Appendix O

Landscape and Visual Impact Assessment

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Landscape and Visual Impact Assessment

Cudgegong Road Station Precinct South

Quality information

Document name	Ref	Prepared for	Prepared by	Date	Reviewed by
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Revision history

Revision	Revision date	Details	Name	Position
A	05/03/18	Draft Landscape and Visual Impact Assessment	Adam Jeffery	Senior Landscape Architect
B	12/03/18	Landscape and Visual Impact Assessment	Adam Jeffery	Senior Landscape Architect
C	16/03/18	Landscape and Visual Impact Assessment	Adam Jeffery	Senior Landscape Architect

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Glossary

Term	Definition
Landscape Character Zones (LCZ)	These are distinct zones of the landscape that are relatively homogenous in character. They are generic in nature in that they may occur in different areas, but wherever they occur they share broadly similar combinations of geology, topography, drainage patterns, vegetation and historical landuse and settlement pattern, and perceptual and aesthetic attributes.
Photomontage	Computer simulation or other technique to illustrate the appearance of a proposal.
Magnitude	A combination of the scale, extent and duration of an effect.
Sensitivity	Susceptibility of a receptor to a specific type of change.
Visual receptor	Individual and/or a defined groups of people who have the potential to be affected by a proposal.
View	A sight or prospect of some landscape, scene, etc.

1. Introduction

1.1. Overview

AECOM Australia Pty Ltd (AECOM) has been commissioned by Landcom to undertake a Landscape and Visual Impact Assessment (LVIA) for the Stage 1 concept proposal for a mixed-use development at Cudgegong Road Station Precinct South (hereafter referred to the Project). The LVIA assesses the Project suitability for a mixed-use development with regard to potential landscape and visual impacts during the construction and operational stages of the development. The content and structure of this LVIA address the Secretary's Environmental Assessment Requirements (SEAR's) issued by the Department of Planning and Environment dated 16 February 2018.

1.2. Report structure

The LVIA has been structured into the following Sections:

Table 1: Report Structure

Report Section	Description
1.0 Introduction	This section provides an introductory overview that describes the intent and purpose of the LVIA and description of the report structure.
2.0 Methodology	This section describes the methods employed to assess the potential impacts of the Project.
3.0 Legislation, policy and guidelines	This section outlines the legislation, policies and planning guidelines relevant to the Project.
4.0 Contextual Analysis	This section describes the regional context, site locality and key components of the development.
5.0 Landscape Character Assessment	This section identifies the variations in the character of the landscape within and surrounding the Project and determines the sensitivity and magnitude of the landscape to the proposed change.
6.0 Visual Impact Assessment	This section describes and determines the potential visual effect of the Project from key visual receptor locations.
7.0 Mitigation Measures	This section considers the application of mitigation measures to minimise potential visual impacts.

Figure 1: The Cudgegong Road Station Precinct South Landscape Concept Plan

Figure 2: Artists Impression of the Project

1.3. The Proposal

The New South Wales Government is currently building the Sydney Metro Northwest (SMNW) that is due to start operations in 2019. The project includes the construction of eight new metro stations between Cudgegong Road and Epping and conversion of five existing stations between Epping and Chatswood. The second stage of the project will deliver a new metro rail line from Chatswood through the Sydney Central Business District to Sydenham.

Landcom and the Sydney Metro Delivery Office (SMDO) with Transport for NSW (TfNSW) are working in collaboration to develop walkable, attractive, mixed use centres around the SMNW stations. This includes using the surplus government owned land located around the Cudgegong Road Station.

The Project is located between Cudgegong Road, Tallawong Road, Schofields Road and the metro corridor and comprises around 7.8 hectares of government owned land. It is within the southern part of the broader Cudgegong Road Station Precinct (Areas 20) of the North West Priority Growth Area.

The Cudgegong Road Station Precinct South development is designed to be an active and walkable neighbourhood with the Metro Station at its core. It will comprise a broad range of higher density housing, public domain including a central park and a series of mixed-use facilities within 300m of the new station.

The street pattern is arranged to create a rational and legible urban grid providing physical and visual connectivity through the site and beyond. A network of pedestrian and cycleway paths complementing the street grid pattern provide pedestrian focused links through the site and divides the developable areas into smaller blocks. These links extend through and connect the residential areas, the town centre, the Metro Station and adjoining neighbourhoods such as The Ponds.

A series of open spaces including a public park, plazas, tree-lined streets, landscape zones and communal open spaces are distributed throughout the site. These will create a series of connected open spaces providing amenity to the residents, visitors and employees. The spaces will be designed to support a variety of uses and activities.

Higher density housing is accommodated in buildings up to 8 storeys in height providing a variety of urban scale and built form within the development. Taller buildings have been located to consider overshadowing impacts to the public spaces and to concentrate density around the public domain amenities. Within this built form, a range of housing types will accommodate and foster a diverse community.

Mixed-use facilities such as retail, childcare, work hub and community spaces proposed for the ground and first floor areas will be situated in close proximity to the Metro Station and public park to activate the precinct centre.

2. Methodology

There is no accepted national published guidance on landscape and visual amenity impact assessment specific to Australia. Therefore, the assessment is made with reference to an understanding of techniques set out in the following good practice document: *The Guidelines for Landscape and Visual Impact Assessment, Third Edition* (2013), (GLVIA) developed by the Landscape Institute and Institute for Environmental Management (United Kingdom).

The following method assesses landscape character and visual amenity effects arising from the Project and has been derived from an analysis of the preliminary design drawings prepared by Bennett and Trimble (2017). The method:

- analyses the existing landscape character and visual environment
- determines the extent and nature of potential landscape and visual impacts of the Project on surrounding areas; and
- identifies measures to mitigate and minimise potential landscape and visual impacts.

2.1. Desktop assessment and fieldwork

Key resources have been identified and reviewed as a component of the desktop assessment. This included review of 1:25,000 scale topographic maps and aerial photography of the project site and surrounding landscape. The topographic maps and aerial photography were used to identify the locations of potential receptor locations. The desktop assessment also outlines the visual character of the surrounding landscape including features such as landform, elevation, landcover and distribution of residential properties.

Fieldwork was conducted to determine and confirm the potential extent and visibility of the Project and ancillary structures. Various view locations from which the Project could potentially be visible were also confirmed and determined.

2.2. Assessment of landscape character effects

Assessment of landscape character deals with the effect of a visible change on the landscape and development on the elements that make up the landscape, the aesthetic and perceptual aspects of the landscape and its distinctive character. The assessment comprises the combination of the following assessments:

2.2.1. Sensitivity of landscape to visual change

The identification of the sensitivity of the landscape to a specific change encompasses the following components:

Susceptibility to change

The existing landscape receptor is assessed to understand the capacity to accommodate the proposal: without adverse effect on existing landscape character, e.g. based on landform, land use, pattern or scale; and the capacity to achieve landscape planning policy and strategy objectives.

Value of the landscape

This assesses whether the value of the landscape would be affected based on existing landscape character designations (e.g. state, regionally or locally recognised landscapes), and the value of particular landscape elements or notable aesthetic, perceptual or experiential qualities.

These individual criteria are combined to achieve a landscape sensitivity rating that could broadly be defined in Table 2.

Table 2: Sensitivity of landscape to change

Sensitivity of landscape to visible changes	
High	Landscapes of international designation and/or landscapes that have high sensitivity to the type of development proposed which could have a detrimental effect on the landscape character or value. Mitigation measures will be unlikely to reduce all of the effects of the change.
Moderate	Landscapes of regional designation or valued more locally and tolerant of moderate levels of change. Any change would be unlikely to have a significant adverse effect on the landscape character or value and mitigation would neutralise some of the effects.
Low	Landscapes of local designation that are more commonplace and potentially tolerant of noticeable change or are undergoing substantial development themselves, with mitigation measures likely to neutralise or improve the landscape character.
Negligible	Landscapes of local designation and/or with low sensitivity to the type of change proposed with mitigation likely to completely neutralise any effects or not required at all.

2.2.2. Magnitude of landscape effect

The magnitude of landscape effects is comprised of the following components:

Size or scale of change

An assessment of size or scale of change in the landscape likely to be experienced as a result of the proposed development which may include the extent of loss of an existing landscape elements, the degree of alteration to aesthetic or perceptual aspects of the landscape, or change to key characteristics of the landscape.

Geographical extent of effects

This considers the geographical extent over which the landscape effects will be felt, and is distinct from the size or scale of the change. This is influenced by site levels, the immediate setting of the site, and landscape character types in the vicinity.

Duration and reversibility of the effects

Duration is judged on a scale of short term (zero to five years), medium term (five to ten years) and long term (ten to twenty-five years). Reversibility is a judgement about the prospects of the effect being reversed, for example, a project such as a mine might have a limited life.

These individual criteria are combined to achieve a magnitude of landscape effect that is defined in Table 3:

Table 3: Magnitude of landscape effect

Magnitude of landscape effect	
High	A substantial/obvious change to the landscape due to total loss of, or change to, elements, features or characteristics of the landscape. Change would cause a landscape to be permanently changed and its quality diminished.
Moderate	Discernible changes in the landscape due to partial loss of, or change to key elements, features or characteristics of the landscape which may be partly mitigated. The change would be out of scale with the landscape, at odds with the local character, and would leave an adverse impact on the landscape. The change would partially obstruct or change a view.
Low	Minor loss or alteration to one or more key landscape features or characteristics, or the introduction of elements that may be visible but may not be uncharacteristic within the existing landscape.
Negligible	Almost imperceptible or no change in the landscape or views as there is little or no loss of, or change to the elements, features or characteristics of the landscape.

2.2.3. Overall rating of landscape character effects

Once the sensitivity of the landscape to visual change and the magnitude of the landscape effect is determined, a rating matrix is used to determine an overall rating of landscape effects, and made on the level of significance of the effect, described as being Negligible, Low, Moderate - Low, Moderate, High - Moderate or High, as set out in Table 4.

Table 4: Overall significance of landscape character effects

		Magnitude of effect			
		High	**Moderate**	**Low**	**Negligible**
Sensitivity	**High**	High	High - moderate	Moderate	Negligible
	Moderate	High - moderate	Moderate	Moderate - low	Negligible
	Low	Moderate	Moderate - low	Low	Negligible
	Negligible	Negligible	Negligible	Negligible	Negligible

2.3. Assessment of visual effects

Assessment of visual impacts deals with the impact of changes to the landscapes perceived by individuals or groups of people. This identifies the change or loss of existing elements of the visual landscape and/or introduction of new elements to relevant users.

Receptor Types

The viewpoints have been organised in key receptor types, each of which are considered typically to share defined levels of sensitivity to changes in the context and character of views. The receptor types that form this assessment comprise residents, passive recreation users and road users.

Photomontages

A photograph of the Project from each of the nominated receptor locations has been used to assist in the analysis process. These photos were taken using a single-lens reflex digital camera using a 28 millimetre full frame lens with no parallax error.

Photomontages were then prepared to illustrate the likely visual change from a number of key viewpoints and are included in Section 6.0. These images focus on viewing the Proposal in its wider setting, at the view level of a pedestrian at a nominal eye height of 1.7 metres. The materials and finishes used are indicative only and would be further investigated during detailed design.

To prepare photomontages, a 3D model of the Proposal was developed and confirmed against survey information, architectural plans, elevations and sections. Viewpoint locations were selected and photographs taken during a site visit on Friday 12 January 2018. Photographs were corrected for distortion using specific camera and lens profiles, and camera coordinates were then merged with the 3D model to allow a 'virtual camera' to be setup using these coordinates. Camera matching was undertaken using reference points common to the 3D model and physical features in the photographs. The model was then rendered with the photograph and edits to the foreground and background elements made as necessary.

2.3.1. Sensitivity of visual receptors

The sensitivity of visual receptors encompasses the components outlined below.

Susceptibility of visual receptors to change

The susceptibility of different visual receptors to changes in views and visual amenity is mainly a function of the activity of people experiencing the view and the extent to which their attention or interest may therefore be focused on the view.

Visual receptors most susceptible to change are generally residents who are likely to occupy these locations for long periods of time, people engaged in outdoor recreational activity, visitors to attractions where the surroundings are part of the experience, and communities where the landscape setting is an important contributor to the amenity of their environment.

Visual receptors with a moderate susceptibility to change are generally travellers on road and rail transport. Where travel involves recognised scenic routes, awareness of views may be particularly high.

Visual receptors with less sensitivity to change include people engaged in outdoor sport and people at their place of work where attention is focussed on their activity and the setting is less important to their experience.

Value attached to views

This assessment considers:

- the recognition of the value attached to particular views, either in relation to heritage assets or through planning designations, planning policy or other existing planning or urban design studies
- indications of the value attached to views, either through inclusion in guidebooks or on tourist maps, provision of facilities for their enjoyment such as sign boards and interpretive material
- reference to them in literature or art.

These components are combined to produce a sensitivity assessment that ranges from High to Negligible.

2.3.2. Magnitude of the visual effects

The magnitude of visual effects is comprised of the components outlined below.

Size or scale of the change

This assessment takes account of the scale of change in the view with respect to: the loss or addition of features in the view; the degree of contrast or integration of any new features or changes and characteristics in terms of form, scale and mass, line, height, colour and texture; and the nature of the view of the proposal and whether views will be full, partial or glimpses.

Geographical extent of effects

The geographical extent of a visual effect will vary with different viewpoints and is likely to reflect the horizontal angle of the view, the distance of the viewpoint and the extent of the area over which changes would be visible.

Duration and reversibility of the effects

Duration is judged on a scale of short term (zero to five years), medium term (five to ten years) and long term (more than ten years). Reversibility is a professional judgement about the prospects of the effect being reversed.

These components are combined to produce a magnitude of visual effect assessment that ranges from High to Negligible.

2.3.3. Overall significance of visual effects

Once the sensitivity of the landscape to visual change and the magnitude of the landscape effect is determined, a rating matrix is used to determine an overall rating of visual effects, and made on the level of significance of the effect, described as being Negligible, Low, Moderate - Low, Moderate, High - Moderate or High, as set out in Table 5.

Table 5: Overall significance of visual effects

		Magnitude of effect			
		High	**Moderate**	**Low**	**Negligible**
Sensitivity	**High**	High	High - moderate	Moderate	Negligible
	Moderate	High - moderate	Moderate	Moderate - low	Negligible
	Low	Moderate	Moderate - low	Low	Negligible
	Negligible	Negligible	Negligible	Negligible	Negligible

3. Legislation, policy and guidelines

3.1. Secretary's Environmental Assessment Requirements

This LVIA addresses and responds to the Secretary's Environmental Assessment Requirements (SEARS) dated 16 February 2018 for the assessment of potential visual impacts of the Project. The SEAR's are identified in Table 6.

Table 6: SEAR's Requirement

SEAR's Requirement
Address visual privacy, views and visual impacts to the surrounding area, including neighbouring properties and the public domain.
View analysis to and from the site from key vantage points and streetscape locations including photomontages or perspectives of the proposed development.
Illustrate the proposal's potential amenity impacts to surrounding properties, including low-density residential development to the south (The Ponds), and any proposed mitigating measures in respect to privacy, views and any other amenity impacts.
A detailed Heritage Impact Statement must be prepared and include a view impact assessment of State Heritage Register heritage items in the vicinity of the development including the former Royal Oak Inn and Rouse Hill House. The assessment must be informed and illustrated with photomontages.

3.2. Legislation and policy

While there is no legislation specific to the field of LVIA, Table 7 summarises some of the relevant planning policies and guidelines that apply to the Project, as well as the implications and requirements specific to landscape character and visual impacts.

Table 7: Relevant policies and implications for the Project

Policy	Clause	Implications for the Project
State Environmental Planning Policy (Sydney Region Growth Centres) 2006	Part 7 – Clause 26	Whether or not the development will adversely impact on the cultural heritage values of the Rouse Hill House Estate and its setting. The Project should consider: • the extent, location and form of any proposed landscaping and its ability to reduce the visual impact of the development; • a visual analysis that assesses the impact of the development on views to and from the Rouse Hill House Estate.
	Appendix 6 Area 20 Precinct Part 4 – Clause 4.3	To minimise visual impact and protect the amenity of adjoining development and land in terms of solar access to buildings and open space.
State Environmental Planning Policy No 19 - Bushland in Urban Areas	Clause 2	To protect bushland for its scenic values, and to retain the unique visual identity of the landscape.
State Environmental Planning Policy No 65—Design Quality of Residential Apartment Development	Schedule 1	Principle 2: Built form and scale: • appropriate built form defines the public domain, contributes to the character of streetscapes and parks, including their views and vistas, and provides internal amenity and outlook.

Figure 3: Context Plan

4. Contextural Analysis

4.1. Regional Context

The Project is located within the Blacktown City Council Local Government Area (LGA) and is approximately 2km west of Rouse Hill Town Centre and 45 km north-west of the Sydney CBD. The site is bound by Tallawong Road to the West, Cudgegong Road to the East, Schofields Road to the South and Cudgegong Road Metro Station to the North. The site is located within Area 20 of the North West Growth Centre. Refer to Figure 3 for Context Plan.

The area is well connected for vehicle travel via Windsor Road to the east that links to the M7. Schofields train station to the west of the site provides the closet rail link on the T1 and T5 lines. The future Sydney Metro Northwest will provide an alternative connection immediately to the Project site.

4.2. Local Context

Cudgegong Road Station Precinct South sits within Blacktown City Council LGA and immediately adjacent to the Hills Shire Council. The local area is undergoing rapid transformation associated with the construction of the Sydney Metro Northwest and ongoing residential development.

The Ponds development to the south of the study area showcases recent changes to standard low density development and has introduced a variety of housing typologies such as town houses. It is anticipated that residents of The Ponds will be one of the primary users of the station due to its close proximity and proposed pedestrian / cycle links.

The Rouse Hill Town Centre is situated to the east of the precinct on the opposite side of Windsor Road and will be connected by the Sydney Metro Northwest line and future pedestrian / cycle links. It is anticipated that residents of the Cudgegong Road Station Precinct South will frequent this regionally popular shopping district enjoying the pedestrian focused streets and open air shopping.

To the north of the site the existing low density and semi-rural subdivisions are undergoing extensive change due to the imminent completion of the Sydney Metro Northwest. Numerous development applications for medium density residential and apartment buildings have been lodged or approved by Blacktown City Council, further evidence of the changing way in which development is being rolled out around transport infrastructure.

Future residential and employment centres are being planned to the northwest of the site in areas currently comprising semi-rural development.

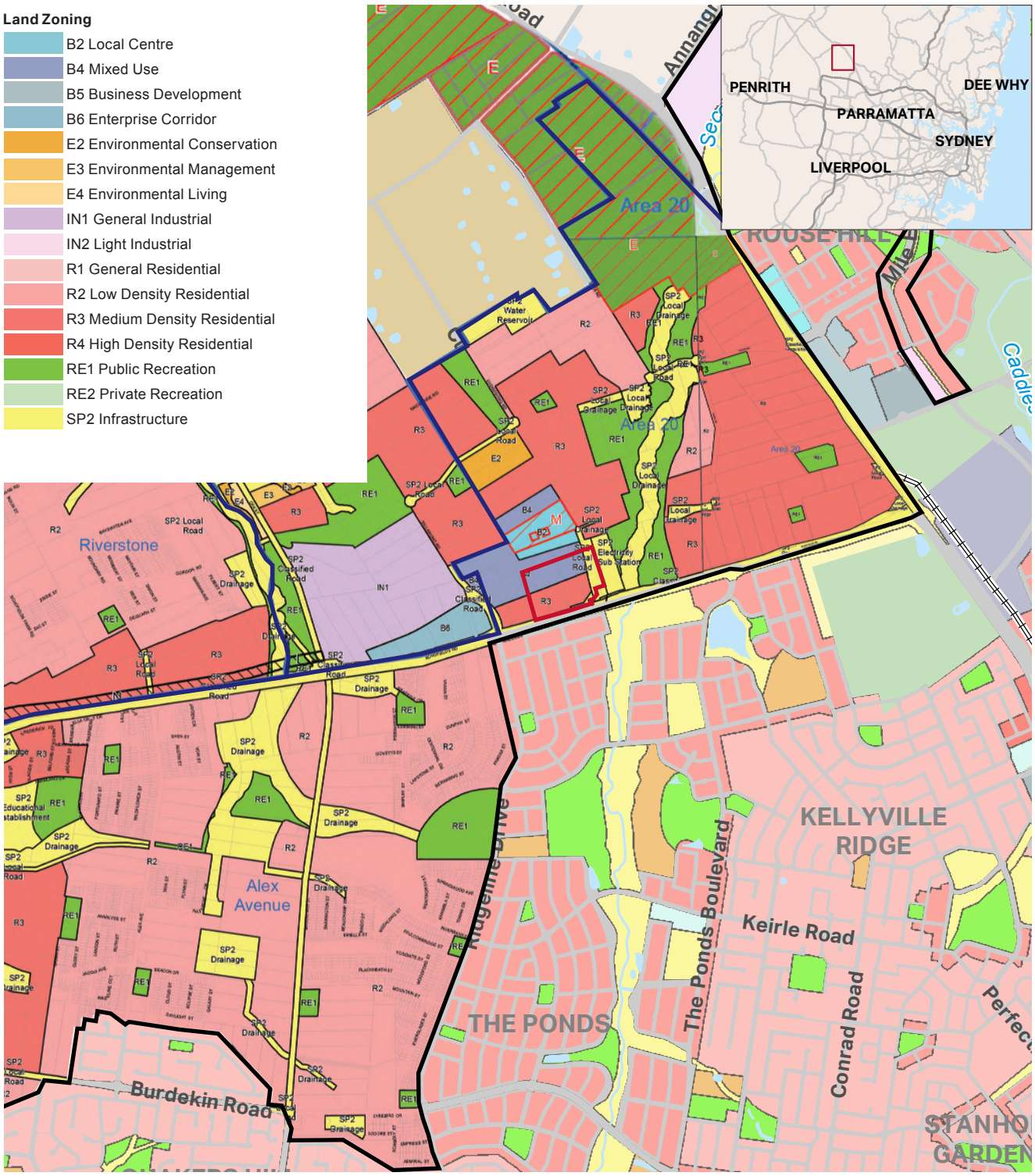


Figure 4: Land Use Plan

4.3. Land Use

The existing surrounding land uses are primarily low density residential (refer to Figure 4). To the south is the suburban settlement of The Ponds, with low density residential detached houses and townhouses. The Ponds also includes a number of open spaces and sports fields. The Castlebrook Memorial Park (Cemetery and Crematorium) is located to the south-east of the site on the corner of Windsor Road and Schofields Road.

To the north the land use is larger lots for environmental living, a caravan park, Lankarama Buddhist Vihara, Rouse Hill Anglican College and the Rouse Hill House & Farm.

The Second Ponds Creek riparian corridor runs north-south immediately adjacent to the east of the site the site, as well as Rouse Hill Regional Park to the north and The Ponds to the south.

4.4. Topography, geology and soils

The land is flat to gently sloping alluvial plain in the area of the site. The primary creek line is the Second Ponds Creek that runs north-south to the east of the site. High points around the site include the Rouse Hill House and Farm site to the north and Glenheath Park in The Ponds to the south.

The area of the site is primarily Blacktown soil landscape with areas of South Creek soil landscape to the north.

The Blacktown soil landscape geology is dominated by the Wianamatta Group - Ashfield Shale with laminite and dark grey siltstone, Bringelly Shale which consists of shale with occasional calcareous claystone, laminite and infrequent coal, and Minchinbury Sandstone consisting of fine to medium-grained quartz lithic sandstone.

In the South Creek soil landscape the geology is quaternary alluvium derived from Wianamatta Group Shales and Hawkesbury Sandstone.

4.5. Vegetation communities

The vegetation is almost completely cleared open-forest and open-woodland (dry sclerophyll forest). The original woodland and open-forest were dominated by *Eucalyptus tereticornis* (Forest Red Gum), *Eucalyptus crebra* (Narrow-leaved Ironbark), *Eucalyptus moluccana* (Grey Box) and *Corymbia maculata* (Spotted Gum).

The vegetation of the South Creek landscape comprises species that can withstand frequent inundation. Common tree species include *Angophora subvelutina* (Broad-leaved Apple), *Eucalyptus amplifolia* (Cabbage Gum) and Casuarina glauca (Swamp Oak). Still water species such as *Eleocharis sphacelata* (Tall Spike Rush), Juncus usitatus and Polygonum spp. occur where channels are silted up. On more elevated streambanks a tall shrubland of *Melaleuca spp.* (Paperbarks) and *Leptospermum spp.* (Tea Trees) may occur. However much of this soil landscape has been previously cleared and is now dominated by exotic species such as *Rubus vulgaris* (blackberry) and other weeds.

Figure 5: Heritage Items

4.6. Heritage

There are ten heritage items in the vicinity (two kilometres) of the site. Three of these items are listed on the state heritage register as being of state heritage significance (refer to Figure 5). The other items are listed on the Blacktown LEP and The Hills LEP as being of local heritage significance.

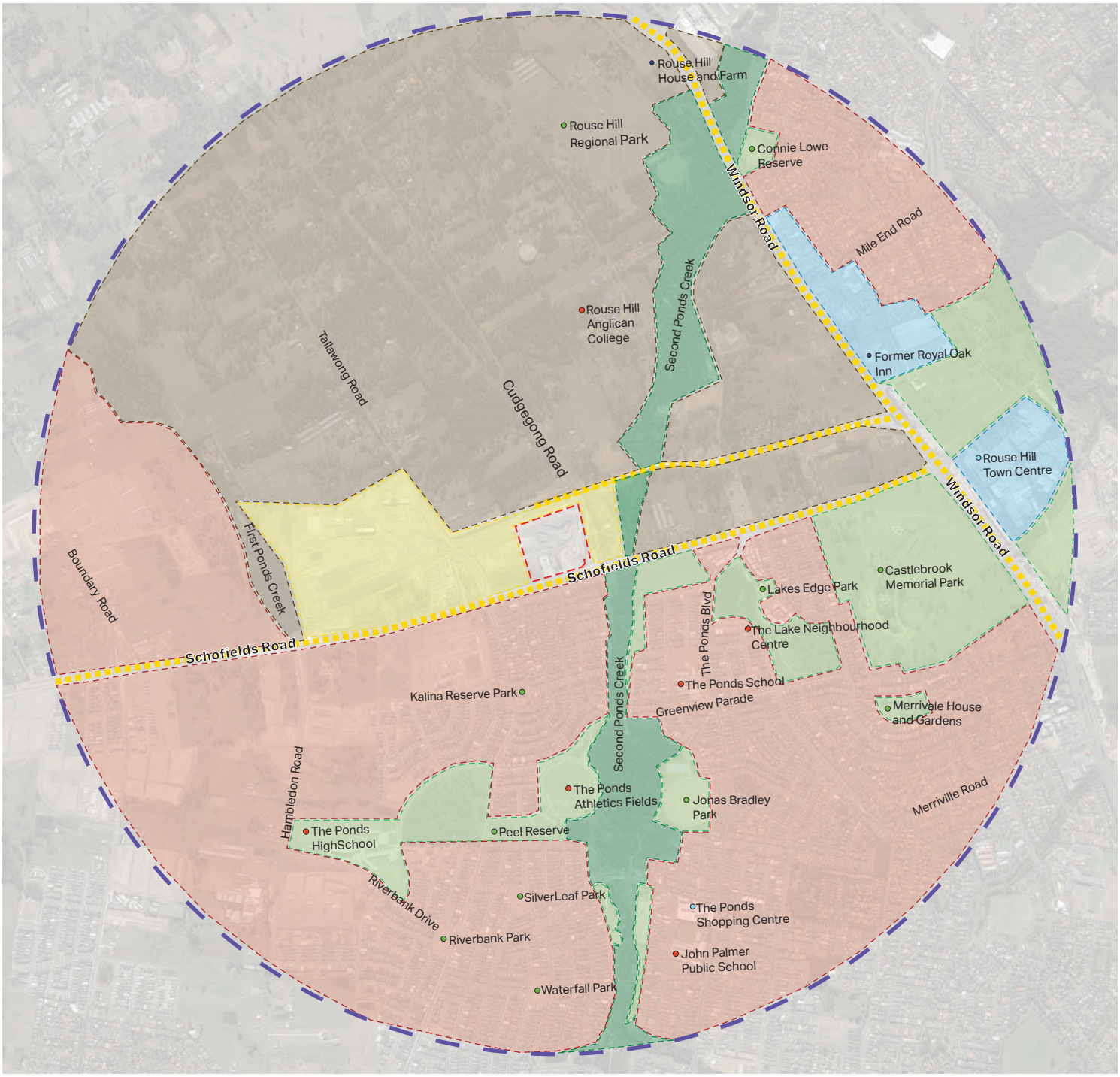
The former Royal Oak Inn on the eastern side of Windsor Road, Rouse Hill House and Farm to the north of the site and Merriville House and Gardens to the south-east of the site are listed as items of State heritage significance.

The former Royal Oak Inn meets six of the seven criteria for listing on the state heritage register. The Inn is an important survivor of an early colonial coaching inn of the 1820-1840 period. The Inn is believed to be the site of one of the first inns on the Parramatta to Windsor/Richmond route and one of the earliest licenced premises in the colony.

Rouse Hill House meets six of the seven criteria for listing on the state heritage register. It is one of the most significant and substantial houses of the Macquarie period which dates from 1810 to 1822. The statement of significance notes:

"*Rouse Hill House Estate is the largest and most complete publically owned physical record - in the form of buildings, furnishings, artefacts and landscape relationship - of the occupancy and culture of a European-Australian family, encompassing the tastes, fortunes, and endeavours of seven generations from the early 19th century to the late 20th century.*"

Merriville House and Garden statement of significance notes the rarity of the early-mid nineteenth century fabric of the site. The structures and landscaping are good examples of largely intact Colonial Georgian and Victorian Georgian architecture. The house is associated with respected early nineteenth century settler, Jonas Bradley. Bradley was independently important for his contribution to the development of early agricultural practices in the settlement. The property is also associated with the Pearce family who were major figures in the Hills district for their commercial orchards. Robert Pearce and his descendants were associated with this house and land for approximately one hundred years. At one time the Pearce family was the largest landholder in the district and responsible for some of its finest properties



LEGEND

- Study area (2km offset)
- Project boundary
- LCZ 1: Residential
- LCZ 2: Rural
- LCZ 3: Open Space
- LCZ 4: Riparian corridor
- LCZ 5: Commercial
- LCZ 6: Infrastructure

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Figure 6: Landscape Character Zones

5. Landscape Character Assessment

5.1. Landscape character zones

Based upon the assessment of the existing natural and cultural influences that shape the landscape and visual context of the study area, landscape character zones (LCZs) have been identified.

Each character zone identified represents a relatively homogenous character based on the consideration of the following attributes:

- Landscape value (for example landscapes designated for their scenic or landscape importance or valued recreational function).
- Landscape elements that contribute to defining character (for example residential development, infrastructure corridors, landform and open space).
- Landscape character attributes (including scale, grain and perceptual characteristics such as the sense of remoteness, tranquillity and/or its perceived character).

The six LCZs identified near to the Cudgegong Road Station Precinct South are outlined below and shown in Figure 6:

- LCZ 1: Residential
- LCZ 2: Rural
- LCZ 3: Open Space
- LCZ 4: Riparian Corridor
- LCZ 5: Commercial
- LCZ 6: Infrastructure

For the purpose of this assessment, the key area of focus is considered to be those within a two kilometre offset from the Project. Beyond this area, it is anticipated that the combined effects of intervening landform, built form and vegetation will combine to substantially limit landscape and visual impacts.

5.2. Landscape character effects

An assessment of landscape character impacts arising from the Project of the identified landscape character zones has been undertaken to determine the significance of potential changes to the character of the landscape.

Table 8: Landscape character effects assessment - LCZ 1: Residential

Landscape Character Zone 1: Residential
Anticipated change to LCZ
The Project would comprise an uncharacteristic new built form within the landscape comprising high density buildings ranging up to eight stories providing a variety of urban scale and built form.
Sensitivity to change: High
Susceptibility to change
A distinction is made between the character of housing fronting onto Schofields Road (along Amarco Circuit) which is separated by the Project by four busy lanes of traffic and residences having open front yards that address the Project. In contrast, other local roads comprise quiet streets with both open front yards and substantial rear yard screen planting and fencing that address the Project. The LCZ has a low potential to accommodate the proposed change due to the uncharacteristic scale, massing and form of the Project within the existing low rise residential development of The Ponds and differing relationships between street frontages.
Value of LCZ
The value of LCZ to changes in landscape character is considered to be Moderate within the context of it being unlikely to accommodate the proposed change and limited to the edge between where the Project converges with this LCZ and elevated positions along the ridgeline to the south of the Proposal.
Magnitude of change: Moderate
Size/scale
No existing elements within the LCZ are expected to be lost to the Project. The scale, massing and form of the Project is in strong contrast to the low lying landform and one to two storey scale, built form and massing associated with the adjoining roads of The Ponds residential development. The perception of those residences on Amarco Circuit in particular as being within a local road setting will be affected by the Project. Within the context of the broader landscape setting, the land use, pattern and scale have the capacity to accommodate the type of changed envisaged.
Geographical extent
The geographical extent of the landscape effect is considered generally to be within the vicinity of the Project.
Duration/reversibility
The Project would comprise a permanent change.
Significance of landscape character effect: High - Moderate

Table 9: Landscape character effects assessment - LCZ 2: Rural

Landscape Character Zone 2: Rural
Anticipated change to LCZ
The Project would have some impacts on the character of the landscape; however these would be limited to the south orientated edges of the LCZ overlooking the Project. The Project would introduce new built form within visual proximity of this LCZ.
Sensitivity to change: Low
Susceptibility to change
The vegetation cover within LCZ 2 provides a complimentary setting to the landscape character of LCZ 4. The ability of this LCZ to accommodate the proposed change without effects on its landscape character is considered to be high given this LCZ is present across large parts of the region.
Value of LCZ
LCZ 2 is considered to be of local value due to the contribution of tree planting within rural lots. In addition, the informal and naturalistic nature of endemic regrowth vegetation within this LCZ contributes to the broader landscape character.
Magnitude of change: Low
Size/scale
The size of change is considered to be low within the context of the scale, massing and form of the Project across the adjoining low lying landscape character zones. However, there is two development proposals immediately north of the Project which would be of similar scale and would have the capacity to accommodate the type of change.
Geographical extent
The geographical extent of the landscape effect is considered within the immediate setting of the Project only. Extensive areas of the LCZ occur across the regional landscape.
Duration/reversibility
The Project would comprise a permanent change.
Significance of landscape character effect: Low

Table 10: Landscape character effects assessment - LCZ 3: Open Space

Landscape Character Zone 3: Open Space
Anticipated change to LCZ
The change in landscape character would be limited to the edge between where LCZ 3 converge with LCZ 1: Residential and LCZ 4: Riparian Corridor and from elevated positions along the ridgeline south of the Project.
Sensitivity to change: Moderate
Susceptibility to change
The susceptibility of the LCZ to accommodate the proposed change without impacts on its landscape character is considered to be high given its separation from the Project.
Value of LCZ
The LCZ is considered to comprise a high value recreational and landscape resource. Passive recreational users are usually interested in the appearance of their surroundings, specifically seeking out recreational opportunities in visually pleasant environments.
Magnitude of change: Low
Size/scale
The scale of change in the landscape is considered to be generally low given no physical works are proposed in the LCZ and is considered a minor change within the context of the broader landscape setting.
Geographical extent
The geographical extent of the landscape effect is considered generally to be within the vicinity of the Project.
Duration/reversibility
The Project would comprise a permanent change.
Significance of landscape character effect: Moderate - Low

Table 11: Landscape character effects assessment - LCZ 4: Riparian Corridor

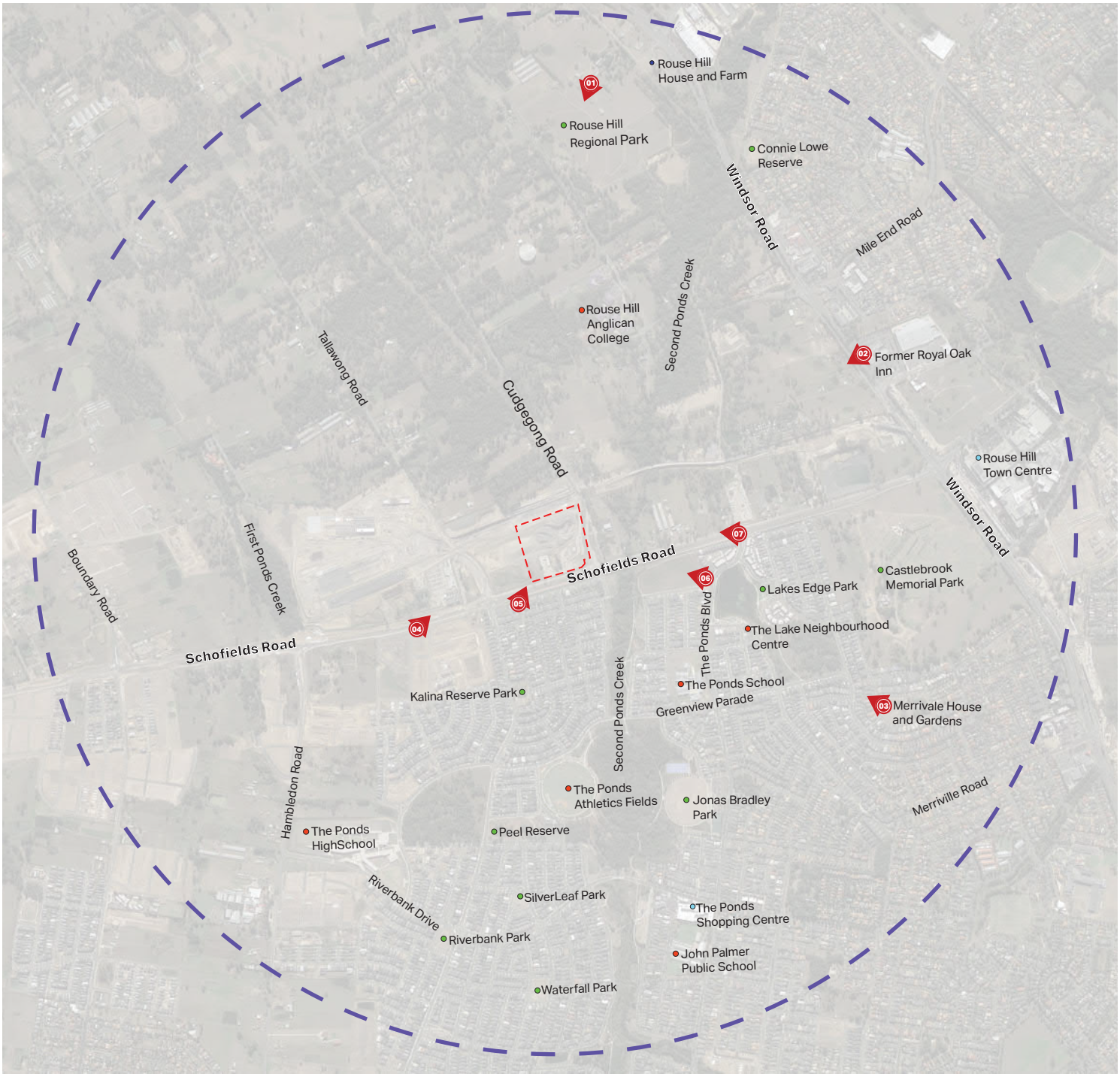
Landscape Character Zone 4: Riparian Corridor
Anticipated change to LCZ
There is no significant change anticipated from the project on this LCZ.
Sensitivity to change: High
Susceptibility to change
The ability of this LCZ to accommodate the proposed change without impacts on its landscape character is considered to be high given its separation from the Project.
Value of LCZ
This LCZ comprises the Second Ponds Creek corridor which is considered a highly valued landscape, recreational resource and open space setting, used regularly by large numbers of predominantly passive recreational receivers from nearby residential areas.
Magnitude of change: Negligible
Size/scale
The scale of change in the landscape would be negligible given its clearly defined extent and physical separation for the project.
Geographical extent
The extent of the change felt by the LCZ is considered to be negligible.
Duration/reversibility
The Project would comprise a permanent change.
Significance of landscape character effect: Negligible

Table 12: Landscape character effects assessment - LCZ 5: Commercial

Landscape Character Zone 5: Commercial
Anticipated change to LCZ
There is no significant change anticipated from the project on this LCZ given its substantial separation from the Project.
Sensitivity to change: Low
Susceptibility to change
The ability of this LCZ to accommodate the proposed change without impacts on its landscape character is considered to be high given its substantial separation from the Project.
Value of LCZ
The LCZ is considered to have a low sensitivity to change. While they may have some interest in the quality of their surrounding environment, the attention of this user group is expected to be primarily focused on their work or activity.
Magnitude of change: Negligible
Size/scale
The scale of change in the landscape would be negligible given its clearly defined extent and physical separation for the Project.
Geographical extent
The extent of the change felt by the LCZ is considered to be negligible.
Duration/reversibility
The extent of the change felt by the LCZ is considered to be negligible.
Significance of landscape character effect: Negligible

Table 13: Landscape character effects assessment - LCZ 6: Infrastucture

Landscape Character Zone 6: Infrastructure
Anticipated change to LCZ
The change in landscape character would be limited to the edge between where LCZ 6 borders with the Project along Schofields Road.
Sensitivity to change: Moderate
Susceptibility to change
LCZ 6 is considered to have moderate potential to accommodate the Project without adverse effects on the existing landscape character. The Project would comprise a development of uncharacteristic scale, form and fabric within the low rise streetscape character of Schofields Road.
Value of LCZ
The LCZ is a contained, linear element with a utilitarian character and limited visual amenity. It is considered to be of local value as a transport corridor.
Magnitude of change: Low
Size/scale
The scale of change in the landscape would be low, given the size and uncharacteristic form the Project, but taking into consideration that this occurs within a highly transient transport corridor.
Geographical extent
The geographical extent of the landscape effect is considered generally to be within the vicinity of the Project.
Duration/reversibility
The Project would comprise a permanent change.
Significance of landscape character effect: Moderate - Low



LEGEND

- Study area (2km offset)
- Project boundary
- Visual receptor locations

Figure 7: Visual receptor locations

6. Visual Impact Assessment

6.1. Visual receptor types

Viewpoints have been organised into key receptor types, each of which are considered typically to share defined levels of sensitivity to changes in the context and character of views.

6.1.1. Residential receptors

Residents are interested in the outlook from their properties and typically have regular and prolonged viewing opportunities towards the project, so are considered to have a high level of sensitivity to the proposed change. All of these viewpoints are representative of views from a moderate to high number of residential receptors, where the project would be located within the immediate foreground, and therefore seen in a high level of detail. The provided representative views are located within publicly accessible areas.

6.1.2. Recreational users, shared trails and parks

Passive recreational users are usually interested in the appearance of their surroundings, specifically seeking out recreational opportunities in visually pleasant environments and so are considered to have a high sensitivity to change.

6.1.3. Road users

Road users and passengers are considered likely to generally have only a passing interest in the quality of their surroundings as they are travelling through the landscape (especially on Schofields Road), and the Project comprises only a small component of the landscape through which they are travelling. Additionally, drivers would be expected to have much of their concentration focussed on road conditions, particularly as they enter higher built-up areas/commercial areas where pedestrian activity is likely, and so are considered to have a moderate to low sensitivity to change. Local road users may have a moderate sensitivity to change, given the potential for these receptors to have a sense of proprietary interest in their local environment.

6.1.4. Heritage sites

Although heritage sites may not be directly affected by the Project, they may be indirectly impacted through physical and visual encroachment into curtilage areas, and changes to the heritage context of the landscape.

6.1.5. Commercial properties

Workers and commercial users are generally regarded as having a low sensitivity to change. While they may have some interest in the quality of their surrounding environment, the attention of this user group is expected to be primarily focused on their work or activity.

6.2. Visual effects assessment

6.2.1. Operational impacts

A total of seven visual receptor locations have been identified to represent viewpoints for the assessment of potential impacts on views as a result of the Project, as shown in Figure 7.

The visual receptor locations include:

- V01: Rouse Hill House and Farm
- V02: Former Royal Oak Inn (The Mean Fiddler Hotel)
- V03: Merriville House and Gardens
- V04: Monet Place
- V05: Amarco Circuit and Schofields Road
- V06: The Ponds Boulevard
- V07: Schofields Road

Table 14: Visual effects assessment - V01

V01: Rouse Hill House and Farm

Existing view

Photomontage of proposed view at project completion (day one of operation)

Description of view:

This receptor location provides a view south-west from Rouse Hill Farm and House towards the Project.

Anticipated change to view

There will be no anticipated change to the view due to intervening landform and existing vegetation cover.

Sensitivity to change: High

Susceptibility of visual receptor to proposed change

The susceptibility of the Rouse Hill House and Farm would be high. Rouse Hill House and Farm requires a rural context as its curtilage. Views and vistas are determining factors in the nature of this estate. The traditional landscape surrounding Rouse Hill House and Farm was that of a pastoral character and the visual contrast created by the juxtaposition of wooded land and cleared grazing land.

Value attached to view

The view forms an important vista of geographical significance as it provides broad expanses of pastoral landscape of Cumberland Plains Woodland vegetation within the visual curtilage of the Rouse Hill House and Farm. The value attached to the view is also high as it comprises a regional landscape value and is designated a State Heritage Item.

Magnitude of change: Negligible

Size/scale

The Project does not interface directly with this visual receptor and therefore the scale of change is negligible.

Geographical extent

The Project would be located at a viewing distance of approximately 1,760 metres from this viewpoint and the geographical extent would be negligible due the existing vegetation cover and landform.

Duration

The project would comprise a permanent change.

Significance of visual effect: Negligible

Table 15: Visual effects assessment - V02

V02: Former Royal Oak Inn

Existing view

Photomontage of proposed view at project completion (day one of operation)

Description of view:

This receptor location provides a view south-west from the former Royal Oak Inn (The Mean Fiddler Hotel) towards the Project.

Anticipated change to view

There will be no anticipated change to the view due to intervening landform and existing vegetation cover.

Sensitivity to change: High

Susceptibility of visual receptor to proposed change

The susceptibility of the former Royal Oak Inn is high as it is of historical and technological heritage significance because it is an important survivor of an early colonial coaching inn of the 1820-40 periods with the main part of the original complex of buildings remaining intact.

Value attached to view

The value attached to the view is high as it comprises a regional landscape value and is designated a State Heritage Item.

Magnitude of change: Negligible

Size/scale

The Project does not interface directly with this visual receptor and therefore the scale of change is negligible.

Geographical extent

The Project would be located at a viewing distance of approximately 1,350 metres from this viewpoint and the geographical extent would be negligible due the existing vegetation cover and landform.

Duration

The Project would comprise a permanent change.

Significance of visual effect: Negligible

Table 16: Visual effects assessment - V03

V03: Merriville House and Gardens

Existing view

Photomontage of proposed view at project completion (day one of operation)

Description of view:

This receptor location provides a view north-west from the Merriville House and Gardens towards the Project.

Anticipated change to view

The proposed view will incorporate the addition of new built form to the distant horizon which would be only a minor element in a panoramic view.

Sensitivity to change: High

Susceptibility of visual receptor to proposed change

The susceptibility of the Merriville House and Gardens is high as it is of stage heritage significance and forms an important example of an early Australian colonial house.

Value attached to view

The value attached to the view is high as it comprises a regional landscape value and is designated a State Heritage Item.

Magnitude of change: Low

Size/scale

The size and scale of change would be low, as the Project would comprise a small proportion of the panoramic view. This is also moderated by the screening provided by the existing vegetation located along the Second Ponds Creek riparian corridor.

Geographical extent

The Project would be located at a viewing distance of approximately 1,450 metres from this viewpoint and would be a visible element in the background of this view.

Duration

The Project would comprise a permanent change.

Significance of visual effect: Moderate

Table 17: Visual effects assessment - V04

V04: Monet Place

Existing view

Photomontage of proposed view at project completion (day one of operation)

Description of view:

This receptor location provides a view north-east from Monet Place towards the Project. The view is representative of residential receptors living on Monet Place who will likely have oblique views toward the Project. The view is also representative of local road users travelling along Monet Place.

Anticipated change to view

The proposed view will incorporate the addition of new built form to the distant horizon which would be a minor element in a panoramic view.

Sensitivity to change: Moderate

Susceptibility of visual receptor to proposed change

Residents are likely to be moderately sensitive to the proposed change in view. However, the level of sensitivity would likely be tempered given the fact that these residents adjoin and view the Project across the busy intervening Schofields Road, which exhibits low levels of visual amenity.

Value attached to view

The existing view of these residences is considered to be of low value, comprising a busy road, limited street trees and construction works such as earthworks and stockpiles.

Magnitude of change: Moderate

Size/scale

The scale of change in the view is considered moderate at this location given the scale and form of the new built form seen in the background. However, much of the Project is considered to have a substantial level of visual congruency with new works that are currently in place, providing moderate levels of visual absorption.

Geographical extent

The Project would be located at a viewing distance of approximately 515 metres from this viewpoint and would be a visible element in the background of this view.

Duration

The project would comprise a permanent change.

Significance of visual effect: Moderate

Table 18: Visual effects assessment - V05

V05: Amarco Circuit and Schofields Road

Existing view

Photomontage of proposed view at project completion (day one of operation)
Description of view:
This receptor location provides a view north-east from Schofields Road towards the Project. The view is representative of residential receptors living on Amarco Circuit who will have direct views towards the Project. The view is also representative of motorists, pedestrians and cyclists travelling on the shared footpath along Schofields Road.
Anticipated change to view
Changes to this view would comprise the loss of vegetation and visual amenity associated with the expansive and open view. New built form would be visually prominent and seen in high levels of detail, with the skyline view substantially blocked by the Project.
Sensitivity to change: High
Susceptibility of visual receptor to proposed change
Residential receptors along Amarco Circuit face the Project, with direct views upon entering and leaving their premises, and potentially in some cases from living areas within their homes. The susceptibility of residents to the proposed change in view would be high given the scale of the proposed built form immediately opposite the receptor location.
Value attached to view
The value attached to the view is limited given the outlook towards the existing construction site and low amenity outlook to Schofields Road.
Magnitude of change: High
Size/scale
The scale of change in the view is high at this location, particularly with regard to the new built form located in the immediate foreground of this view.
Geographical extent
The geographical extent of the Project would broadly extend from the Schofields Road frontage to the residential frontages of Amarco Circuit. The Project would be located at a viewing distance of approximately 170 metres from this viewpoint.
Duration
The project would comprise a permanent change.
Significance of visual effect: High

Table 19: Visual effects assessment - V06

V06: The Ponds Boulevarde

Existing view

Photomontage of proposed view at project completion (day one of operation)

Description of view:

This receptor location provides a view north-west from The Ponds Boulevarde. The view is representative of residential receptors living on The Ponds Boulevarde who will have direct views towards the Project. The view is also representative of motorists, pedestrians and cyclists travelling on the pedestrian footpath along The Ponds Boulevarde. Ironbark Lake forms an important open space for recreational users and is located opposite The Ponds Boulevarde.

Anticipated change to view

The proposed built form would be visually prominent and generally seen in sharp relief against the distant skyline.

Sensitivity to change: High

Susceptibility of visual receptor to proposed change

The susceptibility of residents and passive recreational users (including recreational users of Ironbark Lake) to the proposed change in view would be high. The attention of residents to the view could be expected to occur regularly for relatively long periods of time. The Project would comprise a visually prominent part of the view.

Value attached to view

Residents are interested in the outlook from their properties and typically have regular and prolonged viewing opportunities towards the project, so are considered to have a high level of sensitivity to the proposed change. Passive recreational users of open space associated with Ironbark Lake are interested in the appearance of their surroundings, specifically seeking out recreational opportunities in visually pleasant environments and so are considered to have a high sensitivity to change.

Magnitude of change: Moderate
Size/scale
The size and scale of change would be very different to those existing, comprising visually prominent built form which would be seen in sharp contrast to the skyline. The Project would be in strong contrast to the existing, and viewed for moderate periods of time by road users travelling west along The Ponds Boulevarde and recreational users of Ironbark Lake. However, the existing vegetation located along the Second Ponds Creek riparian corridor provides partial screening of the Project.
Geographical extent
The Project would be located at a viewing distance of approximately 620 metres from this viewpoint and would be a visible element in the background of this view.
Duration
The Project would comprise a permanent change.
Significance of visual effect: High - Moderate

Table 20: Visual effects assessment - V07

V07: Schofields Road

Existing view

Photomontage of proposed view at project completion (day one of operation)

Description of view:

This receptor location provides a view west to south-west Schofields Road towards the project. The view is representative of residential receptors living on Wyndham Glade who will have direct views towards the Project from the rear yard of their property. The view is also representative of motorists, pedestrians and cyclists travelling on the shared footpath along Schofields Road

Anticipated change to view

The proposed built form would be visually prominent and generally seen in sharp relief against the distant skyline.

Sensitivity to change: Moderate

Susceptibility of visual receptor to proposed change

Residential receptors are likely to have a moderate susceptibility to proposed changes given the visibility of the project from their homes. However it is noted that residences face away from Schofields Road with tall boundary fences along the street frontage.

Value attached to view

A local value is attached to the view from this location within the context of the busy Schofields Road, notwithstanding the moderate level of endemic vegetation which is seen in the background of this view.

Magnitude of change: Moderate

Size/scale

The size and scale of change would be very different to those existing, comprising visually prominent built form which would be seen in sharp contrast to the skyline. However, this is moderated by the screening provided by the existing vegetation located along the Second Ponds Creek riparian corridor.

Geographical extent

The Project would be located at a viewing distance of approximately 650 metres from this viewpoint and would be a visible element in the background of this view.

Duration

The project would comprise a permanent change.

Significance of visual effect: Moderate

7. Mitigation Measures

Mitigation measure would be implemented to minimise the level of visual impact during the design development, construction and operation phases of the Proposal.

7.1. Design development

The following mitigation measures are recommended to minimise visual impacts during the design development process:

- during detailed design, the design of the proposed buildings, columns and façades to be further refined to articulate form and profiles which may assist in minimising the bulk of built form;
- select materials, colour and finishes for new elements with the aim of minimising the bulk of the structures and incorporate transparent materials to maximise natural light into the structures, and use non-reflective materials for façades and finishes;
- design lighting to minimise upward spread of light near local residents and key receptors. Care should be taken when selecting luminaries to ensure that light spill and glare are kept to a minimum;
- consideration in selection and location of new tree planting along Schofields Road, Tallawong Road and Cudgegong Road frontages that may provide partial screening of constructed elements from surrounding receptors, and facilitate improved amenity;
- minimise disturbance of vegetation to the minimum amount necessary to construct the Proposal to maintain the screening of views;

7.2. Construction

The following mitigation measures are recommended to minimise visual impacts as a result of construction:

- provide well-presented and maintained construction hoarding and site fencing with shade cloth (or similar material where necessary) to minimise visual impacts on key viewpoints during construction. Hoardings and site fencing would be removed following construction completion
- provide cut-off or directed lighting within and outside of construction site, with lighting location and direction considered to ensure glare and light spill is minimised.

7.3. Operation

The following mitigation measures are recommended to minimise visual impacts at operation:

- ongoing maintenance and repair of constructed elements
- long term maintenance (and replacement as necessary) of planting within the Project to maintain visual filtering and screening of views where appropriate.

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