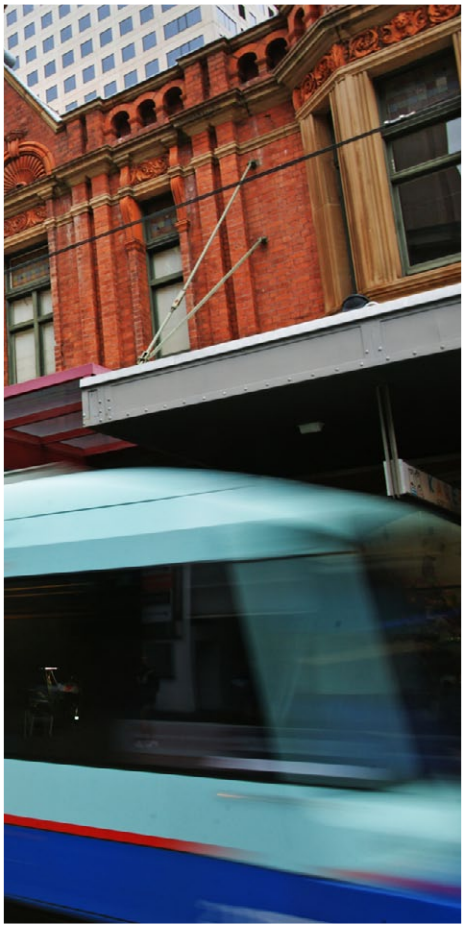
Transport NSW



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SYDNEY LIGHT RAIL EXTENSION
STAGE 1 – INNER WEST EXTENSION
Volume 2 - Technical Reports

NSW GOVERNMENT Transport

PB 125 YEARS PARSONS BRINCKERHOFF

TECHNICAL PAPER

3

HERITAGE

Sydney Light Rail Extension Stage 1 Heritage Impact Assessment

Prepared by Australian Museum Business Services
for Parsons Brinckerhoff

September 2010

100510

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1 Introduction

1.1 Preamble

Australian Museum Business Services (AMBS) has been commissioned by Parsons Brinckerhoff (PB), on behalf of Transport NSW, to prepare a Heritage Impact Assessment (HIA) to address Indigenous and non-Indigenous heritage issues associated with Stage 1 of the Sydney Light Rail Extension. Stage 1 of the Sydney Light Rail Extension (the project) will follow the former Rozelle Goods Line from the existing Lilyfield Station to Dulwich Hill. This project is to be undertaken in accordance with Section 75E, Part 3A of the *Environmental Planning & Assessment Act* 1979. This HIA will form part of the Environmental Assessment (EA) of the project.

1.1.1 Background

In February 2010, the New South Wales (NSW) Government announced, as part of the Metropolitan Transport Plan, a $500 million commitment to extend the existing Sydney light rail system in the Inner West along the disused Rozelle Goods Line corridor from Lilyfield to Dulwich Hill and in the central business district (CBD) from Haymarket to Circular Quay via Barangaroo. This comprised:

- Stage 1 — an Inner West extension of 5.6 kilometres along the disused Rozelle goods line corridor from Lilyfield to Dulwich Hill
- Stage 2 — a CBD western corridor extension from Haymarket to Circular Quay via Barangaroo with consideration of a future light rail option from Circular Quay to Central via George Street.

Collectively these two stages are known as the Sydney Light Rail Extensions (SLRE).

In the 2010-11 NSW Budget funding has been allocated to start construction on the SLRE Stage 1 (the Inner West extension) following the environmental assessment process, as well as to undertake pre-construction work on Stage 2.

In finalising the scope of work for the SLRE Stage 1 (the Inner West extension), the NSW Government took into account the many practical suggestions received from the community following the public release of the Sydney Light Rail - Inner West Extension Study (GHD 2010).

The community strongly favoured the inclusion of a walking and cycling shared path in the corridor, along with a number of bushcare sites – termed a "GreenWay" – from the Cooks River to Iron Cove. On 19 July 2010 the NSW Government announced that the GreenWay would be included in the SLRE Stage 1 (the Inner West extension) project.

SLRE Stage 1 (the Inner West extension) including the GreenWay forms the project and is the subject of this Heritage Impact Assessment.

An overview of the key features of the project is shown on Figure 1.1 and the following maps (provided by PB), and comprises:

- A 5.6 kilometre extension of the light rail between the existing Lilyfield light rail stop and the proposed Dulwich Hill Interchange stop. The extension would be located within the existing disused Rozelle goods line corridor.
- Nine new light rail stops — Leichhardt North, Hawthorne, Marion, Taverners Hill, Lewisham West, Waratah Mills, Arlington, Dulwich Grove and Dulwich Hill Interchange.
- Minor modifications to the existing Lilyfield stop and surrounding track to tie-in new track and overhead wiring infrastructure with the existing light rail.

- Modifications to the existing northern car park at Bedford Crescent to accommodate the Dulwich Hill Interchange stop.
- Raising of the existing bridge over Parramatta Road which will carry the light rail.
- Provision of the GreenWay, a shared pedestrian and cycle path from Iron Cove at Dobroyd Point to the northern bank of the Cooks River.
- Provision of pedestrian linkages (access pathways) to surrounding neighbourhoods to enable access to the GreenWay shared path and light rail stops.
- Modification of the existing road bridge structures to accommodate the GreenWay shared path – namely at Hercules Street, Old Canterbury Road, Constitution Road, Davis Street and Longport Street.
- New pedestrian/cycle bridge at Parramatta Road adjacent to the light rail overbridge.
- New pedestrian/cycle bridge across the Hawthorne Canal near Hawthorne stop.
- New infrastructure to ensure accessibility and connectivity between the shared path, local streets and light rail stops.
- Provision of sites for bushcare and vegetation remediation areas in order to provide for existing, and an increase in, local habitat for fauna.
- Appropriate safety fencing or separation of shared path and light rail operations, and the light rail operations and the heavy passenger rail operations at Dulwich Hill.
- Provision of overhead wiring, substation and utilities infrastructure.

Transport NSW prepared a Preliminary Environmental Assessment (PEA) in July 2010 that addressed Indigenous and non-Indigenous heritage for the SLRE Stage 1 project. This PEA identified that:

> *Numerous heritage items are located along the corridor. As construction of the Sydney Light Rail extension is unlikely to go beyond the corridor boundaries, no heritage items besides those within 200 meters of stops would be impacted directly. However, two heritage items identified within 200 metres of the proposed Lewisham stop are located within the corridor. These items are:*
>
> - *Lewisham Railway Viaduct (listed on the State Heritage Register, RailCorp s170 Register, Ashfield LEP 1985 and Marrickville LEP 2001)*
> - *Lewisham Sewage Viaduct (listed on the State Heritage Register, Sydney Water s170 and Ashfield LEP 1985)*

Indigenous heritage was not considered to be a key environmental issue for the EA; however, PEA identified that:

> *One Aboriginal site (45-6-2278 Lilyfield Cave) is known to occur in close proximity to the study area. However, further analysis is required, including a search of the Aboriginal Heritage Information Management System, to confirm the presence of any Aboriginal heritage sites potentially affected by the project.*

In addition, advice received from the DoP on 18 August requests that the *Environmental Assessment addresses impacts to heritage items along the corridor, including the Catherine Street Railway Bridge and the Marion Street Underbridge*.

1.2 Study Area

The study area for the project includes the Rozelle Goods Line from Lilyfield to Dulwich Hill, and includes a shared pedestrian and bicycle path, collectively referred to as the GreenWay, and lands in the vicinity (Figure 1.1). The project passes through the Leichhardt, Ashfield and Marrickville LGAs (Figure 1.2-Figure 1.6).

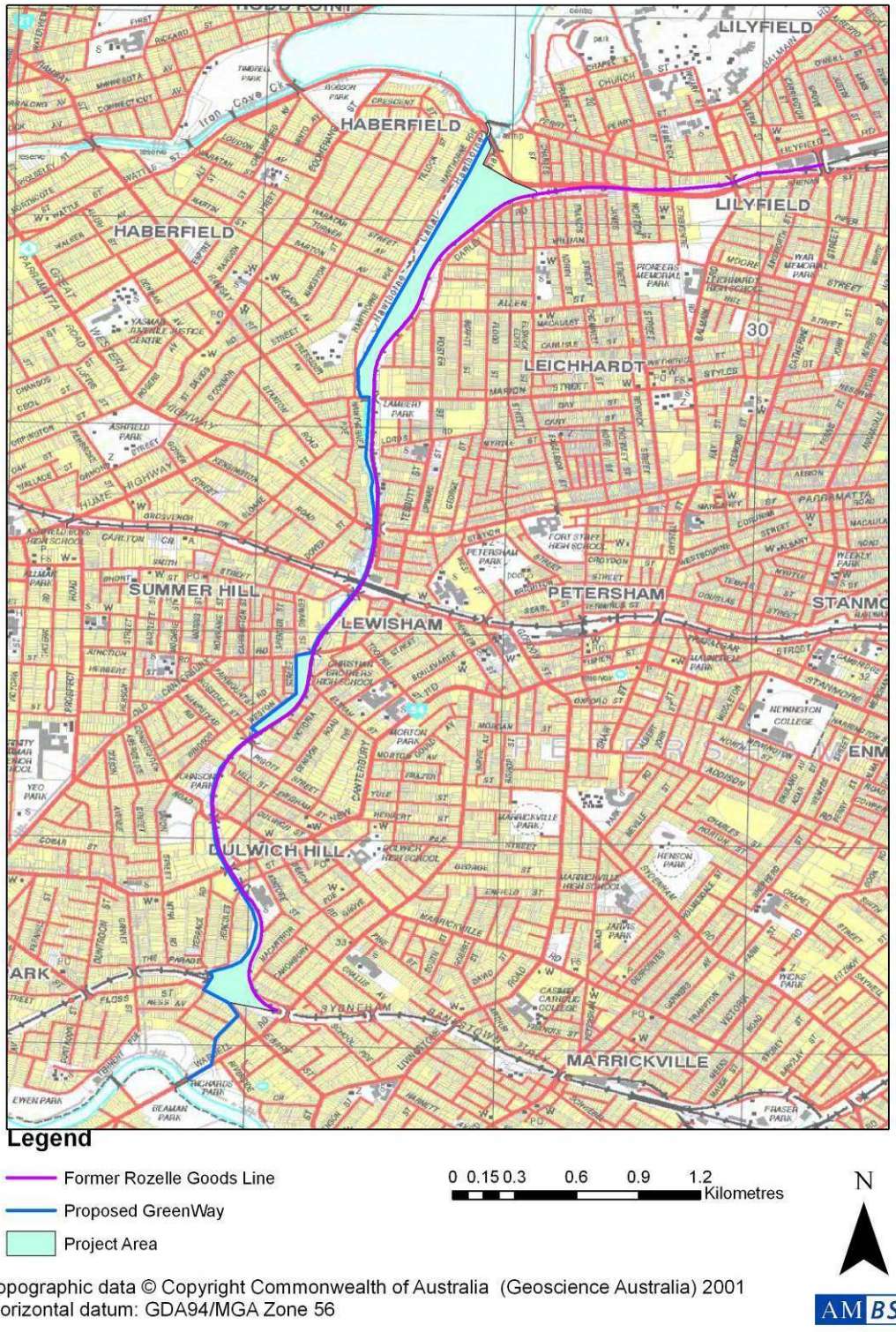


Figure 1.1 The extent of the study area, showing location of proposed light rail corridor (the former Rozelle Goods Line) and GreenWay.

Figure 1.2 Key features of the project – Lilyfield to Leichhardt North section (source: PB).

Figure 1.3 Key features of the project – Leichhardt North to Marion Street section (source: PB).

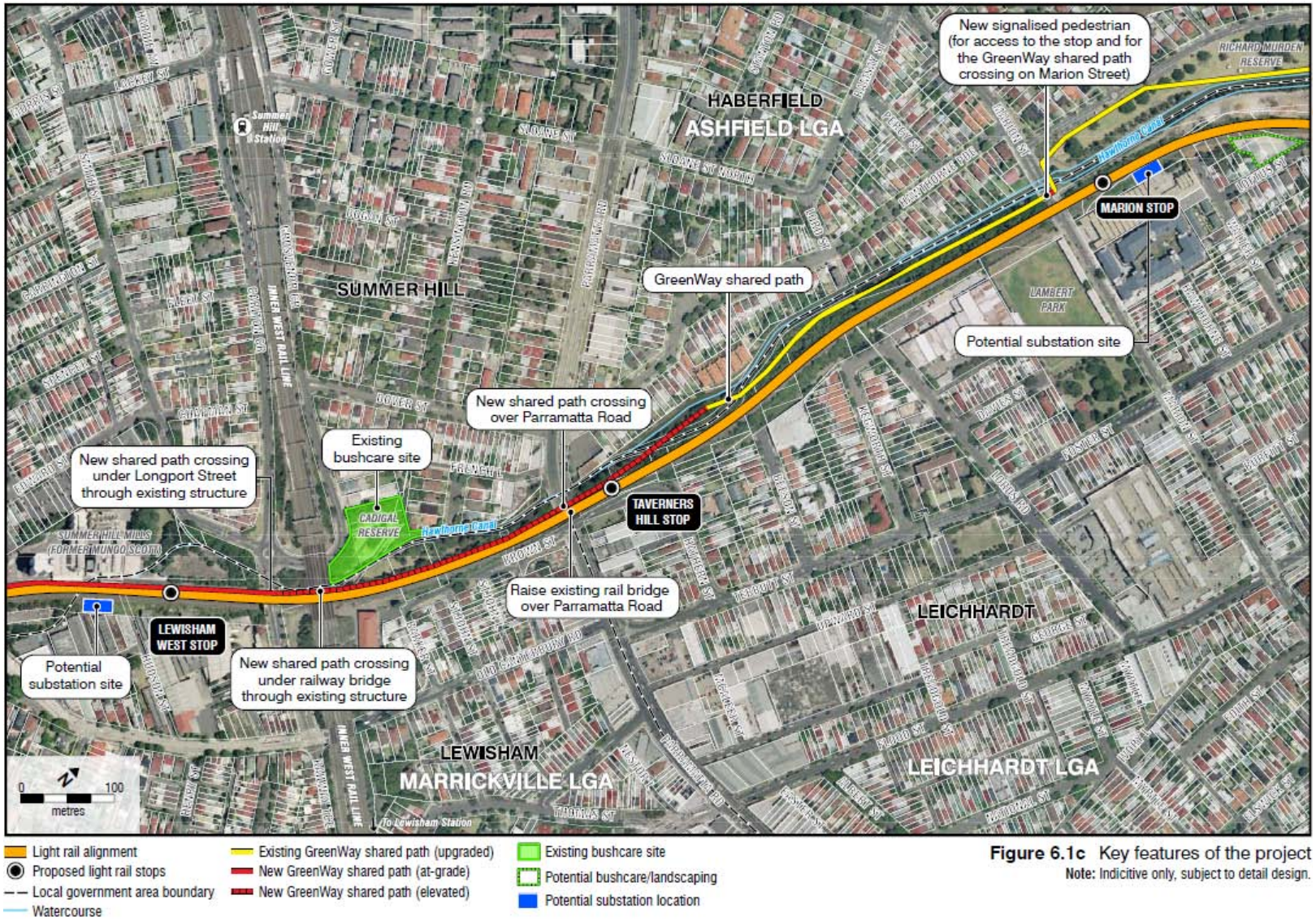


Figure 6.1c Key features of the project
Note: Indicitive only, subject to detail design.

Figure 1.4 Key features of the project – Marion Street to Lewisham West section (source: PB).

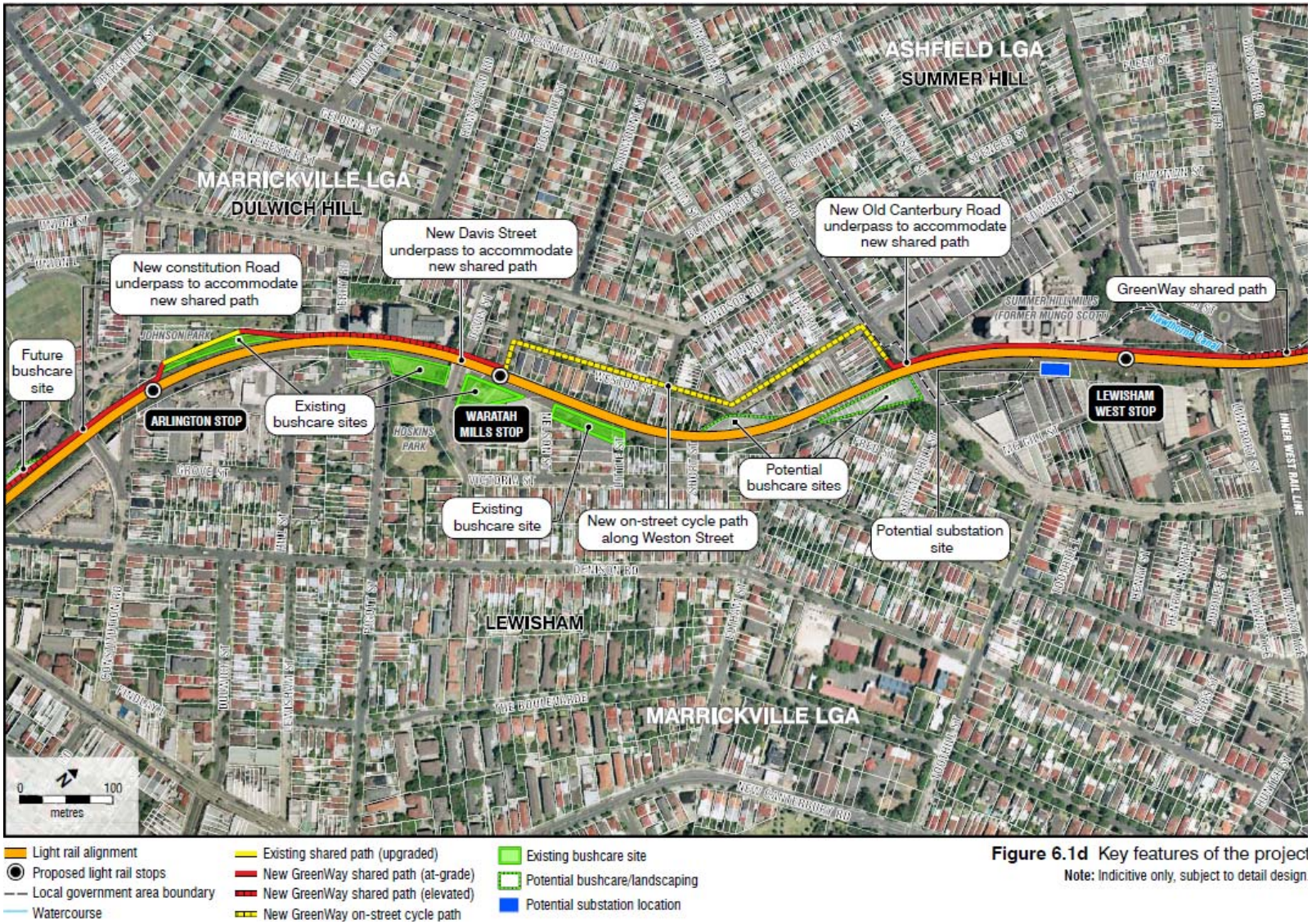


Figure 6.1d Key features of the project
Note: Indicitive only, subject to detail design

Figure 1.5 Key features of the project – Lewisham West to Arlington section (source: PB).

Figure 6.1e Key features of the project
Note: Indicitive only, subject to detail design.

Figure 1.6 Key features of the project – Arlington to Dulwich Hill section (source: PB).

1.3 Methodology

This HIA is broadly consistent with the processes and principles set out in the Australia ICOMOS Burra Charter (*The Australia ICOMOS charter for the conservation of places of cultural significance*). The assessment of Aboriginal scientific significance has been undertaken in accordance with the NSW National Parks and Wildlife Service (NPWS; now Department of Environment, Climate Change and Water [DECCW]) *Aboriginal Heritage Guidelines* (DEC 1997).

This HIA has been prepared in accordance with current heritage best-practice guidelines as identified in the *NSW Heritage Manual*, published by the Heritage Office and Department of Urban Affairs and Planning (now the Heritage Branch, Department of Planning) and associated documents, including *Archaeological Assessments* and *Assessing Heritage Significance*.

A survey of the study area for historic heritage was conducted by Jennie Lindbergh and Jenna Weston on 3 August 2010. A survey of the study area for Aboriginal heritage was conducted by Jenna Weston and Aboriginal community representatives on 19 August 2010.

1.3.1 Aboriginal Consultation

The Director-General's Requirements (DGRs) for this project specify that consultation should be undertaken with special interest groups such as the Metropolitan Local Aboriginal Land Council (MLALC), and no specification to undertake consultation in accordance with DECCW guidelines was made. Aboriginal community consultation is an integral part of the assessment of Aboriginal cultural heritage significance. Consultation was undertaken in order to:

- identify the Aboriginal cultural heritage values of the study area;
- provide an opportunity for the local Aboriginal community to comment on the Aboriginal heritage assessment process, and on the outcomes and recommendations of draft heritage assessment reporting; and,
- integrate Aboriginal heritage values and recommendations for management into the assessment report.

A 'Notice of Aboriginal Consultation' was placed in the Inner West Courier on 29 July 2010, inviting Aboriginal parties with cultural knowledge of the area to register an interest in being consulted for the project, by 12 August 2010 No responses to the advertisement were received.

The NSW Department of Aboriginal Affairs Registrar of Aboriginal Owners (RAO), the National Native Title Tribunal, local councils (Ashfield, Marrickville and Leichhardt), DECCW and the Metropolitan Local Aboriginal Land Council (MLALC) were contacted to request notification of any known Aboriginal parties with cultural knowledge of the area who may be interested in being consulted for the project. The MLALC, as statutory representatives of the local Aboriginal community, registered their interest.

The National Native Title Tribunal (NNTT) has one active Native Title Claim on its Register for the relevant LGAs, being for Darug Tribal Aboriginal Corporation (DTAC). The applicants are listed as Colin Gale, Gordon Morton and Angela Martin. Gordon Morton is now part of Darug Aboriginal Cultural Heritage Assessments (DACHA). DTAC and DACHA were both invited, in writing, to register an interest in being consulted for the project, and DACHA registered its interest.

DECCW identified MLALC and Tocomwall/Yarrawalk as potential Aboriginal stakeholders. As MLALC had already registered interest in being consulted, Yarrawalk was also invited, in writing, to register an interest in being consulted for the project, and did so.

Each local Council identified MLALC as a potential Aboriginal stakeholder; in addition, Leichhardt Municipal Council identified Boomalli Aboriginal Art Gallery as potentially having an interest in being consulted for the project; and Marrickville Council identified that their committee, the Marrickville Aboriginal Consultative Committee (MACC), and committee member, Jenny Thomsen, has good local knowledge and history. Given the tight timeframe for the project, the Boomalli Aboriginal Art Gallery were unable to confirm whether they wanted to be consulted.

Details of the project and a draft heritage assessment methodology were provided to MLALC, DACHA and Tocomwall on 12 August 2010. Darug Land Observations (DLO) registered an interest in the project on 16 August 2010, and was provided with the methodology. A field survey of the study area, in accordance with this methodology, was undertaken on 19 August 2010, with Aboriginal community representatives Dallas Dodd (MLALC), Gordon Morton and Tim Wells (DACHA).

Information provided by the Aboriginal community groups as part of the consultation has been integrated into the assessment, and has been attached to this report upon receipt, where appropriate (see Appendix A). The draft Aboriginal heritage assessment report was provided to each group for review and comment on 31 August 2010.

1.4 Authorship & Acknowledgements

This report has been prepared by Jenna Weston, AMBS Project Officer. Jennie Lindbergh, AMBS Senior Project Manager, prepared the Thematic History, historic heritage impact assessment and mitigation. Christopher Langeluddecke, AMBS Project Manager, reviewed the report.

The authors acknowledge the assistance of Emma Dean, Emma Taylor and Alex McDonald, of PB.

2 Statutory Context

2.1 Environment Protection and Biodiversity Conservation Act *1999*

In 2004, a new Commonwealth heritage management system was introduced under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The National Heritage List (NHL) was established to protect places that have outstanding value to the nation. The Commonwealth Heritage List (CHL) has been established to protect items and places owned or managed by Commonwealth agencies. Approval from the Minister is required for controlled actions which will have a significant impact on items and places included on the NHL or CHL.

The Register of the National Estate (RNE) was originally established under the *Australian Heritage Commission Act 1975*. Since the establishment of the NHL and CHL, there is now a significant level of overlap between the Register of the National Estate and heritage lists at the national, state and territory, and local government levels. To address this situation, the Register has been frozen since February 2007, meaning that no places can be added or removed. The RNE should be understood as an information resource only. Where an action has been referred to the Minister, in accordance with the EPBC Act, concerning World Heritage, National Heritage, Wetlands, endangered communities, or Commonwealth lands, the RNE may be used as a reference, where appropriate.

The RNE lists the following items, located within the vicinity of the study area.

Item	Primary Address
Haberfield Conservation Area	Haberfield
Parramatta and Lane Cove Rivers Landscapes, Sydney*	Parramatta and Lane Cove Rivers from North Rocks Road and de Burghs Bridge respectively, to Greenwich and including areas along the banks of both rivers
The Pressure Tunnel*	Potts Hill to Waterloo

*Indicative Place, meaning that data provided to or obtained by the Australian Heritage Council or the former Australian Heritage Commission has been entered into the database and the place is at some stage in the assessment process. A decision on whether the place should be entered in the Register has not been made.

The following site is not included on the National Heritage List, meaning that the Council has submitted an assessment to the Minister and the Minister has decided not to include the place on the National Heritage List:

- Haberfield Conservation Area – Parramatta Road, Haberfield.

Nevertheless, this site should be considered to have particular value to the local community.

2.2 National Parks and Wildlife Act 1974

Under the provisions of the *National Parks & Wildlife Act* 1974 (NPW Act), the Director-General of the DECCW is responsible for the care, control and management of all national parks, historic sites, nature reserves, state conservation areas, karst conservation reserves and regional parks. The Director-General is also responsible, under this legislation, for the protection and care of native fauna and flora, and Aboriginal places and objects throughout NSW.

All Aboriginal Objects are protected regardless of their significance or land tenure under the NPW Act. Aboriginal Objects can include pre-contact features such as scarred trees, middens and open campsites, as well as physical evidence of post-contact use of the area such as Aboriginal built fencing and fringe camps. The NPW Act also protects Aboriginal Places, which are defined as *"a place that is*

or was of special significance to Aboriginal culture. It may or may not contain Aboriginal objects". Aboriginal Places can only be declared by the Minister administering the NPW Act.
Under Section 90 of the Act, it is an offence for a person to destroy, deface, damage or desecrate an Aboriginal Object or Aboriginal Place without the prior issue of an Aboriginal Heritage Impact Permit (AHIP). The Act requires a person to take reasonable precautions and due diligence to avoid impacts on Aboriginal Objects. AHIPs may only be obtained from the Environmental Protection and Regulation Division (EPRD) of DECCW. It is also an offence under Section 86 of the NPW Act to disturb or excavate land for the purpose of discovering an Aboriginal Object, or to disturb or move an Aboriginal Object on any land, without first obtaining a permit under Section 87 of the NPW Act.

The *National Parks and Wildlife Amendment Act* 2010 will come into force on 1 October 2010, after which the permit process will change. Permits granted under Section 87 or Section 90 of the NPW Act and in force immediately prior this date will continue under the same terms and conditions. After 1 October 2010, where a development will have an impact on an Aboriginal object or place an AHIP will be required under Section 90 of the National Parks and Wildlife Amendment Act 2010. There will no longer be a requirement to undertake test excavation in accordance with a Section 87 permit.

Part of the regulatory framework for the implementation of the NPW Act is the Aboriginal Heritage Information Management System (AHIMS), maintained by DECCW. AHIMS includes a database of Aboriginal heritage sites, items, places and other objects that have been reported to the DECCW. Also available through AHIMS are site cards, which describe Aboriginal sites registered in the database, as well as Aboriginal heritage assessment reports, which contribute to assessments of scientific significance for Aboriginal sites. The AHIMS is not a comprehensive list of all Aboriginal heritage in NSW, rather it reflects information which has been reported to DECCW. As such, site co-ordinates in the database vary in accuracy depending on the method used to record their location. Heritage consultants are obliged to report Aboriginal sites identified during field investigations to DECCW, regardless of land tenure, or whether such sites are likely to be impacted by a proposed development. The results of a site search for the local area, for this HIA, are presented in Section 3.2.2.

2.3 The Heritage Act 1977

The *Heritage Act 1977* (Heritage Act) provides protection for heritage places, buildings, works and archaeological sites that are important to the people of NSW. Historic places, buildings, works or archaeological sites that have particular importance to the state of NSW can be listed on the State Heritage Register (SHR). Items and places of Aboriginal heritage significance which are listed on the SHR, or to which an active Interim Heritage Order applies, are protected under the Heritage Act.

The following items, which are within the study area, are listed on the SHR:

Ref	Name	Primary Address	Significance
01043	Lewisham Railway viaducts over Long Cove Creek	Great Southern and Western Railway, Grosvenor Crescent, Summer Hill	State
01326	Lewisham Sewage Aqueduct	Grosvenor Crescent East, Summer Hill/Lewisham	State
01630	Pressure Tunnel and Shafts (Pressure Tunnel Building)	Weston St, Lewisham	State

The SHR curtilage for each of these items:

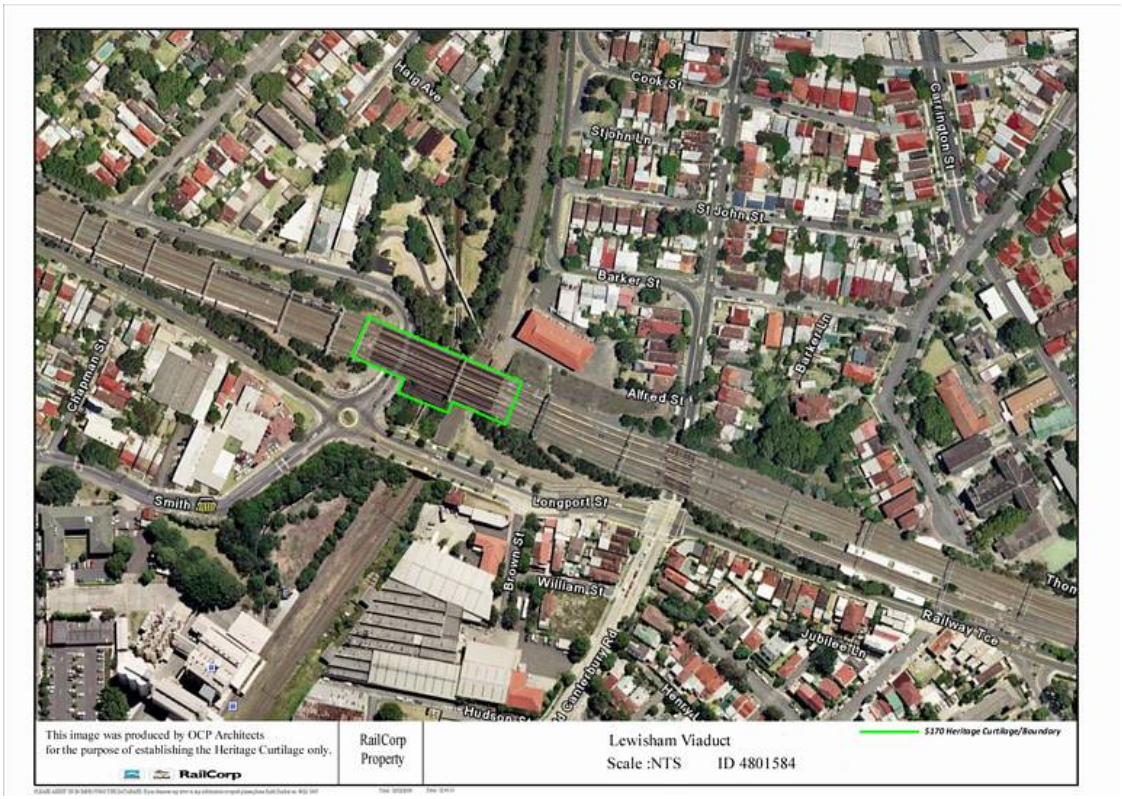


Figure 2.1 Lewisham Viaducts

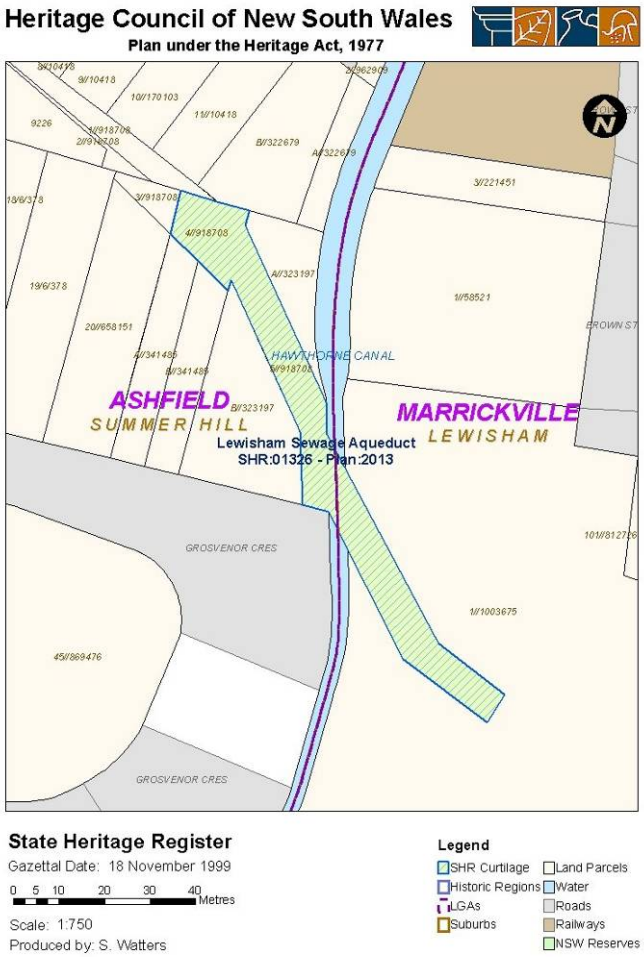


Figure 2.2 Lewisham Sewage Aqueduct.

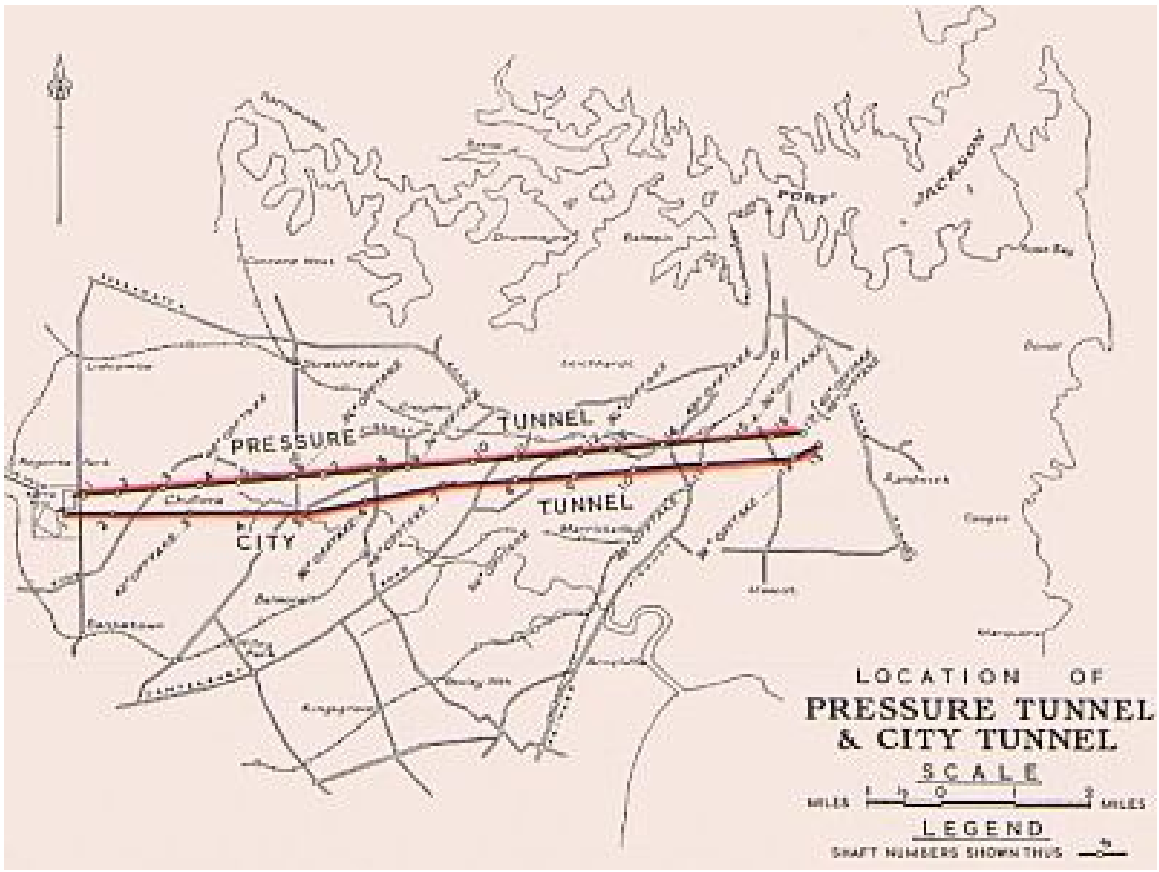


Figure 2.3 Pressure Tunnel & City Tunnel.

The Heritage Act also provides statutory protection to relics, archaeological artefacts, features or deposits. Sections 139 to 146 of the Act requires that excavation or disturbance of land that is likely to contain, or is believed may contain, archaeological relics is undertaken in accordance with an excavation permit issued by the Heritage Council (or in accordance with a gazetted exception to this Section of the Heritage Act).

The Act defines an archaeological relic as meaning *any deposit, artefact, object or material evidence:*

(a) relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement, and

(b) is of State or local heritage significance.

Where *any disturbance or excavation of land in respect of which an archaeological assessment approved by the Heritage Council indicates that there is little likelihood of there being any relics in the land*, an Exception under Section 139(4) should be submitted to the Heritage Council.

Under Section 170 of the Heritage Act, government instrumentalities are required to maintain a register of heritage assets: a Heritage and Conservation Register, also known as a Section 170 Register. Section 170A (1) of the Heritage Act requires that a *government instrumentality must give the NSW Heritage Council not less than 14 days written notice before the government instrumentality*:

(a) *removes any item from its register under section 170, or*

(b) transfers ownership of any item entered in its register, or

(c) ceases to occupy or demolishes any place, building or work entered in its register.

It should be noted that most activities, other than maintenance and cleaning, that impact on items listed on the Section 170 Register need approval from the Heritage Council. At a minimum this will

require that a Review of Environmental Factors (REF) is approved by the appropriate authority. Activities that involve heritage items also require the preparation of a heritage impact statement. This report has been prepared to fulfil this requirement.

2.3.1 RailCorp Heritage and Conservation Register (Section 170 Register)

The following items, which are within the study area or its vicinity, are listed on the RailCorp Section 170 Register:

Name	Primary Address	Significance
Dulwich Hill Railway Station Group	Wardell Road, Dulwich Hill	Local
Leichhardt (Charles St) Underbridge	Dulwich Hill to Rozelle Goods Line, Charles Street, Leichhardt	Local
Leichhardt (Marion St) Underbridge	Dulwich Hill to Rozelle Goods Line, Marion Street, Leichhardt	Local
Lewisham (Parramatta Road) Underbridge	Dulwich Hill to Rozelle Goods Line, Parramatta Road	Local
Lewisham Railway Sub-Station	Alfred Street, Lewisham	Local
Lewisham Railway Viaduct	Smith Street, Summer Hill	State
Lilyfield (Catherine St) Overbridge	Catherine Street, Lilyfield	Local

2.3.2 Sydney Water Corporation Heritage and Conservation Register

The following items, which are within the study area or its vicinity, are listed on the Sydney Water Section 170 Register.

Item No.	Item	Primary Address	Significance
4570001	Hawthorne Canal Stormwater Channel No. 62 (& Leichhardt Branch)	Hawthorne Parade, Haberfield to Canterbury Road	Local
4570955	Lewisham Sewage Aqueduct	Grosvenor Crescent East, Summer Hill/Lewisham	State
4570942	Pressure Tunnel & Shafts (Pressure Tunnel Building)	1-9 Weston Street, Dulwich Hill	State

2.3.3 NSW Roads and Traffic Authority Heritage and Conservation Register

The following item, which is within the vicinity of the study area, is listed on the NSW Roads and Traffic Authority Section 170 Register.

Item No.	Item	Primary Address
4305024	Battle Bridge Over Hawthorne Canal	Hawthorne Canal, Parramatta Road, Summer Hill

2.3.4 NSW Department of Education & Training Heritage and Conservation Register

The following item, which is within the vicinity of the study area, is listed on the NSW Department of Education & Training Section 170 Register.

Item	Primary Address
Kegworth Primary School	Tebbutt Street (between Lords Road and Kegworth Street), Leichhardt

2.4 Environmental Planning and Assessment Act (1979)

The *Environmental Planning and Assessment Act 1979* (EP&A Act) is the principal law regulating land use planning and development in NSW, and requires consideration to be given to the environment as part of the land use planning process. Projects are considered under different parts of the Act, including:

- Major projects, requiring the approval of the Minister for Planning and which are regional or State significant are undertaken under Part 3A of the Act.
- Minor or routine development projects, requiring local council consent are usually undertaken under Part 4. In limited circumstances, projects may require the Minister's consent.
- Projects which do not fall under Part 4 or Part 3A are undertaken under Part 5. These are often infrastructure projects approved by local councils or the State agency undertaking the project.

A Review of Environmental Factors (REF), Environmental Impact Statement (EIS) or Environmental Assessment (EA) considers environmental impacts as part of the land use planning process. In this context the environment includes Aboriginal and historic cultural heritage. The consent authority is required to consider the impact on all Aboriginal heritage values, including natural resource uses or landscape features of spiritual importance, as well as the impact on Aboriginal Objects and Aboriginal Places.

The EP&A Act also controls the making of environmental planning instruments (EPIs). Two types of EPIs can be made: Local Environmental Plans (LEPs), covering local government areas; and State Environment Planning Policies (SEPPs), covering areas of State or regional environmental planning significance. LEPs commonly identify and have provisions for the protection of local heritage items and heritage conservation areas.

2.4.1 State Environmental Planning Policy (Infrastructure) 2007

The *State Environmental Planning Policy (Infrastructure) 2007* (SEPP 2007) provides specific provisions and development controls for essential infrastructure projects, such as roads and railways. Division 15 of SEPP 2007 includes specific provisions for infrastructure developments undertaken to rail corridors and rail infrastructure facilities. The SEPP defines 'rail infrastructure facilities' as including:

> *(a) railway tracks, associated track structures, cuttings, drainage systems, fences, tunnels, ventilation shafts, emergency accessways, bridges, embankments, level crossings and roads, pedestrian and cycleway facilities, and*
> *(b) signalling, train control, communication and security systems, and*
> *(c) power supply (including overhead power supply) systems, and*
> *(d) railway stations, station platforms and areas in a station complex that commuters use to get access to the platforms, and*
> *(e) public amenities for commuters, and*
> *(f) car parks intended to be used by commuters, and bus interchanges, that are integrated or associated with railway stations, and*
> *(g) maintenance, repair and stabling facilities for rolling stock, and*
> *(h) refuelling depots, garages, maintenance facilities and storage facilities that are for the purposes of a railway, and*
> *(i) railway workers' facilities, and*
> *(j) rail freight terminals, sidings and freight intermodal facilities, 'but do not include buildings or works that are for residential, retail or business purposes and unrelated to railway purposes.*

Clause 79 'Development permitted without consent—rail infrastructure facilities generally', confirms that development for the purposes of a railway or rail infrastructure facilities by or on behalf of a

public authority, in this instance Transport NSW, may be undertaken without consent. Therefore, the proposed construction works for the project, including the alteration, demolition or relocation of a local heritage item or the alteration or relocation of a State heritage item, does not require consent under Part 4 of the EP&A Act. However, SEPP 2007 does not affect the requirements of the Heritage Act and relevant approvals under that Act should still be applied for (see Section 2.3 above).

Clause 14 of the SEPP also requires that Transport NSW, as the proponent and determining authority, should consult with Ashfield, Leichhardt and Marrickville Councils regarding the impact of the development on local heritage items and heritage conservation areas.

2.4.2 Leichhardt Local Environmental Plan 2000

Clauses 15 and 16 of the Leichhardt LEP 2000 are consistent with current heritage best practice guidelines, providing for the protection of heritage items, places, and archaeological sites.

Schedule 2 'Heritage items' of the LEP lists the following heritage items, which are located within the study area or its vicinity:

Name	Address	Significance
Former House in Lambert Park (now a childcare centre)	22 Foster Street, Leichhardt	Regional*
Houses	18–20 Beeson Street, Leichhardt	Local
Kegworth Primary School	Tebbutt Street (between Lords Road and Kegworth Street), Leichhardt	State*
SRA Stores Branch Building, former Tram Depot Office, Tramshed, Cable Store	25 Derbyshire Road and Balmain Road, Leichhardt	State*
Street trees – avenue of Brush Box	Planted in carriageway, Allen Street, Leichhardt	Local
Street tree – Moreton Bay Fig	Derbyshire Road, Leichhardt	Local
Street trees – row of Brush Box and one Ficus Hillii	Planted in carriageway, Henry Street, Leichhardt	Local
Two adjacent stone houses	134–136 James Street, Leichhardt	Local

*It should be noted that only the properties listed in Section 2.3 are listed on the SHR. The NSW Heritage Council recognises State and Local levels of heritage significance only. Since the remainder of these items and places are not currently listed on the SHR, they have local heritage significance only; however, they should be understood to have particular value to the local community.

2.4.3 Ashfield Local Environmental Plan 1985

Clause 32 of the Ashfield LEP 1985 is consistent with current heritage best practice guidelines, providing for the protection of heritage items, places, and archaeological sites.

Schedule 7 'Heritage items and heritage conservation areas' of the LEP lists the following heritage items, which are located within the study area or its vicinity:

Ref	Name	Primary Address	Significance
235	Battle Bridge	Hawthorne Canal, Parramatta Road, Summer Hill	Local
252	Mungo Scott Flour Mill Deferred under Section 68 (5)	2–32 Smith Street, Summer Hill	Local*
N/A	Haberfield CA Group	Dalhousie Street, Haberfield	Local
170	Lewisham Sewer Aqueduct	Grosvenor Crescent East, Summer Hill/Lewisham	State

144	Lewisham Viaduct	Carlton and Grosvenor Crescent, Summer Hill	State

*The Mungo Scott Flour Mill site at 2-32 Smith Street is identified in the heritage schedule of the 1985 LEP as 'Deferred under Section 68 (5)', which no longer has relevance. The new Draft LEP has not yet been finalised/exhibited, but will include the Flour Mill on the updated heritage schedule Ron Sim, Manager Strategic Planning & Projects, Ashfield Council, 26 August 2010).

2.4.4 Marrickville Local Environmental Plan 2001

Clause 48 of the Marrickville LEP 2001 is consistent with current heritage best practice guidelines, providing for the protection of heritage items, places, and archaeological sites.

Schedule 5 'Heritage items, heritage conservation areas and archaeological sites' of the LEP lists the following heritage items, which are located within the study area or its vicinity:

Ref	Name	Primary Address	Significance
1.3	Adjacent Girder Bridges (identified as 'Long Cove Creek Viaduct' on 2010 Draft LEP; i.e. Lewisham Railway Viaducts over Long Cove Creek)	Hawthorne Canal, Lewisham	State
1.40	Stone terracing and steps	101–109 Old Canterbury Road, Lewisham	Local
1.41	Timber Edwardian house (identified as 'Timber Federation period house' on 2010 Draft LEP)	122 Victoria Street, Dulwich Hill	Local
1.42	Waratah Flour Mills	10–14 Terry Road, Dulwich Hill	Local
3.2A	Victorian cottage	286 Wardell Road, Marrickville	Local
2.52	All street names marked in cement paving	Various streets located in the former Municipality of St Peters	Local

It should be noted that the Draft Marrickville LEP 2010 is currently in review, and has not yet come into force. Clause 5.10 of the draft Marrickville LEP 2010 provides for the protection of heritage items, places, and archaeological sites. Schedule 5 'Environmental heritage' of the LEP lists the following additional heritage items, which are located within the study area or its vicinity:

Ref	Name	Primary Address	Significance
25	Lewisham Sewage Aqueduct	Grosvenor Crescent East, Lewisham	State
HCA 26	Lewisham Estate Heritage Conservation Area	Old Canterbury Road, Lewisham	Local
10	Pressure Tunnel Shaft	1–9 Weston Street, Dulwich Hill	State

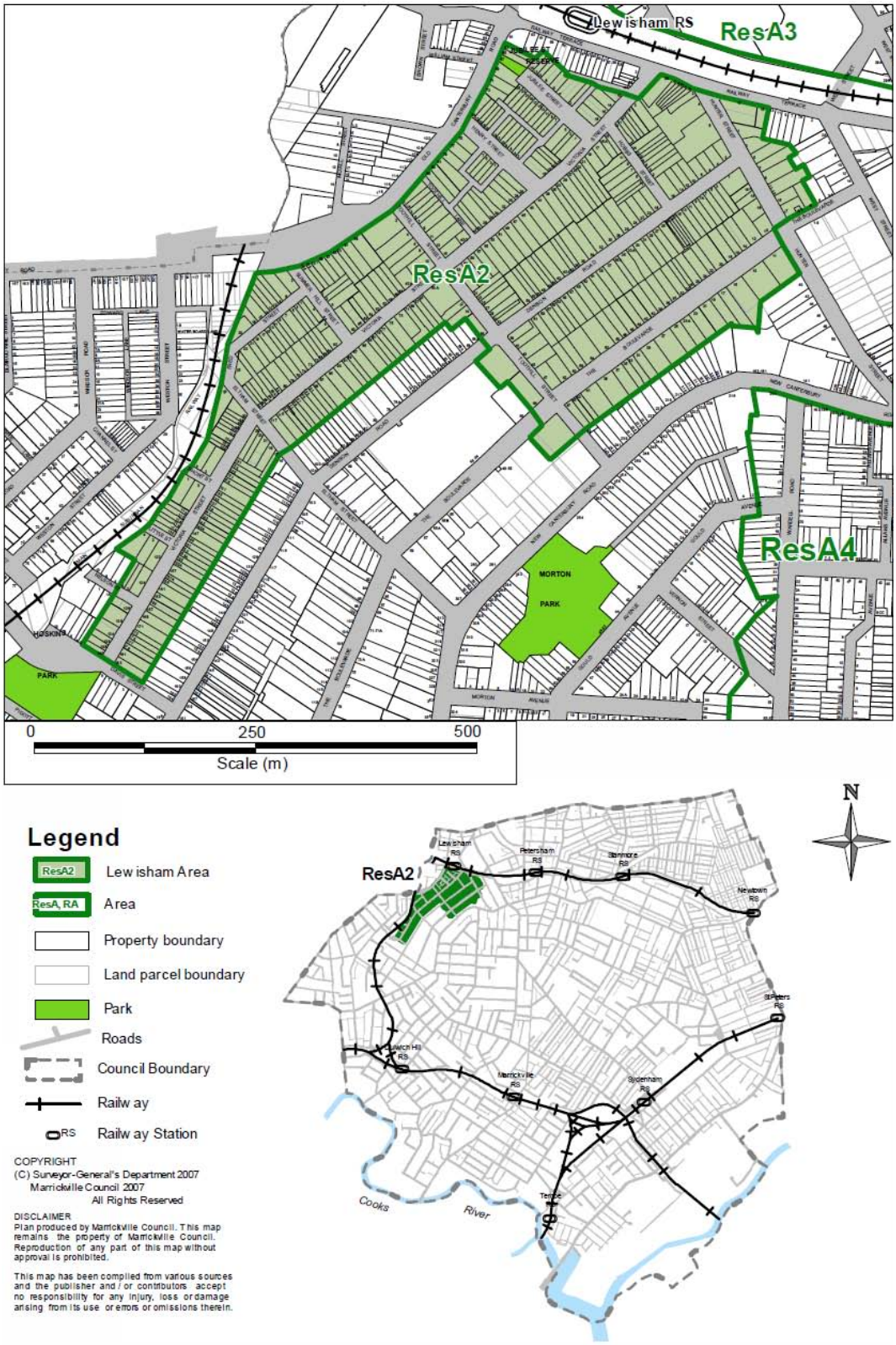


Figure 2.4 Curtilage of the Lewisham Estate Heritage Conservation Area

2.4.5 City West Sydney Regional Environmental Plan No. 26

Division 6 of the City West SREP No. 26 (now considered a SEPP) is consistent with current heritage best practice guidelines, providing for the protection of heritage items, places, and archaeological sites.

Schedule 4 'Heritage items' of the SREP lists the following heritage item, which is located within the vicinity of the study area:

Ref	Name	Primary Address
Part 3, Item 12	Catherine Street Railway Bridge	Catherine Street, Lilyfield

2.5 National Trust of Australia (NSW)

The National Trust of Australia is a private, not-for-profit organisation committed to conserving Australia's heritage. Listing with the National Trust of Australia does not have statutory authority; however, it does have a role in raising public awareness of heritage issues.

The following places or items within the study area or its vicinity have been classified by the National Trust:

Ref	Name	Primary Address
10071	Sydney Sewerage System Lewisham Aqueduct	Grosvenor Crescent Across Long Cove Creek
7848	Haberfield Urban Conservation Area	Generally bounded by Dobroyd Lane, Kingston Street, Waratah Street, Hawthorne Parade, Marion Street, Ramsay Street, Sloane Street, Parramatta Road (north side), Northcote Street, Ramsay Street, Dalhousie Street, Boomerang Street and including Robson Park
10659	Viaduct, Main West Line Over Long Cove Creek	Lewisham
8736	Leichhardt Tramways Storage Depot (former)	Derbyshire Street, corner Moore Street (west)
7891	Hercules Furniture Factory (replaced by modern apartments)	3 Terrace Road, Dulwich Hill

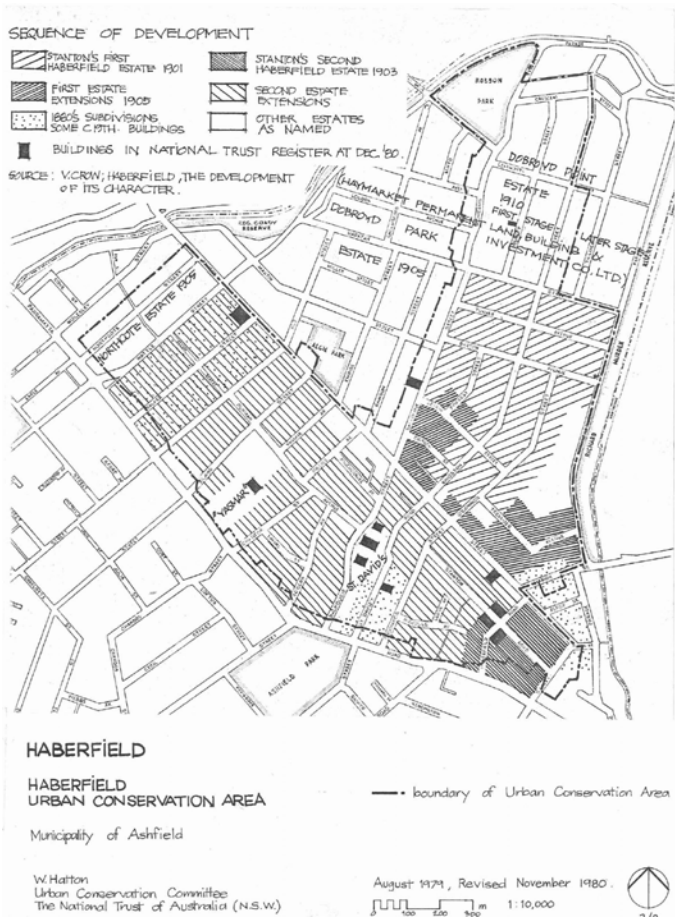


Figure 2.5 Haberfield Urban Conservation Area.

2.6 Summary of Identified Historic Heritage Items

Table 2.1 provides a summary of the 29 identified historic heritage items within the study area or its vicinity, and the level of significance of identified items. Maps of identified historic heritage items (where locations are known, or where locations were verified during the site visit) within the vicinity of the study area is provided in Figure 2.6 to Figure 2.12.

Table 2.1 Summary of identified historic heritage items in the study area or its vicinity

Item	Primary Address	Listing Identification
All street names marked in cement paving*	Various streets located in the former Municipality of St Peters	LEP
Battle Bridge Over Hawthorne Canal	Hawthorne Canal, Parramatta Road, Summer Hill	LEP S.170
Deferred under Section 68 (5)	2–32 Smith Street, Summer Hill	LEP
Dulwich Hill Railway Station Group	Wardell Road, Dulwich Hill	S.170
Former House in Lambert Park (now a childcare centre)	22 Foster Street, Leichhardt	LEP
Haberfield Conservation Area	Haberfield	LEP RNE National Trust
Hawthorne Canal Stormwater Channel No. 62 (& Leichhardt Branch)	Hawthorne Parade, Haberfield to Canterbury Road	S.170
Hercules Furniture Factory (replaced by modern apartments)*	3 Terrace Road, Dulwich Hill	National Trust
Houses	18–20 Beeson Street, Leichhardt	LEP
Kegworth Primary School	Tebbutt Street (between Lords Road and Kegworth Street), Leichhardt	LEP S.170
Leichhardt (Charles St) Underbridge	Dulwich Hill to Rozelle Goods Line, Charles Street, Leichhardt	S.170
Leichhardt (Marion St) Underbridge	Dulwich Hill to Rozelle Goods Line, Marion Street, Leichhardt	S.170
Lewisham (Parramatta Road) Underbridge	Dulwich Hill to Rozelle Goods Line, Parramatta Road	S.170
Lewisham Estate Heritage Conservation Area	Old Canterbury Road, Lewisham	Draft LEP
Lewisham Railway Sub-Station	Alfred Street, Lewisham	S.170
Lewisham Railway Viaducts over Long Cove Creek	Great Southern and Western Railway, Grosvenor Crescent, Summer Hill	SHR LEP S.170 National Trust
Lewisham Sewage Aqueduct	Grosvenor Crescent East, Summer Hill/Lewisham	SHR LEP S.170 National Trust
Lilyfield (Catherine St) Overbridge	Catherine Street, Lilyfield	S.170 SREP/SEPP
Parramatta and Lane Cove Rivers Landscapes, Sydney*	Parramatta and Lane Cove Rivers from North Rocks Road and de Burghs Bridge respectively, to Greenwich and including areas along the banks of both rivers	RNE (Indicative place)

Pressure Tunnel and Shafts (Pressure Tunnel Building)	1–9 Weston Street, Lewisham	SHR S.170 Draft LEP RNE (Indicative place)
SRA Stores Branch Building, former Tram Depot Office, Tramshed, Cable Store	25 Derbyshire Road and Balmain Road, Leichhardt	LEP National Trust
Stone terracing and steps	101–109 Old Canterbury Road, Lewisham	LEP
Street trees – avenue of Brush Box	Planted in carriageway, Allen Street, Leichhardt	LEP
Street tree – Moreton Bay Fig	Derbyshire Road, Leichhardt	LEP
Street trees – row of Brush Box and one Ficus Hillii	Planted in carriageway, Henry Street, Leichhardt	LEP
Timber Edwardian house	122 Victoria Street, Dulwich Hill	LEP
Two adjacent stone houses	134–136 James Street, Leichhardt	LEP
Victorian cottage	286 Wardell Road, Marrickville	LEP
Waratah Flour Mills	10–14 Terry Road, Dulwich Hill	LEP
*Item has not been mapped.		

Inventories for heritage items are available on the Heritage Branch website http://www.heritage.nsw.gov.au/07_subnav_04.cfm. Many of the heritage inventories include little more information than the name and address of the item.

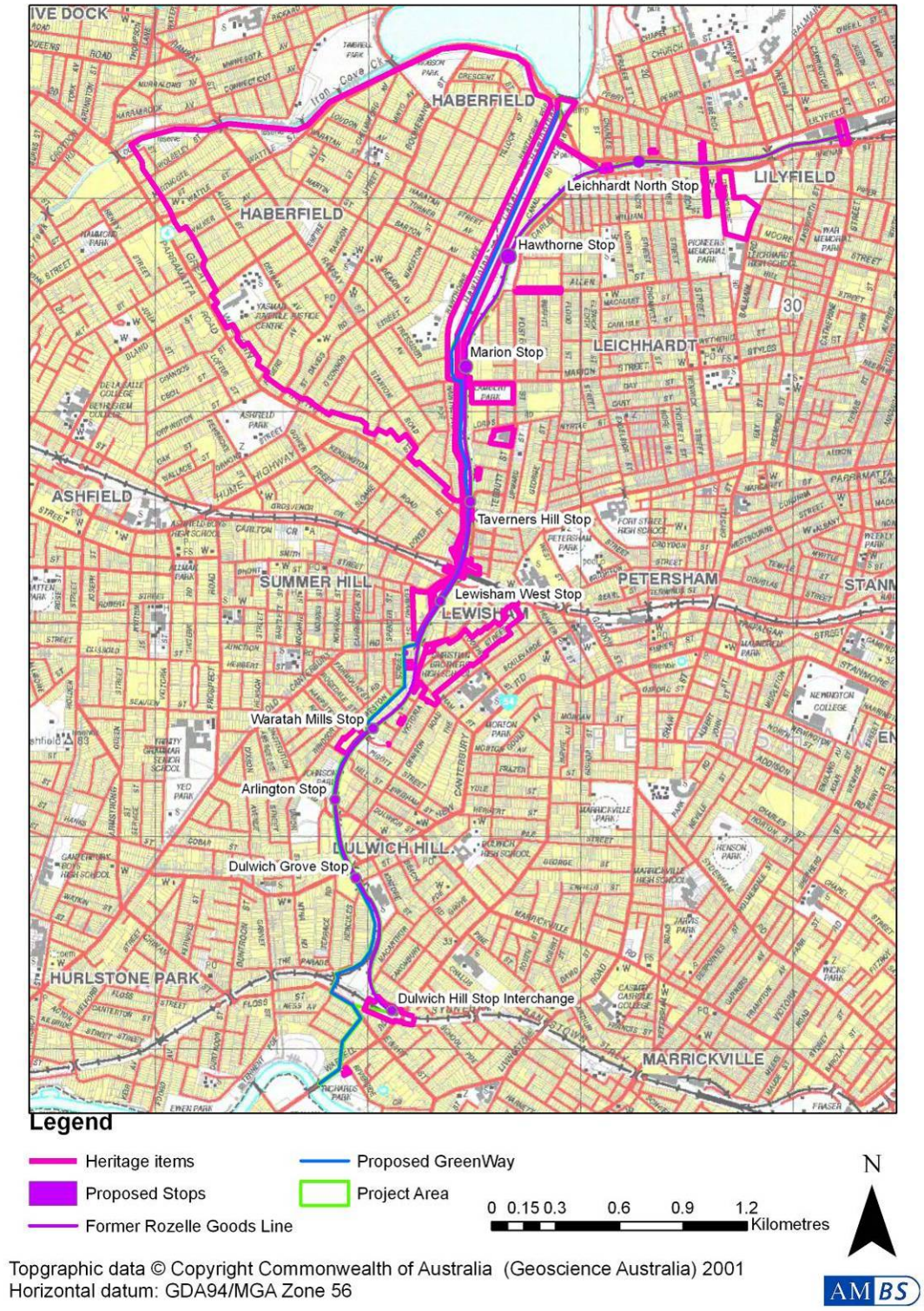


Figure 2.6 Location of identified historic heritage items in the vicinity of the study area.

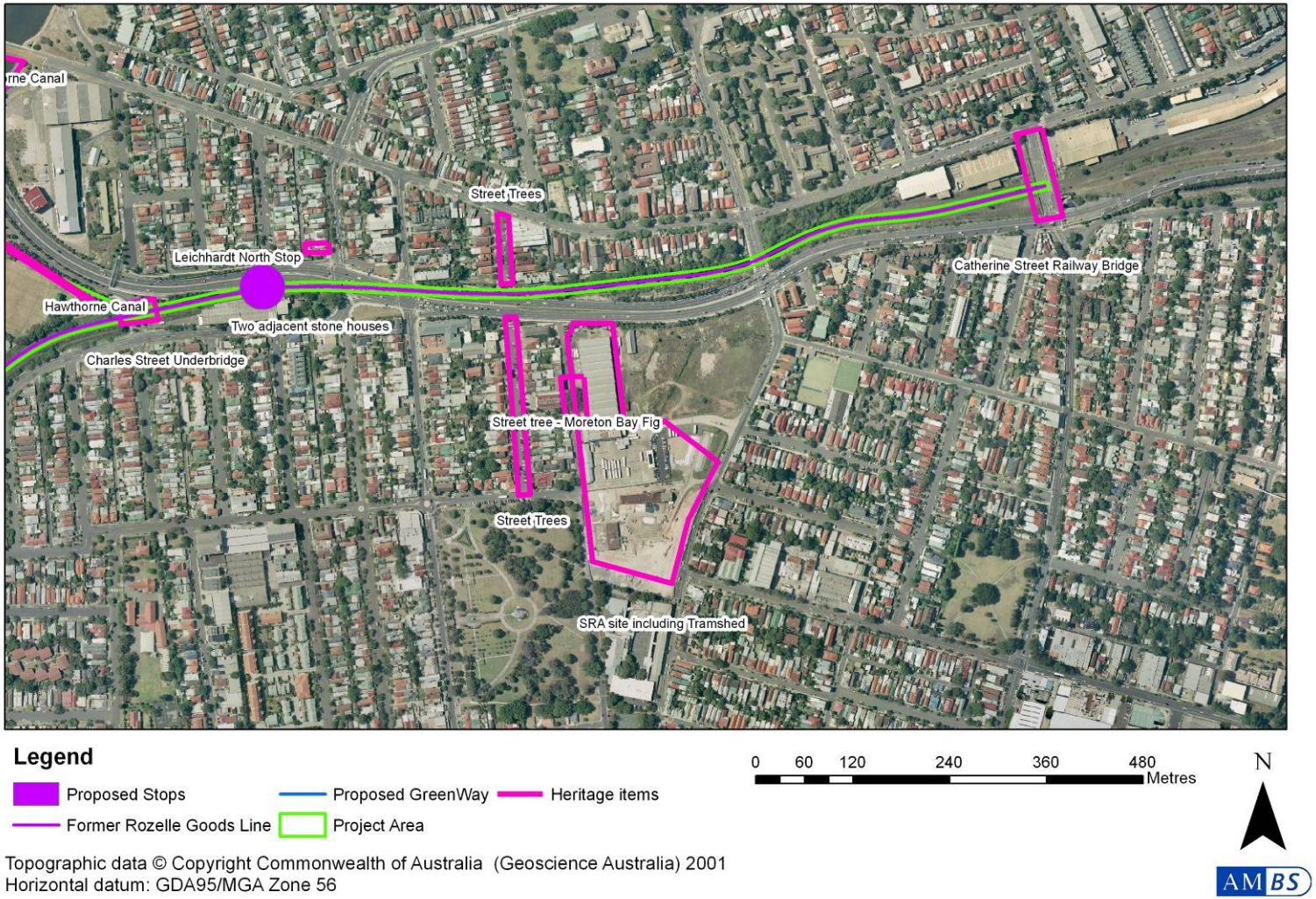


Figure 2.7 Location of identified historic heritage items in the vicinity of the north-eastern part of the study area.

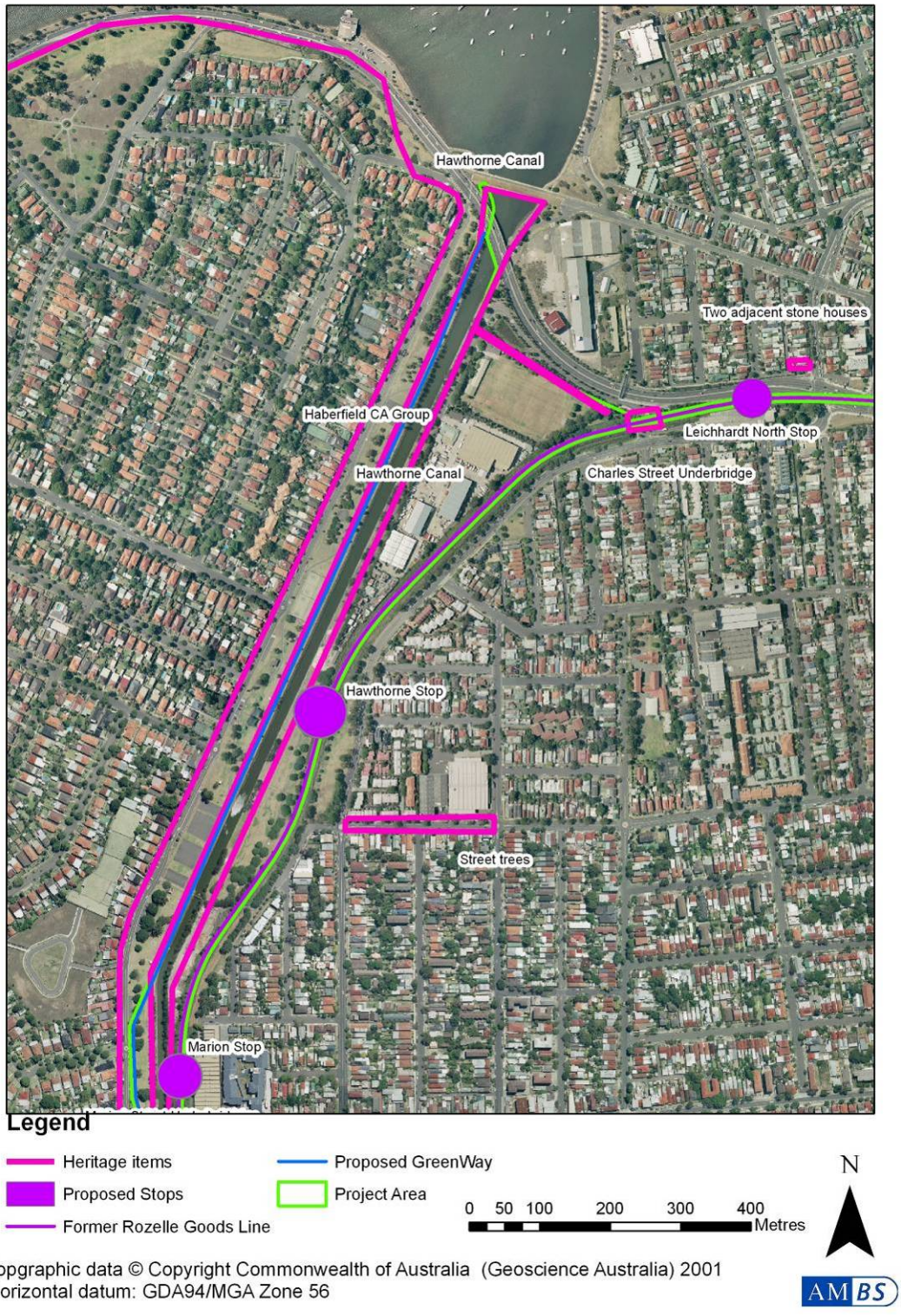


Figure 2.8 Location of identified historic heritage items in the vicinity of the north-western part of the study area.

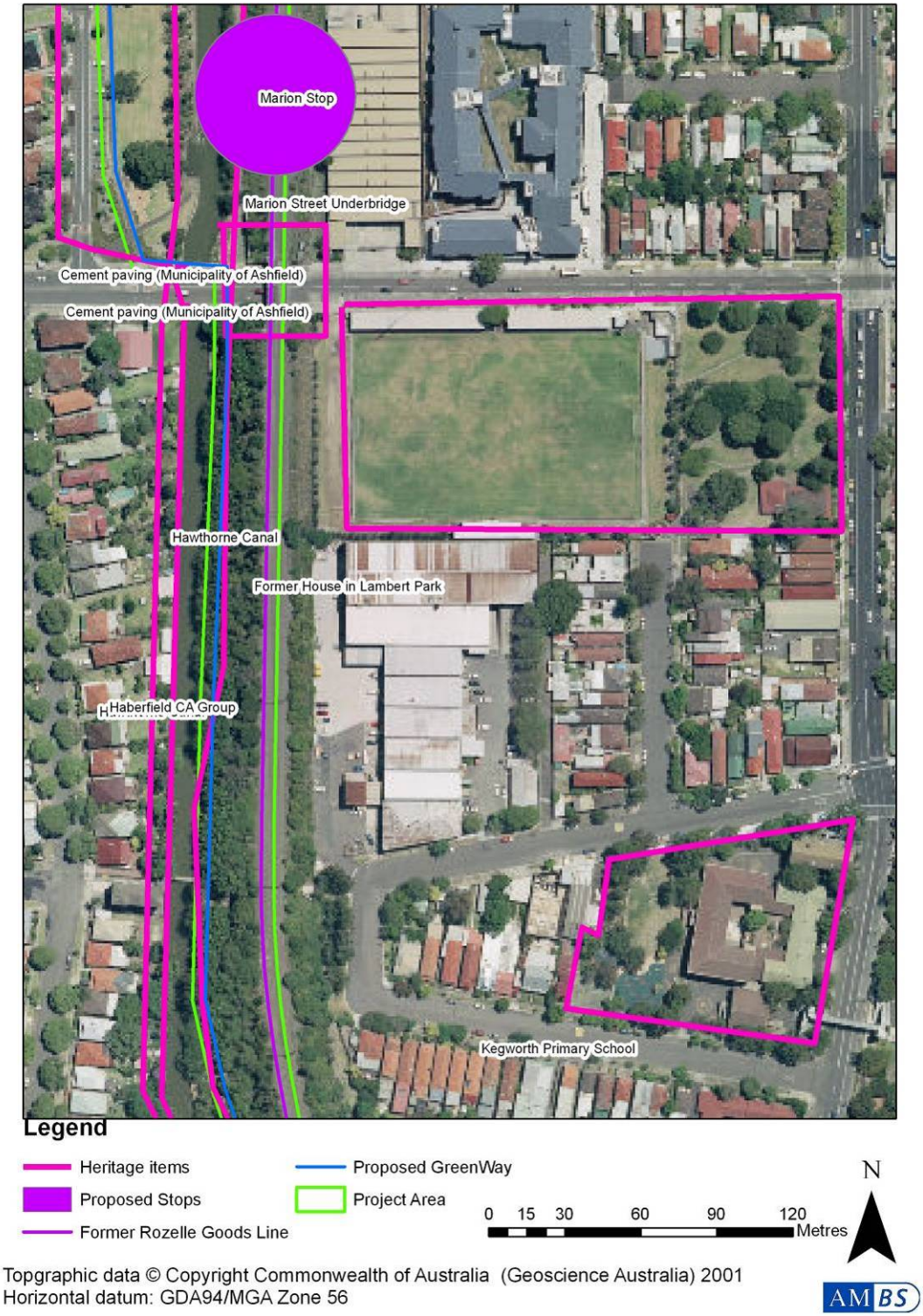


Figure 2.9 Location of identified historic heritage items in the vicinity of the Marion part of the study area.

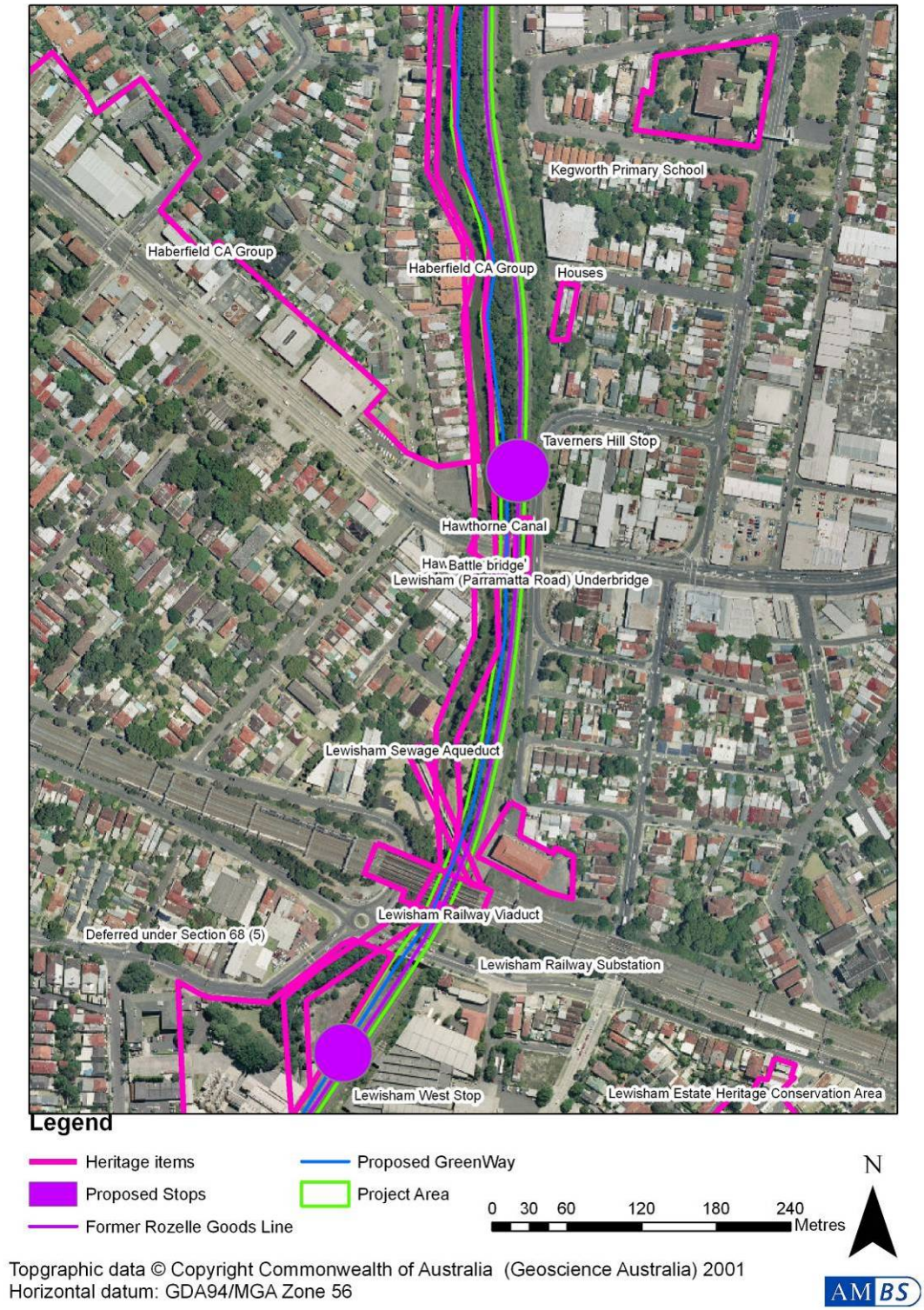


Figure 2.10 Location of identified historic heritage items in the vicinity of the Lewisham part of the study area.

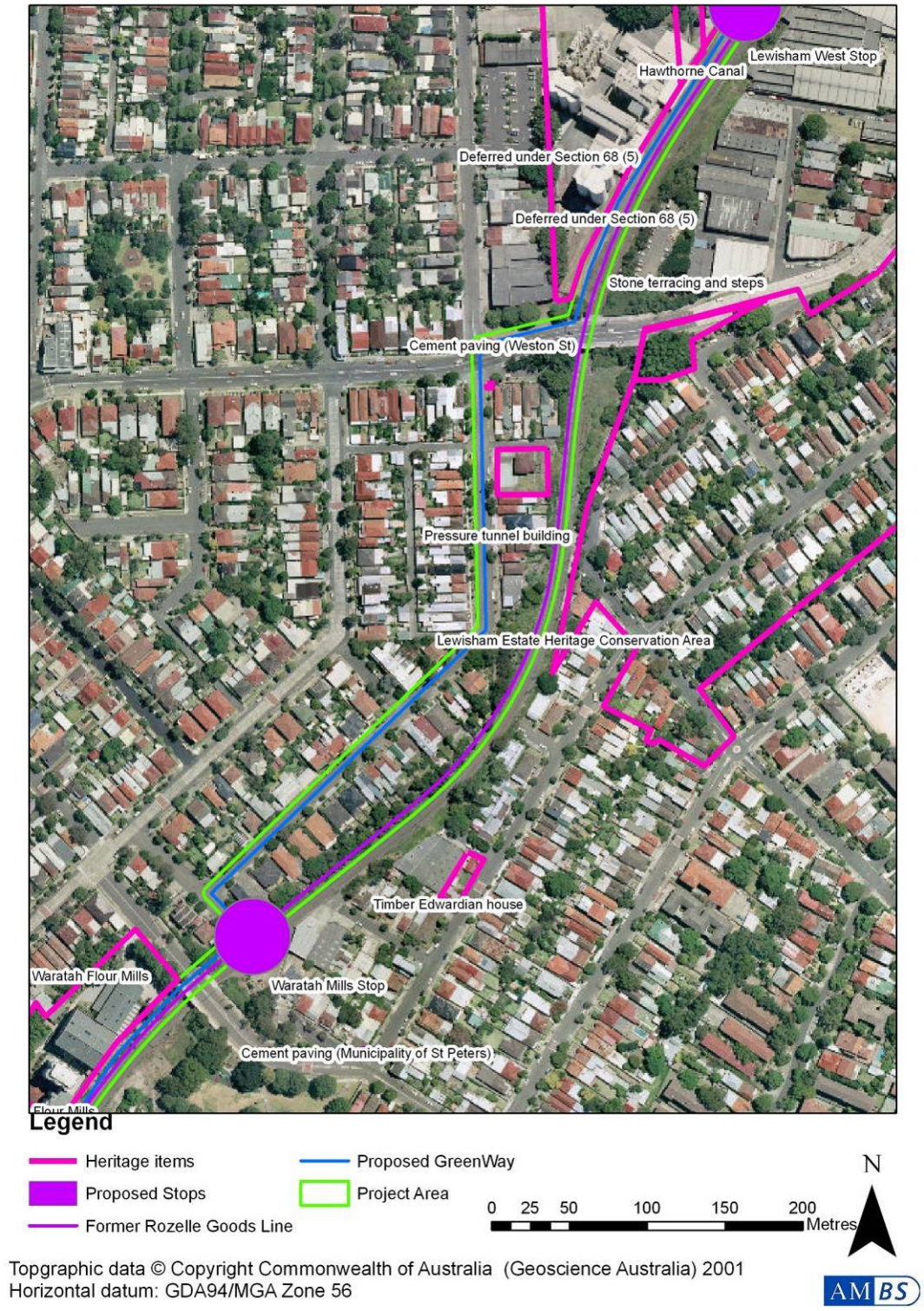


Figure 2.11 Location of identified historic heritage items in the vicinity of the Lewisham/Waratah Mills part of the study area.

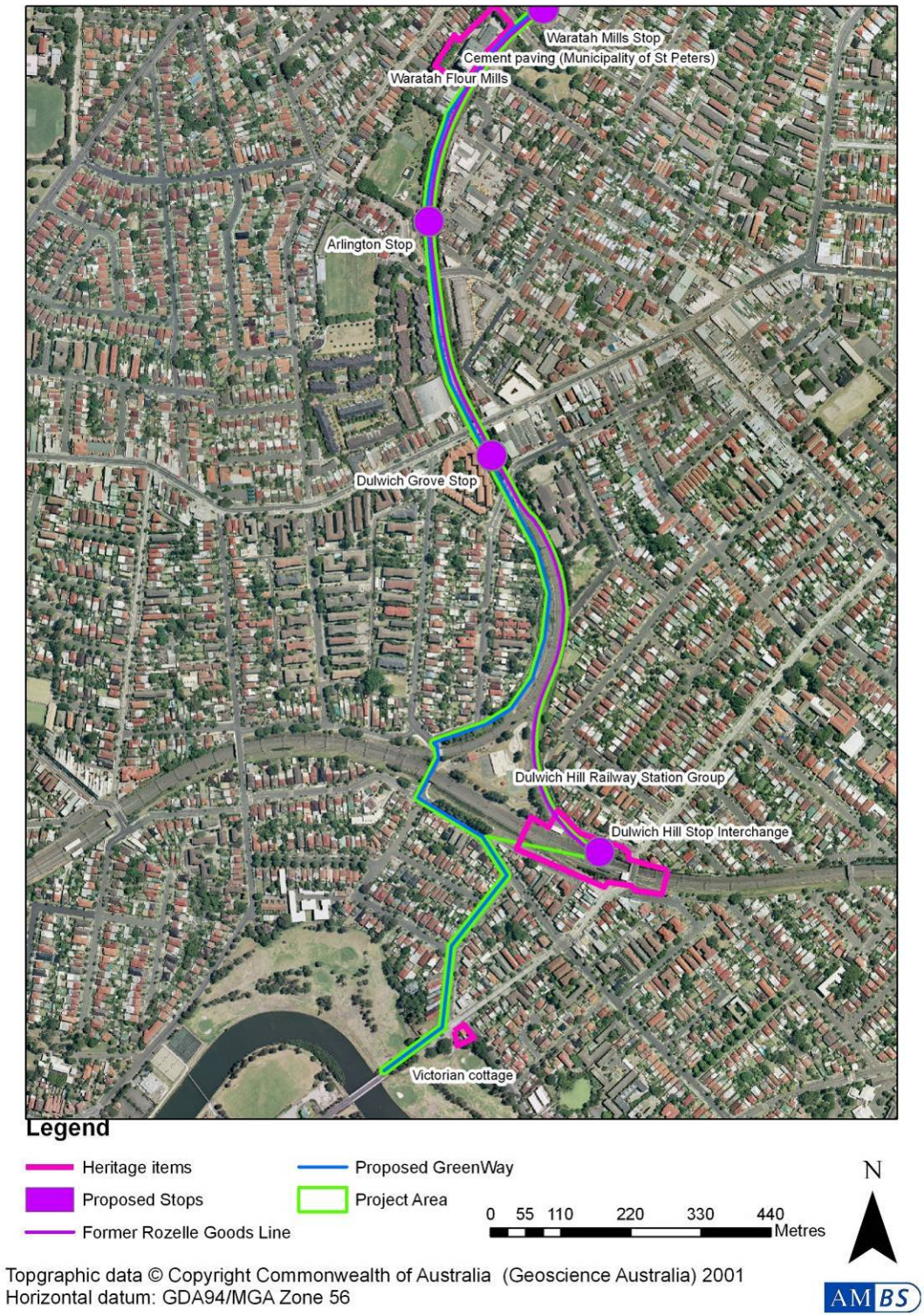


Figure 2.12 Location of identified historic heritage items in the vicinity of the southern part of the study area.

3 Aboriginal Context

3.1 Environmental Context

An understanding of environmental factors within the local landscape provides a context for analysing past human occupation and history of an area. The natural environment was, and is, of key importance to Aboriginal people for both cultural and spiritual reasons. It also provided a wealth of natural resources for subsistence, tool making and occupation. The characteristics of the natural environment often influenced occupation and subsistence strategies. For the purpose of cultural heritage management, the analysis of environmental factors is important as it contributes to the development of predictive models for archaeological sites (see Appendix B for descriptions of types of sites), as well as providing a basis to contextualise the archaeological material and to interpret patterns of past human behaviour.

3.1.1 Topography, Geology and Soils

The northern portion of the study area, in the vicinity of Iron/Long Cove, is disturbed terrain (Figure 3.1). Based on an early Parish map (Figure 3.2), the disturbance is due to extensive land reclamation and the construction of the Hawthorne Canal.

Parts of the study area in Lilyfield and Dulwich Hill comprise the Gymea (gy) erosional soil landscape. This consists of undulating to rolling rises and low hills on Hawkesbury Sandstone. This geology is suitable for Aboriginal sites such as shelters, rock engravings and axe grinding grooves, and one registered Aboriginal site (45-6-2278) is located in this landscape, over 200m east of the north-eastern end of the rail corridor. Soils include shallow to moderately deep (30-100cm) yellow earths and earthy sands on crests and inside benches, shallow (<20cm) siliceous sands on leading edges of benches, localised gleyed and yellow podzolics on shale lenses, and shallow to moderately deep (<100cm) siliceous and leached sands along drainage lines (Chapman and Murphy 1989:64).

In the vicinity of Lewisham (between Kegworth and Hudson Streets), and adjacent to the Cooks River, the Birrong (bg) alluvial soil landscape is present. This consists of level to gently undulating alluvial floodplain draining Wianamatta Group shales. This geology is not suitable for Aboriginal sites such as shelters, rock engravings, axe grinding grooves or quarries. Soils include deep (>250cm) yellow podzolics and solidics on older alluvial terraces, and deep (>250cm) solidics and yellow solonetzics on current floodplain (Chapman and Murphy 1989:82). Floodplains are generally not favourable locations for Aboriginal occupation sites.

Parts of the study area in Lilyfield and Dulwich Hill comprise the Blacktown (bt) residual soil landscape. This consists of gently undulating rises on Wianamatta Group shales (Ashfield and Bringelly) and Hawkesbury shale. This geology is not suitable for Aboriginal sites such as shelters, rock engravings, axe grinding grooves or quarries. Soils are shallow to moderately deep (<100cm) red and brown podzolics in higher and well-drained areas, and deep (150-300cm) yellow podzolics and soloths in lower and poorly-drained areas (Chapman and Murphy 1989:30).

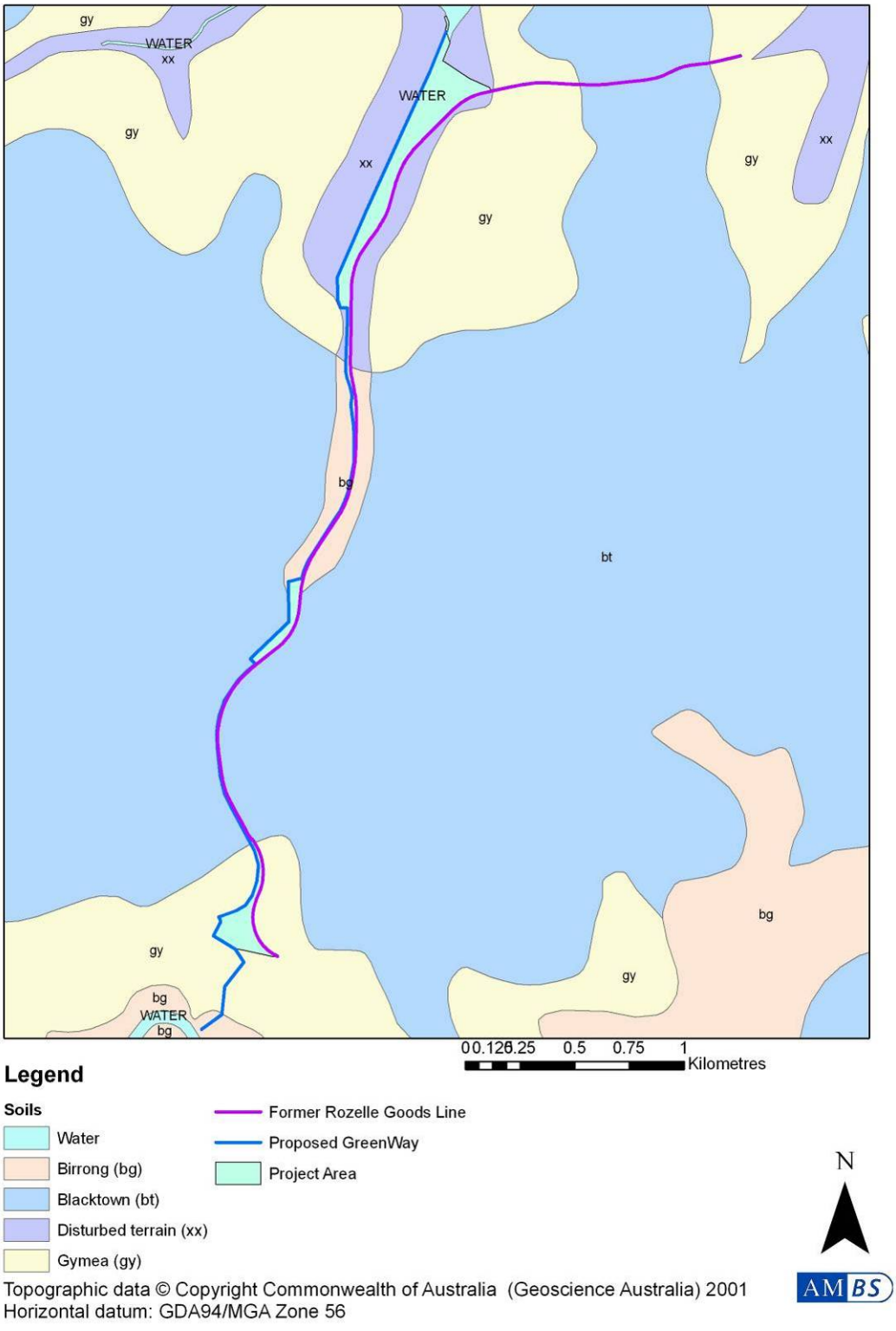


Figure 3.1 Soils in the vicinity of the study area.

Figure 3.2 Detail from Parish map of Petersham (n.d.), showing Long Cove extending inland further than it does in the present day. This indicates that some land reclamation has occurred in this area (Source: Parish Map Preservation Project 14062201).

3.1.2 Hydrology and Drainage

Most drainage lines in this area of Sydney have been converted to lined concrete and brick channels, such as the Hawthorne Canal (Chapman and Murphy 1989:83). As indicated by an early Parish map (Figure 3.2), the Hawthorne Canal was originally Long Cove Creek. Aboriginal occupation of the study area is likely to have been centred on the creeks (Long Cove Creek and the Cooks River) and the harbour at Long Cove; however, the land in the northern portion of the study area, in the vicinity of Long Cove, has been reclaimed, and the former coastline/creekline has now been extensively developed. Therefore, no *in situ* Aboriginal sites are likely to be present along the northern portion of the GreenWay.

The southern part of the study area extends to the Cooks River. McIntyre-Tamwoy notes that 'wetlands and marshes around the Cooks River have been progressively filled and the creeks and the river itself canalised and alignments changed', and it appears that the alignment has been slightly modified at the southern end of the study area (2003:i) (compare Figure 1.1 and Figure 3.3). Nevertheless, Aboriginal occupation in this general area is likely to have been frequent. However, the proposed GreenWay extends along an established road in the vicinity of this River, and therefore no Aboriginal sites will be present within the study area in the vicinity of the Cooks River.

Figure 3.3 Detail from Parish map of Petersham (n.d.), showing the alignment of the Cooks River, which appears to have been somewhat modified (Source: Parish Map Preservation Project 14062201).

3.1.3 Vegetation

The study area would originally have been covered by open schlerophyll forest and eucalypt woodland. Trees in this area would have included Sydney blue gums, blackbutt, red and yellow bloodwood, scribbly gum, brown stringybark, old man banksia, forest red gum, ironbark, turpentineSydney peppermint, smooth-barked apple, grey box and black ash trees. An understorey of shrubs would have comprised Epacridaceae, Myrtaceae, Fabaceae and Proteaceae (Chapman and Murphy 1989:30-1,64-5,83). However, the area has been extensively cleared and no remnant vegetation remains. As such, no scarred or carved trees will be present in the study area.

3.1.4 Land Use and Disturbance

The SLRE is to follow the former Rozelle Goods Line from Lilyfield to Dulwich Hill. This area has been disturbed by the original construction of the rail corridor in 1916, and Aboriginal sites will therefore not remain within the corridor. Part of the project area and GreenWay, in the north, includes Blackmore Park and a commercial/industrial area; and the Hawthorne Canal Reserve, which also includes some pathways, sports courts and other public facilities (Figure 3.4). The northern part of this land has also been reclaimed (see Section 3.1.2).

South of this area, the GreenWay extends through green areas adjacent to the Hawthorne Canal and the rail corridor; and further south, between residential areas/parks and the rail corridor. There are

some previously constructed pedestrian/bicycle paths along the GreenWay in this area. In those areas where there are no existing paths or green areas, the GreenWay is proposed for roads such as Weston Street, Ewart Street, Riverside Crescent and Wardell Road. The project area also includes a residential area between the rail corridor and Weston Street (Lewisham), and a park area between the rail lines at Dulwich Hill (Figure 3.5). The southern part of the project area extends along Wardell Road to the Cooks River, adjacent to Richards Park.

In summary, the greater part of the study area has been disturbed by the construction of the rail, roads, canal or residential/commercial construction, and parts have been reclaimed. The green areas/parks have also been disturbed by landscaping and the construction of facilities, including paths. As such, none of the original ground surface of the study area is visible, and the probability that any Aboriginal sites are present is very low. Any Aboriginal heritage material that remains, for example, in the green areas, will not be *in situ*.

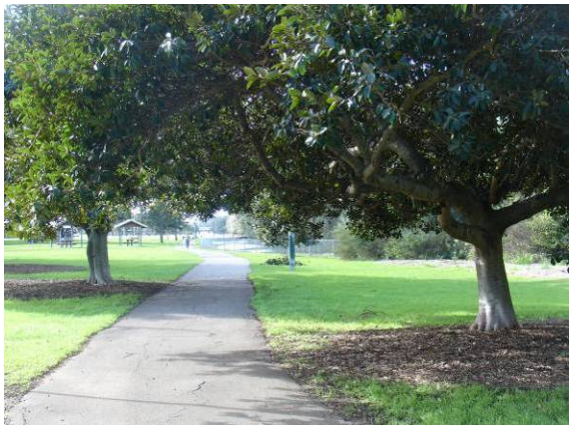


Figure 3.4 Landscaping and construction in Hawthorne Canal Reserve.

Figure 3.5 Rail corridor and skate park in vicinity of Dulwich Hill interchange.

3.2 Aboriginal Archaeological Context

This section describes the nature of the known Aboriginal archaeology of the study area, based upon a review of relevant archaeological reports and publications, and a search and review of previously recorded sites in DECCW's AHIMS database. This review and discussion has been undertaken to allow for the development of a predictive model for potential Aboriginal sites within the study area, and to establish a context for a comparative significance assessment.

3.2.1 Regional Archaeological Context

Aboriginal occupation of the Sydney basin is likely to have spanned at least 20,000 years, although dates of more than 40,000 years have been obtained from artefacts found in gravels of the Cranebrook Terrace on the Nepean River (Stockton and Holland 1974; Nanson *et al* 1987; Stockton 1993). Late Pleistocene occupation sites have been identified on the fringes of the Sydney basin and from rockshelter sites in adjoining areas. Dates obtained from these sites are 14,700 BP at Shaws Creek in the Blue Mountain foothills (Kohen *et al* 1984), c. 11,000 BP at Mangrove Creek and Loggers Shelter (Attenbrow 1981, 2004), and c. 20,000 BP at Burrill Lake on the South Coast (Lampert 1971). The majority of sites in the region, however, date to within the last 3,000 to 5,000 years, with many researchers proposing that occupation intensity increased from this period (Attenbrow 1987, 2003, 2004; Kohen 1986; McDonald 1994; McDonald and Rich 1993). Such an increase in occupation intensity may have been influenced by rising sea levels, which stabilised approximately 6,500 years ago. Older occupation sites along the now submerged coastline would have been flooded, with subsequent

occupation concentrating along, and utilising resources of, the current coastlines and the changing ecological systems of the hinterland (Attenbrow 2003).

A study of the Sydney region reveals that Aboriginal sites are distributed across the whole range of physiographic units and environmental zones, although certain types of sites may be more frequently associated with certain parts of the landscape (for example, shelter sites are particularly common in areas of Hawkesbury Sandstone), and different parts of the landscape contain different resources, which may be seasonally available or highly localised (Koettig 1996). Hence, shell middens are common in the Part Jackson region around the shores of bays, rivers, harbours and the coast, in areas where shellfish are available. Accordingly, the Port Jackson archaeological record is different to that of the Cumberland Plain of Sydney, partly because of the different resources in these areas (Attenbrow 1990:30).

In 1989-90, Val Attenbrow undertook Stage 1 of the Port Jackson Archaeological Project, which involved documentary research on previous archaeological work done in the catchment, detailed recording of registered sites and some field survey of areas where no sites had been registered. Stage 2 involved further research of regional issues through excavation of certain sites. Overall, Attenbrow classified six sites as having excellent research potential, 48 as having good potential, and 151 as having poor to nil potential. Attenbrow found, from a review of excavation work in the Port Jackson area, that Aboriginal people were living around the harbour foreshores gathering shellfish at least 4,500 years ago, that the number and species of shellfish represented in middens varied according to distance from the harbour mouth, and that a change from exploitation of predominantly cockle (*Anadara trapezia*) to predominantly oysters (*Saccostrea commercialis*) appears to have occurred over time in this region (Attenbrow 1990:30). She also found that most middens are located within 10m of the high water level, and that burials were placed in open middens as well as in middens within rockshelters. In the same year, as part of an Aboriginal Sites Planning Study for the Lane Cove River State Recreation Area, the NPWS observed that regional excavations of coastal sites with midden layers indicated the exploitation of a variety of sea and land resources.

It should also be recognised that the archaeological evidence within any particular site can vary considerably in quantity and the range of evidence present, and that the number of sites or amount of archaeological evidence found in any specific area varies. Further, the distribution of presently recorded sites in some areas is unlikely to be indicative of the original distribution of Aboriginal sites and therefore may not be a reliable guide to the occupation history of that area (Koettig 1996). Accordingly, without professional archaeological assessment of an area, the sites most likely to have been recorded are those which are most obvious to non-professionals, such as rockshelters and art sites.

Nevertheless, Hawkesbury Sandstone does outcrop in and underlie part of the study area (see Section 3.1.1). Therefore, it may be expected that occupation deposits will most frequently be found in rockshelters, and that art (including engravings) and axe grinding grooves will be present in the area as it contains the appropriate resources (sandstone). Further, the Sydney Basin Rock Art Project (undertaken by Jo McDonald over several years, for the National Parks & Wildlife Service [now DECCW] and as part of her doctoral research) revealed that most shelters with art are located on hilltops (with some found on valley bottoms and ridgetops), approximately a quarter of shelter with art sites are associated with known archaeological deposit, most rock engravings are located on horizontal sandstone exposures on ridgetops or slopes (or occasionally in valleys), and approximately 13% of rock engravings are associated with axe grinding grooves (McDonald 1985, 1987, 1990, 1994). However, it should be noted that some sites cannot be detected through inspection of the ground surface or rock surfaces alone, and that shelters without visible occupation deposit may be sites (Koettig 1996:57).

3.2.2 Local Archaeological Context

Ethnographic Context

Prior to the arrival of the Europeans, the area is thought to have been occupied by the Wangal people, as described by Governor Arthur Phillip in 1790, and naval officer Philip Gidley King in 1793 (quoted in Attenbrow 2003:22):

> *The tribe of Cadi inhabit the south side [of Port Jackson], extending from the south head to Long-Cove; at which place the district of Wanne, and the tribe of Wangal, commences, extending as far as Par-ra-mata, or Rose-Hill.*

The people who lived in the area would have probably belonged to the Darug language group, speaking a coastal dialect that was in use between Botany Bay and Port Jackson (Attenbrow 2003:33).

Archaeological Sites

As discussed in Section 2.2, a search of the AHIMS database was undertaken on 5 August 2010, and 52 registered Aboriginal sites were identified within approximately 3km of the study area. The search results are summarised in Table 3.1 and presented in Figure 3.6.

Table 3.1 Aboriginal sites previously recorded near the study area.

Site Type	Count	Percent
Shelter with Midden	14	27
Midden	12	23.1
Shelter with Deposit	6	11.5
Open Camp Site	5	9.7
Shelter with Art	3	5.8
Rock Engraving	3	5.8
Midden, Shelter with Art	2	3.8
Potential Archaeological Deposit (PAD)	2	3.8
Shelter with Art and Deposit	1	1.9
Shelter with Art and Midden	1	1.9
Midden, Rock Engraving	1	1.9
Burial/s, Midden	1	1.9
Aboriginal Resource and Gathering	1	1.9
Total	**52**	**100**

The most common site types previously recorded in the local area are shell middens and camp sites, in both shelter and open contexts (shelters with midden and/or deposit, and open camp sites). Art/engraving sites, in both shelter and open contexts, have also been recorded, as have Potential Archaeological Deposits (PADs), a burial (in a midden context) and an Aboriginal Resource and Gathering site (the Tent Embassy at the University of Sydney, Darlinghurst).

The search indicates that there are no registered Aboriginal sites within the study area. One site has been recorded approximately 230m north east of the Lilyfield end of the study area (Figure 3.7). Known as Lilyfield Cave (AHIMS site #45-6-2278), it is a shelter with midden, located in a cliff-face present on the disused property at 81 Lilyfield Road, and accessed through a hole in the wooden fence. The predominant shell species seen was *Trichomya hirsuta* (hairy mussel), with *Saccostrea commercialis* (Sydney rock oyster), *Anadara trapezia* (Sydney cockle) and *Chama fibula* (spiny oyster) also present. The site card, recorded in 1991 by Michael Guider, notes that:

> *The immediate area around [the] site was once a sandstone ridge and quite probably had more shelters however it has been extensively quarried and any evidence of this has now been destroyed. I was surprised to find shell here as most shell middens in this area were totally destroyed by limeburners and waterfront industry.*

Potential Archaeological Deposits (sites 45-6-2654, 45-6-2745) have generally been identified in areas where the topsoil has remained undisturbed, particularly in areas of creeks (or former creeks). In 2000, Navin Officer identified an area of PAD at Fraser Park (approximately 2km east of the southern end of the study area) during a survey for the upgrading of electricity cables by MetroGrid. Shell material was discovered at this site during geotechnical testing, however, test excavation by McIntyre-Tamwoy concluded that the material derived from a natural shell bed, rather than an Aboriginal midden (2003:i).

Huys, Johnston and Wickman undertook a survey of Callan Point and Yurulbin Point in 1995, as part of a cultural heritage study for the Leichhardt Municipal Council. As part of this study, detailed recording was undertaken, of a previously identified open and shelter midden site, a shelter with art site, and two other rockshelters at Yurlbin Point (which were considered likely to have been utilised by past Aboriginal people). A possible open midden and an isolated hammerstone artefact at Callan Point, and an art site at White Horse Point, were also recorded. It was recommended that the sites be conserved, and protected by the use of boardwalks in public recreation areas. Further, it was considered likely that additional Aboriginal sites would be present along the shoreline of the Leichhardt Municipality, and it was recommended that a general archaeological survey of this area be undertaken (1995:87).

3.3 Aboriginal Heritage Site Prediction Modelling

On the basis of the archaeological sites registered in the region and review of previous archaeological studies, the following conclusions can be drawn regarding the potential presence and location of Aboriginal heritage sites within the landscape of the study area:

- Aboriginal occupation of the study area would most likely have been more intense around the creeks (Long Cove Creek and the Cooks River) and the harbour at Long Cove. However, the land in the vicinity of Long Cove has been reclaimed, and the former coastline/creekline and land near the Cooks River has now been extensively developed. Therefore, no *in situ* Aboriginal sites are likely to be present in these areas.
- Although parts of the study area in Lilyfield and Dulwich Hill have underlying Hawkesbury Sandstone, these areas have been disturbed by the rail corridor and the development of roads, parks and residential areas; therefore, no sandstone sites (e.g. shelters, engravings, axe grinding grooves) are likely to remain.
- Middens, shelters with middens, and burials are generally located close to the foreshore of the harbour. The distance from the study area to the harbour, given that the northern section of the GreenWay had been reclaimed, suggests that such sites are unlikely to be found.
- The study area has been extensively cleared and no remnant vegetation remains. As such, no scarred or carved trees will be present in the study area.
- There is no suitable stone resource material within the study area, so quarries will not be present.
- The vast majority of the study area has been subject to previous disturbance for rail, roads, canal or residential/commercial construction, and parts have been reclaimed. The green areas/parks have also been disturbed by landscaping and the construction of facilities, including paths. As such, the probability that any Aboriginal sites are present is very low.

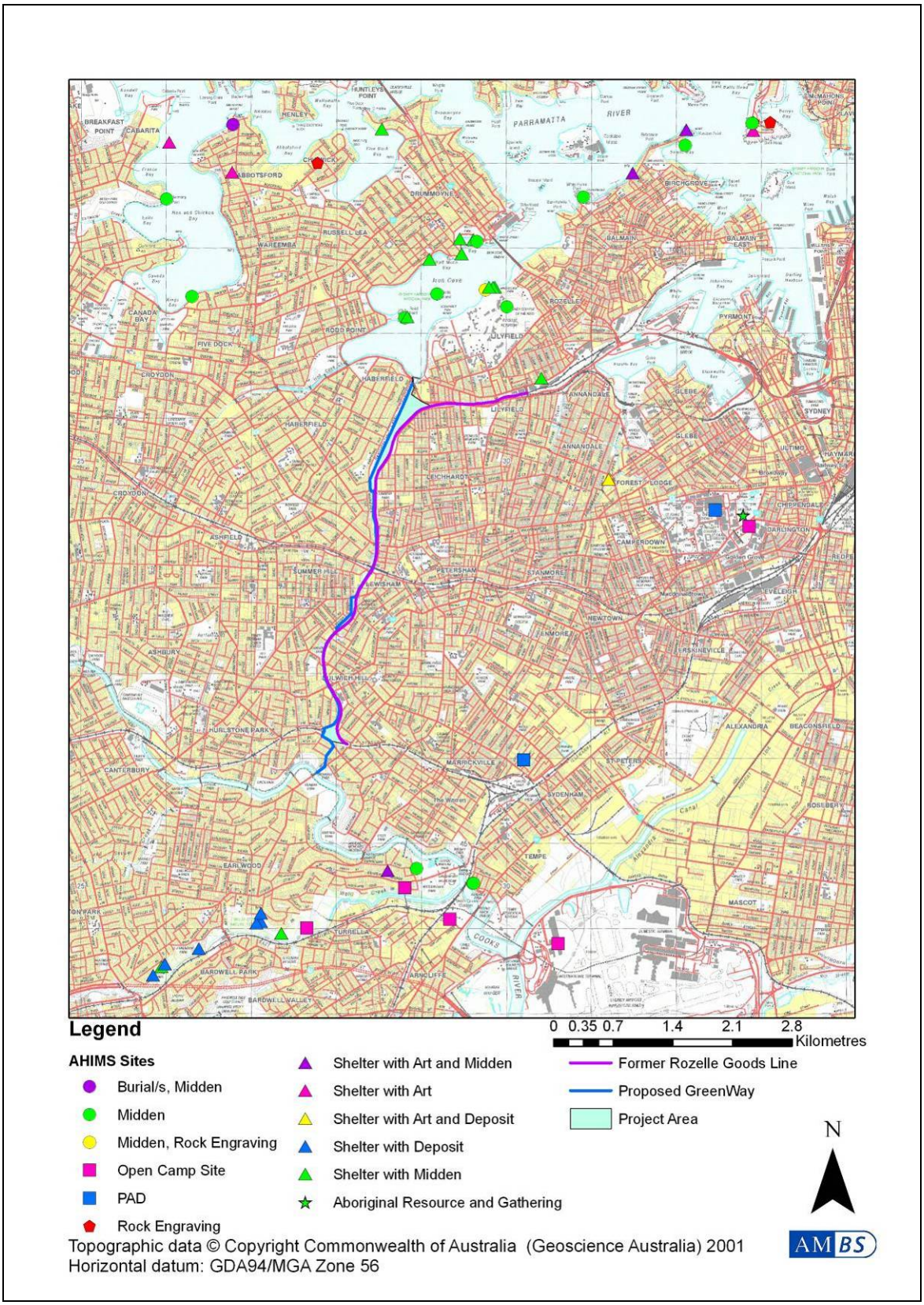


Figure 3.6 Location of previously recorded Aboriginal sites within approximately 3km of the study area.

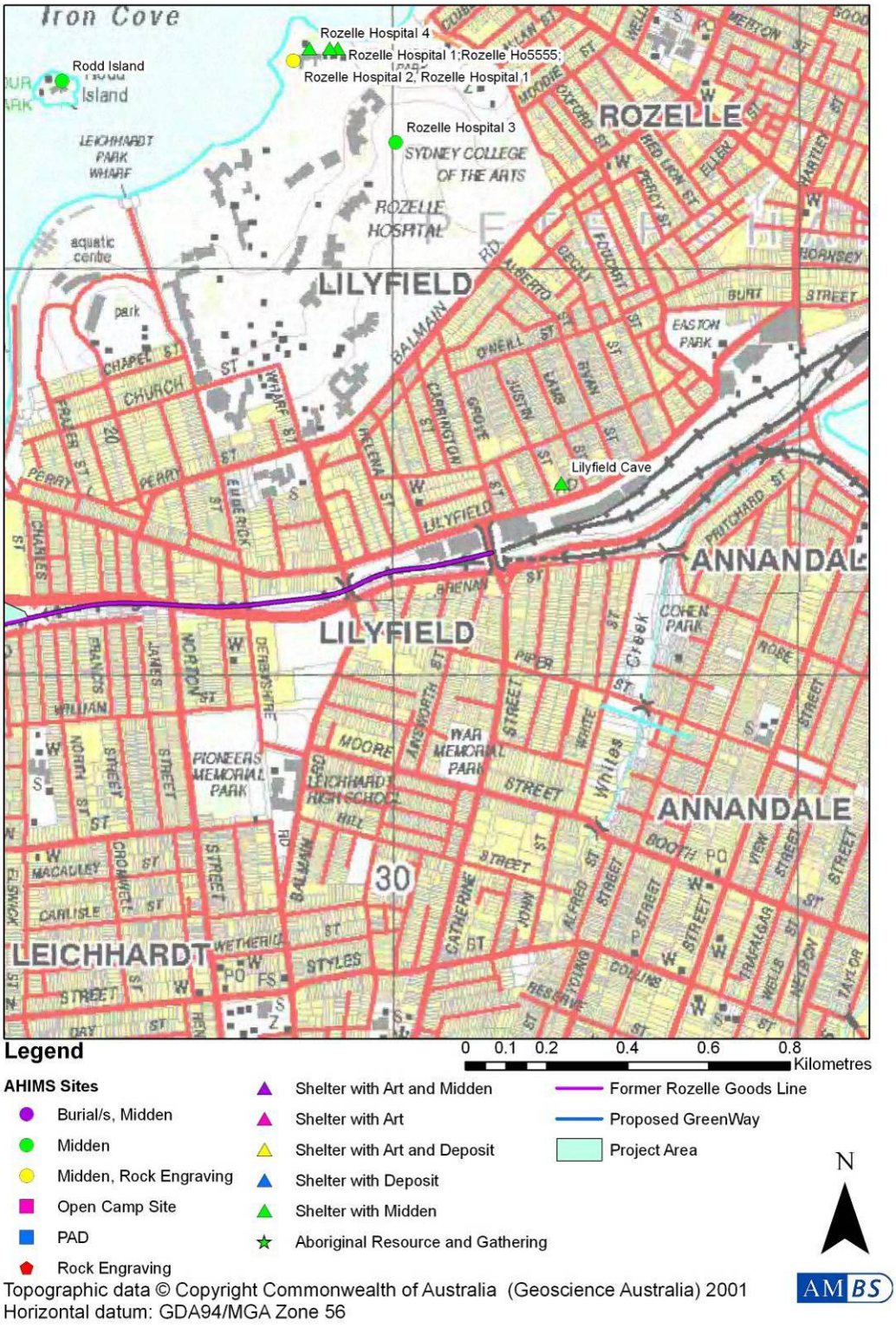


Figure 3.7 Location of previously recorded Aboriginal sites within closest proximity to the study area.

4 Thematic History

4.1 Background

Transportation systems ensure that people, produce and essentials can be moved between nodes of settlement safely and efficiently. Early roads beyond colonial Sydney linked the town with the vital resources available from settlement areas in western Sydney, to the north and Newcastle, and the Illawarra to the south. As the population increased throughout the nineteenth century more efficient transportation systems formed the basis for urban development. For most of the nineteenth century, settlement patterns were characterised by a mix of large estates, small holdings and small villages. The construction of the railway from Sydney to Parramatta in 1855, and the subsequent establishment of local industries, led to an increase in land subdivisions and urban development.

4.2 Development of Transport Systems

4.2.1 Parramatta Road

Parramatta River provided the main communication and transport route between the first European settlements of Sydney and Parramatta. Parramatta Road, which superceded this function was one of the earliest colonial transport routes in Australia, originally as an overland track hacked through the bush between 1789 and 1791. The track, which was formalised in c.1797 under the direction of the Surveyor-General, Augustus Alt, became the basis for the Parramatta Road (Kass 2006:11).

Inns and staging posts were established along the route to service the needs of travellers. By the 1810s, stagecoach services between the two settlements challenged the dominance of river transport; however, the importance of the road declined with the opening of the new railway in 1855 (Prescott 1998).

From the beginning of the twentieth century, with the increasing popularity of motor vehicles, the quality of Sydney's roads began to decline. Parramatta Road was declared a Main Road, which made it eligible for government subsidies. It was resurfaced as a macadam road during the 1920s, changing the boggy surface into one able to cope with the increasing demands of modern motor traffic (Kass 2006: 23-24).

In 1926, after considering the needs of motor traffic and trams, the Metropolitan Roads Board (MRB) established an optimum metropolitan road width of 84 feet (25.6 m). At 24 feet (7.3 m) wide, the Parramatta Road between Ashfield and Parramatta was considered to be too narrow for the volume of traffic and the MRB adopted a scheme for widening the road (Kass 2006:33-35). Road improvements saw Parramatta Road become the main transport corridor from central Sydney to the west. Ironically, road improvements facilitated ever increasing levels of traffic and from the 1960s onward, traffic congestion led to a series of plans to by-pass Parramatta Road, including development of the M4 Western Motorway (Prescott 1998).

4.2.2 The Great Southern and Western Suburban Railway

In March 1851, hot on the heels of the British railway boom of the 1840s, the Sydney Railway Company began construction of the first steam railway line in NSW, from Sydney to Parramatta. Although, work was disrupted by the discovery of gold at Ophir, and the rush to the gold fields as working men left their homes and jobs to seek their fortune. The gold rush precipitated huge rises in the costs of experienced and qualified engineers, labourers and materials and the company ran into financial difficulty. In late 1854, the Government agreed to purchase the company outright and, by an Act of Parliament, took responsibility for all further construction. The line eventually opened on 26 September 1855, with terminal stations at Sydney and Parramatta (now Granville), and four intermediate stations at Newtown, Ashfield, Burwood and Homebush. Originally the line from

Sydney to Newtown was a double track, with a single track to Parramatta; however, the line construction to Parramatta allowed for duplication and a second line was added between Newtown and Parramatta in 1856. Trains to Parramatta used the southern track (down line) and trains to Sydney used the northern track (up line) (Lee 1988:19-32; Gunn 1989:24-47).

Towards the end of the nineteenth century, as suburban development along the railways increased, the existing capacity of the trains came under pressure. In 1888, the new Chief Commissioner of the Railways, E M G Eddy moved to relieve rail congestion by approving the widening of the main suburban rail corridor from Sydney to Homebush from two to four lines (Gunn 1989: 208). The work was completed in 1892, greatly improving travel speeds and allowing express trains along this section. The lines were further expanded from four to six in 1927, in conjunction with the electrification of the suburban lines.

4.2.3 Railway Electrification

By the beginning of the twentieth century, the increasing urban population was placing substantial pressure on the existing rail network. In 1915, a design for a new city and suburban electric railway scheme was submitted to the NSW Legislative Assembly by JCC Bradfield, Chief Engineer for Metropolitan Railway Construction (Figure 4.1). Electrification also facilitated underground railway construction, because steam locomotives could not operate for extended distances underground due to inadequate ventilation (Gunn 1989:278-279.) Despite the disruptions caused by World War I, the project was initiated in 1916, but work on the suburban scheme was stopped in July 1917 and was not restarted until 1923 (Gunn 1989:307-313).

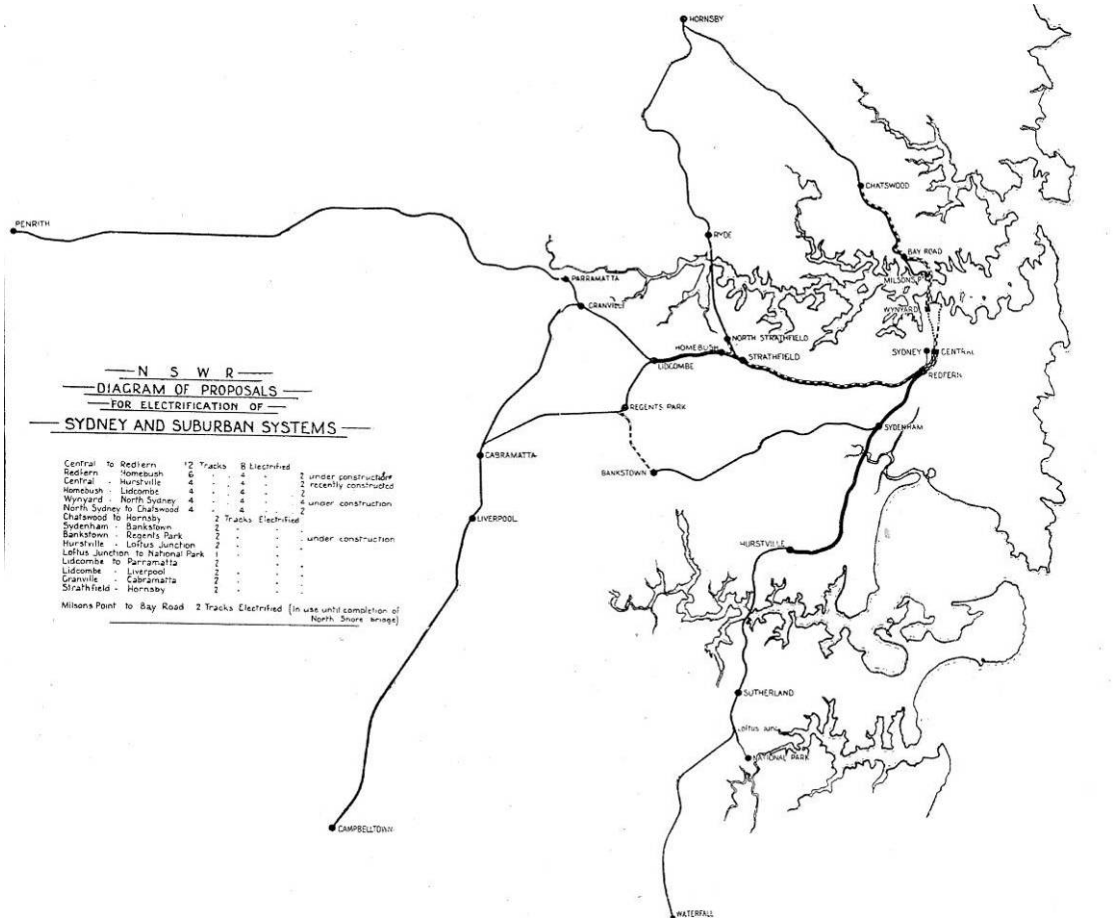


Figure 4.1 Diagram of Proposals for Electrification of Sydney and Suburban Systems, 1926 (Fraser 1926:Fig 2).

The conversion from steam to electric traction required a range of associated civil engineering works, including signalling, new rolling stock and electric power reticulation. This included increases to the capacity of existing electric power stations, the construction of new substations at key points along the lines, and the installation of overhead wires to supply the trains themselves.

The electrification of the line from Central to Homebush was begun in 1926, at 1500 volt direct current (V DC), following the Bradfield plan. Between 1926 and 1932, fifteen electrical substations were constructed in the Sydney Metropolitan area to accommodate all the equipment 'under one roof' (Figure 4.2). These were among the largest substations, originally designed to be fed by 11,000 volt 50 cycle AC from the White Bay Power Station (Myers 1926:238, 243). One of the group of 15 is the Lewisham Railway Sub-station, to the west of Lewisham Station was built in 1928, a period of intense building activity to address the increased demands for electrical power by industry and residential developments from the 1920s (Wilkenfeld and Spearitt 2004:18-22). The sub-station is characteristic of the group, and is an Inter-War Stripped Classical building, featuring a hipped, tiled roof with a gabled clerestory. The sub-station reflects the Public Works Department intention of constructing public utility buildings in the prevailing urban architecture. The Sub-station continues in its original function but has been modified by sealing all window openings.

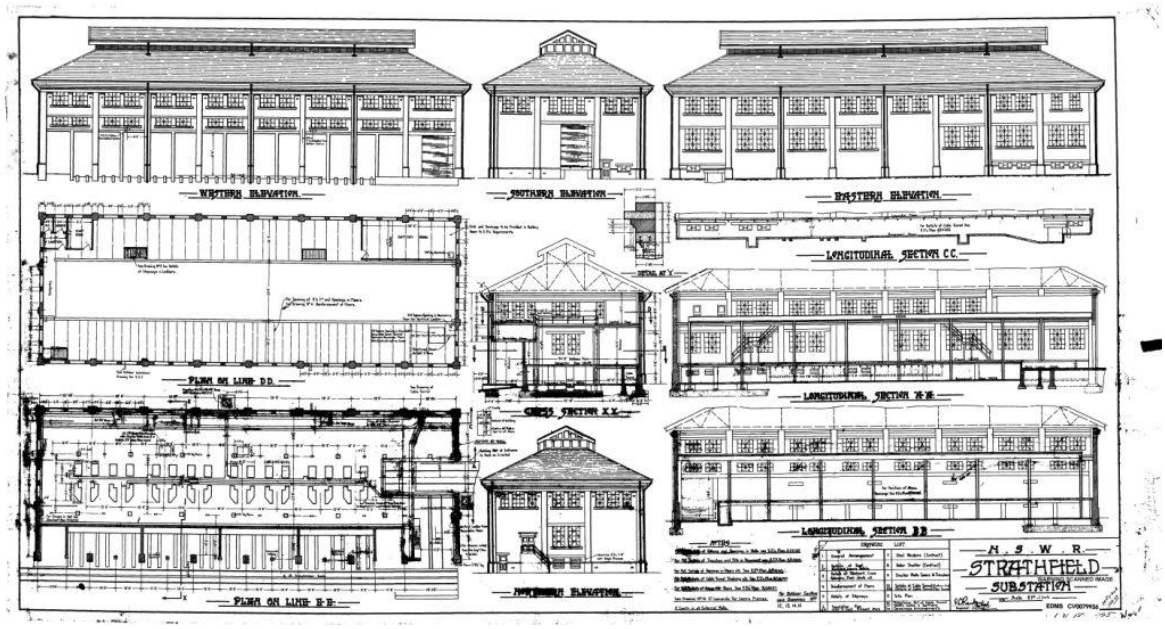


Figure 4.2 1927 plan and elevation of the Strathfield Sub-station showing the characteristic form and layout (RailCorp Plan Room, Ref: CV0079926).

4.2.4 The Rozelle Goods Line

Increased use of the suburban rail network placed increasing pressure on the transportation of goods and produce. Since the 1880s, a concern was the separation of the transportation of goods from the commuter traffic. Limits to the hours during which goods trains could operate on the Main Western Line, saw the development of a plan to construct a network of dedicated goods lines. The impetus to the construction of the goods line was the completion of the Pyrmont (Jones Bay) wharves, with rail lines running along each of the wharves, by the Sydney Harbour Trust and the resultant increase in freight train movements in the early years of the twentieth century. Between 1911 and 1924, the Metropolitan Goods Lines were constructed to separate the transportation of goods from passenger rail transport, in particular an important consideration was to serve the Abbatoirs on Glebe Island, although the meatworks was about to move to Homebush Bay. Triangle junctions are a feature of the goods line network, providing flexibility for train movements. The double-track line from Dulwich

Hill to Rozelle and Glebe Island opened on June 30 1916, beginning at a triangle junction opposite Dulwich Hill Station (Figure 4.3). At the time the signals were controlled by the Wardell Road Signal Box, but are now remotely operated from Sydenham.

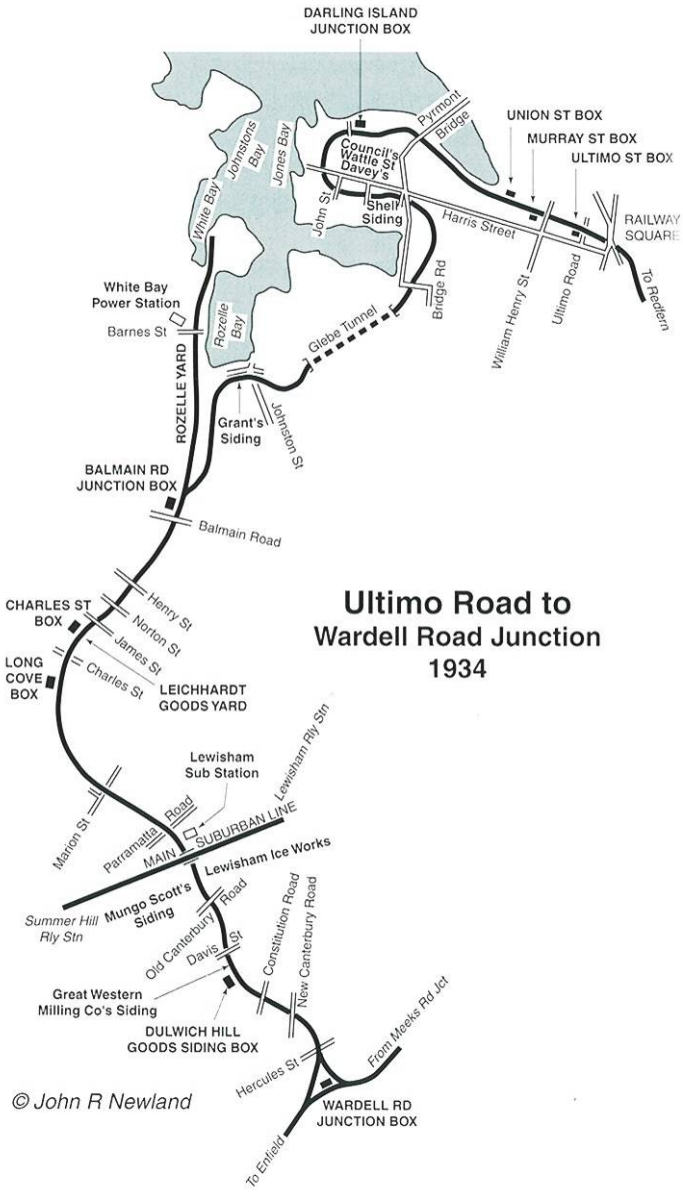


Figure 4.3 The alignment of the Rozelle Goods Line (Oakes 2008:44).

To the north of the Mungo Scott Flour Mill, the goods line passes under the Main Western Line at the site of the Long Cove, Lewisham, Viaducts, and follows the Hawthorne Canal toward Iron Cove, where it turns to the east toward Leichhardt and Lilyfield. The Leichhardt Goods Yard and the Long Cove signal box were located between Charles and James Streets; however, by 1974 all that had survived of the goods yard was the George Fielders Pty Ltd Siding, which could only be accessed from the Down Line. The line continues through a deep sandstone cutting to Balmain Road, the Rozelle Goods Yard and Darling Harbour (Oakes 2008:43-46). The goods line from Rozelle to the northern end of Darling Harbour was completed and opened for traffic on 23 January 1922. To the east of the Catherine Street overbridge, is the light rail Lilyfield Stop, with the light rail now continuing to Central Railway Station.

Along the Rozelle Goods Line were nine goods sidings, of which only the Mungo Scott Flour Mill siding is extant.

4.2.5 Associated Industries and Infrastructure

The construction of the Rozelle Goods Lines in 1913, and the containment of Long Cove Creek as the Hawthorne Canal, provided an incentive for industrial development along the corridor.
The Flour Mill in Terry Street, Dulwich Hill, was established in 1914, as the Waratah Flour Mill, and was subsequently owned by the Great Western Milling Company and Fielders Gillespie Ltd, Industrial Division. The mill included a central five-storeyed mill warehouse, flanked by corrugated iron structures, concrete silos, elevators and hoppers located and a siding on the Rozelle Goods Line (Figure 4.4). The siding for the Great Western Milling Company was once a part of the Dulwich Hill Goods Yard, between Constitution Road and Davis Street on the Up side (west), and operated from 1924 until its closure in 2001. The Waratah Flour Mill has been converted into 84 luxury apartments housed in the original mill warehouses and silos.

Figure 4.4 The Great Western Flour Mill in 1948 (http://www.marrickville.nsw.gov.au/community/history/milling.htm).

The land on which the Mungo Scott Flour Mill now stands was originally part of a grant of 30 acres made to Henry Kable in 1804. The site is apparently partly shown on the 1883 Higinbotham & Robinson map of Ashfield where it is designated as Fyle's Brickyard. In 1883, the site of 5 acres is identified as Fyle's Brickworks, having been bought by John Fyle from Robert Campbell in about 1840. Following Fyle's death in 1887 the brickworks was left to his daughter Harriett Stratford, after whose death in 1904, the land passed to her children who sold it to the Railways & Tramways Construction Authority. The land was acquired for the construction of the Rozelle section of the Metropolitan Goods Lines. In 1916, the excess land was sold to Mungo Scott Ltd for £3,000, with an additional portion of six-and-a-quarter perches acquired in 1918.

In 1920, an application was lodged for the construction of the flour mill, which was built by John Dunkerley, of Burwood. The original Mill complex included the five-storey masonry mill warehouse, timber-framed building housing the timber grain bins and associated workshops and stores, and stables. The goods siding, opened on 11 December 1920 on the Up line, for loading wheat and flour. Subsequent additions, in response to increases in production and technical innovations, have included several large concrete grain silo's, elevators and abridges, and steel grain bins as well as support and

office buildings and landscaping (Figure 4.5). The property was later acquired by Goodman Fielder Wattle Ltd and and today by Allied Flour Mills.

Figure 4.5 The Mungo Scott Flour Mill in 2003 (Heritage Inventory image)

Whether the grain bins were within the railway corridor or not is also unknown. At the former Crago's Flour Mill, Newtown Silos, the receiving bins were internal, with a chute set in the factory wall leading to the basement to be conveyed to the grain bins. However, the receiving bins at the former Albion Flour Mill in Brisbane, are within the siding.

4.2.6 Hawthorne Canal

The swamps and mangroves at the head of Iron Cove through Long Cove and Iron Cove Creeks drain were drained and reclaimed with the construction of a sea wall, and the creeks channelled in the late nineteenth century. In 1895, the Public Works Department began work on the transformation of Long Cove Creek, which flowed into Iron Cove, as the Hawthorne Canal, completed by 1938 (Figure 4.6). The Canal was one of the first of nine stormwater/sewer channels constructed by the Public Works Department, the others being the Beattie Street Balmain, Dobroyd, Rushcutters Bay, Homebush Creek, North Sydney, Wentworth Park and Munni Street Erskineville. The Canal is an open stormwater channel extending from Dobroyd Point at Iron Cove to Canterbury Road at Lewisham. Initially built to be a navigable canal, by 1895 it was highly polluted. Integral to the Canal, are several branch lines including, Leichhardt 62A, Leichhardt Amplification, Petersham, Petersham Park, Smith Street, Henson Street, Victoria Street and Grove Street, the majority of which were constructed prior to 1900.

Figure 4.6 Detail of the Petersham Parish map dated 1886 showing the land reclamation and formed Hawthorn Canal (Dept. Lands Parish Map Project PMapMN04 14010901).

The floor of the Canal is surfaced in concrete, while the walls are lined with sandstone blocks from Iron Cove to Marion Street, after which the walls a brick-lined, as are the branch lines. At Lewisham, where the Canal converges with the Rozelle Goods Line, the Lewisham Viaducts and the Main Western Line, the Canal dives to continue underground.

4.2.7 Sydney Water Pressure Tunnel

The supply of water from the Upper Nepean Scheme to the Sydney suburbs south of Parramatta River is via two 48in cast iron mains from Potts Hill Reservoir to the Water Pumping Station, WP0008, on the corner of Burke and McEvoy Streets, Waterloo. Following construction of these mains in 1888 and 1893, the system came under increasing pressure, and additional relieving mains were constructed. The third, and major solution to relieving the system, was the construction of a large Pressure Tunnel between Potts Hill and Waterloo, was begun in 1914. Along the Pressure Tunnel alignment are five Offtakes and vertical shafts providing access for maintenance, housed in small buildings constructed by the Public Works Department (Aird 1961:49-58) (Figure 4.7). One of these buildings stands adjacent to the goods line at 1-9 Weston Street, Marrickville.

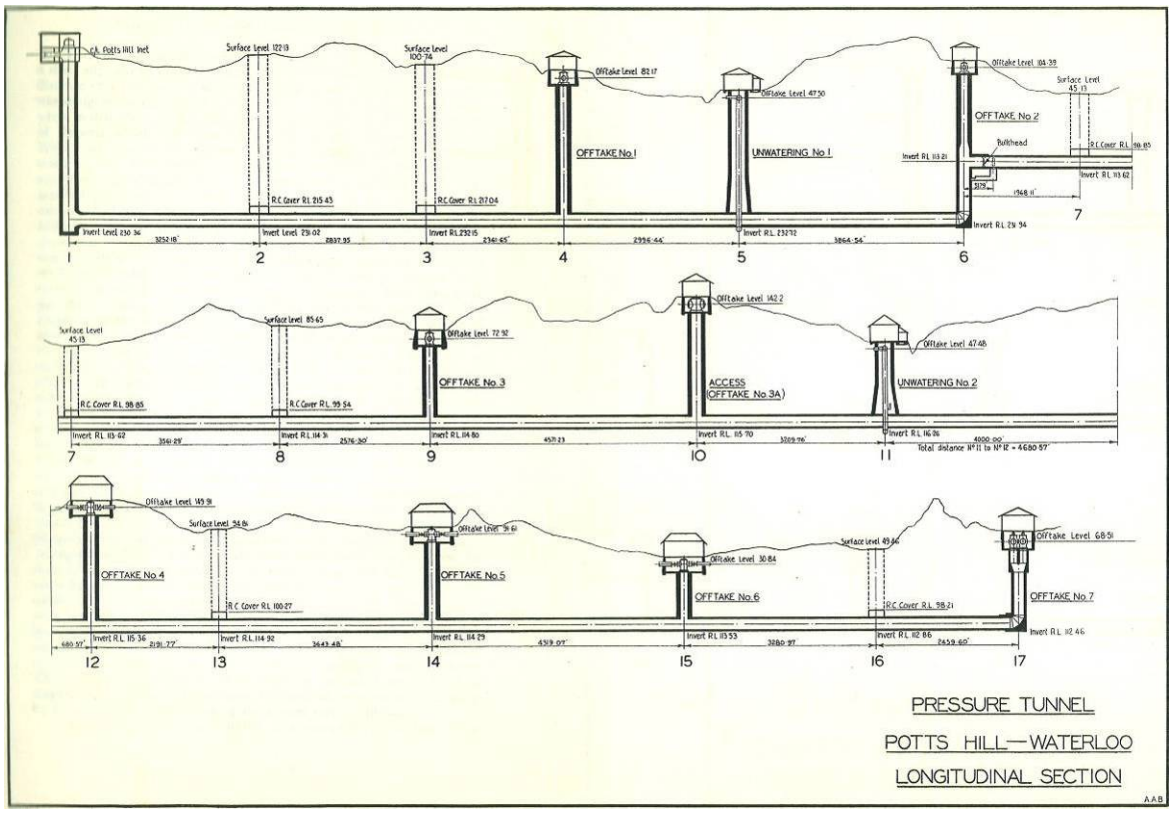


Figure 4.7 Cross section of the Pressure Tunnel from Potts Hill to Waterloo showing Offtakes (Henry 1939:98)

4.2.8 Lewisham Sewage Aqueduct

The disposal of human wastes continued to pose a problem for which various systems were tested, until in 1875, the Sydney City and Suburban Sewerage and Drainage Board determined that system of ocean outfalls would resolve the issue. The first, the Bondi Ocean Outfall System (BOOS), came into operation in 1889, was followed in the twentieth century by the Southern and Western Suburbs Ocean Outfall Sewer (SWOOS) No.1 in 1916, and the SWOOS No. 2 in 1936, and subsequent sewers serving the northern and western suburbs. The sewer systems included associated branch lines and subsidiary sewers.

The Lewisham Sewage Aqueduct is one of six aqueducts constructed by the Public Works Department and completed 1895-1901; the reinforced concrete 'Monier' arches at Whites Creek and Johnstons Creek (1897), the mass concrete/brick arches and iron pipe at Wolli Creek and Cooks River (1895), and the Mosman Bay steel arch (1901). The Lewisham Aqueduct was completed in 1900 for the Dobroyd Branch of the SWSOOS No.1, by the Public Works Department, and transferred to the Water Board on completion. The aqueduct was designed to carry sewage over the Hawthorne Canal near the Lewisham Railway Viaduct, and is 280-ft. (85.3 m.) long with six spans; two of 40-ft. (12.2m.) and four of 50-ft. (15.2m.) supported by five piers are concrete faced with rusticated sandstone blocks at centres of 50ft. Within the embankment the sewer is encased in concrete.

4.2.9 Rail Bridges

The construction of underbridges was a necessary part of the Sydney Metropolitan rail network (Figure 4.8). The late 1860s saw the government allocate around 50% of public works funds to railway construction, and when extensions to the Main trunk lines were approved the major bridge crossings were constructed from imported wrought iron from Britain. The first wrought iron riveted

girder bridge was constructed at Menangle in 1863, using prefabricated girders imported from England on substantial masonry; brick and sandstone, piers (Figure 4.9).

Figure 4.8 Detail of Map of the Sydney & Environs Railways and Tramways, 1910. The study area is circled in red (Mitchell Library).

Figure 4.9 Menangle Viaduct built in 1863, overlooking the weir on the Nepean River.

During the 1890s depression through to WWI, brick arches were preferred when upgrading existing line infrastructure. Truss Girders, lattice girders or open web girders are efficient and economical structural systems, and as such truss bridges are built over wide range of spans. Truss bridges compete against plate girders for shorter spans, against box girders for medium spans and cable-stayed bridges for long spans. For short and medium spans parallel chord trusses such as Warren truss, Pratt truss, Howe truss, are an economical solution, particularly the Warren truss as it requires less material than either the Pratt or Howe trusses. However, for longer spans, a greater depth is required at the centre and variable depth trusses are adopted for economy. In case of truss bridges that are continuous over many supports, the depth of the truss is usually larger at the supports and smaller at midspan. Plate web girders were preferred for bridges with spans of up to 80feet (24m).

The ***Charles Street Underbridge*** was constructed between 1910 and 1922. The bridge carries the goods line over Charles Street, Leichhardt in the vicinity of the original Long Cove Signal Box, opened in 1917, which had been transferred from Maitland. The signal box was a timber building to British design, as a result of the influx of British engineers. The bridge is a standard design of riveted plate girders with steel stringers.

The ***Marion Street Underbridge*** in Leichhardt was constructed in 1912 as part of the original infrastructure for the double track Metropolitan Goods Line. The bridge comprises riveted steel plate half-through riveted plate web girder and has a single span of 22.71m between brick abutments, with perpendicular wing walls.

Parramatta Road Underbridge carries the double track Rozelle Goods Line Brown Street over Parramatta Road, and was constructed in 1912. The bridge comprises a riveted steel half-through Warren Truss with a transom deck spanning 34m between brick gravity abutments. At the time of construction it was determined that the Warren Truss would be the most efficient form for this length of span. A pedestrian / bike path leads up from Parramatta Road on the east side of the bridge to links to a footpath on Brown Street.

The intersection at Lewisham of the Goods Line with the Hawthorn Canal and Lewisham Sewer Aqueduct, also coincides with the intersection with the Main Western Line; ***Lewisham Railway Viaducts*** and to the east, overlooking the line stands the Lewisham Railway Sub-station, discussed above. The Main Western Line crosses the goods line and Hawthorn Canal via one of the Lewisham Railway Viaducts.

The original 8-span stone arch viaduct over Long Cove Creek on the western side of Petersham, had been the largest structure on the line which, due to its deterioration was replaced in the 1880s. The replacement bridge comprised 3 pairs of 90-foot American-type wrought iron, pin-jointed deck Whipple trusses, and was one of two bridges in NSW to employ the Whipple Truss; the other being a road bridge over the Shoalhaven River at Nowra (Figure 4.10). A pair of the Whipple trusses is on display to the south of the Main Western Line with an explanatory sign (Figure 4.11). In 1892, the line was quadruplicated using three British lattice type double track deck trusses and in 1925/27 with sextuplication, three pairs of riveted steel, deck Warren trusses were erected.

The line was electrified in 1955, and upgrades to the Viaduct in 1993 and 1998 have seen the replacement of trusses by welded, deck plate web girders in 1998.

Figure 4.10 Long Cove Rail Bridge at the Hawthorne Canal crossing c. 1905 (ADHS collection 82046

http://members.optusnet.com.au/ashfield_dhs/ADHS-postcard.htm#PC).

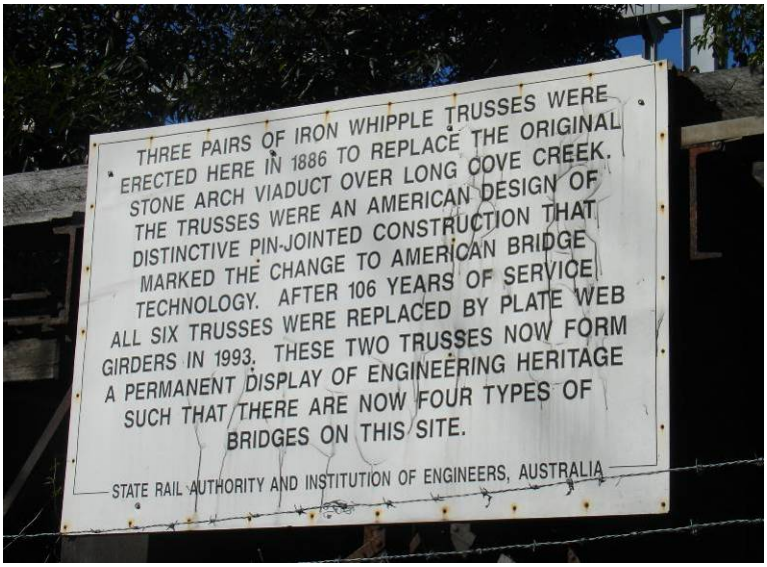


Figure 4.11 The interpretive sign identifying the remnant of the Whipple trusses.

4.2.10 Road Bridges

The flow of east-west traffic across the Rozelle Goods Line and Hawthorn Canal is assisted by the construction of road overbridges along their alignments from Lilyfield and Dulwich Hill.

Immediately to the west of the Lilyfield Light Rail stop is the ***Catherine Street Overbridge***, constructed in 1922. The bridge was constructed as part of the Rozelle Goods Line to allow road traffic to cross unimpeded; concrete bridge is framed by face-brick parapet walls and id supported by ten brick piers.

The ***Marion Street Overbridge*** is an important carrier for road transport over the Hawthorn Canal in Leichhardt. The bridge was constructed in 1936 by the Department of Main Roads (DMR) in concrete with steel supporting girders, with brickwork to the canal. The parapet walls comprise a series of molded concrete arches (Figure 4.12). The walls of the canal change from sandstone block to brickwork at this point, and it was at this point that the canal ceased to be navigable.

Figure 4.12 The DMR date plaque and parapet wall of the Marion Street overbridge.

The Overbridge carrying road traffic over the Canal at Parramatta Road, Taverners Hill is known as the ***Battle Bridge*** is a sandstone arch bridge with sandstone parapet walls, which was built in c1873 to carry traffic across Long Cove Creek, which was formed as the Hawthorn Canal in 1895. Although the sandstone arch is intact, it is obscured by the c1937 widening of Parramatta Road with steel girders on either side of the arch and the laying of a concrete deck. The sandstone parapet walls were moved to continue their function at the time of the road widening, but are now finished with wire mesh fencing at each end.

4.2.11 The Haberfield and Lewisham Urban Conservation Areas

The development of Sydney's inner western suburbs followed the general pattern of large estates giving way to smaller subdivisions, and villages generally centring around the major transport nodes. The patterns of residential and industrial development of some urban areas of Sydney is such that whereas large parts of Sydney have undergone a process of urban renewal since WWII, other pockets of the urban landscape have retained a sense of the early pattern of subdivisions during the decades preceding and following Federation. Such areas are usually distinguished by an homogeneity of architectural styles, layouts, streetscapes, street plantings and gardens, and are often deemed worthy of retention and protection as Urban Conservation Areas. The alignment of the Rozelle Goods Line passes within the vicinity of two such areas.

Old Canterbury Road and the Rozelle Goods Line define the western edge of the Lewisham Estate Conservation Area (see Figure 2.4).

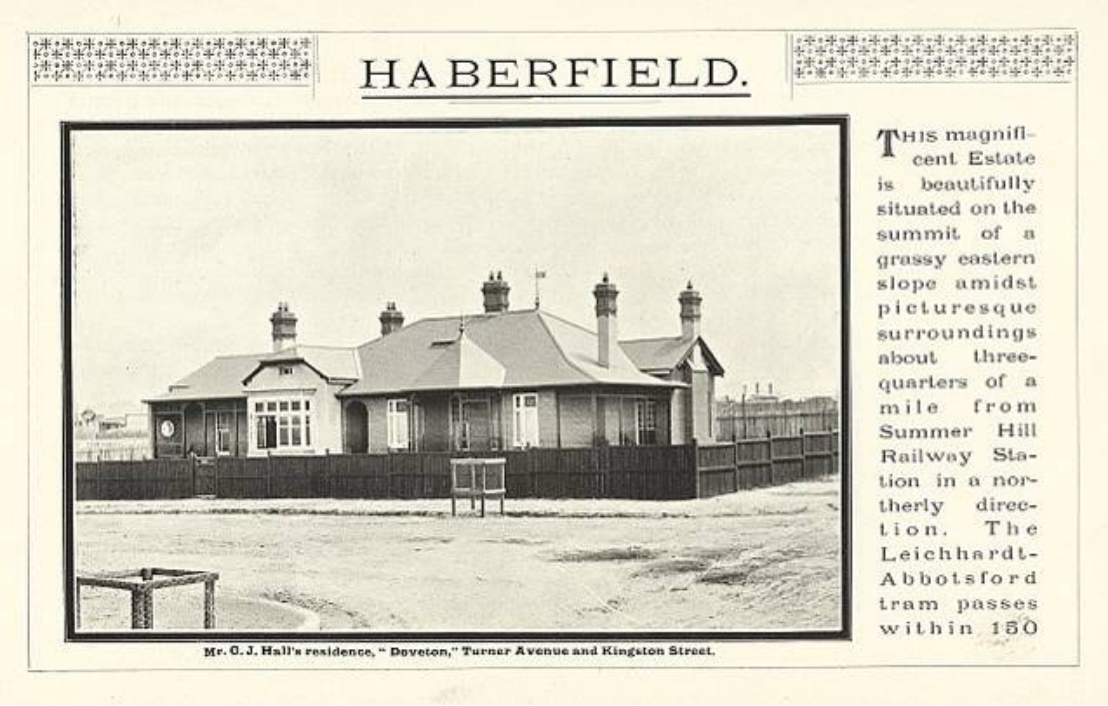
The suburb of Lewisham developed in response to the construction of the Main Western Line and was acquired by Joshua F. Josephson in 1834, who named it after the London borough of Lewisham. Josephson was to become mayor of Sydney in 1848 and go on to have a distinguished career. The estate had been a subdivision of the earlier Wardell Estate. Like much of Sydney at the time, the district had been heavily wooded and became the focal point for the local hunt, centred around Toothill Road, which was so named as this was where the master of the hunt sounded his horn.

The area remained undeveloped until land boom of the 1870s and 1880s when it was subdivided and developed. Two plans for the subdivision were issued in the 1870s, one by F.H. Reuss Surveyor & Architect 142 Pitt Street, Sydney the other by the Lithographer (Figure 4.13).

Figure 4.13 The Lewisham Estate Petersham Geo. Bishop, Lithographer. The coloured lots are sold (http://catalogue.nla.gov.au/Record/1402396?lookfor=Lewisham%20{pi:nla.map*}&offset=1&max=3).

The late nineteenth century development did not result in a consistent style with variations in the subdivision pattern with narrow small frontages to generous lots, usually of medium depth on long streets following the ridge lines with shorter, steeper cross streets. The housing stock is mixed single and two storeys, rows of terraces and elaborately detailed Italianate Victorian villas with some large scale villas set in established gardens. The later 1920s development tends to be set at the street, with later infill development.

The area around Iron Cove was dominated by large estates and open paddocks into the 1870s; one large estate belonging to Dr David Ramsay who married the merchant, Simeon Lord's daughter Sarah Ann. In 1901, in response to the Garden Estate movement, the garden suburb of Haberfield was established by Richard Stanton. The outbreak of bubonic plague in 1900 had an impact on town planning inner Sydney with the demolition and rebuilding of a large part of the inner suburbs. The development of garden suburbs was seen as a means of creating healthy and safe suburbs for the growing population. As demonstrated in the publicity booklet for the Haberfield Estate prepared by Stanton & Son, property auctioneers and real estate agents, of Summer Hill and Mosman, in the early 1900s, the suburb was to be a genteel, slum-less, lane-less, pub-less estate, in contrast to the so-called working class slums of inner Sydney (Figure 4.14).


HABERFIELD.

THIS magnifi-cent Estate is beautifully situated on the summit of a grassy eastern slope amidst picturesque surroundings about three-quarters of a mile from Summer Hill Railway Sta-tion in a nor-therly direc-tion. The Leichhardt-Abbotsford tram passes within 150

Mr. C. J. Hall's residence, "Doveton," Turner Avenue and Kingston Street.

Figure 4.14 the first page of Stanton's publicity booklet for the Haberfield Estate (National Library of Australia nla_map-lfsp1014-s3-v).

Housing in Haberfield comprised architect-designed detached homes, each on a block of land typically, 50' x 150' (15 m x 45 m), a large proportion of which were designed by J. Spencer-Stansfield. Although each house was individual, common themes included slate or Marseilles terra cotta tiled roofs, front verandahs with many featuring ornate timber details, leadlight windows and distinctive tiled floors of verandahs and bathrooms. The Federation theme was continued in the naming of early streets after members of the first Federal Cabinet; Barton, Kingston, Forrest, Turner, Deakin, and Dickson. The wide tree-lined streets and established gardens are characteristic of the suburb, which was completed by the 1920s (http://www.ashfield.nsw.gov.au/page/haberfield1.html).

The integrity of the streetscapes and housing stock has ensured that the Garden Suburb of Haberfield has survived as an Urban Conservation Area since 1990 and is described as covering an area of c.200ha

of Haberfield bounded by Iron Creek, Iron Cove, Hawthorne Canal and Parramatta Road, Haberfield.
The Haberfield and Lewisham Urban Conservation Areas are demonstrative of two distinct periods in the development of urban Sydney. The largely consistent late nineteenth century development of the Lewisham Estate represents the post 1890s depression boom, a period of economic confidence and the beginning of the move to Federation. The development of the Haberfield Garden Suburb reflects the optimism of the period following Federation.

4.3 Discussion

The preceding thematic history provides a context for understanding the study area. The major influence has been the arrival of the Main Western Line linking Sydney and Parramatta in 1855. The development of the Metropolitan Goods Lines, and the Rozelle Goods Line brought industrial and residential development, including the flour mills, which in turn required the delivery of services, including water supply and waste disposal.

The Rozelle Goods Line traverses a varied landscape that includes discrete areas of dense urban development and open parklands. The settlement pattern is reflected in the character of the Lewisham Estate Conservation Area and the Haberfield Garden Suburb, as well as the bridges providing linkages across areas divided by railways and canals.