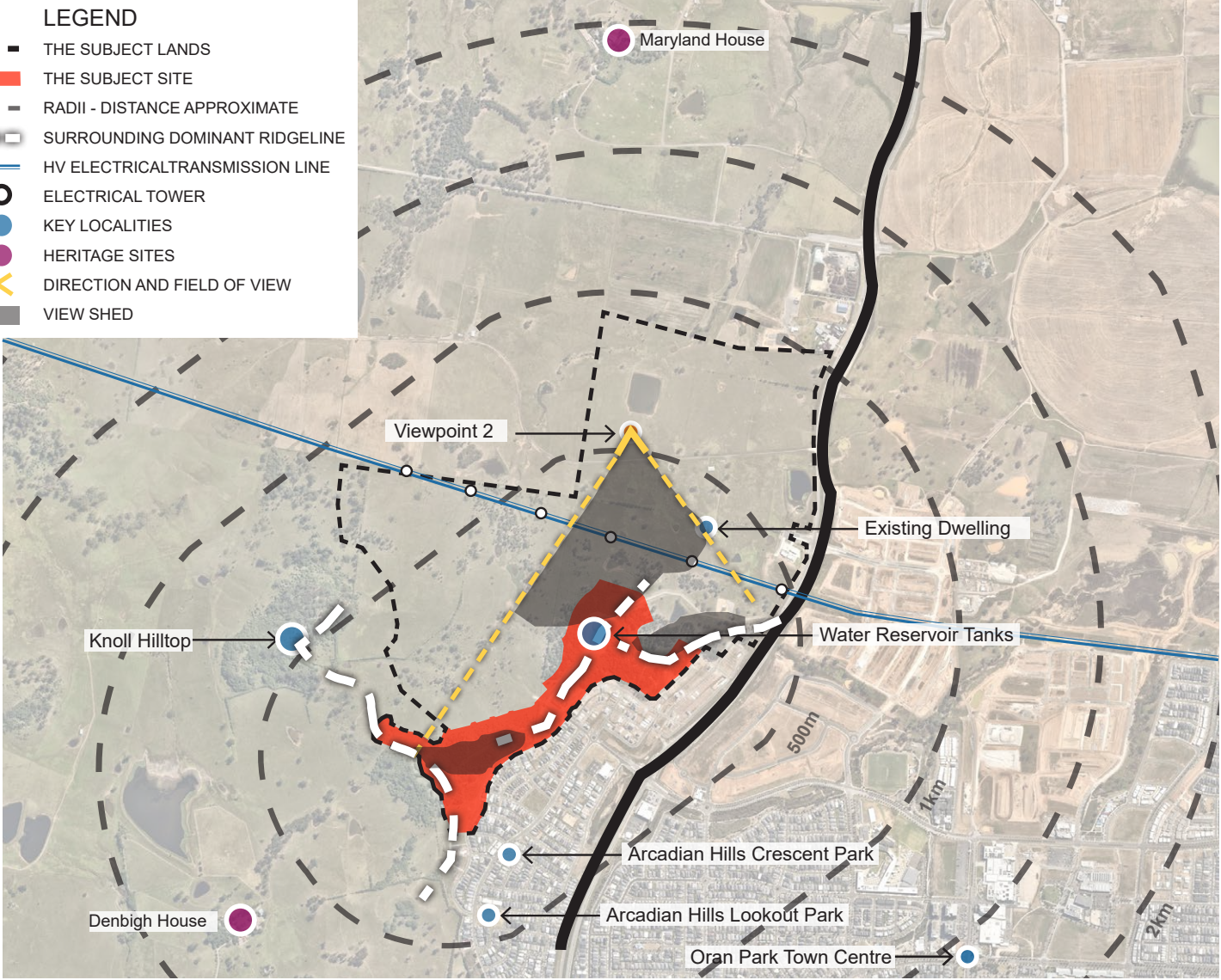
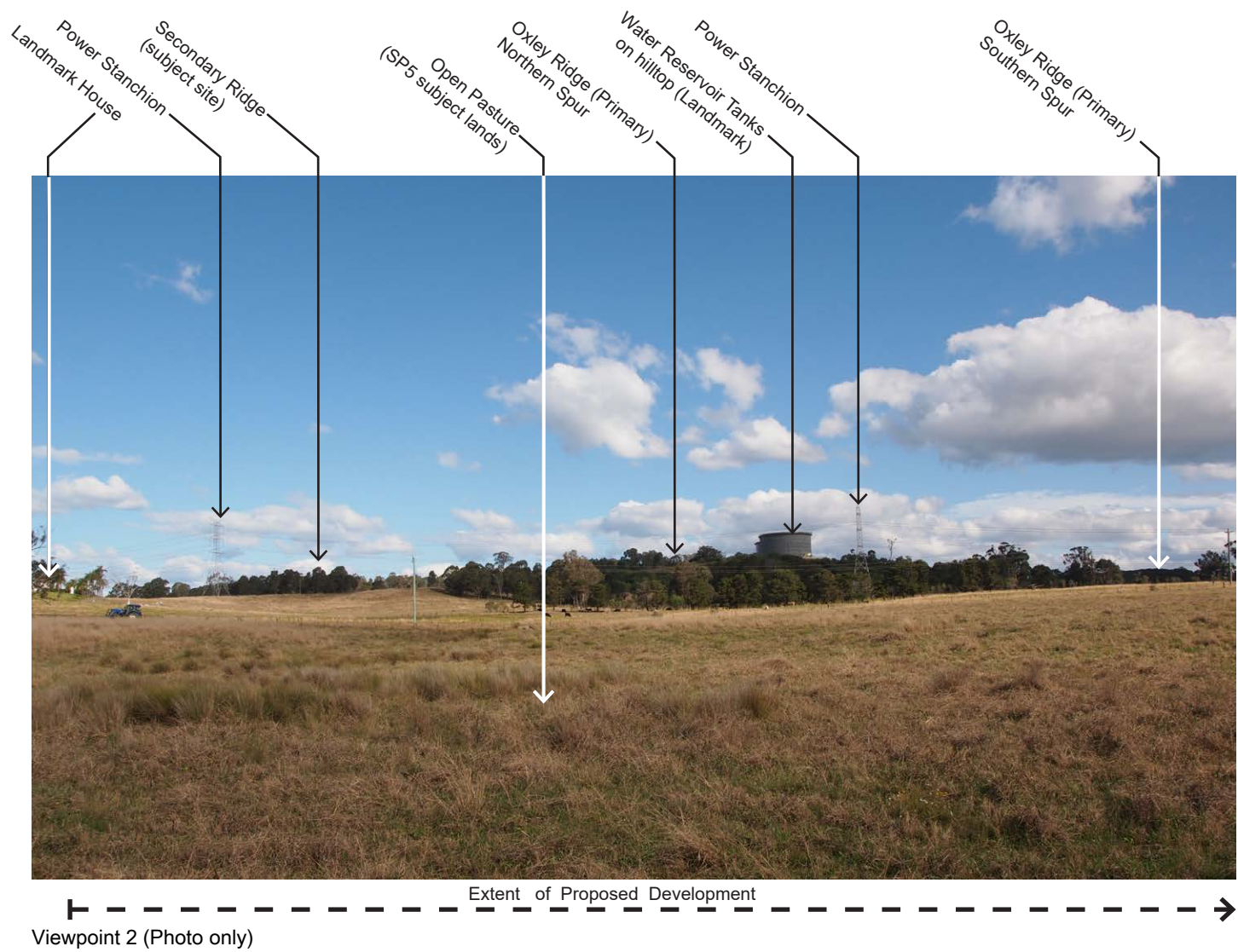


Figure 3.4: Viewpoint 2 Location and Viewshed Diagram (Nearmap, viewed September 2024)



Viewpoint 2 (Photomontage)

distinctive Living Design

Viewpoint 2 – 600m north of the subject site from Future Local Centre, Bringelly			
Description of view	Visual sensitivity of view	Visual impact of site development	Rating*
The viewpoint is taken from within the subject lands, on the Future Local Centre site as part of the broader SP5 development. The flatter topographic in foreground rises into more undulating open rural pastoral lands of sub-precinct 5 (subject lands) characterised by grasslands, farm dams, stock fences, cattle, and sporadic native trees. The Landmark house can be seen far left of view. The transmission easement identified by the two stanchions breaching the ridgeline, can be observed running across the viewshed. In the mid-ground ascending vegetated slopes are visible characterised by tree canopies wrapping the Northern aspects (NE-N-NW) of the ridge spur demarking the subject site. Both native and African Olive weed make up the mix. The dominant Oxley Ridge is observed centre right of view and identified by the two enormous water tanks on the ridge apex of the northern spur. In the far background, right of view the southern spur can be seen, vegetated almost entirely with African olive.	A moderate portion of the subject site is visible from this viewpoint, both with the northern and to a lesser extent, the southern spur of Oxley Ridge capturing primarily the westerly aspect. The receptor groups will vary when the local centre is established however a range of local residents would be present in varying scenarios with exposure likely to be moderate. Visual sensitivity would in time be diminished, due to the fact the viewshed will capture the new residential dwellings (R2 low and R3 medium density) of sub-precinct 5 on the lower elevated lands. Further, in the local context of this viewpoint, no views other significant scenic landscape or features are captured beyond the immediate dominant ridgeline and therefore visual sensitivity therefore is rated as low.	Views to any lot dwellings on the ascending slopes of the subject site from this location will be visible, however likely heavily obscured by the native tree canopies either retained or as part of land management revegetation works from African Olive removal. Dwellings positioned on the low side of lots would ensure built form does not breach the ridgeline, diminishing any impacts. Visual impacts are further diminished due to the fact existing residential dwellings (SP5) will be heavily observed in the viewshed, and therefore the Visual Impact is rated as low.	low

*Visual Impact Rating - refer to definitions

Table 3.2 Viewpoint 02 Assessment Table

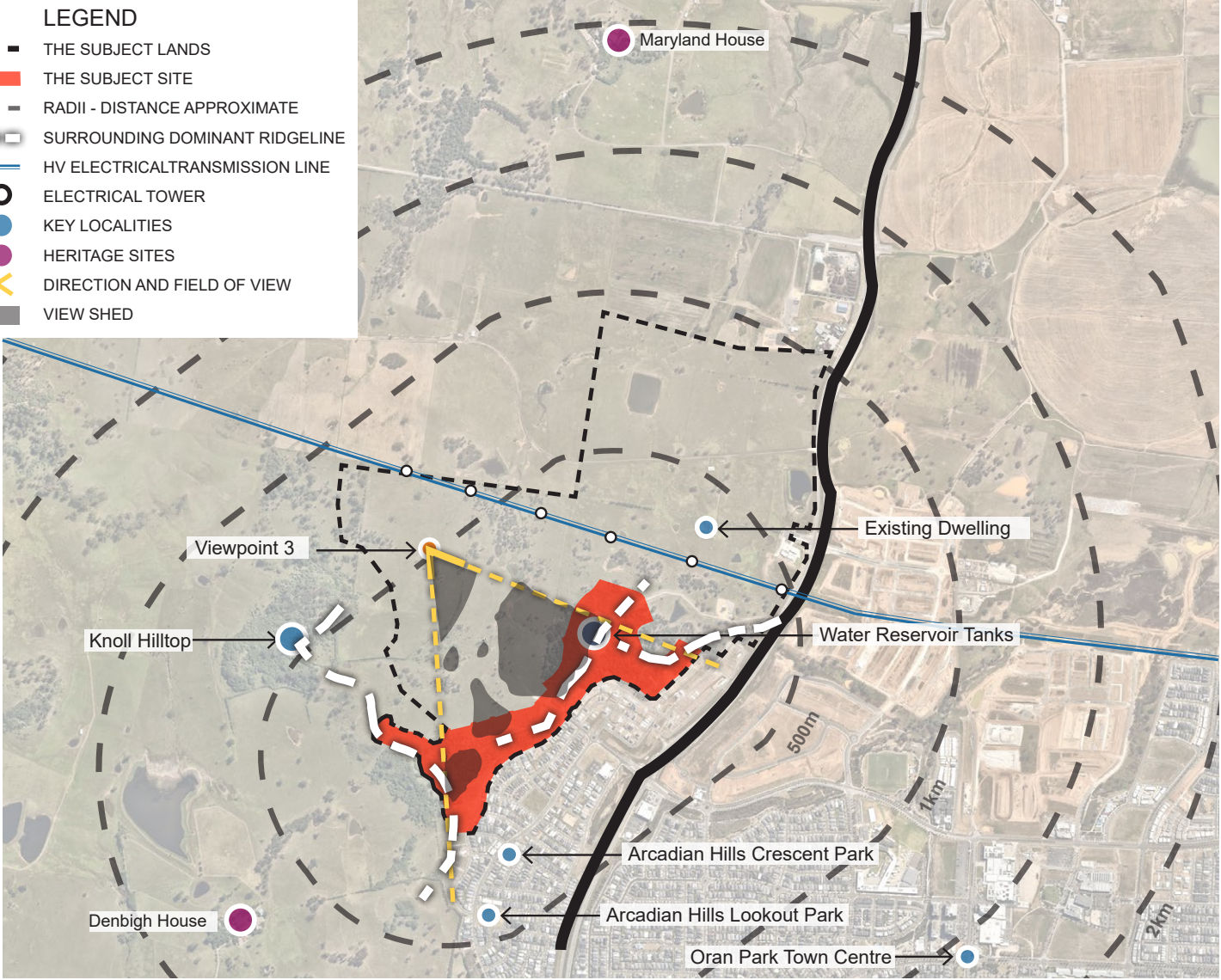
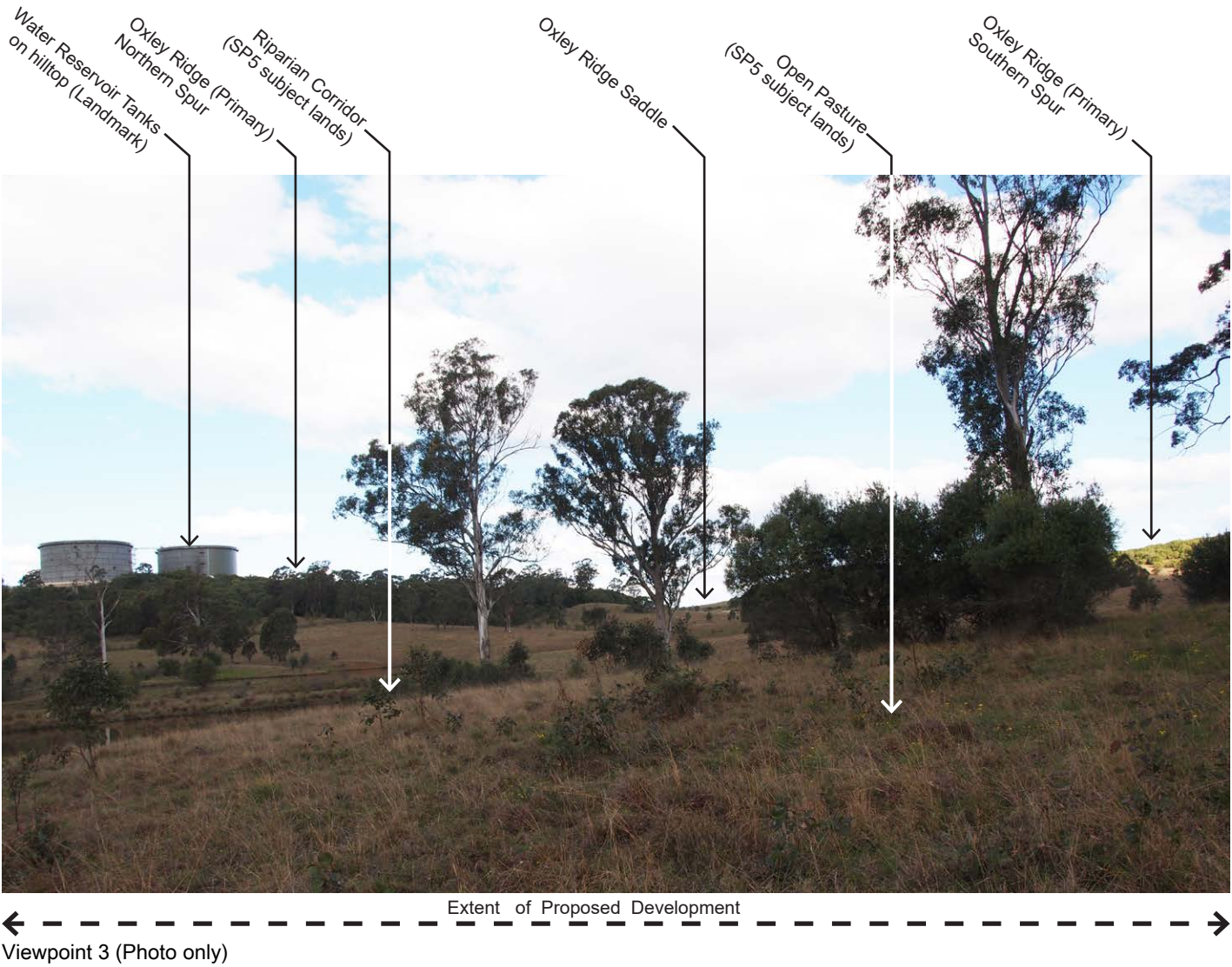


Figure 3.5: Viewpoint 3 Location and Viewshed Diagram (Nearmap, viewed September 2024)



Viewpoint 3 (Photomontage)

distinctive Living Design

Viewpoint 3 – 500m west of the subject site from Future Creek Parklands, Bringelly			
Description of view	Visual sensitivity of view	Visual impact of site development	Rating*
The viewpoint is taken from within the subject lands, on the Future Creek Parklands site as part of the broader SP5 development. In the foreground are the open rural pastoral lands of sub-precinct 5 (subject lands) characterised by gently undulating grasslands, farm dams, stock fences, cattle, and sporadic native trees. In the mid-ground a topographic depression demarks the Riparian Corridor running across the viewshed. Above that are the ascending slopes are characterised by open pasture, transitioning to tree canopies wrapping the Western aspects (NW-W) of the northern ridge spur. In the centre of view the ridgeline 'saddle' can be seen demarking the separation of the northern and southern spurs of Oxley Ridge. To the right of view the southern spur is observed dominated by African Olive weed vegetation. The subject site is in view for the entire viewshed left to right. In the background to the left of view, the two enormous water tanks on the ridge apex of the northern spur can be observe breaching the ridgeline.	A moderate portion of the subject site is visible from this viewpoint, both with the northern and to a lesser extent, the southern spur of Oxley Ridge capturing primarily the westerly aspect. The receptor groups will vary when the Parklands are established however a range of local residents would be present in varying scenarios with exposure likely to be moderate to high. Visual sensitivity would in time be diminished, due to the fact the viewshed will capture the new residential dwellings (R2 low density) of sub-precinct 5 on the higher elevated slopes. Further, in the local context of this viewpoint, no views to other significant scenic landscape or features are captured beyond the immediate dominant ridgeline and therefore visual sensitivity therefore is rated as moderate.	Views to any lot dwellings on the ascending slopes of the subject site from this location will be visible, however likely heavily obscured by the native tree canopies either retained or as part of land management revegetation works from African Olive removal. Dwellings positioned on the low side of lots would ensure built form does not breach the ridgeline, further diminishing any impacts. Visual impacts are further diminished due to the fact existing residential dwellings (SP5) will be heavily observed in the viewshed, and therefore the Visual Impact is rated as low.	low

*Visual Impact Rating - refer to definitions

Table 3.3 Viewpoint 03 Assessment Table

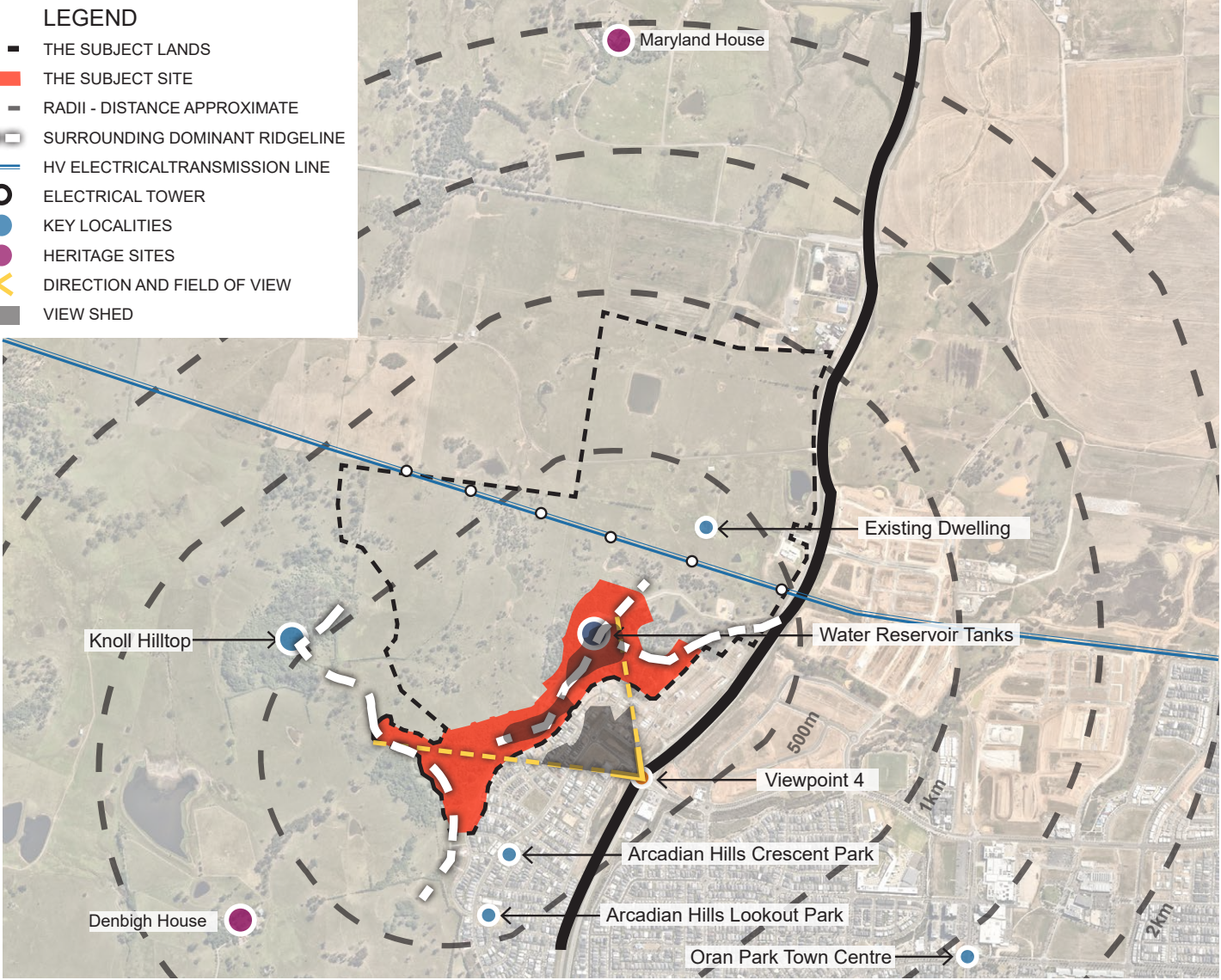
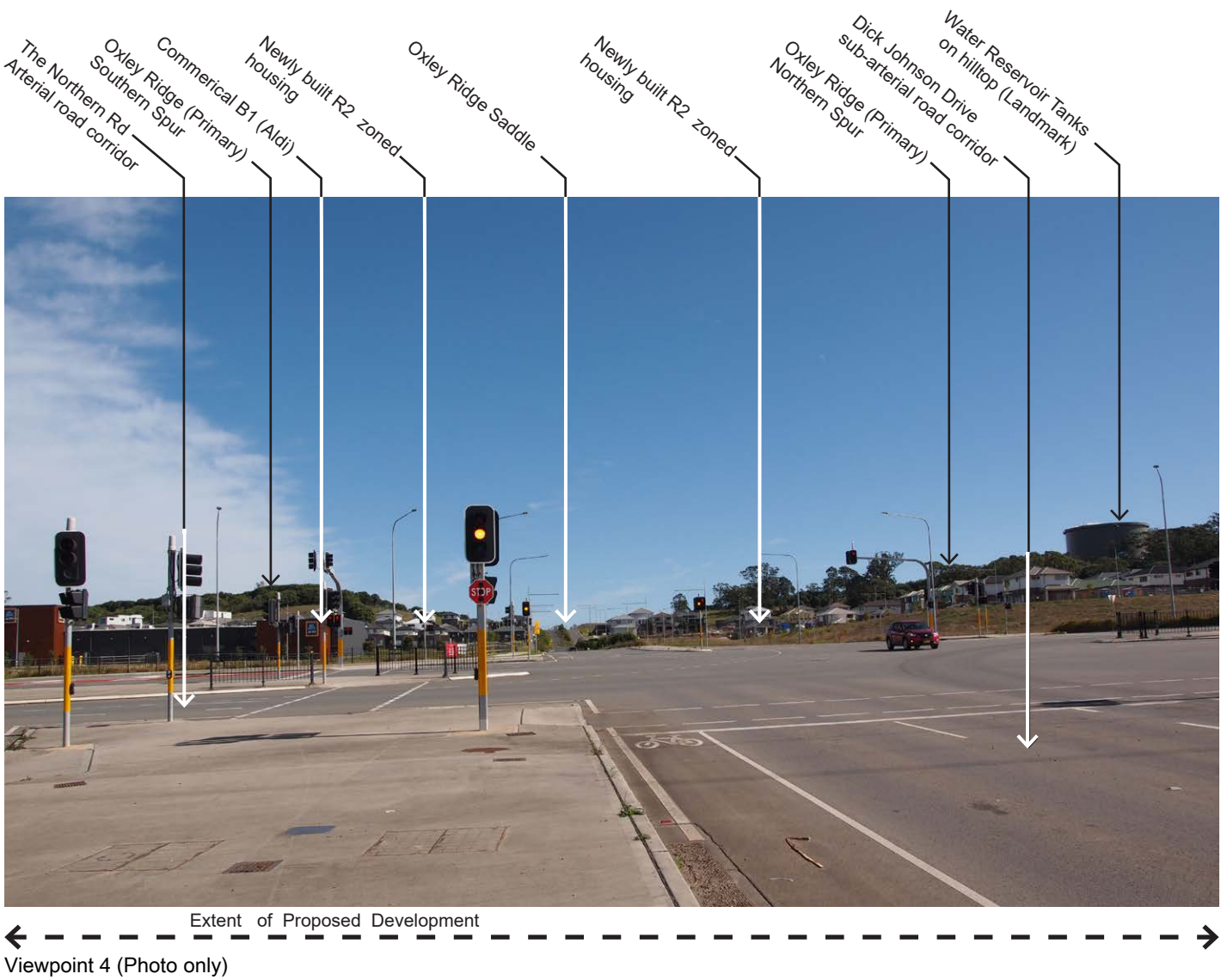


Figure 3.6: Viewpoint 4 Location and Viewshed Diagram (Nearmap, viewed September 2024)



Viewpoint 4 (Photomontage)

distinctive Living Design

Viewpoint 4 – 400m east of the subject site from intersection Dick Johnson Dr & The Northern Rd			
Description of view	Visual sensitivity of view	Visual impact of site development	Rating*
The viewpoint is taken from the busy intersection of Dick Johnson Drive and The Northern Road in a western direction towards the subject lands. In the foreground vast asphalt pavement dominates the viewshed coupled with moderate building mass from the mixed-use zone and identified by the Aldi store left of view. The mid-ground reveals newly built residential housing (R2 low density) as part of the Arcadian Hills development area on the eastern aspect of Oxley Ridge and across the full viewshed. In the centre of view the road leads up the Ridge 'saddle' topographic depression demarking the separation of the northern and southern spurs of Oxley Ridge. The rooftops of houses breach the ridgeline only in the area of the 'saddle'. Elsewhere above rooflines, the ascending slope of the subject site is seen, mostly all obscured by vegetation. The two enormous water reservoir tanks on the ridge apex can be seen right of view. Native canopies dominate the northern spur, while African Olive weed dominates the southern spur with sporadic native Eucalypts emerging above the lower weed layer.	A moderate portion of the subject site is visible from this viewpoint, both with the northern and to a lesser extent, the southern spur of Oxley Ridge capturing primarily the easterly aspect. The receptor groups are motorist and pedestrian commuters in transit, with exposure being moderate at the intersection. Visual sensitivity is diminished, due to the fact the viewshed captures the new residential dwellings (R2 low density) of Arcadian Hills, already breaching the ridge. Further, in the local context of this viewpoint, no views to other significant scenic landscape or features are captured beyond the immediate dominant ridgeline and therefore visual sensitivity therefore is rated as moderate.	Views to any lot dwellings on the ascending slopes of the subject site from this location will be visible, however likely obscured by the native tree canopies either retained or as part of land management revegetation works from African Olive removal. Dwellings positioned on the low side of lots would ensure built form does not breach the ridgeline, further diminishing visual impacts. Further, the fact existing residential dwellings dominate the ascending slopes in the viewshed, Visual Impact is therefore rated as low.	low

*Visual Impact Rating - refer to definitions

Table 3.4 Viewpoint 04 Assessment Table

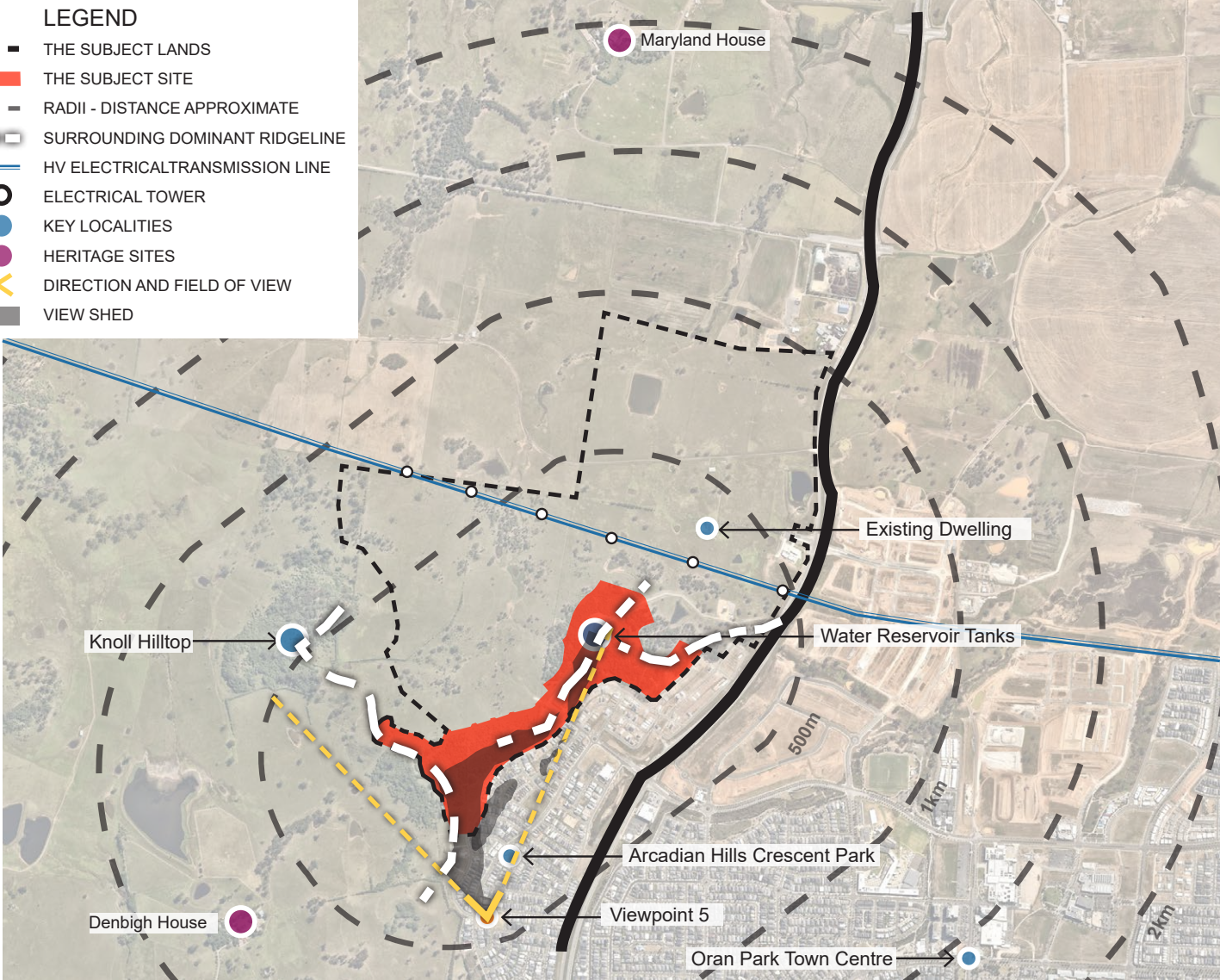
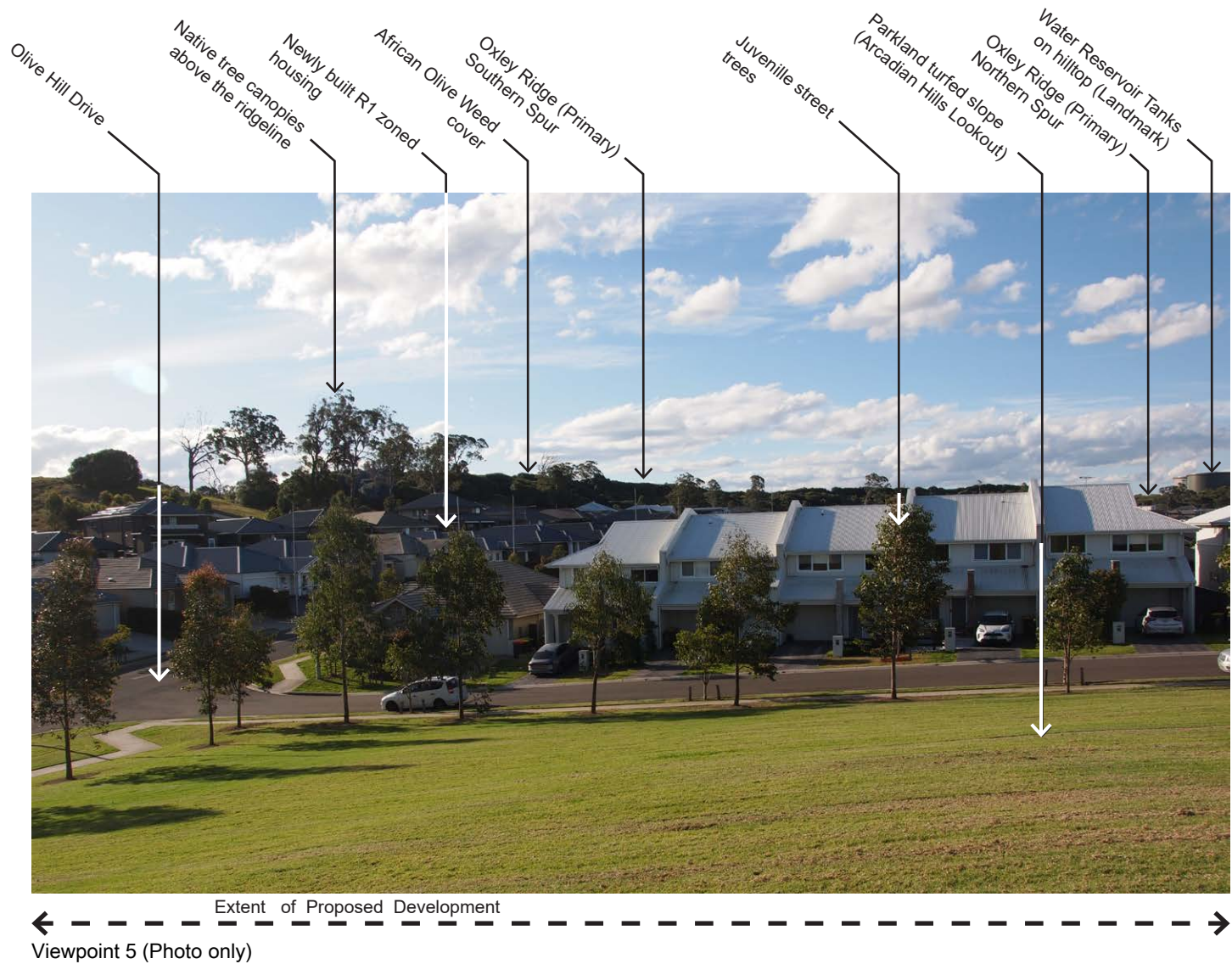


Figure 3.7: Viewpoint 5 Location and Viewshed Diagram (Nearmap, viewed September 2024)



Viewpoint 5 (Photomontage)

distinctive Living Design

Viewpoint 5 – 400m south-east of the subject site from Acadian Hills Lookout Park, Cobbitty			
Description of view	Visual sensitivity of view	Visual impact of site development	Rating*
The viewpoint is taken from the Arcadian Hills Lookout Park located on an elevation site on public land. The viewpoint faces north towards the subject site. In the foreground the descending turfed slopes of the park are observed leading down to the tree-lined local roads of the recently established residential neighbourhood. The street trees are juvenile. In the mid-ground the residential dwellings dominate the viewshed from left to right characterised by pitched single and double storey roofs, recessive material colours, and juvenile tree canopies. In the background Oxley Ridge runs across the horizon with native Eucalypts breaching the ridge. To the far right of view the two enormous water reservoir tanks on the ridge apex can be seen. Although limited viewlines to the northern spur, native tree canopies dominate the ascending slopes, while African Olive weed dominates the southern spur with sporadic native Eucalypts emerging above the lower weed layer.	A small portion of the subject site is visible from this viewpoint, primarily associated with the southern spur of Oxley Ridge. The northern spur is more obscured by rooflines. The receptor group are recreational park users, mainly local residents. Visual sensitivity is diminished, due to the fact the viewshed captures the new residential dwellings (R2 low density) of Arcadian Hills. Further, in the local context of this viewpoint, no views to other significant scenic landscape or features are captured beyond the immediate dominant ridgeline and therefore visual sensitivity therefore is rated as low.	Views to any lot dwellings on the ascending slopes of the subject site from this location will be visible, however likely obscured by the native tree canopies either retained or as part of land management revegetation works from African Olive removal. Dwellings positioned on the low side of lots would ensure built form does not breach the ridgeline, further diminishing visual impacts. Further, the fact existing residential dwellings dominate the ascending slopes. Visual Impact is therefore rated as low.	low

*Visual Impact Rating - refer to definitions

Table 3.5 Viewpoint 05 Assessment Table

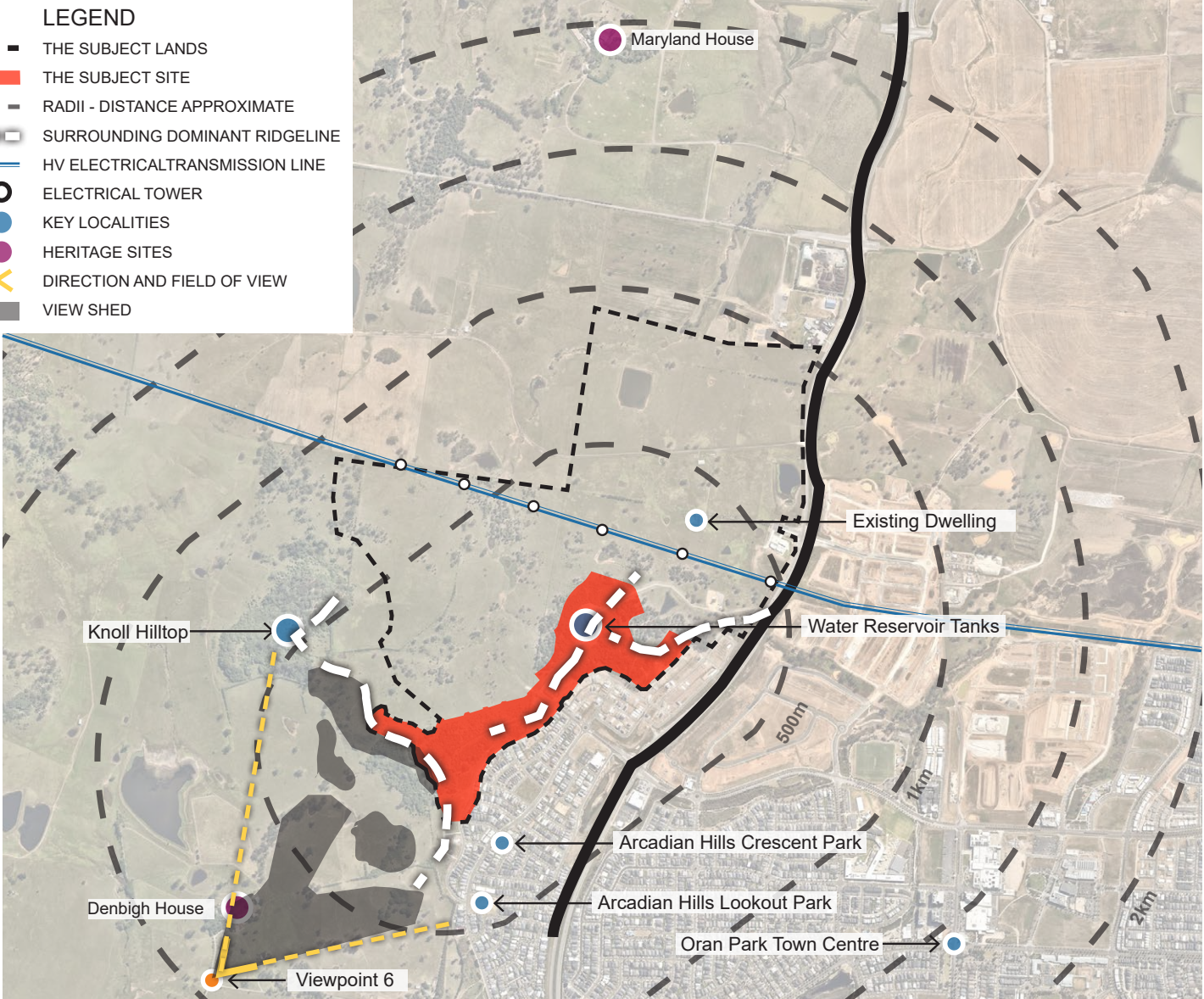
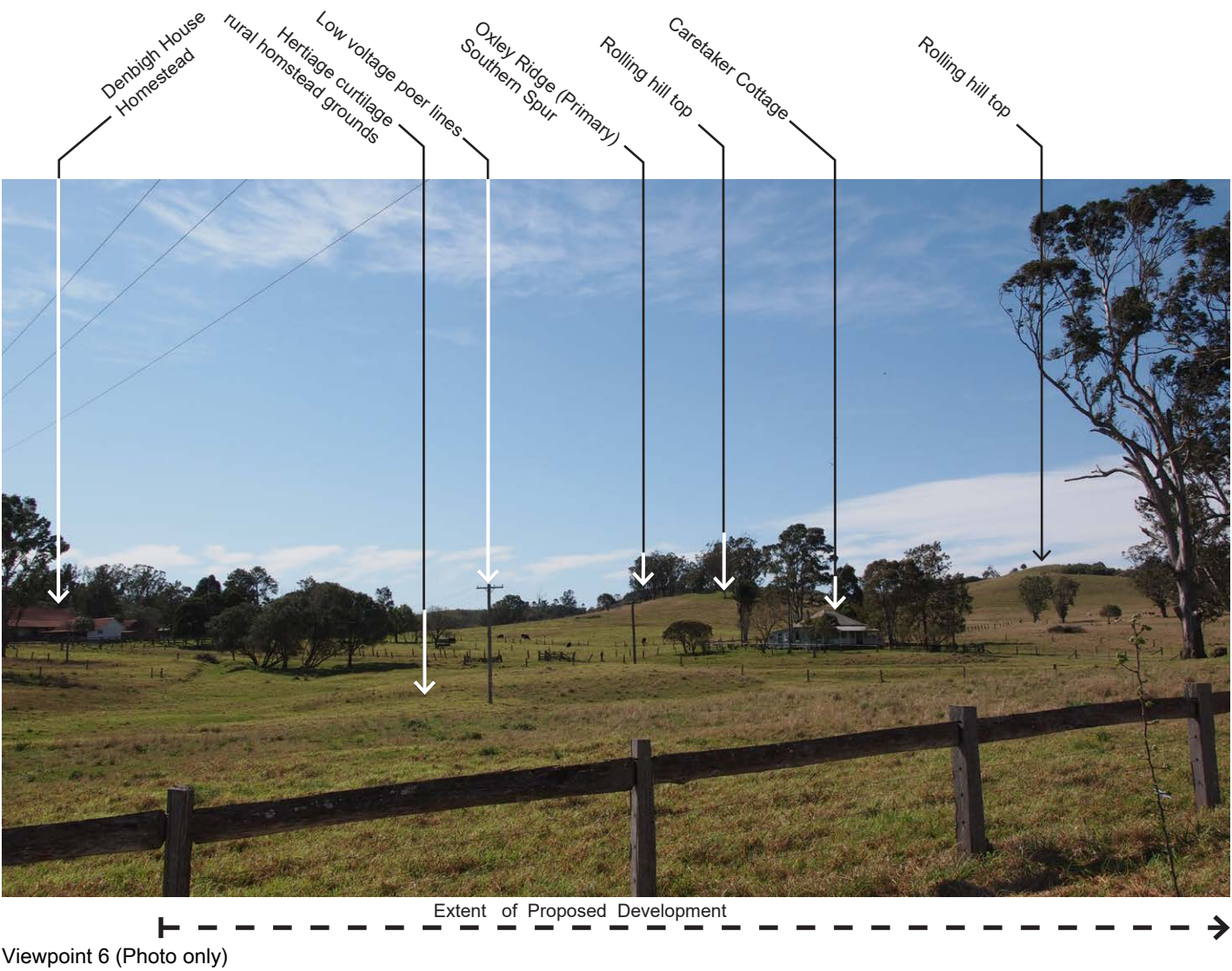


Figure 3.8: Viewpoint 6 Location and Viewshed Diagram (Nearmap, viewed September 2024)



Viewpoint 6 (Photo only)

Viewpoint 6 – 1km south-west of the subject site from Denbigh House Cobbitty

Description of view	Visual sensitivity of view	Visual impact of site development	Rating*
The viewpoint is taken from the State heritage listed Denbigh House and Grounds. The viewpoint is taken from the entry drive looking north-east towards the subject site. In the foreground are the rural heritage grounds characterised by old timber fencing, farm infrastructure, feed lots, sporadic native trees, and grazing livestock. Cultural planting are also observed around the old homestead which is observed left of view. A series of subtle timber power poles cross the viewshed. To the centre right of view is an old cottage house. In the background of the cottage are rolling pastoral lands increasing in elevation. Behind that in the far background is the southern spur of Oxley Ridge defining the horizon line with the sky with tree canopies on the hills penetrating above that. A depression in the midground hills, centre left of view, reveals the secondary ridgeline south-east of Oxley Ridge. The dense nature of tree planting around the heritage homestead blocks background view to the far left of the viewshed, although this would be beyond the subject site even if visible.	This viewpoint exhibits good scenic amenity, enhanced by the picturesque rolling hills, rural heritage landscape, and the distant Oxley Ridge ridgeline. Visual sensitivity is increased due to the fact the viewshed represents an indicative view from a state heritage listed site. The receptor groups would be the homestead owners and workers, as well as any visitation groups. This would be a limited group being privately owned lands, but exposure would be high. Visual Sensitivity would therefore be rated as Moderately High.	As the viewshed captures the higher elevated ridgeline, proposed residential lots on private property would therefore also be visible. However as any proposed lots would have the building envelopes at the lower elevated portion of the lots, dwellings would not be observed for this viewpoint. Visual impact is therefore rated as nil	Nil

*Visual Impact Rating - refer to definitions

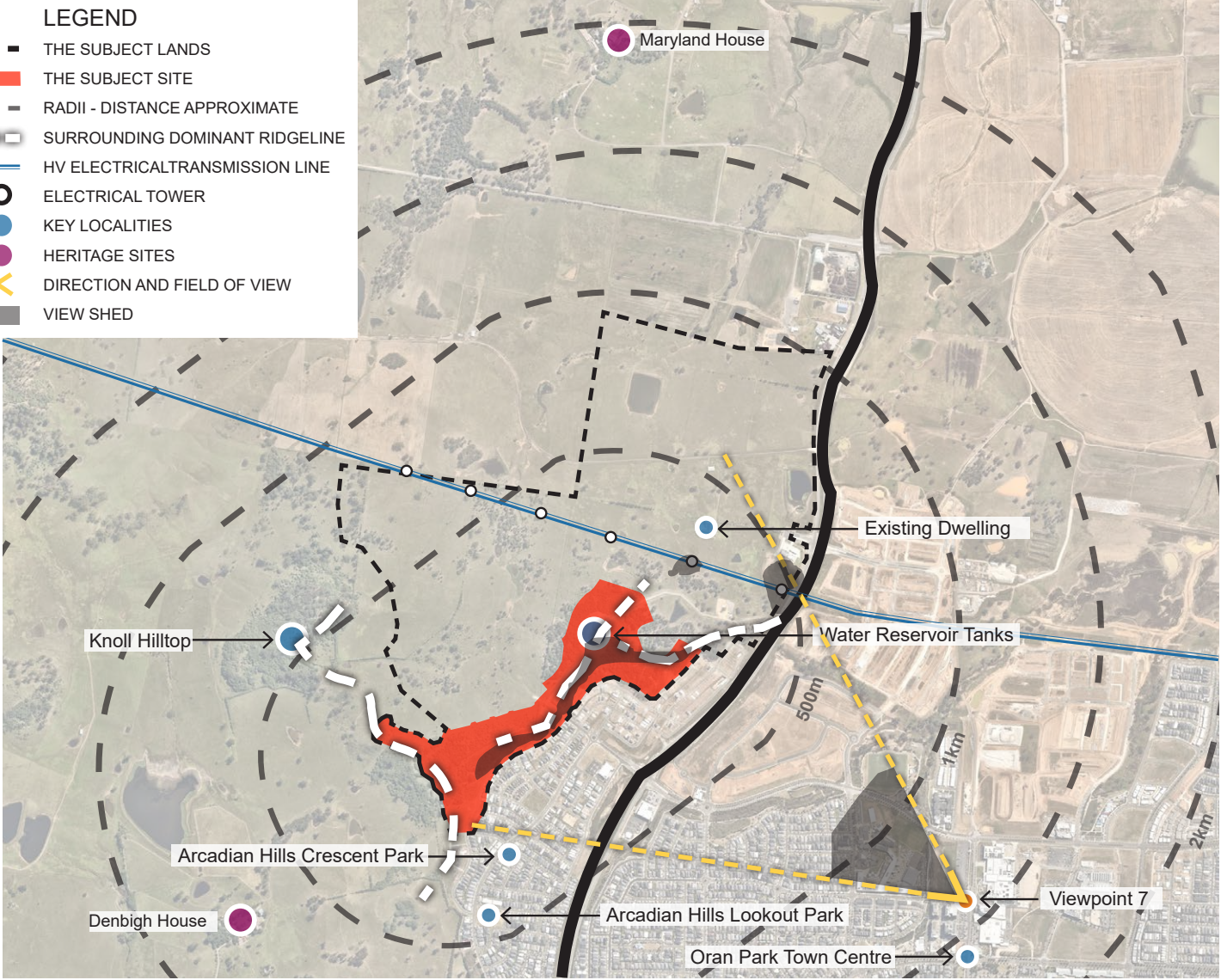
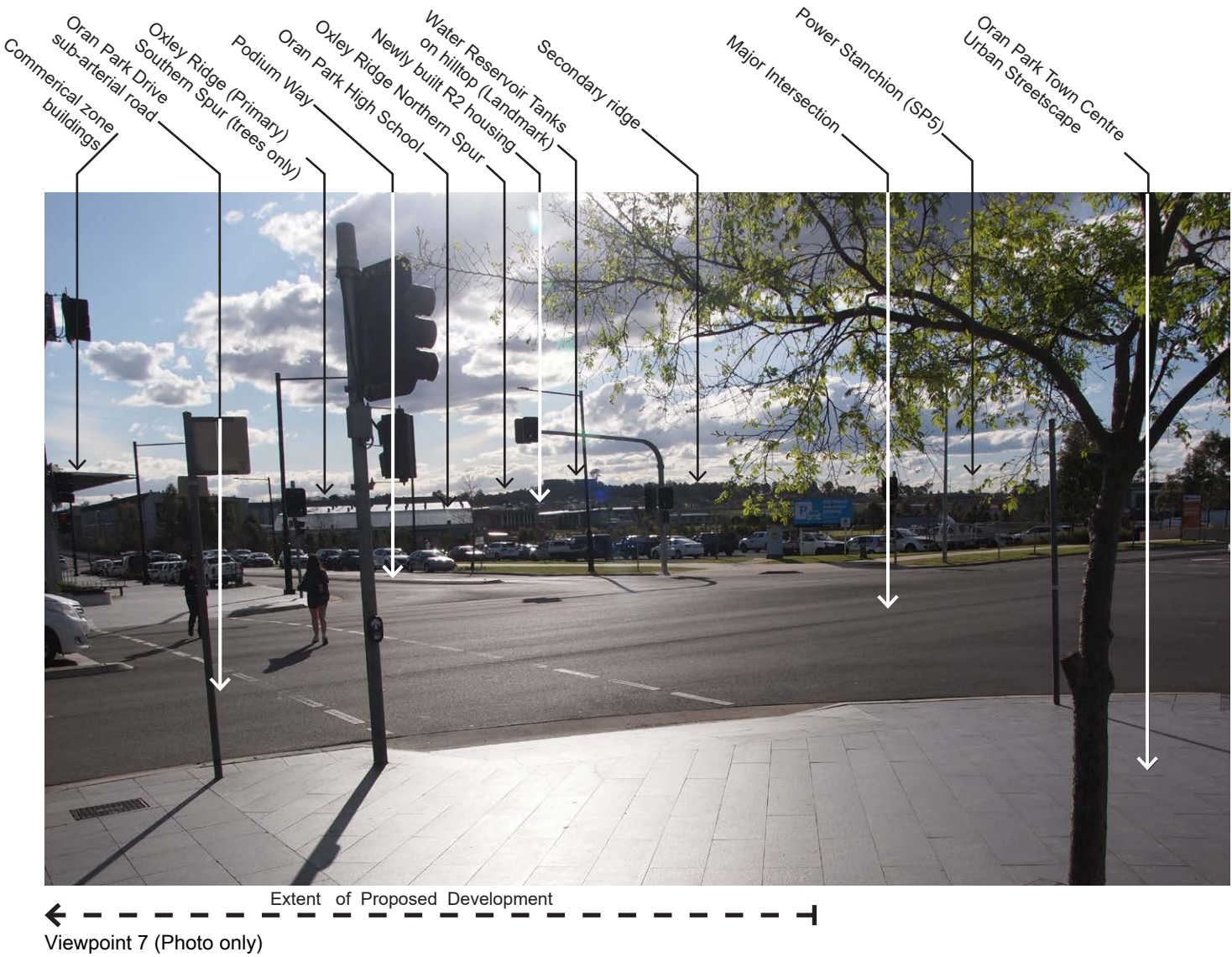


Figure 3.9: Viewpoint 7 Location and Viewshed Diagram (Nearmap, viewed September 2024)



Viewpoint 7 (Photomontage)

distinctive Living Design

Viewpoint 7 – 1.7km west of the subject site from the Oran Park Town Commercial Centre			
Description of view	Visual sensitivity of view	Visual impact of site development	Rating*
The viewpoint is taken from the major intersection of Oran Park Drive and Podium Way in the regional town centre looking east towards the subject site. In the foreground vast hard pavement of the urban centre and streetscape dominates the viewshed coupled with moderate building mass from the commercial zone (left) and High School (right). To the right of view the transmission easement traversing the subject lands (SP05) can be identified by the two stanchions towering into the skyline, running across the viewshed. Over the rooflines of the school buildings, Oxley Ridge can be observed in the background. The southern spur is only identified by the existing tree canopies on the elevated topography. To the centre of view the two enormous water reservoir tanks on the ridge apex can be seen on the highest elevated position on the ridgelines northern spur. The newly built residential housing (R2 low density Arcadian Hills) can be observed below the dominant ridgeline identified by light colour roofs. The secondary ridgeline can be seen descending from the primary ridge right of view.	A small portion of the subject site is visible from this viewpoint, distant, and primarily associated with the northern spur of Oxley Ridge. The southern spur isn't visible due the viewlines being impeded by the High School buildings. Visual sensitivity is decreased due the fact the viewshed captures a range of built form leading from the foreground to the background which distantly captures similar low-density housing within the Arcadian Hills development. Frequency would be high with exposure being moderate. Visual Sensitivity would be rated as low.	Views to any lot dwellings on the ascending slopes of the subject site from this location will be visible. Dwellings positioned on the low side of lots would ensure built form does not breach the ridgeline, further diminishing visual impacts. Visual impacts are diminished due to the fact existing residential dwellings will be observed in the viewshed. Visual Impacts will be negligible, and therefore rated as nil	Nil

*Visual Impact Rating - refer to definitions

Table 3.7 Viewpoint 07 Assessment Table

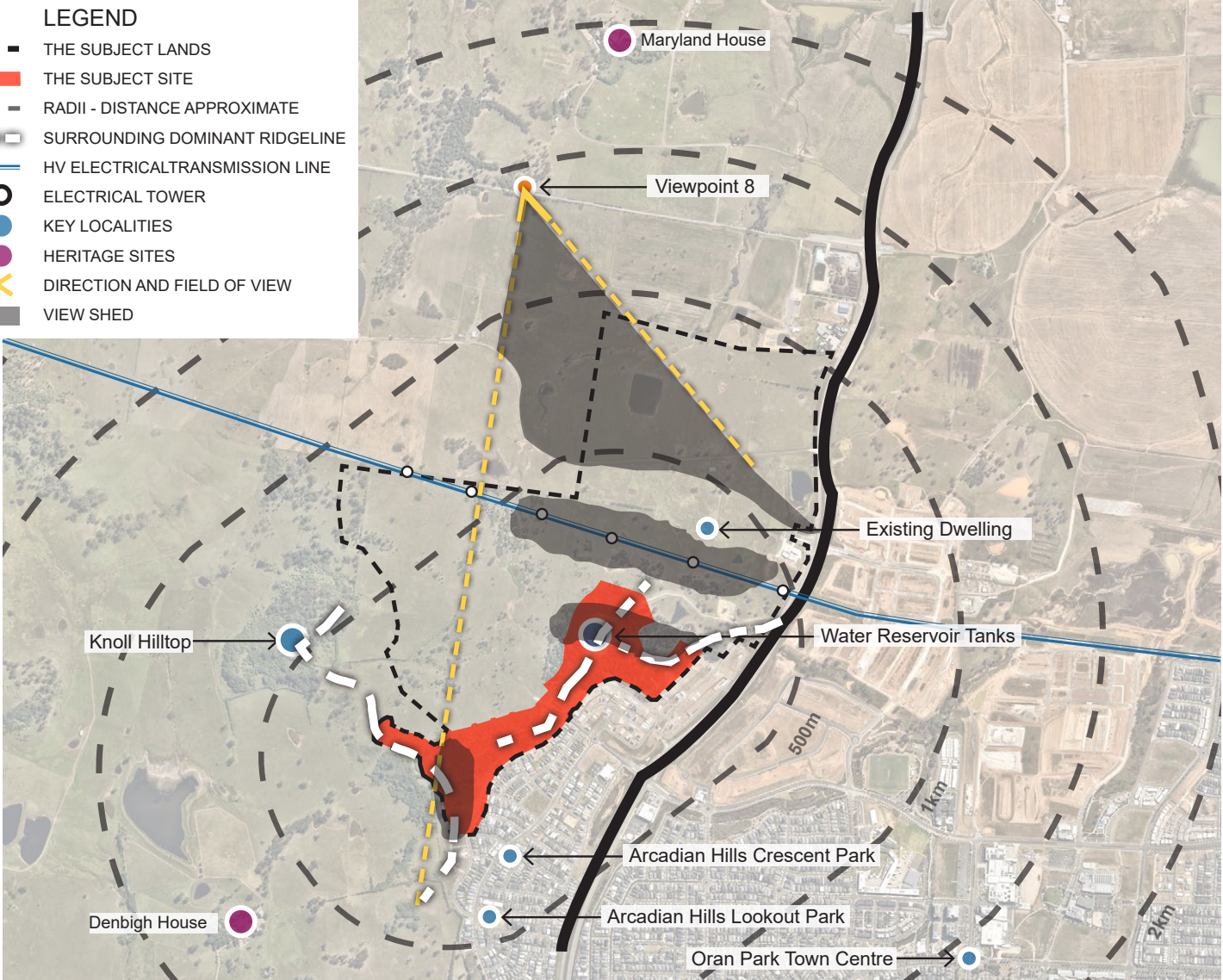
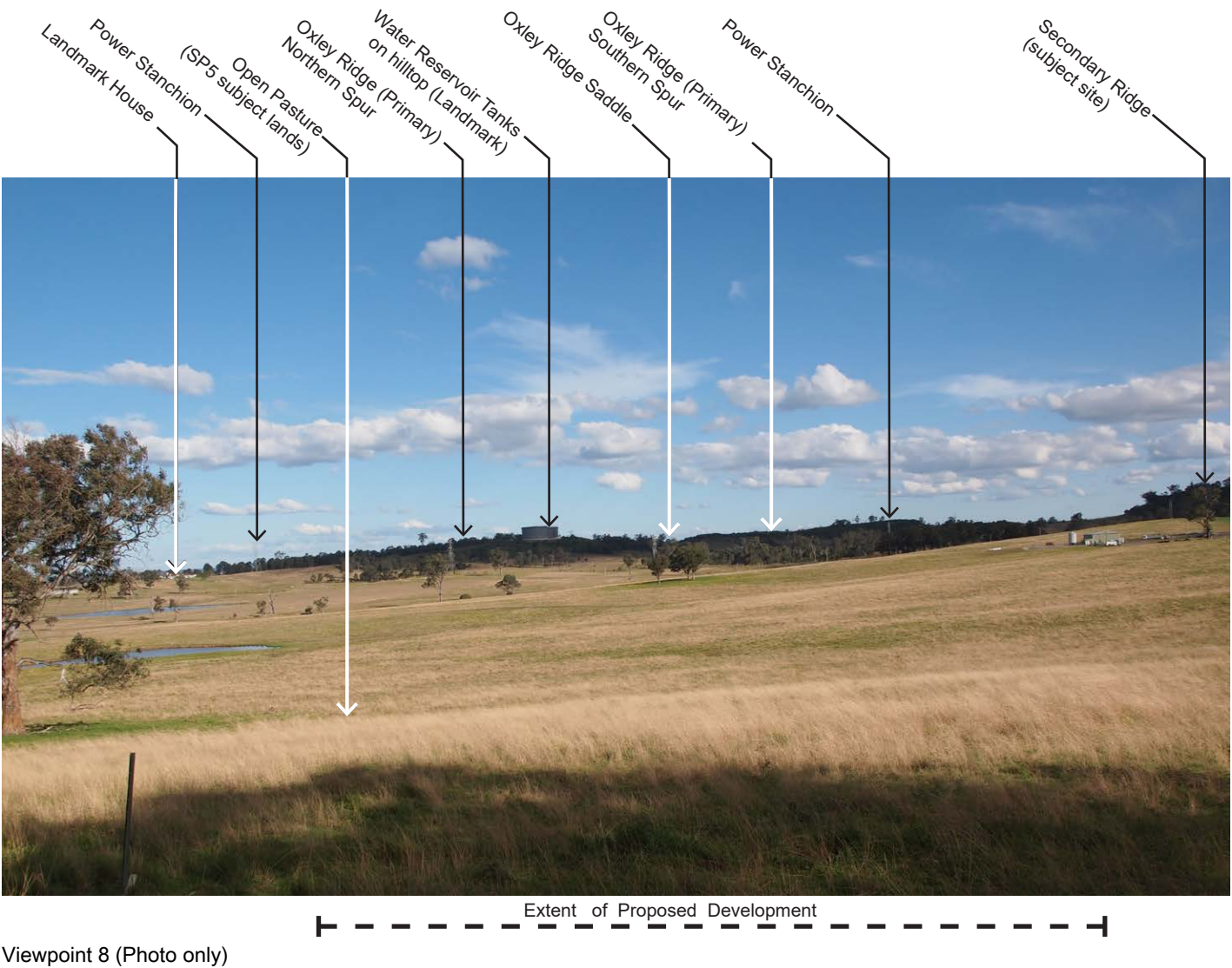


Figure 3.10: Viewpoint 8 Location and Viewshed Diagram (Nearmap, viewed September 2024)



Viewpoint 8 (Photo only)



Viewpoint 8 (Photomontage)

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Viewpoint 8 – 1.5km north of the subject site from Maryland Link Rd No.2 (Maryland House) Bringelly			
Description of view	Visual sensitivity of view	Visual impact of site development	Rating*
The viewpoint is taken from the Maryland Link Road No.2, a short distance south of the privately owned and State Heritage listed Maryland House, representing an indicative viewshed from the homestead, and the broader grounds of the historic 'Nonorrah' land holding. The viewpoint faces south towards the subject site. In the fore & mid-grounds are the open rural pastoral lands of sub-precinct 5 (subject lands) characterised by gently undulating grasslands, farm dams, stock fences, cattle, and sporadic native trees. The Landmark house can be seen left of view just below the ridge. The transmission easement identified by several stanchions can be observed running across the viewshed. In the background the dominant Oxley Ridge is observed centre left of view and identified by the two enormous water tanks on the ridge apex of the northern spur. A band of native tree canopies wrapping the Western aspects (NW -W) of the ridge spur. Centre view the ridge 'saddle' is seen depressed. To the right of view the southern spur is observed dominated by African Olive weed vegetation.	This viewpoint exhibits very good scenic amenity, enhanced by the picturesque rolling hills, rural landscape, and distant Oxley Ridge ridgeline. Visual sensitivity is increased due the fact the viewshed represents an indicative view from a state heritage listed site. The receptor groups would firstly be indicative of the homestead owners and workers, as well as any visitation groups. This would be a limited group being privately owned lands, but exposure would be high. The second group would be commuters using the link road, limited to a brief glimpse while in motion providing a low exposure rate. Visual Sensitivity overall would therefore be rated as Moderately High.	Views to any lot dwellings on the ascending slopes of the subject site from this location, although distant, will be visible, however likely heavily obscured by the vegetation band of native tree canopies. Visual impacts are diminished due to the fact existing residential dwellings (SP5) will be observed in the viewshed, and therefore the Visual Impact is rated as moderate.	Moderate

*Visual Impact Rating - refer to definitions

Table 3.8 Viewpoint 08 Assessment Table

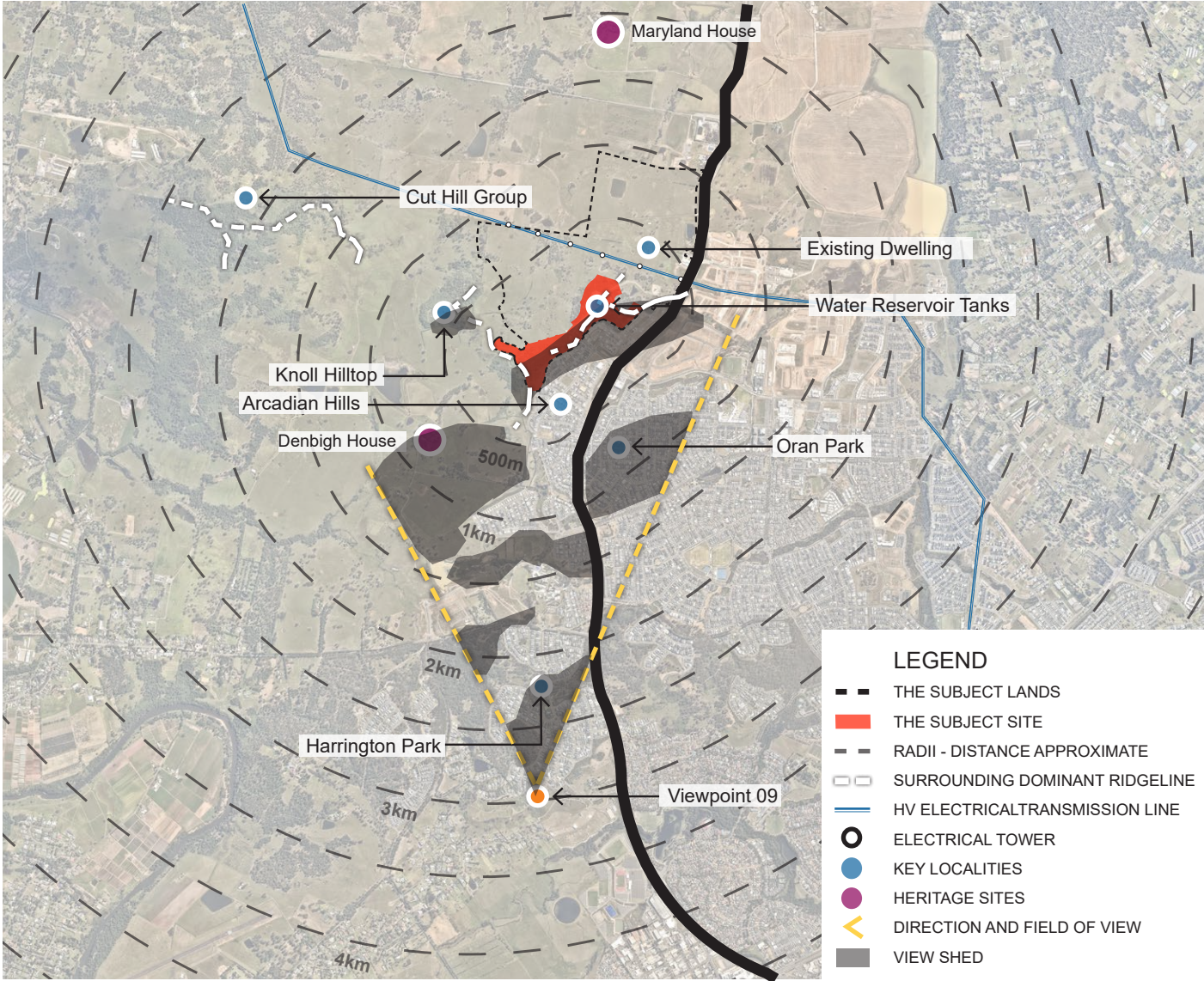
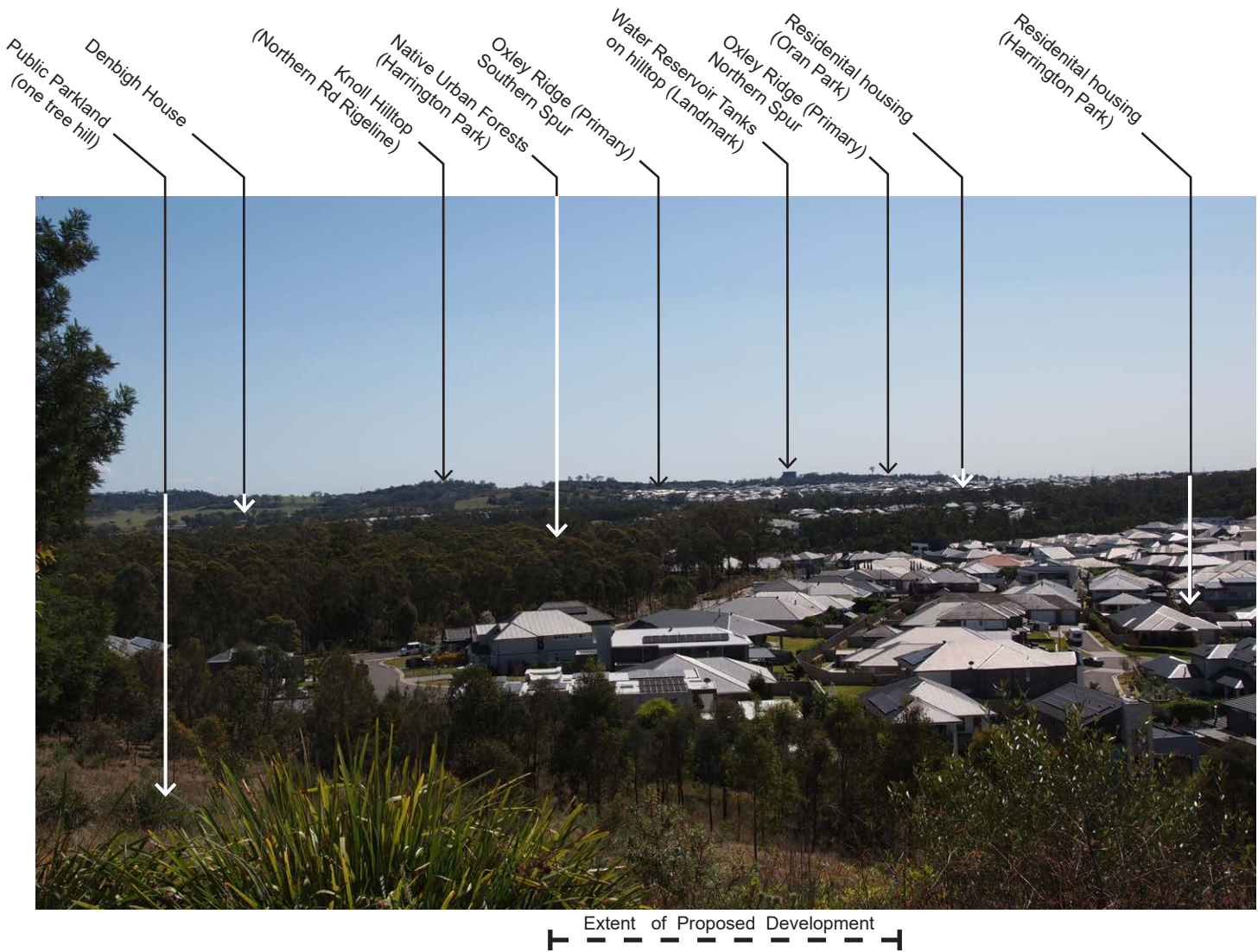


Figure 3.10: Viewpoint 9 - View shed plan (Nearmap, viewed 16 September, 2024)

Viewpoint 9 – 3.2km from the subject site from One Tree Hill Lookout Harrington Park			
Description of view	Visual sensitivity of view	Visual impact of site development	Rating*
The viewpoint is taken from a public parkland reserve unofficially known as 'One Tree Hill' on an elevated hilltop between 'The Lanes' Kirkham and Harrington Park. The viewpoint is taken from an isolation position away from the designated 'Viewing Location' that captures expansive high value views to the south and east. This viewpoint captures views to the north looking towards the subject site off the informal walking trail. In the foreground the descending vegetated slopes of the parkland are observed leading down to the established residential neighbourhood of Harrington Park characterised by low density housing and networked native forests. Beyond that in the mid-ground are the residential rooftops of housing within the suburb Oran Park. In the background Oxley Ridge runs across the horizon centre view with native Eucalypts breaching the ridge. To the centre right of view the two enormous water reservoir tanks on the ridge apex can be seen. African Olive weed trees dominate the southern spur with sporadic native Eucalypts emerging above the lower weed layer. Similarly on the northern spur although larger areas of native vegetation are observed. Right of view the dominant ridge (Oxley) descends and meets the horizon line where the transmission stanchions are observed on the subject lands (SP05). Left of view the Northern Rd Ridgelines rise from the left of Oxley. Observed below the ridge and ascending slopes is State heritage listed Denbigh House and Grounds.	This viewpoint exhibits very good scenic amenity, enhanced by the picturesque urban forest landscape, and distant views to the Northern Road Ridgeline group (including Oxley). Visual sensitivity is increased due the fact the viewshed captures a state heritage listed site (Denbigh House). The receptor group would be trail walkers, hikers etc that frequent the parklands extensive recreational trails. Frequency would be low to moderate and exposure high. Visual sensitivity is diminished, due to the fact the viewshed captures residential dwellings across the viewshed. Visual Sensitivity overall would therefore be rated as Moderately High.	Views to any lot dwellings on the ascending slopes of the subject site from this location will be visible. However dwellings positioned on the low side of lots as proposed, would ensure built form does not breach the ridgeline, further diminishing visual impacts. They would likely blend with adjacent built form with the magnitude of change being very low from this distance. Visual impacts are therefore rated as low.	low

*Visual Impact Rating - refer to definitions

Table 3.9 Viewpoint 09 Assessment Table



Viewpoint 9 (Photo only)



Viewpoint 9 (Photomontage)

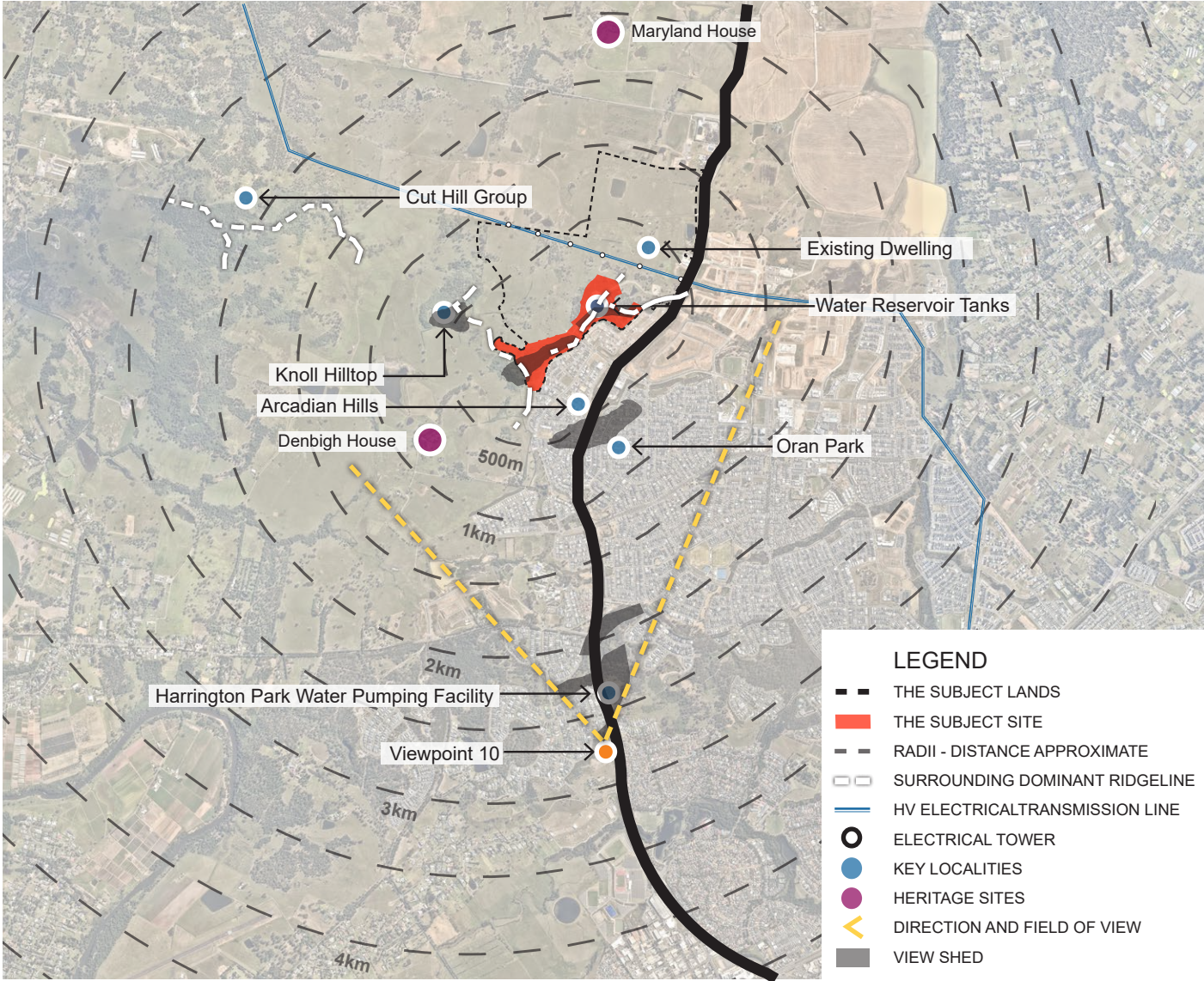
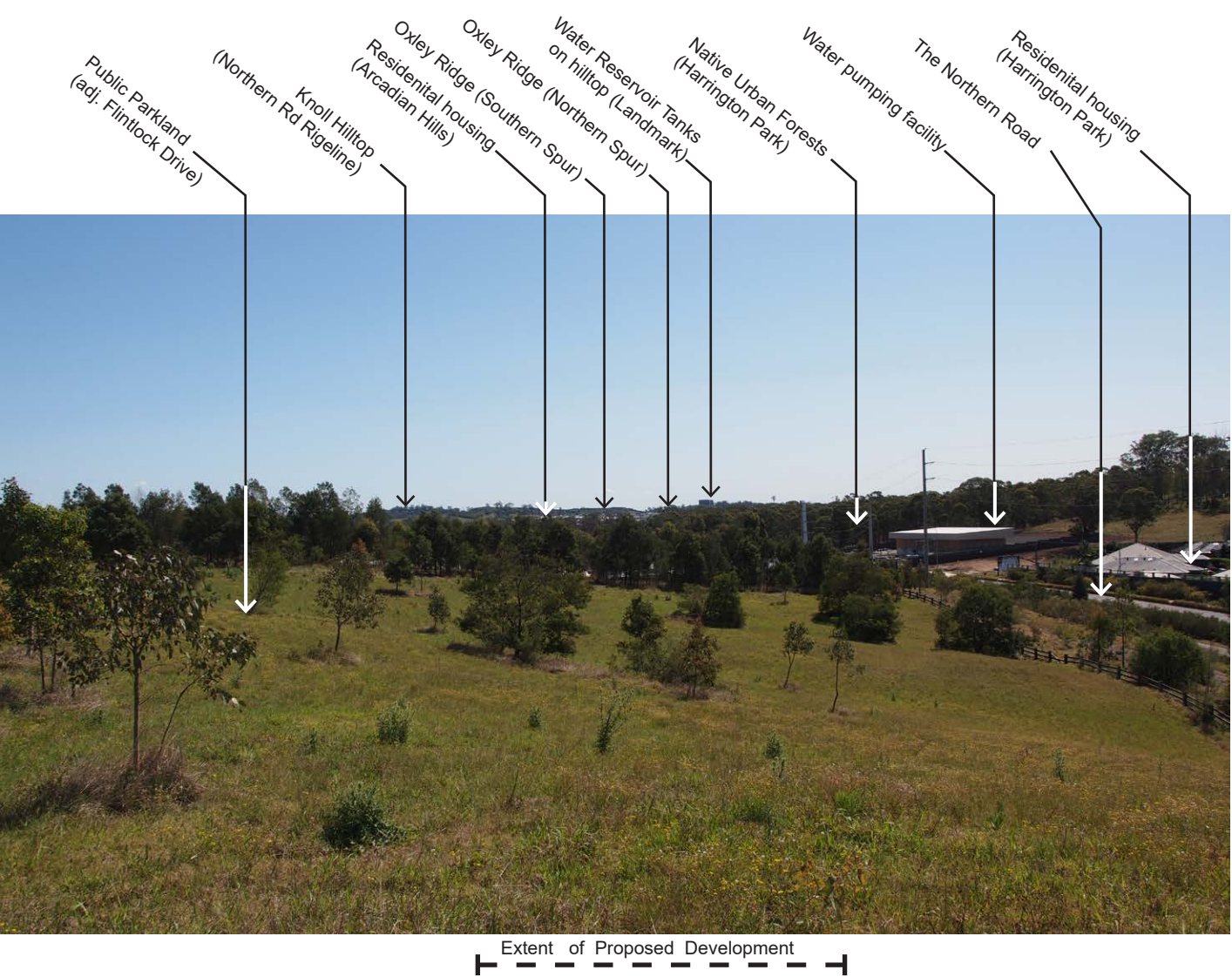


Figure 3.10: Viewpoint 10 - View shed plan (Nearmap, viewed 16 September, 2024)

Viewpoint 10 – 3.0km from the subject site from Public Reserve (Orielson House) Harrington Park			
Description of view	Visual sensitivity of view	Visual impact of site development	Rating*
The viewpoint is taken from a public parkland reserve adjoining Flintlock Drive, directly north of the State heritage listed Orielson House. The viewpoint is taken from an isolation position away from the designated 'Viewing Location' that captures expansive high value views to the south and east. This viewpoint captures views to the north looking towards the subject site from the open turfed area of the parkland. In the foreground the descending turfed slopes of the parkland are observed leading down right of view to The Northern Road arterial commuter corridor. The view shed also picks up the edge of low-density housing and The Harrington Park water pumping facility. In the midground centre view the canopy cover of the Harrington urban forest dominates and impedes most view lines to the suburban housing development of Oran Park. In the background Oxley Ridge runs across the horizon centre view with native Eucalypts breaching the ridge. House rooflines (Arcadian Hills) are just visible above the tree line. To the centre right of view the two enormous water reservoir tanks on the ridge apex can be seen. African Olive weed trees dominate the southern spur with sporadic native Eucalypts emerging above the lower weed layer. Similarly on the northern spur although larger areas of native vegetation are observed. Left of view the Northern Rd Ridgelines connect from the left of Oxley forming The Northern Road Ridgeline group. Background views far left and right of the viewshed are impeded by the topography in the midground.	This viewpoint exhibits good scenic amenity, enhanced by the picturesque urban forest landscape, and distant views to the Northern Road Ridgeline group (including Oxley). The receptor group would be local recreation park users. Frequency would be low and exposure high. Visual sensitivity is diminished, due to the fact the viewshed captures some residential dwellings across the viewshed. Visual Sensitivity overall would therefore be rated as Moderate.	Views to any lot dwellings on the ascending slopes of the subject site from this location will be visible. However dwellings positioned on the low side of lots as proposed, would ensure built form does not breach the ridgeline, further diminishing visual impacts. They would likely blend with adjacent built form with the magnitude of change being very low from this distance. Visual impacts are therefore rated as low.	low

*Visual Impact Rating - refer to definitions

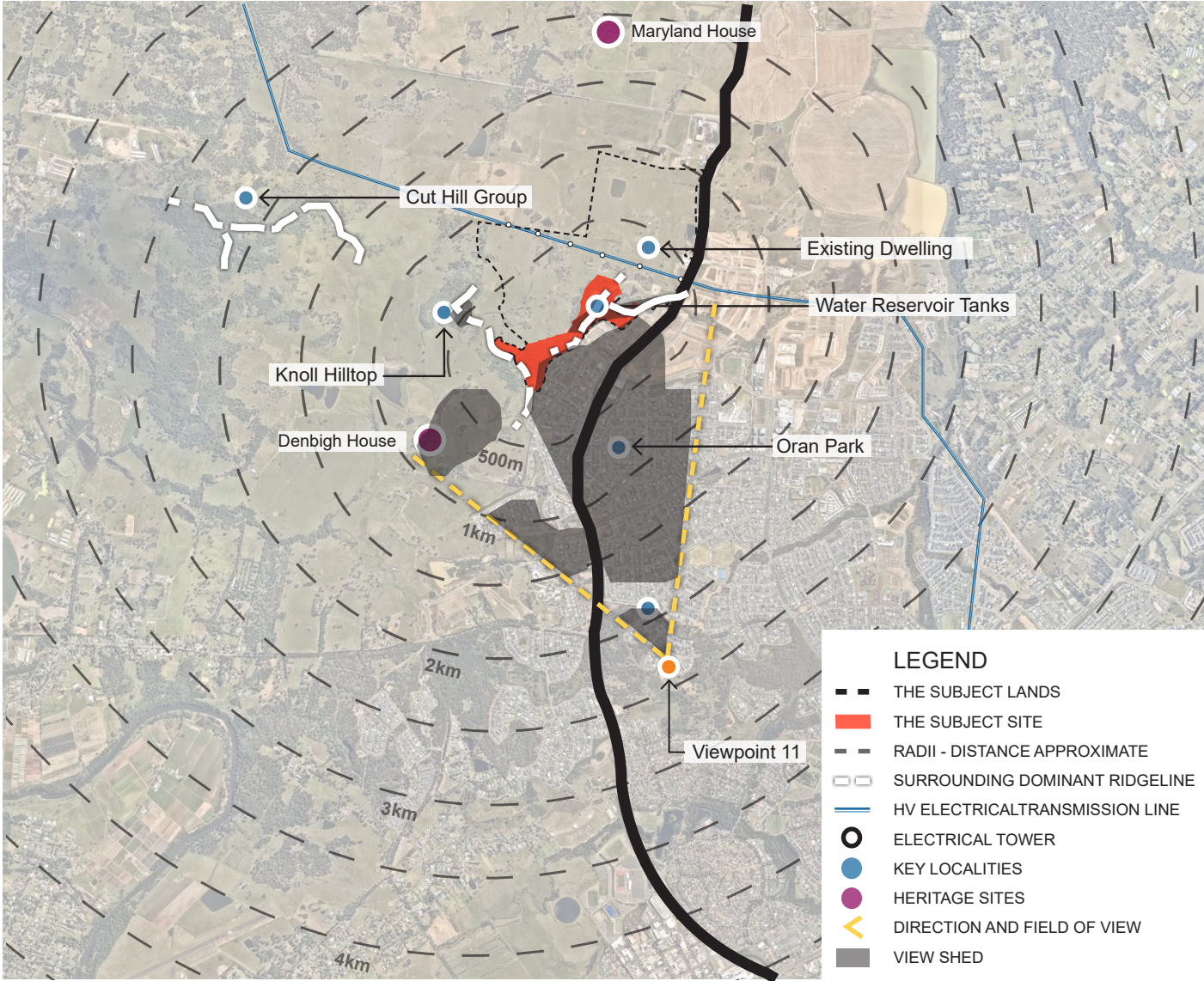
Table 3.10 Viewpoint 10 Assessment Table



Viewpoint 10 (Photo only)



Viewpoint 10 (Photomontage)



Viewpoint 11 (Photo only)



Viewpoint 11 (Photomontage)

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Figure 3.10: Viewpoint 11- View shed plan (Nearmap, viewed 16 September, 2024)

Viewpoint 11 – 2.5km from the subject site from Crear Hill Lookout Harrington Park			
Description of view	Visual sensitivity of view	Visual impact of site development	Rating*
The viewpoint is taken from Crear Hill Lookout (149m AHD), publicly accessible from Rogan Close in Harrington Park. The viewpoint is taken from the access road, lower in elevation, away from the designated 'Lookout' that captures expansive high value views in many directions, except to the north. This viewpoint captures views to the north looking towards the subject site. In the foreground the descending vegetated slopes of the parkland are observed leading down to the established residential neighbourhood of Harrington Park characterised by low density housing and networked native forests. Beyond that in the mid-ground are the residential rooftops of housing within the suburb Oran Park. In the background Oxley Ridge runs across the horizon centre view with native Eucalypts breaching the ridge. To the centre right of view the two enormous water reservoir tanks on the ridge apex can be seen. African Olive weed trees dominate the southern spur with sporadic native Eucalypts emerging above the lower weed layer. Similarly on the northern spur although larger areas of native vegetation are observed. Right of view the dominant ridge (Oxley) descends and meets the horizon line where the transmission stanchions are observed on the subject lands (SP05). Left of view the Northern Rd Ridgelines rise from the left of Oxley. Observed below the ridge and ascending slopes is State heritage listed Denbigh House and Grounds. Cut Hill ridge is seen over this centre of view. In the far background and the Blue Mountains plateau are observed beyond the dominant ridgeline	This viewpoint exhibits very good scenic amenity, enhanced by the picturesque urban forest landscape, distant views to The Northern Road & Cut Hill Ridgeline groups, and beyond to the Blue Mountains. Visual sensitivity is increased due the fact the viewshed captures a state heritage listed site (Denbigh House). The receptor group would be tourists and local residents as a prominent vantage point but also for recreation use. Frequency would be moderate and exposure high. Visual sensitivity is marginally diminished due to the fact the viewshed captures residential dwellings across the viewshed. Visual Sensitivity overall would be rated as High.	Views to any lot dwellings on the ascending slopes of the subject site from this location will be visible. However dwellings positioned on the low side of lots as proposed, would ensure built form does not breach the ridgeline, further diminishing visual impacts. They would likely blend with adjacent built form with the magnitude of change being very low from this distance. Visual impacts are therefore rated as low.	low

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*Visual Impact Rating - refer to definitions

Table 3.11 Viewpoint 11 Assessment Table

3.6 Analysis of Selected Viewpoints

- Each viewpoint was rated on;
- Visual Sensitivity of the view
 - Visual Impact of potential development of the site
- Refer to 3.1 for Definitions of these ratings*

Viewpoints have been separated into two categories based on their proximity and general context to the subject land as follows;

Localised – Less than and up to 1km from subject site, located within the immediate local environment

Regional – Approximately 1km, and up to 4km from subject land, located within the greater regional environment

3.6.1 Viewpoints Summary Table

Viewpoint	Description Name	Visual Sensitivity	Visual Impact
Viewpoint 1	The Northern Road (southbound), Bringelly	Low	Low
Viewpoint 2	Future Village Centre, Bringelly	Low	Low
Viewpoint 3	Future Creek Parklands, Cobbitty	Moderate	Low
Viewpoint 4	Dick Johnson Dr / The Northern Road Intersection, Oran Park	Moderate	Low
Viewpoint 5	Arcadian Hills Lookout Park, Cobbitty	Low	Low
Viewpoint 6	Denbigh House, State Heritage listed, Cobbitty	Moderately High	Nil
Viewpoint 7	Oran Park Town Centre, Oran Park	Low	Nil
Viewpoint 8	Maryland Link Rd (Maryland House, State Heritage listed) Bringelly	Moderately High	Moderate
Viewpoint 9	One Tree Hill Lookout, Harrington Park	Moderately High	Low
Viewpoint 10	Public Reserve (Orielson House) Harrington Park	Moderately High	Low
Viewpoint 11	Crear Hill Lookout, Harrington Park	High	Low

Table 3.13 Viewpoint Analysis Summary Table

3.6.2 Localised Viewpoints 1 – 5

Viewpoints 1 to 5 represent key vantage viewpoints within the immediate locality from 0km up to 1km from the subject lands. Each viewpoint aims to capture any sightlines looking towards the subject lands and surrounding landscape. Each viewpoint assesses the visual sensitivity of the viewshed in relation to the landscape character captured. Further, each viewpoint assesses any potential visual impacts of the proposed rezoning and development both in terms of changes to the landscape character and visual amenity. These viewpoints demonstrate that the subject lands are visible from all viewpoints, with visual sensitivity ranging from low to moderately high. Visual impact of the proposed development within the subject site ranges from nil to low.

Summary Visual Sensitivity of the view – Low to Moderately High
Summary Visual Impact of proposed development – **Nil to Low**

Nil definition – No adverse change to the existing visual resource in the landscape, with no viewer response to change in the visual environment ¹⁰.

Low definition - Minor adverse change to the existing visual resource in the landscape, with low viewer response to changes in the visual environment. New development may or may not require mitigation using conventional practices such as architectural design, recessive exterior finishes, building height controls, landscaping ¹⁰.

3.6.3 Regional Viewpoints 6 – 11

Viewpoints 6 to 11 represent key vantage viewpoints from sites in the greater regional environment in a general radial extending from 1km up to 4km from the subject lands. Each viewpoint aims to capture any sightlines looking towards the subject lands and surrounding landscape. Each viewpoint assesses the visual sensitivity of the viewshed in relation to the landscape character captured. Further, each viewpoint assesses any potential visual impacts of the proposed rezoning and development both in terms of changes to the landscape character and visual amenity. These viewpoints demonstrate that the subject lands are visible from all viewpoints, except viewpoint 6 (Denbigh House) with visual sensitivity ranging from low to high. Visual impact of the proposed development within the subject site ranges from nil to moderate.

Summary Visual Sensitivity of the view – Low to High
Summary Visual Impact of development of site – **Nil to Moderate**

Nil definition – No adverse change to the existing visual resource in the landscape, with no viewer response to change in the visual environment ¹⁰.

Low definition - Minor adverse change to the existing visual resource in the landscape, with low viewer response to changes in the visual environment. New development may or may not require mitigation using conventional practices such as architectural design, recessive exterior finishes, building height controls, landscaping ¹⁰.

Moderate definition - Moderate adverse change to the visual resource in the landscape with moderate viewer response. Impact can be mitigated within five years using conventional practices ¹⁰

10. Guidelines for the Visual Impact Assessment of Highway Projects

4 Conclusions

4.1 The Local Landscape Vernacular

The key visual sensitivities are from busy arterial roads, heritage sites, lookouts, and the existing & future open space public domain, where the subject site is visible in a contextual relationship to the key ridgelines. These ridgelines relate directly to their landscape, semi-rural, and suburban settings deriving the local landscape vernacular. The characterisation of the local landscape vernacular, through a visual lens, is that of two interwoven fabrics. One being emerging low density housing and roads set amongst vegetated urban forests, parks, and riparian corridors. The other is the existing cleared rural landscape dotted with Historical colonial houses, rolling pastoral hills, degraded creeks, and dominate ridgelines.

4.2 Oxley Ridge West Side

Any impacts relating to the Western side of Oxley Ridge relate directly to those from and in association with the *South Creek West Cobbitty Sub-Precinct 5 Release Area* subject lands. These are viewed from primary local viewpoints (1 to 3) and to a lesser extent, one regional viewpoint (8), representing a snapshot of the future visual impacts from developed lands within the sub-precinct 5 area. It is important to note that these impacts on the ridgeline need to be seen not in isolation, but considering the assumed visual amenity once the surrounding development has taken place in the future. The emergence of a local centre, housing, revegetation of riparian corridors, and establishment of open space ‘greening’, will ultimately have an effect on the longer-term visual outcomes. These considerations are speculative and cannot be quantified, therefore not fully assessed in this report. Further in the context of this study, views towards the western side of ridge are of less importance to those towards the eastern side of the ridge, as explained in *4.3 Oxley Ridge East Side* below.

The results show local viewpoints are most relevant when viewing this side of the ridgeline, and indicate consistently low visual impacts, arguably negligible when considering future development scenario as outlined above. This would only apply if all structures are concentrated on the low side of the proposed lots, as the built form (rooftops) blend from below and ridgeline crest is preserved.

4.3 Oxley Ridge East Side

Any impacts relating to the Eastern side of Oxley Ridge relate directly to those from and in association with the *Heartfruit Ave Site* and *Wainwright Drive Site* on the subject lands. These are viewed from primarily regional viewpoints (6,7,9,10, and 11) and to a lesser extent, local viewpoints (4 and 5) and represent an accurate depiction of the visual impacts against the established development from the Oran Park and Oran Park West (Arcadian Hills etc) release areas seen from all viewpoints to the East side of the ridgeline. In the context of this study, views towards the eastern side of ridge are of higher importance to those towards the western side of the ridge for several reasons. Firstly, the receptor groups are more extensive and the frequency is higher, meaning more types and quantity of people are seeing it more often. Secondly, the ridge can be viewed from greater distances from key public lookouts contextually against Historic sites and other dominant ridgelines, such as Cut Hill group and the Blue Mountains.

The results show regional viewpoints are most relevant when viewing this side of the ridgeline, and indicate consistently low visual impacts. This would only apply if all structures are concentrated on the low side of the proposed lots, as the built form (rooftops) blend from below and the ridgeline crest is preserved.

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4.4 Overall

Visual impacts from the proposed dwelling houses backing onto the dominant ridgeline, Oxley Ridge, positioned on the low side of lots facing the local road network, are likely to be very limited when viewed from all directions.

Demonstrated adverse visual resource changes that would prompt a low viewer response to a visual change in amenity were most consistently determined, with a slight varying in severity, registering only one viewpoint rated as moderate. None were rated above moderate (excluded *moderately-high* and *high* ratings). Most notably were those viewpoints capturing the eastern side of ridge that have a contextual relationship to state heritage items, or the local vernacular relating to the dominant ridgelines both locally and regionally. These visual impact, although minor, were increased by greater receptor groups and greater frequency, meaning more types & quantity of people are seeing it more often.

The overall conclusions therefore show a consistently *minor adverse change to the existing visual resource in the landscape, with low viewer response to changes in the visual environment. At worst, a moderate adverse change to the visual resource in the landscape with moderate viewer response can be mitigated within five years using conventional practices and some built form controls.*

Strategic urban design layout coupled with visual impact mitigation measures such as built form controls, and title covenants on the retention of ridgeline vegetation, would result in a reduced visual impact on the local and regional vernacular.

The mitigation measures can be applied through conventional interventions, as well as some specific planning and development controls or covenants as outlined in *Section 5 Recommendations*.

5 Recommendations

5.1 Conventional Mitigation Measures

It is determined that conventional mitigation measures, such the reservation of land in perpetuity (public), and landscape buffers or vegetative screening will not have the desired effect in this instance that would effectively mitigate the visual impact of housing on the ascending slopes of the ridge. However the following conventional measures should be applied on private land as follows;

5.1.1 Rehabilitate the Ridge Crest

Prior to the private sale of subdivided lots, the landowner/developer must remove all weed species such as African Olive, without destabilising the batters, and revegetate the nominated upper slopes of the lots with native species. This is to ensure the Ridgeline and crest is rehabilitated and preserved, and the visual integrity of a natural ridge geology and vegetative cover is maintained into the future. Landowners of lots are to maintain the rehabilitated area until trees are protected by a Tree Preservation Order (TPO) *refer 5.2.3* below.

5.2 Planning and Development Controls

Apply planning and development controls, additionally to the respective DCP that mitigate the visual impact of the development or the potential visual impacts of other land uses on private property.

5.2.1 Building and Land Use Restrictions

- Purpose**
To ensure dwellings and structures are located on the low side of lots to negate any visual impacts on the ridgeline.
- Controls**
 - All dwelling houses must be located within the site specific building envelopes located outside of the mapped Asset Protection Zones (APZ)
 - Any ancillary buildings or structures are not-permissible on the upper slopes of lots outside of the APZ

5.2.2 Covenant on Title – Vegetated Ridge Slopes & Crest

- Purpose**
To ensure the upper slopes and crest of the ridgeline remains stabilised and vegetated to negate any visual impacts on the ridgeline.
- Covenant**
 - Landowners must retain and maintain the vegetated area on the upper slopes of private lots in perpetuity.
 - No other lands uses are permitted in the vegetated area other than access for maintenance.

5.2.3 Tree Preservation Orders

Provide a tree preservation order (TPO) to all vegetation on private lands or other ownership to ensure existing landscape offsets, and mitigating sightlines are maintained. Works that require Councils consent, except as otherwise provided in a TPO, a person shall not; 1. cut down or remove; 2. ring bark, prune (which includes pruning of branches or roots which are more than 30mm in diameter; 3. top, lop; 4. Injure by poisoning or mechanical means; 5. Damage tree roots by compaction or changing the ground level (by fill or excavation) beneath the drip line; or 6. Wilfully destroy trees the subject of an order.

NOTE: Asset Protection Zones (APZ) should be observed and considered when placing a TPO in accordance with the relevant Bushfire Consultant and RFS Guidelines. Ensure APZ management specifications are adhered to with relation to both Inner Protection Ares (IPA) and Outer Protection Area (OPA).

5.2.4 Built Form Controls

Visual impact mitigation measures such as built form controls, and building materiality would result in a reduced visual impact on the local vernacular, although these would be only marginal. Tighter development controls beyond those outlined in the applicable DCP, in the context of urban release areas more broadly, would not result in a greatly reduced visual outcome on the dominant ridgeline, while burdening those individual landholders further.

6 Referencing

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7 Appendix A - Full Size Photomontages



Viewpoint 1 - Photomontage of the Proposed Oxley Ridge Development



Viewpoint 2 - Photomontage of the Proposed Oxley Ridge Development



Viewpoint 3 - Photomontage of the Proposed Oxley Ridge Development



Viewpoint 4 - Photomontage of the Proposed Oxley Ridge Development



Viewpoint 5 - Photomontage of the Proposed Oxley Ridge Development



Viewpoint 7 - Photomontage of the Proposed Oxley Ridge Development



Viewpoint 8 - Photomontage of the Proposed Oxley Ridge Development



Viewpoint 9 - Photomontage of the Proposed Oxley Ridge Development



Viewpoint 10 - Photomontage of the Proposed Oxley Ridge Development



Viewpoint 11 - Photomontage of the Proposed Oxley Ridge Development