

- Proposed SWRL corridor
- Previously recorded Indigenous heritage sites
- Aboriginal sites and/or places identified during this study

Figure 5-3 Location of Aboriginal cultural heritage sites recorded previously and as a result of the present study

- *grinding grooves*: These are ‘Grooves which formed as a piece of stone, wood or bone was rubbed on a rock surface during implement manufacture, especially to sharpen and edge or point’ (Attenbrow 2002, p205). Grinding grooves are considered unlikely to occur in the SWRL study area due to the absence of outcropping rock.
- *rock shelters and rock art*: A rock shelter or overhang is a naturally occurring rock formation (Attenbrow 2002). Not all rock shelters are archaeological sites; those that are contain objects such as stone artefacts or rock art. These are considered unlikely to occur in the SWRL study area due to the absence of outcropping rock.
- *open camp site and isolated finds*: Stone artefacts or flaked stone, being more durable than material cultural items made from organic material, are often the only artefact types that remain within these archaeological deposits. These mainly consist of stone tools and debris from the creation of stone tools (unused flakes, cores and fragments). Stone artefact occurrences are the most common site types found in the region surrounding the SWRL study area.
- *modified or carved trees*: Two types of modified trees are found in NSW — scarred and carved trees. Scarred trees are defined as ‘trees that have been scarred by Aboriginal people through the deliberate removal of bark or wood’ (Long 2005, p6). Carved trees comprise trees upon which designs were carved (Attenbrow 2002). It is possible that scarred trees occur in the SWRL study area.
- *stone arrangements*: These are sets of stones or rock arranged by humans to form lines, circles, cairns or piles, often having a ceremonial or ritual purpose. No stone arrangements are known to exist in the immediate study area region and, considering past land practices, none are expected to occur in the SWRL study area.
- *burials*: These are locations where an individual or number of individuals have been interred. There are no recorded burials in the study area, but this does not preclude the presence of Aboriginal burials in any landscape context.

Culturally significant sites

Whether any culturally significant (or in AHIMS terminology ‘Aboriginal ceremony and dreaming’) sites occur in the SWRL study area can only be determined by members of the relevant Aboriginal community(s). Aboriginal consultation for the SWRL project is ongoing (see Chapter 15). Results of the Aboriginal consultation undertaken so far are outlined in Chapter 15.

Study area site prediction

Based on the distribution of known Aboriginal archaeological sites in landforms of the surrounding region, the likelihood of archaeological sites existing or having existed on landforms in the study area can be predicted. Open artefact scatters and isolated finds are the most common site type recorded in the local area and, therefore, it is probable that this is the predominant site type existing in the study area.

Again, the type and location of known Aboriginal sites is more likely to reflect development pressures than past Aboriginal land use patterns.

Site survey results

As part of the preliminary Aboriginal heritage assessment, a site visit to the SWRL study area and some of the properties directly affected by the proposed SWRL was undertaken with representatives of the Aboriginal stakeholders listed above on 14 and 15 September 2006. As a result of this visit, six additional Aboriginal archaeological sites were identified and one previously recorded site was located. These sites are detailed in Table 5-4 and mapped on Figure 5-3.

Table 5-4 Newly recorded and rediscovered Aboriginal sites/places identified during the site visit

Site name	Site type	Material	Landform
SWST1	Possible scarred tree	A grey box eucalypt	Flat ground approximately 500 metres from a creekline
SW1	Isolated find	1 quartz artefact	Low slope of a closed depression
SW2	Artefact scatter extending approximately 50m x 10m	Mudstone, silcrete and quartz were all represented	Low slope adjacent to creek line
SW3	Isolated find	1 silcrete artefact	Creek flat
SW4	Isolated find	1 mudstone artefact	Creek flat
SW5	Artefact scatter (2 stone artefacts)	2 mudstone artefacts	Ridge near creek line
SW6	Isolated find	1 striped red/grey silcrete with quartz inclusions	Ridge near creek line
DD3	Artefact scatter	Various artefacts, silcrete, mudstone and chert	Eroding creek flats

Source: Technical Paper 6

All of the recorded sites were found on or near creek lines or watercourses. This conforms to the general model for the discovery of Aboriginal cultural material across the Cumberland Plain.

Some relatively undisturbed areas in the study area may have the potential to yield further archaeological material, including parts of Kemps Creek, Bonds Creek, and tributaries of Cabramatta and Maxwell Creeks.

Furthermore, due to the poor ground surface visibility across the entire study area, the presence of newly recorded sites may be an indication that further subsurface Aboriginal cultural remains exist. Based on the existing landform and number of artefacts recorded, this is particularly the case in proximity to sites SW3, SW4 and SW2. The cultural material at SW2 is likely to be relatively *in situ* and, therefore, may signify the presence of a potential subsurface archaeological deposit.

Further details regarding areas of Aboriginal archaeological, cultural and social potential in the study area are provided in Section 15.1.

Non-Indigenous heritage

A large number of non-Indigenous heritage items, places and values are located within and around the SWRL corridor. The following description is summarised from Technical Paper 7 in Volume 3.

Listed heritage items

Table 5-5 identifies the items of cultural heritage significance listed on all statutory and non-statutory listings for the area including and surrounding the SWRL corridor. The approximate positions of the listed historic heritage items are shown on Figure 5-4.

Table 5-5 Summary of listed heritage items in the region

Item name	Item description	Location	Heritage listing
Sydney Water Supply Upper Canal	The Upper Canal is the conduit which carries water stored in the Upper Nepean Catchment dams to Prospect Reservoir.	Between Denham Court and Cecil Hills	Campbelltown LEP, Liverpool LEP, SHI, SCA S170 Register, NT
Milestones	Stones markers placed along the road to indicate distances to and from destinations in miles.	Various locations, Campbelltown Road	Campbelltown LEP, SHI
Hurlstone Agricultural High School	School dating from 1926 (in present location), the central building comprised a two-storey block with upper level as the principal's residence and lower level assembly hall and students' dining room.	Roy Watts Road, Glenfield	Campbelltown LEP, SHI, NT
Ingleburn Military Camp	The site comprises buildings of various functions- administrative, medical, residential, etc - dispersed over a largely flat area of land.	Campbelltown Road, Ingleburn	Liverpool LEP, SHI, RNE
Glenfield Farm Group	The Glenfield Farm Group consists of the homestead, the former dairy, a barn and a privy. It is sited on the eastern side of ridge which slopes steeply (to the east) down to Glenfield Creek and the George's River and from which panoramic views to the north, south and east are afforded over the River Valley.	88 Leacocks Lane, Casula	Liverpool LEP, SHR, SHI, RNE, NT
Macquarie Field House Estate	The house is a fine sandstone Regency dwelling built c.1838-40 by Samuel Terry and represents the final flowering of the Australian colonial country house style. The complex has regional aesthetic significance as its siting closely relates to the surrounding landscape, being a landmark on a prominent hilltop along an undulating ridge of high land, surrounded by mature trees, and commanding expansive views to the south and west.	Quarter Sessions Road, Glenfield	SHR, RNE, NT
Denham Court Group	House and associated buildings	Denham Court, Campbelltown Road	Campbelltown LEP, SHR, SHI, RNE, NT
Row of Bunya Pines		Bringelly Road, Austral	Sydney REP No. 31

Notes: LEP = Local Environmental Plan; NT = National Trust; REP = Regional Environmental Plan; RNE = Register of the National Estate; SCA = Sydney Catchment Authority; SHI = State Heritage Inventory; SHR = State Heritage Register

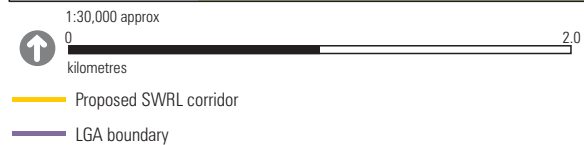
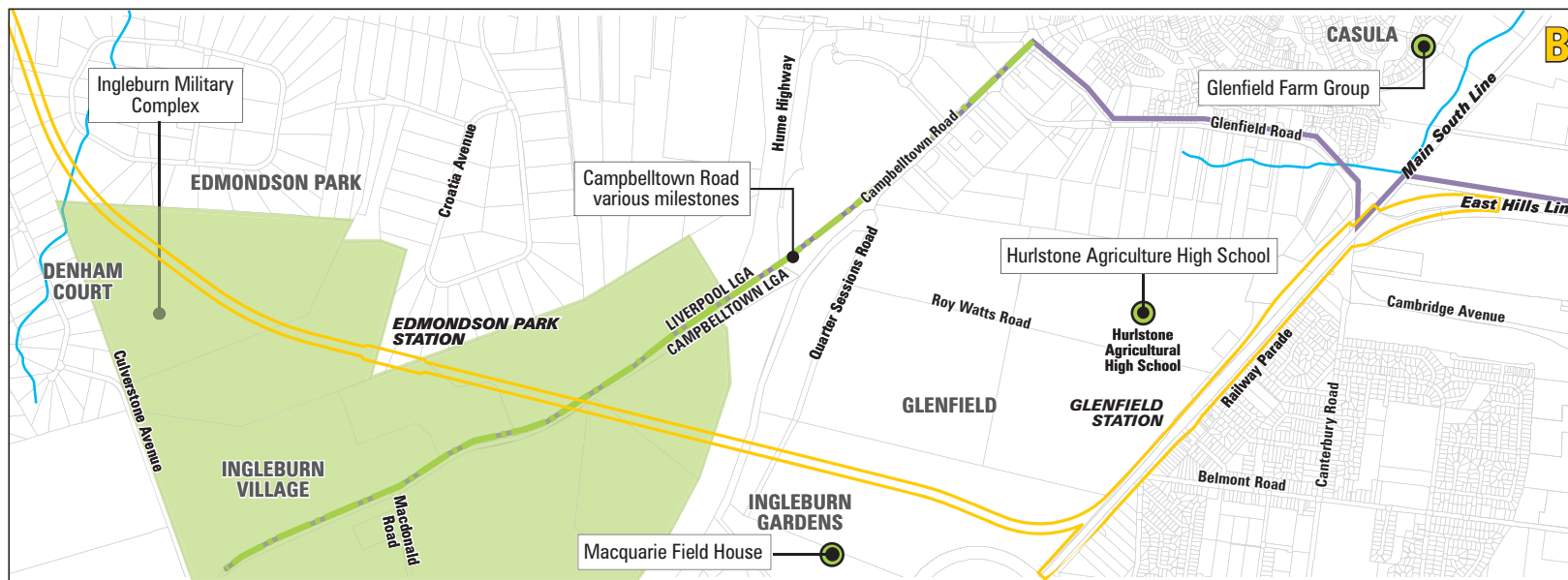
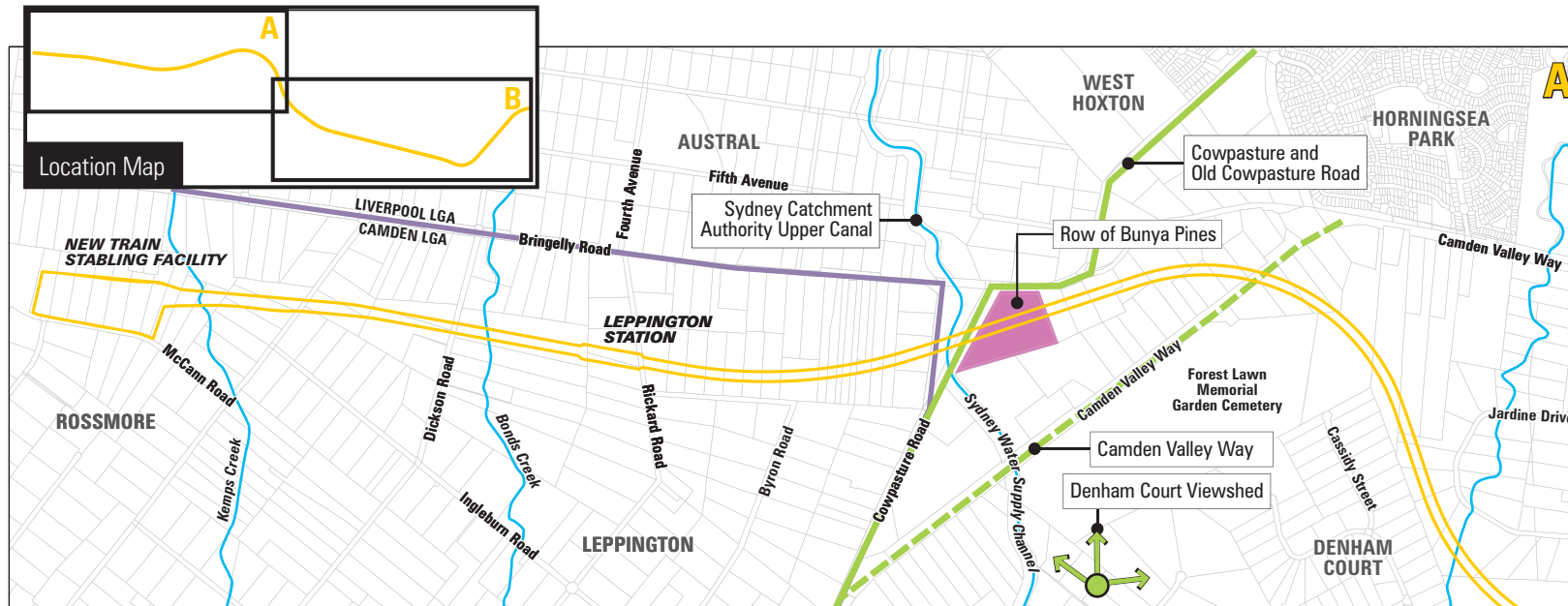


Figure 5-4 Location of key historic heritage items and places

Other non-listed items

Other, non-listed items of heritage significance shown on Figure 5-4 include:

- *The Denham Court viewshed:* The Denham Court viewshed includes rural views to the north-east towards the Ingleburn Military Camp and views across the Cumberland Plain. This viewshed is important as a landscape in that it gives an excellent indication of European impact on and use of the Cumberland Plain landscape. The viewshed of Denham Court was previously identified as important to the general rural character of the surrounding area in the *Liverpool Heritage Study* (Neustein and Associates 1992). The viewshed could be altered as a result of the SWRL project. However, since the Liverpool Heritage Study was undertaken, part of the viewshed has been developed for rural-residential purposes and in addition, planned development for Edmondson Park town centre would further change the viewshed.
- *Historic road alignments, Cowpasture Road and Camden Valley Way:* These are exceptional examples of early road alignments linked to the settlement of the Cumberland Plan. They are significant for their aesthetic quality and their ability to demonstrate a rural aesthetic scene reminiscent of 18th and 19th Century road alignments.
- *Historic fenceline remnant:* The site visit for the study revealed the presence of the remains of a historic fence alignment between Camden Valley Way and Old Cowpasture Road. This most likely reflects the pattern of past subdivisions in the area.

Historically significant areas

The proposed SWRL corridor passes through a landscape that has undergone changes since the beginning of European occupation. The dominant landscape during the 19th and early 20th Centuries reflected the agricultural and pastoral uses of the area at the time. During the late 20th Century, the areas within this landscape began to move from semi-rural towards urbanisation. The proposed SWRL corridor traverses areas that have been previously identified as historically significant and that are listed on various heritage registers. The historically significant areas include Hurlstone Agricultural High School, Ingleburn Army Camp and the Sydney Water Supply Upper Canal System. The location of these areas is shown on Figure 5-4.

Hurlstone Agricultural High School is located on 2,020 acres of land granted to James Meehan and known as Macquarie Fields, and a 950 acre grant given to Charles Throsby known as Glenfield. The school has been in its present location since 1926 after relocating from its original site in Ashfield.

The Ingleburn Military Camp has been in operation since October 1939, following the commencement of Australia's involvement in World War II. The Camp was initially established on 684 acres of land (compulsorily acquired in 1940 from several 19th Century land grants). The Camp was the assembly and embarkation point for Australia's overseas contingent for World War II and was the first purpose-built training camp for Australian forces. The Camp was extended in 1951 following the acquisition of 119 acres to the west of the Camp. The Camp played a significant role in the training of personnel for the Korean and Vietnam Wars and was the major centre in Australia for the National Service Scheme. From 1973 to 1990, the Camp was the headquarters for the training of the Army Reserves. Activity at the Camp began to wind down from the 1990s, including the demolition of various vacant buildings.

The Upper Nepean (water supply) Scheme was constructed in the 1880s in response to the need for a larger and more reliable water supply than that provided by the Botany Swamps. The Scheme was completed in 1888 and consisted of gravity-fed canals, tunnels, aqueducts, pipes and reservoirs. The Sydney Water Supply Upper Canal begins in a tunnel at the weir on the Nepean River and extends through the LGAs of Wollondilly, Liverpool, Holroyd, Fairfield, Campbelltown and Camden in a serpentine route through bushland settings.

The Upper Nepean Scheme was originally designed and constructed to allow for progressive development. Over time, various elements of the Scheme have been upgraded (including the construction of major storage dams on the Cataract, Cordeaux, Avon and Nepean Rivers between 1907 and 1935). The Upper Canal was divided into sections (numbered 1 to 11) for maintenance purposes, with a telephone line operating along its length by 1891. Maintenance men and inspectors were housed in cottages (one per section) alongside the canal and men patrolled their section either on foot or on horseback. These cottages remained in existence until the 1970s. The SWRL study area lies within Section 8 of the Upper Canal. The Upper Canal system of the Upper Nepean Scheme remains in operation, and is an integral part of water supply infrastructure for metropolitan Sydney.

Historic themes relevant to the study area

The proposed SWRL corridor is located in an area of south-western Sydney that retains aspects of its past pastoral, agricultural, market garden and country estate uses. Table 5-6 summarises the identified historic themes in the study area and the areas where these themes are applicable.

Table 5-6 Table of historic themes applicable to the proposed SWRL corridor

Australian theme	NSW theme	NSW Heritage Office notes on interpretation of NSW State themes	Items that fulfil heritage themes within the present study area
Developing local, regional and national economies	Agriculture	Activities relating to the cultivation and rearing of plant and animal species.	Almost the whole SWRL route contains evidence of a rural landscape indicative of past land use. The evidence of market gardening, plantation orcharding and plough markings.
	Commerce	Activities relating to buying, selling and exchange.	The Cowpastures Road and Camden Valley Way are historic trade routes from the market gardens and fertile land, east to Sydney.
	Environment - cultural landscape	Activities associated with the interaction between humans and their physical surroundings.	Land clearing has obviously taken place since European settlement, with market gardening and farming evident in the landscape.
	Events	Activities and processes marking cultural or natural occurrences.	The military heritage precinct and adjoining memorial monuments and the camps themselves are memoriam to various wars and to Australians who fought in them.
	Pastoralism	Activities associated with the breeding and raising of livestock.	Various areas of the whole corridor allow us glimpses of a pastoral past.
Building settlements,	Utilities	Activities associated with the provision of	Sydney Water Upper Canal

Australian theme	NSW theme	NSW Heritage Office notes on interpretation of NSW State themes	Items that fulfil heritage themes within the present study area
towns and cities		services, especially on a communal basis.	
Educating	Education	Activities associated with teaching and learning.	Hurlstone Agricultural College. Military Camp for training.
Governing	Defence	Activities associated with defending places from hostile takeover or occupation.	Military Camp and extant remains of the military infrastructure in the area.
Developing Australia's cultural life	Domestic life	Activities associated with creating, maintaining and living in domestic institutions.	Married quarters at Bardia give a glimpse of domestic life for military families.
	Sport	Activities associated with organised recreational activities.	Various ovals and sports courts associated with the military camp.
Marking phases of life	Persons	Activities of, and associations with, identifiable families and groups.	Memorials within the military camp and the camp and training grounds themselves stand as memoriam to generations of Australians who have trained, fought and died in defence of their country.

Impacts on the above existing heritage values are described in Chapter 15 (Heritage).

5.1.5 Existing visual context

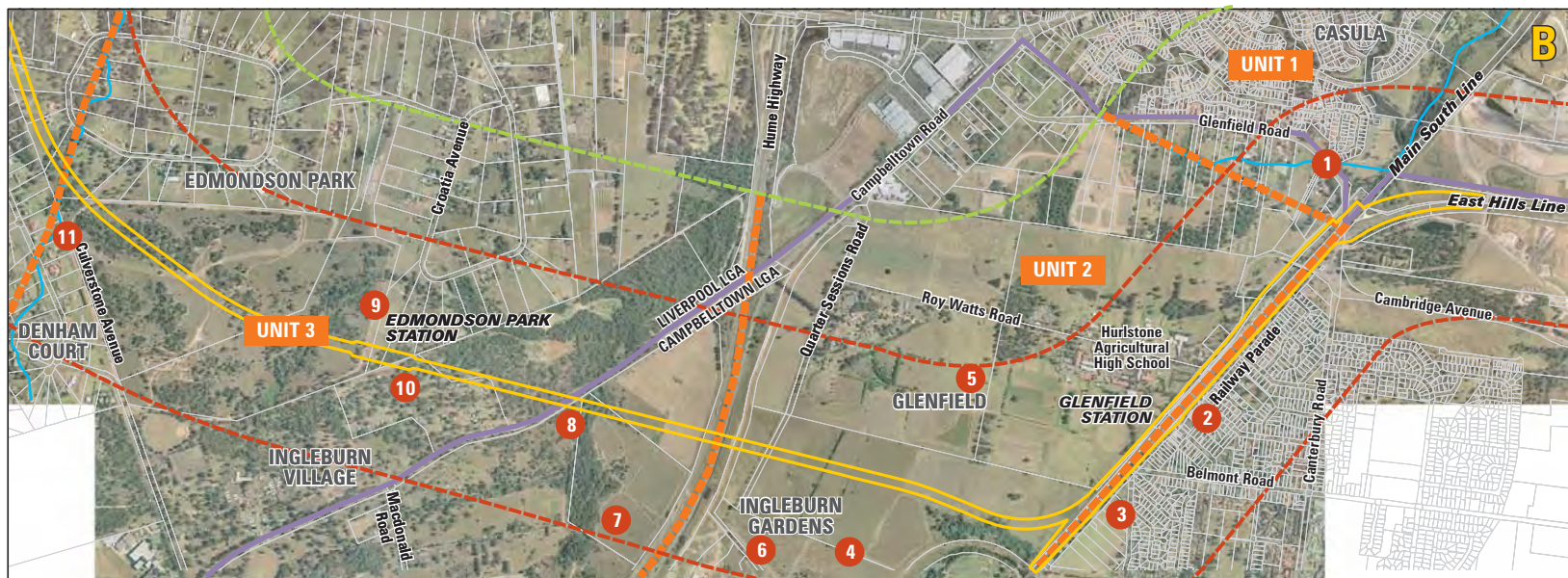
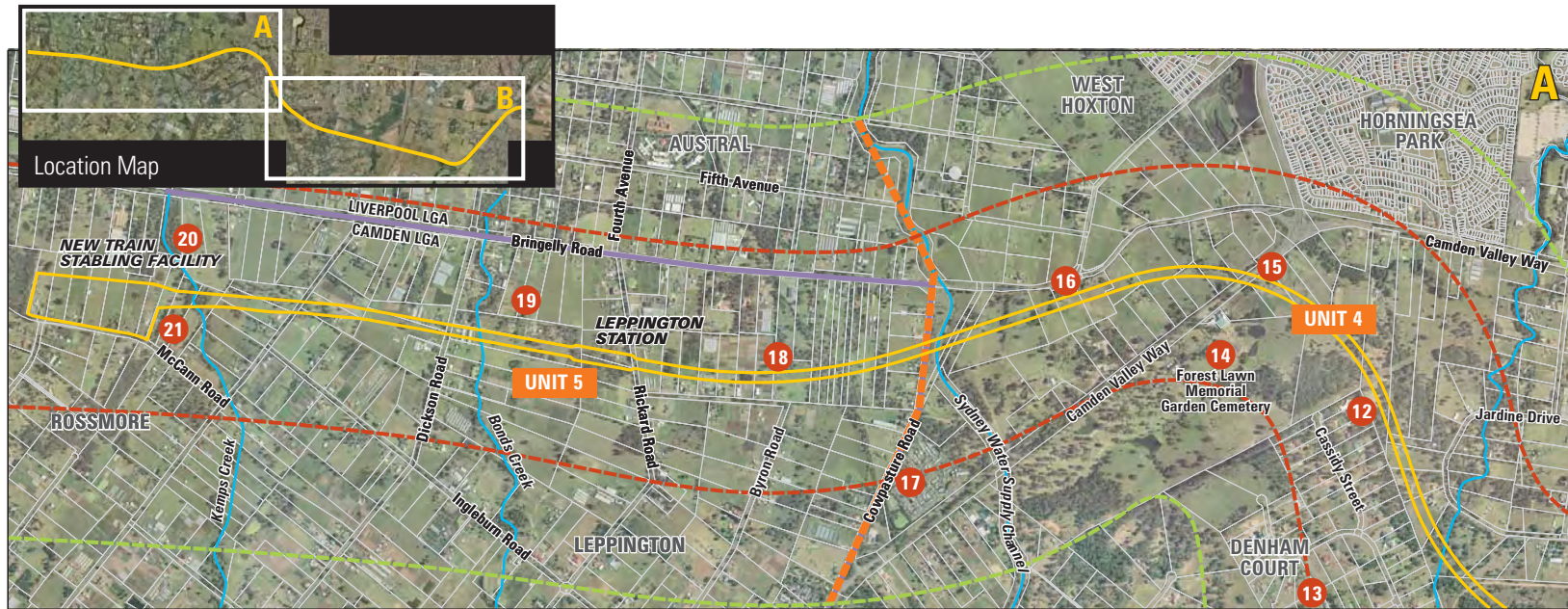
An assessment of the existing visual environment in the vicinity of the SWRL corridor was completed using the assessment approach described in Chapter 16 and Appendix D.

The study area was divided into five visual units for the purpose of assessing the visual environment (see Figure 5-5, which also identifies key viewpoints in areas surrounding the corridor). These units were based on identifiable differences between landscape character types and geographical boundaries. The units can broadly be described as:

- Unit 1 — Glenfield Junction (including Glenfield Station)
- Unit 2 — Glenfield to Hume Highway
- Unit 3 — Hume Highway to Cabramatta Creek
- Unit 4 — Cabramatta Creek to Cowpasture Road
- Unit 5 — Leppington, west of Cowpasture Road.

Foreground views relate to potential impacts on viewing locations within one kilometre of the SWRL corridor, the expected limit of foreground views is indicated on Figure 5-5.

A summary table for the 'on opening scenario' (existing visual environment on opening of the SWRL in 2012, with some development around Edmondson Park) is provided for each visual unit in Table 5-7. A more detailed description of each unit follows.



- Proposed SWRL corridor
- LGA boundary
- 500 metres outside of corridor
- 1.0 kilometres outside of corridor
- External unit boundary
- 10 Main identified view point in direction of rail corridor (within 1 kilometre of corridor boundary)

Figure 5-5 Visual units and view points along the corridor

Note: Not all locations within 1 km boundary would be able to see SWRL

Table 5-7 Existing visual characteristics by visual unit

Visual unit	Main visual characteristics
Unit 1 — Glenfield Junction (including station)	<ul style="list-style-type: none"> ▪ existing landscape character – low density, older residential, limited vegetation ▪ existing scenic quality/ landscape significance value – low ▪ existing visibility of proposed SWRL corridor (2012) - low to moderate (near Glenfield Station).
Unit 2 — Glenfield to Hume Highway	<ul style="list-style-type: none"> ▪ existing landscape character – semi-rural ▪ existing scenic quality/ landscape significance – low to moderate (Hurlstone Agricultural High School and Macquarie Field House) ▪ existing visibility of proposed SWRL corridor (2012) – low (Macquarie Links Golf Course) to moderate (Hurlstone Agricultural High School and Macquarie Field House).
Unit 3 — Hume Highway to Cabramatta Creek	<ul style="list-style-type: none"> ▪ existing landscape character – semi-rural to bushland (surrounded by rural-residential) ▪ existing scenic quality/ landscape significance – low to moderate (vegetated areas within Ingleburn Military Camp) ▪ existing visibility of proposed SWRL corridor (2012) – low to moderate (Campbelltown Road).
Unit 4 — Cabramatta Creek to Cowpasture Road	<ul style="list-style-type: none"> ▪ existing landscape character – semi-rural to bushland (surrounded by rural-residential) ▪ existing scenic quality/ landscape significance – low to moderate (Camden Valley Way) ▪ existing visibility of proposed SWRL corridor – moderate to high (from Camden Valley Way and some properties in Denham Court; although it would largely be hidden in a cutting from most)
Unit 5 — Leppington, west of Cowpasture Road.	<ul style="list-style-type: none"> ▪ existing landscape character – market gardens/semi-rural to rural ▪ existing scenic quality/ landscape significance – low to moderate (more rural views) ▪ existing visibility of proposed railway – low to moderate.

Unit 1 - Glenfield Junction (including Station)

This unit covers the existing urban area of Glenfield immediately east of Glenfield Station and the railway corridor extending north. Focused around Glenfield Railway Station is a small strip of local shops. In general it is an older residential area of single-storey detached houses. The landform is fairly flat, rising slowly to the east. This topography means that the current opportunity for views beyond the immediate area is limited. The existing Station and nearby rail corridor are not obvious from the surrounding residential area until close to the shopping strip and Railway Parade. An attractive avenue of established Eucalypts exists along the railway side of Railway Parade to the south of the shopping centre. The shopping centre itself has no street trees or parkland.

Just north of Glenfield Station, the existing rail corridor sweeps in a wide arc to the north-east. At this location the rail corridor can be seen from the rail bridge at Glenfield Road and (partially) from some nearby residences in the northern part of Glenfield and the southern area of Casula.

Unit 2 – Glenfield to Hume Highway

The landscape character of this unit, from the western side of the existing rail corridor at Glenfield to just east of the Hume Highway, is currently largely semi-rural, fringed by urban development to the east (Glenfield), south (Macquarie Fields) and north (Casula).

Immediately north-west of the existing rail corridor (approximately 300-400 metres away) is the Hurlstone Agricultural College, a number of other small schools and Department of Education offices. The complex is essentially a semi-rural property with two main groupings of buildings: one to the east close to Glenfield Station and one to the west towards the Hume Highway. Each area of buildings is interspersed with, and surrounded by, a large number of native trees, reducing the potential for view opportunities beyond the site itself.

The proposed SWRL corridor would be located south of Hurlstone Agricultural High School in an area of open grassland with some scattered clumps of native trees, known as the James Meehan Estate. The landform is a rising slope from the valley floor up towards the Hume Highway. The main buildings of Hurlstone Agricultural High School face away from the corridor, with the southern side dominated by playing fields.

To the south of the proposed SWRL corridor and Hurlstone Agricultural High School is some relatively new residential development. This includes the “Macquarie Links” development, a boutique style residential/golf complex. Macquarie Field House is also located some 500 metres to the south on an undulating ridge line, which has views across the proposed SWRL corridor, extending all the way to central Sydney.

On the western boundary of this Unit is the Hume Highway, connecting Sydney to Canberra and Melbourne in the south. In the vicinity of the proposed SWRL corridor, the highway sits on an elevated embankment some 13 metres high. Yet a small cutting through a section of higher ground and a partial boundary of trees along this section of the Hume Highway mean that only obscured and intermittent views of the SWRL corridor site would be possible from this vantage point.

Unit 3 - Hume Highway to Cabramatta Creek

This unit extends from the elevated Hume Highway west through the Ingleburn Military Camp to Cabramatta Creek. It covers an area that ranges from semi-rural, mostly cleared land west of the Hume Highway to the quite densely vegetated area around the Military Camp. The Camp itself is made up of simple, cabin-like housing within a bushland setting, with open areas that support parade grounds and other uses. In general it has a rather tired appearance with many buildings either demolished or in a state of disrepair. Along the northern border, including the proposed SWRL corridor site, the vegetation becomes denser. The landform is relatively flat. Combined with the high number of trees in this area, the flat landscape means that views within the site are mainly only possible of the immediate area.

Through this unit passes Campbelltown Road, a regional arterial. The proposed SWRL corridor would cross over this road, just west of the Hume Highway, and then extend along a narrow vegetated corridor from the north-west corner of Ingleburn Military Camp towards Cabramatta Creek.

Unit 4 – Cabramatta Creek to Cowpasture Road

On either side of the proposed SWRL corridor in this unit, rising slightly away from it, are rural-residential areas to the north and south. Both areas comprise large homes on small acreages, but are quite different in character. The rural-residential area to the north (Edmondson Park) appears to be an older area, with an undulating landform and a more

rural-like character. The southern rural-residential area (Denham Court) is a more recent subdivision consisting of very large, contemporary homes with more of a manicured landscape character than a rural one. From some elevated locations, glimpses are possible of the Blue Mountains to the west and the Sydney city skyline to the north-east. There are also local views across the semi-rural and rural landscape, including towards the Military Camp.

Nearing Camden Valley Way, the landscape becomes more rural with open grassland and scattered trees where the proposed SWRL corridor would traverse. Just to the south of the corridor is the Forest Lawn Memorial Gardens Cemetery. Camden Valley Way currently has a rural/bushland character along the section within this unit, and has been previously identified as a 'visual corridor and route' within the *Camden Scenic and Cultural Landscapes Study* (Landcom Associates 1998).

There is also two small caravan parks, 'Casa Paloma' and 'Four Lanterns', on the eastern side of Cowpasture Road, south of the proposed SWRL corridor. Cowpasture Road has a semi-rural character. There is also another small caravan park, the 'Four Lanterns', on Camden Valley Way, just south of the intersection with Cowpasture Road.

Unit 5 – Leppington, west of Cowpasture Road

Unit 5 is the most western landscape unit, and also the most rural, consisting of working market gardens and generally older-style, modest homes, integrated with a mix of sheds, large greenhouses, and small patches of bushland. The landform is flat to gently undulating with scattered concentrations of native trees. The market garden landscape is becoming less common on the fringe of Sydney as urban development occurs.

There are limited opportunities for views beyond the immediate area of this unit; however, at some slightly elevated locations, distant views are possible of the Blue Mountains to the west.

Overview

The study area currently comprises a mix of urban and semi-rural land uses. The general existing scenic quality ranges from quite low to moderate. The overall landscape significance value is also relatively low, except for a number of locations that have been previously identified as having heritage value, including:

- Camden Valley Way, between Bringelly Road and Camden, which covers part of the proposed SWRL corridor (this road has been identified as a visual corridor and route in Section 5.1.4)
- Ingleburn Military Camp
- Sydney Water Supply Canal
- Hurlstone Agricultural High School
- Cowpasture Road.

The Denham Court Road viewshed (which includes rural views to the north-east towards the Ingleburn Military Camp) was previously identified as important to the general rural character of the surrounding area in the *Liverpool Heritage Study* (Neustein and Associates 1992). However, since that time, part of that viewshed has been developed as rural-residential and planned development for Edmondson Park town centre will further alter this viewshed.

Potential impacts on the above existing visual conditions are described in Chapter 16 (Visual).