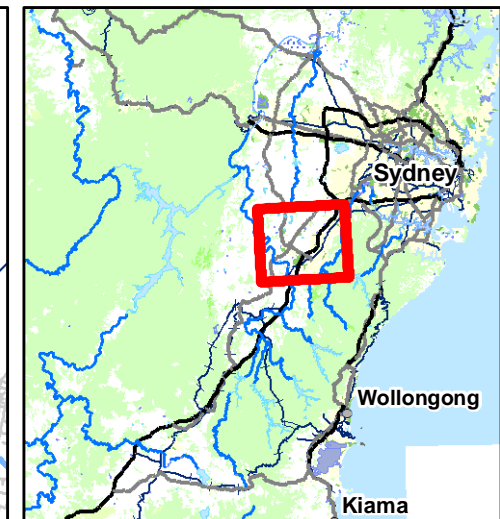
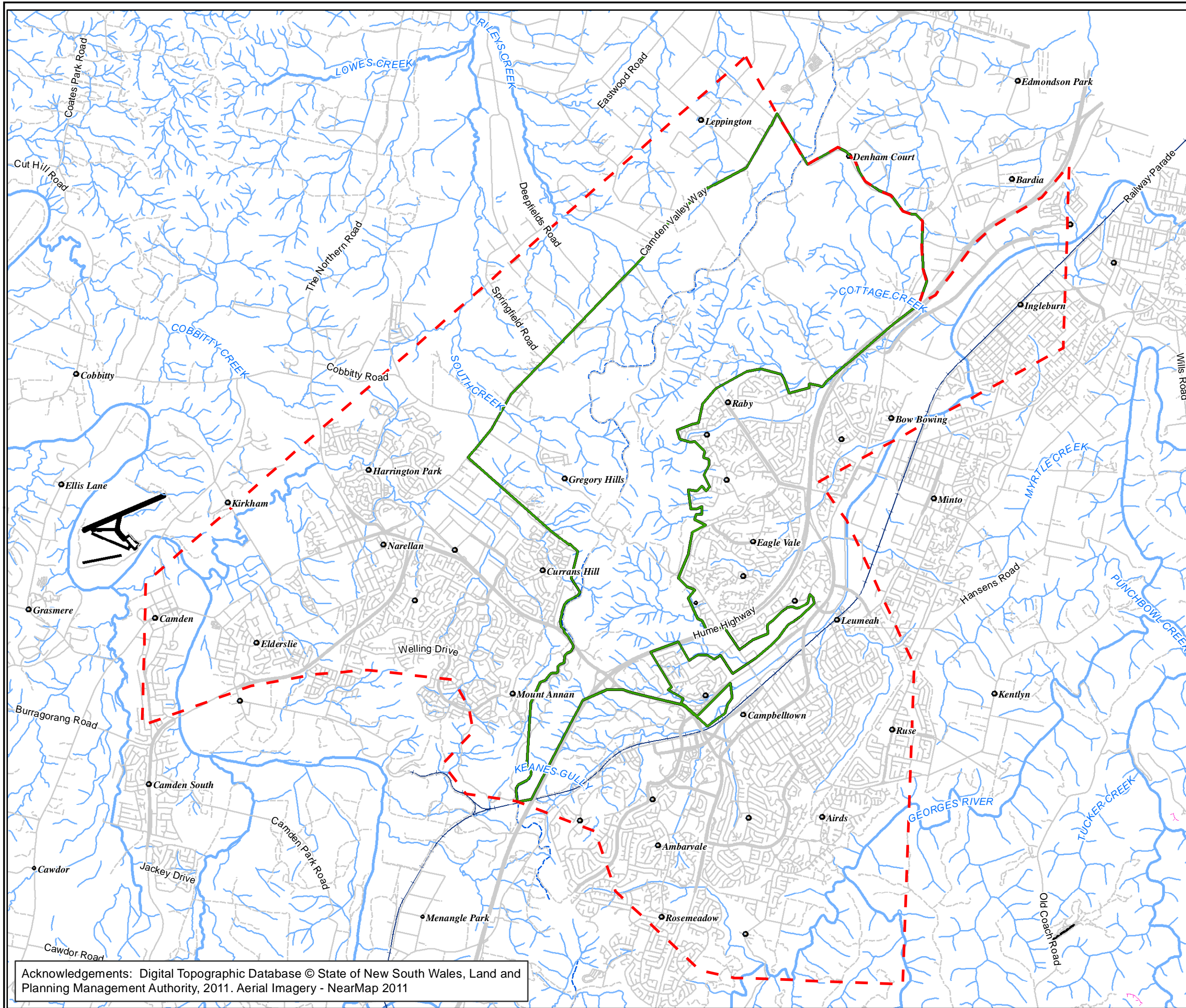


FIGURES



Legend

- Surface Project Area/Study Area
- Subsurface Project Area

Figure 1: The location of the Surface Project Area in a regional context.

0 0.65 1.3 1.95 2.6 3.25
Kilometers
Scale: 1:65,000 @ A3
Coordinate System: GDA 1994 MGA Zone 55

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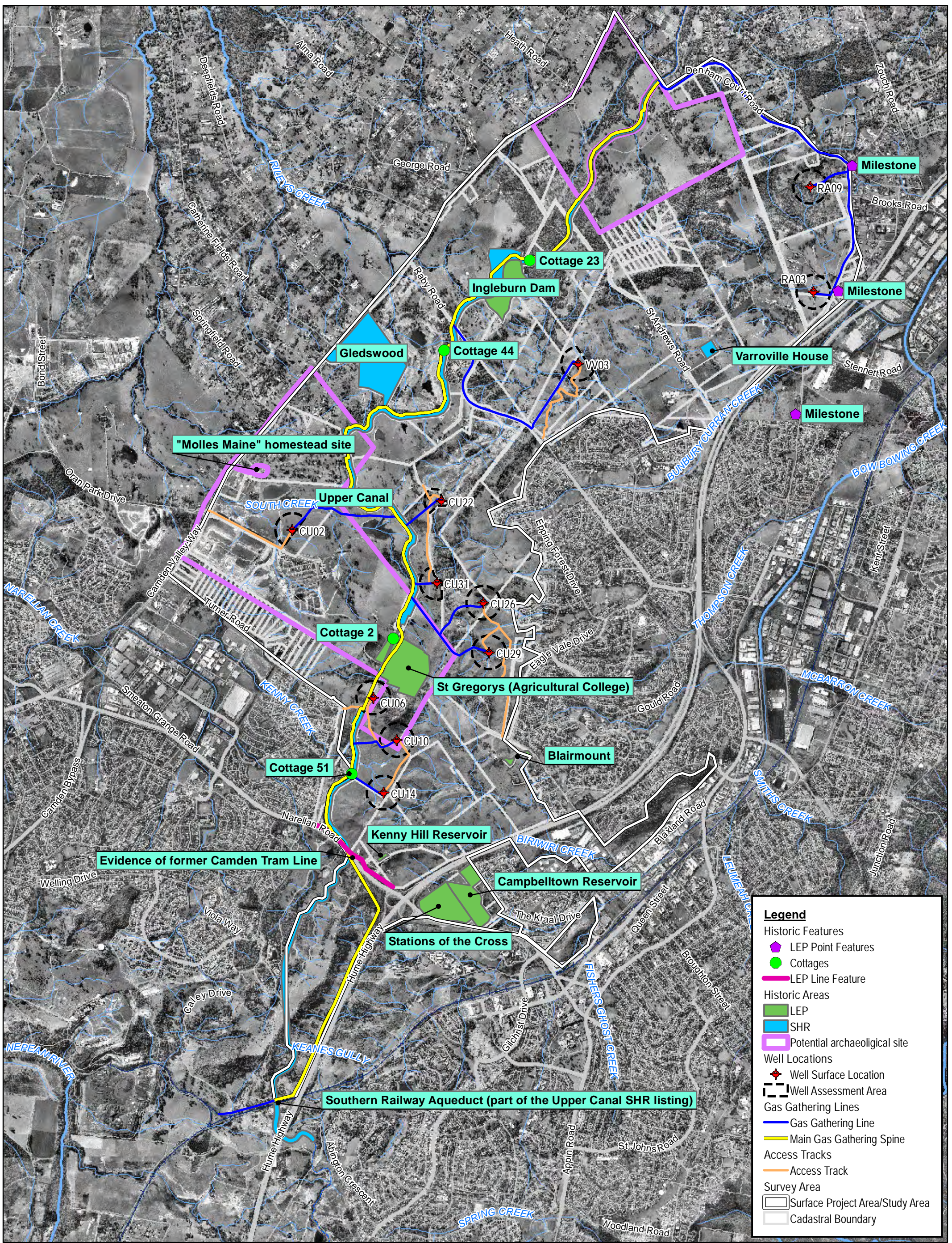
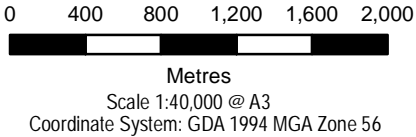
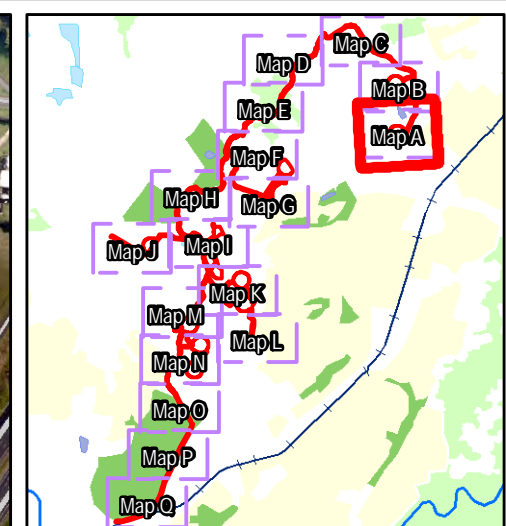
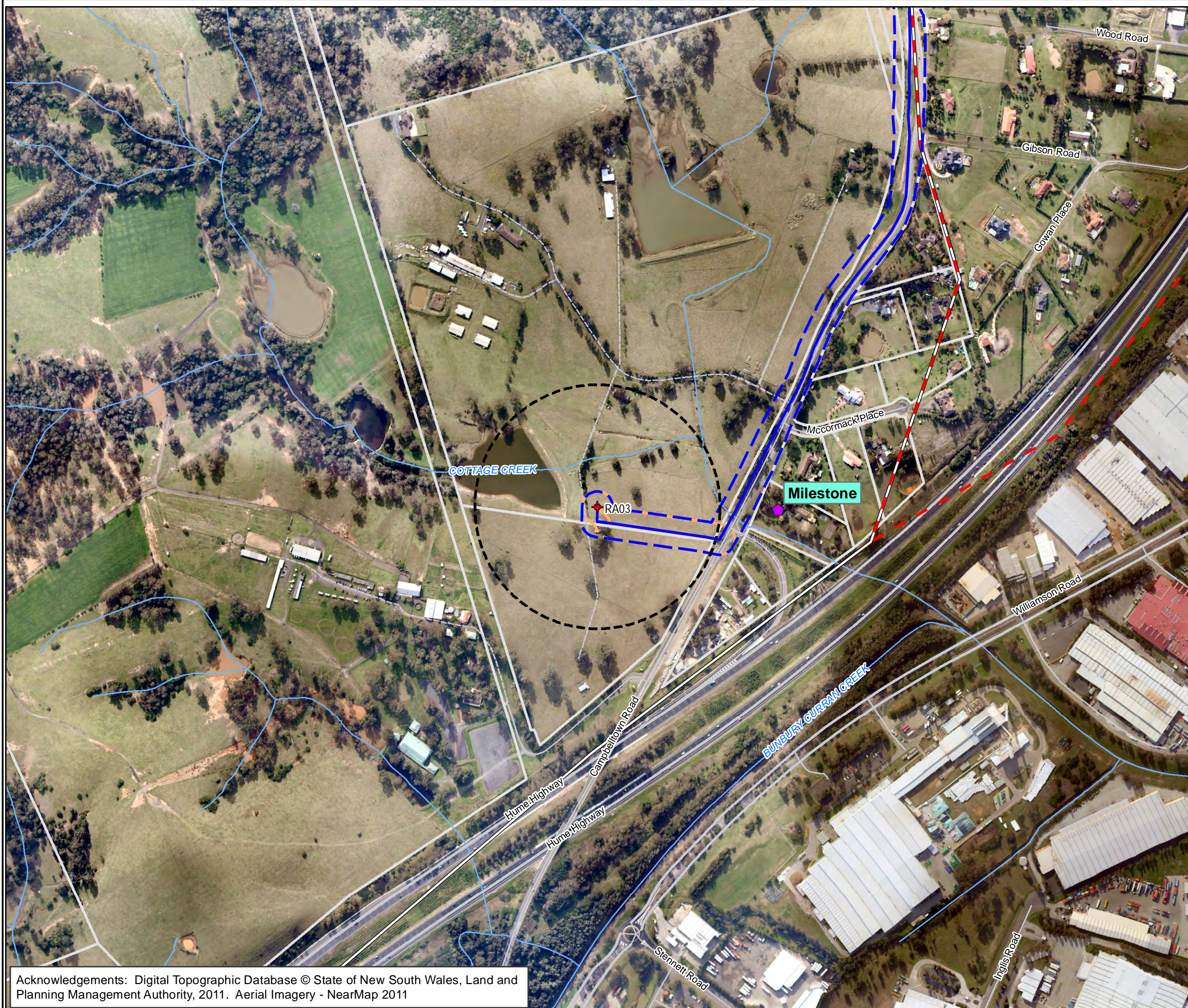


Figure 3: Listed & Potential Heritage Items within the Surface Project Area

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Legend

Historic Features

- LEP Point Features
- Cottages
- LEP Line Feature

Historic Areas

- LEP
- SHR
- Potential archaeological site

Well Locations

- Well Surface Location
- Well Assessment Area

Gas Gathering Lines

- Gas Gathering Line
- Gas Gathering Line Envelope
- Main Gas Gathering Spine
- Main Gas Gathering Spine Envelope

Access Tracks

- Access Track
- Access Track Envelope

Survey Area

- Surface Project Area/Study Area
- Subsurface Project Area
- Cadastral Boundary

Figure 4A: Detail showing proposal relative to heritage

0 50 100 150 200 250

Metres

Scale: 1:5,800 @ A3

Coordinate System: GDA 1994 MGA Zone 55



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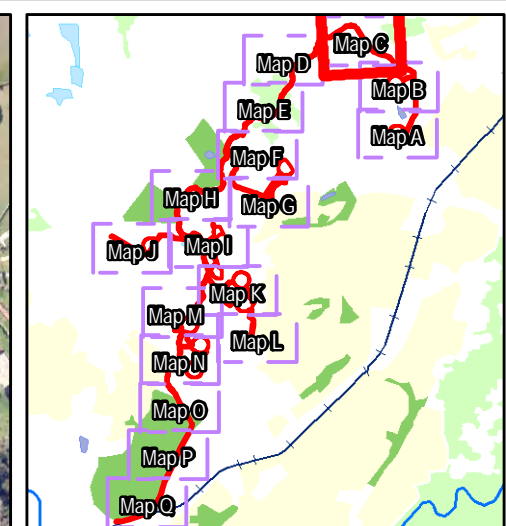
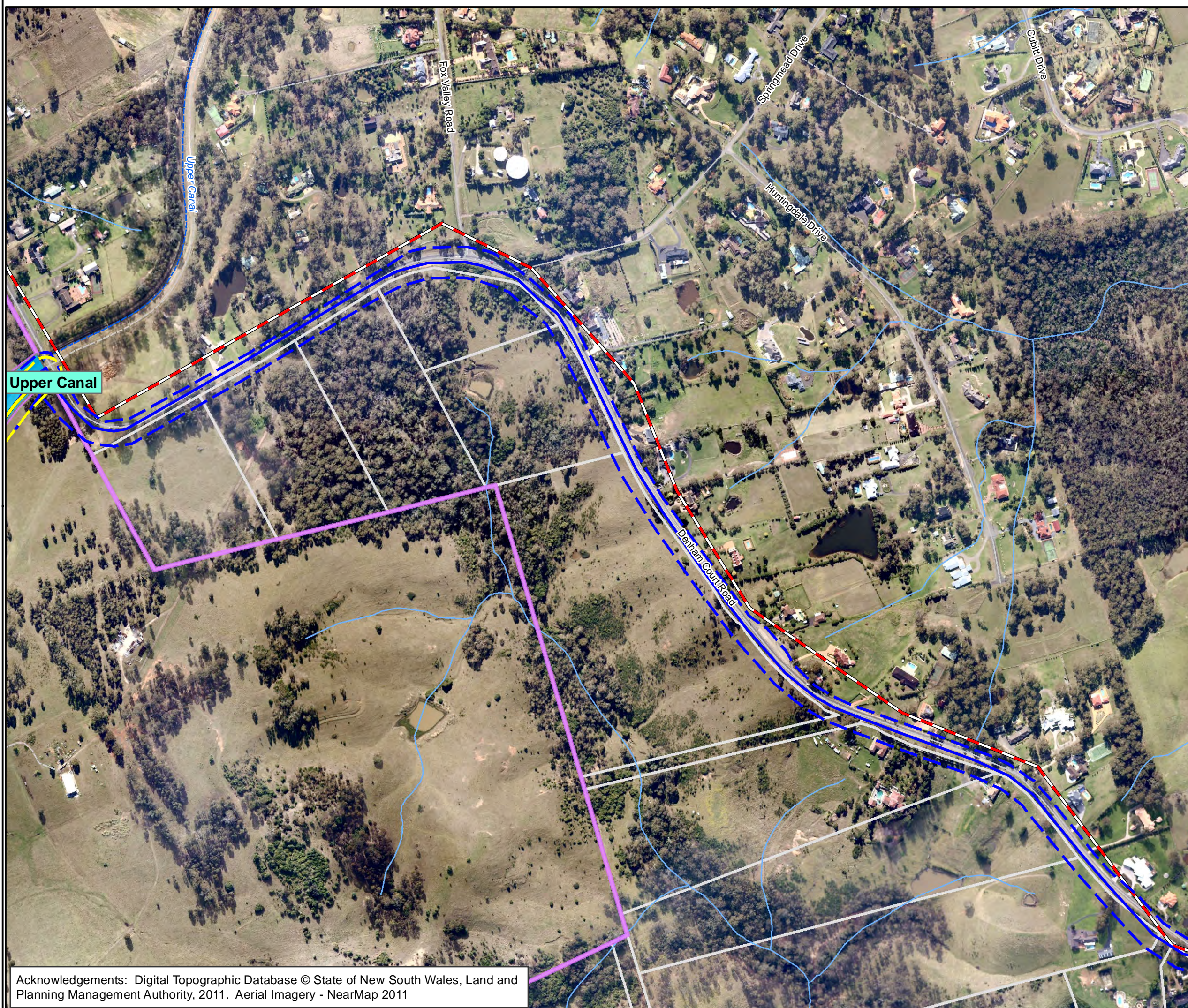
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Legend

Historic Features

- ◆ LEP Point Features
- Cottages
- LEP Line Feature

Historic Areas

- LEP
- SHR
- Potential archaeological site

Well Locations

- ◆ Well Surface Location
- Well Assessment Area

Gas Gathering Lines

- Gas Gathering Line
- Gas Gathering Line Envelope
- Main Gas Gathering Spine
- Main Gas Gathering Spine Envelope

Access Tracks

- Access Track
- Access Track Envelope

Survey Area

- Surface Project Area/Study Area
- Subsurface Project Area
- Cadastral Boundary

Figure 4C: Detail showing proposal relative to heritage

0 50 100 150 200 250

Metres

Scale: 1:5,800 @ A3

Coordinate System: GDA 1994 MGA Zone 55



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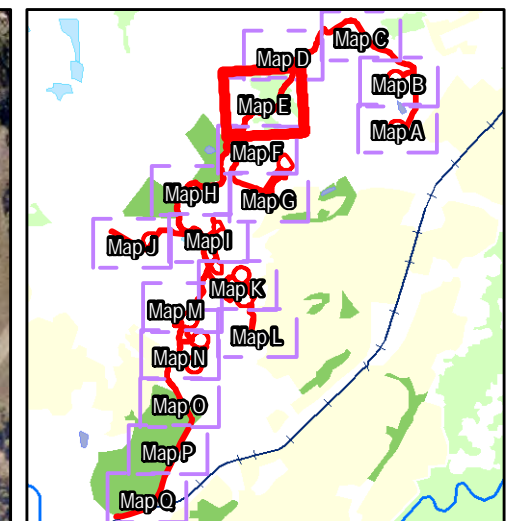
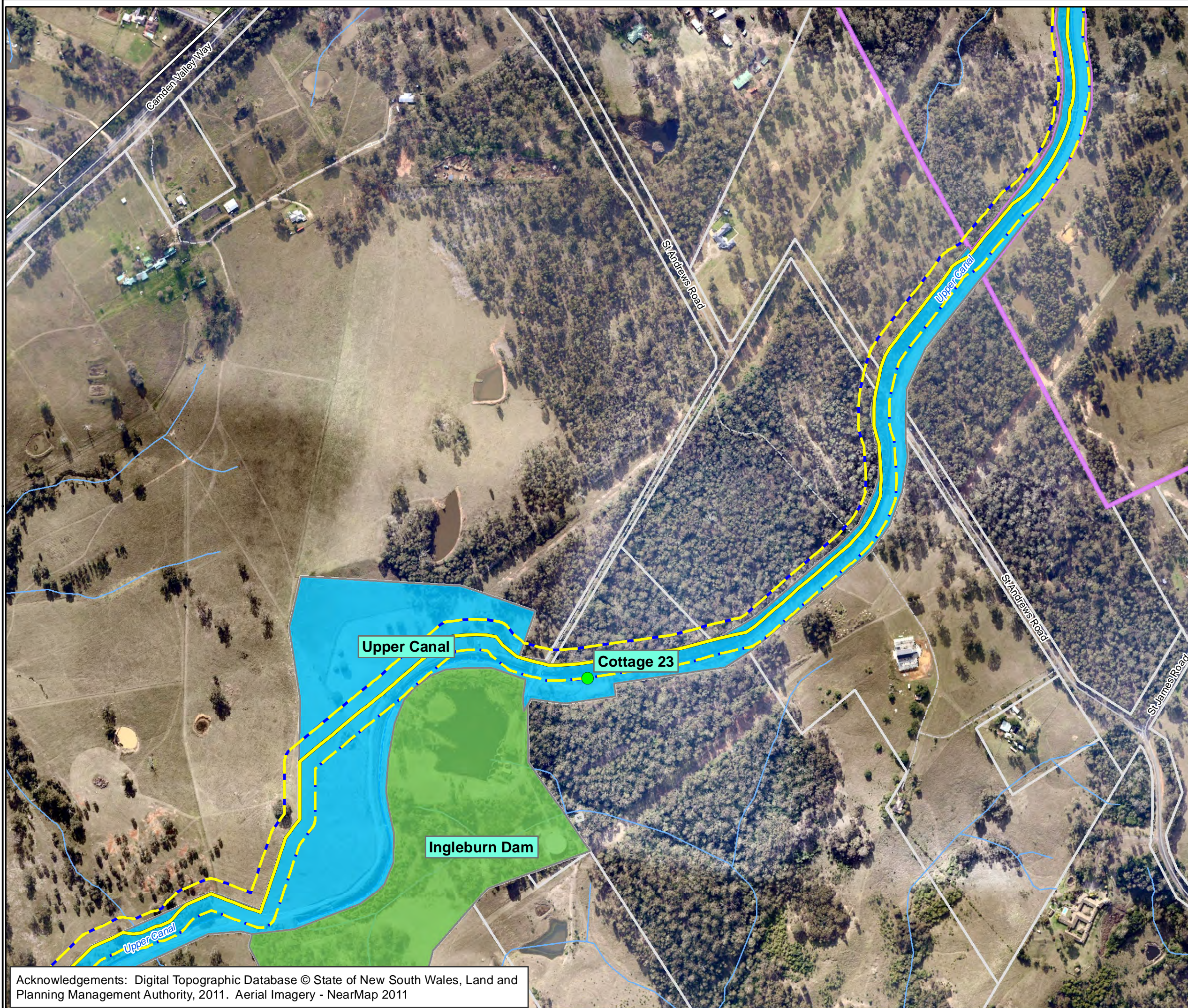
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Legend

Historic Features

- LEP Point Features
- Cottages
- LEP Line Feature

Historic Areas

- LEP
- SHR
- Potential archaeological site

Well Locations

- Well Surface Location
- Well Assessment Area

Gas Gathering Lines

- Gas Gathering Line
- Gas Gathering Line Envelope
- Main Gas Gathering Spine
- Main Gas Gathering Spine Envelope

Access Tracks

- Access Track
- Access Track Envelope

Survey Area

- Surface Project Area/Study Area
- Subsurface Project Area
- Cadastral Boundary

Figure 4E: Detail showing proposal relative to heritage

0 50 100 150 200 250

Metres

Scale: 1:5,800 @ A3

Coordinate System: GDA 1994 MGA Zone 55



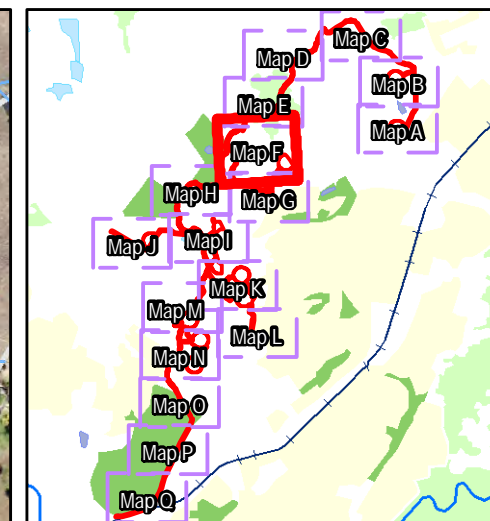
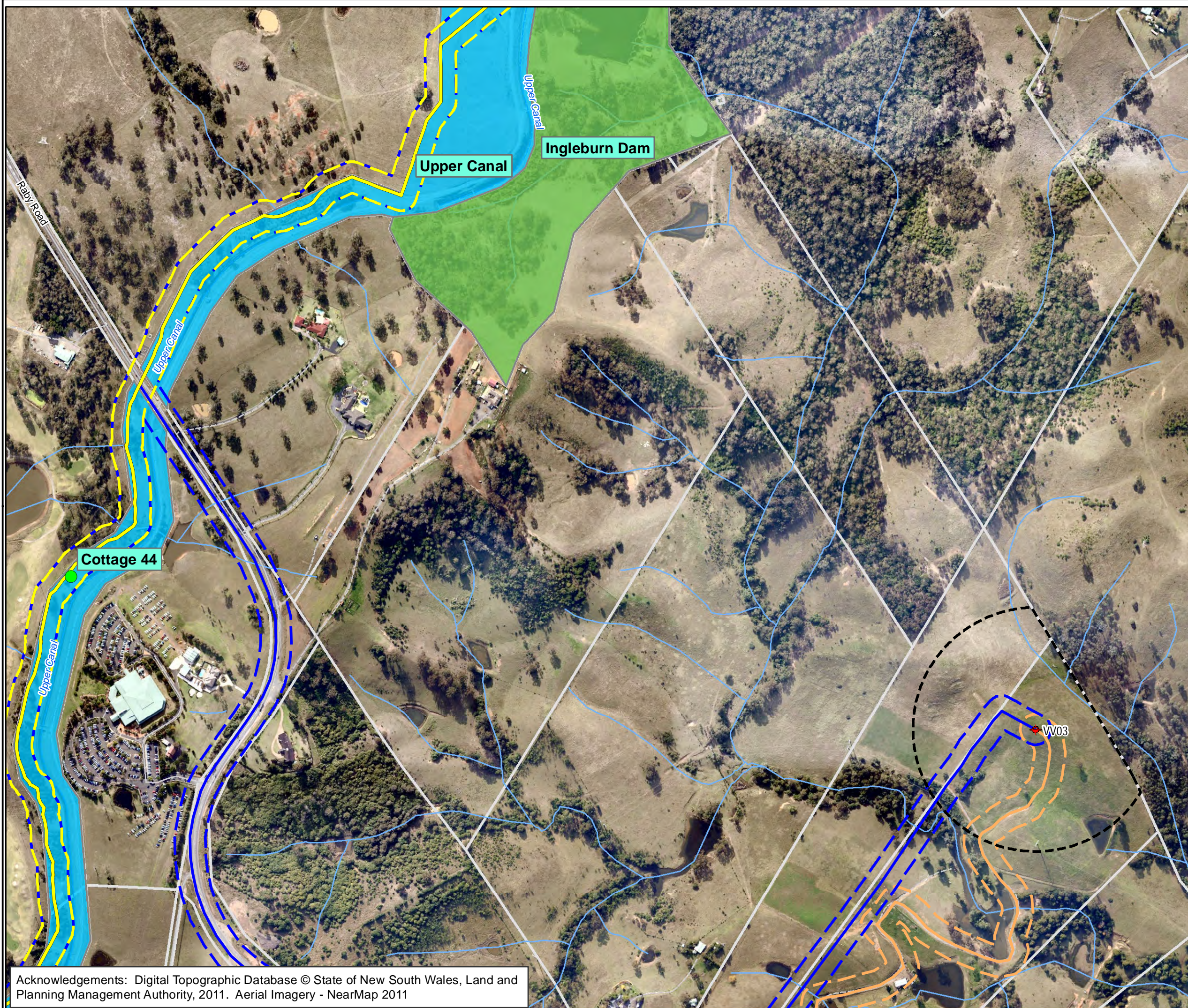
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Legend

Historic Features

- ◆ LEP Point Features
- Cottages
- LEP Line Feature

Historic Areas

- LEP
- SHR
- Potential archaeological site

Well Locations

- ◆ Well Surface Location
- Well Assessment Area

Gas Gathering Lines

- Gas Gathering Line
- Gas Gathering Line Envelope
- Main Gas Gathering Spine
- Main Gas Gathering Spine Envelope

Access Tracks

- Access Track
- Access Track Envelope

Survey Area

- Surface Project Area/Study Area
- Subsurface Project Area
- Cadastral Boundary

Figure 4F: Detail showing proposal relative to heritage

0 50 100 150 200 250

Metres

Scale: 1:5,800 @ A3

Coordinate System: GDA 1994 MGA Zone 55



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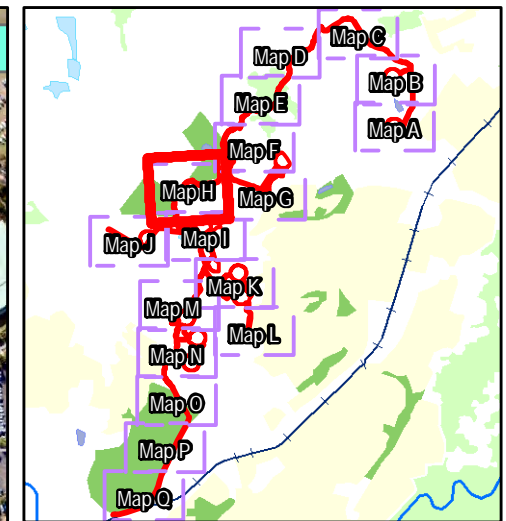
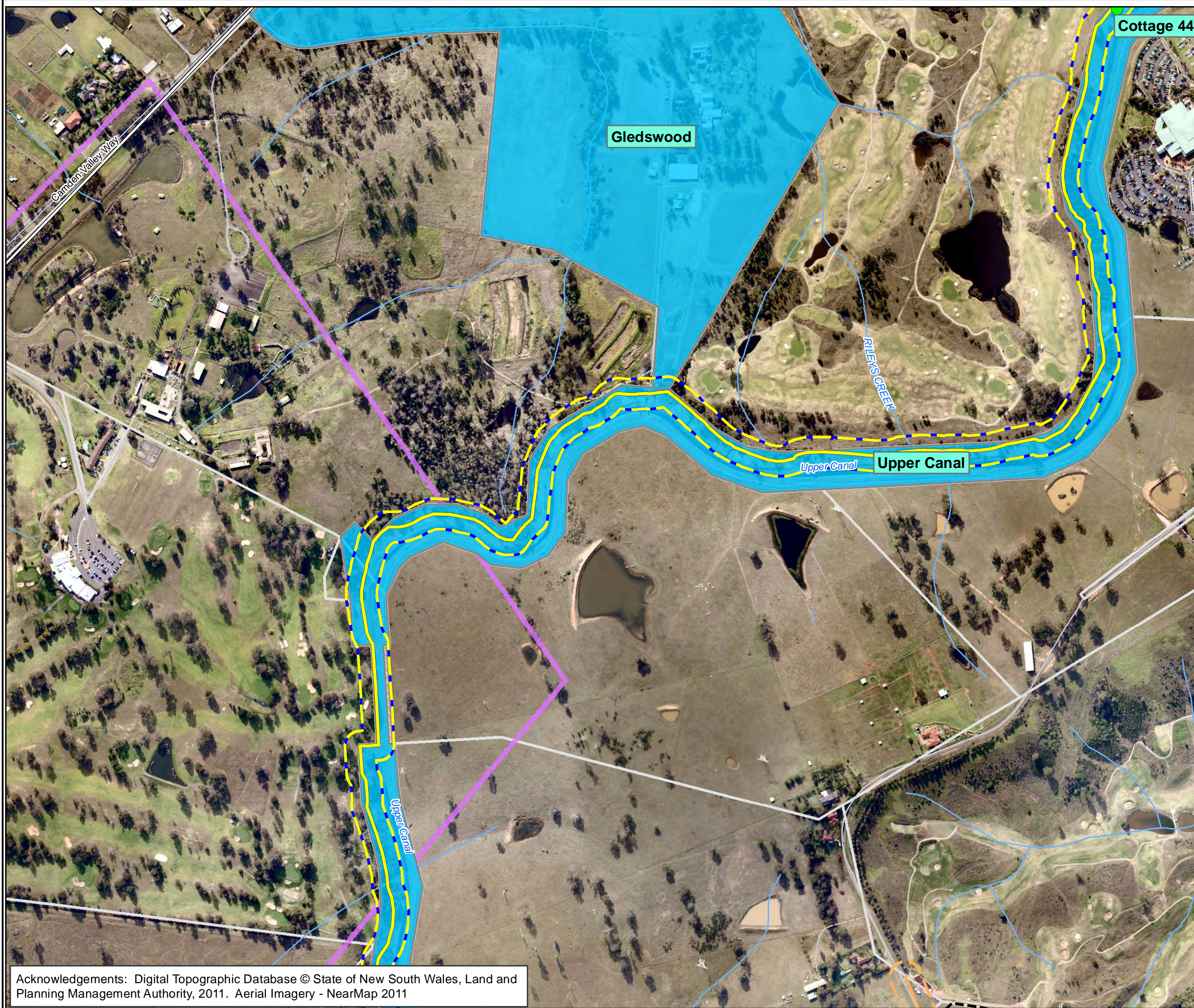
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Legend

Historic Features

- ◆ LEP Point Features
- Cottages
- LEP Line Feature

Historic Areas

- LEP
- SHR
- Potential archaeological site

Well Locations

- ✦ Well Surface Location
- Well Assessment Area

Gas Gathering Lines

- Gas Gathering Line
- Gas Gathering Line Envelope
- Main Gas Gathering Spine
- Main Gas Gathering Spine Envelope

Access Tracks

- Access Track
- Access Track Envelope

Survey Area

- Surface Project Area/Study Area
- Subsurface Project Area
- Cadastral Boundary

Figure 4H: Detail showing proposal relative to heritage

0 50 100 150 200 250

Metres
Scale: 1:5,800 @ A3
Coordinate System: GDA 1994 MGA Zone 55



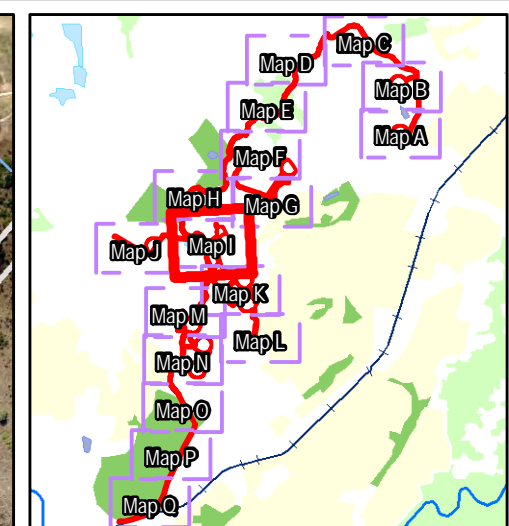
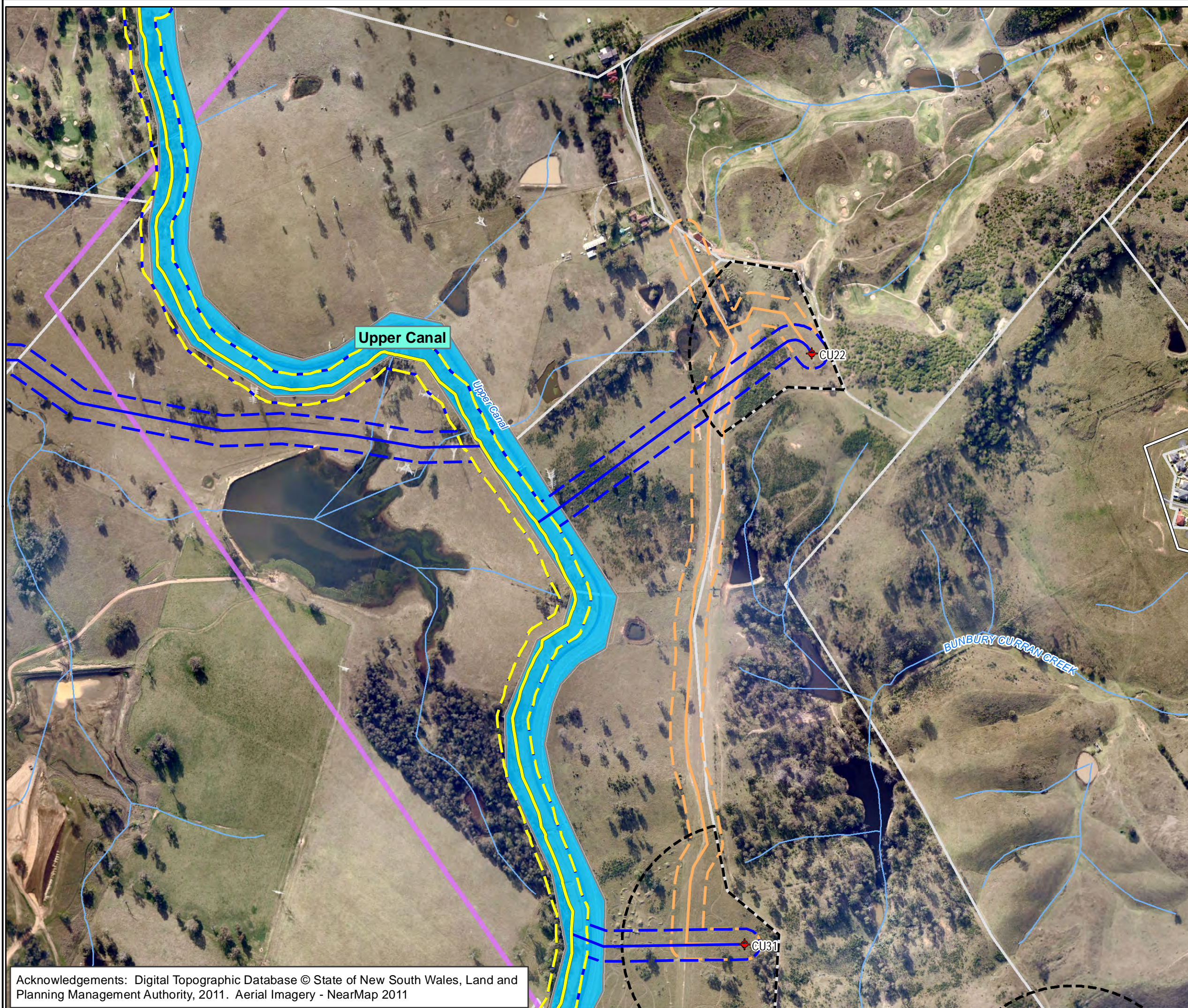
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- Legend**
- Historic Features**
- LEP Point Features
 - Cottages
 - LEP Line Feature
- Historic Areas**
- LEP
 - SHR
 - Potential archaeological site
- Well Locations**
- Well Surface Location
 - Well Assessment Area
- Gas Gathering Lines**
- Gas Gathering Line
 - Gas Gathering Line Envelope
 - Main Gas Gathering Spine
 - Main Gas Gathering Spine Envelope
- Access Tracks**
- Access Track
 - Access Track Envelope
- Survey Area**
- Surface Project Area/Study Area
 - Subsurface Project Area
 - Cadastral Boundary

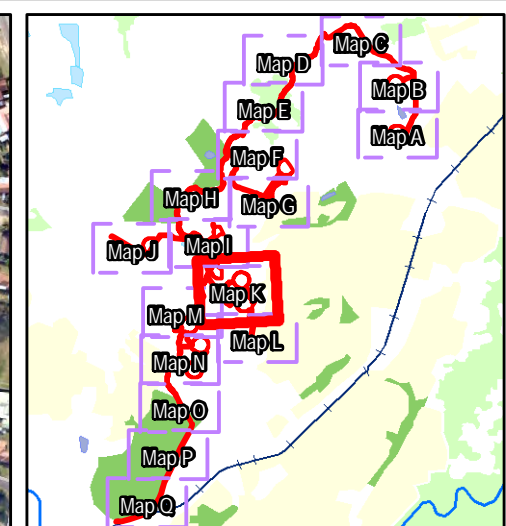
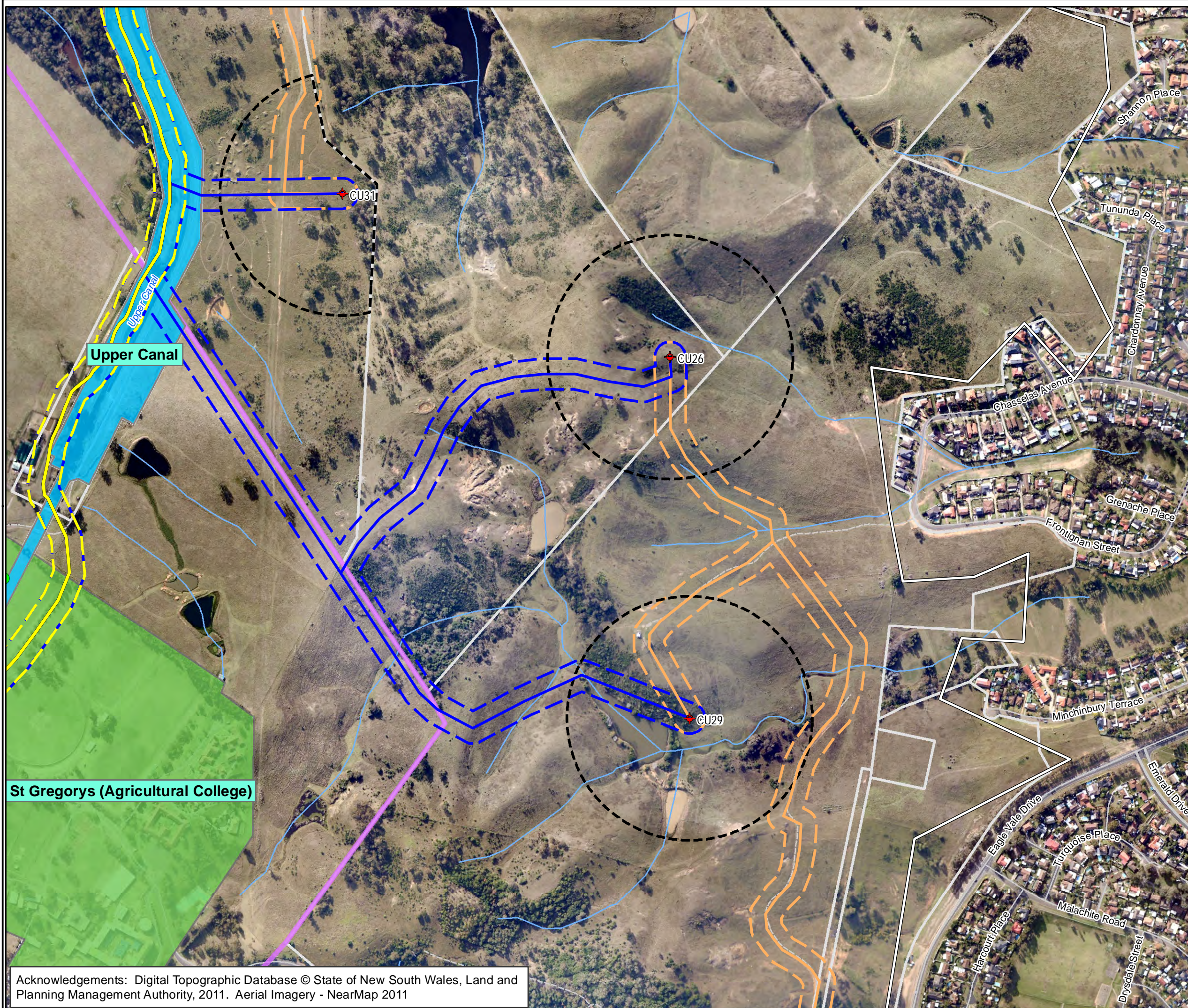
Figure 4I: Detail showing proposal relative to heritage

0 50 100 150 200 250
Metres
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Legend

Historic Features

- ◆ LEP Point Features
- Cottages
- LEP Line Feature

Historic Areas

- LEP
- SHR
- Potential archaeological site

Well Locations

- ◆ Well Surface Location
- Well Assessment Area

Gas Gathering Lines

- Gas Gathering Line
- Gas Gathering Line Envelope
- Main Gas Gathering Spine
- Main Gas Gathering Spine Envelope

Access Tracks

- Access Track
- Access Track Envelope

Survey Area

- Surface Project Area/Study Area
- Subsurface Project Area
- Cadastral Boundary

Figure 4K: Detail showing proposal relative to heritage

0 50 100 150 200 250

Metres

Scale: 1:5,800 @ A3

Coordinate System: GDA 1994 MGA Zone 55



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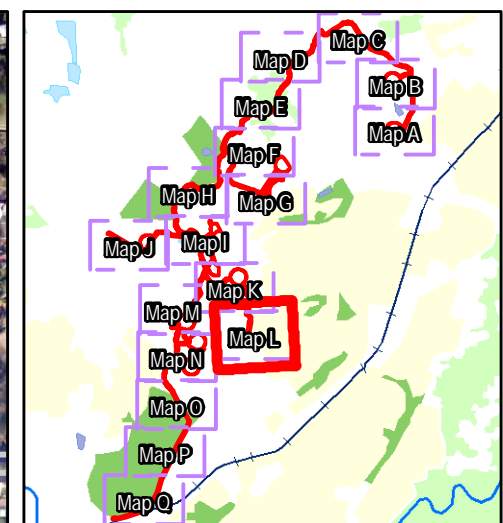
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- Legend**
- Historic Features
- LEP Point Features
 - Cottages
 - LEP Line Feature
- Historic Areas
- LEP
 - SHR
 - Potential archaeological site
- Well Locations
- Well Surface Location
 - Well Assessment Area
- Gas Gathering Lines
- Gas Gathering Line
 - Gas Gathering Line Envelope
 - Main Gas Gathering Spine
 - Main Gas Gathering Spine Envelope
- Access Tracks
- Access Track
 - Access Track Envelope
- Survey Area
- Surface Project Area/Study Area
 - Subsurface Project Area
 - Cadastral Boundary

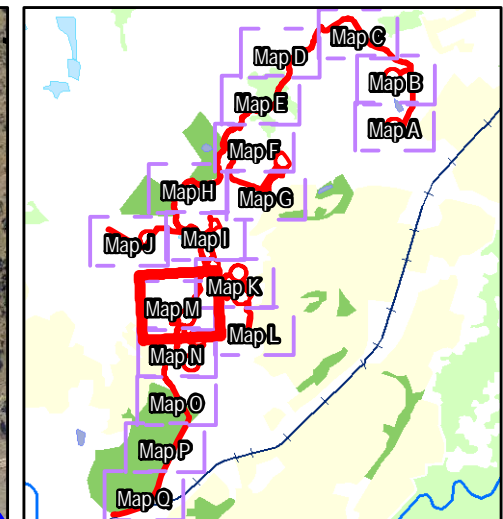
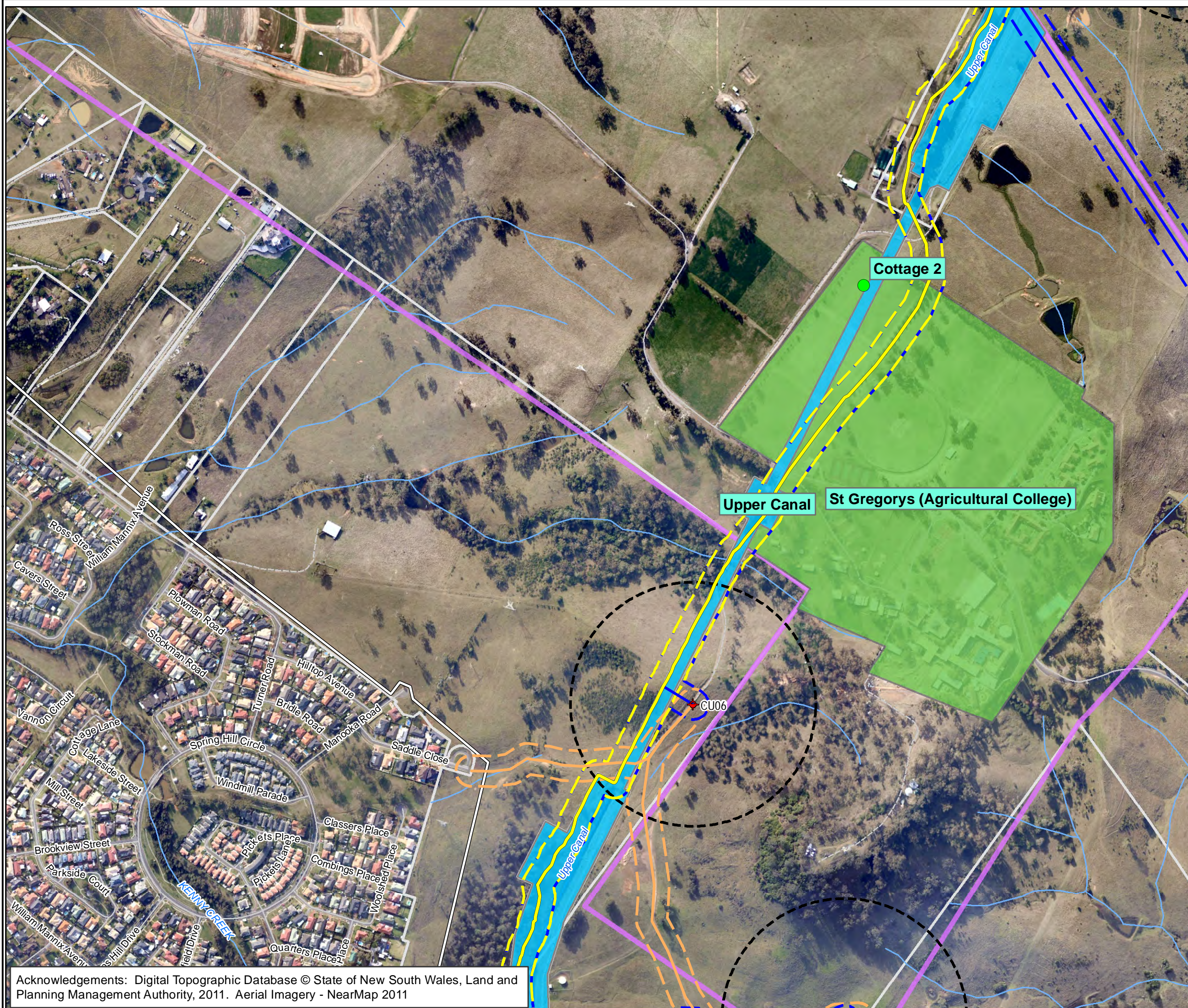
Figure 4L: Detail showing proposal relative to heritage

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Metres
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Coordinate System: GDA 1994 MGA Zone 55


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- Legend**
- Historic Features
- LEP Point Features
 - Cottages
 - LEP Line Feature
- Historic Areas
- LEP
 - SHR
 - Potential archaeological site
- Well Locations
- Well Surface Location
 - Well Assessment Area
- Gas Gathering Lines
- Gas Gathering Line
 - Gas Gathering Line Envelope
 - Main Gas Gathering Spine
 - Main Gas Gathering Spine Envelope
- Access Tracks
- Access Track
 - Access Track Envelope
- Survey Area
- Surface Project Area/Study Area
 - Subsurface Project Area
 - Cadastral Boundary

Figure 4M: Detail showing proposal relative to heritage

0 50 100 150 200 250
Metres
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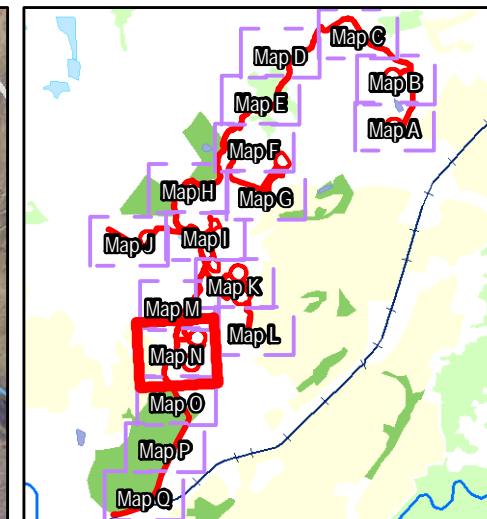
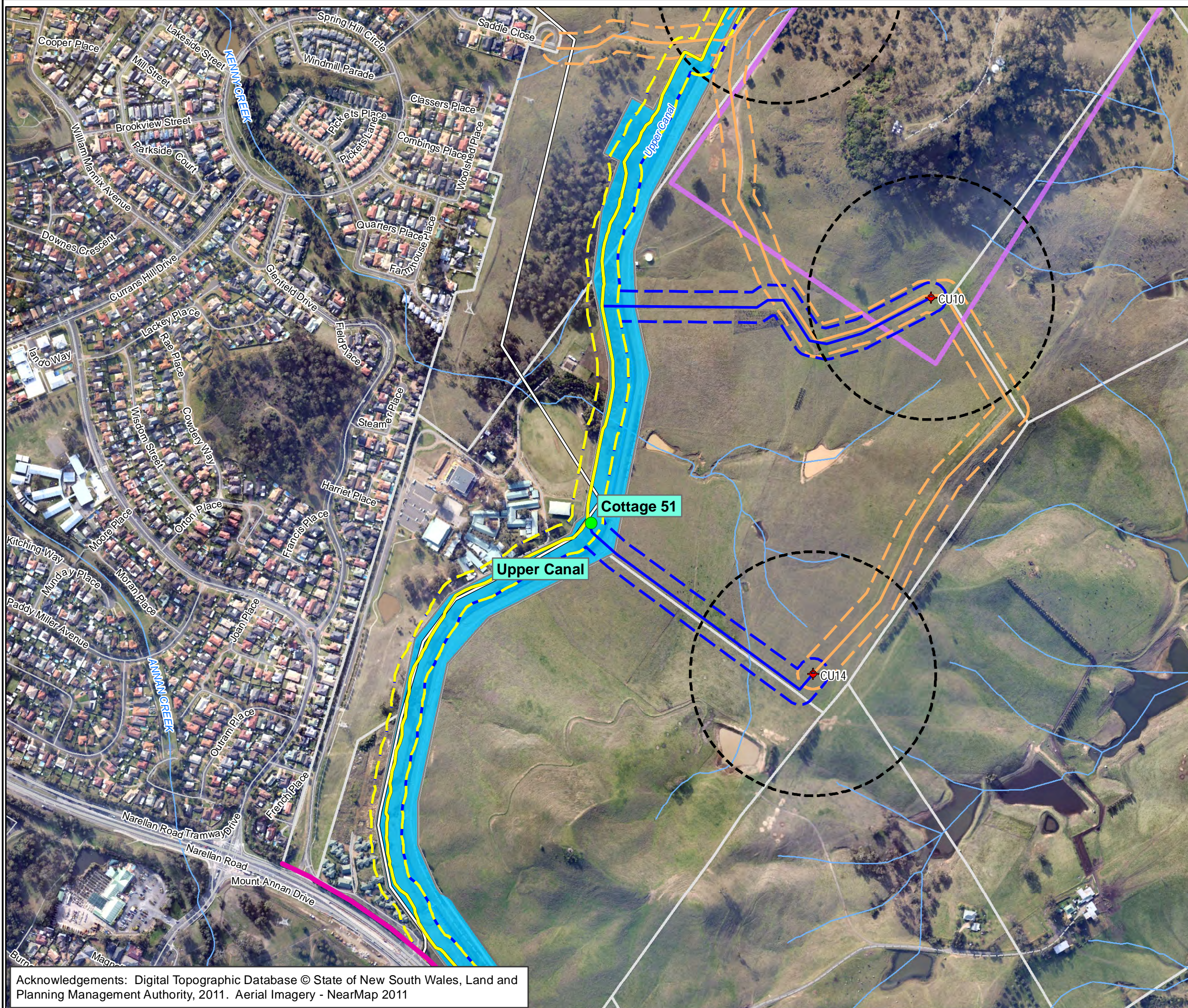


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- Legend**
- Historic Features
- LEP Point Features
 - Cottages
 - LEP Line Feature
- Historic Areas
- LEP
 - SHR
 - Potential archaeological site
- Well Locations
- Well Surface Location
 - Well Assessment Area
- Gas Gathering Lines
- Gas Gathering Line
 - Gas Gathering Line Envelope
 - Main Gas Gathering Spine
 - Main Gas Gathering Spine Envelope
- Access Tracks
- Access Track
 - Access Track Envelope
- Survey Area
- Surface Project Area/Study Area
 - Subsurface Project Area
 - Cadastral Boundary

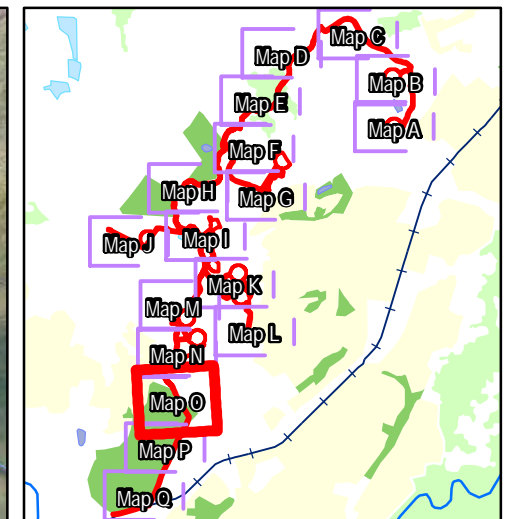
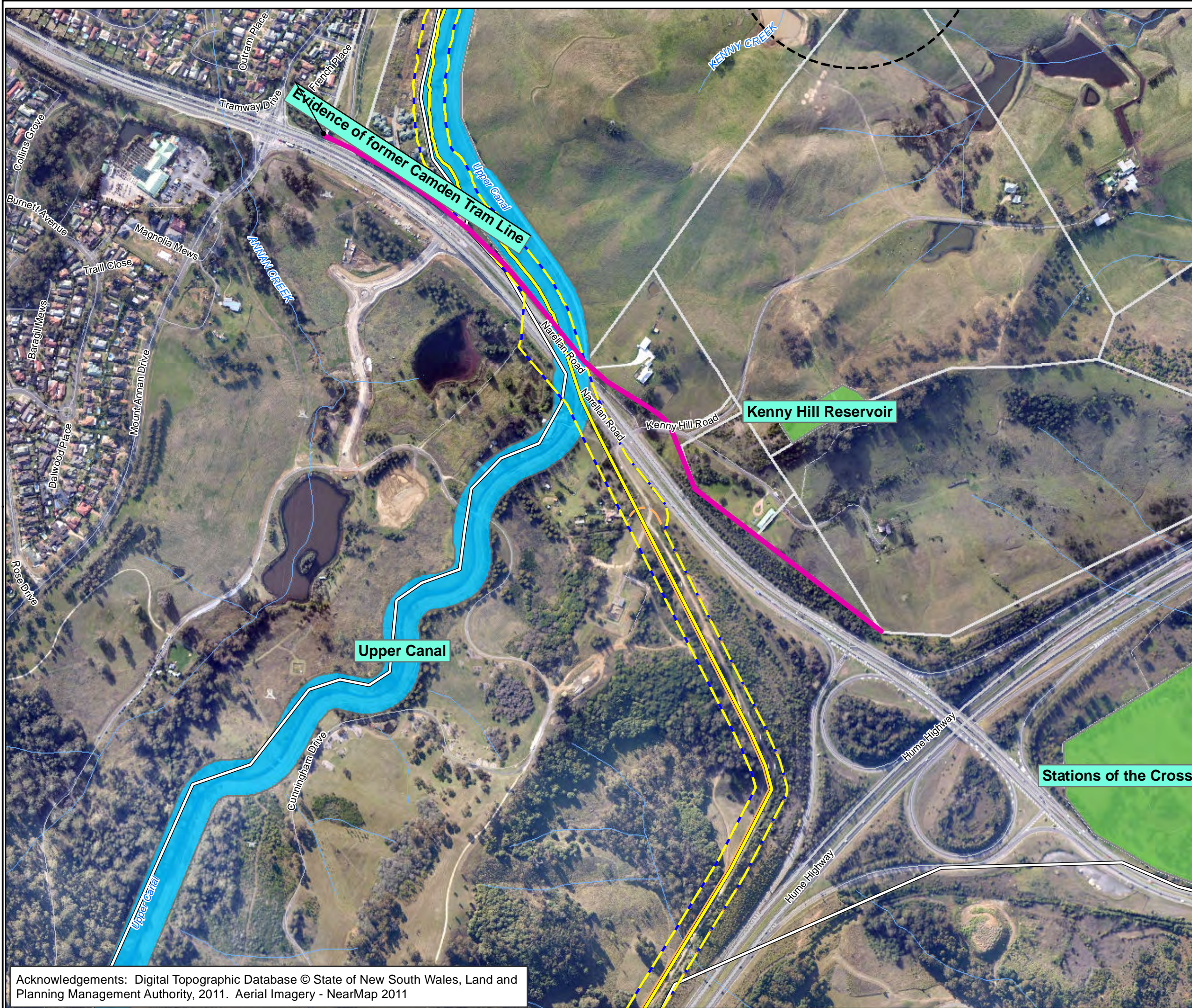
Figure 4N: Detail showing proposal relative to heritage

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Metres
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Legend

Historic Features

- LEP Point Features
- Cottages
- LEP Line Feature

Historic Areas

- LEP
- SHR
- Potential archaeological site

Well Locations

- Well Surface Location
- Well Assessment Area

Gas Gathering Lines

- Gas Gathering Line
- Gas Gathering Line Envelope
- Main Gas Gathering Spine
- Main Gas Gathering Spine Envelope

Access Tracks

- Access Track
- Access Track Envelope

Survey Area

- Surface Project Area/Study Area
- Subsurface Project Area
- Cadastral Boundary

Figure 40: Detail showing proposal relative to heritage

0 50 100 150 200 250

Metres

Scale: 1:5,800 @ A3

Coordinate System: GDA 1994 MGA Zone 55

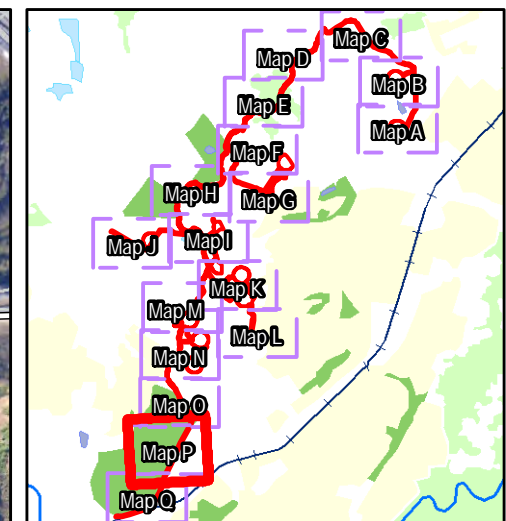
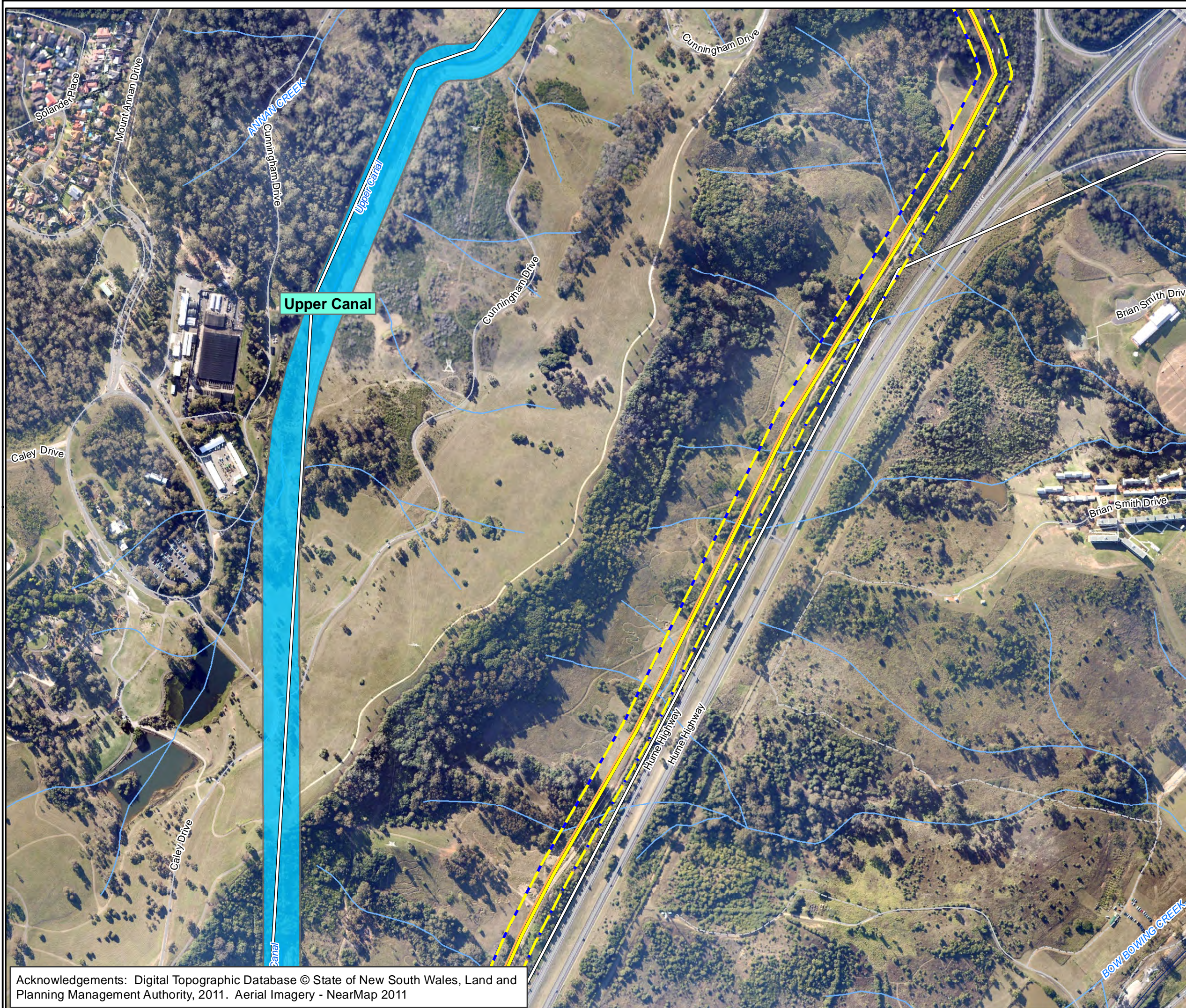


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Legend

Historic Features

- LEP Point Features
- Cottages
- LEP Line Feature

Historic Areas

- LEP
- SHR
- Potential archaeological site

Well Locations

- Well Surface Location
- Well Assessment Area

Gas Gathering Lines

- Gas Gathering Line
- Gas Gathering Line Envelope
- Main Gas Gathering Spine
- Main Gas Gathering Spine Envelope

Access Tracks

- Access Track
- Access Track Envelope

Survey Area

- Surface Project Area/Study Area
- Subsurface Project Area
- Cadastral Boundary

Figure 4P: Detail showing proposal relative to heritage

0 50 100 150 200 250

Metres

Scale: 1:5,800 @ A3

Coordinate System: GDA 1994 MGA Zone 55



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Camden Gas Project Amended Northern Expansion: Historic Cultural Heritage Assessment

Report for AGL Upstream Investments Pty. Ltd.

October 2012

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11944/13343/14975

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Mapping:

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PROJECT	Amended Northern Expansion Camden Gas Project: Historic Cultural Heritage Assessment
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REPORT FOR	AGL Upstream Investment Pty Ltd
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REPORT TITLE:	Camden Gas Project Amended Northern Expansion: Historic Cultural Heritage Assessment
----------------------	--

AUTHOR(S):	Fenella Atkinson, Pamela Kottaras and Asher Ford
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Draft 2	Sam Moody Pamela Kottaras	--	Adam Lollback, Aaron Clifton	Pamela Kottaras
Draft 3	Pamela Kottaras Melanie Thomson	Pamela Kottaras	Adam Lollback, Erin Saunders	Melanie Thomson
Draft 4	Pamela Kottaras	Peter Woodley		
Draft 5	Pamela Kottaras			
Final C	Asher Ford	Pamela Kottaras	Alexander Frolich, AGL	Asher Ford
Final D	Asher Ford	Pamela Kottaras	Alexander Frolich, AGL	Asher Ford
Final E	Asher Ford	Melanie Thomson	Alexander Frolich, AGL	

REVISION	ISSUED	NAME	SIGNED
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Draft 2	13 November 2009	Pamela Kottaras	
Draft 3	02 March 2010	Melanie Thomson	
Draft 4	16 July 2010	Pamela Kottaras	

Final A	03 August 2010	Pamela Kottaras	PK
Final B	22 November 2011	Pamela Kottaras	PK
Final C	20 July 2012	Pamela Kottaras	PK
Final D	09 August 2012	Pamela Kottaras	PK
Final E	18 September 2012	Asher Ford	
Final F	08 October 2012	Asher Ford	

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- Rebecca Ward, National Trust of Australia (NSW)
- Kate Lenertz, Heritage Officer, Sydney Catchment Authority
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- Neil Abrahams, Senior Environmental Officer, Sydney Catchment Authority
- Chris Lalor, Team Leader, Land Use & Planning, Camden Council
- Pam Browne, Camden Historical Society
- Caitlin Allen, Government Architect's Office
- Kylie Seretis, Department of Planning and Infrastructure

ABBREVIATIONS & TERMINOLOGY

AECOM	AECOM Australia Pty Limited
AGL	AGL Upstream Investments Pty Limited
CHL	Commonwealth Heritage List
CGP	Camden Gas Project
CMP	Conservation Management Plan
DGRs	Director-General's Requirements
DoPI	Department of Planning and Infrastructure
EA	Environmental Assessment
EMS	Environmental Management Strategy
EP&A Act	<i>Environmental Planning and Assessment Act 1979 (NSW)</i>
EPBC Act	<i>Environmental Protection and Biodiversity Conservation Act 1999 (Cth)</i>
GAO	Government Architect's Office
GGL	Gas Gathering Lines
ICOMOS	International Council on Monuments and Sites
LEP	Local Environmental Plan
LGA	Local Government Area
NHL	National Heritage List
NPWS	National Parks and Wildlife Service (now part of DECC)
PPL	Petroleum Production Lease
REP	Regional Environmental Plan

RNE	Register of the National Estate
SCA	Sydney Catchment Authority
Section	Refers to SCA breakdown of the canal alignment (refer Plate 29 to Plate 32)
SIS	Surface to in-seam (refers to a type of connection from coal seam to well)
SHR	State Heritage Register
WSL	Well Surface Locations
Upper Canal	Sydney Upper Canal Water Supply

EXECUTIVE SUMMARY

Biosis Research Pty. Ltd. has been commissioned by AECOM Australia Pty Limited on behalf of AGL Upstream Investments Pty Limited (AGL) to undertake a Historic cultural heritage assessment for the proposed Camden Gas Project (CGP) Northern Expansion (Northern Expansion Project) to form part of the Environmental Assessment (EA). The CGP involves the extraction of gas from the Illawarra Coal Measures, within the Southern Coalfield of the Sydney Basin (AECOM 2012).

The project area for the Northern Expansion Project, as amended having regard to the submissions received by AGL during the public exhibition (Amended Project), has been separated into two distinct areas known as the Subsurface Project Area (within which project works are limited to subsurface drilling activities only) and the Surface Project Area. The Surface Project Area for the Amended Project will include the construction and operation of gas wells at up to 11 well surface locations (WSL), gas gathering lines (GGL), water lines with central water storage tanks where feasible and access roads. Flora and fauna field surveys were confined to the Surface Project Area.

The Northern Expansion Project is development to which Part 3A of the *Environmental Planning and Assessment Act 1979 (NSW)* (EP&A Act) applies. Under the (now repealed) clause 6 of Schedule 1 of the *State Environmental Planning Policy (Major Development) 2005* (SEPP 2005), the Northern Expansion Project is, in the opinion of the Minister for Planning, development of a kind that is described in Schedule 1 of SEPP 2005 (that is, development for the purpose of drilling and operation of petroleum wells that is within a specified local government area), and is a project to which Part 3A of the EP&A Act applies. Part 3A of the EP&A has been repealed. However, in accordance with Schedule 6A of the EP&A Act, the Northern Expansion Project is a ‘transitional Part 3A project’, and Part 3A of the EP&A Act continues to apply to in respect of the Northern Expansion Project.

Under the EP&A Act, specified development on specified land may be declared to be State Significant Development (SSD). On 19 October 2012, the project was declared to be SSD by an order of the Minister for Planning and Infrastructure published in the NSW Gazette on 26 October 2012.

By virtue of the operation of clause 6(3)(b), Schedule 6A of the EP&A Act, previous steps taken under Part 3A (including issue of Director-General’s Requirements (DGRs) and public exhibition of the EA) are now taken to have been completed under Division 4.1, Part 4 of the EP&A Act. AGL has prepared a Submissions Report to which this report is appended. The Submissions Report also addresses the amendments made to the Northern Expansion Project which has reduced the environmental impact of the development as a result of the issues raised during submissions.

In response to the submissions and having regard to impacts to historic cultural heritage, AGL made changes to the Northern Expansion Project, including in relation to the route for GGL and main gas gathering spine, and WSL. For purposes of this report, the Northern Expansion

Project, as amended, will be referred to as the Amended Project. The Amended Project comprises:

- Construction and operation of eleven WSL locations containing up to six well heads each;
- Construction and operation of associated GGL, including interconnection with the existing CGP network, along with central water storage points where required;
- Construction of access roads and ancillary infrastructure, including storage yard(s), where required; and,
- Subsurface drilling of lateral in-seam well paths within the bounds of the Subsurface Project Area.

Some approvals under the *Heritage Act 1977* (NSW) are not required for a SSD that is authorised by a development consent, and the provisions of the *Heritage Act 1977* that prohibit an activity without such approvals do not apply (section 89J of the EP&A Act). Accordingly, if consent is granted to the Amended Project, then some approvals would not be required. However, specific process and notification requirements under the *Heritage Act 1977* will continue to apply to the Amended Project (if approved under the EP&A Act).

The assessment of the Amended Project utilised an “envelope” approach to impact assessment, meaning that a wider area or “envelope” around surface components was assessed to allow the final infrastructure sites to move within the assessed parameters, subject to the recommended environmental management measures and consultation with the landowner. This "Project Envelope" includes a 200 metre radius for a WSL and 25 metres either side of GGLs and access roads.

Searches were carried out of relevant heritage registers, statutory planning instruments and databases. The field assessments focussed on the areas of previously identified archaeological potential within the Surface Project Area (as defined in Section 1 below) determined through background research. Eight listed heritage items occur within the Surface Project Area, with one of those sites, the Sydney Upper Canal Water Supply (Upper Canal) occurring within the Study Area (as defined below), that is, within the development ‘envelopes’. At the time of the historical heritage assessment commencement, the relevant local environmental plan (LEP) and draft standard instrument (LEP) for Camden Council included a third item, St Gregory’s Agricultural College. The draft instrument has been gazetted and now applies to the Camden Local Government Area (LGA). However the Camden LEP excludes the Agricultural College as the buildings, which are considered significant, as they are within the Campbelltown LGA. Campbelltown has not yet listed the buildings as a heritage item but it is anticipated that they will be listed in the future, therefore, they have been treated within this report a heritage item.

Six potential archaeological sites were also identified, four of which are cottage sites associated with the maintenance of the Upper Canal; one being the potential relics of the former homestead ‘Molles Mains’ and the sixth being the location of the remains of what is believed to be a WWII aeroplane that crashed in the vicinity of the proposal in 1942 or 1943. The site visit undertaken

in June 2011 identified the site of the WWII plane (period to be confirmed) and additional information was provided by the Government Architect's Office (GAO) courtesy of the Sydney Catchment Authority (SCA).

Management recommendations for the plane wreck have been formulated in the report *Aircraft Wreckage Near the Upper Canal at Catherine Field, NSW: Archaeological Assessment*, prepared by the GAO of the Department of Public Works (2009). The report concludes that *in situ* retention is not considered necessary for the item to retain the level of cultural significance it has been provisionally ascribed. As part of the SCA conservation policy for this crash site, the GAO report and details of the crash site location are not publicly accessible at present.

The location of the former Molles Mains homestead has been identified (with some certainty) as being within the boundary of the Camden Valley Golf Course and close to Camden Valley Way, and thus will not be impacted by the Amended Project.

In general, avoidance of all identified heritage sites is the most effective way to reduce the level of mitigation required to protect heritage items and potential heritage items. Avoidance is also the best outcome with regard to the heritage values of the affected landscape. General recommendations and specific mitigation measures have been proposed in this report. The recommendations are as follows:

Conservation

- As a precautionary principle, consult with the SCA in relation to areas of heritage significance on the Upper Canal prior to commencing works, including delivery of plant and other equipment. Consultation would include defining safe distances of proposed AGL infrastructure with regard to the structural preservation of the Upper Canal.
- In the first instance, AGL should endeavour to avoid impact to all identified heritage items.
- Avoidance of impacts to the fabric of the Upper Canal System and associated infrastructure is to be exercised by adjusting the alignment of GGLs and well heads at the design stage, prior to the commencement of ground disturbance works within the Study Area.
- Impacts to the purported WWII plane wreckage site are permissible only after a mitigation strategy has been agreed to by all stakeholders and relevant statutory authorities, that is, the SCA (landowner), AGL (proponent), the Heritage Council (NSW heritage advisory body) and the Department of Planning and Infrastructure (DoPI) (statutory authority). Reference should be made to the GAO 2011 archaeological research design report.

- Where impact to sites is unavoidable, AGL should consult with the SCA to develop an appropriate mitigation strategy. This would include applying the relevant management recommendations of the Conservation Management Plan (CMP) (Higginbotham and Associates 2002) and include these in the existing Environmental Management Strategy (EMS) for the CGP.
- AGL, in consultation with the SCA should consider under-boring where GGLs cross the Upper Canal, in particular, where the project has the potential to impact upon the archaeological site of Cottage 23 (Section 7), Cottage 44 (Section 6) and Cottage 55 of the Upper Canal and in the vicinity of Ingleburn Dam.
- If the placement of project components can be modified to avoid all identified potential impacts, no archaeological work will be required except in the case of unexpected finds.
- Where impact on relics (archaeological sites of local or State significance) cannot be avoided, the site should be archaeologically excavated and an excavation report prepared.
- Variations to the current Amended Project beyond that area assessed within the current Survey Area will require additional archaeological survey and assessment by a qualified heritage consultant. An increase in the Surface Project Area may require further documentary research.
- Care should be taken when moving plant equipment throughout the Surface Project Area to avoid inadvertent impacts to listed and potential heritage items (including archaeological sites).
- Where mitigation of visual impacts is suggested by screening with vegetation, this may be along existing fence lines or directly adjacent to AGL infrastructure rather than to block views from existing structures (amenity rather than significant views).

Ongoing Management

- Incorporate the recommendations of this report into the existing EMS for the CGP.
- Schedule a heritage induction for the Amended Project personnel prior to site works commencing. Include this requirement in all construction contracts.

Unanticipated Historical Archaeological Sites

- Should unanticipated relics be identified during any works of each component, works should cease in the vicinity of the find and a qualified archaeologist should be contacted to assess the find. The Heritage Branch, OEH, will require notification as per s.146 of the *Heritage Act 1977*.

Human Remains

In the case of any skeletal remains, suspected of being human, being found during any project works, the following process will be required:

- Immediately cease all work at that location and not further move or disturb the remains;
- Notify the NSW Police, the State Coroner and DoPI;
- Notify AGL of the find;
- Notify Aboriginal stakeholders of the find;
- Notify OEH;
- Not recommence work at that location unless authorised in writing by DoPI;
- If the skeletal remains are of Aboriginal ancestral origin, develop an appropriate management strategy in consultation with the Aboriginal stakeholders (refer to the Aboriginal Cultural Heritage Assessment Report [ACHAR] for the Amended Project prepared by Biosis Research 2012); and,
- Record the find in accordance with the *National Parks and Wildlife Act 1974* (NSW) and the NSW National Parks and Wildlife Service (NPWS) (now part of DECC Aboriginal Cultural Heritage Standards and Guidelines Kit (1997) (refer to the ACHAR [Biosis Research 2012])).

Mitigation Measures

Table 1 details mitigation measures that have been developed for each of the Amended Project components that have been identified as posing potential impacts to heritage items or historical archaeological sites within the Surface Project Area (overleaf).

Table 1: Mitigation measures for non-Aboriginal archaeological and built heritage sites within the Study Area.

Project Component	Heritage Sites	Mitigation Measures
Main Spine Line GGL	<ul style="list-style-type: none"> The Upper Canal & associated infrastructure CMP Sections 4, 5, 6 & 7: <ul style="list-style-type: none"> Mollesmain Tunnel – CMP Section 6 Badgelly Tunnel – Junction of CMP Section 6/5 Steps Bridges Culverts Cottage Site 23 – CMP Section 7 (lot 1 DP 610146) Cottage Site 44 – Section 6 (lot 2 DP 623825) Cottage Site 51 and associated gate (CMP Section 5) Junction of Main Spine Line, Upper Canal and Main Southern Railway southern extent of proposal 	<p>Avoid all Upper Canal components by ensuring that the Main Spine Line and associated construction impacts are confined to existing drainage ditches and tracks.</p> <p>Where the Main Spine Line intersects with the Upper Canal (including a curtilage of 5 m from the edge of the canal) consult with SCA for an appropriate mitigation strategy.</p> <p>Detail design of the junction of Amended Project components must make provision for avoidance of impact to fabric and future damage to the Upper Canal and its components.</p> <p>Cottage site 44 is in the alignment of the Main Spine Line; the Main Spine Line should be moved to avoid impacts to this item.</p> <p>Cottage site 51 (and associated gate) is in the alignment of the Main Spine Line; the Main Spine Line should be moved to avoid impacts to this item.</p> <p>Where the Main Spine Line intersects with the Upper Canal (including a curtilage of 5 m from the edge of the canal) consult with SCA on appropriate mitigation strategies.</p> <p>Detail design of the junction of Amended Project components must make provision for avoidance of impact to fabric and future damage to the Upper Canal and its components.</p>
	<ul style="list-style-type: none"> St Gregory's Agricultural College (lot 100 DP 1119742). This site was mistakenly listed within the Camden LGA and is currently unlisted. It is understood that the buildings are the significant element of the site. 	Ensure that works stay away from the significant buildings and items.
	<ul style="list-style-type: none"> WWII aeroplane crash site 	Mitigate development impacts through actions agreed by all stakeholders. Archaeological excavation should be considered as an option.
RA03 WSL	None	None
RA09 WSL	None	None

Project Component	Heritage Sites	Mitigation Measures
GGL from RA09 & RA03 to Main Spine Line GGL	<ul style="list-style-type: none"> Milestones – should be on the eastern side of the road on the opposite side to the development, however personnel should be aware that they may occur on the western side of the road 	<p>Identify and avoid any impacts. Should impacts be unavoidable, consultation with Campbelltown Council will be required.</p> <p>It is unlikely that milestones are located on the western side of Campbelltown Rd.</p>
VV03 WSL, GGL and access track	None	None
CU02 WSL, GGL and access track	None	None
CU22 WSL, GGL and access track	<ul style="list-style-type: none"> The Upper Canal – CMP Section 6 	Detail design of the junction of Amended Project components must make provision for avoidance of impact to fabric and future damage to the Upper Canal and its components
CU31 WSL, GGL and access track	<ul style="list-style-type: none"> The Upper Canal – CMP Section 6 	Detail design of the junction of Amended Project components must make provision for avoidance of impact to fabric and future damage to the Upper Canal and its components
CU26 WSL, CU29 WSL and access track	None	None
CU26 WSL and CU29 WSL GGL	<ul style="list-style-type: none"> The Upper Canal – CMP Section 6 	Detail design of the junction of Amended Project components must make provision for avoidance of impact to fabric and future damage to the Upper Canal and its components
CU06 WSL	<ul style="list-style-type: none"> The Upper Canal CMP Section 5 – Badgelly Tunnel 	In the vicinity of the Badgelly Tunnel. Consult with SCA on development method to ensure that the integrity of the Badgelly Tunnel is not compromised.
CU10 WSL	None	None
CU14 WSL	None	None
GGL between CU10 WSL and Main Spine Line GGL	<ul style="list-style-type: none"> The Upper Canal – CMP Section 5 	Detail design of the junction of Amended Project components must make provision for avoidance of impact to fabric and future damage to the Upper Canal and its components

Project Component	Heritage Sites	Mitigation Measures
GGL between CU14 WSL and Main Spine Line GGL	<ul style="list-style-type: none"> The Upper Canal – CMP Section 5 	Detail design of the junction of Amended Project components must make provision for avoidance of impact to fabric and future damage to the Upper Canal and its components
Access track to and between CU10 & CU14	None	None
Mount Annan GGL Main Spine Line	<ul style="list-style-type: none"> Upper Canal on the northern side of the junction of the canal with the Main Southern Railway Line 	<p>Where the Main Spine Line intersects with the Upper Canal (including a curtilage of 5 m from the edge of the canal) consult with SCA for an appropriate mitigation strategy.</p> <p>Detail design of the junction of Amended Project components must make provision for avoidance of impact to fabric and future damage to the Upper Canal and its components.</p>

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1.0 INTRODUCTION

1.1 Project Background

AGL Upstream Investments Pty. Ltd. (AGL) is continuing to develop the coal seam methane resource in the local government areas (LGAs) of Camden and Campbelltown, known as the Camden Gas Project (CGP). AGL currently operates 143 wells, low pressure gas gathering lines (GGLs), access roads, the Rosalind Park Gas Plant (RPGP) and a high pressure gas sales pipeline.

In 2010, AGL lodged an application for the Northern Expansion of the CGP (Northern Expansion Project) under Part 3A of EP&A Act. Having regard to the submissions receiving during the public exhibition of the Northern Expansion Project, AGL amended the Northern Expansion Project.

AGL is seeking planning approval for the Amended Project which comprise:

- Construction and operation of eleven well surface locations (WSL) containing up to six well heads each;
- Construction and operation of associated GGLs, including interconnection with the existing CGP network, along with central water storage points where required;
- Construction of access roads and ancillary infrastructure, including storage yard(s), where required; and
- Subsurface drilling of lateral in-seam well paths within the bounds of the Subsurface Project Area (Figure 2).

Biosis Research Pty. Ltd was commissioned by AECOM Australia Pty Limited (AECOM) on behalf of AGL to undertake a historic cultural heritage assessment for the Northern Expansion (Northern Expansion Project) to inform the Environmental Assessment (EA). Biosis was also commissioned by AGL to undertake further historic cultural heritage assessment for the Amended Project.

1.2 Amended Project Area Definitions

The Amended Project area has been divided into three separate project categories known as the ‘**Subsurface Project Area**’, the ‘**Surface Project Area**’ and the **Survey Area**, all of which make up the **Study Area** (refer to Figures 1 and 2). Both areas are situated within the boundaries of the existing Petroleum Production Lease 5 (PPL5) and the proposed Petroleum Production Lease (referred to as the PPL Area).

The ‘**Subsurface Project Area**’ refers to the area where project works would include subsurface drilling activities only. Drilling would consist of lateral well paths beyond the ‘**Surface Project Area**’, where proposed surface infrastructure would be located (refer to Figure 2).

The Survey Area is a 200 metre radius for a well surface location and 25 metres either side of GGLs and access roads. The survey area is that part of the Surface Project Area that was surveyed during the field assessment (Figure 2).

1.3 Surface Project Area

The Surface Project Area is situated in the vicinity of Campbelltown, within the LGA of Camden and Campbelltown. The Surface Project Area is located within the suburbs of Currans Hill, Varroville, Raby and Denham Court. The suburbs of Catherine Field, Eagle Vale, Claymore, Mount Annan and Leppington are in close proximity to the Surface Project Area. The Surface Project Area is generally bound by Narellan Road to the south, Camden Valley Way to the west, the M5 generally to the east and Denham Court Road to the north (Figure 1 and Figure 2).

The land within the Surface Project Area is largely rural and used for agricultural purposes such as grazing, with some rural-residential properties scattered throughout. Large areas of land in the west of the Surface Project Area are earmarked for future urban development. In general, the rural landscape consists of open or cleared land with some scattered stands of Cumberland Plain Woodland. Mount Annan Botanical Gardens is situated within the lower Surface Project Area. The topography is predominately undulating plain with gentle rolling hills and ridgelines, with some steep slopes.

The Surface Project Area is traversed by the Upper Canal. Several watercourses and small dams are spread across the area. The drainage systems throughout the Surface Project Area comprise ephemeral creek systems, flowing only after sufficient rainfall. The main catchment is the South Creek tributary system which drains into the Nepean River (Hawkesbury/Nepean Catchment), with some waterways draining into the Georges River Catchment via the Bow Bowing/Bunbury Currans Creek tributary system (AECOM 2010).

This assessment considers the broad scale historical heritage issues, including archaeology, of the region and the results of specific investigation through field survey of the proposed works. The overall Surface Project Area and the specific Study Area are clearly indicated on Figure 2.

1.4 Proposed Development

The Amended Project relates to the areas identified in Figure 2 as the Surface Project Area and the Subsurface Project Area. The Amended Project comprises:

- Construction and operation of eleven WSL containing up to 6 wellheads each;
- Construction and operation of associated GGLs, including interconnection with existing gas fields at Menangle Park (located to the south), along with central water storage points where required;
- Construction of access roads and ancillary infrastructure, including storage yard(s), where required; and,

- Subsurface drilling of lateral in-seam well paths within the bounds of the Subsurface Project Area (Figure 2).

The project activities can be generally divided into the following:

- Construction: The activities required to physically develop the drilling of wells and subsurface lateral well paths, GGLs, access roads and supporting infrastructure;
- Production: Production and delivery of gas from WSLs to the gathering system for connection to the existing gas gathering system at Menangle Park;
- Post Development: Operational activities which may be needed to maintain production efficiency. It is anticipated that these activities may include the upgrade of GGLs, re-fracture stimulation (if required) and re-drilling (if required); and,
- Closure and Final Rehabilitation: Decommissioning of the Amended Project in accordance with statutory requirements and industry best practice.

1.4.1 Assessment Approach

The assessment of the Amended Project has utilised the following approach (AECOM 2012):

1. An “envelope” approach to impact assessment, meaning that a wider area or “envelope” is assessed to allow the final infrastructure sites to move within the assessed parameters, subject to the recommended environmental management measures and consultation with the landowner; and
2. A worst case approach to the impact assessment such that the highest impact activities are assessed even when these activities are not the most likely, so that the full variety of possible activities at each site are within the assessed parameters and the assessment is conservative.



The “environmental envelope” approach to impact assessment requires a defined assessment area within which the highest impact activities are assessed even when these activities are not most likely to occur. For the purpose of the assessment, a 200 metre radius for a WSL and 25 metres either side of GGLs and access roads has been employed. Utilising the abovementioned approach means that, subject to environmental constraints and landowner consultation, proposed infrastructure could be located at any point within the assessed radius with confidence that environmental impacts would remain within acceptable limits (AECOM 2012).

1.5 Development Construction Works

The development works associated with the construction of the proposed Amended Project are discussed below for the purpose of giving consideration to the potential impacts on archaeological sites or heritage items within the Survey Area.

1.5.1 Well Surface Locations

The WSLs have been determined following extensive geological exploration and analysis. The final WSLs may be adjusted within the 200 metre assessment ‘envelope’ during detailed design based on consideration of the environmental and social constraints including land use (existing and future), topography, subsurface geology, flora and fauna, archaeological constraints and noise impacts. Up to six (6) well heads may be installed in the WSLs (AECOM 2012). Examples of an operating and rehabilitated WSL are shown in Plates 1 and 2.

	
<p>Plate 1: Operating WSL</p>	<p>Plate 2: WSL following construction and rehabilitation</p>

Site preparation and construction works would be generally carried out in accordance with the following sequence:

- Identify biodiversity and heritage exclusion zones;
- Installation of silt fences and other environmental controls as required;
- Installation of approved road opening to property where necessary;
- Upgrade or installation of access roads where required;
- Removal of topsoil over access ways and store for initial rehabilitation;
- Truck in hard surface (typically shale) for access road base and drill pad where required;
- Install drain culverts, cattle grids, fencing, gates, bed level crossing and other works as necessary;
- Earthworks as required on a site-specific basis;



- Construct drilling compound (up to 10,000 m²) and fence the perimeter as required by the existing Environmental Management Systems (EMS) for the CGP, and other requirements;
- Strip topsoil and stockpile, then cut and fill as required for a level drill pad area;
- Dig and line drill pit(s) with polyethylene non-permeable liner (typically up to 25 x 25 m and 2-3 m deep). The drill pit(s) are provided to retain and recycle drilling debris and associated water for the drilling process;
- Create a cut-back, flat operating area where WSLs are located on slopes. This construction generally includes an up-slope diversion drain around the site to manage excessive surface flow. The surface profile is returned (as near as possible) to the original profile during rehabilitation; and,
- Rehabilitation of the surplus construction area when construction is complete.

1.5.2 Access Roads

Access to the WSLs would be provided along existing public roads and private tracks within the relevant property boundary. Earthworks may be required to construct or upgrade access roads to new WSLs to enable the drilling rig and support equipment to access the sites. Existing road and track access would be utilised to minimise construction activity and environmental disturbance where practicable.

1.5.3 Gas Gathering Lines

The GGL system would be buried to a minimum depth of 750 mm and up to 1,200 mm in some areas, including unsealed and sealed road crossings, and creek and drainage line crossings (Figure 2). Further detailed engineering and design would be required for crossing other infrastructure, including the Upper Canal and existing high pressure interstate gas pipelines. The route of the GGL system proposed within the Study Area utilises previously or currently disturbed land areas wherever possible (AECOM 2010).

	
<p>Plate 3: Example of a GGL under construction involving the excavation of a narrow trench; located in the Camden area.</p>	<p>Plate 4: Location of a GGL next to an access road and demonstrating limited disturbance post-construction.</p>

The construction of the GGLs would typically involve the following works:

- Clear and grade pipeline route including stripping of topsoil (where required);
- Trenching and under-boring where necessary (Plate 3);
- Lowering-in of pipe strings (including trench preparation and padding);
- Installation of tracer lines (for pipe tracing) as polyethylene (PE) pipe is non conductive;
- Backfilling and compaction of trench;
- Rehabilitation of ground along pipeline route (Plate 4);
- Installation of gas line signposts to mark and identify gathering line location; and,
- Register GGL on 'Dial before you dig' (ph: 1100).

The GGLs would typically be buried in sections of approximately 100 m in length at any one time. This would ensure minimal disturbance and reduce impacts on soil erosion and potential run on effects as a result of unanticipated rainfall events or other variables.

1.6 Summary Development Construction Works

The proposed construction and operation of gas wells at up to 11 WSL, GGLs, water lines with central water storage tanks where feasible, and access roads are expected to have minimal overall impact on archaeological values of the Surface Project Area. However, where avoidance of known historical archaeological sites and areas of potential is not possible, management and mitigation measures will be employed. The disturbance associated with the Amended Project does however, have the potential to impact on historical archaeological sites within each component of work. The following assessment will aim to identify potential archaeological sites and assess such potential impacts and determine the appropriate mitigation and management measures for these potential impacts. In addition, the assessment aims to identify existing heritage items within the overall Surface Project Area in order to understand potential impacts to these items and to provide advice on preventing those impacts.

1.7 Subsurface Project Area Development Proposal

The Subsurface Project Area is predominately residential, varying from rural-residential to urban housing. It comprises rural and agricultural land located to the west near Kirkham and Harrington Park, industrial land to the north east near Ingleburn, and Defence land to the far south east extent of the Subsurface Project Area. Several golf courses, sporting complexes and recreational reserves are spread throughout (AECOM 2010) and the Australian Botanic Gardens located at Mount Annan in the south of the Surface Project Area.

The Subsurface Project Area will include subsurface drilling activities and lateral well paths extending up to 2500 m within the identified boundary (Figure 2). The Subsurface Drilling Activities relate to all vertical, directional and Surface to In-Seam (SIS) well paths. Surface infrastructure would not be located within the Subsurface Project Area.

For directional and SIS wells, the continued penetration of the underling geology can be defined as subsurface drilling where the drilling deviates from a central point on the surface and continues along a subsurface path some distance from its origin. These drilling techniques minimise the surface impacts and allow access to areas laterally remote from the drilling origin, which would normally not be possible due to surface constraints. Based on the depth of cover within the Surface Project Area and the Subsurface Project Area and observed subsidence impacts within the existing CGP well field, it is considered unlikely that there would be any subsidence related impacts to the Non-Aboriginal archaeological site types that occur within the current Subsurface or Surface Project Areas.

1.8 Planning Approvals

The Northern Expansion Project is development to which Part 3A of the *Environmental Planning and Assessment Act 1979* (NSW) (EP&A Act) applies. Under the (now repealed) clause 6 of Schedule 1 of the State Environmental Planning Policy (Major Development) 2005 (SEPP 2005), the Northern Expansion Project is development, which in the opinion of the Minister for Planning, is development of a kind that is described in Schedule 1 of SEPP 2005 (that is, development for the purpose of drilling and operation of petroleum wells that is within a specified local government area), and is a project to which Part 3A of the EP&A Act applies. Part 3A of the EP&A has been repealed, but the Northern Expansion Project is a ‘transitional Part 3A project’ under Schedule 6A of the EP&A Act, and Part 3A of the EP&A Act continues to apply to and in respect of the Northern Expansion Project.

Under the EP&A Act, development may be declared to be State Significant Development (SSD). On 19 October 2012, the project was declared to be SSD by an order of the Minister for Planning and Infrastructure published in the NSW Gazette on 26 October 2012.

Under clause 6(3)(B) of Schedule 6A of the EP&A Act, previous steps taken under Part 3A (including issue of DGRs and public exhibition of the environmental assessment) are taken to have been completed under Division 4.1, Part 4 of the EP&A Act. AGL has prepared a Submissions Report to which this report is appended. The Submissions Report also addresses the amendments made to the Northern Expansion Project (now called the Amended Project) which has reduced the environmental impacts of the development as a result of the issues raised in the submissions.

1.8.1 Director-General’s Requirements

The Director-General’s Requirements (DGRs) for the project identify non-Aboriginal Heritage as a key issue to be considered in the EA.

There is no specific requirement in the DGRs which requires AGL to address heritage. The DGRs requires AGL to take into account:

- NSW Heritage Manual (NSW Heritage Office & Department of Urban Affairs and Planning (now Department of Planning and Infrastructure (DoPI)); and,
- The Burra Charter (The Australian International Council on Monuments and Sites (ICOMOS) charter for places of cultural significance).

1.8.2 Camden Council input into Environmental Assessment Requirements

Camden City Council noted the following to be considered in the EA:

- Reference is made to the Upper Canal Water Supply being listed on the State Heritage Register (SHR); however Gledswood Homestead, which is also listed on the SHR, is not mentioned;
- No reference is made to Varroville House which is located in Campbelltown LGA and is listed on the SHR; and,
- In Section 3.3 – State Matters, no reference is made to the *NSW Heritage Act 1977*.

1.8.3 Campbelltown City Council input into Environmental Assessment Requirements

The Campbelltown City Council noted the following to be considered in the EA:

- It is noted that the Scoping Report includes a reference to the Sydney Water Supply Upper Canal, however there are a number of other items of environmental heritage noted within Schedule 1 of *Campbelltown Local Environmental Plan – District 8 (Central Hills Lands)*, being Varroville, Blairmount, Campbelltown Reservoir and the Ingleburn Dam.

1.8.4 Sydney Catchment Authority input into Environmental Assessment Requirements

The SCA noted the following to be considered in the EA:

4. Heritage Integrity

- The Upper Canal is listed on the NSW SHR and the SCA s.170 Heritage and Conservation Register and the SCA is responsible for its conservation in accordance with the Conservation Management Plan (CMP). The EA must assess potential impacts as appropriate on heritage values of the Upper Canal and propose suitable mitigation measures.

1.9 Objectives

The following is a summary of the major objectives of the historic cultural heritage assessment:

- Conduct a search of heritage registers, and environmental planning instruments to identify any heritage items within the Study Area. Searches include the SHR, National

Heritage List (NHL), Commonwealth Heritage List (CHL), the Register of the National Estate (RNE), Local and Regional Environmental Plan (LEPs, REPs) and other relevant statutory and non statutory heritage lists;

- Conduct additional background research involving the review of relevant literature in order to recognise any identifiable trends in historical archaeological site distribution and location;
- Conduct a pedestrian survey within the curtilage of the Upper Canal in order to identify new sites and therefore further heritage constraints associated with the project;
- Determine the cultural heritage significance of the above and propose measures required to fulfil legislative requirements and AGL policy;
- Identify impacts to known historical archaeological sites based on potential ground disturbances caused by the proposed development; and,
- Recommend appropriate mitigation strategies to remove or reduce impacts to historical archaeological sites within the Surface Project Area.

2.0 HERITAGE STATUS & PLANNING DOCUMENTS

2.1 Commonwealth Registers

2.1.1 Environmental Protection & Biodiversity Conservation Act 1999

Under the *Environmental Protection and Biodiversity Conservation Act 1999* (Cth), two mechanisms have been created for protection of heritage places of National or Commonwealth significance. The NHL provides protection to places of cultural significance to the nation of Australia. The CHL comprises natural, Aboriginal and historical heritage places owned and controlled by the Commonwealth and therefore mostly includes places associated with defence, communications, customs and other government activities.

Nominations to these two lists are assessed by the Australian Heritage Council (AHC), which also administers the (now static) RNE, a list of places identified as having national estate values. There are no management constraints associated with listing on the RNE unless the listed place is owned by a Commonwealth agency; however a listing on the RNE is an acknowledgement that the listed place has cultural heritage value.

Results of heritage register searches have been included in Appendix 4.

APPLICATION TO THE PROJECT AREA –HERITAGE REGISTERS ADMINISTERED BY DEWHA

A search of the NHL, CHL and RNE was conducted on 27/04/2009 and 09/08/2012.

No items listed on the NHL, CHL or RNE occur within the Subsurface or Surface Project Area

The Surface Project Area contains the following items listed in the RNE:

- Gledswood, Camden Valley Way, Catherine Field (Place ID 3525)
- Gledswood Garden, Camden Valley Way, Catherine Field (Place ID 3253)
- Varro Ville (Varroville House), St Andrews Road, Varroville (Place ID 3268)

2.1.2 Heritage Act 1977 (NSW)

Under the EP&A Act, relevant approvals under the *Heritage Act 1977* are not required for a SSD that is authorised by a development consent, and the provisions of the *Heritage Act 1977* that prohibit an activity without such approvals do not apply (section 89J of the EP&A Act). The approvals which are not required for SSDs authorised by a development consent are:

- An excavation permit to disturb or excavate land which will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed (section 139 of the *Heritage Act 1977*); and,
- Approval to do works (e.g., demolish, move, damage, destroy, carry out development, excavate land to expose or move a relic) when an interim heritage order or listing on the SHR applies to a place, building, work, relic, moveable object, precinct or land (Part 4 of the *Heritage Act*).

In addition, an order restricting harm to a building, work, relic or place not subject of an interim heritage order or listing on the State Heritage Register does not apply to prevent or interfere with the carrying out of a SSD that is authorised by a development consent (Division 8 of Part 6 of the Heritage Act).

Accordingly, if consent is granted to the proposed development, the approvals set out above are not required.

The Heritage Branch, OEH, maintains two lists of heritage items that have been recognised as having State or local significance. The majority of listed items are built heritage such as homes, industrial buildings and complexes or civic buildings. In some cases, archaeological sites are listed as are items of moveable heritage.

State Heritage Register: The SHR contains items that have been assessed as being of State Significance to New South Wales. Items on the SHR have been through a rigorous assessment process and are considered to be significant to the development of the state of NSW. These items are afforded the highest level of heritage protection under stage legislation.

State Heritage Inventory: The SHI is a list of heritage items included on the Heritage Schedules of LEPs, REPs and/or on a State Government Agency's Heritage and Conservation Register (s170 Register) that are deemed to be of local or state significance. Additionally, potential archaeological sites identified in archaeological zoning plans may also be listed on the SHI, most notably those identified on the Parramatta Historical Archaeological Landscape Management Study (PHALMS) (GML 2000). Most REPs have been removed from the planning system in NSW and those that remain are being converted to SEPPs. It is worth noting this point as listings on the SHI occasionally make reference to REPs. However the Surface Project Area is not within the boundary of a REP.

If an item or place does not appear on either the SHR or SHI, it does not mean that the item or place does not have heritage or archaeological significance. In some cases, items listed on planning instruments have not been transferred to the SHI and in other cases, items have not been assessed to determine their heritage significance.

Further, relics not listed on the SHR are protected under a separate section of the *Heritage Act 1977* (Refer "Relics Provision" this section).

APPLICATION TO THE SURFACE PROJECT AREA – NSW STATE HERITAGE REGISTER LISTINGS

A search of the **SHR** was undertaken on 27/4/2009 and 09/08/2012.

The Study Area contains the following items listed on the SHR:

- Upper Canal System (Prospect Reservoir) (DB No. 5051481) includes the Southern Railway Aqueduct.

The Surface Project Area contains the following items listed in the SHR:

- Gledswood, 900 Camden Valley Way, Catherine Field (Lot 12 DP 748303) (DB No. 5051540); and,
- Varroville House, St Andrews, Minto (Part Lot 21 DP 564065) (DB No. 5045252).

A search of the **SHI** was undertaken on 27/4/09 and 09/08/2012.

The Surface Project Area contains the following items included in the SHI:

- Gledswood, 900 Camden Valley Way, Catherine Field;
- Blairmount, Badgally Road, Blairmount;
- Kenny Hill Reservoir (WS0390), Narellan Road, Currans Hill; and,
- Stations of the Cross, Narellan Road, Campbelltown.

S.170 provisions: In addition, Section 170 of the NSW *Heritage Act 1977* requires that culturally significant items or places managed or owned by Government Agencies be listed on a departmental Heritage and Conservation Register. Information on these Registers has been prepared according to Heritage Branch guidelines and should correspond with information in the SHI.

APPLICATION TO THE PROJECT AREA – GOVERNMENT AUTHORITY S.170 REGISTER

The Sydney Water s.170 Register was searched on 6/05/2009 and 09/08/2012. The Surface Project Area contains the following items listed in the Register:

- Kenny Hill Reservoir (WS 0058), Lot 1 DP 745144 and Lot A DP 156084 (Item 4576030).

The SCA s.170 Register

A search of the State Heritage Inventory on 21/11/2011 and 09/08/2012 identified the item as:

- Upper Nepean Scheme (from Pheasants Nest to Prospect Reservoir).

Relics Provisions: Approvals to manage relics in NSW are assessed in two sections of the *Heritage Act 1977*. Approval must be obtained from the Heritage Council of NSW when making changes or excavating land on an SHR listed place (Section 60 Permit).

Where there is a possibility of disturbing relics not on the SHR, excavation must be accompanied by an excavation permit approved under Section 140 of the Act. As discussed above, this approval will not be required if development consent for the Amended Project has been issued.

APPLICATION TO THE SURFACE PROJECT AREA – NSW HERITAGE ACT 1977 RELICS PROVISIONS

As project approval is being sought under Part 4 of the *EP&A Act 1979*, the requirement for an approval under Part 4 or an excavation permit under s.139 of the *Heritage Act 1977* does not apply. The requirement under s.146 of the *Heritage Act 1977* to notify the Heritage Council of NSW in the event that relics are unexpectedly discovered during works remains in force.

2.1.3 Environmental Planning and Assessment Act

The *EP&A Act* includes provisions for local government authorities to consider environmental impacts in land-use planning and decision making. Such impacts are generally considered in relation to the planning provisions contained in the LEP.

Local Environmental Plans: Each local government authority is required to create and maintain a LEP that in addition to other development controls, contain clauses for the

protection of built heritage items, archaeological sites and conservation areas. Local Councils identify items that are of significance within their LGA, and these items are listed on heritage schedules in the LEP and are protected under the *EP&A Act* and in instances where the items has been included on the SHR or is an archaeological site, the *Heritage Act 1977*.

Councils are currently updating their existing LEPs into a standard template. In some cases, the standard LEP will consolidate the various LEPs that exist for one local government area, including the heritage schedules. The heritage schedule of the Camden and Campbelltown LEPs were searched and the results are presented below.

APPLICATION TO THE SURFACE PROJECT AREA – LOCAL ENVIRONMENTAL PLANS

A search of the **Camden LEP 2010** was undertaken on 02/11/2011 and 09/08/2012. The Study Area contains the following items:

- Gledswood, Camden Valley Way, Catherine Field (Item 81- lot 12 DP 748303); and,
- Upper Canal Water Supply System, Narellan Road, Kenny Hill (Item 122 – various lots).

Earlier versions of the various Camden LEPs listed the St Gregory's Agricultural College as a heritage item. While the property is located within the Camden and the Campbelltown LGAs, the school buildings are within the Campbelltown LGA and are presently unlisted. However it is anticipated that the buildings will be listed in the future, and this report will include the buildings in the assessment.

A search of the **Campbelltown (Urban Area) LEP 2002** was undertaken on 27/4/09, 17/07/2010, 02/11/2011 and 09/08/2012. The Study Area contains the following items listed in 'Schedule 1 – Heritage items and heritage conservation areas':

- Blairmount, Badgally Road, Blairmount (Lot 102 DP 708401);
- Stations of the Cross, Narellan Road, Campbelltown (Lot 1 DP 247902); and,
- Milestones on Campbelltown Road (potentially 2 items where Campbelltown Road crosses into the Study Area).

A search of the **Campbelltown LEP – District 8 (Central Hills Lands)** was undertaken on 27/4/09, 17/07/2010 and 09/08/2012. The Study Area contains the following items listed in 'Schedule 1 – Items of Environmental Heritage':

- Varro Ville (Varroville House) (Lot 21 DP 564065) (Varroville);
- Blairmount (Lot 3 DP 527426);
- Campbelltown Reservoir, Narellan Road, Kenny Hill (Lots A & B DP 156085);
- Ingleburn Dam, St Andrews Road, Varroville (part Lot 7 DP 596839); and,
- Sydney Water Supply Upper Canal.

The St Gregory's Agricultural College is not listed on any of the Campbelltown LEPs but its potential significance has been acknowledged and it is likely to be considered in the preparation of the standard instrument.

2.2 Non-Statutory Registers

2.2.1 The National Trust of Australia (NSW)

The National Trust of Australia (NSW) is a community-based conservation organisation. The Trust maintains a register of heritage items and places. The register is recognised as an authoritative statement on the significance to the community of particular items, and is held in high esteem by the public. The National Trust lists items or places that have heritage or cultural value to the community and, as such, the Trust encourages and promotes the public appreciation, knowledge, and enjoyment of heritage items for future and present generations.

APPLICATION TO THE SURFACE PROJECT AREA – NATIONAL TRUST OF AUSTRALIA (NSW)

A search of the **National Trust Register** was undertaken on 27/4/09 and 09/08/2012.

The Trust has classified the following items within the Surface Project Area:

- Gledswood Group, Hume Highway, Catherine Field;
- Ingleburn Dam Sydney Water Supply, Raby Road North, adjacent to Upper Canal, Leppington;
- Blairmount, with stables and silo, Badgally Road, Campbelltown;
- Milestone group, comprising obelisk and five associated milestones, Campbelltown Road, between Campbelltown and Liverpool;
- Sydney Water Supply: Upper Canal, Gilead; and,
- Varroville Group (Varroville, St Andrews Road, Minto).

2.2.2 Heritage Studies

A number of heritage studies of the region have been conducted over the last four decades.

Gledswood Conservation Management Plan prepared by Godden Mackay Logan (2008)

The CMP for Gledswood prepared by Godden Mackay Logan (GML) identifies significant views and vistas to and from the estate. Those that are most significant are to the north and south east as well as the two public roads, being Camden Valley Way and Raby Road. Another view considered to be of value is that from Raby to the Gledswood bunya pines, which was identified by GML as a continuation of an early visual connection between two early and significant estates (GML 2008: 19). The report was prepared for Paynter Dixon Golf.

Former Gledswood Estate, Catherine Field: Landscape Conservation Management Plan prepared Clive Lucas Stapleton & Partners (2005)

The Panoramic view of the estate are identified in this report as being to the north, north east, north west and south east. This report was prepared for Camden Council. The conservation policy related to views is:

Policy 4: The historic visibly intact estate, with the Gledswood Homestead and garden in its vale, indicated in Figure 1.2, should be retained and conserved. Development within this area

must preserve the estate character and visual primacy of the Homestead complex. (Clive Lucas, Stapleton & Partners 2005: 45)

Gledswood, Camden Valley Way, Catherine Field NSW: Conservation Management Plan prepared by Plan Tropman & Tropman (2003a)

The CMP prepared by Tropman & Tropman for the Gledswood Estate identifies significant views and vistas and generally addresses archaeological potential around the current curtilage.

The relevant policies for the estate identify views and vistas generally to the north and east of the existing property curtilage (policies 7.3.5 – 7.3.9 Tropman & Tropman 2003a: 129). Potential archaeological issues are addressed in policy 7.3.10, which considers that sub-surface areas below and adjacent to the site have archaeological potential (Tropman & Tropman 2003a: 129).

Gledswood, Camden Valley Way, Catherine Field NSW: Master Plan Strategy prepared by Tropman & Tropman (2003b) (Draft)

The Master Plan Strategy for the Gledswood Estate identifies views to the north east, north west and south east as the significant view corridor (Gledswood Masterplan Strategy – no plan number).

Colonial Landscapes Cumberland Plain & Camden Morris & Britton (August 2000)

- Varroville

The report recommends that the SHR curtilage be amended to include outbuildings, early access roads, and agricultural terracing; that the scenic protection zoning be retained; and that important view lines be retained and protected (Morris & Britton 2000: 98-99).

- Gledswood

Specific recommendations for the future of Gledswood do not form part of the Morris & Britton report. The homestead is built to the “Loudon” model, that is, where the placement of a building is lower than the summit of ridgeline or knoll for the protection afforded by the rising ground behind (Morris & Britton 2000: 128). It is clear that the place is significant and the general management recommendations made for this type of homestead are to ensure the visual integrity of the early buildings and tree group and the compositional relationship between the buildings and their setting (Morris & Britton 2000: 129).

Camden Significant Trees and Vegetated Landscape Study Landarc Landscape Architects (June 1993)

Gledswood is listed as an item under ‘Significant Trees/Vegetation Communities under Rural Private Ownership’ (121).

Macarthur Region Environmental Study, JRC Planning Services (1986)

The south-eastern part of the study area falls within the ‘Narellan and Menangle Park’ cultural landscape, which is identified in this study as a notable cultural landscape, with a medium-level protection priority (117). The gardens of Gledswood are identified as notable gardens (149).

The following items within the study area are listing in the inventory:

- Ten Milestones, Campbelltown Road south from Cross Roads (Item Ref. No. 99);
- Varroville Group: House, St Andrews Road, Minto (Item Ref. No. 248);
- Varroville Group: Outbuildings, St Andrew Road, Minto (Item Ref. No. 615);
- Varroville Group: Trees, St Andrews Road, Minto (Item Ref. No. 616);
- Gledswood Group: House, Hume Highway, Narellan (Item Ref. No. 195);
- Gledswood Group: Garden and Trees, Hume Highway, Narellan (Item Ref. No. 377);
- Gledswood Group: Detached Kitchen, Hume Highway, Narellan (Item Ref. No. 379);
- Gledswood Group: Cellars, Hume Highway, Narellan (Item Ref. No. 382);
- Gledswood Group: Stables, Hume Highway, Narellan (Item Ref. No. 380);
- Gledswood Group: Hen-house, Hume Highway, Narellan (Item Ref. No. 381);
- Blairmount Group: Silo, Badgally Road, Blairmount (Item Ref. No. 297);
- Blairmount Group: Stables, Badgally Road, Blairmount (Item Ref. No. 296);
- Blairmount Group: House, Badgally Road, Blairmount (Item Ref. No. 162);
- St Gregory’s Agricultural College / Mt Badgally, end of Badgally Road (Item Ref. No. 169);
- Camden Tramway Group: Maryfield’s Siding Site / Rudd’s Gate Platform, Camden Road, Campbelltown (Item Ref. No. 646);
- ‘Upper Canal’ Water Supply System, Nepean Tunnel to Prospect Reservoir (Item Ref. No. 553);
- Ingleburn Dam, adjacent to Upper Canal at Varroville (Item Ref. No. 556); and,
- Campbelltown Reservoir, Kenny’s Hill, Curran’s Hill (Item Ref. No. 555).

Campbelltown, Camden, Appin, Proudfoot (November 1973)

This document is a survey of and report on Nineteenth-Century buildings and sites in the areas of Campbelltown, Camden and Appin. The following items are identified in the study area:

- Milestones from the Crossroads to Campbelltown. The series is intact south from the Crossroads, and stands on the left-hand eastern side of Campbelltown Road. The heritage study recommends that the milestones be preserved (8);

- Varroville House. It is recommended that Varroville House be preserved, “with sufficient of its site to retain a good setting and include the garden and associated tree-planting” (12);
- Blairmount. It is recommended that Blairmount be retained (32);
- Mount Badgally, now St Gregory’s Agricultural College. No recommendations are made concerning this item (33); and,
- Superintendent’s Cottage, Government Nursery, Badgally Road. It is recommended that the mature trees in this old nursery area be safeguarded and preserved (28).

2.3 Summary of heritage listings in the Surface Project Area

The summary of heritage listed items and places within the Surface Project Area and Survey Area, is included in Table 2. The grey box denotes items that are within the Survey Area (development corridor).

Table 2: Summary of known heritage items within the Surface Project Area

Item	RNE	CHL	NHL	SHR	Sydney Water S.170	Camden LEP 20010	Camden LEP NO.48	Campbelltown LEP District 8	Campbelltown LEP 2002	National Trust
Blairmount, Badgally Road, Blairmount						Y		Y	Y	Y
Campbelltown Reservoir, Narellan Road, Kenny Hill								Y		
Stations of the Cross, Narellan Road, Campbelltown									Y	
Varroville House, St Andrews Road, Varroville	Y			Y				Y		Y
Sydney Water Upper Canal				Y		Y	Y	Y		Y
Gledswood Homestead	Y			Y		Y	Y			Y
Kenny Hill Reservoir (WS0390)					Y					
Ingleburn Dam								Y		Y
Milestones, Campbelltown Rd									Y	Y

3.0 HISTORICAL CONTEXT

3.1 Camden and Campbelltown

Shortly after the arrival of the First Fleet at Port Jackson, several of the imported cattle were lost. After some years, it was found that the cattle had strayed to an area to the south-west of the settlement at Port Jackson. Governor Hunter sent a party to investigate, and visited the area himself in 1795. The area was named Cowpastures, after the now wild cattle found there. A hut was built near what is now Elderslie, to house a stockman to look after the cattle (Wrigley 2001: 7-9).

A track to the area developed, as people visited for hunting and tours (Mylrea 2002: 7). The track may have been marked out as early as 1803, by John Warby, who was Stockman of the Wild Cattle (Mylrea 2002: 41). In 1805, James Meehan surveyed the line of the track leading south-west from Prospect and a rough road was formed. This became the Old Cowpasture Road, most of which is now known as Camden Valley Way (Wrigley 2001: 9). The present road still follows much of the original route (Mylrea 2002: 41).

The first grant of land in the area was made in 1805 to John Macarthur. The property was named Camden Park (Wrigley 2001: 10). Macarthur was granted the 5000 acres in support of his idea that there was potential for the production of fine quality wool in the colony (Mylrea 2002: 17). Wool was the first main industry of the Camden area (Wrigley 2001: 18). By the late 1830s Macarthur's property had been expanded to 28,000 acres (Wrigley 2001: 10).

With the exception of the grant made to Macarthur, and another made to Walter Davidson, no land was granted in the Camden district until Macquarie became governor in 1810 (Mylrea 2002: 8). To the north-east, in the South Creek catchment, a few grants had been made by 1806, all of which were located along Cowpasture Road or the creek (Perumal Murphy August 1990: 12).

Flooding in the Hawkesbury district in 1806 and 1809 led Colonel Paterson to grant land in other areas, including the Minto district, ('Varroville' SHR listing; Liston 1988: 7). In August 1809 Paterson made out the first six grants in the Campbelltown region (Liston 1988: 7). By the end of 1809, 34 settlers had received grants in the Minto district, and several others had orders which they later took up in Minto (Liston 1988: 8). The largest property granted was that of Andrew Thompson.

Once Macquarie became governor, the grants in the Minto district were declared invalid. However, most had been confirmed by late 1811, and Macquarie also made new grants. After making two trips through the area between Bunbury Curran Creek and the George's River, Macquarie named the area Airs. He instructed free persons wanting land in the area to submit applications (Liston 1988: 10).

"Most of the small grants were concentrated along Bow Bowing and Bunbury Curran Creeks with the larger grants extending over the high ridges and slopes. The district of Airs, later

absorbed in the parish of St Peters, was granted as small portions of about 100 acres (40 ha). Some had little interest in farming and sold their grants as soon as they received them, leaving little evidence of their existence aside from their names on a map.” (Liston 1988: 11)

By 1820 all land with agricultural potential had been alienated, with the exception of land reserved for public purposes (Perumal Murphy August 1990: 12). The area of South Creek was initially considered to be one of the best locations for agricultural and pastoral development in the district (Perumal Murphy August 1990: 1). However, several difficulties presented themselves to the settlers, including lack of water, difficulty of access to Sydney, price fluctuations, local commodity monopolies, and pests and diseases (Perumal Murphy August 1990: 12). According to the Perumal Murphy report (August 1990: 1), those landowners who were able to establish major pastoral holdings in the South Creek catchment were, in general, those who had alternative sources of income on which to draw in bad seasons.

A large number of the smaller grants were incorporated into the larger estates along the road between Campbelltown and Liverpool. Other than some changes in ownership, these large estates remained largely intact. Some of the landholdings that started off small were increased through purchase of neighbouring property or through marriage into a neighbouring family. Labour on the largest estates was supplied by convicts but on smaller properties, ex-convicts were employed as was casual labour depending on the season. In some instances, landowners leased portions of the properties to tenants who were required to clear forested land, cultivate it and provide the landlord a portion of the crop (Liston 1988: 41–42).

A road from Sydney to Liverpool was opened in 1814, and was soon extended further south to Appin. It was at first just a cleared dirt track (Liston 1988: 11). The road through Campbelltown to Appin had been built in 1815, and was then maintained by convict road gangs. However, the road broke up quickly in bad weather. The road from Liverpool to Campbelltown was very hilly and badly designed. The alternative southern route was the old Cowpastures Road further to the west (Liston 1988: 53).

It may have been as early as 1815 that the site for the later town of Campbelltown was set aside, as this was when the road from Liverpool to Appin was surveyed. By the end of 1820, Macquarie had approved the location (Liston 1988: 28). In December 1820, Macquarie marked the boundaries of the township and named it Campbelltown, after his wife’s maiden name (Liston 1988: 29). Although applications for allotments were made from 1821, no land was allocated until 1827, apart from the church land, graveyard, and school (Liston 1988: 29). Land was released for occupation in 1831 (Liston 1988: 31).

In 1821 a route through Appin to the Illawarra district was discovered and a road was built the following year. Campbelltown became the gateway to the southern inland districts and to the south coast.

In 1827 the Cowpasture Bridge was built at Camden. A new road across Hovell’s estate linked Campbelltown with the Cowpastures Road and the bridge (Liston 1988: 53). By 1832 Campbelltown had become a small village, set among farming country (Liston 1988: 33).

Though located near the Bow Bowling Creek and the George's River, water supply was a constant problem for both farmers and townspeople. Wells and tanks were unable to supply sufficient water to support a large population (Liston 1988: 47). In the early 1830s a dam was built in town. An additional reservoir was added in the late 1830s (Liston 1988: 48). The reservoir provided Campbelltown's water supply until 1888 (Liston 1988: 49).

Sometime before 1832 the northern part of the Cowpasture Road had been supplanted by a road from Liverpool which passed the Crossroads and joined the existing Cowpasture Road at Leppington. This road and the existing southerly section of the existing Cowpasture Road became the Great South Road (Mylrea 2002: 42). This became the main overland route to southern NSW and to Victoria (Mylrea 2002: 30). The town of Narellan developed on the route, with the early growth of the town due in large part to the importance of the route (Mylrea 2002: 30). The inns that were established along the road indicate the importance of the area in providing services to travellers (Mylrea 2002: 30).

Traffic on the Cowpasture Road declined after 1836, when the road to Liverpool moved to the east (Perumal Murphy August 1990: 12). In 1836 the town of Camden was surveyed on part of the Macarthur property (Wrigley 2001: 10). Before the establishment of this town, the rural properties in the area were developed as almost self-contained communities (Wrigley 2001: 11). Camden soon eclipsed Narellan as the main centre of the district. In c.1843 the District Council of Camden-Narellan-Campbelltown-Picton was formed, but it was short-lived (Wrigley 2001: 22). In 1889, the Municipality of Camden was incorporated (Wrigley 2001: 22).

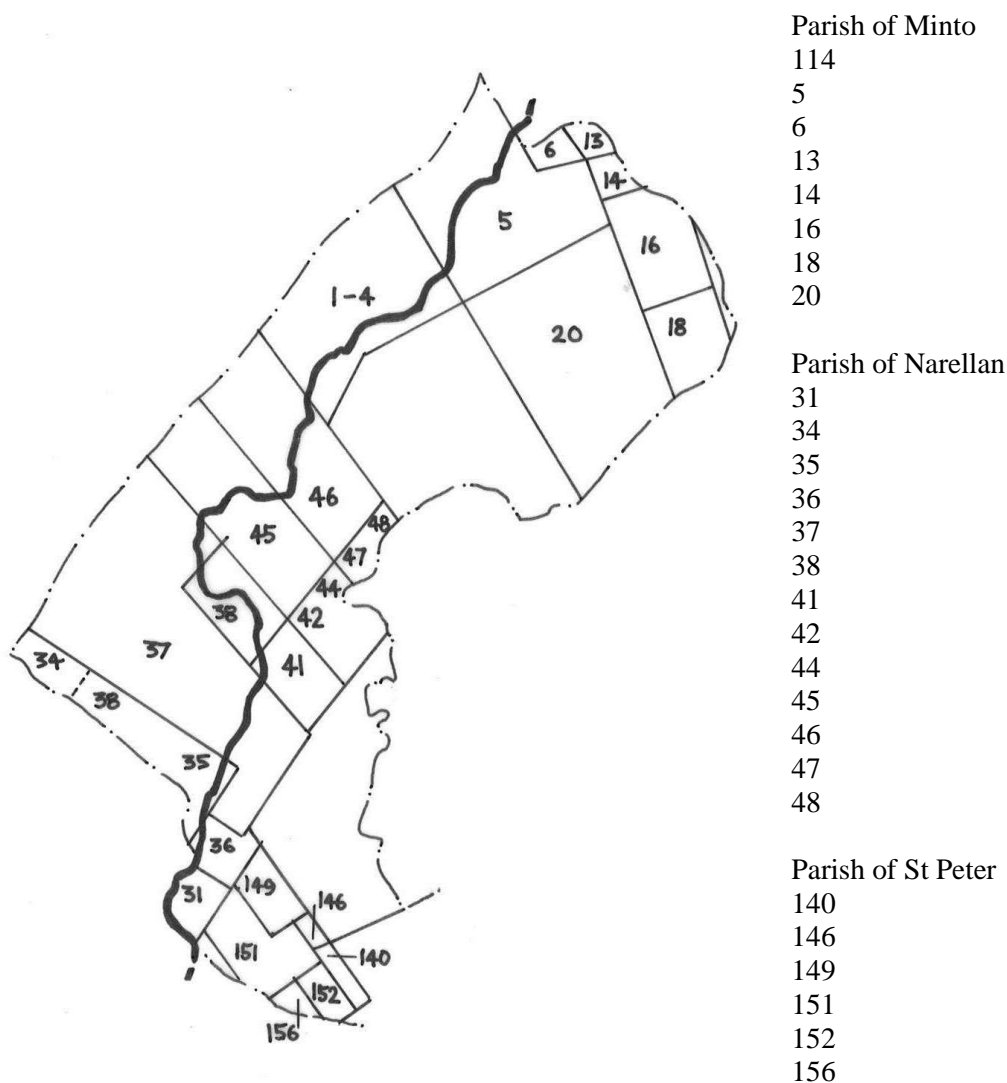
The railway through to Campbelltown was opened in 1858 (Liston 1988: 71).

By the mid-1870s wheat was no longer a viable crop for Campbelltown farmers, owing to the effects of rust (Liston 1988: 73). From this period onwards, the growth of feed crops became more common, to provide for the increasing number of dairy farms (Kass February 2002: 15).

After the First World War, much of the area was subdivided to create hobby farms and small poultry farms (Kass February 2002: 17). The Narellan area remained primarily agricultural until well into the 20th Century (Mylrea 2002: 33), and, in fact, planners attempted to discourage further subdivision in the period following the Second World War (Perumal Murphy August 1990: 14). However, the growth of Sydney created a demand for residential subdivision in the surrounding areas (Perumal Murphy August 1990: 14). From the 1970s through to the present, large housing estates have been subdivided and developed on what was farming land, including at Currans Hill, Harrington Park, Mount Annan, Narellan and Narellan Vale (Wrigley 2001: 38).

3.2 Surface Project Area

The Surface Project Area comprises parts of the Parishes of Minto, St Peter and Narellan, County of Cumberland. The history and development of the Surface Project Area is described briefly in the following sections, divided according to Parish. The parish portions all or partly included in the Surface Project Area are listed in tables at the beginning of each sub-section. Plan 1 below indicates the location of the portions discussed in the following section. The Surface Project Area is within the continuous boundary line.



Plan 1: A schematic representation of the Surface Project Area divided into its historical portions.

- Upper Canal
- - - - Surface Project Area to Narellan Road

3.2.1 Parish of Minto

Most of that part of the Parish of Minto included in the study area was alienated in three large grants; Saint Andrew, Varroville, and Leppington. Saint Andrew was later incorporated into the Gledswood estate, to the south. Some of the northern area was incorporated into the Denham Court estate, the bulk of which lay on the northern side of Denham Court Road, to the north of the Surface Project Area.

Table 3: Details of the Portions of the Parish of Minto that is wholly or partly included in the Surface Project Area.

Parish	Portion	Grantee	Area	Property	Date	Plan
Minto	1	Edward Edwards	100a		1.1.1810	M217 M425
Minto	2	John Laurie (or Joseph Ward)	100a		20.6.1816	M217 M425
Minto	3	William Gaudry	100a	Cary Grove	1.1.1810	M217 M425
Minto	4	Henry Kable	300a	Holme's Farm	1.1.1810	M217 M425
Minto	5	William Cordeaux	700a	Leppington	5.4.1821	M217 M326 M425
Minto	6	Simeon Lord	200a	Huntsmore	1.1.1810	C181 M217 M326 M425
Minto	13	Simeon Lord	200a	Montore		
Minto	14	Charlotte Driver	100a	Paterson's Gift	1.1.1810	C5 M217 M326 M425
Minto	16	John Moore	200a		3.9.1821	M217 M326 M425
Minto	17	Richard Atkins	500a	Denham Court		C5 M217
Minto	18	Joseph Underwood	300a	Reaghs Farm	1.11.1809	C5 M217 M326 M452
Minto	20	Dr Robert Townson	1000a	Varroville	1.1.1810	M217 M326 M425
Minto	21	Andrew Thompson	1240a	Saint Andrews	1.1.1810	M217 M425 A284 A315

Portions 1 & 2

Portions 1 and 2 each consisted of 100 acres. Portion 1 was granted to Edward Edwards in 1810, and Portion 2 to either John Laurie or Joseph Ward in 1816. By 1867, Portion 1 was in the ownership of Edward Flanagan, and was tenanted by Hickey. Part of the property is

described as clear and part as bush. Hickey's house is shown in the western corner of the property (CP753.1603).

By 1892, both Portions 1 and 2 were in the ownership of EL Moore and occupation of M Rush. Part of the property was in cultivation, and part was bushland. There appears to be a structure on Portion 2 (CP923.3000). The 1895 plan is similar, but does not show the possible structure (CP 288.3000).

In 1906 James Mahoney was the owner and occupier of the properties (CP8057.3000). Mahoney had earlier acquired the neighbouring Portion 3.

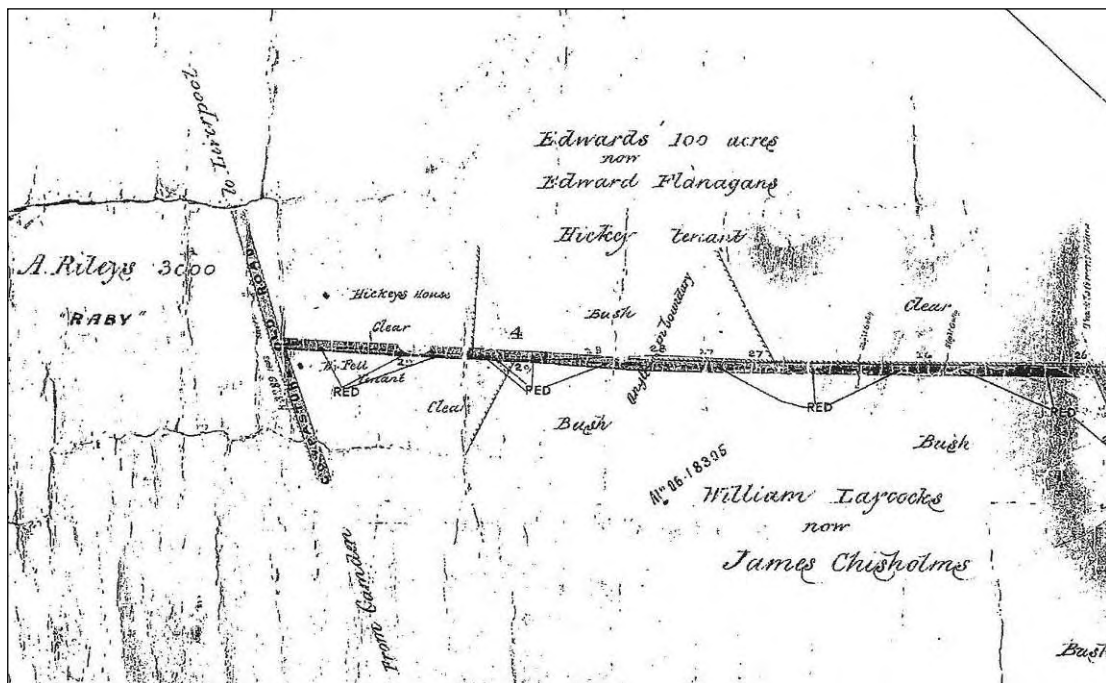


Plate 5: Detail of an 1867 plan showing parts of Portion 1 of the Parish of Minto and Portion 46 of the Parish of Narellan (source: Plan of a road from the Campbell Town Road to the Cowpasture Old Road in the Parishes of Minto and Narellan County of Cumberland to be proclaimed as a Parish Road under the Act of Council 4 Wm No. 11. LPMA CP 753.1603).

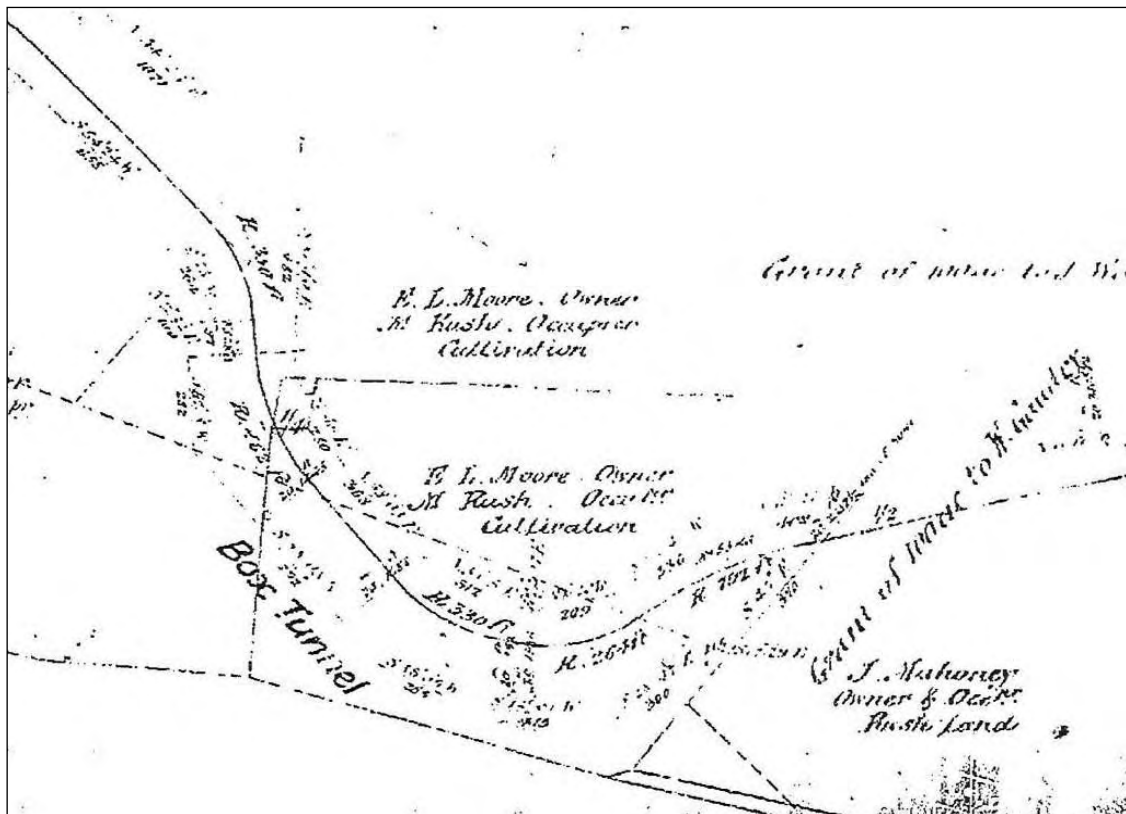


Plate 6: Detail of an 1892 plan, showing part of Portion 2 of the Parish of Minto (source: LPMA Crown Plan 923.3000).

Portion 3

Portion 3, 100 acres known as Cary Grove, was granted to William Gaudry in 1810. In 1809, Gaudry had married Diana Kable, a daughter of the neighbouring landholder, Henry Kable (NSW BDM Reg. No. V1809883 3A/1809). By 1892 the property was in the ownership and occupation of J Mahoney, and was described as bushland (CP923.3000). Mahoney remained in possession of the property in 1895 (CP 288.3000), and in 1906 (CP8057.3000), by which time he had also bought Portions 1 and 2.

Portion 4

Portion 4 consisted of 300 acres, and was granted to Henry Kable in 1810. The property was named Holme's Farm. Kable had arrived in the colony in 1788. He later went into business with James Underwood, a boat builder (NSW State Records, Colonial Secretary Index). Underwood was the owner of Portion 18 of the parish, to the east.

Kable also owned land at Petersham Hill, in the Hawkesbury district, and in Sydney. In 1811 he moved to Windsor where he operated a store and brewery (NSW State Records, Colonial Secretary Index).

By 1892, the southern part of Portion 4 was in the ownership and occupation of A Munro, and the northern part was in the ownership and occupation of R Thompson (CP923.3000). The 1895 plan shows the same arrangement (CP 288.3000)

1906 plan shows property subdivided; McGauley / owner vacant west side canal J Douglas occupier east side canal, George Munro owner vacant, McLeod Owner vacant, J Douglas owner and occupier (CP8057.3000)

Portion 5 (Leppington)

Portion 5 consisted of 700 acres, and was granted to William Cordeaux in 1821. The property was named Leppington, and has given the present-day suburb its name. Cordeaux arrived in the colony in 1818, having been appointed Deputy Assistant Commissary General (NSW State Records, Colonial Secretary Index). He was later given other official responsibilities, including taking charge of the commissariat at Liverpool in 1821 (Morgan 1966).

Cordeaux received several land grants, but made his home at Leppington (Morgan 1966). Although the grant was not formalised until 1821, Cordeaux had taken up occupation in about 1816 (Liston 1988: 45). In the early 1820s he had authority to receive 22 convicts from the Sydney Barracks to clear land at Liverpool (NSW State Records, Colonial Secretary Index). A large two-storey house, with ballroom, was built on the property (Liverpool City Council n.d.).

In 1818 Cordeaux married Ann Moore, the sister of either Thomas Moore of Moorebank (Liston 1988: 45) or William Moore solicitor (Morgan 1966). The 1828 census lists William at their property in Sutton Forest, and Ann and their three children at Leppington. The Cordeauxes were the largest sheep and cattle owners in the district and major employers of convict labour, numbering 24 government servants among their 31 employees (Liston 1988: 45). Cordeaux died at Leppington in 1839. Ann Cordeaux died in 1877 (Morgan 1966).

In the early 1870s, Leppington was farmed by James and Sarah Elizabeth Jane Payten. Sarah Payten was a daughter of Thomas Rose's, the owner of Mount Gilead, to the south. At Leppington, the Paytens' grazed dairy cattle, sheep and horses, and grew hay and vegetables. They remained there until 1873, when they moved to the Woodbine estate at Campbelltown (Liston 1988: 76).

The 1890s plans show the property in the ownership and occupation of representatives of the late H Bell (CP923.3000 and CP 288.3000). By 1906, Leppington was owned and occupied by Perry (CP8057.3000).

In the 1940s, the house at Leppington burnt down. The site was later used by the army for target practice. However, enough remained for some of the bricks to be salvaged for re-use in the outdoor stage at Leppington School (Liverpool City Council n.d.).

Portions 6 and 13

Portion 6 (Huntsmore) and Portion 13 (Montore) were both granted to Simeon Lord, at least the first of them in 1810. Lord was brought to Sydney in 1791 as a convict, and was assigned as a servant to Captain Thomas Rowley. After his emancipation, Lord began a career as a merchant. In 1805, Lord, Henry Kable and James Underwood formed a short-lived but profitable partnership, exporting oil and sealskins. Lord acquired a large amount of real estate, in various parts of the colony (Hainsworth 1967).

The two Portions were later incorporated into the Denham Court Estate.

Portion 14

Charlotte Driver 100 acres, Paterson's Gift, 1810.

Portion 16

Portion 16 consisted of 200 acres, and was granted to John Moore in 1821. In 1822, Edmund Burke and John Voyle were renting land from a John Moore in the district of Minto (NSW State Records, Colonial Secretary Index), and it is possible that this was Portion 16.

Portion 17 (Denham Court)

Portion 17 consisted of 500 acres, and was granted to Richard Atkins. Atkins arrived in 1791, and was made a magistrate at Parramatta. In 1792 he was made Registrar of the Vice Admiralty Court, and he was Judge Advocate from 1796 to 1798 and 1800 to c1809 (NSW State Records, Colonial Secretary Index).

The estate later expanded to include several of the neighbouring properties. The study area includes only a small part of the Denham Court estate, and the main complex of buildings was to the east. The history of the property is therefore not discussed here. However, an 1884 plan indicates that there were a few small structures on the south-western corner of the intersection of Campbelltown and Denham Court Roads (see Plate 7).

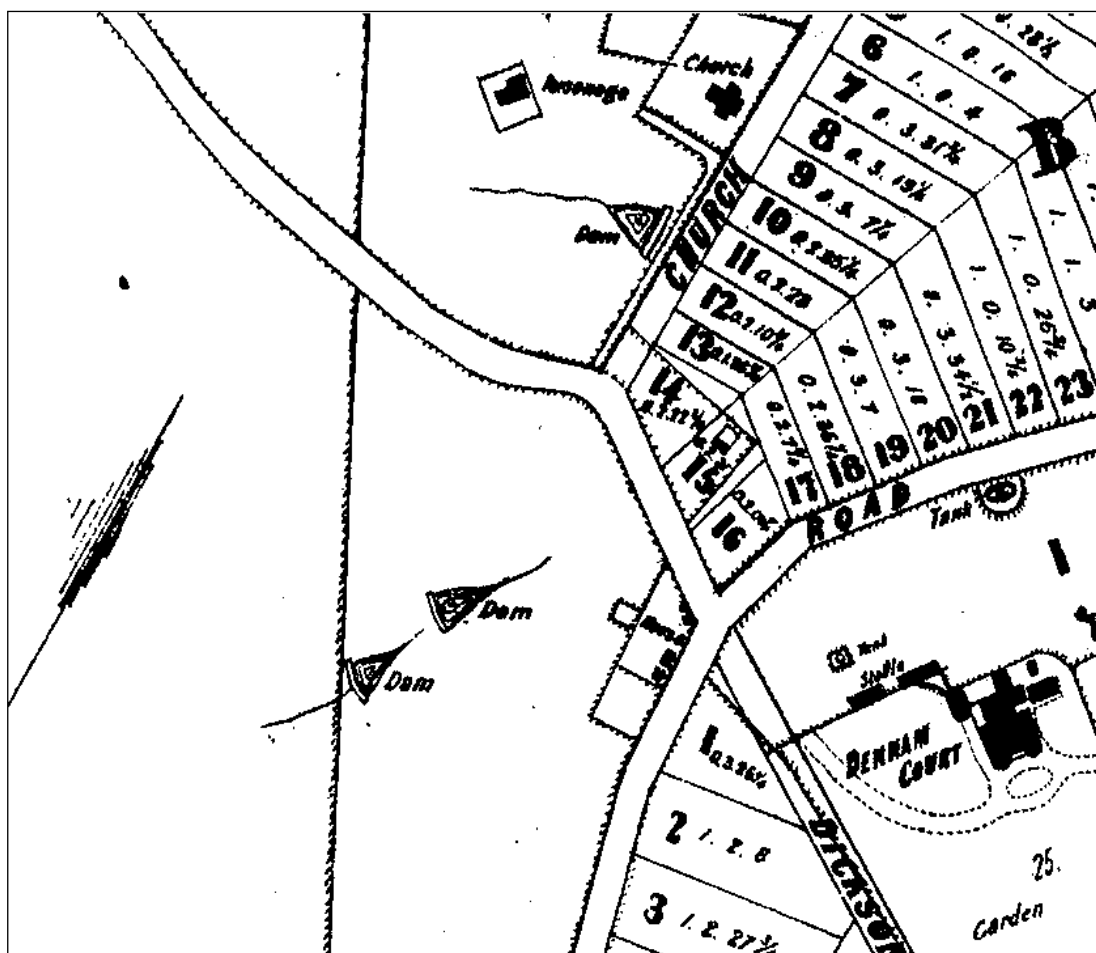


Plate 7: Detail of an 1884 plan of the subdivision of the Denham Court estate, showing the intersection of Campbelltown and Denham Court Roads (source: ‘Denham Court Estate, Saturday Oct 25th 1884’, State Library of NSW, Subdivision Plans – Campbelltown, ZSP: C4/4).

Portion 18

Portion 18, known as Reagh’s Farm, consisted of 300 acres, and was granted to Joseph Underwood in 1809. Underwood came free to the colony in 1807, and operated as a merchant, occasionally in partnership with Kable and Lord. Underwood appears also to have occupied land in the County of Argyle and District of Sutton (NSW State Records, Colonial Secretary Index).

Portion 20 (Varroville)

Portion 20 consisted of 1000 acres and was granted to Dr Robert Townson in 1810. Townson was born in Shropshire in c1763. He travelled widely in Europe, studying mineralogy, chemistry, botany, rural economy, technology, politics and ethics in the Universities of Gottingen, Vienna, Paris and Edinburgh (‘Varroville’ House SHR listing). Townson arrived in the colony in 1807, and was the colony’s most highly regarded academic. He intended to establish himself as a pastoralist and trader, and initially settled on a small estate, called Towweery, on the banks of the George’s River (‘Varroville’ House SHR listing).

Townson then exchanged some of his land for 1000 acres in the Minto district, which he occupied in 1809. The property was named Varro Ville after the Roman writer on agriculture, Marcus Terentius Varro. Probably in 1812-1813, Townson built a house on this property ('Varroville' House SHR listing). The house was of sandstock brick on stone foundations. He also had a bridge built over the creek, but by 1813 it had washed away, and he requested that the governor have another one built (Liston 1988: 13).

In 1809 a productive kitchen garden was laid out; the garden was noted for its extensive fruit varieties by the early 1820s. The kitchen garden may have occupied sloping ground to the north-west of the house. A vineyard was also established ('Varroville' House SHR listing).

A significant part of the property was used for growing crops in the c1810s-1830s period. In 1815 Dr Robert Townson supplied meat to the Sydney, Liverpool and Parramatta commissariat stores. In the 1818 muster of stock, Townson is recorded as possessing 214 head of horned cattle, and 1961 sheep, with 22 acres in wheat, eight in maize, four in barley, two in potatoes, and two in garden and orchard ('Varroville' House SHR listing). By 1822, Townson had 20 acres under wheat, 5 of barley, and 6 acres of garden/orchard and held a total of 2680 acres with 3 horses, 400 head of cattle, 3350 sheep and 24 hogs (Morris & Britton Aug 2000: 96).

In 1827 Townson died at Varroville. In 1829 the property was acquired by Thomas Spencer Wills (1800-1836), the first Australian-born Justice of the Peace, and a founder of the Bank of NSW ('Varroville' House SHR listing).

The property was owned by Charles Sturt (1795-1869) from 1837 to 1839. Sturt established dams and modified watercourses, and maintained the garden, orchard and vineyard. In 1839 Sturt left for South Australia, to take up the position of Surveyor-General. The 1839 sale notice for Varroville notes 'The cottage is convenient and an excellent kitchen and wash house have been added to it. The outhouses consist of stables, coach house, verandah, dairy, store, barn etc. and there is a well-stocked garden and vineyard' (Morris & Britton Aug 2000: 96).

The property was owned by James Raymond from 1839 to 1851. Raymond was the first Postmaster General of the Colony of NSW. In 1851 Raymond died, leaving Varroville in the occupation of his daughter Aphra and her family. In 1858 the property was bought by George Taylor Rowe ('Varroville' House SHR listing).

A plan dating to 1850 shows that the house was approached along an avenue running from Campbelltown Road, near Robinhood Inn (Plate 8). This road continued in use until possibly as late as the 1940s, but a new entry from St Andrew's Road became the main approach in the 1950s. The original road did not become redundant until the construction of the south-western freeway (Morris & Britton Aug 2000: 97).

The 1810 house was replaced by the present structure in 1858. This second house is thought to be located on the same site as the first, or possibly in the area of the tennis court to the east of the current house. The new house retained an early stone chimneypiece and hearthstone from

the previous house. A large underground water tank was installed near the house, probably around the same time as the existing house was built. The 1858 house was designed by the firm Weaver and Kemp, one of the partners of which, William Weaver, was Government Architect from 1854 to 1856 ('Varroville' House SHR listing).

Following Rowe's death in 1859 the property was sold to Justice Alfred Cheeke (1810-1876), who bred and trained racehorses on the property, and maintained a racecourse on the flat below the house. He was elevated to the Supreme Court of NSW in 1865 ('Varroville' House SHR listing). In 1876 the property was advertised for sale;

Varroville is a commodious family residence, recently erected by the late proprietor. It is built of brick and stone, is nearly surrounded by verandahs and contains the following accommodation: - hall, 8 feet wide: drawing and dining rooms each 20 x 16: 6 bedrooms, two of which are 20 x 16: dressing room with well-arranged superior bath: patent closet: stove, kitchen with oven, servants hall, wine cellar, laundry with copper, larder, pantry, china closet & c

There is an additional residence of six apartments a few yards from the above. Both are surrounded by tastefully laid out gardens and shrubbery, are erected on a beautiful elevation, and approached by a fine carriage drive from the main road.

An abundant supply of water is obtained from an immense underground reservoir, which receives the roof water. A pump forces the water on to the premises, supplying the bathroom &c.

The outbuildings are very numerous and comprise gardener's house, barn, cow-houses, calf-pens, dairy, piggery with coppers, stock and drafting yards, complete ranges of stabling, including a number of well-finished spacious loose boxes for blood stock.

(*Sydney Morning Herald*, 15 April 1876, cited in 'Varroville' House SHR listing)

In 1876 the property was bought by grazier M Suttor. From about this time until the mid twentieth century, the property was used as a dairy. In 1885 it was sold to Thomas Salter, a Sydney solicitor, who leased it to H Pockley for dairying. In 1906 it was sold to Reginald Thomas, and in 1912 to WH Staniforth, of St Andrews, dairyman. In 1929 Varroville was bought by George Smith, and later by Robert Stanley Thompson, who in 1950 sold it to grazier William Forest Ross. It was then sold to Alfred LM and Cherry Jackaman. The property was subdivided in the 1970s ('Varroville' House SHR listing).

In 1990 Varroville was acquired by the National Trust. In 1992 it was sold to Ken and Virginia Pearson-Smith (Morris & Britton Aug 2000: 97).

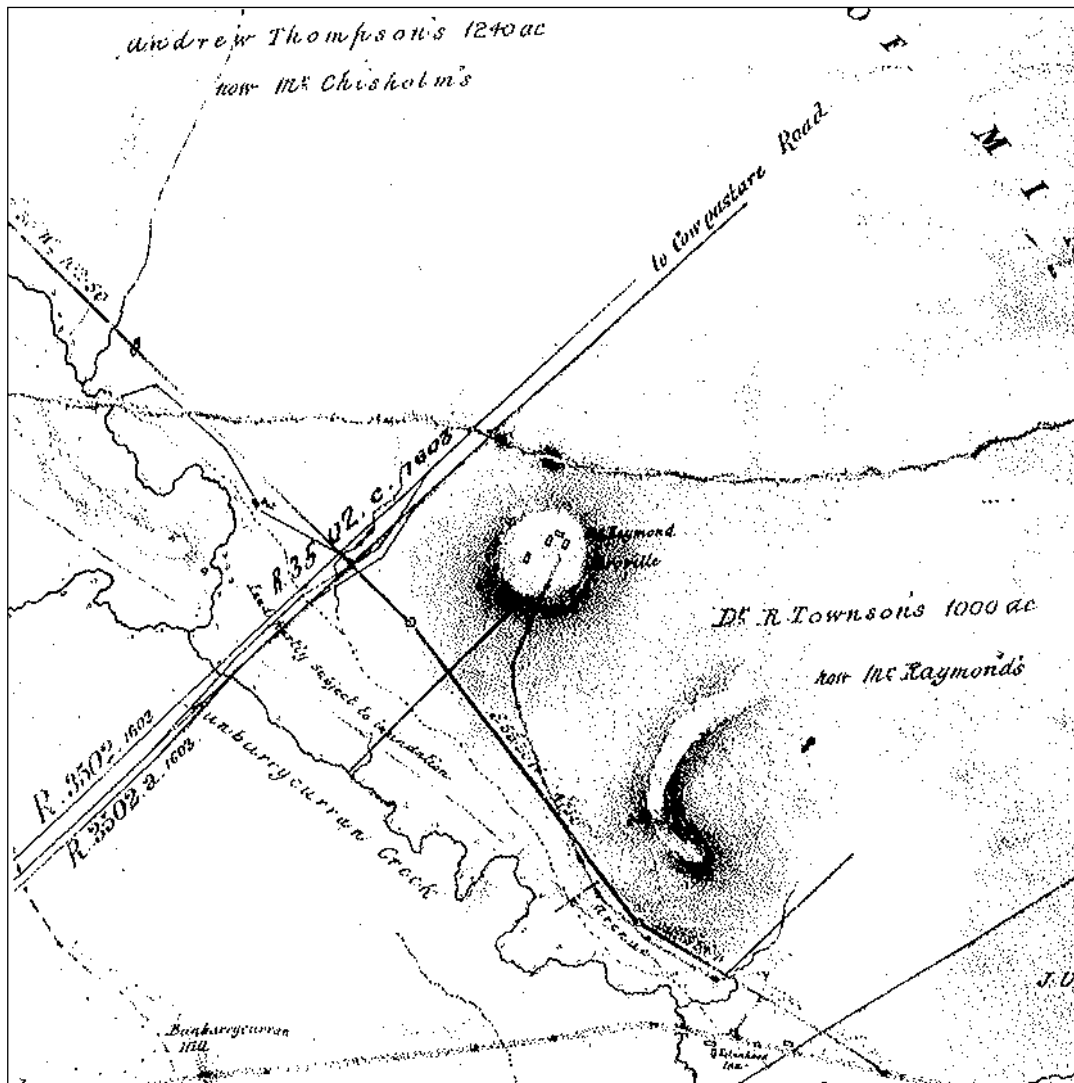


Plate 8: Detail of an 1850 plan, showing parts of Varroville and Saint Andrew (source: ‘Survey of a proposed new line of road from the Campbelltown Road near Denham Court to the Cowpasture Road near Molles Main’, NSW State Records, AO Map 5155).

Portions 21 & 22 (Saint Andrews)

Portion 21 was the largest of the first grants of land in the Minto district was made to Andrew Thompson, and consisted of 1240 acres. Thompson had been transported to the colony as a convict, and was appointed a constable. He was made Bligh's personal agent, and became very prosperous. The Minto grant was made as a reward for his bravery during the 1806 floods, and was named Saint Andrews (Liston 1988: 8). Portion 22, 345 acres on the opposite side of Bunbury Curran Creek, was later added to the property.

Thomson died in 1810, leaving one-quarter of his estate to Macquarie. Macquarie visited St Andrews later in the year. There was a farmhouse with offices, garden stockyards, cleared timber, 10 acres of corn, 90 cattle and 1400 sheep. The farmhouse was under the care of Joseph Ward and his wife (Liston 1988: 9).

Saint Andrews was incorporated into the Chisholm family Gledswood estate. The 1867 plan shows the property in the ownership of Frederick Chisholm. Part had been cleared, but part was described as bush, and part as dense prickly scrub. A track to Thompson's farm is described as leading north from Raby Road, just to the west of the Bunbury Curran Creek crossing (CP753.1603). The property was not subdivided until the 1950s (Plate 9).

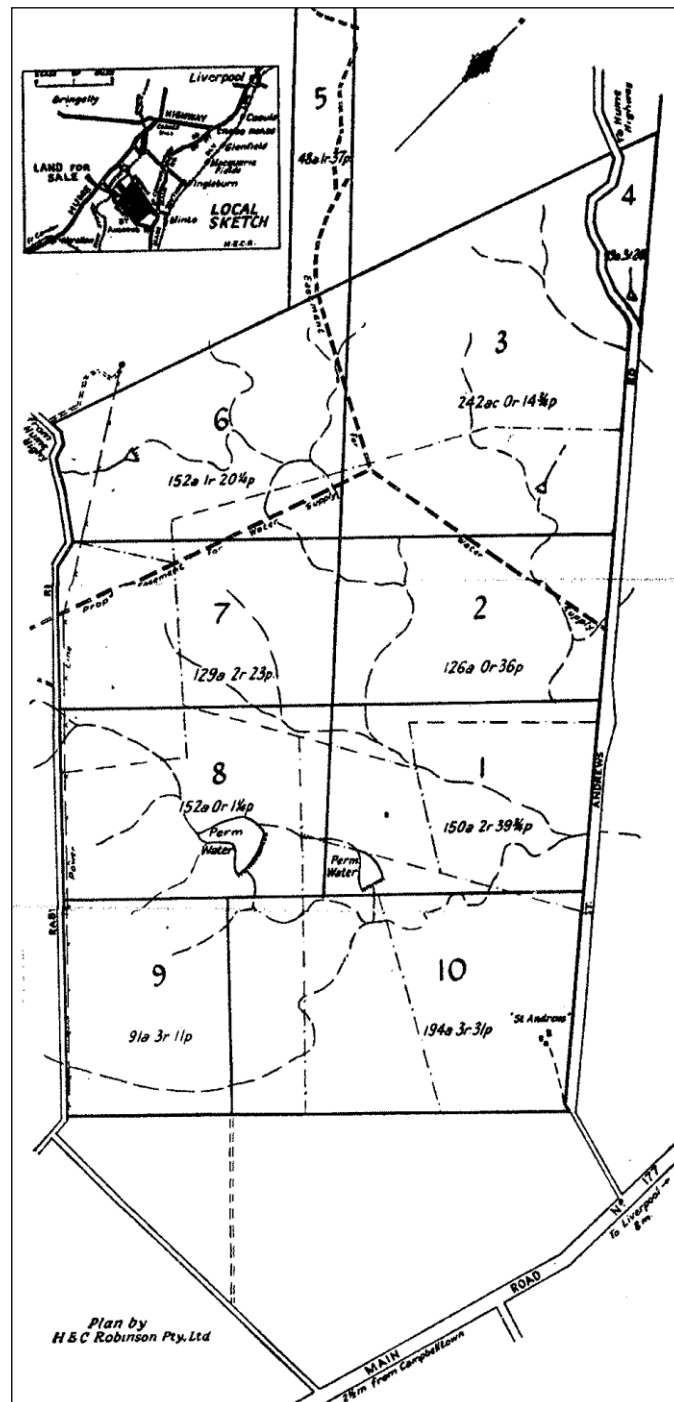


Plate 9: (source: 'Subdivision of the historic "St Andrews", Friday 29th March 1957', State Library of NSW, Subdivision Plans – Minto, ZSP: M19/18).

3.2.2 Parish of St Peter

The Parish of St Peter was in general granted in smaller portions than were the Parishes of Minto and Narellan. This was presumably a less desirable area as it was further from the main road (Cowpasture Road, now Camden Valley Way). Some of the grants appear to have remained as small farms. However, much of the northern area was consolidated into one property, Eagle Vale later known as Eschol or Eshcol Park.

Table 4: Details of the Portions of the Parish of St Peter that is wholly or partly included in the Surface Project Area.

Parish	Portion	Grantee	Area	Property	Date	Plan
St Peter	106	John Yates	80			A284
St Peter	107	John Johnson	40			A315
St Peter	108	Francis Cox	60			A315
St Peter	119	John Lee	40			A315
St Peter	120	William Guise	60			A315
St Peter	121	George Berry	34			A315
St Peter	123	Abraham Whittaker	50			A315
St Peter	?	West of 123 T Clarkson?	50			A315
St Peter	124	Henry Cole	200			A315
St Peter	125	John Cureton	50			A315
St Peter	135	John Bent	50			A315
St Peter	136	Thomas O'Connor	50			A315
St Peter	137	Thomas Burke	100			A315
St Peter	138	Henry McCudden	75		8.10.1816	A315
St Peter	138A	James Robertson			3.11.1859	C730.690R
St Peter	139	William Deards	30		20.6.1816	A315
St Peter	140	Neil McLeod	30		20.6.1816	A315
St Peter	141	Darby Murray	56		20.6.1816	A315
St Peter	142	William Davis	80		20.6.1816	A315
St Peter	146	James Dwyer	30			A315
St Peter	147	Thomas Burke	65			A315

Parish	Portion	Grantee	Area	Property	Date	Plan
St Peter	148	Joseph Dernsfield	30			A315
St Peter	149	Hester Stubbs	80			A315
St Peter	150	Jemima Jenkins				A315
St Peter	151	Edward Shakely	200			A315
St Peter	152	Thomas Rowley	60			A315
St Peter	153	Thomas Barrett	36		20.6.1816	A315
St Peter	154	John Goldsmith	30		20.6.1816	A315
St Peter	156	Patrick Cullen	130		1823	A315
	150	Luck?	100			
		School?	100			

The Portions granted in the Parish of St Peter were in general smaller than those in the Parish of Minto, and less information about the grantees is readily available. It appears that these were less wealthy people, and of less standing in the official circles of the colony.

William Guise, the grantee of Portion 120, was probably a colonial-born farmer and grazier, of Liverpool. In 1822 Charles Throsby made an official complaint that Guise was trespassing and using his bulls (NSW State Records, Colonial Secretary Index). Neil McLeod, of Portion 140, was possibly a private in the 73rd Regiment (NSW State Records, Colonial Secretary Index). Thomas Rowley, of Portion 152, was possibly the colonial-born son of Thomas Rowley. In 1822 his residence was said to be Holdsworth, and in 1823 Campbelltown. In 1823 a clearing party was employed to reap wheat on his farm in the Campbelltown District (NSW State Records, Colonial Secretary Index).

As the above information indicates, a number of the grantees started clearing their land fairly shortly after it was granted. The 1867 plan indicates that at least parts of Portions 151, 152 and 156, along Narellan Road, had been cleared (CP779.1603).

By 1867, Portions 142 and 153-155 had been incorporated into the Therry Estate (CP779.1603). The Church and School Estate, on the other hand, had been subdivided and sold. That part of the estate on the northern side of what is now Narellan Road was Portion 3 and was in the possession of William Ray. At least part of it was described as clear (CP779.1603).

Portion 138

Henry McCudden arrived in the colony as a convict in 1796. He received a conditional pardon, and was farming at Airs by 1813. He also acted as a police constable for a time (Liston 1988: 43-44). In 1823 a clearing party was employed to reap wheat on his farm in the Campbelltown District (NSW State Records, Colonial Secretary Index). In 1833 McCudden and his wife were still farming their property. His nephew arrived as a convict in 1830, and McCudden applied for him as an assigned servant, to assist on the farm (Liston 1988: 43-44).

Portion 141

Darby Murray was brought to the colony as a convict in 1806 (NSW State Records, Colonial Secretary Index). After acquiring the 56 acres at Airs in 1816, he bought more land in the Campbelltown area. He also held 16,000 acres on the Lachlan on a squatting licence. In 1839 he married Martha Dwyer of Campbelltown and settled his Campbelltown lands on her and her daughters while his sons had the southern lands at Yass (Liston 1988: 69).

Eagle Vale (Portion 107)

In 1816 Thomas Clarkson was granted 100 acres. Shortly afterwards he acquired five adjoining grants. Clarkson had arrived in the colony in 1806, sentenced to fourteen years transportation, but was pardoned in 1811. He established himself as a publican and baker, and prospered, acquiring property in Sydney and at the Hawkesbury, as well as in Airs. This property was named Eagle Vale, and was the largest estate in the parish of St Peter in the mid 1820s, when Clarkson died (Liston 1988: 12).

“Following the death of Thomas Clarkson, Eagle Vale was sold in 1828 to Jemima Jenkins, the wealthy twice-widowed cousin of Lord Nelson. About 400 acres (160 ha) of the 1500-acre (600 ha) estate was cleared, enclosed by a fence and divided into paddocks. A substantial brick house, 70 feet by 30 feet (21 m by 9 m), commanded a view over the Bow Bowing Valley. Outbuildings included a detached kitchen, dairy, workmen’s accommodation, sheds, piggery and an orchard and flower garden. Eagle Vale was one of several properties owned by Jemima Jenkins and, like Brooks at Denham Court, she found Campbelltown a convenient mid-way location between her grazing lands in the south and her business interests in Sydney. Jemima Jenkins lived at Eagle Vale with her two teenage sons from 1828 until her death in 1842. Criticised by Sarah Mathew as a ‘disagreeable vulgar woman’, Jemima Jenkins took a quiet interest in the affairs of Campbelltown, signing petitions favouring improved roads, schools and churches” (Liston 1988: 46).

Eagle Vale was renamed Eshcol (misspelt as Eschol after 1975) a reference to vineyards in the Old Testament, and William Fowler employed Mr Zorno as vigneron to develop the estate from 1858 (Liston 1988: 77).

‘Eagle Vale estate was inherited by Robert Pitt Jenkins (1814-1859), a member of the Legislative Council, on his mother’s death in 1842. Jenkins and his wife Louisa nee Plunkett,

decided to take their family to England in the late 1850s and sold their various estates, including Eagle Vale. Eagle Vale in 1858 covered 608 acres (243 ha). Apart from the house, there was a coachman's house, stables, gardens, pig sties and a gatekeeper's lodge at the entrance from the Narellan road (Raby Road); only one paddock was fenced for wheat" (Liston 1988: 107).

"Eagle Vale was purchased in 1858 by William Fowler of Campbelltown. Fowler had married Eliza Warby in 1840, opened a store and operated the post office from 1846. Fowler renamed Eagle Vale 'Eshcol Park' – after a vineyard in the Old Testament – planted vines and built a two-storey winery where, within ten years, he was producing 2000-3000 gallons (9100-13650 L) of wine annually. Fowler sold Eshcol Park to Spencer Milgate in 1876, but two years later it was purchased by John Tangelder Gorus, a Dutch photographer, who lived there until the end of the century" (Liston 1988: 107-108).

Portion 156 (Maryfields / Stations of the Cross)

Portion 156 consisted of 130 acres, and was granted to Patrick Cullen in 1823. It was later sold to John Terry Hughes, and then to John Rudd. By 1850, when the property was subdivided, a house named Maryfields had been built. The Maryfields lot was transferred to James Rudd. This was inherited by his granddaughter Sarah Mary Keane who, in 1930, donated the property to the Franciscan Order. The house on the property was still standing at this time (Plate 10 and Plate 11), but has since been demolished ('Maryfields property').



Plate 10: Maryfields in 1934 (source: 1934, 'Maryfields, Narellan Road, Campbelltown', Campbelltown City Library, Local Studies Collection, File No. 004/004441).



Plate 11: An undated view of Maryfields in its garden setting (source: HG McBurney, ‘Maryfields, Narellan Road, Campbelltown’, Campbelltown City Library, Local Studies Collection, File No. 002/002642).

In 1935 the foundation stone for the Franciscan Novitiate was laid. The friars worked the land, and planted and tended trees and gardens on the property, as well as assisting the members of nearby Catholic parishes. From 1936 to 1988 the friars hosted the Stations of the Cross every Good Friday. The First Way of the Cross was composed of fourteen wooden crosses, placed along a path through the fields. These were later replaced with terracotta sculptures ordered from France (‘Maryfields property’).

The Twelfth Station is situated on a large mound, created over the top of an unused vault. There was a cemetery for the friars near the present cemetery of the Poor Clares. The remains were exhumed from this cemetery in 2001 and transferred to Macquarie Park Cemetery (‘Maryfields property’).

There was a tramway (railway?) stop at Maryfields, first called Rudds Gate and later renamed Maryfields. A path near the Eighth Station leads to the site of the old tram station. In 1983 the Franciscan Novitiate was moved to Victoria. In 1988 the last Good Friday Stations of the Cross was held. From 2000 the ceremony was held again, at Lent, on Palm Sunday, and on other special occasions (‘Maryfields property’).

Portion 124 (Blairmount)

The house Blairmount is probably situated on Portion 124, 200 acres granted to Henry Cole. The title of the property has not been traced. The present house is thought to date to the 1880s, although the nearby wooden slab building may be earlier. There is also a small stone silo (‘Blairmount with stables and silo’).

In the early twentieth century it was owned by Clive and Victor Ducat, the second of whom was a local alderman. At this time the property was known as *Belmont*. In the 1920s, Ducat’s property was infested with prickly pear, and he was one of the first to use the insect *Cactoblastis cactorum* to control the weed (‘History of Blairmount’).

In 1923 the part of the property with the house was bought by Leslie Rouse, who developed it as a horse stud. The remainder of the property was sold to Charles McClelland, of the adjoining Glenroy property, in 1929 (‘History of Blairmount’).

After Rouse died in 1928, the property was bought by Frank Young, manager of the Commonwealth Wool Company and the name was changed to *Blairmount* at about this time. Young used the property to breed Clydesdale horses and also bought surrounding land. Young died in 1951. The area surrounding the house was developed with housing in the 1980s ('History of Blairmount').



Plate 12: A photograph of Blairmount in 1979 (source: September 1979, 'Blairmount, Badgally Road, Campbelltown', Campbelltown City Library, Local Studies Collection, File No. 002/002603).

3.2.3 Parish of Narellan

That part of the Parish of Narellan included in the Surface Project Area included one large grant, Portion 37 or Molles Mains, and several smaller properties. Portion 36 was later added to Molles Mains, most likely after Edward Lomas Moore acquired Molles Mains. The property remained in the Moore family until at least the early 1900s.

Most of the northern area, to the south of Raby Road was consolidated into one large property by James Chisholm. This included Portions 38, 41, 45 and 46 of the Parish of Narellan, and also Portion 21 (Saint Andrews) of the Parish of Minto, on the north side of Raby Road. This property was named Gledswood, and remained in the ownership of the Chisholm family until 1940.

To the east of Gledswood, Epping Forest was created by William Kearns, based on Portions 47 and 47 and incorporating some surrounding properties. In the southern area, Portions 31 and 35 were incorporated with the property Naralling, to the south. This property was later named Smeaton Grange, and the bulk of it lies outside the Surface Project Area.

Details of the portions of the Parish of Narellan wholly or partly included in the Surface Project Area are given in Table 5, and some historical information and images follows.

Table 5: Details of the Portions of the Parish of Narellan that are wholly or partly included in the Surface Project Area

<i>PARISH</i>	<i>PORTION</i>	<i>GRANTEE</i>	<i>AREA</i>	<i>PROPERTY</i>	<i>DATE</i>	<i>PLAN</i>
Narellan	31	Mrs Charles Throsby	550a	Smeeton		N401 A315
Narellan	33	William Mannix	400a		25.8.1812	C72 N401
Narellan	34	Patrick Purcell	60a		25.8.1812	C72 N401
Narellan	35	George Grimes	335a	Grimes Farm	25.6.1813	N401 A315 C72
Narellan	36	George Grimes	100a			N401 A315
Narellan	37	George Molle	1550a	Molles Mains	20.6.1816	N401 A315 C72
Narellan	38	William Mitchell	200a	Horatio Farm		A315 N401
Narellan	41	James Chisholm	170a	Calder Farm		A315 N401
Narellan	42	Roger Connor	66a			A315 N401 Ms 9114 Sy
Narellan	44	Bryan Riley	100a			A315 N401 Ms 9114 Sy
Narellan	45	GLMH de Kerrillan	400a	Buckingham		N401 A315
Narellan	46	William Laycock	500a			N401 A315
Narellan	47	John Kearns	100a	River Hill		A315 N401 Ms 9115 Sy
Narellan	48	Matthew Kearns	100a	River Hill		A315 N401 Ms 9115 Sy

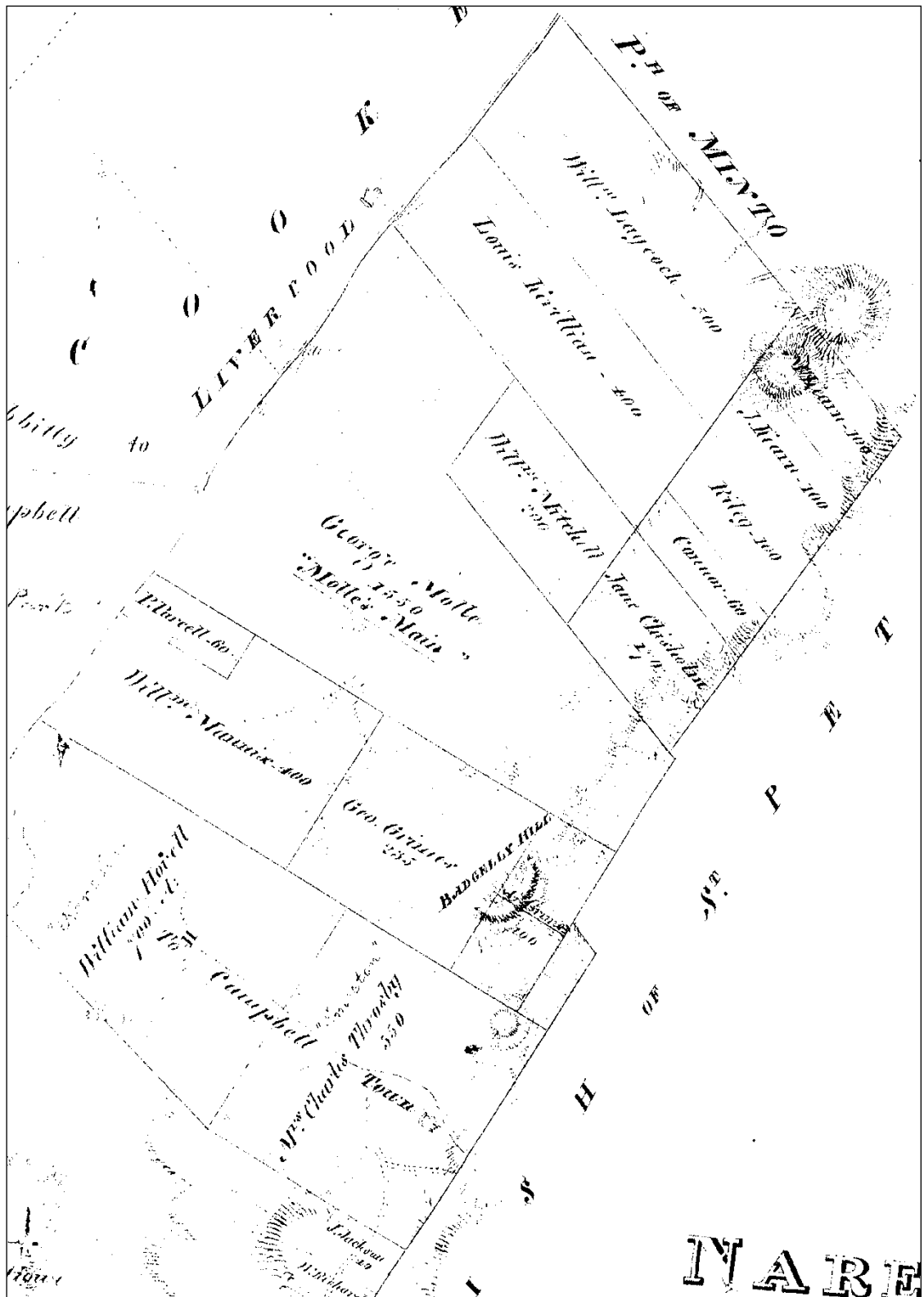


Plate 13: A plan of the Parish of Narellan, possibly dating to 1834 (source: Anon., 1834?, 'Narellan', State Library of NSW Z M2 811.1135/1834/1).

Portion 31 (Smeeton)

Portion 31 consisted of 550 acres, and was granted to Mrs Charles Throsby. From 1822 to 1830, Smeeton (or Smeaton) was leased by Thomas Reddall. Reddall (1780-1838) conducted a school for boys at Macquarie Fields from 1821, and from 1824 to 1826 he was director-general of schools in the colony (Liston 1988: 35-36).

Smeeton, along with the neighbouring property Naralling (Portion 32, not included in the Surface Project Area), was bought by James Fitzpatrick. Fitzpatrick had come to Australia as a convict in 1822, and worked for Hamilton Hume, including accompanying him and Hovell on their 1824 expedition to Port Phillip Bay (Akers n.d.).

By 1867 the property was in the ownership of James Fitzpatrick. The western part of the property is described as open forest land, and the eastern as clear (CP779.1603). In the 1890s plans, the property is described as grassland, and is in the ownership of James Fitzpatrick and the occupation of John J Guthrie (CP923.3000 & CP 288.3000). By 1906, JF O'Donnell was the owner and occupier (CP8057.3000).

Portion 33 (Spring Hill Farm)

William Mannix came free to the colony in 1806, as an employee of Robert Campbell's (NSW State Records, Colonial Secretary Index). In about 1820 he took up 400 acres in Upper Minto. His land holdings increased rapidly to the mid-1820s, when he was in possession of over 1000 acres, in addition to over 500 head of cattle (Liston 1988: 50).

In 1824 he built the Minto Flour Mill, a horse-driven mill, at Spring Hill Farm. By 1828, Mannix employed two free carpenters, another blacksmith, a miller and a clerk, as well as three assigned convicts, one of whom was a blacksmith. Mannix also had a windmill built, possibly in 1829, and this operated until 1836 (Liston 1988: 50).

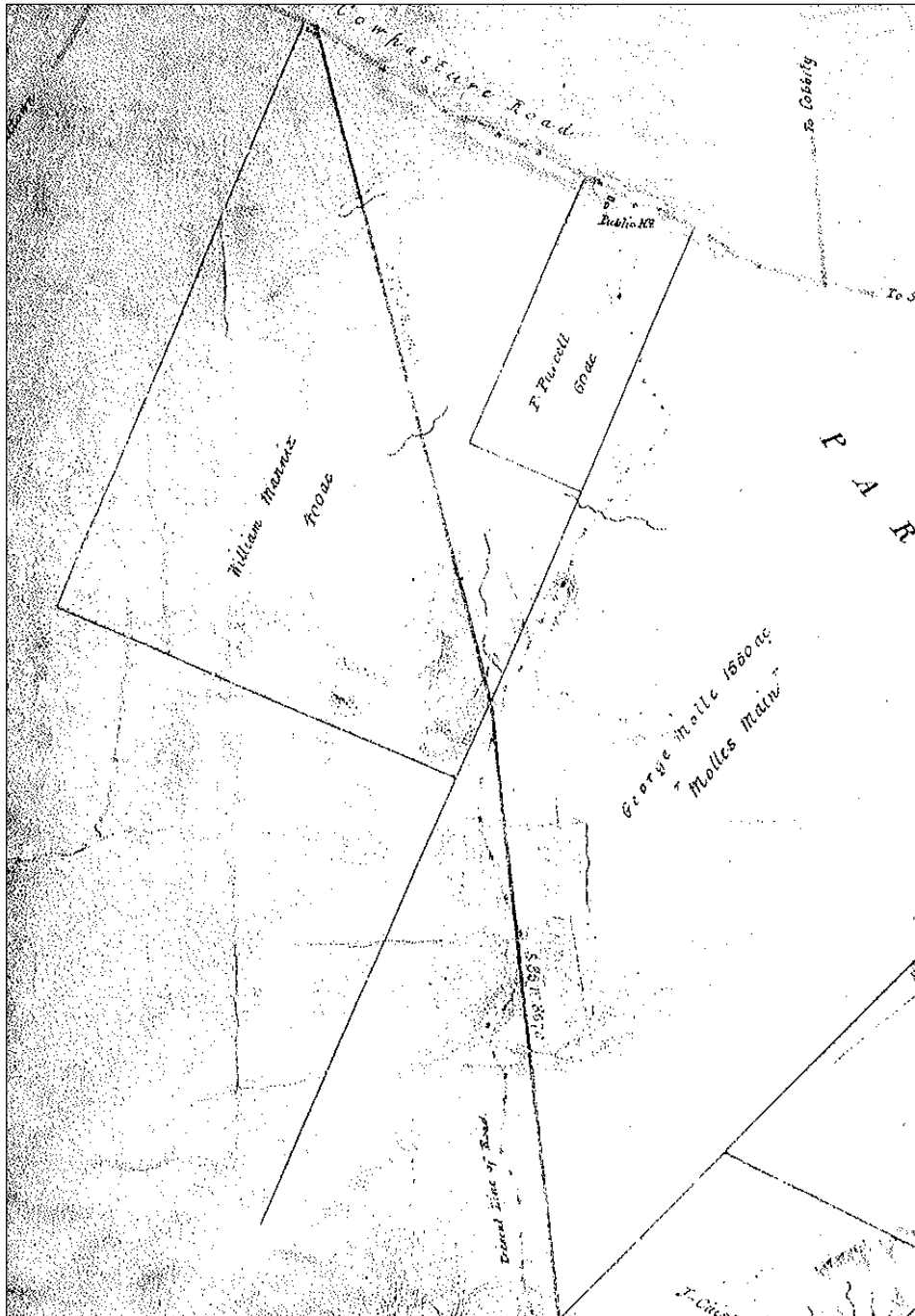


Plate 14: Detail of an 1850 plan, showing Portions 33, 34 and 37 of the Parish of Narellan (source: ‘Survey of a proposed new line of road from the Campbelltown Road near Denham Court to the Cowpasture Road near Molles Main’, NSW State Records, AO Map 5155).

Portion 34

As with William Mannix, the grantee of Portion 33, Purcell came free to the colony in 1806, in the employ of Robert Campbell. An 1822 note describes him as a gardener. In 1824 his residence was given as Irish Town, near Liverpool (NSW State Records, Colonial Secretary Index).

Portions 35 and 36 (Grimes Farm)

George Grimes was probably the colonial-born son of Charles Grimes, Surveyor General. In 1818 he accompanied Charles Throsby on an expedition of discovery, and he later accompanied James Meehan on an expedition to Jervis Bay (NSW State Records, Colonial Secretary Index).

By the 1890s, Portion 35 was in the ownership of James Fitzpatrick and the occupation of William Cooper. The property is described as grassland (CP923.3000 & CP 288.3000). By 1906, the property was in the ownership and occupation of JF O'Donnell (CP8057.3000).

By the 1890s, Portion 36 was in the ownership and occupation of John J Guthrie. The property is described as grassland (CP923.3000 & CP 288.3000). By 1906, the property was in the ownership and occupation of F Moore (CP8057.3000).

Portion 37 (Molles Mains / Mount Badgally / St Gregory's Agricultural College)

George Molle (1773-1823) arrived in NSW in 1814, as the commanding officer of the 46th Regiment. On arrival he was appointed lieutenant-governor of the colony. During his stay, Molle and his wife played an active role in the life of the colony. In 1817, the 46th Regiment was relieved, and Molle left for Madras. On Molle's death in 1823, his eldest son, William Macquarie, became the owner of Molles Mains (Macmillan 1967).

The spelling of the George Molle's original property varies amongst documentary sources. It has been spelled "Molles Maine", "Molles Maines", "Molles Mains" and "Mollesmain". The name adopted in this report is "Molles Mains" as it is understood that George Molle originated from "Mains" in Berwickshire in the Scottish Borders. The town of Mains has not been located in the brief search that was undertaken, however the term "mains" is used in Scotland (and presumably the Borders to the south) as part of a place name to denote the use of the place as a farm.

The homestead which was later built on Molles Mains was demolished around 1950, along with its associated outbuildings and yards, to make way for the Camden Valley Golf Resort. A descendent of the Funnell family which ran a dairy on Molles Mains during the first half of the 20th century, has described the homestead before it was demolished as: "a big old weatherboard homestead" with a separate kitchen. Outbuildings comprised "real big old stables" and there was a round yard for milking (Browne 2007). An aerial photograph of Molles Mains before it was demolished (Plate 14) shows outbuildings and a round yard which matches this description. The Homestead in the photograph is a rectangular, single storey building, with a hipped roof, situated within a fenced house paddock and established garden. Anecdotal information has suggested that the homestead was situated along the southern edge of what is now the golf course (refer Figure 3), however the specific location of the homestead has not been confirmed by reference to primary sources.

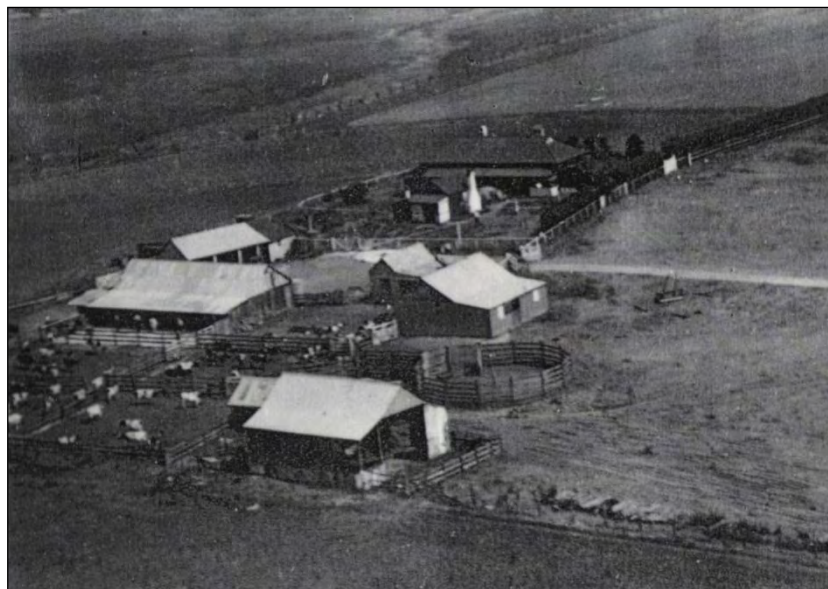


Plate 15: An oblique aerial of Molles Mains showing the homestead in the background, the round dairy pen and other outbuildings (Source: courtesy of Pam Browne, Camden Historical Society). If this is Molles Main, the driveway visible to the right leads to Camden Valley Way.

By the 1890s, Badgally House was in the ownership and occupation of EL Moore. Part was occupied by Larkin (CP923.3000 & CP 288.3000). In 1906 the property was in the ownership and occupation of Frederick Moore (CP8057.3000; Proudfoot Nov 1973: 33). In 1918 it was sold to Sama Hillman, and in 1923 to Thomas Donovan. A home for orphan boys was established on the property, and the running of this home was taken over by the Marist Brothers in 1926 (Proudfoot Nov 1973: 33). It is now the St Gregory's Agricultural College and Badgally House.

Between 1828 and 1830 the principal convict road party working on the Cowpasture Road (Camden Valley Way) was stationed on Molles Mains (Starr n.d.: 13-14). The Cowpasture Road formed the western boundary of Molles Mains (see Plate 15). In 1828, the main work party comprised 65 men. In 1830 there were 33. The specific location of the road party's campsite has not been identified in the research conducted for this report.

In the 1940s additions were made to Moore's house and although it is still standing, it is not recognisable from the outside. It is possible that there are ruins of an earlier building on top of Badgally Hill. A photograph of Moore's house suggests a small building in the background in addition to the farm buildings (Proudfoot Nov 1973: 33).



Plate 16: Badgally House, in 1912 (source: 1912, 'Badgally House, Badgally Road, Campbelltown', Campbelltown City Library, Local Studies Collection, File No. 000/000034).



Plate 17: (source: 1920, 'Dairying at Badgally House, Badgally Road, Campbelltown', Campbelltown City Library, Local Studies Collection, File No. 000/000961).



Plate 18: (source: c.1922, 'Dairying at Badgally House, Badgally Road, Campbelltown', Campbelltown City Library, Local Studies Collection, File No. 000/000975)

Portion 38 (Horatio Farm)

Portion 38 was granted to William Mitchell. Mitchell married Elizabeth de Kerrilleau, the daughter of the owner of the neighbouring property Buckingham (later "Gledswood", Portion 45).

By the 1890s it was in the ownership and occupation of JK Chisholm, and was described as bushland (CP923.3000 & CP 288.3000). In 1906, although JK Chisholm was still the owner, the property was occupied by F Moore.

Portion 41 (Calder Farm)

Portion 41 was granted to James Chisholm. It remained in the ownership of the Chisholm family; in 1892 it was owned by JK Chisholm and occupied by J Jenner, and was in cultivation (CP923.3000). The Chisholms also acquired Portions 38, 45, 46.

In 1907, part of Portions 38 and 41, which had become separated from Gledswood by the upper Canal, were swapped with part of Portion 37 (Molles Mains), which bordered Gledswood (Clive Lucas Stapleton 2005: 10-11).

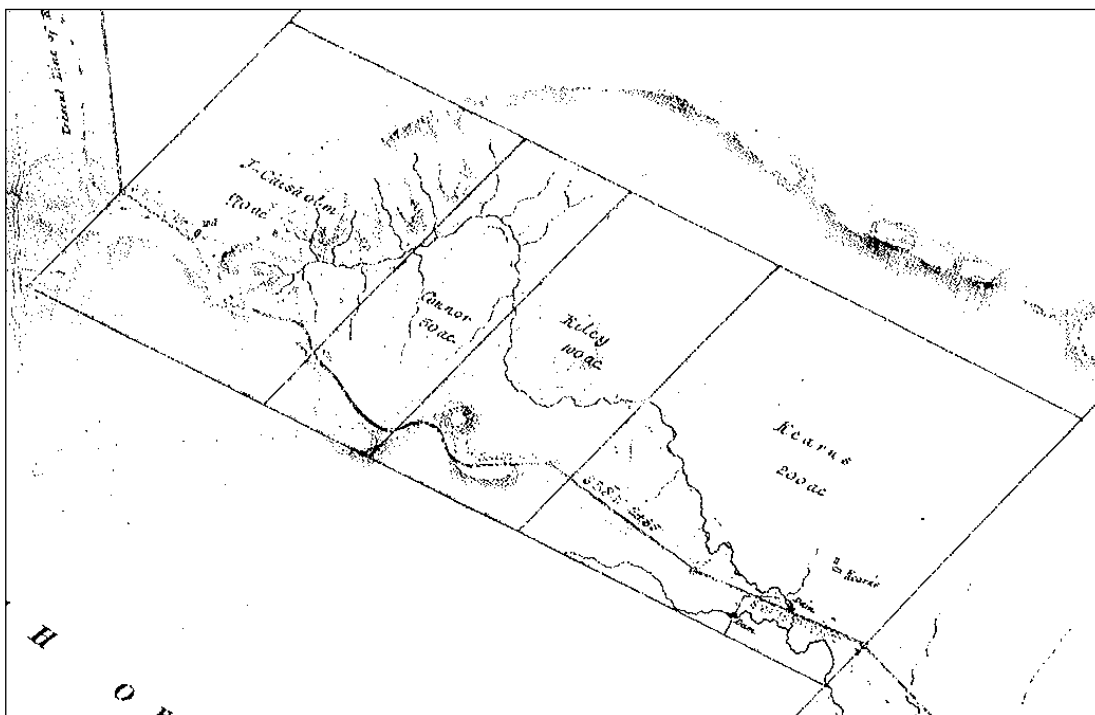


Plate 19: Detail of an 1850 plan, showing Portions 41, 42, 44, 47 and 48 of the Parish of Narellan (source: ‘Survey of a proposed new line of road from the Campbelltown Road near Denham Court to the Cowpasture Road near Molles Main’, NSW State Records, AO Map 5155).

Portion 45 (Buckingham)

Portion 45 was granted to Gabriel Louis Marie Huon de Kerrilleau (alternate spellings of the surname include Kerilliau, Kerilliam). De Kerrilleau had come to the colony as a private soldier in the New South Wales Corps. He was discharged in 1807. In 1810 he received a grant at Narellan, in 1823 a ticket of occupation for land at Bungonia, in 1825 he bought land at Corrundaroo. De Kerrilleau named Portion 45 Buckingham, and it is possible that he built the stone rubble cottage still standing on the property, not attached to the main residence (Clive Lucas Stapleton & Partners Nov 2005: 5).

In 1816 the property was transferred to William Mitchell, de Kerrilleau’s son-in-law and the owner of the neighbouring property Horatio Farm (Portion 38). Later the same year, Mitchell transferred the land to James Chisholm I (1772-1837). As well as de Kerilliam’s and Mitchell’s grants, Chisholm also acquired Laycock’s property (Portion 46), and land to the east of Raby Road, including St Andrews (Portion 21 or 22) (Clive Lucas Stapleton & Partners Nov 2005: 5).

The property was renamed Gledswood by the Chisholms, after a property in Scotland. In 1837, it passed to James Chisholm II (1806-1888), who had lived on the property for some time. In fact, the house may have been built for him and his wife Elizabeth Kinghorne at the time of their marriage in about 1829 (Clive Lucas Stapleton & Partners Nov 2005: 7).

Gledswood was built by James Chisholm in c1830, and remained the Chisholm family home for 90 years. Under the house was a cellar large enough to hold 20,000 bottles of wine. In 1830 James Chisholm junior planted a vineyard ('Gledswood' SHR listing). In the 1840s he began grape-growing for wine-making (Clive Lucas Stapleton & Partners Nov 2005: 7) and in 1847, Frederick and Anna Worner (vinedressers from Germany), were brought in to care for it ('Gledswood' SHR listing).

In 1858 the property passed to James Kinghorne Chisholm and his wife Isabella Macarthur Bowman. JK Chisholm greatly developed the garden of the property (Clive Lucas Stapleton & Partners Nov 2005: 8).

In 1861, JK Chisholm established a school on his property at Gledswood. The school was attended by the children of the local tenant farmers (Clive Lucas Stapleton & Partners Nov 2005: 14). The school closed in 1910, due to a lack of numbers. The school buildings was about $\frac{3}{4}$ mile from the homestead, and consisted of a schoolroom and attached teacher's residence, built of rough stone and mortar, with an underground tank (Clive Lucas Stapleton & Partners Nov 2005: 15). There was also a cesspit (Clive Lucas Stapleton & Partners Nov 2005: 17).

The house was later renovated and updated, probably in the 1870s. The garden was expanded in 1870 ('Gledswood' SHR listing). Gledswood was described in 1880 as follows:

At about a quarter of a mile from the main road, lies the dwelling-house and cultivated ground ... After passing along a well-formed road, with here and there a pond of water margined with willows, bamboos, &c., we arrive at the dwelling-house. This is a commodious structure of the Australian style of architecture ... While taking a cursory glance from the spot, we thought how eminently suitable the surrounding land was for park purposes, the land having all the requisites, and merely requires the assistance of man to convert the whole into park scenery, equal to any in the mother country. This appears to be Mr Chisholm's idea ... in the proposed park, lies the source of the well-known South Creek.

(*Horticultural Magazine*, cited in Clive Lucas Stapleton & Partners Nov 2005: 8)

Another description, published in 1871, ran as follows:

It is about 1500 acres in extent, and on it are flower gardens, orangery, and an orchard. Beside Mr Chisholm's family residence, there are also a schoolhouse, men's huts, a number of stores, stables, and other buildings. A drive over a meadow about a quarter of a mile from the roadside, leads to the house. It is erected on a slight eminence and the verandah partially surrounding it is almost covered with a Wisteria and a Queensland Bignonia climber ... The flower garden is laid out with considerable care, and contains almost every plant and flower known. Beds of sweet violets and camellias were blooming in various parts of the garden. At the far end from the house was a trellised vinery, nearly 200 feet

long, which promises a very good yield, should the season prove favourable. Passing an orange grove of fine fruit, we found ourselves in the midst of a shrubbery, and proceeding along a secluded walk, emerged in front of the lawn to the right of the house, where I was shewn 'a new idea,' at least, to me, in the arrangement of geraniums. ... I left the park by an avenue which crosses a rivulet and leads to the Camden entrance.

(Town and County Journal, cited in Clive Lucas Stapleton & Partners Nov 2005: 9)

By the 1890s, Portion 45 was in the ownership and occupation of JK Chisholm. Part was occupied by Thomas Hickey. The property was described as grassland, and several structures are shown in the plans (CP923.3000 & CP 288.3000).

In 1906 the property was still in the ownership and occupation of JK Chisholm (CP8057.3000) and at least part of the property was occupied by tenant farmers, consisting of Chamberlain (740 acres), P Hickey (64 acres), and Thomas Charles Barker (65 acres) (Clive Lucas Stapleton & Partners Nov 2005: 10). In 1912, the estate passed to JK Chisholm's daughters, Elizabeth Mary and Mary Macarthur Chisholm. The property remained in the ownership of the Chisholm family until 1940, when it was sold to Francis Percival Hopkins, grazier, and his wife Nora Hopkins (Clive Lucas Stapleton & Partners Nov 2005: 13).

The complex of outbuildings includes large cellars, an administration wing, a stable, a machinery shed and a hen house ('Gledswood' SHR listing).

Portion 46

William Laycock was possibly the son of Thomas Laycock (senior), Quartermaster, and a note describes his residence as Georges River (NSW State Records, Colonial Secretary Index). By 1867 the property had passed into the ownership of James Chisholm. Most of the property is described as bush, but the northern corner has been cleared and is tenanted by Henry Fell. There appears to be a structure in this corner (CP 753.1603). In the 1892 and 1906 plans, JK Chisholm is described as the owner and occupier (CP923.3000 & CP8057.3000). The property is described as grassland in 1892.

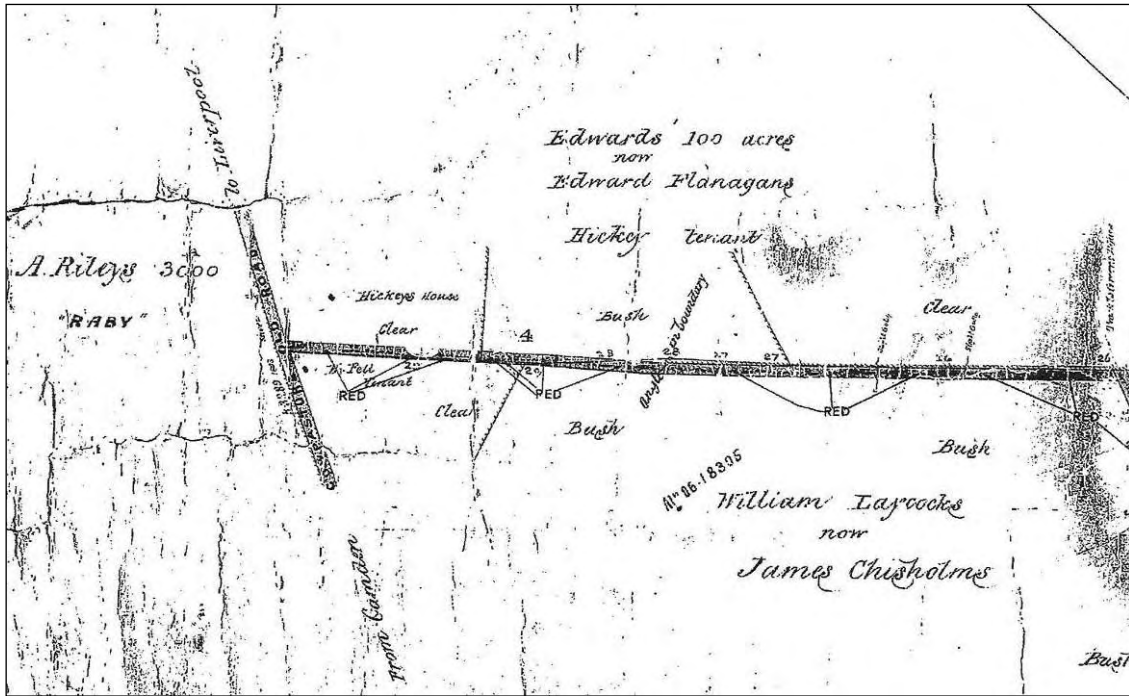


Plate 20: Detail of an 1867 plan showing parts of Portion 1 of the Parish of Minto and Portion 46 of the Parish of Narellan (source: Plan of a road from the Campbell Town Road to the Cowpasture Old Road in the Parishes of Minto and Narellan County of Cumberland to be proclaimed as a Parish Road under the Act of Council 4 Wm No. 11. LTO CP 753.1603).

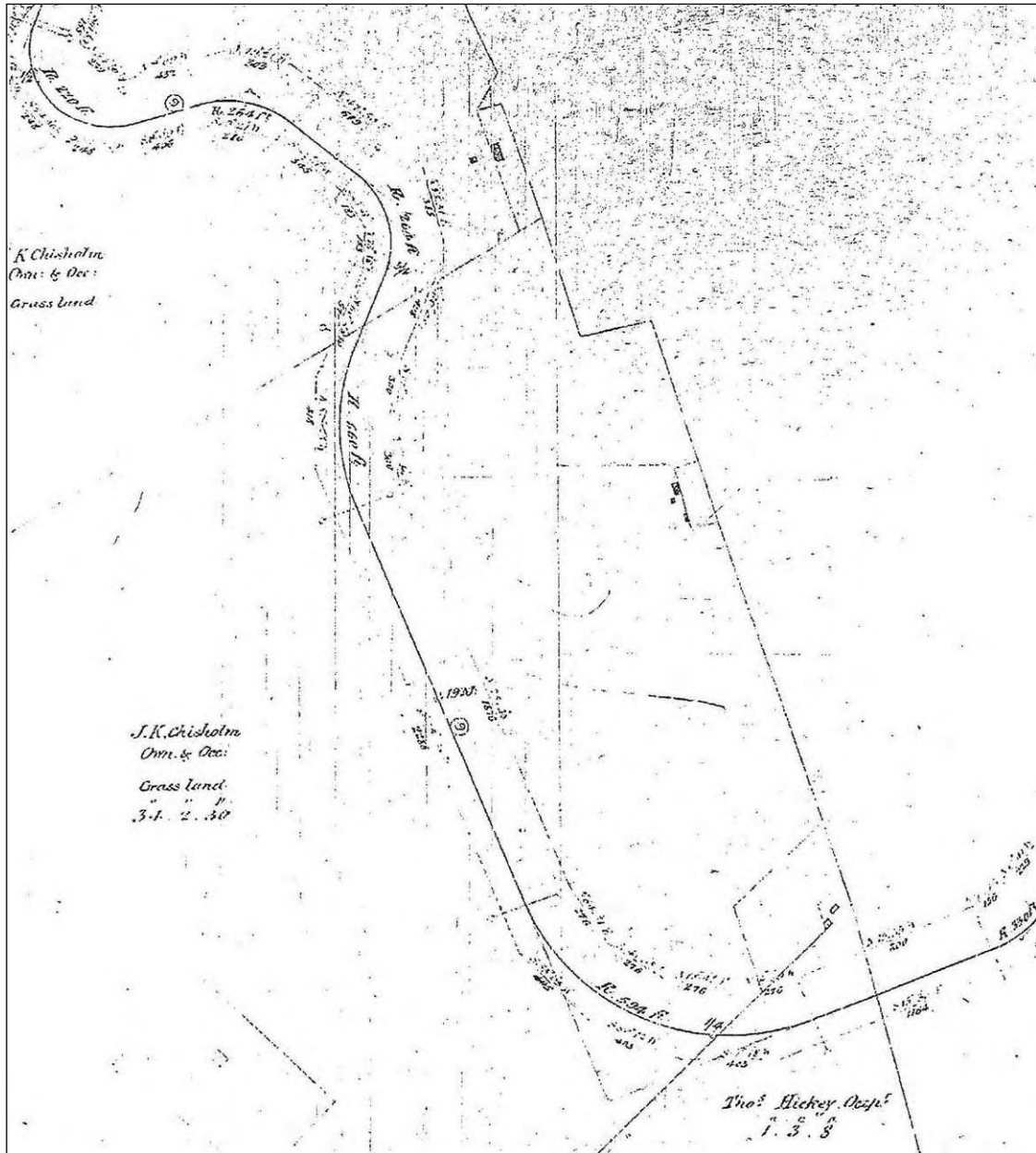


Plate 21: Detail of an 1892 plan, showing Portion 45 of the Parish of Narellan (source: LTO Crown Plan 923.3000).

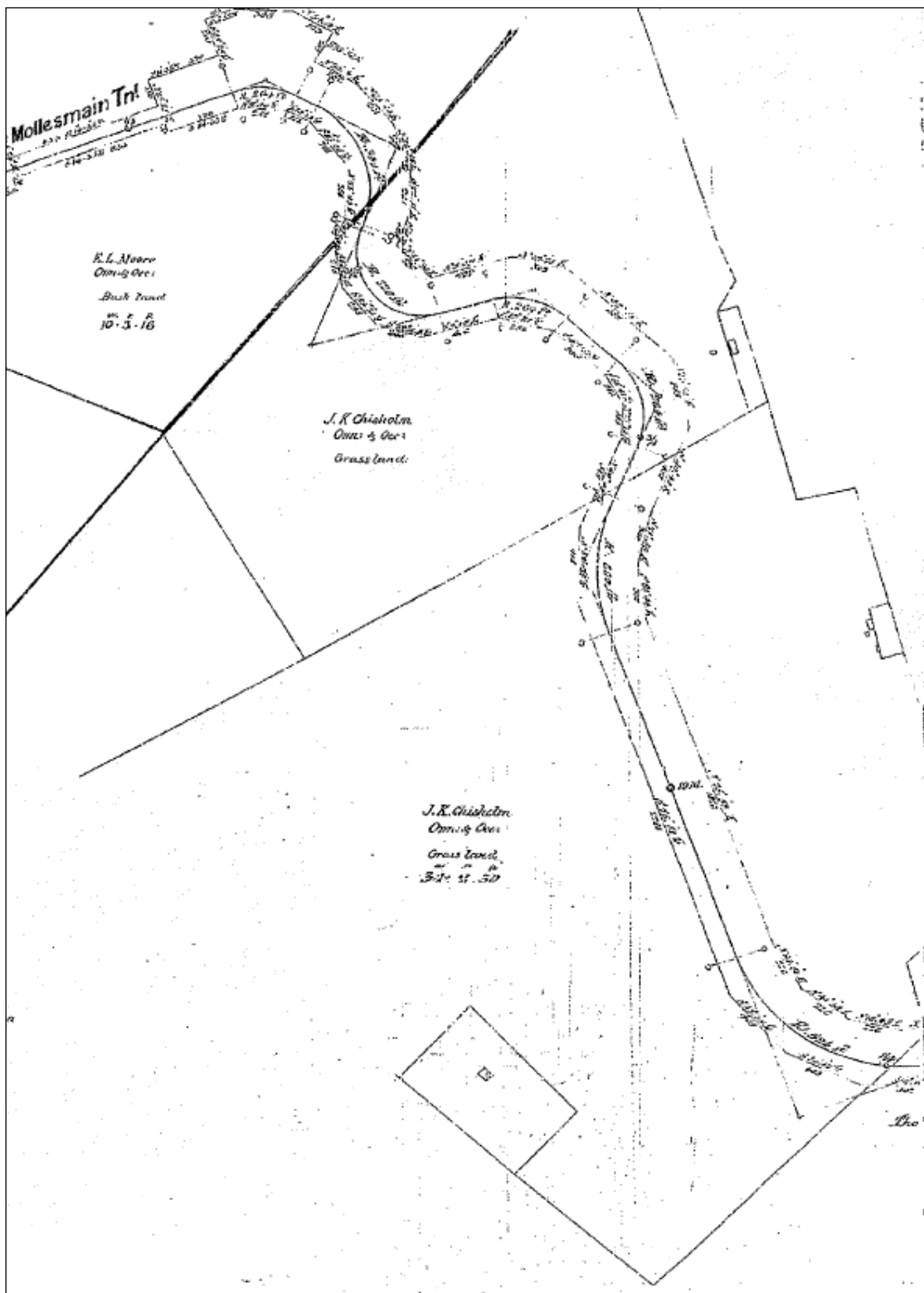


Plate 22: Detail of an 1895 plan, showing Portions 45 and 46 of the Parish of Narellan (source: LTO Crown Plan 288.3000). Note that north is to the right.

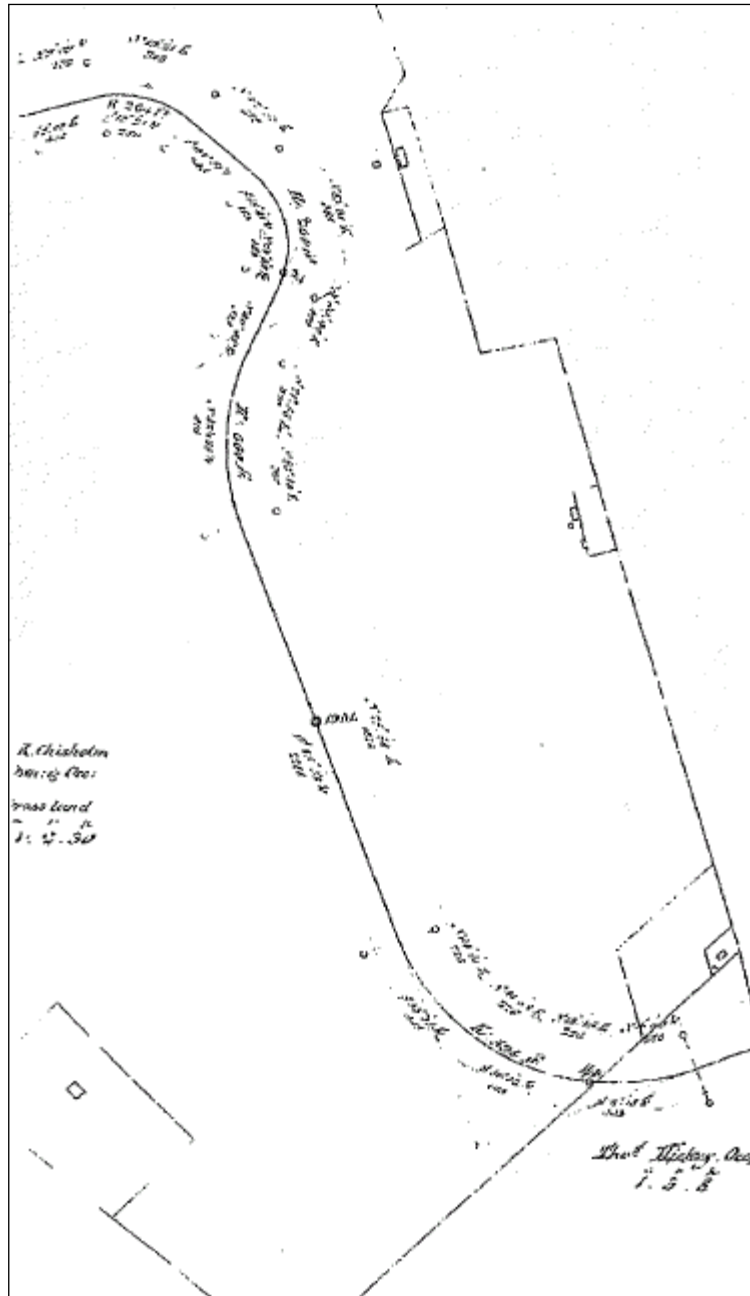


Plate 23: Detail of an 1895 plan, showing Portion 46 of the Parish of Narellan (source: LTO Crown Plan 288.3000).

Portions 47 and 48 (River Hill / Epping Forest)

Portions 47 and 48 were granted to John and Matthew Kearns. A house was built, possibly in the 1820s, and remains standing, on Mississippi Crescent, Kearns, to the east of the Surface Project Area. By 1867 Portion 47 had passed into the ownership of J Kearns as well. Part of the property was cleared, and part was in oats (CP753.1603). Further neighbouring properties were acquired, and the estate was renamed Epping Forest. It remained in the ownership of the Kearns family until c.1960.

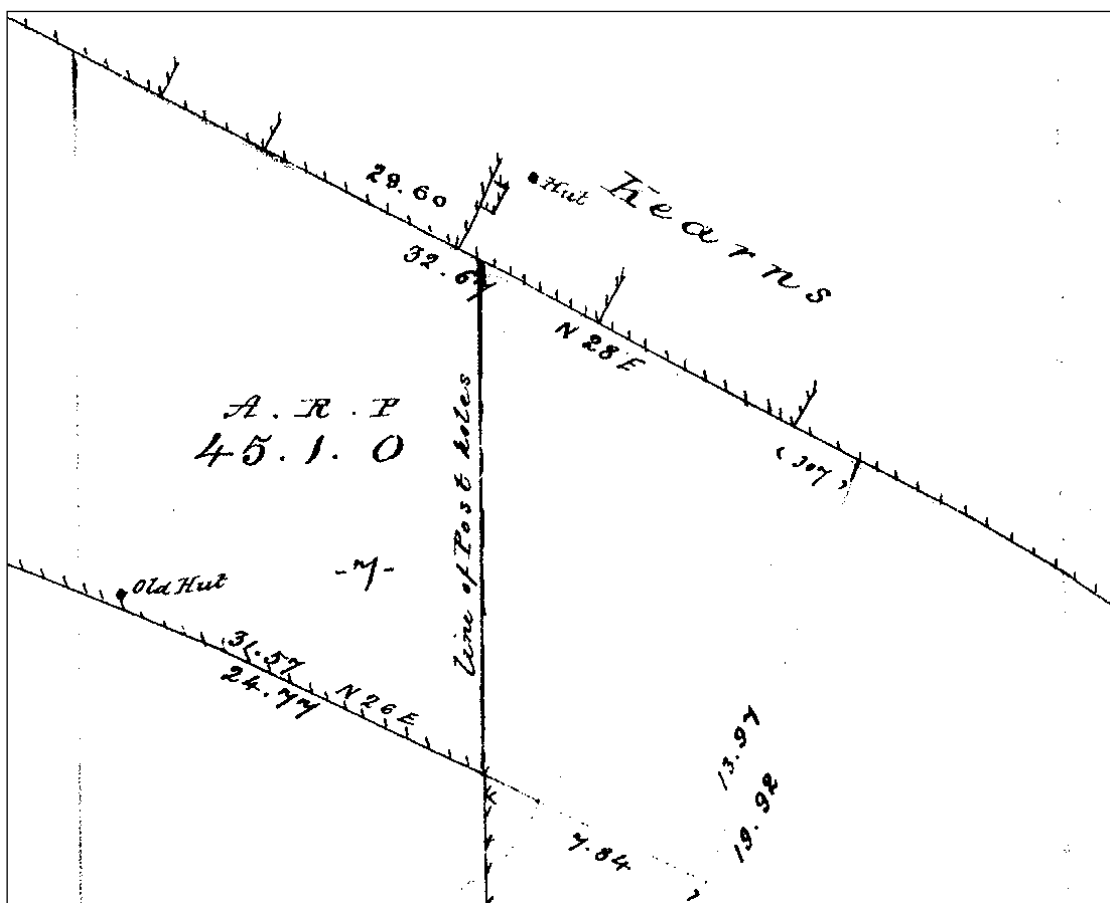


Plate 24: Detail of an 1858 plan of the Eagle Vale Estate (source: Reuss and Browne, July 1858, 'Eagle Vale Estate', State Library of NSW, Subdivision Plans – Campbelltown, ZSP: C4/23).

Summary of the Settlement Pattern in the Surface Project Area

The Surface Project Area lies in south western Sydney in an area that was historically populated, in general, with wealthy landowners who built large homesteads on their estates. The Table below is a summary of homesteads and former homesteads (St Gregory's Agricultural College includes remnants of the former Badgally House), heritage status and their location in the context of the proposed infrastructure.

Table 6: Summary of homesteads and former homesteads within the Surface Project Area

<i>ESTATE</i>	<i>LOCATION OF HOUSE</i>	<i>HERITAGE LISTING</i>
Gledswood	Outside Survey Area; Within Surface Project Area	SHR, LEP, NT, RNE
Saint Gregory's Agricultural College	Outside Survey Area; Within Surface Project Area	LEP
Varroville	Outside Survey Area; Within Surface Project Area	SHR, LEP, NT, RNE
Molles Mains	Outside Survey Area; Within Surface Project Area	No listing – potential archaeological sites (convict road party campsite; Molles Mains homestead).
Denham Court	Outside Surface Project Area	SHR, LEP, NT, RNE
Epping Forest	Outside Surface Project Area	SHR, LEP, NT, RNE
Smeaton Grange	Outside Surface Project Area	Now a Catholic School
Eschol Park	Outside Surface Project Area	LEP, NT
Therry estate	unknown	unknown

3.2.4 Upper Nepean Scheme

The oldest public utility within the Study Area is the Upper Canal, a component of the Upper Nepean Scheme. A Heritage Study and a CMP of the Upper Nepean Scheme and the Upper Canal have been prepared by Higginbotham (Higginbotham et al. Oct 1992; Higginbotham & Associates Aug 2002). Both these documents provide a detailed history of the Upper Canal and form the basis of this summary.

The Upper Nepean Scheme was Sydney's fourth source of water supply and was designed to provide a secure source of water for the growing population of Sydney. Constructed between 1880 and 1888, “the scheme diverted water from the Cataract, Cordeaux, Avon and Nepean rivers to Prospect Reservoir via 64 kilometres of tunnels, canals and aqueducts known collectively as the Upper Canal” (www.sca.nsw.gov.au/dams/history.html).

Construction of the Upper Canal was overseen by the Harbours and Rivers Branch of the Department of Public Works, although much of the work was completed by contractors. Design of the canal is attributed to Edward Moriarty, head of the Harbours and Rivers branch at the time. One of the outstanding features of the Upper Canal Scheme is that it was designed

to work entirely as a gravity supply. Some areas of Sydney, in the ‘gravitational zone’ still receive their water in this way (Higginbotham et al 2002: 8).

The canal transports water by gravity from the catchments in the Southern Highlands, through a 64.5 km long channel. From Pheasant’s Nest Weir on the Nepean River, the Canal proceeds by Tunnel to the Cataract River at Broughton’s Pass. A weir across the Cataract River diverts the flow of the river into the Cataract tunnel. From Broughton’s Pass, the Upper Canal delivers water by gravity through open canal and tunnel to Prospect Reservoir, with a number of subsidiary off-takes such as the storage dams at Liverpool and Ingleburn, used to supply townships along its route including Camden and Campbelltown. From the Prospect Reservoir, the water is distributed to the Sydney water supply network.

(B Cubed Sustainability June 2003: 11)

The Upper Canal was designed and built in response to the conditions of the surrounding countryside. Section profiles were varied according to local conditions. In areas where the ground was soft, the Upper Canal was V shaped and the sides were pitched with shale or sandstone slabs. In other areas, the Upper Canal was U shaped and in these sections it was either cut directly into bedrock or the sides were walled with sandstone masonry. Tunnels were used under hills, unlined through bedrock or lined with brick or stone through softer materials. At the creek crossings (valleys) the water was carried across via wrought iron inverted syphons resting on stone piers (Higginbotham & Assoc Aug 2002:8).

Modifications were made to the surrounding landscape to prevent the entry of contaminated water into the supply system. These included the creation of bunds and drainage channels to direct water to culverts (carrying water under the canal) or flumes (carrying water over the canal). The flumes were mainly originally constructed from timber, but these were gradually replaced with wrought iron, and later, concrete flumes. Bridges carried public traffic over the Upper Canal, while smaller ‘occupation bridges’ allowed land owners with land on each side of the Upper Canal access to both parts of their holdings.

After travelling a distance of 39 $\frac{3}{4}$ miles (64 kilometres) from Pheasants Nest, water entered the Trafalgar Tunnel, where it passed over a measuring or gauging weir and then along the inlet race into Prospect Reservoir. This is the end of the Upper Canal System; the Prospect Reservoir and the Lower Canal comprising the remaining components of the Upper Nepean Scheme (Higginbotham & Assoc Aug 2002).

Development of the Upper Nepean Scheme continued, with upgrades and replacement of damaged materials. The largest development was the augmentation of the Scheme via the construction of four dams in the 1900s - Cataract Dam (1907), Cordeaux Dam (1926), Avon Dam (1927) and Nepean Dam (1935). Standard maintenance of the system has been an ongoing and integral component of the Upper Canal and Upper Nepean Scheme since construction.

Once the Upper Nepean Water Supply Scheme was completed in 1888, the metropolitan Board of Water Supply and Sewerage was able to supply water to an increasing number of localities along the line of the Upper Canal. One of these localities was the Ingleburn/Minto area. Water was supplied directly from the Upper Canal by a 12-inch wood stave pipe. In 1934 supply was made more secure by the construction of Ingleburn Dam ('Sydney Water Supply: Ingleburn Dam').

'Care and maintenance of the Upper Canal in particular was in the hands of Inspectors and maintenance men. They were housed along the Upper Canal in cottages, owned and maintained by the Board. Initially, the men walked or used horses to patrol the length of Upper Canal assigned to them. By the late 1890s, a gradual process of adding roadways along the Canals was under way. The larger creeks were not finally bridged until 1935-6, although one of the early photographs shows a stone embanked roadway across the bed and up the sides of one of the gullies crossed by the Upper Canal' (Higginbotham & Associates Aug 2002: 10).

A CMP for the Upper Canal was prepared by Higginbotham and Associates (Aug 2002), and was endorsed by the NSW Heritage Council in 2003. Whilst official endorsement lasted five years and has now lapsed, the CMP remains the SCA's operating document for the Upper Canal, which is also managed in accordance with the *Heritage Act 1977* (s. 118) (Neil Abrahams pers. Comm. 10/11/2009). The purpose of the CMP was 'to provide approval for operational activities, maintenance works and minor construction works to be undertaken on the Upper Canal' (Higginbotham & Associates Aug 2002: 5), and the Plan is therefore generally not directly applicable to the present project, except where impacts, if any, are proposed.

The CMP makes general recommendations that are guided by design principles with respect to managing change to the Upper Canal. Those recommendations are reproduced in Appendix 3.

4.0 ANALYSIS OF THE UPPER CANAL & ADJACENT LAND

4.1 Evidence from Photographs

The following discussion makes use of available historic aerial photographs and plans. It is not an exhaustive analysis of the Study Area; it considers only potential sites immediately adjacent to the Upper Canal.

Cottages were built to house canal maintenance staff. Eight of the eleven maintenance sections along the Upper Canal originally were assigned as inspector and other maintenance men. The Inspectors were housed in cottages constructed by the Water Board. Each maintenance section has a surviving cottage site (Higginbotham & Associates Aug 2002: 86)

All of the cottages have since been demolished and are likely to survive as archaeological sites. The CMP states that remnant items such as a water tank and tank stand are the surviving remnants of the cottages and that they possess archaeological significance (Higginbotham & Associates Aug 2002: 87). Aerial photographs taken in 1947 indicate four cottage sites within the Study Area.



Plate 25: A 1947 aerial photograph (Department of Lands, Camden, Run 20, Frame 96).

The former cottage site location is indicated by the circle; the irregular feature to the left is Ingleburn Dam, which is listed on the Campbelltown LEP – District 8. The cottage site is Item 23 in Section 7 of the Upper

Canal as identified by Higginbotham 2002: 77; refer Plates 30 & 44). The cottage is located on the southern side of the Upper Canal and is now an archaeological site. The Main Spine Line is to be located on the north side of the Upper Canal.

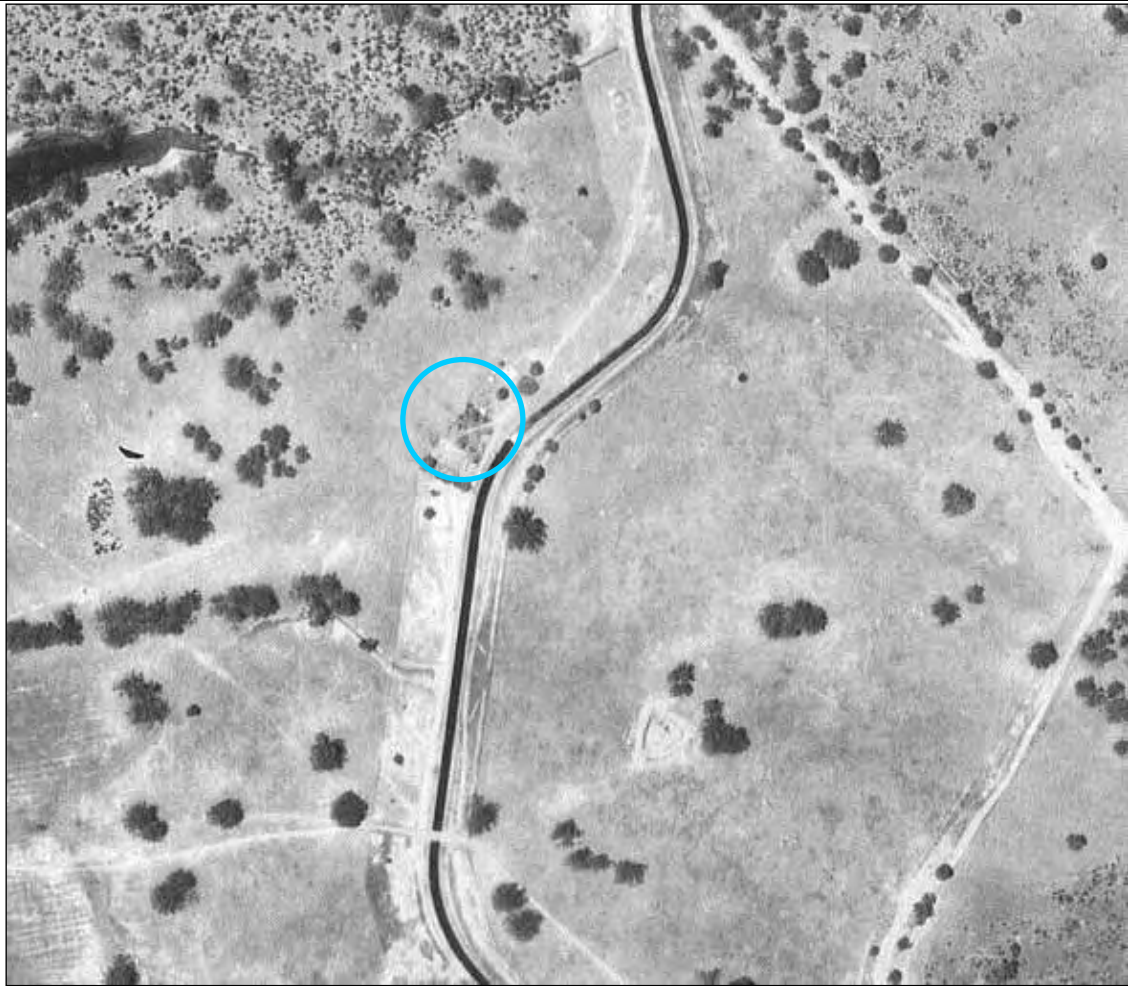


Plate 26: A 1947 aerial photograph (Department of Lands, Camden, Run 20, Frame 96).

A cottage site is circled. It is Item 44 in Section 6 of the Upper Canal as identified by Higginbotham 2002: 76; refer Plate 31) and south of Raby Road. The site is now an archaeological site.

The Main Spine Line will be located on the western side of the canal and impacts to Cottage 44 can be avoided via diversion or an underbore of the site if required.



Plate 27: A 1947 aerial photograph (Department of Lands, Camden, Run 20, Frame 69).

The cottage (Item 2 in Section 6 of the Upper Canal as identified by Higginbotham 2002: 76) is circled. The building is derelict and in poor condition and is located at the northern end of the Badgelly Tunnel. (refer Plate 32).

CC06 is in the general location of the cottage site but at an adequate distance not to affect it.



Plate 28: A 1947 aerial photograph (Department of Lands, Camden, Run 17, Frame 30).

The cottage and Access Road Gate (Items 51 - 52 in Section 5 of the Upper Canal as identified by Higginbotham 2002: 75, are circled. The site is now an archaeological site.

CU10 and CU14 are in the general vicinity of this item but at an adequate distance not to affect it.

The Main Spine Line will be located on the western side of the canal and impacts to Cottage 51 (and associated gate) can be avoided via diversion or an underbore of the site if required.

4.2 Conservation Management Plan

The schematic plans used in this report are reproduced from the *Conservation Management Plan for the Upper Canal, Pheasant's Nest to Prospect Reservoir NSW Vol 1*, (Higginbotham & Associates 2002). The plans have been used to assist with identifying locations along the Upper Canal's length within the Surface Project Area and where it applies to the Study Area.

The Upper Canal has been divided into sections for the purposes of the CMP and those sections have been referred to in this report. They are ordered from north to south with Sections 7, 6 and 5 being relevant to the Amended Project and Study Area. The plans include the locations of the components of the Upper Canal system and numbers these components, which can be related back to management recommendations that would apply to work scheduled for the Upper Canal. In this instance, AGL proposes to undertake works within the vicinity of the Upper Canal. Consultation with the SCA would be required to determine in which situations to apply the recommendations.

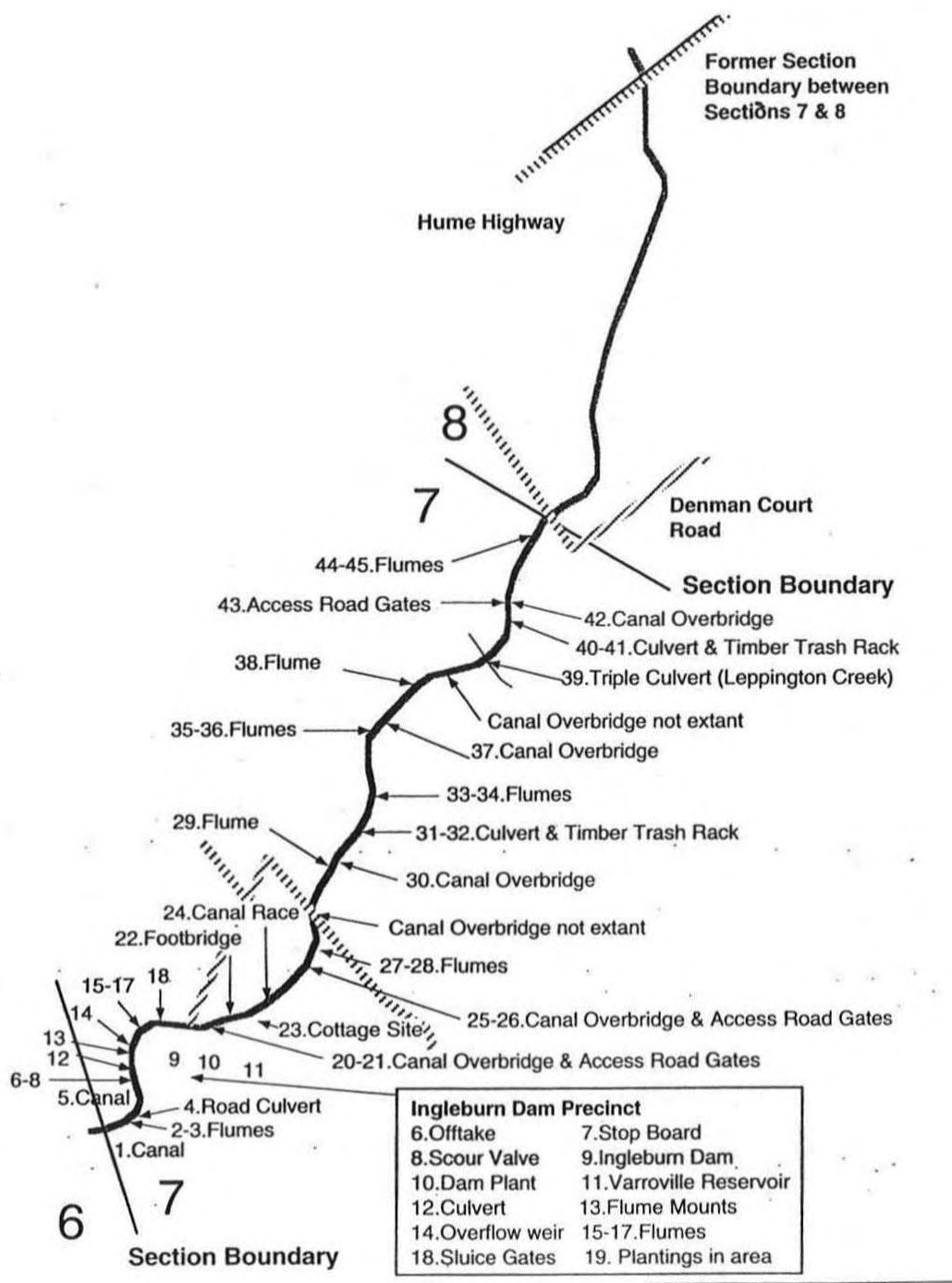


Plate 29: Section 7 of the Upper Canal (source: Higginbotham 2002: 77).

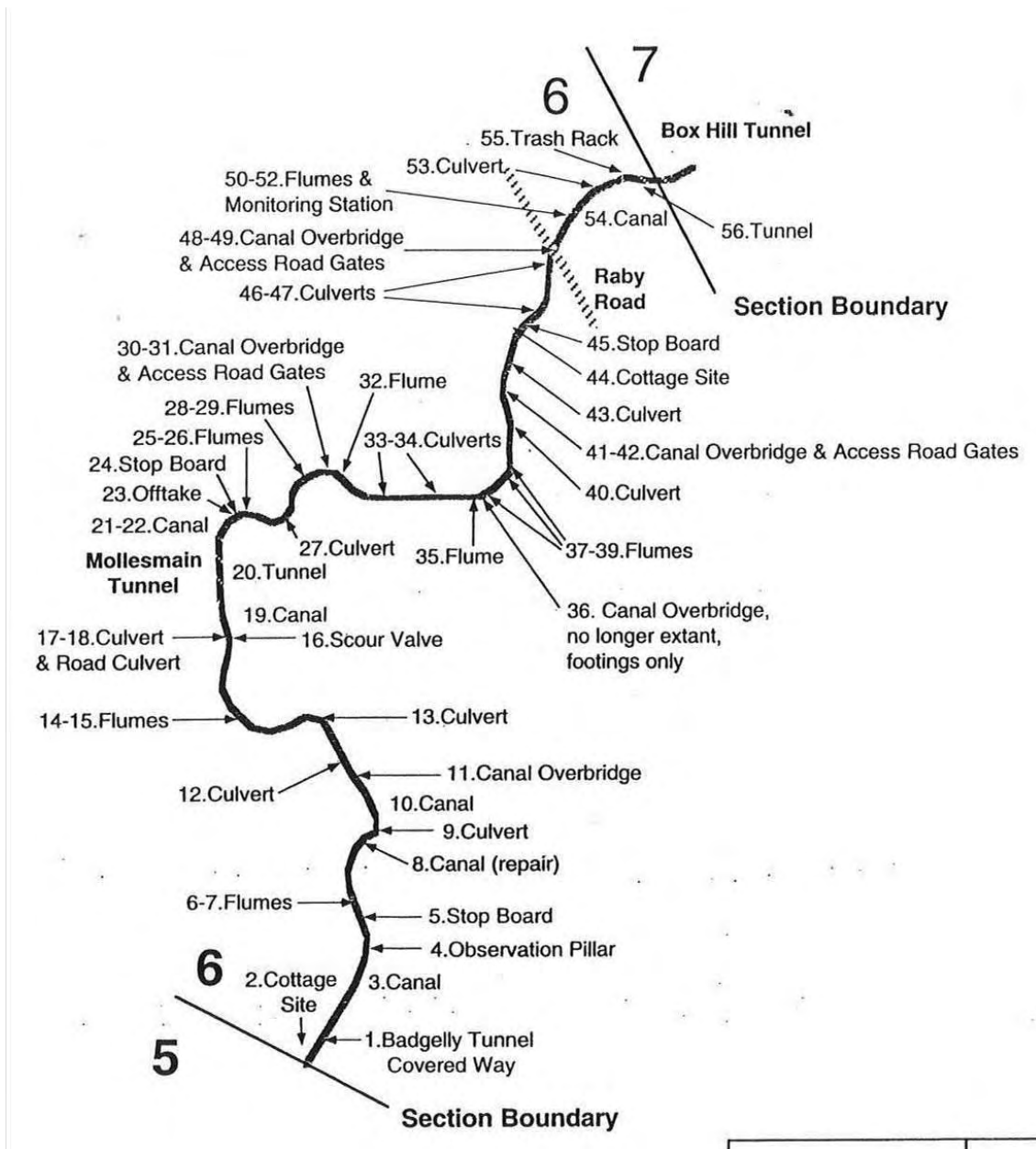


Plate 30: Section 6 of the Upper Canal (source: Higginbotham 2002: 76).

Cottage Site 44 is in Section 6 on the western side of the Canal and therefore not within the current development footprint.

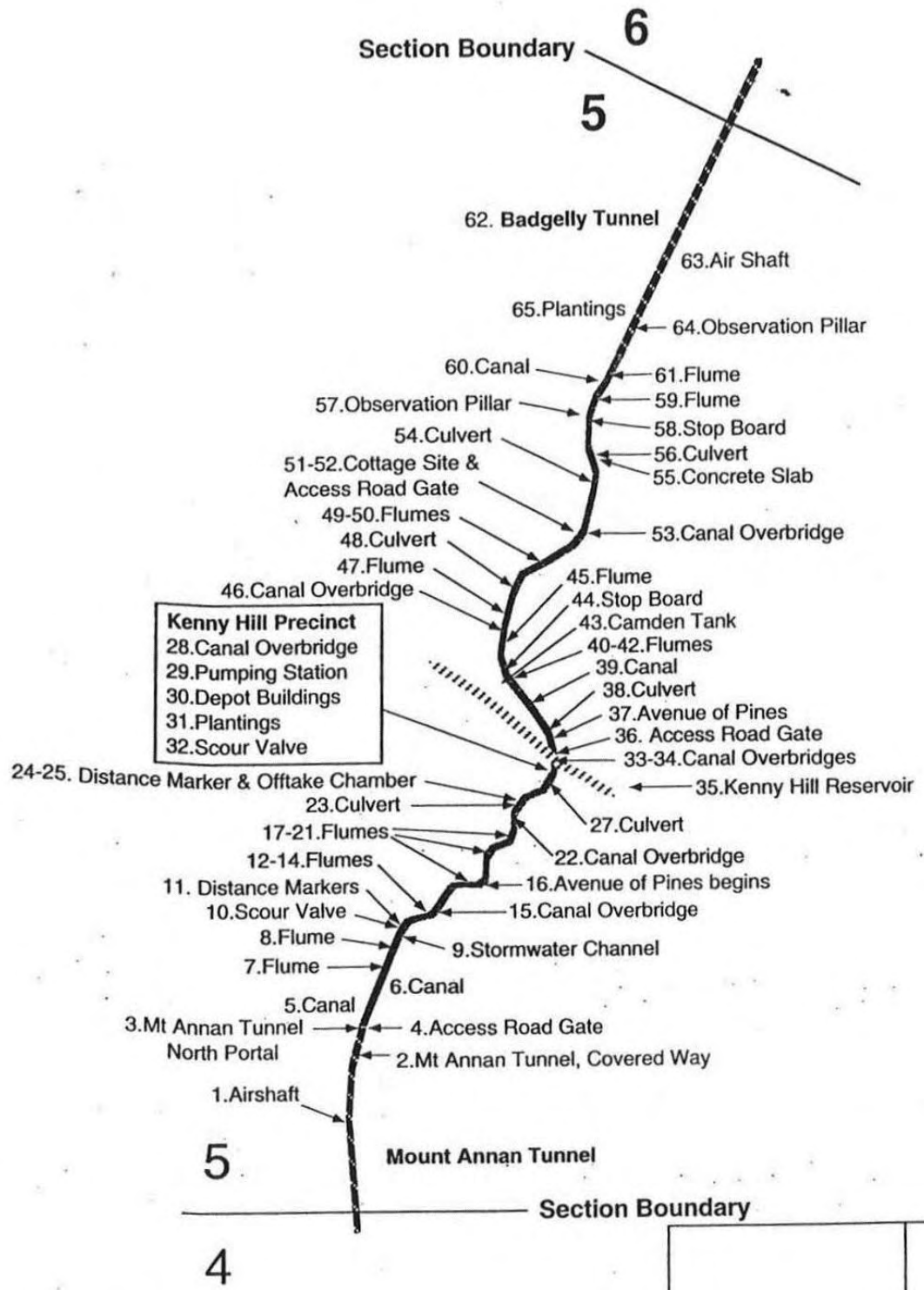


Plate 31: Section 5 of the Upper Canal (source: Higginbotham 2002: 75).

A GGL is proposed for the section of Upper Canal at the location of Items 51 (& 52), 54, 55, 56, 57 and 58.

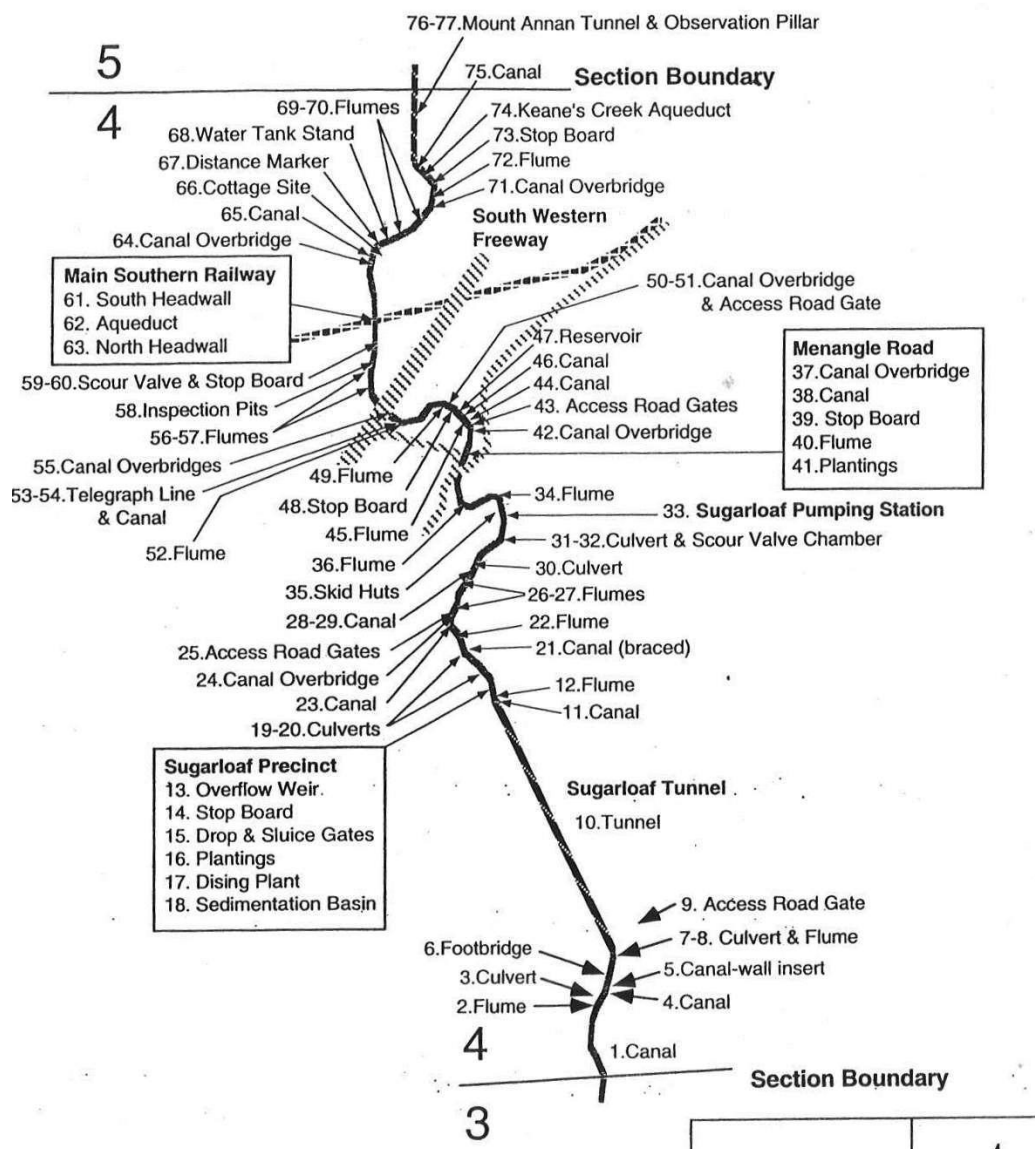


Plate 32: Section 4 of the Upper Canal (source: Higginbotham 2002: 74).

The Amended Project extent stops on the north side of the Main Southern Railway, represented here near the top of the diagram. The majority of the Main Spine Line will be located away from the easement to the east but will encroach again on the Upper Canal curtilage close to the railway line.

4.3 Survey

4.3.1 Survey Methods

The aim of this investigation is to assess all known historic sites situated within the Surface Project Area and to record any new heritage sites within the 11 proposed WSLs (200 m radius buffer) and 25 metres either side of GGLs and access roads. Thus the survey was limited to the Upper Canal corridor and the location of the proposed infrastructure.

Areas within the proposed Surface Project Area that were not surveyed include the possible location of Molles Mains, Gledswood, Varroville and Blairmount. The properties containing these items are not within the footprint of the proposed infrastructure.

The assessment focussed on the following development components that comprise the Survey Area (Figure 2):

- 11 WSLs that includes a 200 metre radius ‘envelope’ around each location
- A 25 metre envelope on either side of proposed GGL routes that connect each WSL and
- Proposed and existing access tracks to each WSL for construction purposes.

An ‘envelope’ approach was taken to assess the proposed development components to allow for each component to be moved within the assessed areas if needed. This decreases the likelihood of impact to known historic archaeological and cultural heritage sites and other environmental constraints. Thus the ‘Study Area’ is comprised of a number of ‘envelopes’ within which the proposed development is to occur.

The field survey methods have been designed to locate historical archaeological sites with reference to the following information:

- The proposed development ‘envelopes’ surrounding each project component;
- Previously registered and identified heritage items and places located within the assessed ‘envelopes’.

Within the identified development ‘envelopes’ targeted pedestrian survey methods were employed for the assessment. For the pedestrian survey, team members (minimum of 3 people at all times) surveyed each ‘envelope’ area. Based on previous archaeological assessment within the region, particular attention was paid to known historic features and those areas most likely to contain historic archaeological sites or features.

Notable historical features were recorded using a GPS. Survey conditions and variables were recorded, whilst the extent of survey was determined after downloading the GPS data into a GIS. Aerial maps, parish plans and existing plans of heritage sites were used to focus on known heritage items and determine the location of previously unrecorded heritage sites or places.

4.3.2 Archaeological Survey Constraints/Factors

Several factors influence the preservation of surface indicators of historical archaeological sites, which would assist with identifying sub-surface relics. The action of ploughing can disturb the top layers of archaeological sites, as can urban developments, the creation of dams and other infrastructure. Similarly to survey for Aboriginal artefacts, ground surface visibility influences the detection of artefacts such as glass and ceramic sherds that could indicate an archaeological site. Vegetation cover and the introduction of fill are two such factors that would obscure evidence of archaeological sites. Finally, the nature of archaeology, being predominantly sub-surface creates a situation where a site may not necessarily be visible.

Other forms of landscape evidence may consist of mature exotic plantings such as bunya pines (*Araucaria* sp) in a group or an avenue, remains of earlier posts and three rail fencing and gates and mounds or hollows surrounded by weeds such as African olive (*Olea europaea* subsp. *cuspidata*,) privet *Ligustrum sinense* (Small leaf privet), *Ligustrum lucidum* (Large leaf privet), and blackberry (*Rubus anglocandicans*).

In general however, historical archaeological sites are detected through documentary research such as plans, historical site descriptions to gain an understanding of site development.

4.3.3 Survey Team

The survey was conducted on:

- Tuesday 26 May 2009
- Friday 12 and Monday 15 June 2009
- Thursday 6, Friday 7 and Wednesday 26 August 2009
- Thursday 24 and Wednesday 30 September 2009
- Monday June 20, 2011
- Thursday June 21, 2012

Field survey was undertaken by Renée Regal, Melanie Thomson and Fenella Atkinson (Biosis Research), Donna Whillock (TLALC) and Glenda Chalker and Rebecca Chalker (Cubbitch Barta NTCAC) on all the dates in 2009. Pamela Kottaras surveyed the revised locations for CU06 and CU20 and targeted areas of the main spine in 2011. The survey was conducted in tandem with the Aboriginal survey team (refer to Aboriginal Cultural Heritage Assessment Biosis Research 2012) in most instances with a separate visit to the WWII aeroplane crash site. Asher Ford surveyed the revised 2012 locations.

4.3.4 Survey Results

The survey results are presented in this section and discussed with regard to potential development impacts in Section 6. Survey of the Study Area, that is, each development envelope yielded the following results:

- Remnants of WWII plane were located during the survey. This site will require a management strategy to ensure that it is not inadvertently damaged or destroyed by the proposed development; and
- Four house sites were identified within the Upper Canal easement and therefore potentially within the proposed development footprint.

4.3.5 Listed Heritage Items within the Survey Area

One listed heritage item occurs within the Survey Area, that is, within the proposal envelopes (Refer Figure 3).

The Upper Canal, traverses a number of the development envelopes, primarily the main GGL spine envelope. The Upper Canal is listed on the SHR, on the SCA's s.170 Register, the Camden LEP 2009 (draft), the Camden LEP 2010, the Campbelltown LEP District 8 and the National Trust. The Upper Canal is comprised of the main water conduit and components such as steps, culverts, bridges etc that are all of heritage value.

A second item, St Gregory's Agricultural College, was originally listed on Schedule 1 of the Camden LEP 48 (now obsolete) and then temporarily on the Camden LEP 2009 (draft) but is not currently listed on the Camden LEP 2010. The College buildings occur within the Campbelltown LGA but the property boundary crosses into the Camden LGA. The college was identified as an item of significance in the *Macarthur Region Environmental Study 1986* (JRC Planning Services), which comprises of a number of buildings within a large curtilage. CU10 and CU14 are both located within the curtilage of St Gregory's Agricultural College but would be located to the south and will be obscured by the steepness of the landscape.

4.3.6 Survey Area – Upper Canal Easement & Development Components

The field survey located a number of potential heritage items within the Survey Area or in close proximity to it. The results of the survey are listed below and then presented in more detail that shows location of the identified items (listed and potential) relative to the proposed development. The Upper Canal is described by the sections used in the CMP and reproduced in Plates 30, 31 and 32.

The field survey identified the following items within proximity to the proposed AGL structures:

- Four demolished houses along the length of the canal – and remnant plantings;
- Possible remains of structures associated with construction camps;
- Remains of earlier post and three rail fencing, and gates, etc;
- Structural items, and plants such as avenue of trees at Kenny Hill;
- Possible locations of construction camps; and,
- Spoil heaps.

4.4 Discussion of Results

4.4.1 Surface Project Area

The Surface Project Area was alienated in the first decades of the nineteenth century and occupation, clearing and development began soon afterwards. Although there were some smaller farms alongside the larger grants, most of these were soon incorporated into large estates. Of these estates, the Surface Project Area includes the main sections of Gledswood, Saint Andrews (later incorporated into Gledswood), Varroville, Molles Mains (also Badgally) and Leppington.

Several of the main houses of these large estates remain standing, and in most cases these they are listed heritage items. Where the extant house is not the original, it is likely to have been constructed on or very close to the location of the original house and main outbuildings were generally constructed close to their homesteads. Thus the main group of standing heritage items and archaeological relics are more likely to be located in the vicinity of the homestead.

However, some of the smaller properties were occupied and farmed, and parts of at least some of the larger estates were leased and farmed by the tenants. Related structures, such as the tenants' houses, are likely to have been less substantial than the main homesteads and do not appear to have survived to the present. Both the large and small properties would also have had features such as wells, fences and barns, which have implications for estates with their main building directly adjacent to the study area. Documentary evidence of the location of some of these structures exists but it is not comprehensive and difficult to locate on modern plans. Because much of the study area has continued to be used for agricultural purposes, rather than being developed, archaeological evidence of many of these features is likely to survive.

Two known sites of construction camps for the Upper Canal are located at Devines Tunnel and Nepean Creek Aqueduct beyond the Surface Project Area and it is possible that that there were a number of similar camp sites along Upper Canal (Higginbotham & Associates Aug 2002: 87).

4.4.2 Survey Photographs



Plate 33: Typical view along the Upper Canal easement, facing south



Plate 34: An example of a section of the Upper Canal with associated infrastructure, also referred to as components in this report.



Plate 35: An example of Upper Canal infrastructure. This is a drain diverting surface water beneath the canal so as not to contaminate drinking water



Plate 36: Culvert 31, located in Section 7



Plate 37: Culvert 31 which drains into a detention basin – view west



Plate 38: The Upper Canal with Overbridge 15 in the background (white structure) and Footbridge 16 in Section 7.



Plate 39: Cottage site 44. The Bunya pines suggest the presence of a building site.



Plate 40: Concrete fencepost, timber fencepost, view to Raby Road



Plate 41: The most likely location of Cottage Site 23 to the north of Ingleburn Dam. The landform suggests a platform that would have supported some sort of structure.

4.4.3 Potential Archaeological Sites

Four definite archaeological sites and one potential archaeological site were identified through documentary research. The Upper Canal maintenance managers' cottages identified in this report (Refer 4.1 "Evidence from Photographs" and 4.2 "Evidence from Plans") all occur within the Upper Canal easement and therefore potentially within the Study Area (development envelope). Other considerations would include the unverified location of potential archaeological sites on the former Molles Mains and undocumented structures that once may have dotted the landscape during the colonial period of the area.

Cottage Sites 23, 44 & 51

The sites of cottages and outbuildings possess archaeological significance. Their recording and archaeological investigation will reveal details of the living and working conditions of the Maintenance Officers and their families. Occasionally outbuildings survive, though many are in a poor condition, most sites possess a surviving water tank and tank stand, with evidence of how the water was pumped from the canal (Higginbotham & Associates Aug 2002: 86).

Construction Camp Sites

Evidence of construction camps has been discovered elsewhere along the Upper Canal and beyond the Survey Area. While no evidence of construction camps was encountered during the

site survey, the possibility that they exist along the Canal easement or in the vicinity of the Upper Canal should be considered. If construction camps exist, they are likely to possess archaeological significance (Higginbotham Aug 2002: 87).

Possible WWII aeroplane crash site

The aeroplane wreckage site was confirmed during the site visit in June 2011 and assessment documents were subsequently released to AGL. Additional information regarding this find is included in Appendix 2.

Undocumented Buildings

Relics related to ancillary buildings of the larger homesteads may survive within the Study Area (that is the Surface Project Area as well as the Subsurface Project Area). Often it is impossible to place ancillary buildings as they were rarely recorded but they nevertheless have existed and may be recognisable in the archaeological record.

5.0 HISTORICAL SITES – SIGNIFICANCE ASSESSMENT

5.1 Heritage Assessment Criteria

The SHR, which was established by the amendments to the NSW *Heritage Act* in 1999, has a separate set of significance assessment criteria broadly based on those of the Australia ICOMOS Burra Charter (1999). To be assessed for listing on the SHR an item needs to meet one or more of the following criteria:

CRITERION	DESCRIPTION	CATEGORY
A	An item is important in the course, or pattern, of NSW's cultural or natural history;	Nature of
B	An item has strong or special association with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history;	Nature of
C	An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW;	Nature of
D	An item has strong or special association with a particular community or cultural group in NSW for social, cultural or spiritual reasons;	Nature of
E	An item has the potential to yield information that will contribute to an understanding of NSW's cultural and natural history;	Nature of
F	An item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history;	Comparative
G	An item is important in demonstrating the principal characteristics of a class of NSW's cultural or natural places; or cultural or natural environments.	Comparative

Table 7: Criteria for the assessment of historic cultural heritage

The criteria above can be applied to built heritage, cultural landscapes and archaeological sites alike to determine State or Local significance. Recent amendments to the *Heritage Act* include the requirement for permits to disturb archaeological sites of State or Local significance only.

The following levels of significance have been attributed to the listed heritage items within the Surface Project Area. The levels of significance are based on background research undertaken to confirm the item's significance. The level of significance attributed to the potential archaeological site belonging to the former Molles Mains homestead, is not detailed but based on the information gathered thus far.

Upper Canal	Registered State significance
Gledswood	Registered State Significance
Varroville House	Registered State Significance
Blairmount	Registered Local Significance
Kenny Hill Reservoir	Registered Local Significance
Stations of the Cross	Registered Local Significance
St Gregory's Agricultural College	Identified Local Significance
Milestones	Registered as "State" Significant on Campbelltown

WWII aeroplane crash site	(Urban Area) LEP 2002 Preliminary assessment suggests at least of Local Significance, possibly higher
Site of Molles Mains	Potentially of State Significance
Other unidentified relics	Unknown

6.0 IMPACT ASSESSMENT

6.1 Proposed Development

As outlined in Section 1.4 the Amended Project includes:

- Construction and operation of eleven WSL containing up to 6 wellheads each;
- Construction and operation of associated GGLs, including interconnection with existing gas fields at Menangle Park (located to the south), along with central water storage points where required;
- Construction of access roads and ancillary infrastructure, including storage yard(s), where required; and,
- Subsurface drilling of lateral in-seam well paths within the bounds of the Subsurface Project Area (Figure 2).

6.1.1 Construction

The construction of WSLs, GGLs, access roads and supporting infrastructure have the potential to disturb soil profiles and in consequence, to impact on historical archaeological sites and cultural values within the overall Study Area (Table 7). It should be noted, however, that impacts to cultural heritage will be mitigated by the relocation of proposed well heads and associated infrastructure where possible within the envelopes. In addition to physical impacts, visual impacts to and from registered heritage items have been addressed in this section.

Construction activities associated with the Amended Project would involve the excavation and disturbance of soils to allow for the construction of gas wells and trenching for the installation of GGLs (AECOM 2010). Minor landform alteration would occur during site preparation, including levelling and grubbing activities (where required) and construction of access roads, with excavated materials being stockpiled on site.

Construction activities likely to disturb soils within the Study Area include:

- Levelling of each WSL in preparation for drill rigs and machinery (where necessary);
- Introduction of shale for hardstand well pad;
- Drilling of wells;
- Excavation of drill pits;
- Trenching for the GGL system; and,
- Access road and infrastructure construction or upgrade.

Alteration to landform would occur during the initial construction phase through the construction of access roads and minor earthworks for site preparation, including the possible clearing and re-levelling of the landscape in order to establish a stable, level drill pad for the drill rig set up.

6.1.2 Subsidence

To date there have been no issues associated with subsidence related to the CGP, however a report was prepared by Mine Subsidence Engineering Consultants (MSEC 2007 in AECOM 2010) in examining the potential for subsidence to occur as a result of the extraction of gas as undertaken by the CGP. The report concluded that surface subsidence would not occur unless:

- Large voids are created in the strata by the mining or extractive activity leading to subsequent collapse, consolidation and subsidence of the overlying strata; and/or,
- Unconsolidated beds of strata are present, which can subsequently be consolidated by the weight of the overburden, following the removal of interstitial fluids.

The proposed extraction of coal seam methane would neither create large voids in the strata, nor leave remnant pillars. The strata within the coal measures are not unconsolidated and in fact are hard and well consolidated rocks. The conditions for significant subsidence to occur are not therefore present and it is concluded that the potential for subsidence to occur as gas is extracted is considered to be negligible (MSEC 2007). No significant subsidence has been observed within existing CGP well fields and is highly unlikely to have impacts on known and unknown historic archaeological sites.

6.2 Potential Impacts

The construction of WSLs, GGLs, access roads and supporting infrastructure would have the potential to disturb soil profiles and potentially impact on historic archaeological deposits, structures and relics located within the Survey Area.

It should be noted however, that the degree of impact resulting from the project components is likely to vary. Where impact is likely to occur, damage to cultural heritage will be mitigated by the relocation of proposed wells and associated infrastructure where possible. Where impact is unavoidable, they would be mitigated through archaeological excavation.

Parish maps of the area indicate that two milestones of State significance were once located on the stretch of Campbelltown Road next to the GGL between RA09 and RA03. Whilst it is more likely that if the milestone survive they are on the eastern side of the road (further to the north milestones are located on the eastern side of the road), care should be taken before construction of the GGL to ensure that milestones and other historical road infrastructure is not within the area of impact.

Other potential impacts would be to items that are not recorded in documentary sources and not visible above the ground surface. These items may include construction camp sites, which have been identified at Devines Tunnel and the Nepean Creek Aqueduct and beyond the Surface Project Area.

Historical research combined with current cadastral information indicates that impacts associated with the proposal have the potential to impact upon:

- The Upper Canal and associated infrastructure;
- Upper Canal Managers' cottage sites;
- Potential construction camp sites;
- Ingleburn Dam;
- St Gregory's Agricultural College; and,
- The WWII aeroplane crash site (Appendix 2).

In addition, given the original size of the historical properties and the potential for satellite outbuildings and infrastructure, there is a small possibility that the Amended Project will impact upon archaeological items associated with the larger homesteads such as wells, barns and stockyards.

The Surface Project Area is a cultural landscape that reflects development from the early colonial period to the present. The rural character of the area retains solid visual links to the place's past (refer Morris & Britton 2000 this report: 19-20). The Amended Project has the potential to impact on the landscape character of the Study Area.

The SHR listed Gledswood homestead is situated on the western edge of the overall Study Area between the Upper Canal and Camden Valley Way. None of the Northern Expansion Project surface components are situated within the SHR curtilage of Gledswood. Several studies of Gledswood have been completed each of which identify significant views and vistas to and from the item and provide recommendations to conserve its visual curtilage (Tropman and Tropman, 2003a and 2003b; Clive Lucas, Stapleton & Partners, 2005; Godden Mackay Logan, 2008). Each of these studies has identified views towards the north of the homestead (in an arc from east to west) as being of most significance. Views to the south are of less value to the visual curtilage of the item and it is in this direction that areas for potential future development have been identified (Tropman and Tropman 2003a: 15, 14, 115, 129, 131; Tropman and Tropman, 2003b; Clive Lucas, Stapleton, 2005:45-46; Godden Mackay Logan, 2008: 99, 133). No proposed surface components will thus be located within a critical part of the visual curtilage of Gledswood. Moreover, if the recommendations of the studies cited above are taken into consideration, then the WSLs could in future be separated from Gledswood by new development of much greater extent and scale.

The SHR listed homestead of Varroville is also situated within the Study Area (Figure 3). The study Colonial Landscapes of the Cumberland Plan and Camden (Morris and Britton, 2000) has identified a significant view corridor from Varroville north east towards Denham Court and Macquarie Fields House (which are situated outside the Study Area), as well as enclosed views to the north and north west, limited by a ridgeline (Morris and Britton, 2000: 98, Figure 4.27.28) (Figure 3). There is therefore no impact on the visual curtilage of Varroville in this direction by the Amended Project. Having regard to the view corridor north east towards Denham Court and Macquarie Fields House, the proposed WSLs RA03 and RA09 may be visible (Figure 3). While most of the intervening landscape is still rural in character, there are existing buildings dotted around the landscape which are of a greater scale and visual presence

than the proposed WLSs (see for example Plate 2). Any visual impact on this view corridor from Varroville is therefore predicted to be negligible.

A summary of potential impacts is presented in Table 7. Specific mitigation measures are provided in Table 9 in Section 7.2, which also includes general recommendations.

Table 8: Summary of Potential Impacts

Project Component	Heritage Sites
Main Spine Line GGL	<ul style="list-style-type: none"> The Upper Canal & associated infrastructure CMP Sections 4, 5, 6 & 7 : <ul style="list-style-type: none"> Mollesmain Tunnel – CMP Section 6 Badgelly Tunnel – Junction of CMP Section 6/5 Steps Bridges Culverts Cottage Site 23 – CMP Section 7 (lot 1 DP 610146) Cottage Site 44 – Section 6 (lot 2 DP 623825) Cottage Site 51 and associated gate (CMP Section 5) Junction of Main Spine Line, Upper Canal and Main Southern Railway southern extent of proposal St Gregory's Agricultural College (lot 100 DP 1119742). This site was mistakenly listed within the Camden LGA and is currently unlisted. It is understood that the buildings are the significant element of the site. WWII aeroplane crash site
RA03 WSL	None
RA09 WSL	None
GGL from RA09 & RA03 to Main Spine Line GGL	<ul style="list-style-type: none"> Milestones – should be on the eastern side of the road on the opposite side to the development, however personnel should be aware that they may occur on the western side of the road
VV03 WSL, GGL and access track	None
CU02 WSL, GGL and access track	None
CU22 WSL, GGL and access track	<ul style="list-style-type: none"> The Upper Canal – CMP Section 6
CU31 WSL, GGL and access track	<ul style="list-style-type: none"> The Upper Canal – CMP Section 6
CU26 WSL, CU29 WSL and access track	None
CU26 WSL and CU29 WSL GGL	<ul style="list-style-type: none"> The Upper Canal – CMP Section 6
CU06 WSL	<ul style="list-style-type: none"> The Upper Canal CMP Section 5 – Badgelly Tunnel
CU10 WSL	None
CU14 WSL	None
GGL between CU10 WSL and Main Spine Line GGL	<ul style="list-style-type: none"> The Upper Canal – CMP Section 5

Project Component	Heritage Sites
GGL between CU14 WSL and Main Spine Line GGL	<ul style="list-style-type: none"> The Upper Canal – CMP Section 5
Access track to and between CU10 & CU14	None
Mount Annan GGL Main Spine Line	<ul style="list-style-type: none"> Upper Canal on the northern side of the junction of the canal with the Main Southern Railway Line

7.0 Conclusions & Recommendations

7.1 Conclusions of this report

The overall Surface Project Area is a cultural landscape resulting from European settlement in the earliest days of the colony. A number of homesteads in the region are listed on the SHR as well as heritage schedules on LEPs, three of which occur within the Study Area, including Upper Canal, St Gregory's Agricultural College (not listed on the LEPs but acknowledged as having potential heritage values) and Ingleburn Dam. None of the other homestead sites are situated within the immediate Study Area, although it should be noted that structures associated with the early operation of historic properties may not have been recorded in documents but survive archaeologically. No relics associated with the homestead sites were noted during the field survey.

The Upper Canal comprises of a number of components, all of which occur within the canal easement. As a consequence, some of those components are potentially within the proposed development footprint. However, the 'envelope' approach of the assessment methodology has provided the opportunity to recommend moving a project component as the first mitigation measure. Where this is not possible and impacts are unavoidable, further mitigation measures have been proposed.

Where recommendations have been made to locate the Amended Project components such as WSLs away from the Upper Canal, it is implicit in the recommendation that consideration should be given to the location of Aboriginal sites and that consultation with the SCA has been undertaken to ensure that the distances are adequate so as not to compromise the structure of the Upper Canal.

The recommendations have been prepared as a guide for heritage management in a general sense. Table 9 identifies specific mitigation measures with regard to heritage items, potential heritage items and archaeological sites that may be affected.

In order to progress the Amended Project and preserve the significant and potentially significant elements within the impact zones, recommendations have been formulated.

7.2 Recommendations

The following management recommendations have been formulated for the Study Area.

Conservation

- As a precautionary principle, consult with the SCA in relation to areas of heritage significance on the Upper Canal prior to commencing works, including delivery of plant and other equipment. Consultation would include defining safe distances of proposed AGL infrastructure with regard to the structural preservation of the Upper Canal.

- In the first instance, AGL should endeavour avoid impact to all identified heritage items.
- Avoidance of impacts to the fabric of the Upper Canal System and associated infrastructure is to be exercised by adjusting the alignment of GGLs and well heads at the design stage, prior to the commencement of ground disturbance works within the Study Area.
- Impacts to the purported WWII plane wreckage site are permissible only after a mitigation strategy has been agreed to by all stakeholders and relevant statutory authorities. That is, the SCA (landowner), AGL (proponent), the Heritage Council (NSW heritage advisory body) and the DoPI (statutory authority). Reference should be made to the Government Architects Office (GAO) 2011 archaeological research design report.
- Where impact to sites is unavoidable, AGL should consult with the SCA to develop an appropriate mitigation strategy. This would include applying the relevant management recommendations of the CMP (Higginbotham and Associates 2002) and including these management recommendations in the existing EMS for the CGP.
- AGL, in consultation with the SCA should consider under-boring where GGLs cross the Upper Canal, in particular, where the project has the potential to impact upon the archaeological site of Cottage 23 (Section 7), Cottage 44 (Section 6) and Cottage 55 of the Upper Canal and in the vicinity of Ingleburn Dam.
- If the placement of project components can be modified to avoid all identified potential impacts, no archaeological work will be required except in the case of unexpected finds.
- Where impact on relics (archaeological sites of local or State significance) cannot be avoided, the site should be archaeologically excavated and an excavation report prepared.
- Variations to the current Amended Project beyond that area assessed within the current Survey Area will require additional archaeological survey and assessment by a qualified heritage consultant. An increase in the Surface Project Area may require further documentary research.
- Care should be taken when moving plant throughout the Surface Project Area to avoid inadvertent impacts to listed and potential heritage items (including archaeological sites).
- Where mitigation of visual impacts is suggested by screening with vegetation, this may be along existing fence lines or directly adjacent to AGL infrastructure rather than to block views from existing structures (amenity rather than significant views).

Ongoing Management

- Incorporate the recommendations of this report into the existing EMS for the CGP.
- Schedule a heritage induction for Amended Project personnel prior to site works commencing. Include this requirement in all construction contracts.

Unanticipated Historical Archaeological Sites

- Should unanticipated relics be identified during any works of each component, works should cease in the vicinity of the find and a qualified archaeologist should be contacted to assess the find. The Heritage Branch, OEH will require notification as per s.146 of the *Heritage Act 1977*.

Human Remains

In the case of any skeletal remains, suspected of being human, being found during any project works, the following process will be required:

- Immediately cease all work at that location and not further move or disturb the remains;
- Notify the NSW Police, the State Coroner and DoPI;
- Notify AGL of the find;
- Notify Aboriginal stakeholders of the find;
- Notify OEH;
- Not recommence work at that location unless authorised in writing by DoPI;
- If the skeletal remains are of Aboriginal ancestral origin, develop an appropriate management strategy in consultation with the Aboriginal stakeholders (refer to the Aboriginal Cultural Heritage Assessment Report [ACHAR] for the Amended Project prepared by Biosis Research 2012); and,
- Record the find in accordance with the *National Parks and Wildlife Act 1974* (NSW) and the NSW National Parks and Wildlife Service (NPWA) (now part of DECC Aboriginal Cultural Heritage Standards and Guidelines Kit (1997) (refer to the ACHAR [Biosis Research 2012]).

7.3 Mitigation Measures

Mitigation Measures

The following table details mitigation measures that have been developed for each of the Amended Project components that have been identified as posing potential impacts to heritage items or historical archaeological sites within the Study Area (Table 9).

Table 9: Mitigation measures for Aboriginal archaeological sites within the Study Area.

Project Component	Heritage Sites	Mitigation Measures
Main Spine Line GGL	<ul style="list-style-type: none"> The Upper Canal & associated infrastructure CMP Sections 4, 5, 6 & 7: <ul style="list-style-type: none"> Mollesmain Tunnel – CMP Section 6 Badgelly Tunnel – Junction of CMP Section 6/5 Steps Bridges Culverts Cottage Site 23 – CMP Section 7 (lot 1 DP 610146) Cottage Site 44 – Section 6 (lot 2 DP 623825) Cottage Site 51 and associated gate (CMP Section 5) Junction of Main Spine Line, Upper Canal and Main Southern Railway southern extent of proposal 	<p>Avoid all Upper Canal components by ensuring that the Main Spine Line and associated construction impacts are confined to existing drainage ditches and tracks.</p> <p>Where the Main Spine Line intersects with the Upper Canal (including a curtilage of 5 m from the edge of the canal) consult with SCA for an appropriate mitigation strategy.</p> <p>Detail design of the junction of Amended Project components must make provision for avoidance of impact to fabric and future damage to the Upper Canal and its components.</p> <p>Cottage site 44 is in the alignment of the Main Spine Line; the Main Spine Line should be moved to avoid impacts to this item.</p> <p>Cottage site 51 (and associated gate) is in the alignment of the Main Spine Line; the Main Spine Line should be moved to avoid impacts to this item.</p> <p>Where the Main Spine Line intersects with the Upper Canal (including a curtilage of 5 m from the edge of the canal) consult with SCA on appropriate mitigation strategies.</p> <p>Detail design of the junction of Amended Project components must make provision for avoidance of impact to fabric and future damage to the Upper Canal and its components.</p>

Project Component	Heritage Sites	Mitigation Measures
	<ul style="list-style-type: none"> St Gregory's Agricultural College (lot 100 DP 1119742). This site was mistakenly listed within the Camden LGA and is currently unlisted. It is understood that the buildings are the significant element of the site. 	Ensure that works stay away from the significant buildings and items.
	<ul style="list-style-type: none"> WWII aeroplane crash site 	Mitigate development impacts through actions agreed by all stakeholders. Archaeological excavation should be considered as an option.
RA03 WSL	None	None
RA09 WSL	None	None
GGL from RA09 & RA03 to Main Spine Line GGL	<ul style="list-style-type: none"> Milestones – should be on the eastern side of the road on the opposite side to the development, however personnel should be aware that they may occur on the western side of the road 	Identify and avoid any impacts. Should impacts be unavoidable, consultation with Campbelltown Council will be required. It is unlikely that milestones are located on the western side of Campbelltown Rd.
VV03 WSL, GGL and access track	None	None
CU02 WSL, GGL and access track	None	None
CU22 WSL, GGL and access track	<ul style="list-style-type: none"> The Upper Canal – CMP Section 6 	Detail design of the junction of Amended Project components must make provision for avoidance of impact to fabric and future damage to the Upper Canal and its components
CU31 WSL, GGL and access track	<ul style="list-style-type: none"> The Upper Canal – CMP Section 6 	Detail design of the junction of Amended Project components must make provision for avoidance of impact to fabric and future damage to the Upper Canal and its components
CU26 WSL, CU29 WSL and access track	None	None
CU26 WSL and CU29 WSL GGL	<ul style="list-style-type: none"> The Upper Canal – CMP Section 6 	Detail design of the junction of Amended Project components must make provision for avoidance of impact to fabric and future damage to the Upper Canal and its components
CU06 WSL	<ul style="list-style-type: none"> The Upper Canal CMP Section 5 – Badgelly Tunnel 	In the vicinity of the Badgelly Tunnel. Consult with SCA on development method to ensure that the integrity of the Badgelly Tunnel is not compromised.

Project Component	Heritage Sites	Mitigation Measures
CU10 WSL	None	None
CU14 WSL	None	None
GGL between CU10 WSL and Main Spine Line GGL	<ul style="list-style-type: none"> The Upper Canal – CMP Section 5 	Detail design of the junction of Amended Project components must make provision for avoidance of impact to fabric and future damage to the Upper Canal and its components
GGL between CU14 WSL and Main Spine Line GGL	<ul style="list-style-type: none"> The Upper Canal – CMP Section 5 	Detail design of the junction of Amended Project components must make provision for avoidance of impact to fabric and future damage to the Upper Canal and its components
Access track to and between CU10 & CU14	None	None
Mount Annan GGL Main Spine Line	<ul style="list-style-type: none"> Upper Canal on the northern side of the junction of the canal with the Main Southern Railway Line 	<p>Where the Main Spine Line intersects with the Upper Canal (including a curtilage of 5 m from the edge of the canal) consult with SCA for an appropriate mitigation strategy.</p> <p>Detail design of the junction of Amended Project components must make provision for avoidance of impact to fabric and future damage to the Upper Canal and its components.</p>

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Heritage Branch Department of Planning: www.heritage.nsw.gov.au

Appendix 3: Upper Canal CMP (Higginbotham 2002)

Management Recommendations

General recommendations:

1. All significant uses, associations, fabric and items identified in the Inventory as possessing significance should be conserved and maintained, subject to the policies, guidelines and recommendations of the Conservation Management Plan.
2. Items inadvertently omitted from or not specifically mentioned in the Inventory, which nonetheless are part of other heritage items identified in the Inventory, should be conserved and maintained, as above.
3. While every effort has been made to provide a complete inventory of heritage items, it is possible that additional items may be recognised. These items should be assessed in accordance with standard guidelines and with reference to this conservation management plan.

(Higginbotham & Associates Aug 2002: 20)

General principles:

1. New buildings or structures should be similar in style, scale, form and building materials to those of heritage significance formerly constructed along the Upper Canal.
2. When placing new items next to heritage items, care should be taken to use similar materials, scale, form and size, where appropriate.
3. New items should not introduce poor standards of workmanship or materials which are incompatible with historical construction along the canal.
4. New items should be unobtrusive and should not obscure adjacent heritage items or detract from their setting.
5. Significant fabric should not be disturbed or demolished by the construction of new items.

(Higginbotham & Associates Aug 2002: 44)

Appendix 4: Heritage Database search results



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Upper Canal System (Prospect Reservoir)

Item

Name of Item: Upper Canal System (Prospect Reservoir)

Other Name/s: includes the Southern Railway Aqueduct

Type of Item: Built

Group/Collection: Utilities - Water

Category: Water Supply Canal

Location: Lat: 150.89260622 Long: -33.81361844

Primary Address: Prospect, NSW 2148

Local Govt. Area: Blacktown

Property Description:

Lot/Volume Code	Lot/Volume Number	Section Number	Plan/Folio Code	Plan/Folio Number
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Boundary: The Upper Canal forms a major component of the Upper Nepean Scheme. The Upper Nepean Scheme supplies water from the Cataract River at Broughtons Pass to the Crown Street reservoir, a distance of 63.25 miles. The Upper Canal commences by tunnel from Pheasant's Nest Weir on the Nepean River and extends through the Local Government areas of Wollondilly, Liverpool, Holroyd, Fairfield, Campbelltown and Camden.

All Addresses

Street Address	Suburb/Town	LGA	Parish	County	Type
	Prospect	Blacktown			Primary
	Horsley Park	Fairfield			Alternate
	Cecil Park	Liverpool			Alternate
	West Hoxton	Liverpool			Alternate
	Denham Court	Campbelltown			Alternate
	Leppington	Camden			Alternate
	Catherine Field	Camden			Alternate
	Currans Hill	Camden			Alternate
	Mount Annan	Camden			Alternate
	Gilead	Campbelltown			Alternate
	Appin	Wollondilly			Alternate

Owner/s

Organisation Name	Owner Category	Date Ownership Updated
Sydney Catchment Authority	State Government	

The Upper Canal is significant as a major component of the Upper Nepean

Statement of Significance

Scheme. As an element of this Scheme, the Canal has functioned as part of Sydney's main water supply system for over 120 years. Apart from maintenance and other improvements, the Upper Canal has changed little.

As part of this System, the Canal is associated with Edward Moriarty, Head of the Harbours and Rivers Branch of the NSW Public Works Department.

The Canal is aesthetically significant, running in a serpentine route through a rural bushland setting as an impressive landscape element with sandstone and concrete-lined edges;

The Canal is significant as it demonstrates the techniques of canal building, and evidence of engineering practice. The Canal as a whole is an excellent example of 19th century hydraulic engineering, including the use of gravity to feed water along the canal.
(BCubed Sustainability, 2/2006).

The Upper Nepean Scheme is significant because:

- * In its scope and execution, it is a unique and excellent example of the ingenuity of late 19th century hydraulic engineering in Australia, in particular for its design as a gravity-fed water supply system.
- * It has functioned as a unique part of the main water supply system for Sydney for over 100 years, and has changed little in its basic principles since the day it was completed.
- * It represented the major engineering advance from depending on local water sources to harvesting water in upland catchment areas, storing it in major dams and transporting it the city by means of major canals and pipelines.
- * It provides detailed and varied evidence of the engineering construction techniques prior to the revolution inspired by reinforced concrete construction, of the evolution of these techniques (such as the replacement of timber flumes with wrought iron and then concrete flumes), and of the early use of concrete for many engineering purposes in the system.
- * The scheme possesses many elements of infrastructure which are of world and national renown in technological and engineering terms.
- * Many of the structural elements are unique to the Upper Nepean Scheme.

Reference: Edward Higginbotham & Associates, SCA Heritage and Conservation Register

Date: 18 December 2000

Date Significance Updated: 17 Sep 03

Note: There are incomplete details for a number of items listed in NSW. The Heritage Branch intends to develop or upgrade statements of significance and other information for these items as resources become available.

Description

History

Historical Notes:


In 1867, the Governor of NSW appointed a Commission to recommend a scheme for Sydney's water supply, and by 1869 it was recommended that construction commence on the Upper Nepean Scheme. This consisted of two diversion weirs, located at Pheasant's Nest and Broughton's Pass, in the Upper Nepean River catchment, with water feeding into a series of tunnels, canals and aqueducts known as the Upper Canal. It was intended that water be fed by gravity from the catchment into a reservoir at Prospect. This scheme was to be Sydney's fourth water supply system, following the Tank Stream, Busby's Bore and the Botany (Lachlan) Swamps.

Designed and constructed by the Public Works Department of NSW, Prospect Reservoir was built during the 1880s and completed in 1888. Credit for the Upper Nepean Scheme is largely given to Edward Orpen Moriarty, the Engineer in Chief of the Harbours and Rivers Branch of the Public Works

Department from 1858-88 (B Cubed Sustainability, 2005, 7).

Historic Themes

Australian Theme (abbrev)	New South Wales Theme	Local Theme
4. Settlement - Building settlements, towns and cities	Utilities - Activities associated with the provision of services, especially on a communal basis	Providing drinking water -
7. Governing - Governing	Government and Administration - Activities associated with the governance of local areas, regions, the State and the nation, and the administration of public programs - includes both principled and corrupt activities.	Building and operating public infrastructure -

Assessment Criteria Items are assessed against the  **State Heritage Register (SHR) Criteria** to determine the level of significance. Refer to the Listings below for the level of statutory protection.

Procedures /Exemptions

Section of Act	Description	Title	Comments	Action Date
21(1)(b)	Conservation Plan submitted for endorsement	Upper Canal CMP, Pheasant's Nest to Prospect Reservoir, Vols 1-3 (Aug 2002)		Jun 27 2003
57(2)	Exemption to allow work	Standard Exemptions	<p>SCHEDULE OF STANDARD EXEMPTIONS HERITAGE ACT 1977 Notice of Order Under Section 57 (2) of the Heritage Act 1977</p> <p>I, the Minister for Planning, pursuant to subsection 57(2) of the Heritage Act 1977, on the recommendation of the Heritage Council of New South Wales, do by this Order:</p> <p>1. revoke the Schedule of Exemptions to subsection 57(1) of the Heritage Act made under subsection 57(2) and published in the Government Gazette on 22 February 2008; and</p> <p>2. grant standard exemptions from subsection 57(1) of the Heritage Act 1977, described in the Schedule attached.</p> <p>FRANK SARTOR Minister for Planning Sydney, 11 July 2008</p> <p>To view the schedule click on the Standard Exemptions for Works Requiring Heritage Council Approval link below.</p>	Sep 5 2008

 **Standard Exemptions** for Works Requiring Heritage Council Approval

Listings

Heritage Listing	Listing Title	Listing Number	Gazette Date	Gazette Number	Gazette Page
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<i>Heritage Act - State Heritage Register</i>		01373	18 Nov 99		
<i>Heritage Act - s. 170 NSW State agency heritage register</i>					
<i>Local Environmental Plan</i>	Wollondilly				
<i>National Trust of Australia register</i>					

Study Details

Title	Year	Number	Author	Inspected by	Guidelines Used
Sydney Water Section 170 Register	1996		Graham Brooks and Associates		No

References, Internet links & Images

Type	Author	Year	Title	Internet Links
Written	Lawrie Greenup	2009	Upper canal and infrastructures affected by LW409 mining :archival photographic recording	
Written	Australian Museum Business Services	2008	Statement of heritage impact: Pheasant's Nest and Broughton's Pass Weirs: Environmental Flow Releases for the Upper Hawkesbury-Nepean River	
Written	Martin James	2006	Upper Canal Aqueduct Scour Valves Upgrade Review of Environmental Factors	
Written	B Cubed Sustainability	2006	Upper Canal Aqueduct Scour Valves Upgrade Heritage Impact Statement (June 2006)	
Written	B Cubed Sustainability P/L	2005	Prospect (Reservoir) Scout/Outlet - Heritage Impact Statement	
Written	Sophy Townsend, URS	2003	Final Report - Review of Environmental Factors for the Proposed Maintenance and Preventative Works on the Upper Canal due to Impacts of Mining at Westcliff Colliery (March 2003)	
Written	Cardno MBK	2003	Effects of Mining of Longwalls 5A5, 5A6, 5A7 and 5A8 - Interim Report - Open Canals and Concrete Aqueducts C and D (August 2003)	
Written	Caitlin Allen, Conservation Archaeologist, NSW Government Architect's Office	2003	Southern Railway Aqueduct on the Upper Canal at Mount Annan Refurbishment and Repair Heritage Impact Assessment	
Written	RTA Operations	2003	Statement of Heritage Impact	
Written	Edward Higginbotham & Associates	2002	Conservation Management Plan for the Upper Canal, Pheasant's Nest to Prospect Reservoir	
Written	Edward Higginbotham, Terry Kass, Vince Murphy, John Collocott, Toby Fiander, Siobhan Lavelle	1992	Heritage Study of the Upper Canal, Prospect Reservoir & Lower Canal (Upper Nepean Scheme): Volume 3 - Conservation Policy	

Note: Internet links may be to web pages, documents or images.



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Gledswood

Item

Name of Item: Gledswood
Type of Item: Complex / Group
Group/Collection: Farming and Grazing
Category: Homestead Complex
Location: Lat: 150.78226907 Long: -34.0023918
Primary Address: 900 Camden Valley Way, Catherine Field, NSW 2171
Local Govt. Area: Camden

Property Description:

Lot/Volume Code	Lot/Volume Number	Section Number	Plan/Folio Code	Plan/Folio Number
LOT	12	-	DP	748303

All Addresses

Street Address	Suburb/Town	LGA	Parish	County	Type
900 Camden Valley Way	Catherine Field	Camden	Narellan	Cumberland	Primary

Owner/s

Organisation Name	Owner Category	Date Ownership Updated
Calda Pty Ltd	Private	

Statement of Significance

Gledswood is an early 19th century farm estate that has close associations with the Camden area which is the birthplace of the Australian wool industry. Built by James Chisholm in c.1830, Gledswood remained the Chisholm family residence for 90 years. A prominent feature at Gledswood is an outstanding colonial garden that was expanded in 1870. The garden featured in Horticultural Magazine (1870) and was romanticised by Hardy Wilson in 1920. The intense and continual interest in gardening at Gledswood has made Gledswood a prominent contributor to the art of gardening within NSW.

Gledswood has historical significance for its association with the early development of Australia's wine industry. James Chisholm junior planted a vineyard in 1830, and in 1847 vinedressers from Germany were imported to work it. A convict built cellar under the homestead was capable of holding 20,000 bottles of wine. (Everett, 2004)

Date Significance Updated: 29 Jul 03

Note: There are incomplete details for a number of items listed in NSW. The Heritage Branch intends to develop or upgrade statements of significance and other information for these items as resources become available.

Description

Designer/Maker: Unknown

Builder/Maker: James Chisholm

Construction Years: 1827 - 1855

Physical Description: Farm:

Gledswood is set on 65 hectares (150 acres) of pastoral land. The Gledswood estate is located off Camden Valley Way south of Raby Road, Catherine Field and was built by James Chisholm c.1830 on land granted to him in 1829. Gledswood was later renovated and upgraded, probably in the 1870's, to include the Gothic verandas and porches. The house has a long stone flagged front veranda on the north side with two gables breaking the eavesline and marking the entrances. Decorative features include bargeboards in a rustic pattern, shuttered french doors and a front door with fanlight and side lights. The walls are rendered brick. The kitchen has been separated from the house and forms the courtyard. Located in the central core of the property is a selection of Georgian Buildings.

Old woodland remnants such as a group of two broad leaved apple trees (*Angohora subvelutina*) frame the entry views to the homestead and the distant Araucarias. Hoop Pines (*Araucaria cunninghamii*) identify the location of the homestead long before any buildings are in view and are definitive of the 19th century landscape character, occurring in association with other typical species found throughout the district.

Outbuildings:

The outbuildings within the estate include large cellars, an administration wing, a fine two storey stable building now used as a restaurant, machinery shed and other farm buildings such as the decorative wooden hen house. Gledswood is the first of such early properties visible when travelling from Sydney along the Hume Highway.

Garden:

A highly maintained lawn and formal garden in front and adjacent to the house along with pockets of bushland dominated by vines and shrubs now considered weeds, are common thematic elements of 19th century landscapes. Close to the homestead is a variety of wild hedgerow and the front of the administration building, south of the wilderness is dominated by a grove of pepper trees (*Schinus molle* var. *areira*), two of which may possibly date from the mid to late 19th century. This species is also scattered throughout the livestock yard and is around the outbuildings and have the same evocative character as the plantings of Belgenny Farm Homestead at Camden South. Further plantings in this area include an old stunted Moreton Bay Fig (*Ficus macrophylla*). To the south of the building is a black locust /false acacia tree (*Robinia pseudoacacia*).

The northern front to the homestead is in the shape of an expansive ellipse, bounded by a formal gravel driveway with a remnant planting of a lone large white cedar (*Melia azedarach* var. *australasica*) on the edge of the driveway.

The eastern garden, set out in the gardenesque style, continues this more formal thematic planting. The trees and shrubs in this area are an eclectic mix of species is typical of late 19th century and early 20th century botanical collections. A rose garden has been established east of the homestead and adjacent to this older formal garden. The eastern lawn contains further planting of jacaranda (*Jacaranda mimosifolia*) and other associated species. The old stunted macadamia nut tree (*Macadamia integrifolia*) is located south-east of the homestead and is a rare specimen planting in this district.

Sources:

"Early Colonial Homes of the Sydney Region 1788 - 1838".
 "Camden Significant Tree and Vegetated Landscape Study", Volume 3 of 3

Morris, C. & Britton, G., "Colonial Landscapes of the Cumberland Plain and Camden NSW", Volume 2, 2000.

**Physical Condition
and/or
Archaeological
Potential:**

Gledswood has been left largely unaltered in design. It has archaeological potential to review evidence of early European farming practices and an understanding of early gardening practices. **Date Condition Updated:**
 29 Jul 03

**Modifications and
Dates:**

Major modifications to Gledswood occurred c.1870's with the addition of Gothic verandas and porches and the expansion of existing gardens. Other modifications have been the adaptive re-use of buildings such as the two storey stables now used as a restaurant.

Further Information:

HO held discussions with a number of interested parties in 2001 concerning this site. Some of these involved retirement village style development proposals. The property was placed on the market in 2003 and sold around March 2003. Any development proposals would require a heritage impact statement which focuses on how the heritage significance of Gledswood can be retained and conserved while allowing appropriate changes.

Current Use:

Tourist Complex and private residence

Former Use:

Farm

History

Historical Notes:

Upon receiving a land grant on Cowpastures rural downs in 1829, James and Elizabeth Chisholm built Gledswood in 1830. A large stuccoed rubble stone house was built in the style of an Indian bungalow with an attached kitchen wing and a nearby barn. The property remained in the Chisholm family for the next 90 years.

Gledswood was extensively renovated during the c.1870's and was noted for its outstanding garden which was expanded by Charles Kinghorne Chisholm and described in the Horticultural Magazine (1870) in the same year that Maryland was featured. The garden remained a prominent feature of Gledswood and was romanticised by Hardy Wilson c.1920. Much like Camden Park Estate, Gledswood has close association with the historical Camden district and for its involvement in pioneering Australia's wool industry. Today, Gledswood has been developed as a tourist farm with a reduced farm curtilage.

James Chisholm purchased a farm in the Minto district in 1816 and renamed the new estate Gledswood and his son Jas planted a vineyard in 1830. Vinedressers Frederick and Anna Worner of Wittenberg (Germany) were imported to work the vineyard in 1847. Chisholm once wrote 'There is much about the vine that renders it an attractive pursuit.' The convict built cellar under the main homestead was capable of holding 20,000 bottles (Everett, 2004).

Historic Themes


Australian Theme (abbrev)	New South Wales Theme	Local Theme
2. Peopling - Peopling the continent	Convict - Activities relating to incarceration, transport, reform, accommodation and working during the convict period in NSW (1788-1850) - does not include activities associated with the conviction of persons in NSW that are unrelated to the imperial 'convict system': use the theme of Law & Order for such activities	Working on private assignment -
3. Economy - Developing local,	Agriculture - Activities relating to the cultivation and rearing of plant and animal species, usually for commercial purposes, can include	Growing vines and maintaining

regional and national economies	aquaculture	vineyards -
3. Economy - Developing local, regional and national economies	Agriculture - Activities relating to the cultivation and rearing of plant and animal species, usually for commercial purposes, can include aquaculture	Clearing land for farming -
3. Economy - Developing local, regional and national economies	Environment - cultural landscape - Activities associated with the interactions between humans, human societies and the shaping of their physical surroundings	(none) -
3. Economy - Developing local, regional and national economies	Pastoralism - Activities associated with the breeding, raising, processing and distribution of livestock for human use	(none) -
4. Settlement - Building settlements, towns and cities	Accommodation - Activities associated with the provision of accommodation, and particular types of accommodation – does not include architectural styles – use the theme of Creative Endeavour for such activities.	(none) -
9. Phases of Life - Marking the phases of life	Persons - Activities of, and associations with, identifiable individuals, families and communal groups	(none) -

Assessment of Significance

SHR Criteria a) [Historical Significance]	The Gledswood Estate was built by James Chisholm c.1830 on land granted to him in 1829 and was upgraded in 1870 to include planned renovations to the buildings and extensions to the gardens that followed within the style of colonial style design.
SHR Criteria b) [Associative Significance]	Gledswood's outstanding 19th century garden was mentioned in the Horticulural Magazine c.1870 and by William Hardy Wilson c.1920 Gledswood remained in the Chisholm family for 90 years and has a strong association with the Camden district.
SHR Criteria c) [Aesthetic Significance]	Romanticised by William Hardy Wilson, Gledswood contains one of the best of the Cowpasturers gardens.
SHR Criteria d) [Social Significance]	Gledswood estate has a strong association with the Camden district, much like Camden Park, . Gledswood's unique character is recognised by well maintained colonial gardens and buildings that offer a strong historic rural character.
SHR Criteria e) [Research Potential]	Gledswood has high potential to yield information on colonial settlement within Cowpastures rural downs, and in a wider sense, Camden and Cumberland County. This information combined with other studies within the area will greatly contribute to a better understanding of our cultural history.
SHR Criteria f) [Rarity]	Gledswood is a rare example of an early Australian homestead characterised by mid 19th century gardens and ornamental plantings.
SHR Criteria g) [Representativeness]	Gledswood is representative of early colonial settlement patterns in the Cowpastures rural downs area. Gledswood's colonial gardens is presentative of traditional European influenced landscapes and of 19th and early 20th century interest in botanical collections.

Integrity/Intactness: Gledswood has been left largely unaltered in design although adaptive re-use of the buildings and new plant material has been introduced.

Assessment Criteria Items are assessed against the  **State Heritage Register (SHR) Criteria** to determine the level of significance. Refer to the Listings below for the level of statutory protection.

Recommended Preparation of Conservation Management Plan (CMP) for the entire estate.

Management

Procedures /Exemptions

Section of Act	Description	Title	Comments	Action Date
57(2)	Exemption to allow work	Standard Exemptions	<p>SCHEDULE OF STANDARD EXEMPTIONS HERITAGE ACT 1977 Notice of Order Under Section 57 (2) of the Heritage Act 1977</p> <p>I, the Minister for Planning, pursuant to subsection 57 (2) of the Heritage Act 1977, on the recommendation of the Heritage Council of New South Wales, do by this Order:</p> <p>1. revoke the Schedule of Exemptions to subsection 57 (1) of the Heritage Act made under subsection 57(2) and published in the Government Gazette on 22 February 2008; and</p> <p>2. grant standard exemptions from subsection 57(1) of the Heritage Act 1977, described in the Schedule attached.</p> <p>FRANK SARTOR Minister for Planning Sydney, 11 July 2008</p> <p>To view the schedule click on the Standard Exemptions for Works Requiring Heritage Council Approval link below.</p>	Sep 5 2008



Standard Exemptions for Works Requiring Heritage Council Approval

Listings

Heritage Listing	Listing Title	Listing Number	Gazette Date	Gazette Number	Gazette Page
<i>Heritage Act - State Heritage Register</i>		01692	22 Dec 06	191	11953
<i>Local Environmental Plan</i>			21 Feb 92		
<i>National Trust of Australia register</i>		7752	23 Mar 78		
<i>Register of the National Estate</i>	Gledswood & Garden	3252, 3253	21 Mar 78		

Study Details

Title	Year	Number	Author	Inspected by	Guidelines Used
Colonial Landscapes of the Cumberland Plain and Camden, NSW	2000	4.33.3	NSW Heritage Office	National Trust of Australia (NSW)	Yes
Camden Significant Trees and Vegetated Landscape Study	1993	pp 121-123	Landarc Landscape Architects	Camden Municipality Council	Yes
Camden Park Estate Conservation Plan	1989		Howard Tanner and Associates		Yes

References, Internet links & Images

Type	Author	Year	Title	Internet Links
Written	Clive Lucas Stapleton & Partners	2005	Landscape Conservation Management Plan: Former Gledswood Estate, Catherine Field	
Written	Everett, David	2004	Frere's Vineyard - Vine Pedigree X in Macarthur (News)	
Written	Tropman & Tropman Architects	2003	Conservation Management Plan: Gledswood, Camden Valley Way, Catherine Field, SSW	
Written	Tropman & Tropman Architects	2003	Draft Master Plan Strategy: Gledswood, Camden Valley Way, Catherine Field, NSW	
Management Plan	Colleen Morris & Geoffrey Britton	2000	Colonial Landscapes of the Cumberland Plain and Camden - Volume 2	
Written	Landarc Landscape Architects	1993	Camden Significant trees and Landscape Study	
Other	D. Sheedy	1977	Listing Proposal for National Trust	

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Varroville

Item

Name of Item: Varroville
Other Name/s: Varra Ville
Type of Item: Complex / Group
Group/Collection: Farming and Grazing
Category: Homestead Complex
Location: Lat: 150.82600653 Long: -34.00395424
Primary Address: St Andrews, Minto, NSW 2566
Local Govt. Area: Campbelltown

Property Description:

Lot/Volume Code	Lot/Volume Number	Section Number	Plan/Folio Code	Plan/Folio Number
PART LOT	21	-	DP	564065

All Addresses

Street Address	Suburb/Town	LGA	Parish	County	Type
St Andrews	Minto	Campbelltown			Primary

Owner/s

Organisation Name	Owner Category	Date Ownership Updated
Jacqui Kirkby & Peter Gibbs	Private	

Statement of Significance

'Varroville is a 'celebrated early farm estate dating from 1810 with early structures, the 1850s homestead, layout, agricultural (vineyard) terracing and evidence of early access road.' (Morris and Britton, 2000, 98)

'Varroville is rare as one of the few larger estate landscapes remaining in the Campbelltown area where the form of the original grant and the former agricultural use of the estate and its rural landscape character may be appreciated.' (Morris and Britton, 2000, 98)

Varroville was a significant to the horticultural development of New South Wales through the laying out of a productive kitchen garden in 1809 noted for its extensive fruit varieties by the early 1820s and the establishment of a vineyard, said to be second only to that of Gregory Blaxland of Brush Farm, Eastwood. The vineyard terraces are extant and together with the early drive suggest that the present 1858 house occupies the site of the earlier 1810s house. Accounts relating to Charles Sturt's ownership (1837-39) indicate the property's continued role in the acclimatisation of plants sourced from as far afield as Calcutta.

Varroville was significant to agriculture and food production in early New South Wales. The grants of land at Minto were made by Colonel Paterson in response to the Hawkesbury floods of 1806 and later, aiming to safeguard the colony's food supplies. A significant portion of Varroville was used for growing crops in the c. 1810s-1830s period. Townson supplied meat to the Sydney, Liverpool and Parramatta commissariat stores.

Macquarie commented that the farms of Townson and Andrew Thompson (St. Andrews, opposite Varroville) were 'by far the best pasturage I have yet seen in the colony'. The gently rolling hills of the two properties appealed to English Picturesque sensibilities and today is reflected in the locality name, Scenic Hills, defined under the Campbelltown Local Environment Plan - District 8 (Central Hills Lands). This plan aims 'to ensure that the Central Hills Lands District of the City of Campbelltown retains the rural character that was envisaged for it during the planning that preceded the urbanisation of that City.' 'The still appreciable direct viewline from the 1850s Varroville homestead to the landmark Araucarias of both nearby Denham Court and Macquarie Fields House appears to be a deliberate siting intention.' (Morris and Britton, 2000, 98).

Varroville house is sited as 'a house in landscape' according to estate planning principles put forward by British landscape designers Humphrey Repton in the 1790s-1810s (echoed by the Sydney-based horticulturalist and landscape designer, Thomas Shepherd in the 1830s) and John Claudius Loudon in the 1820s-40s. The house is sited to take advantage of sweeping, wrap-around views of the scenic hills from Raby Road in the west to Bunbury Curran Hill in the north and to an extending ridgeline of the range to the east. The important western view dominates the entry through the front door and across the rear courtyard. Varroville, through the Sturt dams and modified watercourses, accounts from the Sturt period and the large underground water tank c. 1858 that extends westwards from the ends of the wings of the house illustrates early recognition of the importance of water conservation to colonists in New South Wales and South Australia. Sturt's accounts relate to the great drought of the 1830s that led to the depression of the early 1840s that was devastating to early NSW society.

Varroville is significant for the relationship between the house and its group of farm buildings, sited in relation to each other on the ridge. The location of the outbuildings along the entrance drive reflect Augustus Earle's c. 1829 watercolour view of Lieut William Lawson's Veteran Hall, Prospect (National Library of Australia) and Mrs Charles Meredith's description of Homebush in the 1840s with barns, stables and estate worker's cottages and other 'ornamental edifices' being visible en route to the house (although not through the front door as Mrs Meredith complained of Homebush). Both Veteran Hall and Homebush have since been demolished.

The house dating from 1858-9 is a significant example of the work of William Weaver, former Government Architect 1854-56. The firm, Weaver and Kemp, also designed Jarvisfield, Picton and Burundulla, Mudgee. The fabric of the house is intact with surviving blackbutt floors, cedar joinery, plaster ceiling roses and imported marble chimneypieces. The roof, originally shingled, is now covered with corrugated iron. The house appears to occupy the site of a previous (1810s) house and the kitchen of the northern wing incorporates the sandstone chimneypiece of a previous service wing. With the exception of generously scaled rooms and plate glass windows (allowing maximum light and taking in of the views), the symmetrical Italianate villa is architecturally conservative (and comparable with houses such as Yasmar, Haberfield, designed by John Bibb in c. 1852). This, and the large underground watertank at the end of the wings may reflect Weaver's engineering (rather than architectural) training.

The garden immediately surrounding the house is a substantially intact mid-19th century plan with a gravelled carriage drive (with post-1950 concrete edgings), lawn tennis court site c. 1870?, remains of a glasshouse and a trellis. Perimeter fence lines and gates have been relocated post 1950 but the original locations are well documented in photographs of c. 1935. Hardy Wilson described 'Varraville' [sic] as 'an Early-Victorian homestead encompassed by many oleanders'. The pink oleander

at the north-east corner of the house was extant in 1950 (information from Mrs Jackaman) and may have been one of the oleanders described by Hardy Wilson. The garden contains staples of Cumberland Plain gardening: Moreton Bay figs, hoop pines, funeral cypresses, white cedars, pepper trees, a Norfolk Island hibiscus, Bauhinia, agaves (bordering the original drive), yuccas, aloes and hedges of cape honeysuckle (*Tecomaria capensis*) and common olive. The Queensland rain forest tree, *Barclaya syringifolia*, may survive from the c. 1890s - 1910 period.

Varroville received important early 20th century literary and artistic recognition as a major homestead of the Cumberland Plain through its inclusion on the parchment map that provides the key to W. Hardy Wilson's romance, 'The Cowpasture Road' (1920). The fictional postmaster, Raymond Plenty in *The Cowpasture Road* (pp 38-40) is no doubt inspired by James Raymond, owner of Varroville 1839-1851, and the reference to the squires having chased Governor Bligh under his bed (p. 8) may be a reference to Townson.

Varroville is 'historically important for its association with prominent owners Dr Robert Townson, Charles Sturt, James Raymond and Alfred Cheeke and for its relationship with Bunbury Curran Hill - a viewing point used by both Governor and Mrs Macquarie.' (Morris and Britton, 2000 p. 19) Varroville during the Raymond, Cheeke and Jackaman periods was a prestigious country estate for owners whose wealth came from other sources. Between c. 1876 and 1950 the property was operated as a dairy, and was representative of rural industry in the Campbelltown area. The property presently retains its rural character (Carlin, 2007).

Celebrated early farm estate dating from 1810 with early structures, the 1850s homestead, layout, agricultural (likely vineyard) terracing and evidence of an early access road;

Varroville is rare as one of the few larger estate landscapes remaining in the Campbelltown area where the form of the original grant and the former agricultural use of the estate and its rural landscape character can still be appreciated;

The still appreciable direct view line from the 1850s Varroville homestead to the landmark Araucarias of both nearby Denham Court and Macquarie Field House appears to be a deliberate siting intention;

Historically important for its associations with prominent owners Dr Robert Townson, Charles Sturt, James Raymond and Alfred Cheeke and for its relationship with Bunbury Curran Hill - a viewing point used by both Governor and Mrs Macquarie (Morris & Britton, 2000, 98).

Varroville has historic significance for its association with Robert Townson, the colony's most highly regarded academic when he arrived in 1807, granted 1000 acres at Minto and who made very good use of it. Governor Macquarie was very impressed when he visited Varroville on his first inspection of the interior in 1810 (Everett, 2004). The property is also associated with the development of the Australian wine industry, having been once known as 'the finest orchard in the Colony and a vineyard second only to Gregory Blaxland's' (at Brush Farm, Ryde) (Everett, 2004).

Date Significance Updated: 21 May 07

Note: There are incomplete details for a number of items listed in NSW. The Heritage Branch intends to develop or upgrade statements of significance and other information for these items as resources become available.

Description

Designer/Maker: Weaver and Kemp

Construction Years: 1810 - 1859

Physical Description: Estate and Setting:

The approach to the siting of Varroville which avoided the house being silhouetted against the sky was endorsed by the horticulturalist and landscape designer, Thomas Shepherd (1776-1836, probably citing the British landscape architect Humphry Repton) when describing the siting of Elizabeth Bay House, Sydney, and later discussed by British writer on estate planning, John Claudius Loudon (1773-1843) whose writings were influential in colonial New South Wales. Varroville is oriented east-west, taking advantage of vistas to other Cumberland Plain homesteads, Denham Court and Macquarie Field House. The locally named Scenic Hills describe the picturesque rolling country selected as the location of the Varroville grant.

Varroville, occupying the site of a previous c. 1810s house has important relationships with features associated with the Townson, Wills and Sturt periods of ownership and occupancy of the estate (1810-1839) - the original driveway from Campbelltown Road, outbuildings grouped in relation to the entrance drive on the ridge to the southern side of the house, the remnant vineyard terracing that wraps around the hillside in view of the house, a track to Bunbury Curran Hill, post and rail fences and dams and modified watercourses believed to have been made by the explorer, Charles Sturt.

The house occupies a narrow ridge (or saddle) on the south side of Bunbury Curran Hill, a landmark that led Townson to refer to Varroville as his property at 'Bunbury Curran'. Bunbury Curran Hill was climbed by Governor and Mrs Macquarie in November 1810 to take advantage of views across the Cumberland Plain to Sydney. The hill, clad in bush, has evidently played a significant role in the landscape design of Varroville, providing a dramatic backdrop to the house when approached from the south. The landscape design of Varroville was discussed between Townson and the Macquaries in 1810.

Garden:

In the immediate surrounds of the house, the gravelled carriage drive, lawn tennis court site, remains of a glasshouse and plantings are elements of a substantially intact mid-19th century garden plan. The carriage loop (with concrete edgings remaining from the Jackaman period: (1950-1990)) appears to relate to the 1858 house. It does not connect with the drive that passes in front of it to the east, but this 'disconnection' may relate to Jackaman period changes. Perimeter fence lines and gates have been relocated during the Jackaman period.

Hardy Wilson described 'Varraville' [sic] as 'an Early-Victorian homestead encompassed by many oleanders'. The garden contains staples of Cumberland Plain gardening - Moreton Bay figs (*Ficus macrophylla*), hoop pines (*Araucaria cunninghamii*) funeral cypresses (*Chamaecyparis funebris*) (particularly along the back drive), white cedars (*Melia azederach* var. *australasica*), pepper trees (*Schinus molle* var. *areira*), coral trees (*Erythrina* sp., probably *E.indica* or *E.x sykesii*) (Read, S., pers.comm.), a Norfolk Island hibiscus /white oak (*Lagunaria patersonae*), orchid tree (*Bauhinia variegata*), century plants/agaves (*A.americana*) (the stretch of original drive in front of the house is a forest of these), Spanish bayonets/Adam's needles (*Yucca* sp.), aloes (*A.sp.*) and hedges of Cape honeysuckle/tecoma (*Tecomaria capensis*) and common African olive (*Olea europaea* var. *africana*).

The kitchen garden laid out in 1809 and described in Sturt's 1839 sale advertisement may have occupied sloping ground to the north - west of the house (Carlin, 2007 with botanic names added by Stuart Read, 22/12/08).

The oldest colonial plantings appear to be located in the tennis court area east of the house, which is supports the current owners' view that this is the most likely site of the second house on the property (built by Townson and lived in by Sturt and Raymond). Landscape architect Geoffrey Britton advises that Varroville's Indian shot/ Canna lily is the species plant (*C.indica*) and that was located en masse on the far slope of what is now a herbaceous border on the southern bank above the tennis court. Geoffrey also considers that the Cypress located on the entrance there is very old. Aside from the figs and hoop pines and re-seeded white cedars, the rest of the garden is largely of the Jackaman era planted out in the 1950s and early 1960s. *C.japonica* on site is likely also to be remnant progeny of an early colonial planting as there are many in the tennis court area, along with cotoneasters. Cotoneasters could have been put there by the Jackamans, as Cherry Jackaman apparently had cotoneasters espaliered down the northern side of the house (removed by later owners)(Kirkby, J., pers.comm., 22/12/08 edited by Stuart Read).

There are two arbors in the garden - an old arbour with an enormous Banksia rose (*Rosa banksia* 'Lutea') which was replaced by the previous owners and a second arbour (with an old jasmine (*Jasminum* sp.) and wisteria (*W.sinensis*) is now propped up

with iron bars (Kirkby, J., edited by Stuart Read, 14/1/2009).

House:

Varroville House is a substantial single-storey symmetrical rendered brick house in a 'U' shape with two rear wings on a stone foundation by the architects, Weaver and Kemp and dating from 1858-9. Its room uses are known from an 1876 sale advertisement. The fabric of the house is intact with surviving blackbutt floors, cedar joinery, plaster ceiling roses and imported marble chimneypieces. The roof, originally shingled, is now covered with corrugated iron. The house appears to occupy the site of a previous (1810s) house and the kitchen of the northern wing incorporates the sandstone chimneypiece of a previous service wing (one of the uprights of the chimneypiece has a void for the hinging of an iron kitchen crane). A large underground water tank extends westwards from the ends of the wings of the house (Carlin, 2007, amended Read, Stuart, 22/12/08).

Physical Condition and/or Archaeological Potential:

The fabric of the house is intact with surviving blackbutt floors, cedar joinery, plaster ceiling roses and imported marble chimneypieces. The roof, originally shingled, is now covered with corrugated iron. (Carlin, 2007). **Date Condition Updated:** 08 Aug 07

Modifications and Dates:

The house appears to occupy the site of a previous (1810s) house and the kitchen of the northern wing incorporates the sandstone chimneypiece of a previous service wing (one of the uprights of the chimneypiece has a void for the hinging of an iron kitchen crane). The oldest colonial plantings appear to be located in the tennis court area east of the house, which is supports the current owners' view that this is the most likely site of the second house on the property (built by Townson and lived in by Sturt and Raymond). Aside from the figs and hoop pines and re-seeded white cedars, the rest of the garden is largely of the Jackaman era planted out in the 1950s and early 1960s. C.japonica on site is likely also to be remnant progeny of an early colonial planting as there are many in the tennis court area (Kirkby, J., pers.comm., 22/12/08 edited by Stuart Read). 1950-90 the Jackamans made many changes, including enlarging the drawing room (to the former footprint of the northern veranda and extending the terrace on this side), relocating the access to the cellar, building the colonnade at the western end of the courtyard (on the site of a picket fence), installing the fountain against the northern range wall, building the swimming pool, change rooms, gazebo and 'crazy paving' the surrounds of these. The old back drive from St Andrew's Road became the principal entry. The verandah surface was paved in concrete. Perimeter fence lines and gates were relocated. The carriage loop (with concrete edgings remaining from the Jackaman period (1950-1990)) appears to relate to the 1858 house. It does not connect with the drive that passes in front of it to the east, but this 'disconnection' may relate to Jackaman period changes. Perimeter fence lines and gates were relocated. The majority of the garden is largely of this era, planted out in the 1950s and early 1960s. In the tennis court area are many cotoneasters - which could have been planted by the Jackamans, as Cherry Jackaman had cotoneasters espaliered down the northern side of the house (removed by later owners) (Kirkby, J., pers.comm., 22/12/08 edited by Stuart Read). Date unknown: roof, originally shingled, is now covered with corrugated iron c.2000: The older of the two arbors in the garden was replaced by the previous owners. It has an enormous Banksia rose (*Rosa banksiae* 'Lutea') and in late 2008 fell down under the weight of the bush (Kirkby, J., edited by Stuart Read, 14/1/2009). 2008-9: minor garden changes, removing a lot of overgrown lantana (*L.camara*) to reveal former layout and form. New perennial and shrub plantings around house, former tennis court and western garden. Replaced a small garden arbor over a path north-west of house's front. Removed a juniper tree (*Juniperus* sp.) and some smaller garden beds and trees near the gate (Stuart Read, pers.comm.).

Current Use:

rural residence

Former Use:

farm

History

Historical Notes:

Robert Townson was born c.1763 in Shropshire, developing interests in mineralogy and natural sciences young. Elected a non-resident member or Fellow of the Royal Society of Edinburgh in 1791, Physical class. He graduated M.D. at Gottingen University in 1795. Over 8-9 years he travelled extensively in Europe, from Trondheim in the north to Sicily, studying mineralogy, chemistry, botany, rural economy, technology, politics and ethics in the Universities of Gottingen, Vienna, Paris and Edinburgh. His 'Travels in Hungary' was published in 1797, his 1798 'The Philosophy of Mineralogy' and a paper on the 'perceptivity of Plants' was read in 1792 and included in the 'Transactions' of the Linnaean Society (Havard, 2005).

July 1807 Dr. Robert Townson (1762?-1827), doctor of law and gentleman scientist arrived in Sydney. Townson had been elected a fellow of the Royal Society of Edinburgh and visited the universities of Copenhagen, Uppsala and Gottingen. In 1792 he contributed a paper to the Linnaean Society of London on the 'Perceptivity of Plants'. 'He was often at the home of Sir Joseph Banks and had there met William Paterson of the New South Wales Corps. His brother, Captain John Townson had served as a military officer in NSW before migrating to the colony as a settler in 1806, so he had ample opportunities to learn about the new settlement. Robert approached the British government for permission to settle in NSW. He was warmly received, informed that he was the type most urgently needed in the colony, promised land and indulgences, and allowed (Pounds)100 to buy books and a laboratory for the colony. Dr Townson arrived in Sydney in the Young William on 7 July 1807. Proficient in all branches of natural science and also in Latin, Greek, German, French, he was the most eminent scholar in the young colony.' (ADB).

Townson arrived as a settler intending to establish himself as a pastoralist and trader in 1807 (Everett, 2004). He arrived with the instructions of the British Secretary of State to Governor Bligh to grant him 2,000 acres. Bligh refused to 'locate the grant', 'but allowed him occupancy while awaiting instructions from England, which arrived in a letter of 31 December 1807 He established himself on a small estate of 77 acres on the banks of the George's River, living there for about 5 years, building a residence, stock yard, making and enclosing paddocks and making roads. He called this grant Towweery (Tom Ugly's)(Havard, 2005).

In January 1808 Townson, affronted at Bligh's delay over the granting of land, became 'an opponent of Bligh, and when rebellion took place some months later he was judged one of the principal six 'who previously concerted together with Major Johnston the arrest and imprisonment of the Governor'. He was present at the dinner at the officers' mess on the eve of the trial of John Macarthur which precipitated the revolt: [and] he signed the requisition to Johnston to depose Bligh on 26 January 1808' He 'soon fell out with the rebel administration. Johnston refused to give him the land he wanted at Emu Island, near Penrith: though he was given 2000 acres (809 ha) at Botany Bay near the present Blakehurst and twenty-eight government cattle, he claimed that only half the grant was of any use, and his long complaints against Bligh written in 1807 and 1808 were followed by another, equally querulous, in 1809 against his supplanters.' (ADB).

Overlooked in the grants made by Johnston in 1808, he received two grants from Foveaux in November 1808, both in the Botany Bay district, one of 75 acres, the other of 1925 acres around the present Oatley station, Mortdale, Penshurst and Hurstville.' (SHR). He had six assigned convicts (Havard, 2005).

In 1809, finding this [Botany Bay] land unsuitable he applied to Paterson (who took over the government) for some adjacent land, of 480 acres. Since his land had poor pasture, he was obliged to send his flock away to other ground, and a few months before Macquarie's arrival he asked Paterson to allow him to exchange 800 acres of his grant for some more open land 'in a distant part of the colony'. Paterson allowed him to take up 1000 acres for the 800, giving him a total of 2680 acres. This 1000 acres he chose was in the Minto district, and was the origin of Varro Ville... (Havard, 2005).

James Meehan surveyed Varro Ville in August 1809, mentioning the hill of Bunbury Curran, a range, flats and hollows, hills and dales, ponds and ironbark trees, and the creek. A road was to be reserved on the south-east side. The grant was ready for delivery in November 1809'. (SHR) 'Townson later confirmed that he had immediately occupied the land, 'employed a great deal of labour, and expended a great deal of money' in building a horse yard, cultivating a large garden, clearing and fencing paddock and making roads. (Fowler p. 68).

Macquarie on his arrival annulled by public proclamation the trials which had taken place during the usurpation (of Bligh). Grants of land and of stock and leases during the same period were revoked, as well as pardons and emancipations until he could tour all the districts and reconsider the grants. Townson was required to hand in his grants, which he did in 1810. Macquarie re-granted Townson 1,000 acres (405 ha) at Bunbury Curran (2000 acres at Minto (1000 acres/405ha at 'Bunbury Curran' as it was called) and Botany Bay were given in May 1811, despite Townson's objections about the amount of land required to be cultivated)(Havard, 2005)), which Townson named Varro Ville after the Roman writer on agriculture, Marcus

Terentius Varro (116-37 BC). (ADB). The stated reason was that Varro wrote extensively on agriculture and Townson was intent on making Varroville an exemplar of agricultural pursuit, which, according to his obituaries and official biography (Havard, 2005), he achieved.

In November 1810 Governor Macquarie toured the area (after having chosen the site of a town on George's River to which he gave the name Liverpool, after the Earl of that title (Havard, 2005) following the foundation of Liverpool, and writes in his journal (8th November 1810): '[Finding] Mrs M had gone after returning home to see Dr Townson's farm and Bunbury Curran Hill we all followed her thither, and met her returning home again after having ascended the Hill, accompanied by her guide Mr. Meehan [Surveyor and owner of Macquarie Field]. The accounts given to me by Mrs M. of the beautiful prospect she had from the top of Bunbury Curran Hill induced me to ascend it, which I did on horseback, and was highly gratified with the noble extensive view I had from the top of it of the surrounding country. On my return from the Hill, we overtook Mrs M. on Dr Townson's farm, where we stopt for a few minutes to speak to the Doctor and look at a very ill chosen situation he has fixed on for the site of his new intended house'. Macquarie also commented in his journal that the farms of Townson and Andrew Thompson (St. Andrews farm, opposite Varroville) were 'by far the finest soil and best pasturage I have yet seen in the colony; the grounds are beautiful and bounded by a large creek of brackish water called Bunbury Curran' (SHR). This difference of opinion on siting reflects the different characters of Macquarie and Townson - the former masterful and dashing, would have chosen a prominent site with an extensive view, the latter a scholar, preferring seclusion and proximity to oversight his crops and orchard (Havard, 2005).

Varro was a famous man of letters. Authors like Quintilian considered him 'the most learned of the Romans'. He wrote 74 works on 620 papyrus rolls on several subjects, but practically none have survived. His lost 'On Libraries', in which he describes the organisation of a library and gives reasons for defining books as cultural artefacts, is one of the earliest discussions of the subject (Baez, 2008).

'Since these grants were made on the customary condition that the land be cultivated and not sold for five years, Townson again felt aggrieved. He had been living on his capital for nearly four years and was afraid of penury. He sought permission to sell his land and return to England. In the end he remained but developed a psychopathic personality. He subordinated everything to the development of his farms, shut himself off from society and apparently did no scientific work in New South Wales. He became 'singular' and eccentric and his rigid economy became a byword. He also nursed undue hostility towards all who had contributed to his critical situation; Macquarie described him as 'discontented' and one of his leading opponents, though there is no evidence that Townson took part in intrigues against him' (ADB).

March 1812 'In March 1812 it would appear that Townson had not yet built his house. "This state of uncertainty (over the route of a public road [St Andrews road, linking the Liverpool -Campbelltown road with the Cowpasture Road] has prevented me from going on with my plans and I am still living, when at Bunbury Curran, in a very uncomfortable manner, as on this road depends where I shall place my house and make my inclosures. (Fowler p. 70)

After 5 years at his small grant of 77 acres at Towweery (Tom Ugly's) on George's River, Townson had relocated to Minto by 1813 (SHR) and had made the 'necessary establishment' there. He had managed to keep his 6 convicts for five years on the Government stores (when new settlers were normally allowed men on the stores for only 18 months), gaining extensions from Macquarie in 1810 and 1811 (Havard, 2005).

Townson was associated with the development of the Australian wine industry, having been once known as 'the finest orchard in the Colony and a vineyard second only to Gregory Blaxland's' (at Brush Farm, Ryde). He made very good use of his grant of 1000 acres at Minto (Everett, 2004).

In 1815 Townson supplied meat to the Sydney, Liverpool and Parramatta stores.

In the 1818 Muster of stock for 1818 'Townson had 214 head of horned cattle and 1961 sheep He had twenty-two acres in wheat, eight in maize, four in barley, two in potatoes and two in garden and orchard.' Following drought (and the caterpillar plague of 1819) Townson obtained a permit to pasture cattle across the mountains. In May 1821 he sent them south to a run that became Tiranna, Goulburn. (JRAHS vol 91 pt 2 p. 188)

In October 1820 Townson offered property for sale ' 1,000 acres at Bunbury Curran, with a good house and offices and one of the best gardens in the colony. A great part is fenced in and divided into paddocks'. See JRAHS vol 91 pt 2 p. 190 for list of stock.

After Macquarie departed the colony, Townson began to take his rightful place in the community. In 1822 he became a foundation vice-president of the Agricultural Society and a member of its Horticultural and Stock Fund Committees. Varroville became a show place for its beauty, abundance and variety in orchard and garden; his vineyard was second only to that of Gregory Blaxland; his fine-wooled sheep and their clip were in great demand; his cattle were numerous and in the opinion of his contemporaries no single man had accomplished more in the rearing of stock' (ADB).

1823 'When the members of the Agricultural Society [of New South Wales] dined after the general Quarterly Meeting in Nash's Inn, Parramatta, at the beginning of 1823 the dessert was contributed from the gardens of Dr Townson and Captain Piper. 'It consisted of no fewer than 18 kinds of fresh fruit, and 4 of dried; among which were the banana, the Orlean plum, the green gage, the real peach, the cat-head apple, and a peculiarly fine sort of musk melon. ' 'Next to Gregory Blaxland, Townson was regarded as having 'most successfully and most extensively given his attention to the vine.' (JRAHS vol 91 pt 2 p. 198)

1825 A notice regarding the theft of grain from Townson's farm mentions a granary. (Fowler, 72)

1827 Townson died at Varroville on 27 June 1827 and was buried at St John's cemetery, Parramatta.. A bachelor, he left his fortune to his brother, Captain John Townson of Van Diemen's Land, to two nieces residing in England and to his nephew, Captain John Witts, R.N. A portrait, attributed to Augustus Earle is in the Mitchell Library. (ADB)

1829 Varroville was acquired by Thomas Spencer Wills (1800-1836), the first Australian born Justice of the Peace and a founder of the Bank of NSW. One of his sisters married Dr William Redfern (1774 - 1833) of nearby Campbellfield, a major landowner in the area, while another married Henry Colden Antill (1779 - 1852) of Jarvisfield, Pictou.

1832 The New South Wales Calendar and General Post Office Directory 1832 refers to 'the residence of the late Dr Townson, now the property of Thomas Wills, Esq. This place is celebrated for a Garden and Vinery.' (Fowler, 75).

Early 1837 Varroville was acquired by explorer, Captain Charles Sturt (1795-1869), who "described himself as 'an enthusiastic horticulturalist'. Writing to his brother William in Calcutta in 1835 when he was planning the purchase of a property, Sturt begged for fruits, plants, bulbs or seeds, 'the rarer the better'." (Fowler p. 77) Sturt established dams and modified watercourses, maintained the thriving kitchen garden, orchard and vineyard and took a keen interest in the birdlife at Varroville.

In 1838 'On another occasion, in Sturt's second home in Varroville, the powers of native trackers were again called into play. Here in 1838 he was visited by the bird-artist, John Gould, who greatly admired Sturt's large original collection of Australian Psittacidae [parrots] in water-colour, for which he offered on the spot a large sum. But these paintings had been the delight of Sturt's leisure; he was devoted to ornithology and had collected rare specimens at great trouble and risk, and at no price would he part with his folio. It is supposed that Gould's remarks must have drawn the attention of some dishonest workman to the value of the drawings, for soon afterward the military chest in which they were kept disappeared and was never again seen. Natives put upon the scent found military accoutrements and other articles thrown out of the same chest, so that drawings were clearly the object of the theft' (Mrs Napier Sturt, 122)

Sturt in a speech at a dinner in honour of Governor Gawler, 10 January 1840 urged South Australians to store water. 'On my farm at Varroville, until labour and skill were exerted, one only of many channels held water, and that was brackish. When I passed that farm, every paddock had its proper water-hole. In a severe drought I not only fed 180 head of stock on 1,000 acres (of which 350 was under cultivation), but I permitted 19 families to supply themselves from my tanks' (Mrs Napier Sturt p.193) Turner, male convict servant as cook rescued the elder Sturt son from drowning in a pond or dam. (Mrs Napier Sturt, 174)

'But no forethought could avert the widespread ruin from such a drought that prevailed between 1836 and 1839. Not even Sturt's waterholes could satisfy all demands or supplement the failing pasture. His hay-crop in 1838 was better than that of his neighbours. But stock were quite at a discount. Nor could wool be sent to Sydney for want of water by the way. The lines of road were unwholesome from the number of cattle and horses that dropped dead upon them. Just when the farmers of New South Wales were reduced to their lowest ebb their hopes were revived by the new settlement in South Australia.' (Mrs Napier Sturt, 125)

In 1839 Sturt's sale notice for the property appeared in the Australian, 'The cottage is convenient and an excellent kitchen and wash house have been added to it. The outhouses consist of stables, coach house, verandah, dairy, store, barn etc. and there is a well-stocked garden and vineyard'. 'Sturt apparently sold his uncleared grant 5,000 acres [at Gunningdera, [sic] Canberra] at its auction value with the proceeds bought a small but ready- fenced property at Varroville, which on his sudden departure for South Australia in 1839 [to take up the post of Surveyor-General], he was forced to sell at so great a loss that the final outcome of the grant dwindled to less than (Pounds)450.' (Mrs Napier Sturt, 109)

Nov 1839 Varroville acquired by James Raymond, the first Postmaster General of the Colony of New South Wales. Raymond introduced the world's first pre-paid postage in November 1838, anticipating the British penny postage in 1840. Raymond entertained extensively at Varroville. 'He was also a keen follower of horse-racing and owned several horses himself.' (ADB) An oil on canvas horse portrait by Edward Winstanley (1820-1849) 'Nazeer Farrib', A High Caste Arab, the property of James Raymond Esq of Varroville is in the State Library of NSW collection (ML282).

Raymond died at Darlinghurst on 29 May 1851 aged 65 and his daughter Aphra (Aphrasia Kemmis) and her family lived rent-free at Varroville according to the terms of his will (Fowler, 85)

1858 'In 1858 Raymond's sons sold the property to the late George Taylor Rowe, who mortgaged it to H. H. Browne. Browne defaulted on his mortgage during 1859 and Rowe claimed possession of the house. ' (Fowler, 85)

27 April 1858 Architects, Weaver & Kemp of 160 Pitt Street, Sydney advertise for tenders from masons 'for laying the Foundations of a House at Varroville, near Campbelltown. Plan and specification, and further particulars may be ascertained on application to the undersigned' (Sydney Morning Herald 27.4.1858). William Weaver (1828-) was a former Colonial Architect (1854- April 1856), formerly Edmund Blacket's clerk of works (while Blacket was Colonial Architect) and had trained under Isambard Kingdom Brunel, the Franco-British civil engineer (1806-1859). Weaver & Kemp also designed Jarvisfield, Picton and Burrundulla, Mudgee. The new house was built on the site of the previous house, retaining an early stone chimneypiece (with evidence of a former kitchen crane) and hearthstone from the previous house. The bread oven chimney has been capped before the shingling of the roof above it.

c. 1859 Following Rowe's death Varroville sold to Justice Alfred Cheeke for (Pounds)4,500. Cheeke (1810-1876) bred and trained race horses at Varroville (including 'Clove' which won the first Australian Jockey Club Derby in 1865) and maintained a private racecourse on the flat below the house. He was elevated to the Supreme Court of NSW in 1865.

1876 Varroville, the estate of the late Justice Cheeke was advertised for sale by Richardson & Wrench and purchased by grazier M. Suttor. 'Varroville House is a commodious family residence, recently erected by the late proprietor. It is built of brick and stone, is nearly surrounded by verandahs and contains the following accommodation:- hall, 8 feet wide: drawing and dining rooms each 20 x 16: 6 bedrooms, two of which are 20 x 16: dressing room with well-arranged superior bath: patent closet: stove, kitchen with oven, servants hall, wine cellar, laundry with copper, larder, pantry, china closet & c There is an additional residence of six apartments a few yards from the above. Both are surrounded by tastefully laid out gardens and shrubbery, are erected on a beautiful elevation, and approached by a fine carriage drive from the main road. An abundant supply of water is obtained from an immense underground reservoir, which receives the roof water. A pump forces the water on to the premises, supplying the bathroom &c. The outbuildings are very numerous and comprise gardener's house, barn, cow-houses, calf-pens, dairy, piggery with coppers, stock and drafting yards, complete ranges of stabling, including a number of well-finished spacious loose boxes for blood stock.' (Sydney Morning Herald, 15 April 1876)

1885 Suttor sold Varroville to Sydney solicitor, Thomas Salter. Salter leased it to H. Pockley for dairying.

1906 Salter sells Varroville to Reginald Thomas (Fowler, 87).

1912 Thomas sells Varroville to W. H. Staniforth, dairyman of St Andrews.

1923 Staniforth leased Varroville to Percy, Austin and Arthur Smith (Smith Bros), dairymen of Concord. They operated dairies at Robin Hood Farm (Ingleburn) and Varroville until 1958, running their own dairy herd and purchasing milk from local farmers' (Liston, 107).

1929 George Smith purchased Varroville. Varroville was subsequently owned by Robert Stanley Thompson.

1950 Thompson sold the property to grazier, William Forest Ross who sold it to Alfred L M (Morris) and Cherry Jackaman (b. 1911). Changes made by the Jackamans include enlarging the drawing room (to the former footprint of the northern veranda and extending the terrace on this side), relocating the access to the cellar, building the colonnade at the western end of the courtyard (on the site of a picket fence), installing the fountain against the northern range wall, building the swimming pool, change rooms, gazebo and 'crazy paving' the surrounds of these. The old back drive from St Andrew's Road became the principal entry.

1964 Morris and Cherry Jackaman opened Varroville as part of house inspections by the National Trust of Australia (NSW) Women's Committee (another opening was held in 1968). The tour brochures indicated the Jackamans considered the house to predate the 1850s, with the verandas and marble chimneypieces described as later additions. Mrs Jackaman's guests included her friend, the British actress Vivienne Leigh, Sir Laurence Olivier and Princess Michael of Kent.

1970s The house was subdivided from its context onto 3.1 hectares (approx eight acres). The date of subdivision of the land occupied by Sweeney's Riding Ranch from land owned by the Jackaman family is unknown.

1980s Land was resumed for the M5 freeway.

1990 Mrs Jackaman, President of the National Trust of Australia (NSW) 1977-1981 presented Varroville homestead and 3.1 hectares (i.e. without its outbuildings) to the National Trust of Australia (NSW).

1992 The National Trust (NSW) commissioned a conservation plan for Varroville from architects, Orwell and Peter Phillips and sold Varroville to architects, Keith and Virginia Pearson-Smith.

2002 Varroville was acquired by John Moutsopoulos and Vanessa Seary
2006 Varroville was acquired by Peter Gibbs and Jacqui Kirkby

May 2007 The Cornish Group acquired approximately 280 acres adjoining Varroville from Mrs Jackaman's daughters. Prior to this the Cornish Group were reported to have taken out an option to buy the adjoining Sweeney's Scenic Riding Ranch (not owned by the Jackaman family), giving them approximately 800 acres of the original 1000 acres of Robert Townson's 1810 estate (Carlin, 2007).

Historic Themes

Australian Theme	New South Wales Theme	Local Theme
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(abbrev)		
2. Peopling - Peopling the continent	Convict - Activities relating to incarceration, transport, reform, accommodation and working during the convict period in NSW (1788-1850) - does not include activities associated with the conviction of persons in NSW that are unrelated to the imperial 'convict system': use the theme of Law & Order for such activities	Working on private assignment -
2. Peopling - Peopling the continent	Migration - Activities and processes associated with the resettling of people from one place to another (international, interstate, intrastate) and the impacts of such movements	Emigrating from one colony or state to another -
3. Economy - Developing local, regional and national economies	Agriculture - Activities relating to the cultivation and rearing of plant and animal species, usually for commercial purposes, can include aquaculture	Clearing land for farming -
3. Economy - Developing local, regional and national economies	Agriculture - Activities relating to the cultivation and rearing of plant and animal species, usually for commercial purposes, can include aquaculture	Farming by detainees and prisoners -
3. Economy - Developing local, regional and national economies	Agriculture - Activities relating to the cultivation and rearing of plant and animal species, usually for commercial purposes, can include aquaculture	Growing vines and maintaining vineyards -
3. Economy - Developing local, regional and national economies	Agriculture - Activities relating to the cultivation and rearing of plant and animal species, usually for commercial purposes, can include aquaculture	Farming wheat and other grains -
3. Economy - Developing local, regional and national economies	Agriculture - Activities relating to the cultivation and rearing of plant and animal species, usually for commercial purposes, can include aquaculture	Pastoralism - grazing sheep, cattle, goats or other animals -
3. Economy - Developing local, regional and national economies	Environment - cultural landscape - Activities associated with the interactions between humans, human societies and the shaping of their physical surroundings	Landscapes of food production -
3. Economy - Developing local, regional and national economies	Environment - cultural landscape - Activities associated with the interactions between humans, human societies and the shaping of their physical surroundings	Landscapes and countryside of rural charm -
3. Economy - Developing local, regional and national economies	Science - Activities associated with systematic observations, experiments and processes for the explanation of observable phenomena	Researching mineralogy -
3. Economy - Developing local, regional and national economies	Science - Activities associated with systematic observations, experiments and processes for the explanation of observable phenomena	researching chemistry -
3. Economy - Developing local, regional and national economies	Science - Activities associated with systematic observations, experiments and processes for the explanation of observable phenomena	Researching new agricultural production techniques -
3. Economy - Developing local, regional and national economies	Science - Activities associated with systematic observations, experiments and processes for the explanation of observable phenomena	Horticultural experimentation, hybridising and acclimatisation -
4. Settlement - Building settlements, towns and cities	Accommodation - Activities associated with the provision of accommodation, and particular types of accommodation – does not include architectural styles – use the theme of Creative Endeavour for such activities.	Country Villa -
4. Settlement - Building settlements, towns and cities	Accommodation - Activities associated with the provision of accommodation, and particular types of accommodation – does not include architectural styles – use the theme of Creative Endeavour for such activities.	Housing farming families -
4. Settlement - Building settlements, towns and cities	Land tenure - Activities and processes for identifying forms of ownership and occupancy of land and water, both Aboriginal and non-Aboriginal	Naming places (toponymy) -
4. Settlement - Building settlements, towns and cities	Land tenure - Activities and processes for identifying forms of ownership and occupancy of land and water, both Aboriginal and non-Aboriginal	Changing land uses - from rural to suburban -
4. Settlement - Building settlements, towns and cities	Land tenure - Activities and processes for identifying forms of ownership and occupancy of land and water, both Aboriginal and non-Aboriginal	Granting Crown lands for private farming -
4. Settlement - Building settlements, towns and cities	Land tenure - Activities and processes for identifying forms of ownership and occupancy of land and water, both Aboriginal and non-Aboriginal	Sub-division of large estates -
5. Working - Working	Labour - Activities associated with work practises and organised and unorganised labour	Working on pastoral stations -
9. Phases of Life - Marking the phases of life	Persons - Activities of, and associations with, identifiable individuals, families and communal groups	Associations with Governor Philip King, 1800 - 1806 -
9. Phases of Life - Marking the phases of life	Persons - Activities of, and associations with, identifiable individuals, families and communal groups	Associations with Governor Lachlan Macquarie, 1810-1821 -
9. Phases of Life - Marking the phases of life	Persons - Activities of, and associations with, identifiable individuals, families and communal groups	Associations with Lt Governor William Paterson, 1794-1796, 1809 -
9. Phases of Life - Marking the phases of life	Persons - Activities of, and associations with, identifiable individuals, families and communal groups	Associations with Major George Johnston, soldier, administrator, farmer -
9. Phases of Life - Marking the phases of life	Persons - Activities of, and associations with, identifiable individuals, families and communal groups	Associations with Gregory Blaxland, explorer and viticulturist -
9. Phases of Life - Marking the phases of life	Persons - Activities of, and associations with, identifiable individuals, families and communal groups	Associations with Governor William Bligh, 1806-1810 -
9. Phases of Life - Marking the phases of life	Persons - Activities of, and associations with, identifiable individuals, families and communal groups	Associations with James Meehan, Surveyor General -
9. Phases of Life - Marking the phases of life	Persons - Activities of, and associations with, identifiable individuals, families and communal groups	Associations with Robert Townson, academic, farmer -

Assessment of Significance

SHR Criteria a) [Historical Significance]

Varroville has historic significance for its association with Robert Townson, the colony's most highly regarded academic when he arrived as a settler intending to establish himself as a pastoralist and trader in 1807, and with the development of the Australian wine industry, having been once known as 'the finest orchard in the Colony and a vineyard second only to Gregory Blaxland's' (at Brush Farm, Ryde). Townson was granted 1000 acres at Minto and made very good use of it. Governor Macquarie was very impressed when he visited Varroville on his first inspection of the interior in 1810. (Everett, 2004)

Assessment Criteria

Items are assessed against the  **State Heritage Register (SHR) Criteria** to determine the level of significance. Refer to the Listings below for the level of statutory protection.

Recommendations

Management Category	Description	Date Updated
Recommended Management	Produce a Conservation Management Plan (CMP)	
Recommended Management	Carry out an Archaeological Assessment	
Recommended Management	Prepare a maintenance schedule or guidelines	

Procedures /Exemptions

Section of Act	Description	Title	Comments	Action Date
57(2)	Exemption to allow work	Heritage Act	Record converted from HIS events Order Under Section 57(2) to exempt the following activities from Section 57(1): * The maintenance of any building or item on the site where maintenance means the continuous protective care of existing fabric contents and setting of a place. Maintenance does not include painting of previously painted surfaces, restoration, renovation or excavation; * The minor repair of buildings where minor repair means the repair of materials by patching, piercing-in, splicing and consolidating existing materials and including minor replacement of minor components such as timber sections, tiles and slates where these have been damaged beyond reasonable repair or are missing. Replacements should be of the same material, colour, texture, form and design as the original it replaces and the number of components it replaced should be substantially less than those remaining. * All works and activities in respect of the garage, pool and pool house, which do not add to the bulk of the buildings or adversely affect the significance of 'Varroville' as an item of heritage; * Garden maintenance including cultivation, pruning, weed control, the repair and maintenance of existing fences, gates and garden walls, tree surgery but not extensive lopping; * Horticultural and agricultural management; * Maintenance and repair of existing farm fences and the provision of internal fences; and * Conservation / restoration works and uses as recommended in the Conservation Plan prepared by Orwell and Peter Phillips Architects in May, 1992.	Aug 27 1993
57(2)	Exemption to allow work	Standard Exemptions	SCHEDULE OF STANDARD EXEMPTIONS HERITAGE ACT 1977 Notice of Order Under Section 57 (2) of the Heritage Act 1977 I, the Minister for Planning, pursuant to subsection 57(2) of the Heritage Act 1977, on the recommendation of the Heritage Council of New South Wales, do by this Order: 1. revoke the Schedule of Exemptions to subsection 57(1) of the Heritage Act made under subsection 57(2) and published in the Government Gazette on 22 February 2008; and 2. grant standard exemptions from subsection 57(1) of the Heritage Act 1977, described in the Schedule attached. FRANK SARTOR Minister for Planning Sydney, 11 July 2008 To view the schedule click on the Standard Exemptions for Works Requiring Heritage Council Approval link below.	Sep 5 2008



Standard Exemptions for Works Requiring Heritage Council Approval

Listings

Heritage Listing	Listing Title	Listing Number	Gazette Date	Gazette Number	Gazette Page
<i>Heritage Act - State Heritage Register</i>		00737	02 Apr 99	27	1546
<i>Heritage Act - Permanent Conservation Order - former</i>		00737	27 Aug 93	094	5185
<i>Cumberland County Council list of Historic Buildings 1961-67</i>					
<i>National Trust of Australia register</i>		10651			
<i>Register of the National Estate</i>			21 Mar 78		
<i>Register of the National Estate</i>		0737	27 Aug 93	094	5185

Study Details

Title	Year	Number	Author	Inspected by	Guidelines Used
Colonial Landscapes of the Cumberland Plain and Camden, NSW	2000		NSW Heritage Office		Yes

References, Internet links & Images

Type	Author	Year	Title	Internet Links
Written	Baez, Fernando	2008	A Universal History of the Destruction of Books	
Written	Carlin, Scott	2007	Varroville notes	
Written	Havard, Olive	2005	Townson of Varroville	
Written	Everett, David	2004	Frere's Vineyard - Vine pedigree X, in Macarthur News	
Written	Morris, C. & Britton, G.	2000	'4.27 Varroville', in Colonial Landscapes of the Cumberland Plain & Camden	

Note: Internet links may be to web pages, documents or images.

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HERITAGE ACT.
1977

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