

SYDENHAM TO BANKSTOWN

SUBMISSIONS AND PREFERRED INFRASTRUCTURE REPORT

> Appendix I – Archaeological assessment
and research design report

Sydney Metro City & Southwest Sydenham to Bankstown Upgrade

Historical Archaeological Assessment
& Research Design

Report to Transport for NSW

June 2018



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EXECUTIVE SUMMARY

Note on this report

Since the preparation of this Archaeological Assessment and Research Design (AARD), the project has been revised (the preferred project). Although some subsurface impacts may be reduced, the assessment of archaeological potential and relevant management outlined in this AARD would remain the same.

Project Background

The proposed Sydney Metro City & Southwest Sydenham to Bankstown project (the project) is the subject of this Archaeological AARD. The project involves upgrading the 10 existing stations from Marrickville to Bankstown (inclusive), and the 13 kilometre long section of the Sydney Trains T3 Bankstown Line between west of Sydenham Station and west of Bankstown Station, to improve accessibility for customers and enable conversion of the line to metro standards. The project would enable Sydney Metro to operate beyond Sydenham, to Bankstown.

The environmental impact statement (EIS) identified the potential for archaeological constraints and the need for the preparation of an AARD for the Bankstown Line and specific station catchments and construction sites. This AARD has been prepared to comply with mitigation measure NAH10.

Sections of the project area, including Punchbowl, Wiley Park, Hurlstone Park, Campsie and Bankstown Stations and other locations which were not assessed as having potential for significant archaeological remains are not dealt with separately in this AARD, but are included as part of the Bankstown Line assessment. These sites will be managed in accordance with the Unexpected Finds Procedure. The following sections of the project that are considered in this report are:

- Bankstown Line
- Marrickville Station Catchment
- Canterbury Station Catchment and construction site
- Belmore Station Catchment
- Lakemba Station Catchment

Archaeological Management

The sites have been divided into archaeological management zones based on archaeological potential and current construction impacts (as submitted with the EIS). Archaeological management zone mapping (Section 8.3) is based on a traffic light code:

- **Red** (Zone 1): Direct impact to significant archaeology. Archaeological investigation required prior to any construction impacts (bulk excavation etc.). Prepare Archaeological Method Statement (AMS) once construction methodology and impacts are known.
- **Amber** (Zone 2): Potential impact to significant archaeology. Prepare Archaeological Method Statement (AMS) once construction methodology and impacts are known. Archaeological investigation is likely required.

- **Green (Zone 3):** Unlikely to contain significant archaeology. Construction to proceed with Unexpected Finds Procedure as nil-low potential for significant archaeological remains.

Archaeological Mitigation

The following table presents a summary of the archaeological management and impact mitigation for the project. The summary is based on detailed analysis presented in this report and is illustrated in the archaeological management maps in Section 8.

Site	Potential archaeology	Management zone	Mitigation
Bankstown Line	Nil to low potential for archaeological features associated with land clearance and farming activities. Low potential for rail-related remains. May reach the threshold for local significance.	3	<ul style="list-style-type: none"> • Unexpected Finds Procedure
Marrickville Station Catchment	Moderate to high potential for locally significant archaeological remains of the early phase of railway infrastructure.	1	<ul style="list-style-type: none"> • AMS • Salvage excavations
	Moderate potential for locally significant archaeological remains associated with WWII air raid shelter.	2	<ul style="list-style-type: none"> • AMS • Test/Salvage Excavations
	Nil to low potential for archaeological remains associated with land clearance and farming. Low potential for rail-related remains of former coal loading and storage facility, and sleeper bridge. Moderate to high potential for archaeological remains associated with upgrades of the station. Unlikely to reach threshold for local significance	3	<ul style="list-style-type: none"> • Unexpected Finds Procedure
	Moderate to high potential for potential State significant archaeological remains associated with the Australasian Sugar Company works. Moderate to high potential for locally significant archaeological remains associated with early residential cottages and outbuildings.	1	<ul style="list-style-type: none"> • AMS • Salvage excavations
Canterbury Station Catchment and construction site	Moderate potential for locally significant archaeological remains of early phase of railway infrastructure.	2	<ul style="list-style-type: none"> • AMS • Test/Salvage excavations

Site	Potential archaeology	Management zone	Mitigation
Belmore Station Catchment	Nil to low potential for archaeological features associated with land clearance and farming. Moderate to high potential for archaeological remains associated with upgrades of the station. Unlikely to reach threshold for local significance.	3	<ul style="list-style-type: none"> Unexpected Finds Procedure
	Low to moderate potential for archaeological features associated with grazing and farming, early rail infrastructure, former railway station goods shed and platform, and rail-related remains. Archaeological remains of the early goods shed and siding have the potential to reach local significance.	2	<ul style="list-style-type: none"> AMS Monitoring or Test/Salvage Excavations
	Nil to low potential for archaeological features associated with grazing and farming. Moderate potential for archaeological remains associated with upgrades of the station. Unlikely to reach the threshold for local significance.	3	<ul style="list-style-type: none"> Unexpected Finds Procedure
	Low to moderate potential for locally significant archaeological remains associated with the first timber island platform and initial railway infrastructure.	2	<ul style="list-style-type: none"> AMS Monitoring or Test/Salvage
Lakemba Station Catchment	Nil to low potential for archaeological remains associated with initial land owners and grants used for agricultural and pastoral purposes. Moderate potential for archaeological remains associated with upgrades of the station. Unlikely to reach the threshold for local significance. Low potential for locally significant archaeological remains associated with Taylor House, stables and outbuildings.	3	<ul style="list-style-type: none"> Unexpected Finds Procedure

CONTENTS

1.0	Introduction.....	1
1.1	Project Background	1
1.2	Sydenham to Bankstown upgrade	1
1.3	Location	2
1.4	Report Overview	4
1.3.1	Aims	4
1.3.2	Structure	4
1.5	Assessment and Research Design Methodology.....	4
1.4.1	Outline	4
1.4.2	Grades of Archaeological Potential	4
1.4.3	Archaeological Significance.....	5
1.4.4	Archaeological Management Framework	5
1.5.1	Historic Themes.....	7
1.6	Limitations.....	7
1.7	Authorship.....	7
2.0	Bankstown Line	8
2.1	Site Location	8
2.2	Historical Analysis	10
2.2.1	1788-1890s: Early exploration of the region.....	10
2.2.2	1890s-present: Development of the Bankstown railway line.....	11
2.3	Archaeological Potential	15
2.3.1	Previous Archaeological Studies	15
2.3.2	Land Use Summary	17
2.3.3	Previous Impacts	17
2.3.4	Potential Archaeological Remains.....	17
2.3.5	Summary of Archaeological Potential.....	18
2.4	Archaeological Significance.....	18
2.4.1	Statement of Archaeological Significance	19
2.5	Archaeological Impacts	19
2.5.1	Proposed Works	19
2.5.2	Potential Archaeological Impacts	20
2.6	Archaeological Management	20
3.0	Marrickville Station Catchment.....	22
3.1	Site Location	22
3.2	Historical Analysis	24
3.2.1	1788-1850s: Early Land Grants.....	24

3.2.2	1850s-1890s: Subdivision and Industry	25
3.2.3	1890s-1920s: Marrickville Railway Station	28
3.2.4	1930s-present: Station development.....	36
3.3	Archaeological Potential	38
3.3.1	Previous Archaeological Studies	38
3.3.2	Land Use Summary	39
3.3.3	Previous Impacts	39
3.3.4	Potential Archaeological Remains.....	39
3.3.5	Summary of Archaeological Potential.....	43
3.4	Archaeological Significance.....	44
3.4.1	Statement of Archaeological Significance	44
3.5	Archaeological Impacts	47
3.5.1	Proposed Works	47
3.5.2	Potential Archaeological Impacts	47
3.6	Archaeological Management	47
3.6.1	Archaeological Methodology	49
3.6.2	Research Questions	50
4.0	Canterbury Station Catchment and Construction Site.....	53
4.1	Site Location	53
4.2	Historical Analysis	55
4.2.1	1788-1841: Early Settlement and Farming.....	55
4.2.2	1841-1855: Establishment of Canterbury and the Australasian Sugar Company.....	55
4.2.3	1855-1895: Urban Development	60
4.2.4	1895-1943: Canterbury Station, Resumptions and Development.....	61
4.2.5	1943-Present: Suburban and Urban Development	66
4.3	Archaeological Potential	68
4.3.1	Previous Archaeological Studies	68
4.3.2	Land Use Summary	69
4.3.3	Previous Impacts	70
4.3.4	Potential Archaeological Remains.....	70
4.3.5	Summary of Archaeological Potential.....	75
4.4	Archaeological Significance.....	76
4.4.1	Statement of Archaeological Significance	77
4.5	Archaeological Impacts	81
4.5.1	Proposed Works	81
4.5.2	Potential Archaeological Impacts	81
4.6	Archaeological Management	81
4.6.1	Archaeological Methodology	84

4.6.2	Research Questions	84
5.0	Belmore Station Catchment	88
5.1	Site Location	88
5.2	Historical Analysis	90
5.2.1	1788-1880: Early Land Grants	90
5.2.2	1880-1920s: Subdivision and Belmore Railway Station	90
5.2.3	1920s-present: Station Development	94
5.3	Archaeological Potential	96
5.3.1	Previous Archaeological Studies	96
5.3.2	Land Use Summary	96
5.3.3	Previous Impacts	96
5.3.4	Potential Archaeological Remains	97
5.3.5	Summary of Archaeological Potential	97
5.4	Archaeological Significance	98
5.4.1	Statement of Archaeological Significance	99
5.5	Archaeological Impacts	102
5.5.1	Proposed Works	102
5.5.2	Potential Archaeological Impacts	102
5.6	Archaeological Management	102
5.6.1	Archaeological Methodology	103
5.6.2	Research Questions	104
6.0	Lakemba Station Catchment	106
6.1	Site Location	106
6.2	Historical Analysis	108
6.2.1	1788-1880s: Early Land Grants	108
6.2.2	1880s-1909: Pioneer Settlement	108
6.2.3	1909-1919: Lakemba Railway Station and development	112
6.2.4	1919-present: Railway Station Upgrades	115
6.3	Archaeological Potential	117
6.3.1	Previous Archaeological Studies	117
6.3.2	Land Use Summary	117
6.3.3	Previous Impacts	117
6.3.4	Potential Archaeological Remains	118
6.3.5	Summary of Archaeological Potential	119
6.4	Archaeological Significance	119
6.4.1	Statement of Archaeological Significance	120
6.5	Archaeological Impacts	122
6.5.1	Proposed Works	122

6.5.2	Potential Archaeological Impacts	122
6.6	Archaeological Management	122
6.6.1	Archaeological Methodology	123
6.6.2	Research Questions	124
7.0	Archaeological Methodologies	127
7.1	Heritage Induction	127
7.2	Archaeological Investigation	127
7.2.1	Excavation Director	127
7.2.2	Specialists.....	128
7.3	Work Stage Specific Archaeological Method Statements	128
7.4	In Situ Conservation	128
7.5	Research Questions	129
7.6	Test Excavation	129
7.7	Test/Salvage Excavation	129
7.8	Salvage Excavation	129
7.8.1	Manual excavation.....	130
7.9	Monitoring	130
7.10	Archaeological Recording.....	131
7.11	Underfloor and Cesspit / Well Deposits	131
7.11.1	Underfloor Deposits	131
7.11.2	Cesspit / Well Deposits.....	132
7.11.3	Sieving Strategy.....	132
7.12	Environmental Samples.....	132
7.12.1	Sampling Strategy	132
7.13	Artefacts.....	132
7.14	Unexpected Finds Procedure	133
7.15	Human Skeletal Remains	133
7.16	Aboriginal Heritage	133
7.17	Contaminated Materials.....	133
7.18	Preliminary Results Reporting	134
7.19	Post-Excavation Analysis and Final Report	134
7.20	Public Interpretation.....	134
8.0	Archaeological Management Summary	135
8.1	Introduction	135
8.1.1	Archaeological Management Zones	135
8.2	Summary of Site Specific Archaeological Management	135
8.2.1	Bankstown Line	135
8.2.2	Marrickville Station Catchment	137

8.2.3	Canterbury Station Catchment and construction site	141
8.2.4	Belmore Station Catchment.....	144
8.2.5	Lakemba Station Catchment	147
8.3	Archaeological Management Zone Mapping	149
9.0	References	153

FIGURES

Figure 1-1: Overview of project	3
Figure 2-1: Bankstown Line showing the project area and station catchments	9
Figure 2-2: Parish Map of the Hurlstone Park area. Source: Lands and Property Information AO Map 341.....	11
Figure 2-3: Proposed loop line between St Peters and Liverpool which prompted subdivision along the line c1880-1890. Source: NLA. Map Folder 16, LFSP 246.	13
Figure 2-4 Belmore Station as constructed in 1890s. Source: OEH SHI.	14
Figure 2-5: Bankstown Railway Station opening, April 1909. Source: RAHS.	14
Figure 2-6: Bankstown Station, opening of Belmore-Bankstown railway line, April 1909. Source: RAHS.....	15
Figure 3-1: Marrickville Station Catchment	23
Figure 3-2: Undated plan of the Parish of Petersham, showing Thomas Moore's grant of 470 acres. The study area was located within this grant. Source: NSW Lands & Property Information, AO Map 341.....	25
Figure 3-3: Dairy at the corner of Carrington Road and Ruby Street, Marrickville 1899. Source: Marrickville Council Library and History Services.	26
Figure 3-4: 1895 Chapman & Hazlewood plan of Marrickville: valuable business positions, desirable villa and cottage sites. Source: NLA MAP Folder 100, LFSP 1480.	27
Figure 3-5: Detail of c.1885-90 plan of Marrickville, showing Marrickville (now Sydenham) Station, and the proposed rail line on which the present-day Marrickville Station would be constructed. Source: City of Sydney Archives, Historical Atlas of Sydney, Atlas of the Suburbs of Sydney ca 1885-1890 – Marrickville.....	29
Figure 3-6: Group portrait at Marrickville Station, c. 1890, showing original platform surface and interlocking pit. Source: NLA nla.pic-vn4697485.	29
Figure 3-7: Marrickville Station in 1899, with original lever set to the right of the station platform building. Source: Marrickville Library and History Services.	29
Figure 3-8: 1900 postcard of Marrickville Station, showing the western end with the level crossing to the right. Source: AHRS.	30
Figure 3-9: n.d. unidentified rail worker at original lever set of Marrickville Station. Source: Marrickville Library and History Services.....	30
Figure 3-10: Drawing of the original stone capping for the island platform walls. Source: Sydney Trains Plan Room 0424649.....	31
Figure 3-11: Postcard of Marrickville Station, after 1911 showing overhead bridge. Source: National Museum of Australia, Joseph Lebovic Collection.....	32
Figure 3-12: H.W. Horning & Co c.1907 Marrickville Station Estate. Plan shows level crossing at Illawarra Road prior to the construction of the overbridge in 1911. Source: NLA MAP Folder 100, LFSP 1499.....	33
Figure 3-13: c. 1920 Hardie & Gorman Pty. Ltd Riverdale Estate, Marrickville: 58 allotments: adjoining Marrickville Station. Map shows the alignment of the Earlwood tram line over Illawarra Road overbridge. Source: NLA MAP Folder 100, LFSP 1504.....	33

Figure 3-14: Sydney Steel Company, c.1920 [infilled Gumbramorra Swamp area]. Source: Marrickville Council.....	34
Figure 3-15: Map of Sydney & suburbs showing tramway lines and stopping places, 1907-1920. Source: National Library of Australia	35
Figure 3-16: Cooks River at Undercliff, with tram on far side. Bridge labelled as Riverside Bridge. n.d. (but prior to 1924 when the tram line extended over the Cooks River). Source: 'Earlwood's Past' by J. Madden, 1989 City of Canterbury Library	35
Figure 3-17: Trams on Undercliff Bridge, c1950. Source: http://www2.canterbury.nsw.gov.au/photos/photearl.htm	36
Figure 3-18: Tram in Illawarra Rd, Marrickville, 1957. Source: https://www.flickr.com/	36
Figure 3-19: Marrickville Station in 1930s, showing original location of the booking office. Source: Sydney Trains Plan Room.....	37
Figure 3-20: 1943 aerial of Marrickville Station, showing layout of station at the time. Source: SIX Maps.....	37
Figure 3-21: Plan to move the platform booking office to the west in 1944. Source: Sydney Trains Plan Room.....	38
Figure 3-22: Historical overlay for Marrickville Station Catchment.....	42
Figure 3-23: Archaeological potential for Marrickville Station Catchment.....	46
Figure 4-1: Canterbury Station Catchment and construction site	54
Figure 4-2: 1841 Plan of 95 allotments at Canterbury adjoining the Australasian Sugar Company's works by W. H. Wells Land Surveyor, showing location of the mill, nearby structures and mining area. Source: National Library of Australia. Note. Plan shows approximate location of structures and may not be an accurate representation.....	57
Figure 4-3 1842 Plan of the Canterbury estate showing land occupied by the Australasian Sugar Company and associated structures. Study area outlined in green. Source: State Library of NSW. Note. Plan shows approximate location of structures and may not be an accurate representation.	57
Figure 4-4 c.1859 Canterbury & Prout's Bridge on Cooks River by Henry Grant Lloyd, showing the Sugar works to the right of the painting. The cottages on the far side of the river to the left of the image are in the vicinity of Robert Street and present day Canterbury Road (George Street). Source: State Library of New South Wales [a5894078 / DL PX 42] (Dixson Library).	58
Figure 4-5: Canterbury Sugar Works c. 1842. Source: Dictionary of Sydney.....	58
Figure 4-6. 1843 Plan of the Village of Canterbury showing various structures fronting onto what is now Canterbury Road and Robert, Broughton and Close Streets. Source: State Library of NSW. Note. Plan shows approximate location of structures and may not be an accurate representation.....	59
Figure 4-7: c1850 sketch showing Canterbury estate and Canterbury village with various buildings along what is now Canterbury and Church Street. Source: National Library of Australia. Note. Plan shows approximate location of structures and may not be an accurate representation.	59
Figure 4-8: 1884 Redmans Canterbury Allotments Subdivision Plan showing detail of Blackett and Co Canterbury Engineering Works. Source: State library of NSW.....	61
Figure 4-9: Detail from c.1840s plan of Cooks River, Jeffreys allotments, Sydney, with approximate location of Canterbury Station (red dashed line) within lots belonging to 'Thompson' and 'C. Prout'. Source: NLA MAP F 749.	62

Figure 4-10: Detail of c.1885-90 plan of Canterbury, showing the rail line and location of Canterbury Station. Source: City of Sydney Archives, Historical Atlas of Sydney, Atlas of the Suburbs of Sydney ca 1885-1890 – Canterbury.....	63
Figure 4-11: Railway acquisition in the vicinity of Bellombi Street and South Parade, between Canterbury and Campsie stations. The new subdivision either side of the line would be called the Silver Park Estate. Source: SLNSW call no. Z/ SP/ C8.	63
Figure 4-12: Canterbury Station between 1916 and 1927. Source: State Heritage Inventory 'Canterbury Railway Station Group'.	64
Figure 4-13: n.d. Canterbury Railway Station, showing platforms capping had been removed possibly with the realignment in 1927. Source: ARHS: 023606.	64
Figure 4-14: Configuration of Canterbury Station with goods platform, race platform and earlier cottages. Source: SLNSW call no. Z/ SP/ C8.....	65
Figure 4-15: Electrification of the railway line c.1926, Canterbury Station. Source: SLNSW call no. Z/ SP/ C8.	65
Figure 4-16: 1943 aerial of Canterbury Station. Source: SixMaps.	66
Figure 4-17. Canterbury, N.S.W. showing the J.C. Hutton Bacon Factory and outbuildings, just east of the study area. Likely taken from near the railway line. Source: State Library of NSW (a105124h). ..	66
Figure 4-18. 1943 aerial showing Canterbury at the time. Land to the west, north and south of the rail line is unoccupied and residential subdivisions take up the majority of land to the north. Source: SixMaps.	67
Figure 4-19. Satellite image showing Canterbury in 2016. Source: Google Earth.....	68
Figure 4-20: Historical overlays for Phase 2: 1841-1855	73
Figure 4-21: Historical overlays for Phase 4: 1895-1943	74
Figure 4-22: Archaeological potential for Canterbury Station Catchment and construction site.....	80
Figure 5-1: Belmore Station Catchment	89
Figure 5-2: Undated plan showing approximate alignment of the proposed railway, and Redman's St Clair Estate (outlined in red). Source: SLNSW call no. Z/SP/B12.....	91
Figure 5-3: 1903 parish map of Belmore Station. Source: LPI.....	91
Figure 5-4: 1922 plan of Redman's Estate subdivision, showing that development on the southern side of the railway line consists of larger blocks of land at this time. Source: SLNSW call no. Z/SP/B12.	92
Figure 5-5: c.1900 photograph of Belmore Station. Source: City of Canterbury Local History Photograph Collection.	93
Figure 5-6: Belmore Station in 1901. Source: Canterbury City Council.	93
Figure 5-7: Configuration of the Belmore Station. Source: SLNSW call no. Z/SP/B12.	94
Figure 5-8: 1895 plan of the Terminus Estate subdivision, showing location of the goods shed, sidings, platform and station master's residence at Belmore Station. Compound areas are highlighted in blue. Source: SLNSW call no. Z/SP/B12.....	94
Figure 5-9: 1943 aerial of Belmore Station. Source: SIX maps	95
Figure 5-10: Archaeological potential for Belmore Station Catchment	101
Figure 6-1: Lakemba Station Catchment.....	107

Figure 6-2: Undated plan showing approximate alignment of the proposed railway. Wall and Taylor's grant has been outlined in red. Source: SLNSW call no. Z/SP/B12.	108
Figure 6-3: Plan showing the subdivision of the Lakemba Park Estate in 1895, prior to the construction of the railway line and Lakemba Station (outlined in green), showing location of Ben Taylor's house and stables. Source: SLNSW call no. Z/SP/B12.	109
Figure 6-4: Ben Taylor's "Lakemba" in 1921, during the Anzac Day March on Haldon Street. Source: City of Canterbury, Pictorial Canterbury, image no. 020227.	110
Figure 6-5: The Methodist Church during construction c.1920, with Taylor's "Lakemba" house in the background. Source: City of Canterbury, Pictorial Canterbury, image no. 210002.	110
Figure 6-6: Construction of timber bridge over railway line at Haldon Street, with Lakemba house in the background right c. 1931. Source: Pictorial Canterbury, City of Canterbury Council.	111
Figure 6-7: Lakemba Station and surrounds in 1919. Source: SLNSW call no. Z/SP/B12.	111
Figure 6-8: Site of the residence of Lakemba after it was demolished. Source: Canterbury City Council.	112
Figure 6-9: Plan of the land to be resumed for Lakemba Railway Station. Source: Sydney Trains Plan Room.	113
Figure 6-10: Haldon Street c1910 showing shop fronts. Source: Canterbury Bankstown Express... ..	113
Figure 6-11: Lakemba Station in c.1910. Source: Bankstown Library Collection via Pictorial Canterbury, items 020204(L) and 020215 (R).	114
Figure 6-12: Lakemba Station c.1920. Source: National Library of Australia nla.pic-vn4543845-v... ..	114
Figure 6-13: Opening of the overhead bridge. Source: City of Canterbury Library Collection via Pictorial Canterbury, Image No. 30416.	114
Figure 6-14: Lakemba c.1920, looking south down Haldon Street from the junction with The Boulevarde. Source: Bankstown Library Collection via Pictorial Canterbury, item 020214.	114
Figure 6-15: Lakemba c.1932, concreting Haldon Street. Source: Bankstown Library Collection via Pictorial Canterbury, item 020201.	115
Figure 6-16: 1943 aerial of Lakemba Station. Source: SIX maps.	116
Figure 6-17: War Memorial at Lakemba Railway Station Group. Source: RailCorp.	116
Figure 6-18: Archaeological potential for Lakemba Station Catchment.....	121
Figure 8-1: Marrickville Station Catchment archaeological management zones	149
Figure 8-2: Canterbury Station Catchment and construction site archaeological management zones	150
Figure 8-3 Belmore Station Catchment archaeological management zones.....	151
Figure 8-4: Lakemba Station Catchment archaeological management zones	152

TABLES

Table 1-1: Indicative archaeological management framework.....	6
Table 2-1: Summary of potential archaeological remains for the rail corridor.....	18
Table 2-2: Assessment of archaeological significance for the rail corridor	18
Table 2-3: Archaeological potential within the Bankstown Line	19
Table 2-4: Summary of archaeological impact mitigation for the Bankstown Line rail corridor	20
Table 3-1: Archaeological potential identified in CMP 2016.....	39
Table 3-2: Summary of potential archaeological remains at Marrickville Station Catchment	43
Table 3-3: Assessment of archaeological significance for Marrickville Station Catchment	44
Table 3-4: Summary of areas with potential for significant archaeological remains for Marrickville Station Catchment	45
Table 3-5: Summary of archaeological mitigation for Marrickville Station Catchment.....	48
Table 3-6: Historical themes associated with Marrickville Station Catchment	50
Table 4-1: Summary of potential archaeological remains for Canterbury Station Catchment and construction site.....	75
Table 4-2: Assessment of archaeological significance for Canterbury Station Catchment and construction site.....	76
Table 4-3: Summary of areas with potential for significant archaeological remains for Canterbury Station Catchment and construction site.....	77
Table 4-4: Summary of archaeological mitigation for Canterbury Station Catchment and construction site	82
Table 4-5: Historical themes associated with Canterbury Station Catchment and construction site ...	85
Table 5-1: Summary of potential archaeological remains for Belmore Station Catchment	98
Table 5-2: Assessment of archaeological significance for Belmore Station Catchment	98
Table 5-3: Summary of areas with potential for significant archaeology for Belmore Station Catchment	99
Table 5-4: Summary of archaeological mitigation for Belmore Station Catchment.....	102
Table 5-5: Historical themes associated with Belmore Station Catchment.....	104
Table 6-1: Summary of potential archaeological remains for Lakemba Station Catchment	119
Table 6-2: Assessment of archaeological significance for Lakemba Station Catchment	119
Table 6-3: Summary of areas with potential for significant archaeology for Lakemba Station Catchment	120
Table 6-4: Summary of archaeological mitigation for Lakemba Station Catchment	122
Table 6-5: Historical themes associated with Lakemba Station Catchment	124
Table 8-1: Summary of archaeological management requirements for the Bankstown Line	136
Table 8-2: Summary of archaeological management requirements at Marrickville Station Catchment	138

Table 8-3: Summary of archaeological management requirements for Canterbury Station Catchment and construction site.....	142
Table 8-4: Summary of archaeological management requirements for Belmore Station Catchment	145
Table 8-5: Summary of archaeological management requirements for Lakemba Station Catchment	148

1.0 INTRODUCTION

Note on this report

Since the preparation of this Archaeological Assessment and Research Design (AARD), the exhibited project has been revised (the preferred project). Although some subsurface impacts may be reduced, the assessment of archaeological potential and relevant management outlined in this AARD would remain the same.

1.1 Project Background

The New South Wales (NSW) Government is implementing *Sydney's Rail Future* (Transport for NSW, 2012a), a plan to transform and modernise Sydney's rail network so that it can grow with the city's population and meet the needs of rail customers into the future.

Sydney Metro is a new standalone rail network identified in *Sydney's Rail Future*, providing 66 kilometres of metro rail line and 31 metro stations. The NSW Government is currently delivering the first two stages of Sydney Metro, which consist of Sydney Metro Northwest (between Rouse Hill and Chatswood) and Sydney Metro City & Southwest (between Chatswood and Bankstown).

Sydney Metro Northwest is currently under construction. Sydney Metro Northwest services will start in the first half of 2019, with a metro train running every four minutes in the peak period. Services will operate between a new station at Cudgong Road (beyond Rouse Hill) and Chatswood Station.

Sydney Metro City & Southwest will extend the Sydney Metro system beyond Chatswood to Bankstown, delivering about 30 kilometres of additional metro rail, a new crossing beneath Sydney Harbour, new railway stations in the lower North Shore and Sydney central business district (CBD), and the upgrade of existing stations from Marrickville to Bankstown. Sydney Metro City & Southwest comprises two core components:

- the Chatswood to Sydneyham project
- the Sydneyham to Bankstown upgrade ('the project' and the subject of this document)

1.2 Sydneyham to Bankstown upgrade

Transport for NSW ('the proponent') has sought approval to construct and operate the Sydneyham to Bankstown upgrade component of Sydney Metro City & Southwest (the project).

The project involves upgrading the 10 existing stations from Marrickville to Bankstown (inclusive), and the 13 kilometre long section of the Sydney Trains T3 Bankstown Line between west of Sydneyham Station and west of Bankstown Station, to improve accessibility for customers and enable conversion of the line to metro standards. The project would enable Sydney Metro to operate beyond Sydneyham, to Bankstown.

A key element of the project is upgrading stations along the corridor from Marrickville to Bankstown, to allow better access for more people, by providing level platforms, and lifts at all stations. These upgrades aim to provide a better, more convenient, and safer experience for public transport customers.

The project is subject to assessment and approval by the NSW Minister for Planning under Division 5.2 (formerly Part 5.1) of the NSW Environmental Planning and Assessment Act 1979 (EP&A Act). A

non-Aboriginal Heritage Impact Assessment (NAHIA) was prepared as part of the environmental impact statement (EIS) for the Sydenham to Bankstown project.

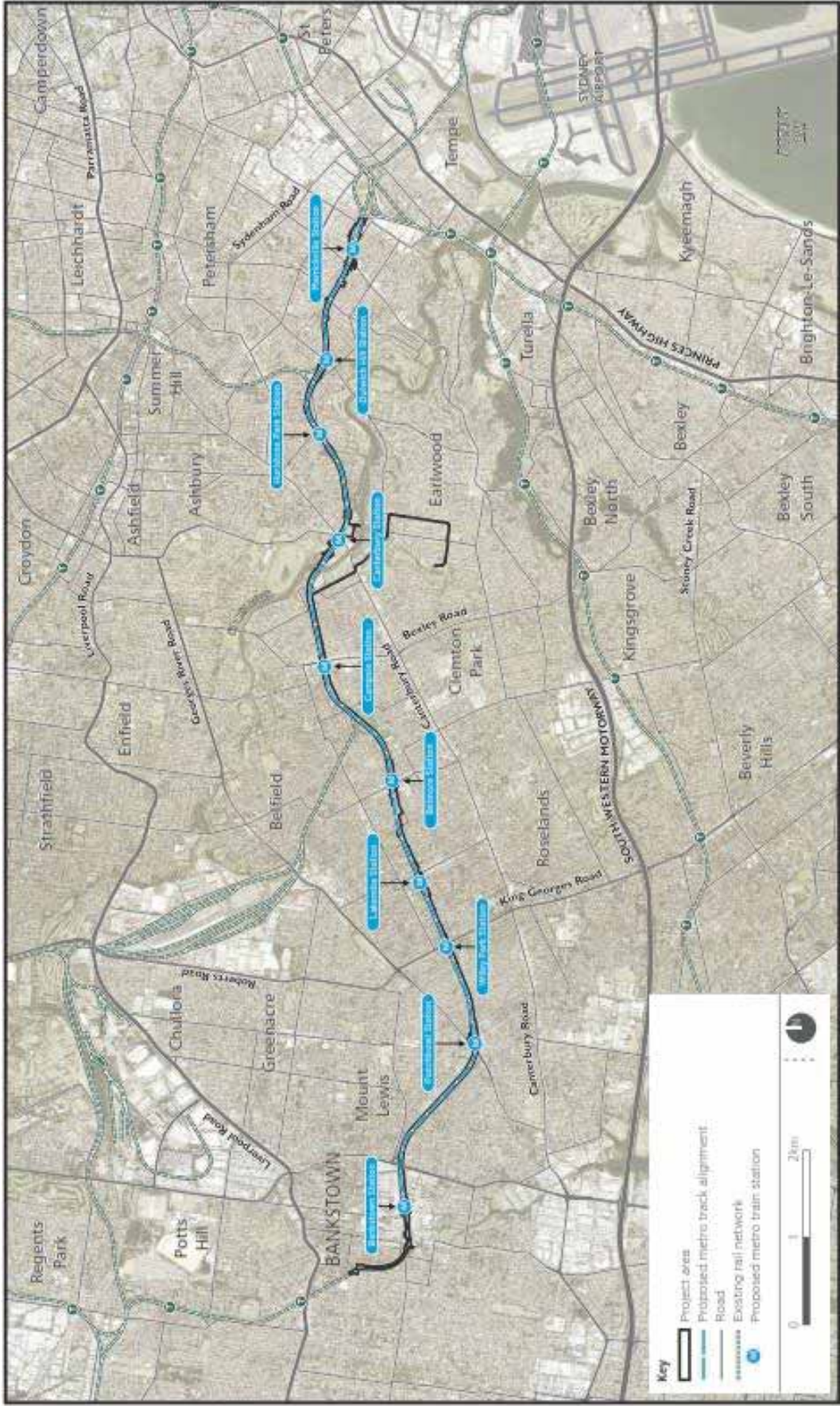
1.3 Location

The location of the project is shown in Figure 1-1.

The project is located mainly within the existing rail corridor, from about 800 metres west of Sydenham Station in Marrickville, to about one kilometre west of Bankstown Station in Bankstown. The project is located in the Inner West and Canterbury-Bankstown local government areas.

The term 'project area' is used throughout this document to refer to the area where the physical works for the project would be undertaken. This area encompasses the existing rail corridor (from about 800 metres west of Sydenham Station in Marrickville, to about one kilometre west of Bankstown Station in Bankstown), the 10 existing stations within the corridor, and areas surrounding the rail corridor as shown in Figure 1-1.

Figure 1-1: Overview of project



1.4 Report Overview

1.3.1 Aims

The purpose of this Historical Archaeological Assessment & Research Design (AARD) is to:

- Provide additional historical research and archaeological potential analysis to supplement the Non-Aboriginal Heritage Impact Assessment (NAHIA) archaeological assessment
- Identify potential construction impacts to significant archaeological resources
- Provide archaeological management strategies for each site and the project
- Identify archaeological impact mitigation and investigation methodologies for the project.

1.3.2 Structure

The AARD includes a section for each site with the potential for archaeological impacts as identified in the NAHIA. Each section provides a detailed assessment and applicable archaeological management strategies for each of these sites.

Details and further explanation on archaeological methodologies is provided in Section 12.0. A summary of the archaeological management for each site, including management zone mapping, is provided in Section 8.0.

1.5 Assessment and Research Design Methodology

1.4.1 Outline

The preparation of the AARD has included the following steps.

- **Historical research:** Additional primary archival research (review of maps, plans and other sources) has been undertaken to identify the location of former structures or features within the project sites in greater detail than was considered in the EIS.
- **Literature review:** Relevant existing archaeological studies and investigation reports were consulted to inform the archaeological potential and significance assessments.
- **Archaeological assessment:** Detailed archaeological assessment was undertaken based on the additional research and literature review.
- **Archaeological management:** Based on the potential for significant archaeological remains, and potential archaeological impacts, an archaeological management strategy was developed for each site. General archaeological management and investigation methodologies, including research questions, have also been provided.

1.4.2 Grades of Archaeological Potential

The archaeological potential of each site is presented in terms of the likelihood of the presence of archaeological remains considering the land use history and previous impacts at the site. This is presented using the following grades of archaeological potential:

- **Nil:** No evidence of historical development or use, or where previous impacts would have removed all archaeological potential

- **Nil-Low:** Low intensity historical activity, such as grazing, with little to no archaeological 'signature' expected, or where previous impacts were extensive, such as considerable bulk excavation and other earthwork activities such as grading
- **Low:** Research indicates little historical development, or where there have been substantial previous impacts, disturbance and truncation in locations where some archaeological remains such as deep subsurface features may survive
- **Moderate:** Analysis demonstrates known historical development and some previous impacts, but it is likely that archaeological remains survive with some localised truncation and disturbance
- **High:** Evidence of multiple phases of historical development and structures with minimal or localised twentieth century development impacts, and it is likely the archaeological resource would be largely intact.

1.4.3 Archaeological Significance

The assessment of archaeological significance has been undertaken in accordance with the Heritage Division guideline *Assessing Significance for Historical Archaeological Sites and Relics 2009*. The significance assessment considers research potential, historical association, aesthetic and technical significance, rarity, representativeness and intactness or integrity of the potential remains. Where intact remains are expected, social significance is also considered. The archaeological remains are assessed as either being of local or state significance.

1.4.4 Archaeological Management Framework

Table 1-1 provides an overview of the broad framework used when considering archaeological management. The significance of potential archaeological remains is a key factor in deciding how the resource would be managed. The table is not definitive and has been used as a general guide to archaeological impact mitigation requirements. The level of construction impact and the nature of the proposed construction methodology also influences how potential archaeological resources are managed.

Table 1-1: Indicative archaeological management framework

Archaeological potential	Archaeological significance	Archaeological impact mitigation
Nil	N/A	Unexpected Finds Procedure
Nil to low	Unlikely to reach the threshold for local significance	Unexpected Finds Procedure
	Local	Unexpected Finds Procedure
	State	Unexpected Finds Procedure
Low	Unlikely to reach the threshold for local significance	Unexpected Finds Procedure
	Local	Unexpected Finds Procedure
	State	Monitoring (recording or salvage if archaeology found – depending on intactness)
Low to moderate	Unlikely to reach the threshold for local significance	Unexpected Finds Procedure
	Local	Monitoring or Test/Salvage excavations
	State	Test/Salvage excavations
Moderate	Unlikely to reach the threshold for local significance	Unexpected Finds Procedure
	Local	Test/Salvage excavations
	State	Test/Salvage excavations
Moderate to High	Unlikely to reach the threshold for local significance	Unexpected Finds Procedure
	Local	Salvage excavations
	State	Salvage excavations
High	Unlikely to reach the threshold for local significance	Unexpected Finds Procedure
	Local	Salvage excavations
	State	Salvage excavations

1.5.1 Historic Themes

Historical themes are a way of describing important processes or activities which have significantly contributed to Australian history. Historical themes are described at a national and state level. The Heritage Council of NSW has prepared a list of state historic themes relevant to the demographic, economic and cultural development of the state (Heritage Council 2006). The use of these themes provides historical context in order to allow archaeological items to be understood in a wider historical context.

1.6 Limitations

Historical research included both primary and secondary sources. Literature review included relevant existing (and publicly available) archaeological studies. This background research was comprehensive, but not exhaustive. Additional historical and archaeological analysis undertaken as part of archaeological site investigations could further inform significance and enhance research outcomes.

Existing site conditions and services for all the sites data was not available. The assessed level of archaeological potential may vary once this information becomes available.

Assessment of potential archaeological impacts and development of mitigation requirements is based on design at the EIS stage. Construction impacts and archaeological management requirements may vary once final construction methodology, program and final designs are known.

1.7 Authorship

This report has been prepared by Shona Lindsay (Heritage Consultant). Dr Sandra Wallace (Director) provided management input and review.

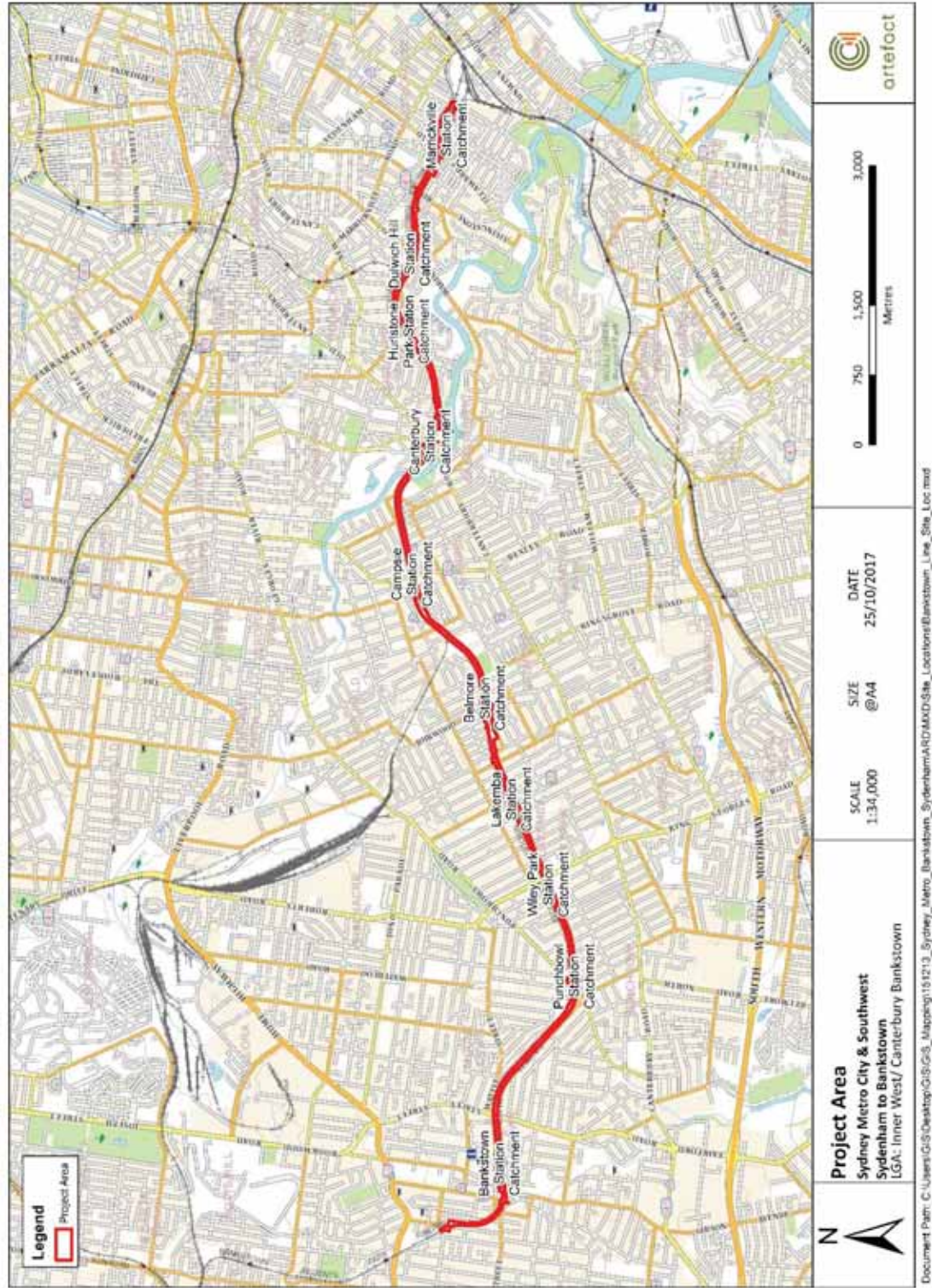
2.0 BANKSTOWN LINE

2.1 Site Location

The key elements of the project are located mainly within the existing rail corridor, from about 800 metres west of Sydenham Station in Marrickville, to about one kilometre west of Bankstown Station in Bankstown. The project is located in the Inner West and Canterbury-Bankstown local government areas.

This section relates to potential archaeological remains within the project area, excluding the defined station catchments for Marrickville, Canterbury, Belmore, and Lakemba Stations, and Canterbury construction site, each of which have separate archaeological potential and management measures (See Section 3.0 to 6.0).

Figure 2-1: Bankstown Line showing the project area and station catchments



2.2 Historical Analysis

2.2.1 1788-1890s: Early exploration of the region

Exploration to the west of Sydney Cove began soon after first settlement, as it was found that the sandstone soils of coastal Sydney were unsuited to cultivation and it was necessary to find more fertile land.

In 1788, a government farm was established on the banks of the Parramatta River at Parramatta (initially named Rose Hill). A government house was built near the farm, which prompted the development of the town of Parramatta, which was laid out in 1790. Initially the river was the main form of transport to and from Parramatta, but an overland track between Parramatta and Sydney was cleared through the bush between 1789 and 1791. This track formed the basis for 'the road to Parramatta', which was laid out in 1797. By the early 19th century, Parramatta Road was a major thoroughfare for the colony.

The first European exploration of the Cook's River region was led by Captain John Hunter in 1789. Hunter travelled a distance of five miles up the river, and later commented that it was "all shoal water". Later that year Lieutenant Bradley was sent to examine the north-west branch of Botany Bay. He described the eight-mile-long creek he encountered as a "winding shoal channel ending in a drain to a swamp, all shoal water".¹ The river appears to have been named prior to 1798, when Governor Hunter sent a map to England naming the Cook's River.

Some of the earliest land grants made within the study area were given in the 1790s and included a mix of large estates and small farms. The grants were intended to link Parramatta to the city through a 'chain of farms'.²

Development of the area north of the Cooks River was relatively slow until the arrival of the railway. The introduction of the railway shifted the mode of settlement from one that was primarily guided by topography to one that was guided by infrastructure. Early parish maps show that the progression of land grants north of the Cooks River (and the relative size of those grants) was primarily guided by the quality of the soil and the development of the road to Liverpool (Parramatta Road) (Figure 2-2). These maps indicate that the study area ran through Richard Johnston, Thomas Moore and Robert Campbell Senior's land grants, which fronted onto the Cooks River. Although some subdivision occurred, by the advent of the 1880s the landscape was little changed from 50 years previous. Large landholdings still dominated the area, reflecting the low yield of the land and its lack of rural usability in smaller parcels, despite the growing demand for property in Sydney.

The construction of the Bankstown Line in 1880 changed the nature of the development in the area, and dramatically increased its use value. Despite relative stagnation for much of the nineteenth century, subdivision of the surrounding grants was seemingly epidemic after the construction of the railway. New residential lots were carved out in rapid succession, radiating out from the arterial railway line. Previous focus on rural land use was no longer a decisive factor in the value of the land. Subdivisions were now advertised in terms of their proximity to the railway and its stations.

¹ Jervis 1951: 14.

² Thorp, W. 1995. Marrickville Conservation Areas Study, p. 3.

Figure 2-2: Parish Map of the Hurlstone Park area. Source: Lands and Property Information AO Map 341.



2.2.2 1890s-present: Development of the Bankstown railway line

Projects to build railways in New South Wales first emerged in 1841. In 1848 a public meeting was held to present a surveyor's report for a route from Sydney to Goulburn. In 1849 the Sydney Railway Company was formed, and the first Sydney station constructed in 1855. The first railway line, linking Sydney to Parramatta, was constructed in 1855. By 1860 the Sydney to Parramatta line had reached Blacktown.

The primary aim of the colony's railways was to allow inland producers to effectively transport their produce to the port of Sydney for export and to open the country up for closer settlement. Improved transport for urban residents was a low priority. A lack of transport was the main drawback for the development of the areas north and west of the Cooks River. From 1880, land speculators began to purchase farmland in the area south of Cooks River. They petitioned for the government to build a railway to the district to encourage subdivision of the land.³

The Sydenham to Bankstown Railway was opened with the initial terminus station at Belmore on 1 February 1895. The line had its origins in Railway Commissioner Goodchap's 1882 recommendation that an additional line was needed between Newtown and Liverpool to relieve traffic on the Southern

³ Madden and Muir 2009. *Belmore*

Line, and to encourage agriculture and suburban settlement. The railway was initially planned as a Loop Line to run from St Peters to Liverpool through the valley of Cup and Saucer Creek south of Canterbury Road (Figure 2-3).⁴ This was intended to relieve crowding at the stations of Homebush and Granville.⁵ Other proposals made in the 1880s included Sanderson's line along Wolli Creek and Kennedy's line along the north bank of the Cooks River.⁶ These plans did not eventuate, with political interests influencing the decision for a shorter version of Kennedy's line.

Lobbying by local interest groups and land speculators achieved Parliamentary approval by 1890 and construction commenced in 1892.⁷ The Bankstown Line was constructed in three stages between 1892 and 1939. The Sydenham to Belmore section was completed in 1895. Sydenham Station had been previously built for the Illawarra line, and was extended to accommodate the new Bankstown Line. This section included Marrickville, Dulwich Hill, Hurlstone Park (originally named Fernhill Station), Campsie, Canterbury and Belmore stations.⁸ The line was the first solely suburban line to be built in Sydney.

The construction of the line was undertaken by Proudfoot and Company, who completed the 5.4 miles of railway within eighteen months. The development of the railway line prompted subdivision and business in the region to shift closer to the stations. Shanty towns of tents sprang up along the line, particularly at Canterbury, Campsie Park and Burwood Road. These makeshift villages accommodated navvies, blacksmiths, labourers and their families. During the 1930s, the shanty towns also accommodated those who had been made homeless by the Depression, who were eager to obtain work.⁹

The most important stations on the line from a heritage perspective, Belmore, Canterbury and Marrickville, were built with impressive near-identical brick buildings (Figure 2-4). The intermediate stations (Campsie, Dulwich Hill and Hurlstone Park) receiving more modest timber buildings, possibly due to the economic austerity required by the onset of the depression of the 1890s. These were later replaced with brick buildings. The depression also suppressed the profitability of the line and the extension to Liverpool did not proceed. However, suburban development followed in the early twentieth century, particularly during the interwar period when many War Service homes were built west of Canterbury.

The construction contract for the Belmore to Bankstown section was awarded to Monie Bro on 13 November 1907. Bankstown Station was opened as a terminal on 14 April 1909, with Lakemba and Punchbowl Stations also opening at the same date (Figure 2-5 and Figure 2-6). The extension of the line to Bankstown triggered a huge real estate boom in the area from 1909 until the late 1920s. In 1926, the Bankstown Line was electrified and a maintenance depot was constructed at Punchbowl. A station was constructed at Wiley Park in 1928. In the same year, the line was extended to Regents Park (outside the current study area) in 1928, making it part of the loop line through Lidcombe, and servicing booming suburban development.¹⁰ Electrification of the line was extended to Regents Park in 1939.

⁴ Madden and Muir 2009. *Belmore*

⁵ Muir 2013

⁶ Muir 2013

⁷ State Heritage Inventory "Bankstown Railway Station Group" NSW Heritage Branch, Office of Environment and Heritage, Parramatta NSW. Accessed 10 July 2016.

⁸ State Heritage Inventory 'Marrickville Railway Station' NSW Heritage Branch, Office of Environment and Heritage, Parramatta NSW. Accessed 8 July 2016.

⁹ Madden and Muir 1988: 28.

¹⁰ State Heritage Inventory 'Marrickville Railway Station' NSW Heritage Branch, Office of Environment and Heritage, Parramatta NSW. Accessed 8 July 2016.

Figure 2-3: Proposed loop line between St Peters and Liverpool which prompted subdivision along the line c1880-1890. Source: NLA. Map Folder 16, LFSP 246.

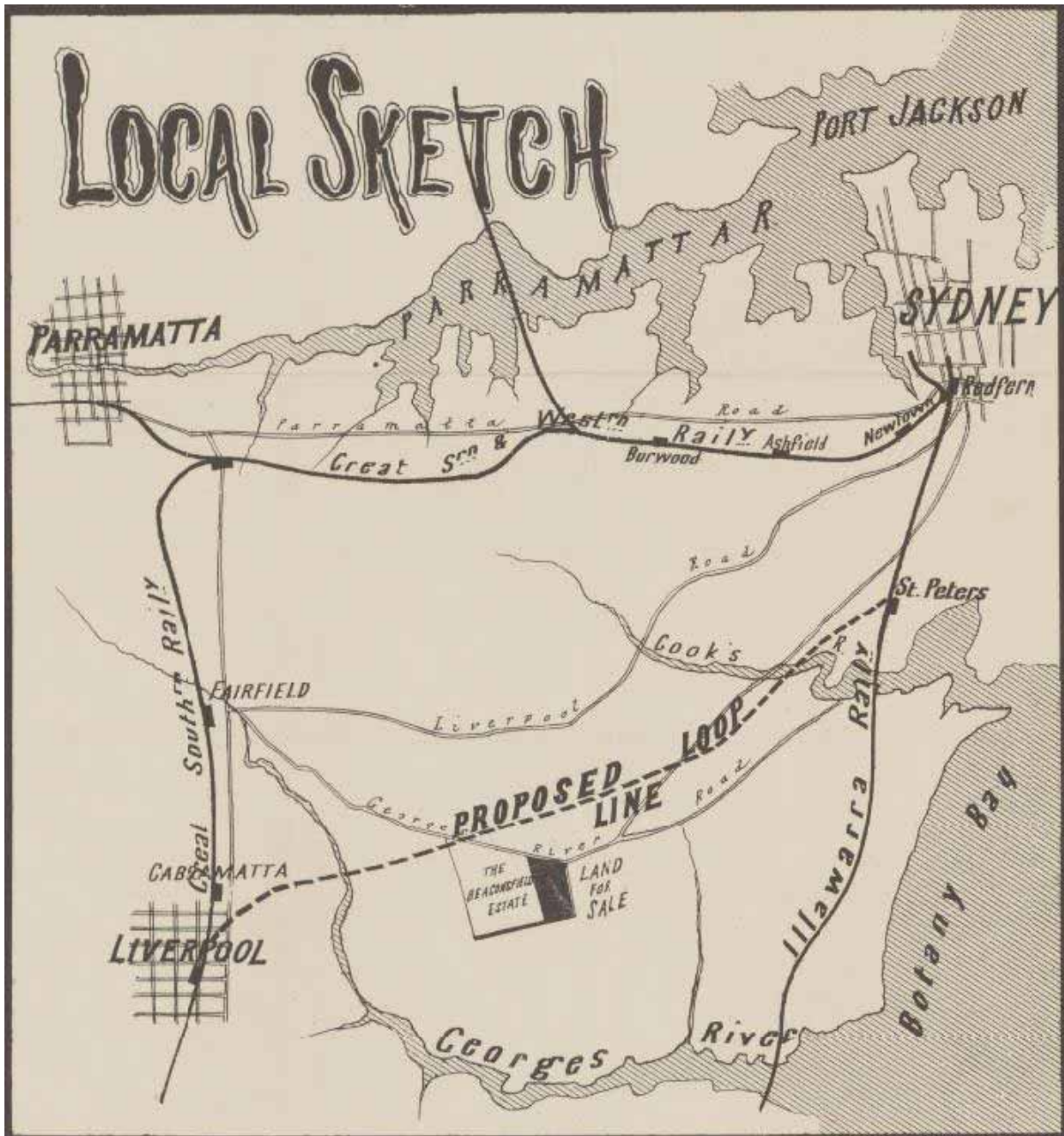


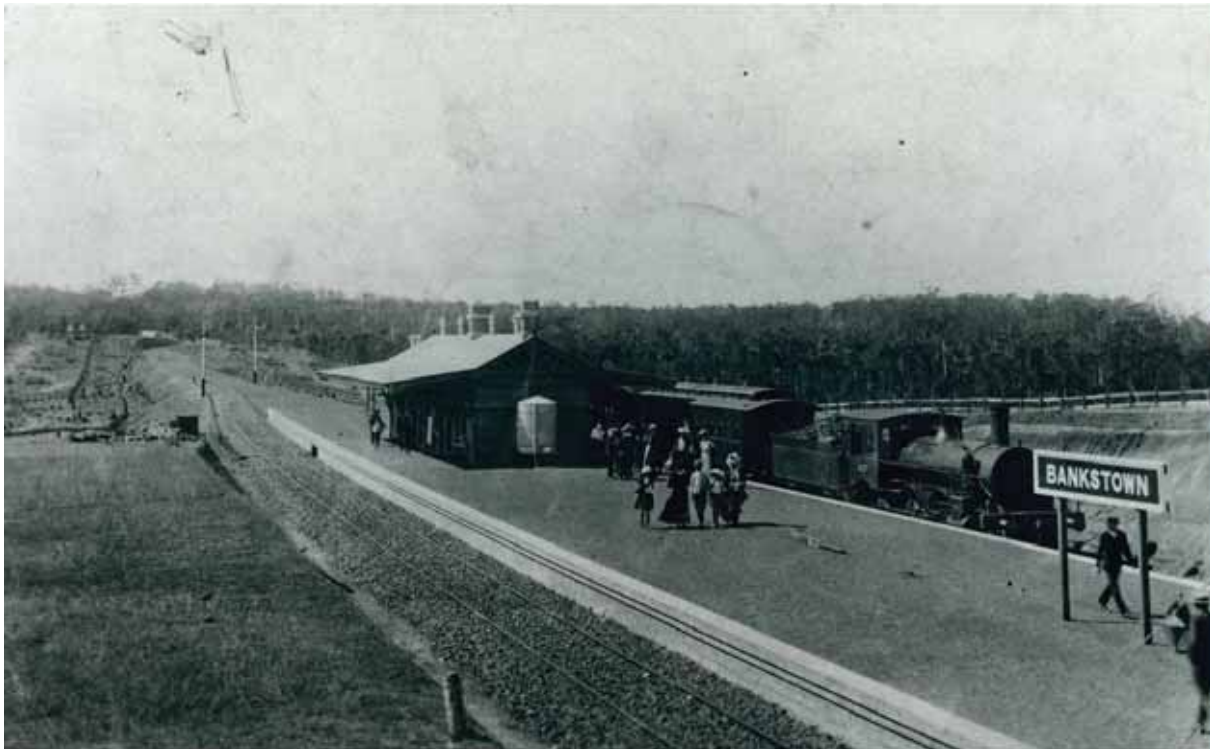
Figure 2-4 Belmore Station as constructed in 1890s. Source: OEH SHI.



Figure 2-5: Bankstown Railway Station opening, April 1909. Source: RAHS.



Figure 2-6: Bankstown Station, opening of Belmore-Bankstown railway line, April 1909.
Source: RAHS.



2.3 Archaeological Potential

2.3.1 Previous Archaeological Studies

Artefact Heritage 2016. *Sydney Metro City & Southwest: Chatswood to Sydenham, Non-Aboriginal Heritage Impact Assessment.* Prepared for Jacobs/Arcadis/RPS.

The technical paper considered the construction and operational impacts on listed heritage items and potential archaeological resources within the Chatswood to Sydenham study area. It included identification of items and areas of heritage significance that would be materially affected by the project, with consideration of the potential impacts on the values, settings and integrity of heritage items and archaeological resources located within the project area. The paper outlined proposed mitigation and management measures in accordance with relevant best practice guidelines.

Artefact Heritage 2016. *Sydney Metro City & Southwest: Chatswood to Sydenham, Historical Archaeological Assessment & Research Design.* Prepared for Jacobs/Arcadis/RPS.

This report provided a detailed archaeological assessment of potential archaeological resources within the Chatswood to Sydenham study area, potential impacts from the proposed works, and mitigation measures. Detailed archaeological management units were discussed and mapped for future management of archaeology in the study area. Research questions were provided to form the basis of managing the potential archaeology.

Artefact Heritage 2017. *Sydney Metro City & Southwest: Sydenham to Bankstown, Non-Aboriginal Heritage Impact Assessment.* Prepared for Transport for NSW.

The technical paper considered the construction and operational impacts on listed heritage items and potential archaeological resources within the study area. It included identification of items and areas

of heritage significance that would be materially affected by the project, with consideration of the potential impacts on the values, settings and integrity of heritage items and archaeological resources located within the project area. The paper outlined proposed mitigation and management measures in accordance with relevant best practice guidelines, one of which was the recommendation for this ARD.

GML 2002. 153-159 Canterbury Road, Canterbury archaeological assessment and research design. Prepared for ALDI Stores.

Godden Mackay Logan prepared an Archaeological Assessment and Research Design for 153-159 Canterbury Road, Canterbury in October 2002. 153-159 Canterbury Road, Canterbury is located approximately 55 metres northeast of the study area. It was originally part of the Canterbury Farm Estate, granted to Reverend Richard Johnson between 1793 and 1799. The land was used for farming and sheep grazing until it was sold to Robert Campbell in 1803. It was then occupied by the Rising Sun Inn from c1848 to 1922.

The archaeological assessment concluded that the entire site of the Rising Sun Inn had potential to contain archaeological deposits associated with its occupation including wells and cisterns that were once located at the rear of the building. Archaeological remains associated with the inn were assessed as having high local significance. The report recommended test trenching with potential further investigations if substantial deposits or intact features were identified.

Higginbotham, E. 2000. Historical and archaeological assessment of the Australian Sugar Company mill, Sugar house Road (formerly Church Street), Canterbury, NSW. Prepared for Gold Abacus Developments & Whhohouse & Danks Pty Ltd.

Edward Higginbotham and Associates prepared a historical and archaeological assessment of the Australian Sugar Company Mill, Sugar House Road (Formerly Church Street, Canterbury, NSW) in May, 2000. The report focussed on land directly east of the current study area, to the west of Hutton and Church Streets, Canterbury. The Mill was established on 1840 and closed in 1855. Prior to this it was part of Robert Campbell's 'Canterbury Estate'. The site was then left empty until 1884 when it was used as an ironworks by an engineering firm for the railways. The ironworks closed in 1890 and the site used as a butter factory. A large portion of the original property was then resumed for the railway in 1897. The newly dissected property was then used as a bacon factory (1900-08) followed by a ham and bacon curing factory (1908-1983). It was during this later phase that many original outbuildings associated with the Old Sugarmill were demolished.

The assessment outlined the various structures associated with the site and its many phases of development. It concluded that there was potential for archaeological remains of the Mill and associated outbuildings to exist within the area. These were assessed as having associative, social and historic significance.

Stedinger Associates 2003. Additional excavations at the Canterbury Sugar Mill, NSW. Prepared for Grosvenor Residential Pty Ltd.

Stedinger Associates prepared an addendum report for archaeological monitoring and recording of excavations at the site of the former Australian Sugar Company Mill, Canterbury in 2003. These were carried out 14 metres west of the mill site and approximately 30 metres east of the study area. Excavations uncovered several unrelated fill layers likely associated with each occupation phase at the site. The earliest occupation phase identified being 1884-1890.

A meat hook (associated with a meatworks [bacon and ham factory] that occupied the site between 1900-1908) and several large cast-iron objects were uncovered during excavations. The latter was likely associated with an ironmongery that occupied the site in the late nineteenth century, and are

likely to be parts of machinery and offcuts. In addition, a north-south oriented sandstone drain was identified in the westernmost portion of the site. This was assessed as being built during the meatworks occupation of the site or the Australian Sugar Company Mill. The drain was preserved *in situ*.

2.3.2 Land Use Summary

The historical development of the Bankstown Line and surrounds can be divided into the following phases of activity:

- Phase 1 (1788-1890s) early exploration of the region: early land grants, timber getting, grazing, farm land, country estates. Land clearing, cultivation, pastoralism, residential and industrial development
- Phase 2 (1890s-present) development of the Bankstown Line: construction of the Bankstown Line between 1892 and 1939, increased residential and industrial development, damming and formalization of the Cooks River and landscape modification, railway infrastructure, line was electrified in 1926, continual upgrading of the line

2.3.3 Previous Impacts

The study area has undergone various impacts since the development of the Bankstown Line in 1890. These include, but are not limited to, the following:

- Subsurface excavations to varying depths to grade and level land within the rail corridor
- Trenching within and adjacent to the rail corridor to accommodate services and utilities
- Vegetation clearance
- Subsurface excavations associated with subsequent upgrades to the rail corridor

2.3.4 Potential Archaeological Remains

General background historical review and analysis of selected historic maps indicates the majority of the rail corridor was constructed through undeveloped farm land. Archaeological features associated with land clearance could include tree boles, and farming activities such as fence line postholes, former shed postholes, field drains, and isolated artefact scatters.

The Bankstown Line was constructed in three stages between 1892 and 1939. Sydenham to Belmore was completed in 1895. The section to Bankstown was complete by 1909. The rail corridor cut through undeveloped country estate and farm land. Earthworks would have included areas of cut and fill with ballast to lay the track. Culverts and drainage channels were built where the rail line crossed over creeks. The line was electrified in 1926.

The 1943 aerial indicates small buildings located within the rail corridor, most likely signalling boxes and huts and rail associated buildings. This also correlates with plans located in the Sydney Trains Plan Room of the Bankstown line. Potential archaeological remains of former signalling huts and buildings could include brick and concrete footings.

Archaeological remains associated with the early infrastructure could include culverts and drains (brick, stone or concrete), ceramic or wood service pipes, brick drainage pits, electrical conduits and pits, sleepers, ballast, signalling equipment, rail point technology, and rail track. There is potential for artefact remains to be located within drains and culverts. No documentary evidence was found for former structures in additional compound sites and worksites.

Based on the history of the site and disturbance that has occurred in the area, the majority of archaeological remains are likely to consist of post-railway structures and services.

2.3.5 Summary of Archaeological Potential

Based on historical information, land use data and evidence of sub-surface impacts, a summary of the potential archaeological remains for the rail corridor is provided in Table 2-1 below.

Table 2-1: Summary of potential archaeological remains for the rail corridor

Phase	Likely archaeological remains	Potential
1 (1788-1890s)	<ul style="list-style-type: none"> Archaeological features associated with land clearance such as tree boles, and farming activities such as fence line postholes, former shed postholes, field drains, isolated artefact scatters. 	Nil to low
2 (1890s – present)	<ul style="list-style-type: none"> Archaeological remains of former rail related buildings such as signalling boxes and huts such as brick and concrete footings Archaeological remains associated with the early infrastructure such as culverts and drains (brick, stone or concrete), ceramic or wooden service pipes, brick drainage pits, electrical conduits and pits, sleepers, ballast, signalling equipment, rail point technology, and rail track. There is potential for artefact remains to be located within drains and culverts. 	Low

2.4 Archaeological Significance

The following assessment of significance is based on the guidelines discussed in Section 2.3 of this report.

Table 2-2: Assessment of archaeological significance for the rail corridor

Criteria	Discussion
Research potential	<ul style="list-style-type: none"> Archaeological remains associated with Phase 1 are unlikely to be present within the rail corridor considering the level of land modification to construct the track. Potential archaeological remains associated with Phase 2 rail infrastructure would unlikely contribute additional information not available from other historical resources.
Association with individuals, events or groups of historical importance	<ul style="list-style-type: none"> The potential archaeological remains are not associated with any particular individual of historical importance. The development of the rail network facilitated economic development and suburban growth in Sydney in the latter half of the nineteenth and twentieth centuries. The potential Phase 2 archaeological remains are associated with the historical development of Bankstown rail line.
Aesthetic or technical significance	<ul style="list-style-type: none"> Former rail infrastructure may demonstrate changes in technology and rail engineering over time. However, they are not expected to demonstrate technical significance. Other potential archaeological remains are not likely to have aesthetic value.
Ability to demonstrate the past through archaeological remains	<ul style="list-style-type: none"> Potential archaeological may have the ability to illustrate the historical development of the rail line.

2.4.1 Statement of Archaeological Significance

There is nil to low potential for archaeological remains associated with nineteenth century farming. Any remains are unlikely to have research value. There is low potential for archaeological 'works' to be located within the railway corridor. The potential Phase 2 rail infrastructure archaeological remains are associated with the historical development of the Bankstown rail line therefore may contribute further information regarding this development and may reach the threshold for local heritage significance.

A summary of the significance of potential archaeological resources is provided in Table 2-3 below.

Table 2-3: Archaeological potential within the Bankstown Line

Phase	Archaeological resource	Potential	Significance
1 (1788-1890s)	<ul style="list-style-type: none"> Archaeological features associated with land clearance such as tree boles, and farming activities such as fence line postholes, former shed postholes, field drains, isolated artefact scatters. 	Nil to low	Unlikely to reach the threshold for local significance
2 (1890s – present)	<ul style="list-style-type: none"> Archaeological remains of former rail related buildings such as signalling boxes and huts such as brick and concrete footings Archaeological remains associated with the early infrastructure such as culverts and drains (brick, stone or concrete), ceramic service pipes, brick drainage pits, electrical conduits and pits, sleepers, ballast, signalling equipment, rail point technology, and rail track. There is potential for artefact remains to be located within drains and culverts. 	Low	May reach the threshold for local significance

2.5 Archaeological Impacts

2.5.1 Proposed Works

Proposed works within station catchments (excluding Marrickville, Canterbury, Belmore, and Lakemba Stations) would include excavation for station platforms.

Proposed works within the station catchments and rail corridor would involve the addition of tracks, Down and Up MSWs, CSR utilities, gas pipelines, drainage pipes, single and multi-grate drainage pits, retaining walls, noise walls and security and segregation fences along the rail corridor boundary. The construction of retaining walls would involve the removal of up to 1.2 metres of top soil and

detritus. Works associated with utilities and fencing would involve trenching and associated subsurface impacts.

Attenuation basins are proposed to be constructed near Marrickville, Dulwich Hill, Hurlstone Park and Campsie Stations, along the southern boundary of the rail corridor. The construction of these basins would involve excavations.

Traction substations are proposed to be constructed along the rail corridor at Dulwich Hill, Canterbury, Campsie, Lakemba and Punchbowl, also along the southern boundary of the rail corridor which would require excavation.

Vegetation across the whole of the corridor is assumed, excluding threatened species of Downy Wattle identified in the rail corridor between Punchbowl and Bankstown Stations.

A number of construction sites are also proposed both within the rail corridor and outside it.

2.5.2 Potential Archaeological Impacts

Depending on the depth of excavation for utilities and drainage, location of impacts within the construction sites (excluding Canterbury Station construction site) and the railway corridor would have a minor impact on potential archaeological remains due to the highly disturbed nature of the areas and the low potential for archaeological remains. The majority of potential archaeological remains would be classified as 'works'.

2.6 Archaeological Management

The area within the Bankstown Rail corridor has been assessed as having nil to low potential to contain archaeological remains associated with Phases 1 and Phase 2.

There is potential for unexpected archaeological remains of structures and activities associated with earlier phases to exist within the area. It is therefore recommended that the project Unexpected Finds Procedure be implemented during the proposed development to manage and mitigate potential impacts to the potential archaeological resource for Phase 1 and 2.

The archaeological mitigation is summarised in Table 2-4.

Table 2-4: Summary of archaeological impact mitigation for the Bankstown Line rail corridor

Phase	Potential archaeology	Impact	Mitigation
1 (1788 - 1890s)	Nil to low potential for archaeological features associated with land clearance such as tree boles, and farming activities such as fence line postholes, former shed postholes, field drains, isolated artefact scatters. Unlikely to reach the threshold for local significance.	Excavation for station platforms, gas pipelines and CSR utility installation and trenching. Installation of drainage pipes, single and multi-grate drainage pits, retaining walls, noise walls, security and segregation fences, attenuation basins, and traction substations. Clearance for construction sites, and vegetation removal.	<ul style="list-style-type: none"> Unexpected Finds Procedure

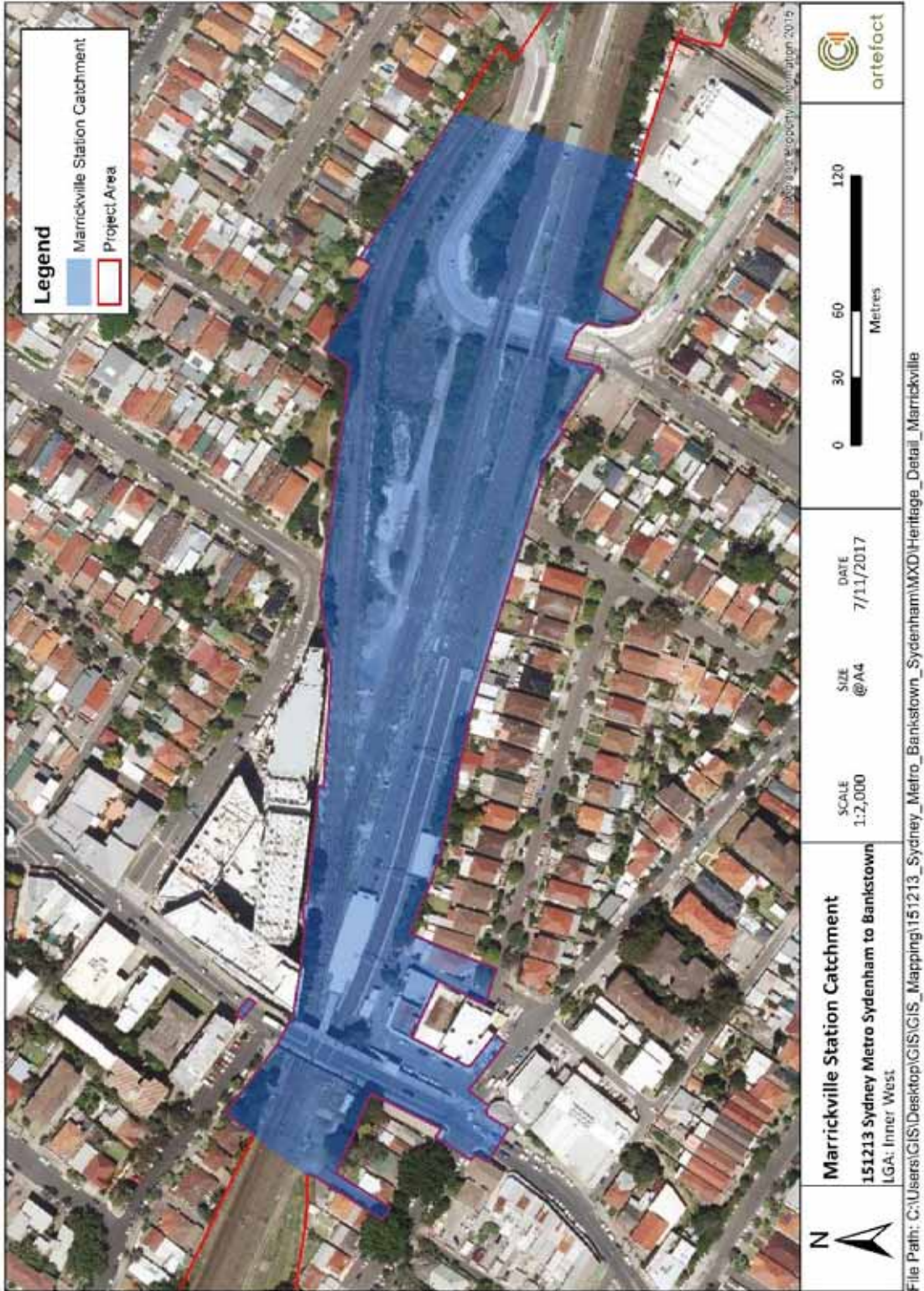
Phase	Potential archaeology	Impact	Mitigation
2 (1890s – present)	<p>Low potential for archaeological remains of former rail related buildings such as signalling boxes and huts such as brick and concrete footings.</p> <p>Low potential for archaeological remains associated with the early infrastructure such as culverts and drains (brick, stone or concrete), ceramic and wooden service pipes, brick drainage pits, electrical conduits and pits, sleepers, ballast, signalling equipment, rail point technology, and rail track. There is potential for artefact remains to be located within drains and culverts. May reach the threshold for local significance.</p>	<p>Excavation for station platforms, gas pipelines and CSR utility installation and trenching. Installation of drainage pipes, single and multi-grate drainage pits, retaining walls, noise walls, security and segregation fences, attenuation basins, and traction substations. Clearance for construction sites, and vegetation removal.</p>	<ul style="list-style-type: none"> • Unexpected Finds Procedure

3.0 MARRICKVILLE STATION CATCHMENT

3.1 Site Location

Marrickville Station is located east of the Illawarra Road overbridge. The station area is bound to the north by a multi-storey residential apartment building, located on the corner of Illawarra Road and Byrnes Street, to the south by Station Street and residential dwellings fronting Leofrene Avenue, and to the west by Illawarra Road. The station entrance is on Illawarra Road.

Figure 3-1: Marrickville Station Catchment



3.2 Historical Analysis

3.2.1 1788-1850s: Early Land Grants

Marrickville was first settled in the 1790s, when land was granted to the north of Parramatta Road and the study area, in both large and modestly sized allotments. Most of Marrickville was previously part of Gumbramorra Swamp, an important source of food and other resources for Aboriginal groups prior to European arrival. Gumbramorra Swamp was largely impassable it was drained and filled in the 1890s. As a result, the majority of early residential and industrial development within the area occurred along the parameters of the swamp, to the west.¹¹

During the 1830s and 1840s the outer lying suburbs of Newtown, St Peters, Tempe and Petersham became desirable locations for the construction of rural retreats, due to increasing land prices in the city.¹² In 1799 Thomas Moore received a grant of 470 acres adjoining the swamp and in 1803 a further grant of 700 acres. Moore also purchased adjoining land and by 1807 held 1920 acres, making him one of the largest landowners in the area (Figure 3-2). His holdings incorporated much of present day Marrickville, Petersham and Dulwich Hill.¹³ Douglas Farm, as Moore's Farm was named, was utilised for the growing of maize and wheat and for its valuable stands of timber. Moore was appointed Master Boat Builder in the dockyard at Port Jackson and it is likely that some of the timber from the property went to his shipbuilding yard.

Moore sold his land holdings to Dr Robert Wardell on the 21st of July, 1830.¹⁴ At this time the estate extended from Parramatta Road to Cooks River. Wardell was a flamboyant figure, hosting lavish parties at his home, Sara Dell (originally located on Parramatta Road in the vicinity of the Fort Street High School), and stocking his property with imported English deer for hunting.¹⁵ In September 1834 Wardell stumbled across the camp of three escaped convicts whilst riding along the Cooks River and was murdered. The estate was divided amongst his sisters, Anne Fisher, Margaret Fraser and Jane Isabella Priddle.¹⁶ Wardell's death opened the way for the first era of subdivision in the area¹⁷ and parts of his land began to be sold off soon after his death.¹⁸

¹¹ Meader, C, 2008. Sydenham, Dictionary of Sydney, <http://dictionaryofsydney.org/entry/sydenham>, viewed 23 Oct 2017

¹² Cashman and Meader 1990: 108.

¹³ Cashman and Meader 1990, 40

¹⁴ Cashman and Meader 1990, 40

¹⁵ Meader 2008

¹⁶ Cashman and Meader 1990, 88

¹⁷ *Ibid.*

¹⁸ *Ibid.*, 42.

Figure 3-2: Undated plan of the Parish of Petersham, showing Thomas Moore's grant of 470 acres. The study area was located within this grant. Source: NSW Lands & Property Information, AO Map 341.



Following the subdivision of Wardell's estate, Marrickville became a popular location for farms and market gardens due to the proximity of ample water supplies in the Gumbramorra Swamp. Stonemasons mined the sandstone cliffs along the Cooks River and ridge lines of the Marrickville valley and numerous small dairy farms were established.¹⁹

3.2.2 1850s-1890s: Subdivision and Industry

In 1855 Thomas Chalder subdivided his 60 acre Marrick Estate, establishing the street grid for what would become the village of Marrickville. Municipal buildings, shops, churches and residences soon followed, bounded by the present-day Illawarra Road, Chapel Street, Fitzroy Street and Sydenham Road. Parts of Marrickville remained well timbered and the area continued to be referred to as Wardell's Bush.²⁰ By the mid-19th century Marrickville was a thriving rural suburb with a diverse population that included small agricultural properties, residences and grand estates owned by wealthy professionals (Figure 3-3). An 1895 real estate plan indicates that many of the small residential lots were occupied prior to the construction of Marrickville Station (Figure 3-4).

By the late nineteenth century many of the market gardens had been replaced by small-scale brick making pits. This brickmaking industry at the time provided greater profits than market gardening, and

¹⁹ Meader 2008a.

²⁰ *Ibid.*

the loamy soil was mined throughout the Marrickville area to produce, initially, hand-made bricks, and, as technology advanced, steam and machine-made bricks.²¹ The area took on an increasingly industrial character, as earlier large residences were demolished, numerous large brickmaking businesses were established, and estates subdivided to provide affordable housing for workers.²² Other industrial enterprises included woollen mills, steel and metal operations and automotive industries. As a result, the population of the area surged to meet the demand for workers.²³

As the clays of the area were depleted, the large pits were abandoned, and left to fill with water. Drowning tragedies occurred throughout the district as a result. In the early twentieth century, many of these earlier pits were resumed by the Marrickville Council and turned into public parks.²⁴

Figure 3-3: Dairy at the corner of Carrington Road and Ruby Street, Marrickville 1899. Source: Marrickville Council Library and History Services.



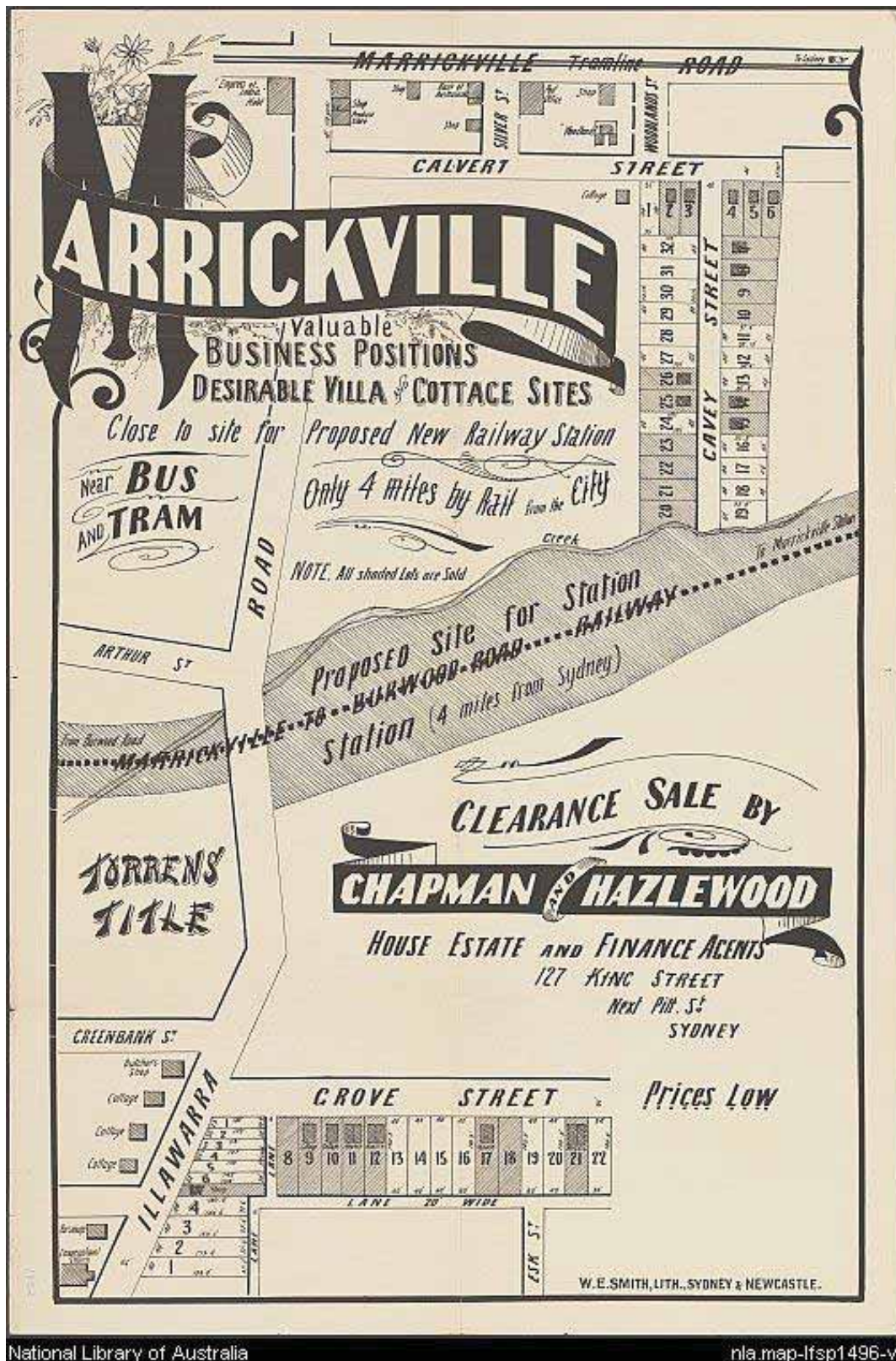
²¹ *Ibid*

²² Meader 2008

²³ Meader 2008

²⁴ Meader 2008

Figure 3-4: 1895 Chapman & Hazlewood plan of Marrickville: valuable business positions, desirable villa and cottage sites. Source: NLA MAP Folder 100, LFSP 1480.



National Library of Australia

nla.map-lfsp1496-v

3.2.3 1890s-1920s: Marrickville Railway Station

Marrickville Station was constructed on the first section of the Bankstown Line between 1894 and 1895. The station was constructed to relieve congestion on the Main South Line, and to encourage the suburban development and agricultural development of the area (Figure 3-5).

The Marrickville Station buildings were designed by the NSW Government Railways and constructed by Alexander Scouller. Scouller was active as a railway contractor from the late 1870s through the 1890s, as well as being a large property holder, a politician and Mayor of Marrickville in 1892, and was associated with a number of railway buildings in and around the Sydney region. The platform building represents a period of architectural transition in railway building construction, from the boom time of the 1880s to the standardisation of NSW railway building design from the 1890s onwards (Figure 3-6, Figure 3-7, Figure 3-8, Figure 3-9).²⁵ The platforms at this time had Pyrmont sandstone capping (Figure 3-10).

Marrickville Station was constructed in two main phases: 1894-1895 and 1911, with smaller modifications being made in later years. The original 1895 station comprised a single platform of a convex island shape with a brick face, a brick platform building of eight bays in length with the bays defined by engaged brick piers, and a timber-framed booking office (since demolished).

In 1911 a second platform, a concave side platform with a brick face and concrete edge, and associated brick platform building were constructed to accommodate the increase in rail traffic at this time. The Illawarra Road overbridge, with steel girders and a concrete slab supported on central brick piers and side brick abutments, was also constructed in 1911 (Figure 3-11).²⁶

Changes were made to the station layout with the construction of the Metropolitan Goods Line in 1917. The lines were quadrupled, with a new Up platform and building being built with overhead booking office, and the Up side of the island platform was withdrawn from use as one of the goods lines now passed it.²⁷ The platforms were also lengthened at this time.²⁸ In 1926 the electrification of the railways resulted in smaller changes to the layout of the station.

The opening of the station stimulated residential and commercial development in the immediate area, including the residential subdivision of the Marrickville Heights to the south (Figure 3-12), Marrickville Station Estate to the north (Figure 3-13), and Riverdale Estate to the southeast (Figure 3-13). Industries in the area at this time consisted of companies like the Sydney Steel Company which was located in the infilled Gumbramorra Swamp area (Figure 3-14).

²⁵ State Heritage Inventory 'Marrickville Railway Station' NSW Heritage Branch, Office of Environment and Heritage, Parramatta NSW. Accessed 8 July 2016.

²⁶ State Heritage Inventory 'Marrickville Railway Station' NSW Heritage Branch, Office of Environment and Heritage, Parramatta NSW. Accessed 8 July 2016.

²⁷ Scobie 2016: 20

²⁸ State Heritage Inventory 'Marrickville Railway Station group' NSW Heritage Branch, Office of Environment and Heritage, Parramatta NSW. Accessed 8 July 2016.

Figure 3-5: Detail of c.1885-90 plan of Marrickville, showing Marrickville (now Sydenham) Station, and the proposed rail line on which the present-day Marrickville Station would be constructed. Source: City of Sydney Archives, Historical Atlas of Sydney, Atlas of the Suburbs of Sydney ca 1885-1890 – Marrickville.

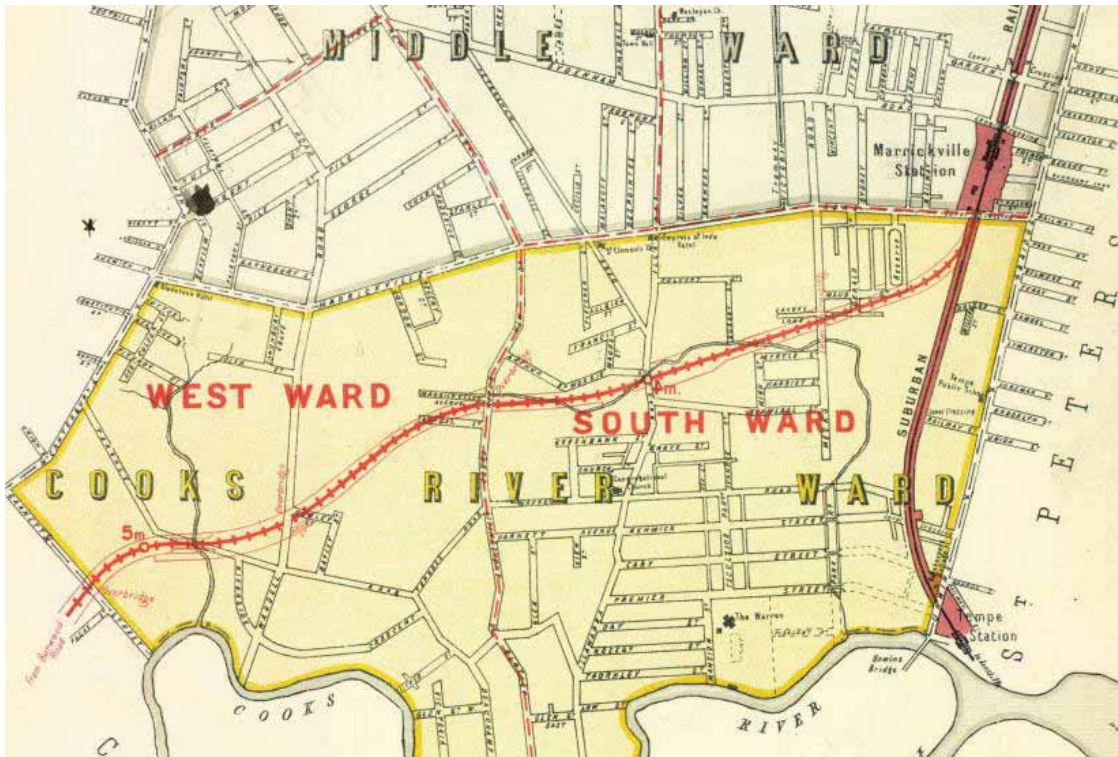


Figure 3-6: Group portrait at Marrickville Station, c. 1890, showing original platform surface and interlocking pit. Source: NLA nla.pic-vn4697485.



Figure 3-7: Marrickville Station in 1899, with original lever set to the right of the station platform building. Source: Marrickville Library and History Services.



Figure 3-8: 1900 postcard of Marrickville Station, showing the western end with the level crossing to the right. Source: AHRs.



Figure 3-9: n.d. unidentified rail worker at original lever set of Marrickville Station. Source: Marrickville Library and History Services.



Figure 3-10: Drawing of the original stone capping for the island platform walls. Source: Sydney Trains Plan Room 0424649.

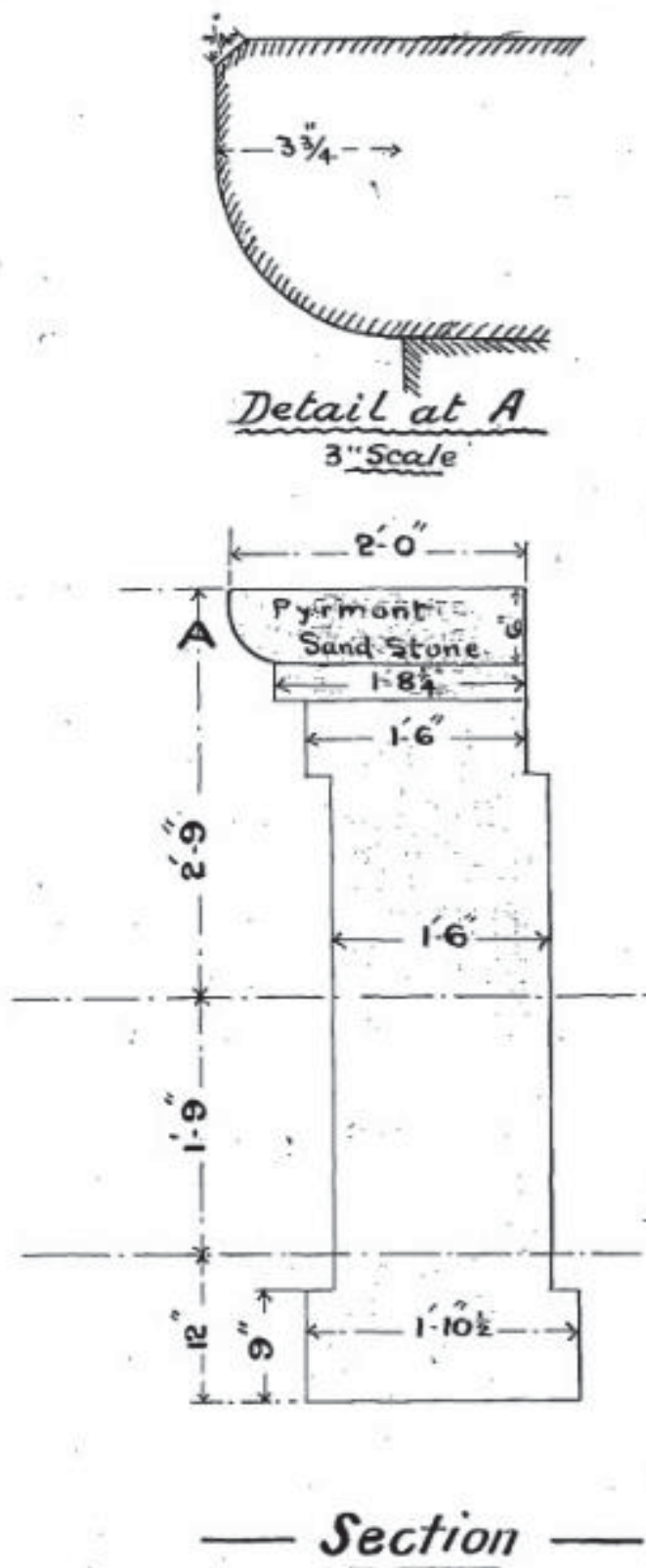


Figure 3-11: Postcard of Marrickville Station, after 1911 showing overhead bridge. Source: National Museum of Australia, Joseph Lebovic Collection.



Figure 3-12: H.W. Horning & Co c.1907 Marrickville Station Estate. Plan shows level crossing at Illawarra Road prior to the construction of the overbridge in 1911. Source: NLA MAP Folder 100, LFSP 1499.



Figure 3-13: c. 1920 Hardie & Gorman Pty. Ltd Riverdale Estate, Marrickville: 58 allotments: adjoining Marrickville Station. Map shows the alignment of the Earlwood tram line over Illawarra Road overbridge. Source: NLA MAP Folder 100, LFSP 1504.

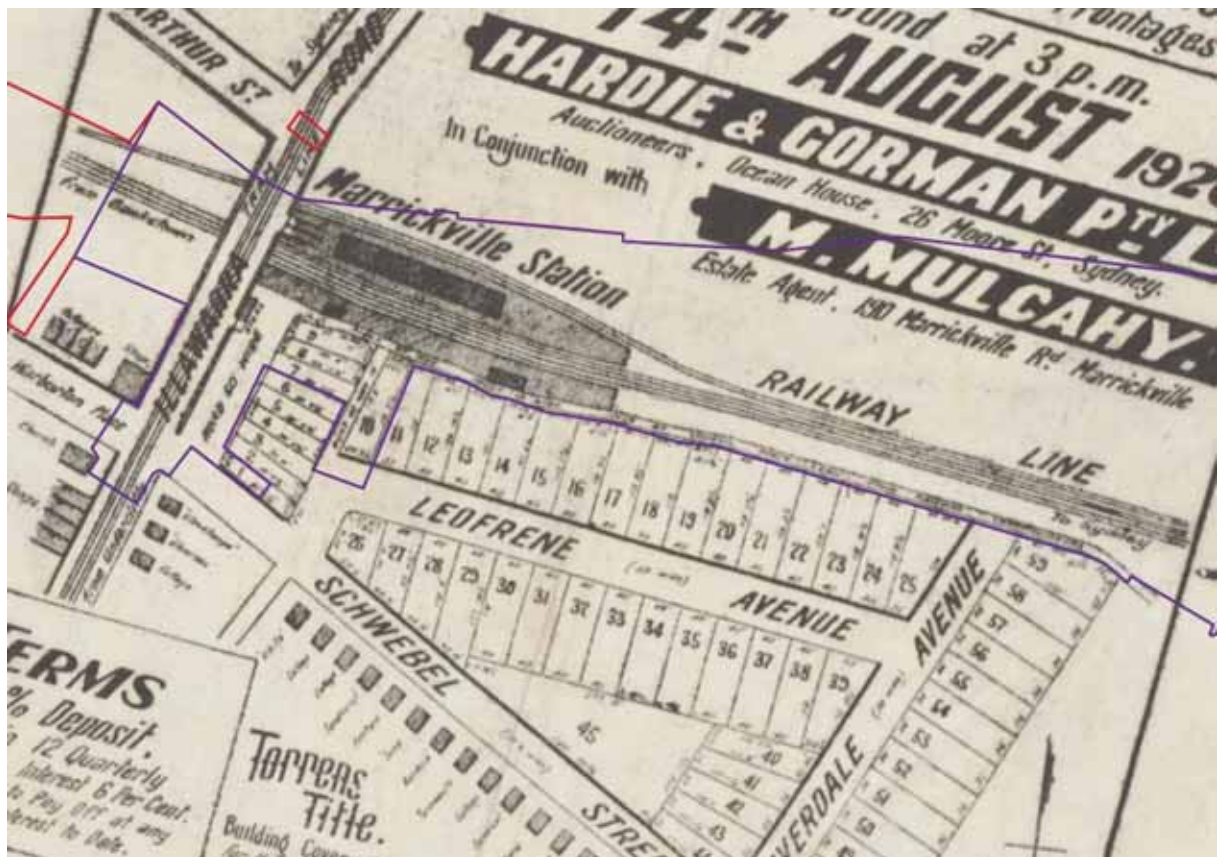


Figure 3-14: Sydney Steel Company, c.1920 [infilled Gumbramorra Swamp area]. Source: Marrickville Council.



3.2.3.1 *Earlwood Tram Line*

The Earlwood Tram Line, a branch line off the Dulwich Hill Tram Line, was constructed in two sections (Figure 3-15). The first section connecting Marrickville to Undercliff was opened in November 1912.²⁹ It branched from the Dulwich Hill Line at the junction of Illawarra Road and Marrickville Road in Marrickville, then travelled south-west along Illawarra Road and terminated at Undercliff at Riverside Park on the northern banks of the Cooks River (Figure 3-16, Figure 3-17, Figure 3-18).

For a number of years the local community lobbied for an extension of the tramline from Undercliff to Earlwood³⁰, a distance of approximately one and a half miles, due to the subdivisions of land and the growing population in the Earlwood area. The tramline was extended to Earlwood in February 1924³¹ initially providing a regular 20 minute service, over four stops, with an increase to a 10 minute weekday service by 1927. It is reported that the construction of the extension to Earlwood was delayed due to the building of a new bridge over the Cooks River. The branch line terminated at Homer Street, Earlwood.

The Earlwood Tram Line closed on 28 September 1957, as part of the overall closure of tram services across Sydney from the mid 1950s until 1961.³²

²⁹ The Sydney Morning Herald, 11 Nov 1912 p10

³⁰ The Sydney Morning Herald, 3 April 1915 p8

³¹ The Sydney Morning Herald, 16 Feb 1924 p18

³² <https://sydneylivingmuseums.com.au/stories/shooting-through-sydney-tram>, and <https://dictionaryofsydney.org/entry/trams>.

Figure 3-15: Map of Sydney & suburbs showing tramway lines and stopping places, 1907-1920.
Source: National Library of Australia



Figure 3-16: Cooks River at Undercliff, with tram on far side. Bridge labelled as Riverside Bridge. n.d. (but prior to 1924 when the tram line extended over the Cooks River). Source: 'Earlwood's Past' by J. Madden, 1989 City of Canterbury Library



Figure 3-17: Trams on Undercliff Bridge, c1950. Source: <http://www2.canterbury.nsw.gov.au/photos/photearl.htm>

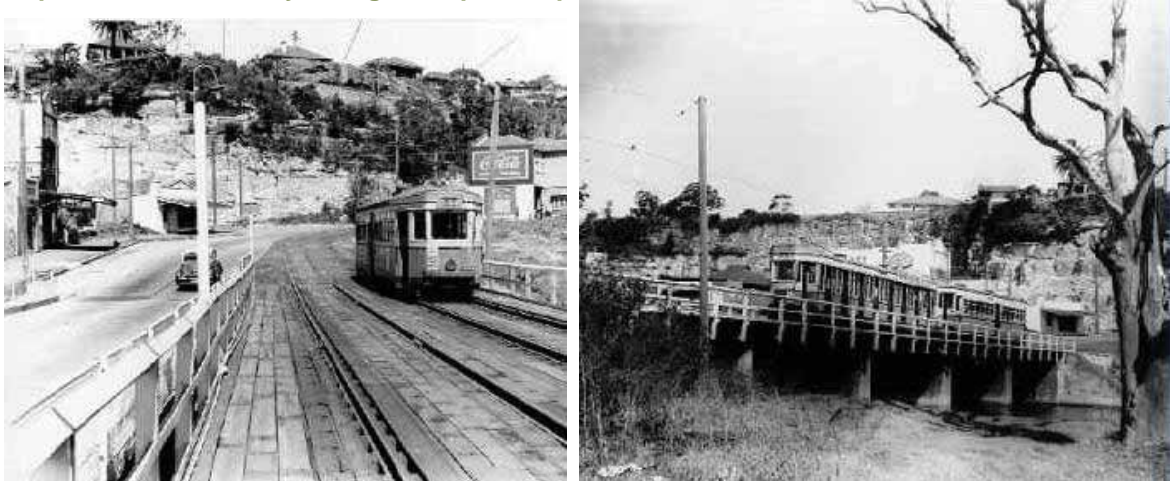


Figure 3-18: Tram in Illawarra Rd, Marrickville, 1957. Source: <https://www.flickr.com/>



3.2.4 1930s-present: Station development

The period between WWI and WWII saw great industrial growth in the Marrickville area. By 1935 there were more than 130 manufacturing industries in Marrickville. The 1940s also saw the beginning of new migration policy, and an increase in the population of the Marrickville area. However, the process of de-industrialisation began in the 1970s, as many of the larger companies either closed or moved their factories to cheaper premises on the suburban fringe.

The station experienced some further changes during this period with the booking office on Platform 2 of the station altered in 1944 by being moved to the west (Figure 3-19 to Figure 3-21). In 1978 a commuter car parking structure was erected over the Goods line.

In 1985 a set of stairs from Illawarra Road were constructed on the southern side. In c. 2000 the commuter car parking structure was demolished along with the Illawarra Road footbridge. In 2011 the

platforms of the station were lengthened to the eastern ends³³, and in June 2016 an upgrade was completed with lifts and a new concourse built.

Figure 3-19: Marrickville Station in 1930s, showing original location of the booking office.
Source: Sydney Trains Plan Room.

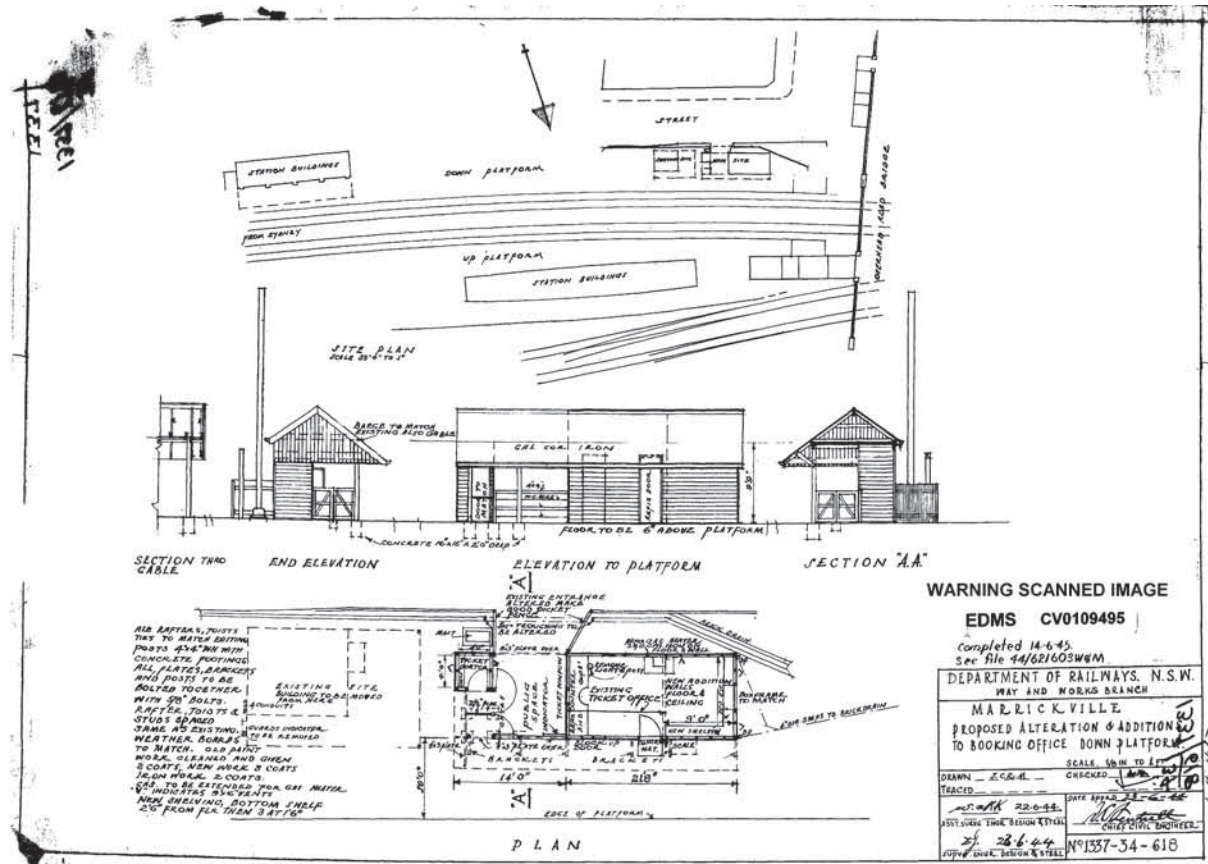


Figure 3-20: 1943 aerial of Marrickville Station, showing layout of station at the time. Source: SIX Maps.



³³ Scobie 2016: 23

Figure 3-21: Plan to move the platform booking office to the west in 1944. Source: Sydney Trains Plan Room.



3.3 Archaeological Potential

3.3.1 Previous Archaeological Studies

Artefact Heritage 2017. Sydney Metro City & Southwest: Sydenham to Bankstown, Non-Aboriginal Heritage Impact Assessment. Prepared for Transport for NSW.

The technical paper considered the construction and operational impacts on listed heritage items and potential archaeological resources within the study area. It included identification of items and areas of heritage significance that would be materially affected by the project, with consideration of the potential impacts on the values, settings and integrity of heritage items and archaeological resources located within the project area. The paper outlined proposed mitigation and management measures in accordance with relevant best practice guidelines.

David Scobie Architects Pty Ltd 2016. Marrickville Railway Station Conservation Management Plan. Prepared for TfNSW and Arenco.

The CMP was prepared following the TAP upgrades to Marrickville Station and included discussion on archaeological potential. It outlines conservation management policies and implementation strategies to ensure the conservation of the heritage significance of Marrickville Station. The CMP is currently at draft stage and has not been endorsed by Heritage Council, although the policies have been referred to in this report for the assessment of Marrickville Station.

3.3.2 Land Use Summary

The historical development of the Marrickville Station Catchment and surrounds can be divided into the following phases of activity:

- Phase 1 (1788 – 1850s) early land grants: land clearance, timber getting, farming, dairying, market gardens
- Phase 2 (1850s – 1890s) subdivision and industry: subdivision for country estates, Marrickville village and later residential development, market gardens and dairying give way to small-scale brickmaking businesses and other industry
- Phase 3 (1890s – 1920s) railway station: construction of railway station in 1894-5 with standard design, construction of the Illawarra Road overbridge in 1911, upgrades including Metropolitan Goods line in 1917, electrification in the 1920s
- Phase 4 (1930s – present) railway station: upgrades and continued use

3.3.3 Previous Impacts

Construction of the railway station and rail line in the late nineteenth century would have included a considerable amount of ground disturbance and excavation. Rail and station upgrades throughout the twentieth century would have resulted in high levels of ground impacts throughout the station catchment. These impacts include, but are not limited to, the following:

- Subsurface excavations to varying depths to grade and level land within the rail corridor and railway station
- Trenching within and adjacent to the rail corridor and railway station to accommodate services and utilities
- Vegetation clearance
- Subsurface excavations associated with subsequent upgrades to the rail corridor and railway station

3.3.4 Potential Archaeological Remains

The Marrickville Station CMP (David Scobie 2016) identified the following potential archaeological remains.

Table 3-1: Archaeological potential identified in CMP 2016

Station Element	Potential Archaeological Remains
Platform 1	<ul style="list-style-type: none"> • The remnants of the original stone copings on Platform 1 remain beneath the western end, as revealed in the 2015 excavations – confirmed relics and works with significance • Earlier alignment of the north side of the eastern end of the platform • The footscrapers at the door thresholds and buried services within the platforms concealed by later re-surfacing – a high potential for relics with significance; • Identified within the vicinity of the new lift and stairs are likely to be remnants of the original lever set. The manual set of levers for activating the points was demolished when the system was automated - a high potential for relics of significance in relation to signalling

Station Element	Potential Archaeological Remains
	<ul style="list-style-type: none"> The current concrete staircase replaced earlier stairs to the Illawarra Road bridge from Platform 1 – a high potential for works with low significance The original bull nose canopies at the eastern and western ends of the Platform 1 building were replaced with extended skillion roofed canopies – a medium potential for works with low significance Remnants of brick dwarf walls as part of the alignment of the eastern ends of the platforms running both north south and east west beneath the Platform 1 surfaces were revealed in the 2015 excavations for services – a high potential for works with low significance The Illawarra Road bridge replaced the original level crossing – a low potential for relics
Platform 2	<ul style="list-style-type: none"> Potential for early works and relics at the western end The Illawarra Road bridge replaced the original level crossing – a low potential for relics The footscrapers at the door thresholds and buried services within the platforms concealed by later re-surfacing – a high potential for relics with significance
Platform 1 building	<ul style="list-style-type: none"> One ceiling space has revealed an early water tank utilised to provide a head of pressure for the original toilets. Other ceiling and roof void spaces have the potential to reveal similar artefacts such as water tanks and redundant services; and Areas within the building which have been subject to less substantial change have the potential to reveal early fabric and details which may have been concealed by later works such as fireplaces and chimney breasts.
Platform 2 booking office	<ul style="list-style-type: none"> Archived drawings indicated that the building had been relocated and extended in 1945 to the current location at the western end of Platform 2. Simple brick footings and services connections were revealed at the last location. Similar footings with a concrete foundation were constructed in the new location.

Phase 1 (1788 – 1850s)

Archaeological remains associated with the earliest period of European settlement are likely to be ephemeral in nature. There is no documentary evidence of specific activities or development with the site at this time. Early maps indicate the study area to be located on Thomas Moore's land grant, which was later sold to Dr Robert Wardell in 1830. Wardell used his land to graze English deer for hunting. Potential archaeological remains associated with this phase could include features associated with land clearance such as tree boles, evidence of dairy farming and market gardening including fence line postholes, former shed postholes, brick or paved yard surfaces, field drains, and isolated artefact scatters.

Phase 2 (1850s – 1890s)

This phase saw the subdivision of Wardell's land and the development of industry in the area. Large country estates were constructed, and Marrickville village was established. At the end of the nineteenth century residential development began and market gardens and dairying gave way to small-scale brickmaking businesses and other industries. There is no documentary evidence of specific activities such as brickmaking or residential development within the study area. Potential archaeological remains associated with this phase could include features associated with farming such as fence or shed postholes, field drains and isolated artefacts, and drains or culverts associated with the former creek.

Phase 3 (1890s – 1920s)

Marrickville Station was constructed in 1894-5 with a standard design. The Illawarra Road overbridge was constructed in 1911. Upgrades to the station occurred in 1917 with the construction of the Metropolitan Goods Line, and with the electrification of the line in the 1920s. Plans dating to 1895 indicate culverts running under the tracks to the west of the Illawarra Road overbridge, and another to the far east of the railway station. The same plan indicates a service pipe running on the southern

side of the island platform, an interlocking pit for the original lever set to the west of the station platform building, picket fence near the level crossing, and level crossing gates.

Archaeological remains associated with the early phase of railway infrastructure could include culverts, ceramic service pits, brick drainage pits, electrical conduits and pits, stanchion bases, sleepers and rail track. Footings of former platform canopies could remain within the platform structures.

The former level crossing was replaced by the current Illawarra Road overbridge in 1911. Archaeological remains of the level crossing could be present within the study area. The Earlwood Line tram line ran across the Illawarra Road overbridge in 1924, and remains of the former track could remain under the current surface of the road.

A plan dating to 1918 indicates coal loading and storing facilities within the rail corridor at Marrickville Station. Archaeological remains associated with coal loading and storing could include footings of storage facilities. This plan also indicates an old sleeper bridge that had been removed when the plan was drawn in 1918, located to the east of the station within the rail corridor. Archaeological remains of the former sleeper bridge could include the bridge footings.

Previous archaeological investigations have identified remains of original stone copings, earlier alignment of platforms, footscrapers, buried services, original lever set, footings of former platform stairs, platform brick dwarf walls, and building footings.

It is unlikely that artefact-bearing deposits associated with the early station accumulated or survived subsequent development and upgrades.

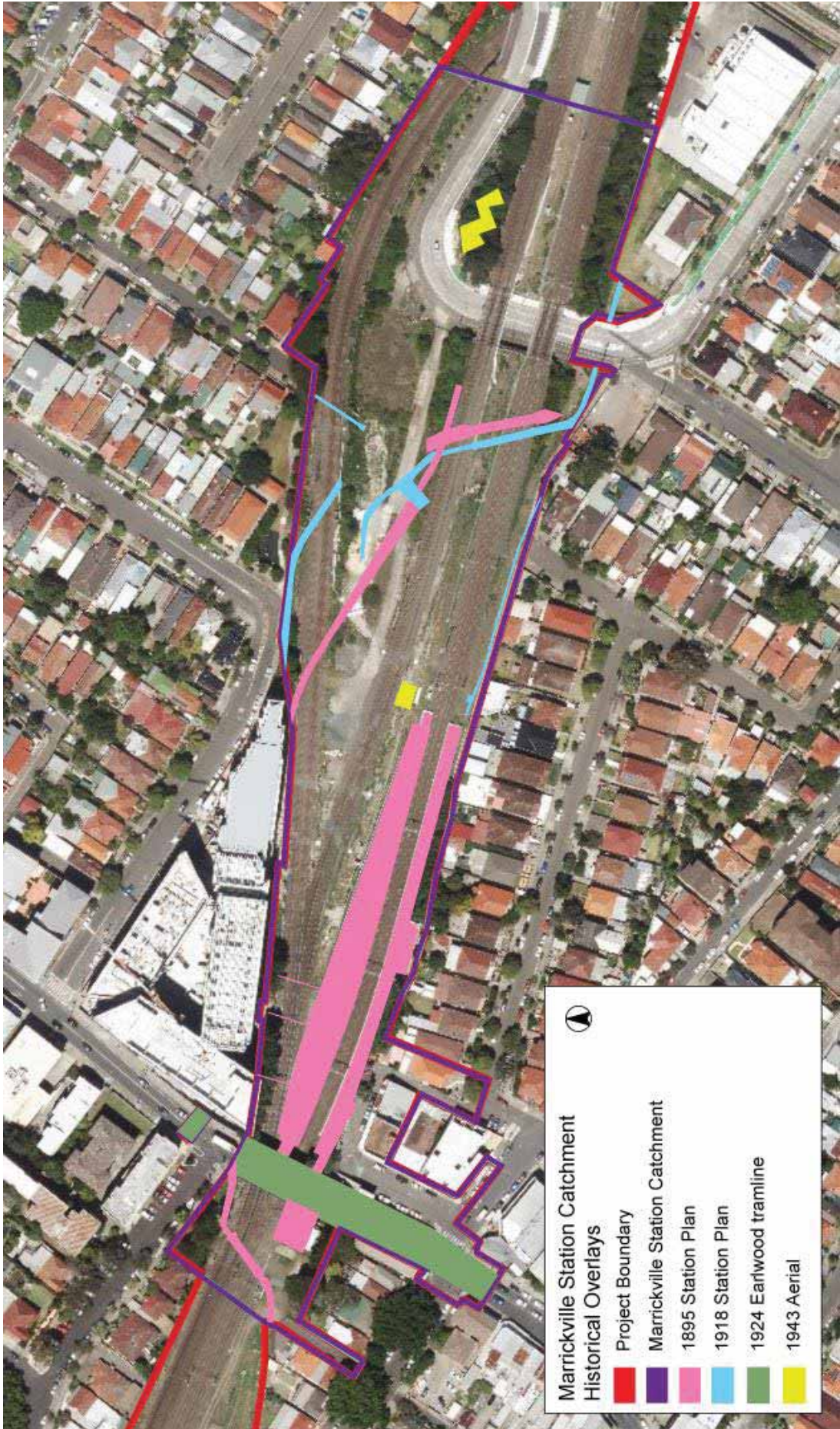
Phase 4 (1930s – present)

From the 1930s onwards, Marrickville Station has undergone upgrades and continued use of the station. The 1943 aerial shows that a small building was located at the eastern end of the island platform, another located in the rail corridor to the east of the station, and another to the west of Illawarra Road, which are mostly signalling boxes or huts.

The 1943 aerial also shows an air raid trench located in the rail corridor to the east of Marrickville Station Catchment. The air raid shelter dates to the beginning of WWII when defences were built in response perceived threats. Precautionary security measures were increasing in Sydney after the bombing of Pearl Harbour in 1941. In 1942 state and municipal authorities began to build defences such as air raid shelters and zig-zagging anti-aircraft trenches were dug into open places such as parks. Following the end of the war many of these shelters and trenches were backfilled. The air raid trench is an underground structure with an apparent zig-zag shape. The air raid trenches were generally cut to a depth of approximately two metres and lined with sandbags and sheets of iron to stabilise the sides. Some examples may have included concrete sandbags, roofing and drainage infrastructure. The current aerial indicates the area to be vegetated with large trees which could have impacted surface remains of the air raid shelter.

In 1944 the booking office on Platform 2 was altered by being extended to the west. In 1978 a commuter car parking structure was erected over the Goods line. In 1985 a set of stairs from Illawarra Road were constructed. In c. 2000 both the commuter car parking structure and the Illawarra Road footbridge were demolished. In 2011 the platforms of the station were lengthened to the eastern ends. Potential archaeological remains associated with this phase would be associated with upgrades such as utilities and drainage, footings of signalling huts and boxes, and footings associated with the commuter car parking structure and the Illawarra Road footbridge.

Figure 3-22: Historical overlay for Marrickville Station Catchment



3.3.5 Summary of Archaeological Potential

Based on historical information, land use data and evidence of sub-surface impacts, a summary of the potential archaeological remains at Marrickville Station Catchment is provided in Table 3-2 below.

Table 3-2: Summary of potential archaeological remains at Marrickville Station Catchment

Phase	Likely archaeological remains	Potential
1 (1788-1850s)	<ul style="list-style-type: none"> No documentary evidence of specific activities or development with the site. Archaeological features associated with land clearance such as tree boles, evidence of dairy farming and market gardening including fence line postholes, former shed postholes, brick or paved yard surfaces, field drains, isolated artefact scatters. 	Nil-low
2 (1850s – 1890s)	<ul style="list-style-type: none"> No known documentary evidence of specific activities such as brickmaking or residential development within the site although undocumented remains could exist Archaeological features associated with farming such as fence or shed postholes, field drains and isolated artefacts, drains or culverts associated with the former creek 	Nil-low
3 (1890s – 1920s)	<ul style="list-style-type: none"> Archaeological remains associated with the early phase of railway infrastructure such as culverts, ceramic service pits, brick drainage pits, utilities such as woodstave sewer or ceramic pipes; electrical conduits and pits, stanchion bases, sleepers and rail track. Identified remains of original stone copings, earlier alignment of platforms, footscrapers, buried services, original lever set, footings of former platform stairs, platform brick dwarf walls, and building footings. Moderate potential for footings of former platform canopies Low potential for former level crossing at the current Illawarra Road overbridge It is unlikely that extensive artefact-bearing deposits associated with the early station accumulated or survived subsequent development and upgrades Archaeological remains of the former Earlwood tram line that ran across Illawarra Road overbridge such as tram tracks and associated infrastructure 	Moderate-high
	<ul style="list-style-type: none"> Low potential for footings of former coal loading and storage facilities Low potential for archaeological remains of the former sleeper bridge such as bridge footings. 	Low
4 (1930s – present)	<ul style="list-style-type: none"> Archaeological remains associated with upgrades such as utilities and drainage Footings of signalling huts and boxes Footings associated with the commuter car parking structure and the Illawarra Road footbridge 	Moderate-high
	<ul style="list-style-type: none"> Archaeological remains associated with the WWII air raid shelter such as the cut of the pit, sandbags, iron, concrete sandbags, roofing, drainage infrastructure, and associated artefacts 	Moderate

3.4 Archaeological Significance

The following assessment of significance is based on the guidelines discussed in Section 2.4 of this report.

Table 3-3: Assessment of archaeological significance for Marrickville Station Catchment

Criteria	Discussion
Research potential	<ul style="list-style-type: none"> It is unlikely that archaeological remains associated with Phase 1 and Phase 2 would be present within the site. Any remains are likely to be truncated and would not have research potential Potential archaeological remains associated with Phase 3 former rail infrastructure would be able to contribute additional information not available from other historical resources Potential archaeological remains of the WWII air raid shelter may have moderate-high research potential, depending on the intactness of the remains
Association with individuals, events or groups of historical importance	<ul style="list-style-type: none"> The potential archaeological remains are not associated with any particular individual of historical importance The development of the rail network facilitated economic development and suburban growth in Sydney in the latter half of the nineteenth and early twentieth centuries. Marrickville Station was built as part of the Bankstown Line between (1895-1939). The potential Phase 3 archaeological remains are associated with the historical development of Bankstown rail line and Marrickville Station The potential archaeological remains of the Earlwood Line tram are associated with the development of trams in the early twentieth century, and for providing affordable transport to people, especially workers, in the region Archaeological remains of the WWII air raid shelters may have historical associations with Sydney's defence systems during World War II, the Australian military services and the local community
Aesthetic or technical significance	<ul style="list-style-type: none"> The potential archaeological remains are not likely to have aesthetic value Remains of former rail infrastructure may demonstrate changes in technology and rail engineering over time. However, they are not expected to demonstrate technical significance Air raid shelters may demonstrate some degree of technical significance as a physical response to the World War II defence and protection of Sydney. Substantial structural remains may have some interpretable qualities of aesthetic and/or technical significance
Ability to demonstrate the past through archaeological remains	<ul style="list-style-type: none"> The potential archaeological remains have potential to illustrate the early development of the railway station Archaeological remains of air raid shelters are likely to demonstrate the historical and physical elements of Sydney's defence and protection response to World War II

3.4.1 Statement of Archaeological Significance

There is nil to low potential for archaeological remains associated with nineteenth century farming. Any remains are unlikely to have research value. There is moderate to high potential for archaeological associated with Phase 3. The potential Phase 3 archaeological remains are associated with the historical development of the Bankstown rail line, Marrickville Station and the Earlwood tramline, although they are likely to be truncated. Archaeological remains associated with Phase 3 have potential to reach the threshold for local heritage significance, depending on the intactness of archaeological remains. Potential archaeological remains of the WWII air raid shelter would be of local significance for research potential, associative and technical significance, and for

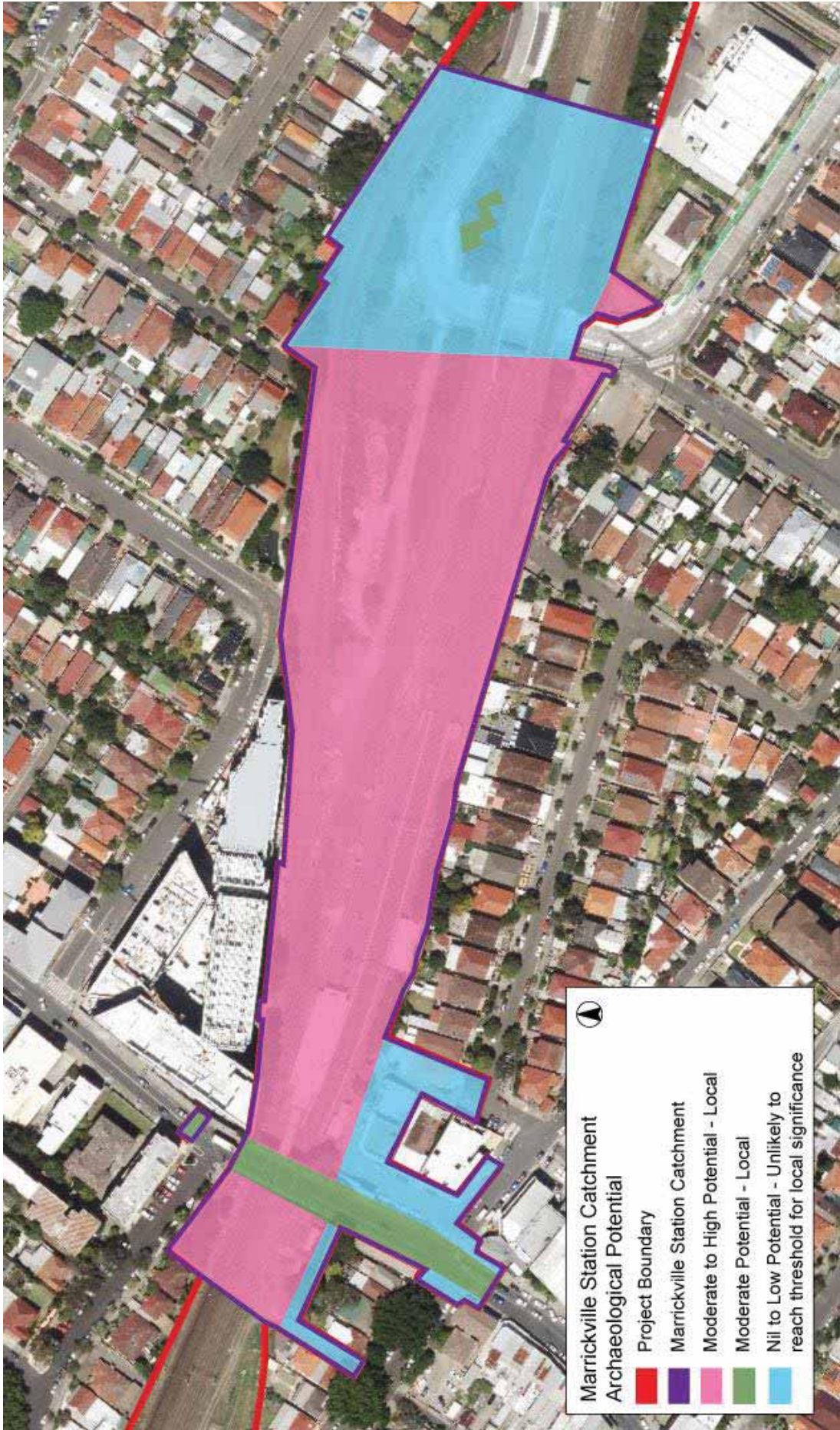
demonstrating the historical and physical elements of Sydney's defence and protection response to World War II.

A summary of the significance of potential archaeological resources is provided in Table 3-4 and Figure 3-23 below.

Table 3-4: Summary of areas with potential for significant archaeological remains for Marrickville Station Catchment

Phase	Archaeological resource	Potential	Significance
1 (1788-1850s)	<ul style="list-style-type: none"> Archaeological features associated with land clearance such as tree boles, evidence of dairy farming and market gardening including fence line postholes, former shed postholes, brick or paved yard surfaces, field drains, isolated artefact scatters 	Nil-low	Unlikely to reach the threshold for local significance
2 (1850s – 1890s)	<ul style="list-style-type: none"> Archaeological features associated with farming such as fence or shed postholes, field drains and isolated artefacts, drains or culverts associated with the former creek 	Nil-low	Unlikely to reach the threshold for local significance
3 (1890s – 1920s)	<ul style="list-style-type: none"> Archaeological remains associated with the early phase of railway infrastructure such as culverts, ceramic service pits, utilities such as woodstave sewer or ceramic pipes; brick drainage pits, electrical conduits and pits, stanchion bases, sleepers and rail track. Identified remains of original stone copings, earlier alignment of platforms, footscrapers, buried services, original lever set, footings of former platform stairs, platform brick dwarf walls, and building footings 	Moderate-high	Local
	<ul style="list-style-type: none"> Moderate potential for footings of former platform canopies Low potential for former level crossing at the current Illawarra Road overbridge Archaeological remains of the former Earlwood tram line that ran across Illawarra Road overbridge such as tram tracks and associated infrastructure 		
4 (1930s – present)	<ul style="list-style-type: none"> Low potential for footings of former coal loading and storage facilities Low potential for archaeological remains of the former sleeper bridge such as bridge footings 	Low	Unlikely to reach the threshold for local significance
	<ul style="list-style-type: none"> Archaeological remains associated with upgrades such as utilities and drainage Footings associated with the commuter car parking structure and the Illawarra Road footbridge Footings of signalling huts and boxes 	Moderate-high	Unlikely to reach the threshold for local significance
	<ul style="list-style-type: none"> Archaeological remains associated with the WWII air raid shelter such as the cut of the pit, sandbags, iron, concrete sandbags, roofing, drainage infrastructure, and associated artefacts 	Moderate	Local

Figure 3-23: Archaeological potential for Marrickville Station Catchment



3.5 Archaeological Impacts

3.5.1 Proposed Works

Proposed works within the Marrickville Station Catchment would include the construction of station platforms along the rail corridor, gas pipeline and CSR utility installation and trenching, the installation of drainage pipes, single grate drainage pits, gas pipelines and CSR utilities, the removal and replacement of the Illawarra Road overbridge, and the construction of a proposed noise wall along the southern boundary of the station between Riverdale Avenue and Charlotte Avenue overbridge. Vegetation across the whole of the corridor is assumed. The majority of these works would involve trenching and subsurface ground disturbance within the existing rail and road corridor.

3.5.2 Potential Archaeological Impacts

Marrickville Station Catchment has moderate to high potential for archaeological remains associated with Phase 3 that would potentially be of local significance. Construction of the station platforms, gas pipeline and CSR utility installation and trenching, the installation of drainage pipes, single grate drainage pits, gas pipelines and CSR utilities have the potential to impact on archaeological remains of this phase. The removal and replacement of the Illawarra Road overbridge has the potential to impact on archaeological remains associated with the former Illawarra Road level crossing. The construction of the noise wall along the southern boundary of the station has the potential to impact on former remains of rail infrastructure. The proposed works in the area of the WWII air raid shelter are not confirmed, although it is assumed that vegetation in the area would be removed. This would have a minor impact on potential remains of the WWII air raid shelter.

3.6 Archaeological Management

The area within the Marrickville Station Catchment has been assessed as having nil to low potential to contain archaeological remains associated with Phase 1 and 2 and moderate to high potential to contain archaeological remains associated with Phase 3 and 4 occupation of the site. The majority of potential archaeological remains are not considered likely to reach the threshold of local significance. However, remains associated with Phase 3 may reach the threshold for local significance if intact or substantial remains are found to exist within the project area, and if remains of the WWII air raid shelter are uncovered.

The Marrickville Railway Station CMP (2016) identified a number of visible and potential remains that were discussed in terms of archaeology. While the majority of identified remains would be classified as significant archaeological remains and would be managed archaeologically, a number such as the water tank in the ceiling cavity would be managed under the significant fabric salvage strategy, as they would not be considered archaeological under the definition provided in the Heritage Act.

As there is potential for remains associated with Phase 3 occupation of the site to have local significance, archaeological impact mitigation is required for Marrickville Station Catchment. A program of salvage excavations for the archaeological remains identified in the CMP would be undertaken prior to the proposed works commencing. Archaeological mitigation would also be required for the rest of Marrickville Station catchment. This would involve monitoring of the proposed works where there is potential for archaeological remains associated with Phase 3 to remain, including the Illawarra Road overbridge and platform works.

As there is potential for remains associated with the WWII air raid shelter to have local significance, it is recommended that an Archaeological Method Statement be prepared when construction impacts are finalised, which would detail whether archaeological monitoring or a program of test and salvage

would be undertaken. The unexpected finds procedure would apply to all other areas within Marrickville Station Catchment.

The archaeological investigations would be supervised by a suitably qualified Excavation Director with experience in managing locally significant archaeology.

The archaeological mitigation is summarised in Table 3-5.

Table 3-5: Summary of archaeological mitigation for Marrickville Station Catchment

Phase	Potential archaeology	Impact	Mitigation
1 (1788-1850s)	Nil to low potential for archaeological features associated with land clearance such as tree boles, evidence of dairy farming and market gardening including fence line postholes, former shed postholes, brick or paved yard surfaces, field drains, isolated artefact scatters. Unlikely to reach the threshold for local significance.	Gas pipeline and CSR utility installation and trenching, the installation of drainage pipes, single grate drainage pits, gas pipelines and CSR utilities. Construction of noise wall.	<ul style="list-style-type: none"> Unexpected Finds Procedure
2 (1850s – 1890s)	Nil to low potential for archaeological features associated with farming such as fence or shed postholes, field drains and isolated artefacts, drains or culverts associated with the former creek. Unlikely to reach the threshold for local significance.	Gas pipeline and CSR utility installation and trenching, the installation of drainage pipes, single grate drainage pits, gas pipelines and CSR utilities. Construction of noise wall.	<ul style="list-style-type: none"> Unexpected Finds Procedure
3 (1890s – 1920s)	<p>Moderate to high potential for potentially local significant archaeological remains associated with the early phase of railway infrastructure such as culverts, ceramic service pits, brick drainage pits, electrical conduits and pits, stanchion bases, sleepers and rail track.</p> <p>Identified remains of original stone copings, earlier alignment of platforms, footscrapers, buried services, original lever set, footings of former platform stairs, platform brick dwarf walls, and building footings.</p> <p>Moderate potential for footings of former platform canopies</p> <p>Low potential for former level crossing at the current Illawarra Road overbridge.</p> <p>Moderate potential for archaeological remains of the former Earlwood tram line that ran across Illawarra Road overbridge such as tram tracks and associated infrastructure</p>	Construction of station platforms, gas pipeline and CSR utility installation and trenching, the installation of drainage pipes, single grate drainage pits, gas pipelines and CSR utilities, the removal and replacement of the Illawarra Road overbridge, and construction of noise wall.	<ul style="list-style-type: none"> AMS Salvage excavations
	<p>Low potential for footings of former coal loading and storage facilities</p> <p>Low potential for archaeological remains of the former sleeper bridge such as bridge footings.</p>	Construction of gas pipeline and CSR utility installation and trenching, the installation of drainage pipes, single grate drainage pits, gas pipelines and CSR utilities.	<ul style="list-style-type: none"> Unexpected Finds Procedure

Phase	Potential archaeology	Impact	Mitigation
4 (1930s – present)	Moderate to high potential for archaeological remains associated with upgrades such as utilities and drainage, footings of signalling huts and boxes, and footings associated with the commuter car parking structure and the Illawarra Road footbridge. Unlikely to reach the threshold for local significance.	Construction of station platforms, gas pipeline and CSR utility installation and trenching, the installation of drainage pipes, single grate drainage pits, gas pipelines and CSR utilities, the removal and replacement of the Illawarra Road overbridge, and construction of noise wall.	<ul style="list-style-type: none"> Unexpected Finds Procedure
	Moderate potential for locally significant archaeological remains associated with the WWII air raid shelter such as the cut of the pit, sandbags, iron, concrete sandbags, roofing, drainage infrastructure, and associated artefacts.	Excavation for utilities and drainage and clearance of vegetation	<ul style="list-style-type: none"> AMS Test/Salvage Excavations

3.6.1 Archaeological Methodology

The following archaeological methodology for the Marrickville Station catchment is based on impacts known at project approval stage. Explanation and further details regarding the archaeological process and methodologies identified below are provided in Section 7.0.

- An AMS would be prepared prior to construction works commencing at the Marrickville Station catchment. This AMS would:
 - Review scope of works and construction methodology and reassess potential for impacts to significant archaeological resources.
 - Outline how the archaeological program would be undertaken within the construction program
 - Confirm the appropriate archaeological mitigation.
 - Consider opportunities to provide information regarding the archaeological findings to the public.
- Salvage excavations would be undertaken to investigate and record archaeological remains identified in the CMP prior to the proposed works commencing.
- Archaeological monitoring of the proposed works within the Marrickville Station catchment with the potential to impact on archaeological remains associated with Phase 3.
- Unexpected finds procedure would apply to all other areas within the Marrickville Station catchment.
- The archaeological investigations would be supervised by a suitably qualified Excavation Director with experience in managing locally significant archaeology.
- A preliminary results report would be written once archaeological fieldwork has been completed.
- Post-excavation analysis of fieldwork results, artefacts, samples and other archaeological data would be undertaken and included in a final archaeological investigation report.
- Significant archaeological findings would be considered for inclusion in heritage interpretation for the project.

3.6.2 Research Questions

The historical themes associated with the Marrickville Station Catchment study area are presented in Table 3-6.

Table 3-6: Historical themes associated with Marrickville Station Catchment

Australian theme	NSW theme	Explanatory notes	Comments
3. Developing local, regional and national economies	Agriculture	Activities relating to the cultivation and rearing of plant and animal species, usually for commercial purposes, can include aquaculture	The study area is located on former rural dairy landscape.
3. Developing local, regional and national economies	Environment – cultural landscape	Activities associated with the interactions between humans, human societies and the shaping of their physical surroundings	The study area is located on land that was originally used for market gardens.
3. Developing local, regional and national economies	Industry	Activities associated with the manufacture, production and distribution of goods	Small-scale brickmaking businesses and other industry were located within the vicinity of the study area, although there is nil to low potential for archaeological remains to be present that relate to early industry.
3. Developing local, regional and national economies	Transport	Activities associated with the moving of people and goods from one place to another, and systems for the provision of such movements	Marrickville Railway Station is associated with the provision of transport in developing local economies. Evidence of the development of the Bankstown line could provide information about the changing technologies in rail infrastructure. Evidence could include early rail infrastructure. Evidence of the tram lines over Illawarra Road overbridge would be associated with the development of the Earlwood tramline in supplying affordable transport to people, especially workers, in the region.
4. Building settlements, towns and cites	Towns, suburbs and villages	Activities associated with creating, planning and managing urban functions, landscapes and lifestyles in towns, suburbs and villages	Evidence of the early subdivision pattern, town plan, streetscape, and development of the civic centre within the study area could provide information about the development of the site, which would complement existing historical plans. There is nil-low potential that ephemeral evidence of fencelines and postholes, may exist.
4. Building settlements, towns and cites	Land tenure	Activities and processes for identifying forms of ownership and occupancy of land and water, both Aboriginal and non-Aboriginal	Evidence of the early subdivision pattern of the study area could provide information about the development of the site, which would complement existing historical plans. There is nil-low potential that ephemeral evidence of fencelines and postholes, may exist.

Australian theme	NSW theme	Explanatory notes	Comments
4. Building settlements, towns and cities	Utilities	Activities associated with the provision of services, especially on a communal basis	Evidence of early culverts, wells and cesspits can provide information about the provision of services and changes in technology, and often contain artefact deposits that have research potential. Early in-ground services including sandstone, brick and ceramic drains could be present in the study area.
7. Governing	Defence	Activities associated with defending places from hostile takeover and occupation	Evidence of the WWII air raid shelter could provide information about the development of defences in response to the threat of WWII in Sydney. Evidence of the WWII air raid shelter could include the cut of the pit, sandbags, iron, concrete sandbags, roofing, drainage infrastructure, and associated artefacts.

The following research questions should be used to guide archaeological investigation at the Marrickville Station Catchment.

Marrickville Railway Station

- What physical evidence of former activities survives within the site?
- What is the integrity of the remains? Have they been truncated by later development or excavation work within the study area?
- Are there remains of the original lever set? How does this inform changes in signalling equipment?
- What evidence of the pre-station landscape exist within the site? Is there evidence of early industry and subdivision?
- What does the evidence indicate about the development of rail infrastructure and technology?
- Do archaeological remains of the former level crossing exist?
- Are there remains of early culverts, wells and cesspits, and what do they tell us about the evolution of utility services in the area?
- How does the evidence inform the historical development of the Bankstown rail line and Marrickville Station?
- What evidence of the former Earlwood tram line remain?
- Is there any evidence of former platforms located below or within the present-day station platforms?
- Interpret the results in terms of broader themes, posing questions that help to inform the Statement of Significance.

WWII air raid trench

- What evidence of the WWII air raid shelter remains?
- What methods were used to construct the air raid shelter? Is this consistent with other known air raid shelters?

- Are there artefacts in association with the air raid shelter? What information do these provide about the use of defence systems during WWII?

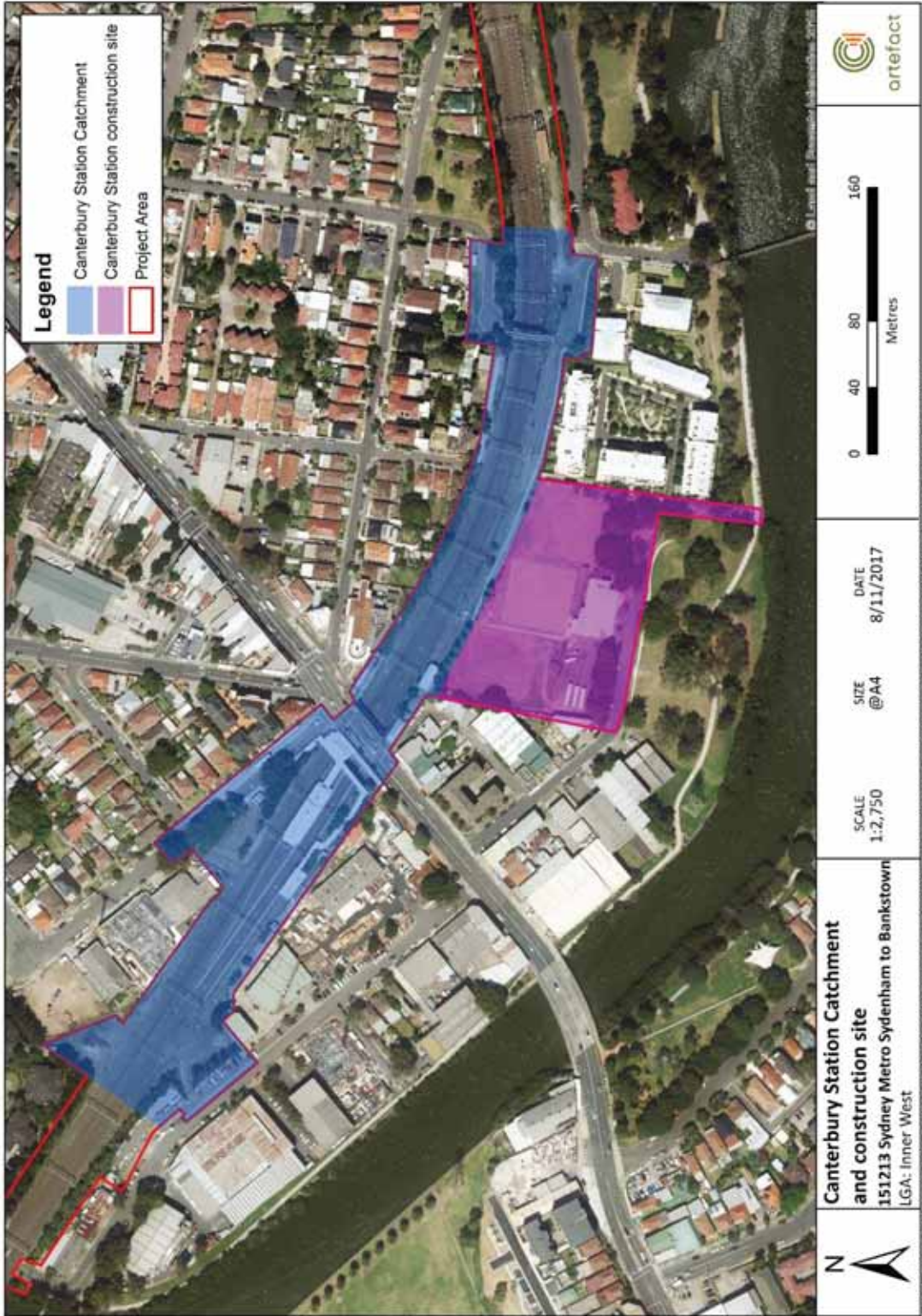
Additional research questions may be posed (and existing questions modified) as the archaeological excavation progresses and the extant and condition of the archaeological resource is revealed.

4.0 CANTERBURY STATION CATCHMENT AND CONSTRUCTION SITE

4.1 Site Location

Canterbury Station is located to the north-west of the Canterbury Road overbridge. The station area is bounded by Broughton Street to the north, a large mixed use development fronting Charles Street to the south, and Canterbury Road to the east. The station entrance is on Canterbury Road.

Figure 4-1: Canterbury Station Catchment and construction site



4.2 Historical Analysis

4.2.1 1788-1841: Early Settlement and Farming

The suburb of Canterbury north of the Cooks River was originally part of land granted to Reverend Richard Johnson. This grant, initially of 100 acres, was periodically added to throughout the late eighteenth century. Named 'Canterbury Vale,' Johnson successfully farmed the land with the assistance of convicts and hired men until it was sold to Lieutenant William Cox in 1800. At this time the property consisted of 600 acres of land, including two acres of vineyards, an orchard, 150 sheep, a mare, three fillies and some horned cattle.³⁴ The study area was located at the southern edge of the grant, near the banks of the Cooks River.

William Cox hired Joseph Holt to assist him in maintaining the property. In Holt's memoirs, he refers to his commencing construction of a grand house for Cox, although it is unclear whether this house was completed. By October, 1800, the farm had 24 acres under crop. Three shepherds were employed on the farm, suggesting that Cox was breeding sheep. Two sawyers, three carpenters, two stone cutters and 20 labourers were also employed on the farm.³⁵

In 1803 Cox sold his 900 acre Canterbury Farm to the merchant Robert Campbell. In 1812 Campbell offered the estate for rent. At this time the property contained, in addition to Canterbury Farm, nine farms. Canterbury Farm was listed as being mostly cleared, and containing a house and other buildings. Campbell does not seem to have been successful in finding a tenant, and in 1814 the property, now consisting of 1040 acres, was offered for sale. A purchaser was presumably not found, and throughout the 1820s the farms were used for the grazing of Government bullocks.³⁶ The Campbell's held the land for many years, and when it was finally subdivided and sold off throughout the nineteenth century, it extended from the Cook's River at Canterbury to the Liverpool Road in Ashfield.

The Village of Canterbury dates to 1841, when 66 allotments of Campbell's Canterbury Estate were offered for sale (Figure 4-2). By November of that year the village contained a school, a building used as a chapel, and a store. Remaining lots for sale were said to be cleared and fenced. A brick kiln was also located on the estate. The under-sheriff of Sydney, Cornelius Prout, constructed Prout's Bridge over the Cook's River in 1841 using convict labour (Figure 4-4). Prior to this he had operated a punt between Canterbury village and his farm in the south side of the river. The railway station at Canterbury would later be constructed partially within Prout's property (Figure 4-9).

4.2.2 1841-1855: Establishment of Canterbury and the Australasian Sugar Company

In the second half of the nineteenth century Canterbury was dotted with palatial colonial mansions on large estates. During these years, the area had experienced very little industrial development, and residential development was largely limited to that at Canterbury village itself (Figure 4-3). The first series of subdivisions began in the 1840's, but were more concerned with dividing the early large land grants into smaller farms.³⁷

The primary industry of the area was timber cutting, brick making and sugar works, constructed between 1840 and 1842 for the Australasian Sugar Company on 60 acres of Robert Campbell's original property (Figure 4-2, Figure 4-3 and Figure 4-4, Figure 4-5).

³⁴ Jervis 1951: 17.

³⁵ Jervis 1951: 18.

³⁶ *Ibid*: 20.

³⁷ Larcombe 1971: 172.

On 11 March 1840 the sugar works was established when the directors of the company and 40 mill staff with their families arrived in Sydney. The staff included William Knox Child and his family, Francis Kemble and his family, plus 30 immigrants who were to be employed by the company.³⁸ About 100 men were employed whilst the mill was being built at cost of £30,000. Sugar mill workers were housed nearby in slab huts and a school was already in operation for over 40 children.³⁹ In 1841 Scottish stonemasons were employed by the company under the management of David McBeath for cutting stone on the sites quarries, some of which are within the study area.⁴⁰

The study area dissects part of the southern extent of the company's land as shown in Figure 4-3. A number of outbuildings associated with the sugar works were located in this area, although the main mill structure is located outside of the current study area boundary. The Old Sugarmill (located at 2-4 Sugar House Road, Canterbury) is one of the last remaining elements of the site within the landscape today.

An 1841 plan showing '95 proposed allotments adjoining the Australasian Sugar Company's works includes nine buildings and a circular feature labelled 'spot where the coal miners are at work', west of the sugar work's property boundary. Some of these are located within the study area, at the site of the proposed Canterbury Station Catchment construction worksite (shown in Figure 4-2). A number of structures within the mill's property are also shown to occupy land within the study area and an area now occupied by the current rail line.

Later plans prepared in 1843 and c1850 show a number of buildings occupying what is now Canterbury Road and Church Street (originally George Street and Sugar Mill Road respectively), as well as Robert, Broughton and Close Streets (Figure 4-6 and Figure 4-7). Some are located within the study area although they are likely to have been resumed and demolished to make way for the railway in 1895.

³⁸ Higginbotham 2000:7

³⁹ Higginbotham 2000:10

⁴⁰ Higginbotham 2000:8

Figure 4-2: 1841 Plan of 95 allotments at Canterbury adjoining the Australasian Sugar Company's works by W. H. Wells Land Surveyor, showing location of the mill, nearby structures and mining area. Source: National Library of Australia. Note. Plan shows approximate location of structures and may not be an accurate representation.



Figure 4-3 1842 Plan of the Canterbury estate showing land occupied by the Australasian Sugar Company and associated structures. Study area outlined in green. Source: State Library of NSW. Note. Plan shows approximate location of structures and may not be an accurate representation.

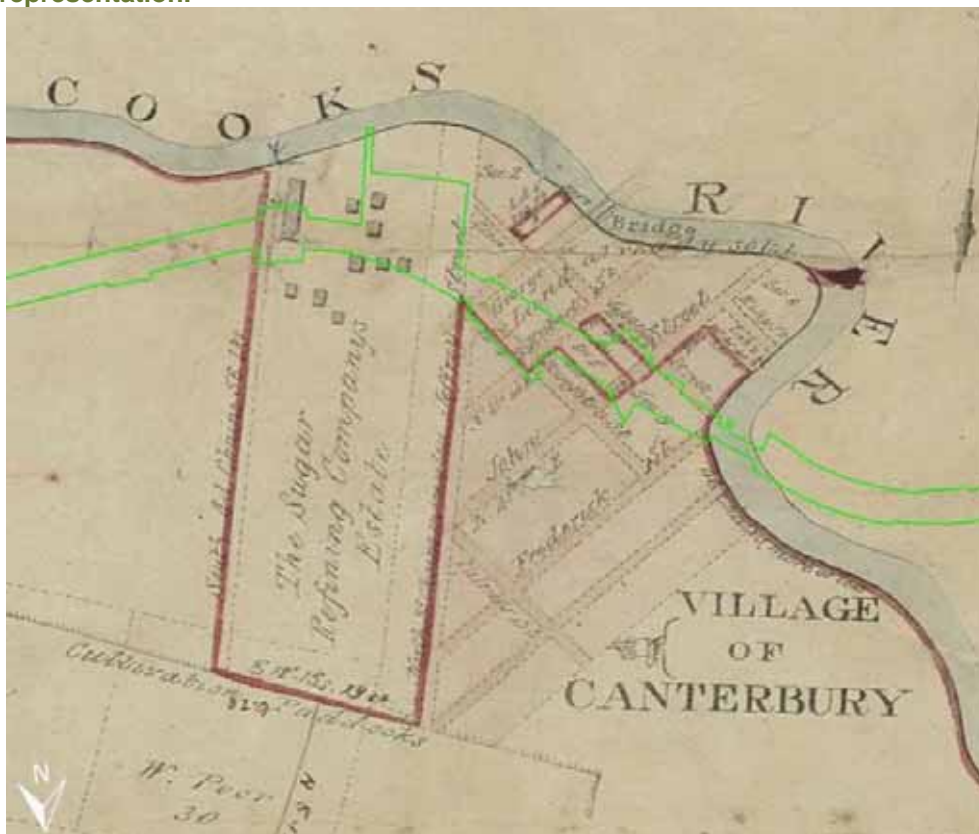


Figure 4-4 c.1859 Canterbury & Prout's Bridge on Cooks River by Henry Grant Lloyd, showing the Sugar works to the right of the painting. The cottages on the far side of the river to the left of the image are in the vicinity of Robert Street and present day Canterbury Road (George Street). Source: State Library of New South Wales [a5894078 / DL PX 42] (Dixson Library).



Figure 4-5: Canterbury Sugar Works c. 1842. Source: Dictionary of Sydney.



Figure 4-6. 1843 Plan of the Village of Canterbury showing various structures fronting onto what is now Canterbury Road and Robert, Broughton and Close Streets. Source: State Library of NSW. Note. Plan shows approximate location of structures and may not be an accurate representation.



Figure 4-7: c1850 sketch showing Canterbury estate and Canterbury village with various buildings along what is now Canterbury and Church Street. Source: National Library of Australia. Note. Plan shows approximate location of structures and may not be an accurate representation.



4.2.3 1855-1895: Urban Development

The Australasian Sugar Company's works closed in 1855, and the site was not used again until 1884. This had a negative economic impact on the area, and little development occurred for the next two decades, although a wool washing establishment was later opened on the south side of the Cook's River in 1868 (south of the study area).

Canterbury changed dramatically in the 1880s, when Sydney experienced a surge in urban development. Initially, sales in the suburb were slow. The poor state of its roads and lack of public transport were accentuated when compared with areas on the rail and tram networks.⁴¹ The first post office opened in 1858, and the first official public school in 1878, and the district slowly developed. Canterbury Race Course, on the northern bank of the Cooks River has been one of Sydney's major racetracks since 1871.

Between 1880 and 1892 the population of Canterbury rose by only 1500, indicating that the area is likely to have retained much of its rural character. Journalists at the time commented on the nature of the area, stating that the large house blocks and older-style residences made it appear 'old-fashioned'. In 1888 it was noted that the residents did not wish for water to be pumped into their homes due to the expense, and continued to use tank and wells.⁴²

In 1881, the site of the Australasian Sugar Company's works (now consisting of 11 acres, 2 roods and 28 perches, and an adjacent parcel of land containing 2 acres, 2 roods and 26 perches) was purchased by Edward Cox. This was then mortgaged by Edward Clissold, who conveyed the site to Owen Blackett. Blackett then established the Blackett & Co Canterbury Engineering Works on the property. This specialised in producing ironwork for the railways.⁴³ The ironworks set up production within the original sugar works mill building, as shown in Figure 4-8. Whether the additional outbuildings extended west into the study area is unknown. The company declared bankruptcy in 1886 although may have continued to operate until 1890.⁴⁴

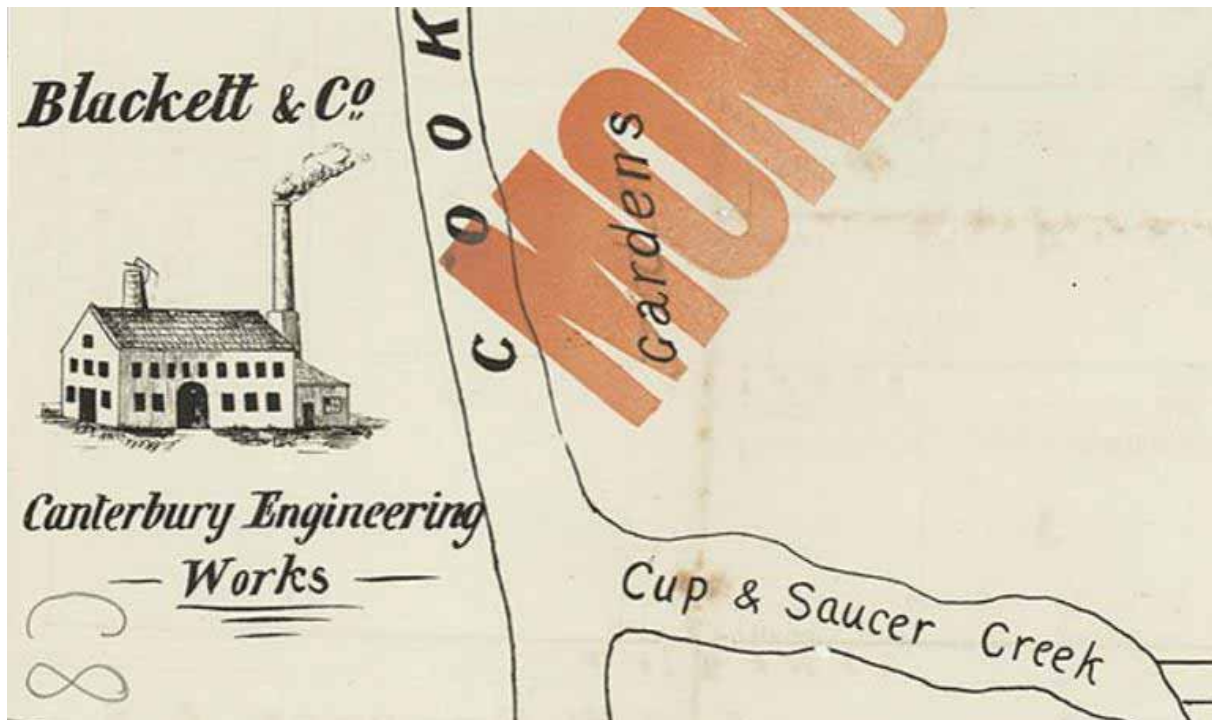
⁴¹ *Ibid*: 176.

⁴² Jervis 1951: 32.

⁴³ Edward Higginbotham and Associates, May 2000. Historical and Archaeological Assessment of the Australian Sugar Company Mill, Sugar House Road (Formerly Church Street, Canterbury, NSW. Prepared for Gold Abacus Development and Woodhouse and Danks Pty Ltd, pp.12-13.

⁴⁴ Edward Higginbotham and Associates, May 2000, p. 15.

Figure 4-8: 1884 Redmans Canterbury Allotments Subdivision Plan showing detail of Blackett and Co Canterbury Engineering Works. Source: State library of NSW.



4.2.4 1895-1943: Canterbury Station, Resumptions and Development

Prior to the arrival of the railway in 1895, Canterbury remained relatively undeveloped due to its isolation from the rest of the city, and much of the study area west of the Old Sugarmill remained occupied by small cottages. To accommodate a rail line through Canterbury, land was resumed and the original street layout slightly altered as evidenced by plans shown in Figure 4-10 and Figure 4-11. The original property boundary of the Robert Campbell's estate and Australian Sugar Company works was dissected, and several properties along, and west of, Canterbury Road resumed. It is possible that the area west of the sugar works, that had once been occupied by outbuildings and mining operations was cleared at this time, as they do not appear on later plans.

The opening of Canterbury Station on February 1, 1895, encouraged land sales throughout the area (Figure 4-10 and Figure 4-11). The subdivision catering to the new station was called the Silver Park Estate. The station consisted of two impressive polychromatic brick platform buildings (Figure 4-12 and Figure 4-13). A branch line leading to sidings used on race days at the Canterbury Racecourse was also constructed (since demolished; Figure 4-14). Extensive cuttings within the existing bedrock took place at this time in order to accommodate the rail line. These are likely to have removed evidence of some structures associated with part of the Canterbury Sugar Company works.

The station consisted of two platforms, with brick facing and concrete edges, and associated brick platform buildings. As a main station on the Bankstown Line, this station had ornate designs which included the use of polychromatic brickwork, decorative dentil coursing, ornate awning brackets and carved bargeboards. A new building was constructed on Platform 3 in 1915 when the station was expanded in conjunction with the Metropolitan Goods Line. In 1916 a goods line was constructed. This was associated with a goods line and goods shed, to the south of the station.

In 1915 a two storey timber-framed signal box was built beside the Bankstown suburban line. The signal box controlled all train movements through Canterbury on both the Bankstown suburban line and Metropolitan Goods line, as well as the storage sidings for the Canterbury Racecourse special

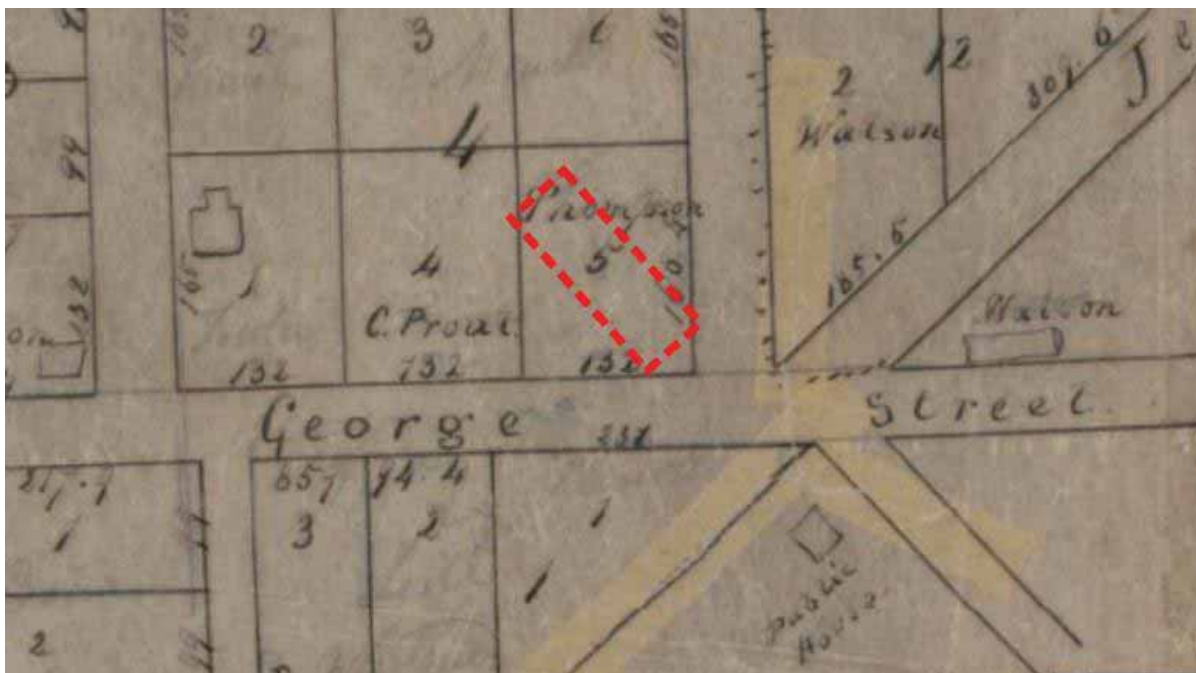
trains and the shunting of the local goods sidings. Extensions were added to the signal box in 1937 and 1968, and it was closed in 1996.

A footbridge was constructed in 1915 with a haunched beam design consisting of tapered cantilevers bearing on platform trestles and brick piers on each side to support shallow beams over the railway tracks. An overbridge was constructed in c1917 consisting of steel girders supporting a jack arched brick and concrete deck.

In 1927 the track was realigned. The Down Bankstown track alongside a new Down side platform; the Up Bankstown track alongside the old Up island platform; the Down Goods track replacing the middle storage siding and the Up Goods track replacing the racecourse siding; No 1 to No 7 car sidings at the racecourse were opened and all were electrified (Figure 4-15).⁴⁵ The goods shed and additional buildings were still present in 1943 (Figure 4-16).

In 1900, land associated with the Old Sugarmill, now consisting of 3 acres and 2 roods was conveyed to Edward Williams Denham, who established the Canterbury Bacon Factory. This too occupied the original Old Sugarmill building, east of the current study area. The factory was then sold to J C Hutton, who established 'Hutton's Bacon Factory' (Figure 4-17). It is unknown if any structures were erected within the study area or more specifically the site of the Canterbury Station Catchment construction site.

Figure 4-9: Detail from c.1840s plan of Cooks River, Jeffreys allotments, Sydney, with approximate location of Canterbury Station (red dashed line) within lots belonging to 'Thompson' and 'C. Prout'. Source: NLA MAP F 749.



⁴⁵ State Heritage Inventory 'Canterbury Railway Station Group' accessed 9 July 2016.

Figure 4-10: Detail of c.1885-90 plan of Canterbury, showing the rail line and location of Canterbury Station. Source: City of Sydney Archives, Historical Atlas of Sydney, Atlas of the Suburbs of Sydney ca 1885-1890 – Canterbury.

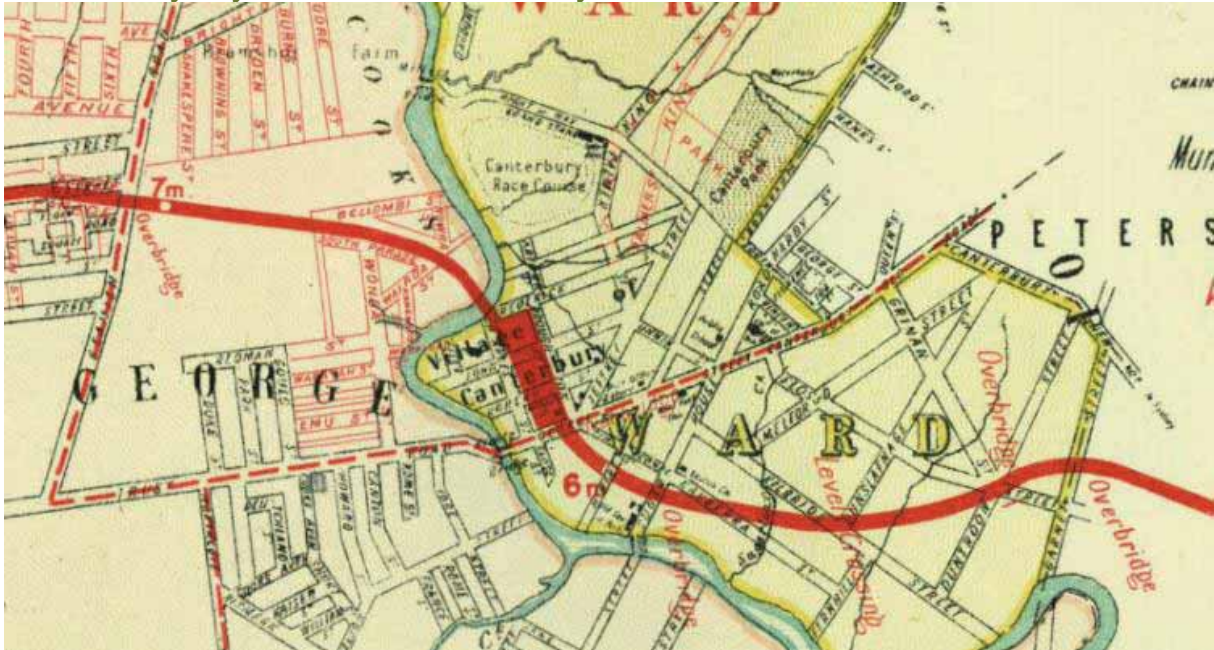


Figure 4-11: Railway acquisition in the vicinity of Bellomby Street and South Parade, between Canterbury and Campsie stations. The new subdivision either side of the line would be called the Silver Park Estate. Source: SLNSW call no. Z/ SP/ C8.

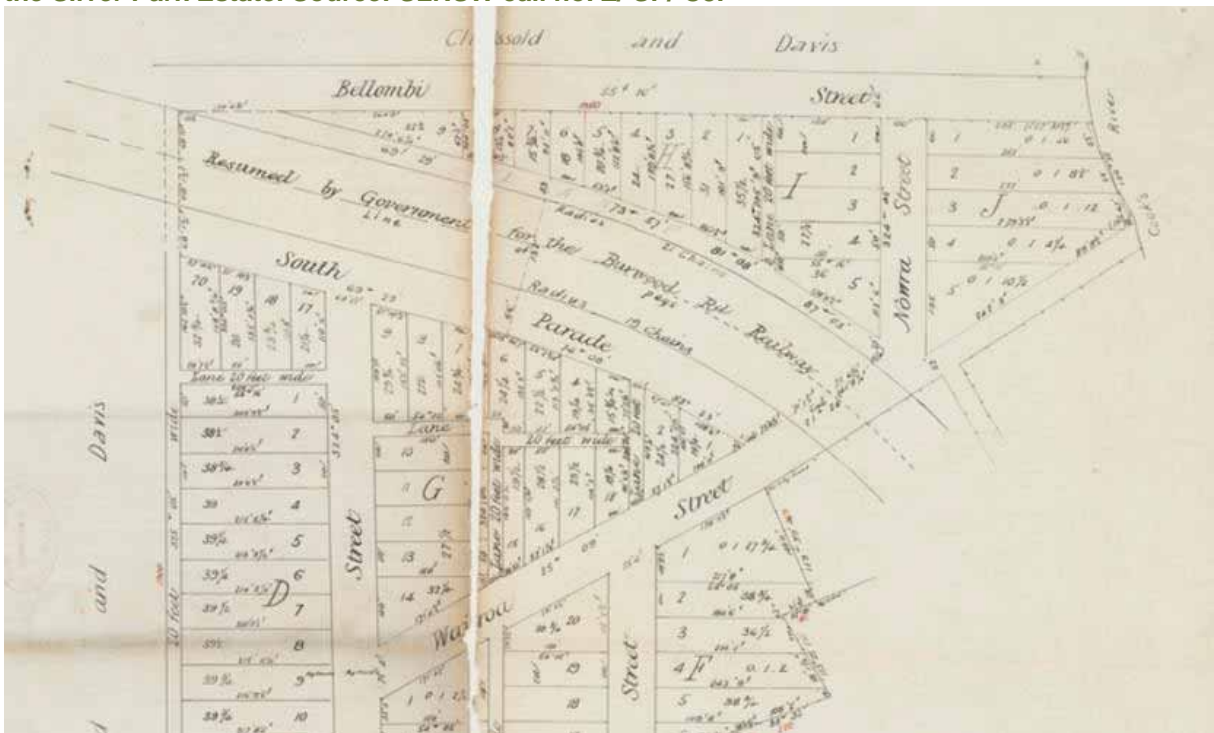


Figure 4-12: Canterbury Station between 1916 and 1927. Source: State Heritage Inventory 'Canterbury Railway Station Group'.



Figure 4-13: n.d. Canterbury Railway Station, showing platforms capping had been removed possibly with the realignment in 1927. Source: ARHS: 023606.



Figure 4-14: Configuration of Canterbury Station with goods platform, race platform and earlier cottages. Source: SLNSW call no. Z/ SP/ C8.

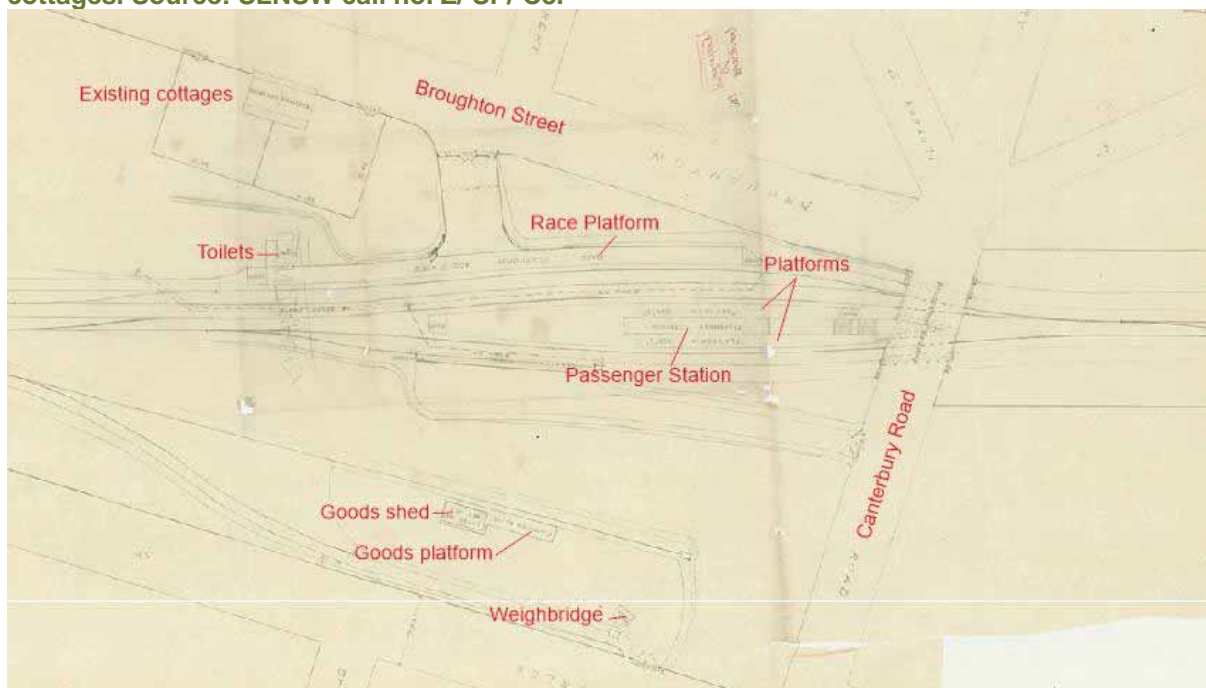


Figure 4-15: Electrification of the railway line c.1926, Canterbury Station. Source: SLNSW call no. Z/ SP/ C8.

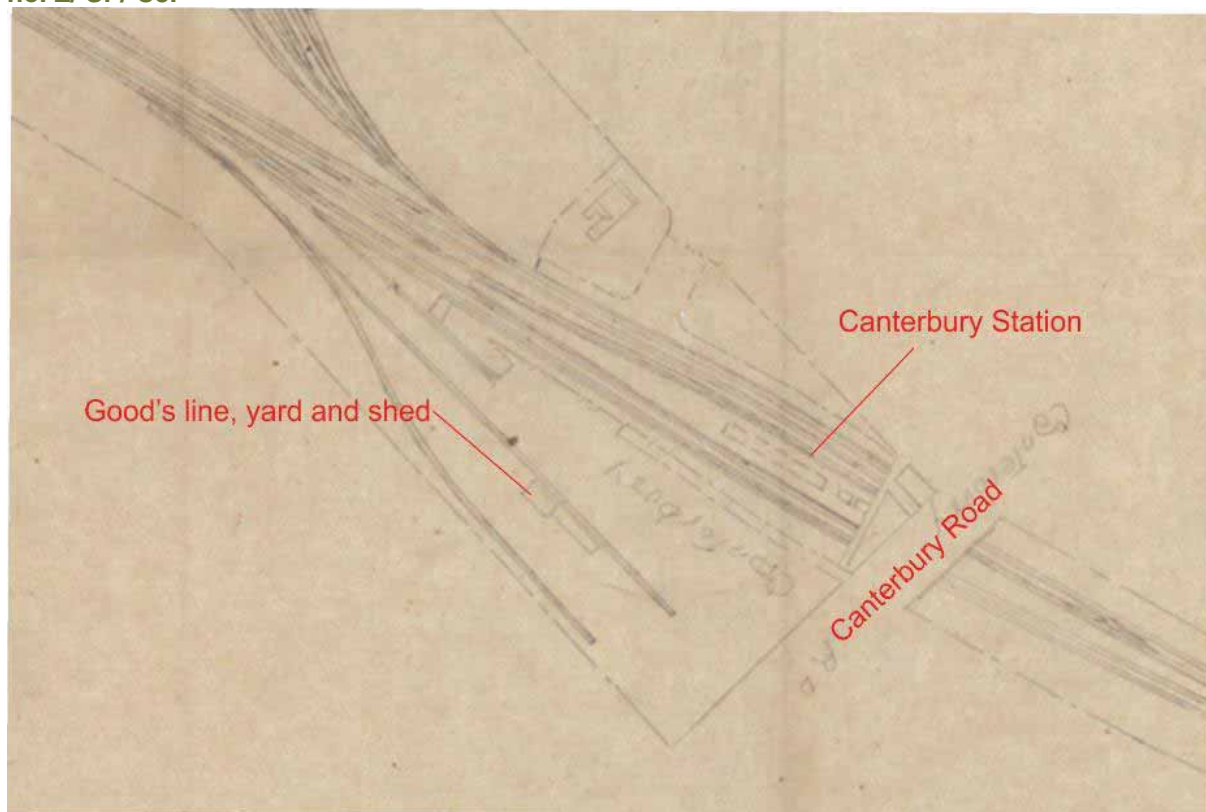


Figure 4-16: 1943 aerial of Canterbury Station. Source: SixMaps.



Figure 4-17. Canterbury, N.S.W. showing the J.C. Hutton Bacon Factory and outbuildings, just east of the study area. Likely taken from near the railway line. Source: State Library of NSW (a105124h).



4.2.5 1943-Present: Suburban and Urban Development

By 1943, the majority of Canterbury had been settled and was associated with late nineteenth and early twentieth century suburban subdivisions (Figure 4-18). Land that had once been occupied by outbuildings and for the sugar works (shown in the 1841 plan) had been cleared and was now occupied by a grassed park bounded by the rail line to the north and Close Street to the south.

Buildings associated with the sugar works and later industries continued to occupy land to the east of the study area. Aside from the railway line and station, no structures occupied the study area at this time.

At present, a warehouse and carpark have been constructed within the once empty grassed park. This fronts onto Close Street and is located within the Canterbury Station Catchment construction site. The remaining parkland continues to remain unoccupied and no development or evidence of ground disturbing works have occurred.

Land to the west of Canterbury Road, north and south of the rail line has also been developed since 1943, and appears to be associated with small scale industrial activities. Rapid development has also taken place along Canterbury Road within the last decade, consisting mainly of modern apartments and commercial enterprises (Figure 4-19).

Figure 4-18. 1943 aerial showing Canterbury at the time. Land to the west, north and south of the rail line is unoccupied and residential subdivisions take up the majority of land to the north. Source: SixMaps.

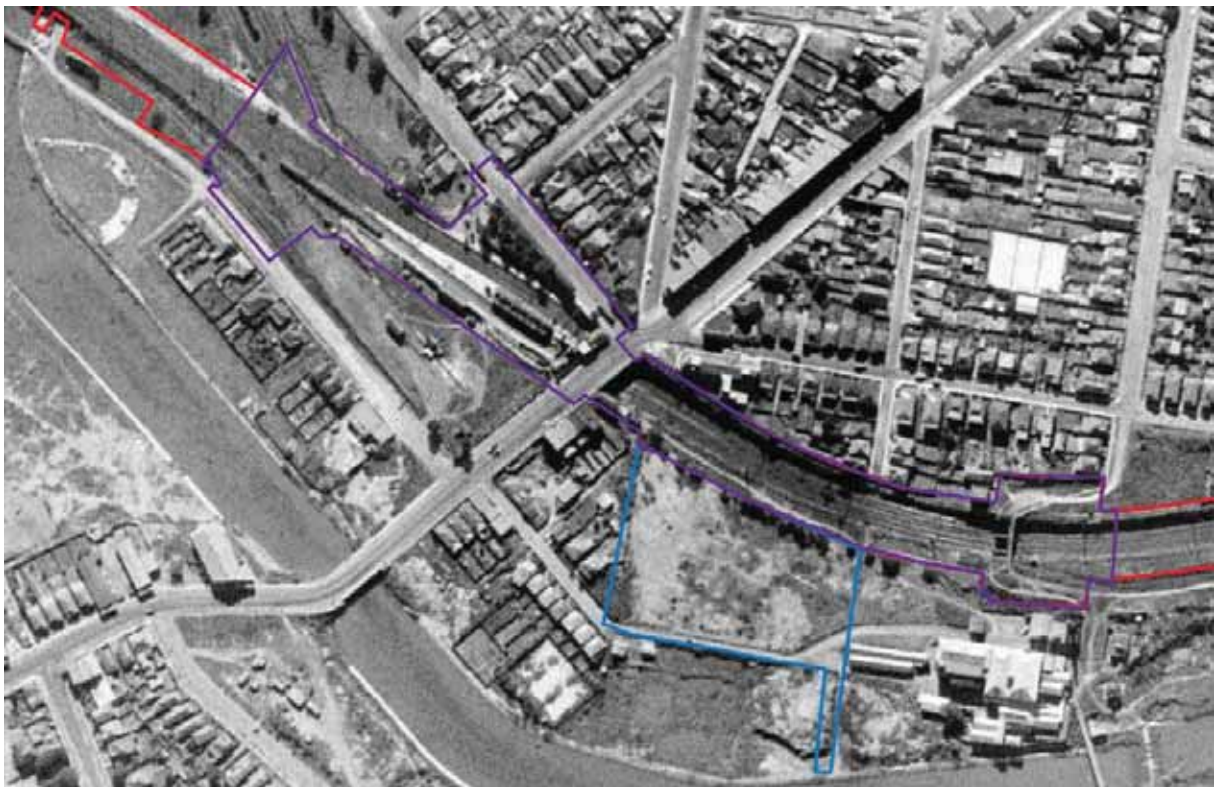


Figure 4-19. Satellite image showing Canterbury in 2016. Source: Google Earth.



4.3 Archaeological Potential

4.3.1 Previous Archaeological Studies

Artefact Heritage 2017. Sydney Metro City & Southwest: Sydenham to Bankstown, Non-Aboriginal Heritage Impact Assessment. Prepared for Transport for NSW.

The technical paper considered the construction and operational impacts on listed heritage items and potential archaeological resources within the study area. It included identification of items and areas of heritage significance that would be materially affected by the project, with consideration of the potential impacts on the values, settings and integrity of heritage items and archaeological resources located within the project area. The paper outlined proposed mitigation and management measures in accordance with relevant best practice guidelines.

GML 2002. 153-159 Canterbury Road, Canterbury archaeological assessment and research design. Prepared for ALDI Stores.

Godden Mackay Logan prepared an Archaeological Assessment and Research Design for 153-159 Canterbury Road, Canterbury in October, 2002. 153-159 Canterbury Road, Canterbury is located approximately 55 metres northeast of the study area. It was originally part of the Canterbury Farm Estate, granted to Reverend Richard Johnson between 1793 and 1799. The land was used for farming and sheep grazing until it was sold to Robert Campbell in 1803. It was then occupied by the Rising Sun Inn from c1848 to 1922.

The archaeological assessment concluded that the entire site of the Rising Sun Inn had potential to contain archaeological deposits associated with its occupation including wells and cisterns that were once located at the rear of the building. Archaeological remains associated with the inn were

assessed as having high local significance. The report recommended test trenching with potential further investigations if substantial deposits or intact features were identified.

Higginbotham, E. 2000. *Historical and archaeological assessment of the Australian Sugar Company mill, Sugar house Road (formerly Church Street), Canterbury, NSW.* Prepared for Gold Abacus Developments & Whhohouse & Danks Pty Ltd.

Edward Higginbotham and Associates prepared a historical and archaeological assessment of the Australian Sugar Company Mill, Sugar House Road (Formerly Church Street, Canterbury, NSW) in May, 2000. The report focussed on land directly east of the current study area, to the west of Hutton and Church Streets, Canterbury. The Mill was established on 1840 and closed in 1855. Prior to this it was part of Robert Campbell's 'Canterbury Estate'. The site was then left empty until 1884 when it was used as an ironworks by an engineering firm for the railways. The ironworks closed in 1890 and the site used as a butter factory. A large portion of the original property was then resumed for the railway in 1897. The newly dissected property was then used as a bacon factory (1900-08) and then a ham and bacon curing factory (1908-1983). It was during this later phase that many original outbuildings associated with the Old Sugarmill were demolished.

The assessment outlined the various structures associated with the site and its many phases of development. It concluded that there was potential for archaeological remains of the Mill and associated outbuildings to exist within the area. These were assessed as having associative, social and historic significance.

Stedinger Associates 2003. *Additional excavations at the Canterbury Sugar Mill, NSW.* Prepared for Grosvenor Residential Pty Ltd.

Stedinger Associates prepared an addendum report for archaeological monitoring and recording of excavations at the site of the former Australian Sugar Company Mill, Canterbury in 2003. These were carried out 14 metres west of the mill site and approximately 30 metres east of the study area. Excavations uncovered several unrelated fill layers likely associated with each occupation phase at the site. The earliest occupation phase identified being 1884-1890.

A meat hook (associated with a meatworks [bacon and ham factory] that occupied the site between 1900-1908) and several large cast-iron objects were uncovered during excavations. The latter was likely associated with an ironmongery that occupied the site in the late nineteenth century, and are likely to be parts of machinery and offcuts. In addition, a north-south oriented sandstone drain was identified in the westernmost portion of the site. This was assessed as being built during the meatworks occupation of the site or the Australian Sugar Company Mill. The drain was preserved in situ.

4.3.2 Land Use Summary

The historical development of the Canterbury Station Catchment and surrounds can be divided into the following phases of activity:

- Phase 1 (1788 – 1841): Early land grants: Land clearance, timber getting, grazing, farming activity associated with the Canterbury Farm
- Phase 2 (1841 – 1855): Establishment of Canterbury and the Australasian Sugar Company works: Subdivision for smaller farms, development of country estates, small scale industry such as timber cutting, wool washing and mining, establishment of the Australasian Sugar Company works and construction of associated structures and outbuildings (some within study area) and small scale residential settlement in form of cottages

- Phase 3 (1855 – 1895): Urban development and closure of the Australasian Sugar Company works: Sugar works closed and site remains unoccupied, post office, public school and race course opened, further subdivisions
- Phase 4 (1895-1943): Canterbury Station, resumptions and development: Land resumed for railway, including residential buildings, construction of railway station in 1895, expansion and construction of the Metropolitan Goods line in 1916, electrification upgrades in 1926 and track realignment in 1927, mill site used for Canterbury Bacon Factory and later 'Hutton's Bacon Factory', possible removal of earlier outbuildings west of the Old Sugarmill site
- Phase 5 (1943 – present): Suburban and urban development: Railway station upgrades and continued use, industrial, commercial and residential development west of Canterbury Road and within grassed park bounded by Close Street and the railway line.

4.3.3 Previous Impacts

Construction of the railway station and rail line in the late nineteenth century would have included a considerable amount of ground disturbance and excavation, especially within the rail corridor. Track realignment, station upgrades and road construction throughout the twentieth century would have resulted in high levels of ground impacts throughout the station catchment.

Contemporary redevelopment to the south of Canterbury Station would have removed archaeological remains of the former Goods siding, platform, shed and weighbridge. In addition, contemporary redevelopment associated with the construction of a building fronting onto Close Street may have impacted potential archaeological resources. Other impacts include, but are not limited to, the following:

- Subsurface excavations to varying depths to grade and level land within the rail corridor and railway station
- Trenching within and adjacent to the rail corridor and railway station to accommodate services and utilities
- Vegetation clearance
- Subsurface excavations associated with subsequent upgrades to the rail corridor and railway station

4.3.4 Potential Archaeological Remains

Phase 1 (1788 – 1841)

Canterbury was originally part of land granted to Reverend Richard Johnson. The land was cleared, and timber getting, grazing, and farming of the Canterbury Farm occurred during this time.

Archaeological features associated with land clearance could be present in the study area such as tree boles, evidence of estate farming activities such as fence line postholes, former shed postholes, field drains, isolated artefact scatters.

Phase 2 (1841 – 1855)

During this time the village of Canterbury was established with subdivision for smaller farms and the development of country estates. Small scale industry developed in the area including timber cutting, wall washing and mining. The Australasian Sugar Company works were constructed with associated structures and outbuildings and small scale residential settlement in the form of cottages. The 1841

plan of the sugar works indicates outbuildings to be present in the study area. These were the slab huts for workers at the sugar mill. A quarry is also evidence on the plan, which was used to construct the sugar mill. Buildings are also marked on the 1843 and 1850 plans of the area.

Archaeological remains of outbuildings, landscape modifications, fence lines, drains and other structural remains associated with the Australasian Sugar Company works could remain within the study area. Archaeological remains of the outbuildings could include footings, timber slabs remnants, underfloor deposits, post holes, artefact deposits, cess pits, wells, cisterns, fencelines, and yard surfaces. Evidence of small scale mining activities for the quarrying of the local stone could exist. Archaeological evidence of farming could be present such as fence line postholes, former shed postholes, brick or paved yard surfaces, field drains, isolated artefact scatters. Archaeological remains of early residential cottages including wells, cisterns and refuse pits.

Phase 3 (1855 – 1895)

The Australasian Sugar Company works was closed in 1855 and the site remained unoccupied. During this time a post office, public school and race course opened, and the area underwent further subdivisions.

Archaeological remains of early residential cottages could include wells, cisterns and refuse pits. Archaeological remains of outbuildings, landscape modifications, fence lines, drains and other structural remains associated with the Blackett and Co Canterbury Engineering Works could be present in the study area.

Phase 4 (1895 – 1943)

Canterbury Station was constructed in 1895 with land being resumed for the railway which included residential buildings. The station was expanded with the construction of the Metropolitan Goods line in 1916. The line was electrified and upgraded in 1926, and the track realigned in 1927. The sugar works site was used for the Canterbury Bacon Factory and later 'Hutton's Bacon Factory', possibly removing the earlier outbuilding west of the Old Sugarmill site.

Plans of Canterbury Station indicate a septic tank, an absorption trench, and the goods siding that had a goods shed and a carriage dock on the southern side of the railway corridor. A sheep and pig yard were located near Charles Street as part of the goods siding. Sugar House Road originally had an overbridge connecting it across the railway corridor.

Archaeological remains and evidence of early railway construction could include rails, refuse pits, drains and timber sleepers. Archaeological remains of former platform structures. Archaeological remains of the former race platform and retaining wall. Archaeological remains of the storage sidings for the Canterbury Racecourse special trains and the shunting of the local goods sidings could be located in the study area. Archaeological remains of early infrastructure could include culverts, tanks, drains (brick, stone or concrete), electrical conduits and pits, sleepers, signalling equipment and rail track. Archaeological remains associated with the early phase of minor railway buildings (such as toilets) prior to track realignment such as postholes, brick footings, former floor surfaces, and early infrastructure such as ceramic service pipes, brick drainage pits, electrical conduits and pits, stanchion bases, sleepers and rail track. It is unlikely that artefact-bearing deposits associated with the early station accumulated or survived subsequent development and upgrades.

Phase 5 (1943 – present)

During this phase Canterbury underwent further suburban and urban development. The railway station had upgrades. Industrial, commercial and residential development occurred west of Canterbury Road and within the grassed park bounded by Close Street and the railway line. Potential archaeological remains associated with upgrades could include utilities and drainage.

Based on the history of the site and disturbance that has occurred in the area, archaeological remains are likely to consist of post-railway structures and services.

Figure 4-20: Historical overlays for Phase 2: 1841-1855

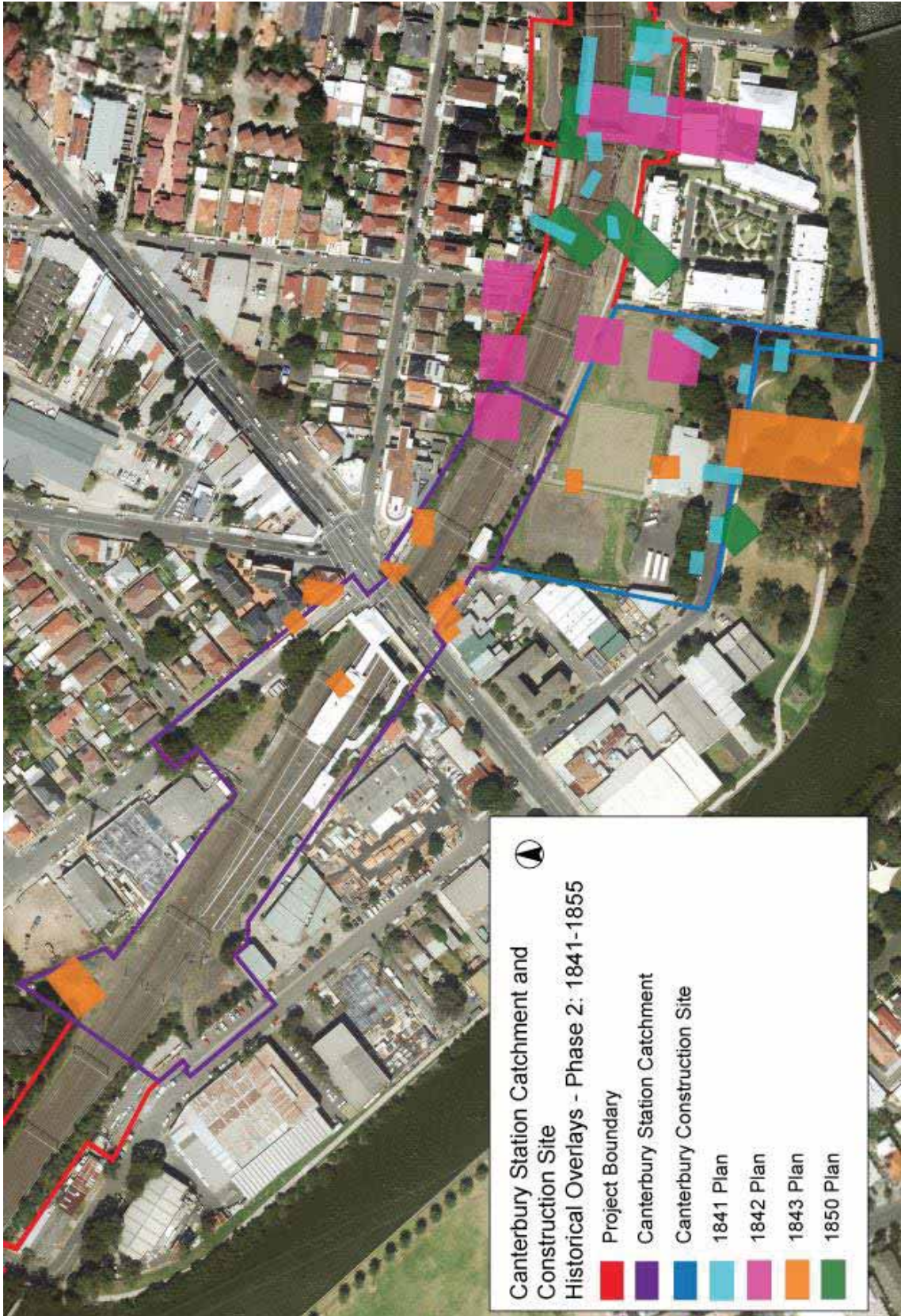
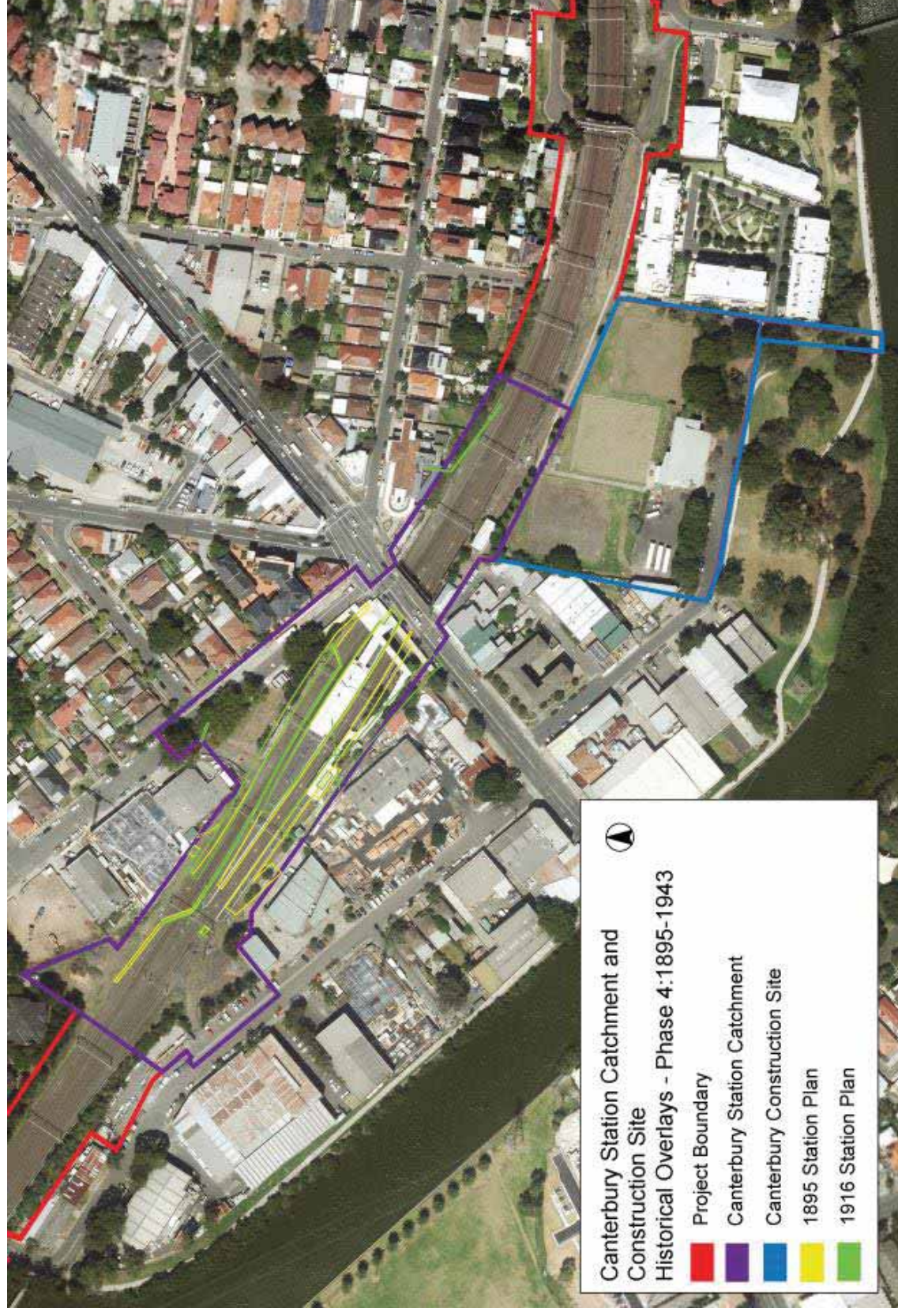


Figure 4-21: Historical overlays for Phase 4: 1895-1943



4.3.5 Summary of Archaeological Potential

Based on historical information, land use data and evidence of sub-surface impacts, a summary of the potential archaeological remains at Canterbury Station Catchment and construction site is provided in Table 4-1 below.

Table 4-1: Summary of potential archaeological remains for Canterbury Station Catchment and construction site

Phase	Likely archaeological remains	Potential
1 (1788-1841)	<ul style="list-style-type: none"> No documentary evidence of specific activities or development with the site Archaeological features associated with land clearance such as tree boles, evidence of estate farming activities such as fence line postholes, former shed postholes, field drains, isolated artefact scatters. 	Nil-low
2 (1841 – 1855)	<ul style="list-style-type: none"> Archaeological remains of outbuildings, landscape modifications, fence lines, drains and other structural remains associated with the Australasian Sugar Company works Archaeological remains of the outbuildings such as footings, timber slabs remnants, underfloor deposits, post holes, artefact deposits, cess pits, wells, cisterns, fencelines, and yard surfaces Evidence of small scale mining activities Archaeological evidence of farming includes fence line postholes, former shed postholes, brick or paved yard surfaces, field drains, isolated artefact scatters Archaeological remains of early residential cottages including wells, cisterns and refuse pits. 	Moderate to High
3 (1855 – 1895)	<ul style="list-style-type: none"> Archaeological remains of early residential cottages including wells, cisterns and refuse pits Archaeological remains of outbuildings, landscape modifications, fence lines, drains and other structural remains associated with the Blackett and Co Canterbury Engineering Works. 	Moderate to High
4 (1895-1943)	<ul style="list-style-type: none"> Archaeological remains and evidence of early railway construction including rails, refuse pits, drains and timber sleepers. Archaeological remains of former platform structures Archaeological remains of the former race platform and retaining wall Archaeological remains of the storage sidings for the Canterbury Racecourse special trains and the shunting of the local goods sidings Archaeological remains of early infrastructure such as culverts, tanks, drains (brick, stone or concrete), electrical conduits and pits, sleepers, signalling equipment and rail track Archaeological remains associated with the early phase of minor railway buildings (such as toilets) prior to track 	Moderate

Phase	Likely archaeological remains	Potential
	<p>realignment such as postholes, brick footings, former floor surfaces, and early infrastructure such as ceramic service pipes, brick drainage pits, electrical conduits and pits, stanchion bases, sleepers and rail track</p> <ul style="list-style-type: none"> It is unlikely that artefact-bearing deposits associated with the early station accumulated or survived subsequent development and upgrades. 	
5 (1943-present)	<ul style="list-style-type: none"> Archaeological remains associated with upgrades such as utilities and drainage 	Moderate to high

4.4 Archaeological Significance

The following assessment of significance is based on the guidelines discussed in Section 2.4 of this report.

Table 4-2: Assessment of archaeological significance for Canterbury Station Catchment and construction site

Criteria	Discussion
Research potential	<ul style="list-style-type: none"> It is unlikely that archaeological remains associated with Phase 1 would be present within the site. Any remains would be truncated or ephemeral and would not have research potential Potential archaeological remains associated with Phase 2 residential and industrial structures and activities (sugar works and mining) would have high research significance as they would yield information relating to the one of the earliest phases of development in Canterbury. Remains of the Old Sugarmill outbuildings could provide information relating to activities that took place around the mill, and the domestic lives of workers, if they were residing at the site. Remains of mining activities would provide insights into early small scale mining practices in the area If intact remains associated with Phase 3 residences and industrial activities (iron works) were located within the study area, they would have moderate research potential. They could yield information relating to domestic living conditions in Canterbury during the mid to late nineteenth century as well as providing insights into early iron works activities and the potential use of outbuildings or the surrounding landscape Potential archaeological remains associated with Phase 4 former structures and rail infrastructure would unlikely contribute additional information not available from other historical resources It is unlikely that artefact-bearing deposits associated with the early station accumulated or survived subsequent development and upgrades.
Association with individuals, events or groups of historical importance	<ul style="list-style-type: none"> The potential archaeological remains of Phase 2 occupation of the site are associated with the State significant 'Canterbury Sugar Company works' or 'Old Sugarmill'. This site was associated with Robert Campbell, a prominent Sydney merchant. The establishment of the Old Sugarmill was highly influential on the subsequent development of Canterbury as a township in the early nineteenth century. The development of the rail network facilitated economic development and suburban growth in Sydney in the latter half of the nineteenth and twentieth centuries. Canterbury Station was built in 1895 as part of the Bankstown Line. The potential Phase 4 archaeological remains are associated with the historical development of Bankstown rail line and Canterbury Station. Canterbury Station is

Criteria	Discussion
	associated with J.J. Scouller who was the builder of the station. The station is also associated with the Canterbury Park Racecourse by having dedicated platforms and holding areas specifically for the racecourse.
Aesthetic or technical significance	<ul style="list-style-type: none"> The potential archaeological remains are not likely to hold aesthetic value, although exposed <i>in situ</i> archaeological remains may have distinctive/attractive visual qualities. Extensive and intact remains of former station structures are not expected to be present. Intact remains associated with the Canterbury Sugar Company works and/ Blackett and Co Canterbury Engineering Works have the potential to hold technical significance, as they would represent early technological advances and structures associated with their respective industries. Former rail infrastructure may demonstrate changes in technology and rail engineering over time. However, they are not expected to demonstrate technical significance.
Ability to demonstrate the past through archaeological remains	<ul style="list-style-type: none"> The potential archaeological remains associated with the Canterbury Sugar Company works and Phase 2 and 3 cottages may illustrate the historical development of Canterbury. If intact or substantial remains are found to exist within the project area, they have the potential to reach the threshold for State significance.

4.4.1 Statement of Archaeological Significance

There is nil to low potential for archaeological remains associated with nineteenth century farming. Any remains are unlikely to have research value. There is moderate to high potential for remains of structures associated with the Canterbury Sugar Company works and outbuildings. These would have high research value and associative and historical significance at a local or State level depending on nature and intactness. There is moderate to high potential for remains of Phase 3 residential and industrial structures that once occupied land within the rail line. If intact remains were found, they would have moderate research potential and reach the threshold for local significance. Potential Phase 4 archaeological remains are associated with the historical development of the Bankstown rail line, Canterbury Station and Canterbury Park Racecourse. Depending on the intactness of the remains, potential archaeological remains of Phase 4 could reach the threshold for local significance. Remains associated with Phase 5 are unlikely to reach the threshold for local heritage significance.

A summary of the significance of potential archaeological resources is provided in Table 4-3 and Figure 4-22 below.

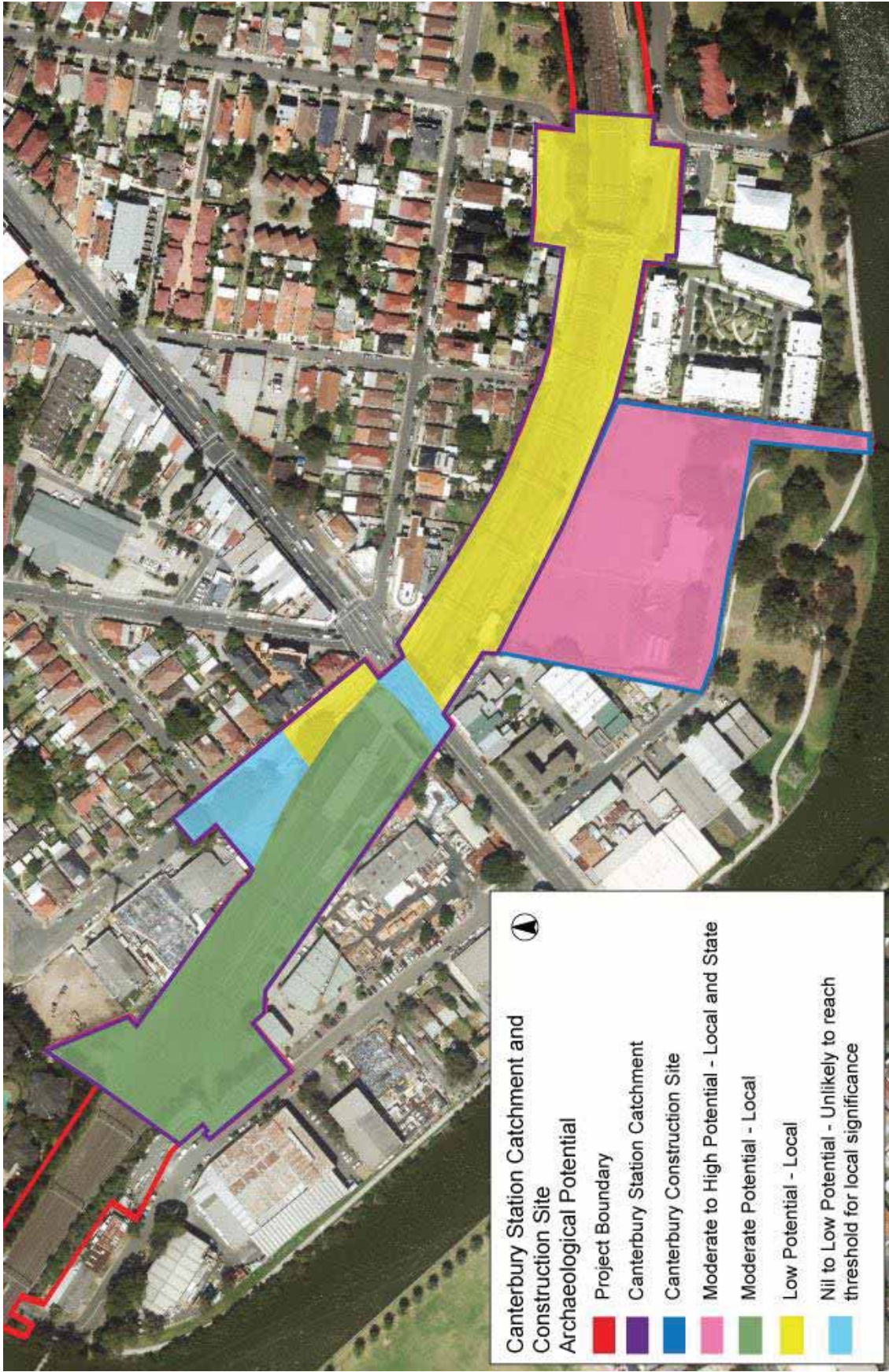
Table 4-3: Summary of areas with potential for significant archaeological remains for Canterbury Station Catchment and construction site

Phase	Archaeological resource	Potential	Significance
1 (1788-1841)	<ul style="list-style-type: none"> Archaeological features associated with land clearance such as tree boles, evidence of estate farming activities such as fence line postholes, former shed postholes, field drains, isolated artefact scatters. 	Nil-low	Unlikely to reach the threshold for local significance

Phase	Archaeological resource	Potential	Significance
2 (1841 – 1855)	<ul style="list-style-type: none"> Archaeological remains of outbuildings, landscape modifications, fence lines, drains and other structural remains associated with the Australasian Sugar Company works Archaeological remains of the outbuildings such as footings, timber slabs remnants, underfloor deposits, post holes, artefact deposits, cess pits, wells, cisterns, fencelines, and yard surfaces Evidence of small scale mining activities Archaeological evidence of farming includes fence line postholes, former shed postholes, brick or paved yard surfaces, field drains, isolated artefact scatters Archaeological remains of early residential cottages including wells, cisterns and refuse pits 	Moderate to High	Potentially State
3 (1855 – 1895)	<ul style="list-style-type: none"> Archaeological remains of early residential cottages including wells, cisterns and refuse pits Archaeological remains of outbuildings, landscape modifications, fence lines, drains and other structural remains associated with the Blackett and Co Canterbury Engineering Works 	Moderate to High	Potentially local
4 (1895-1943)	<ul style="list-style-type: none"> Archaeological remains and evidence of early railway construction including rails, refuse pits, drains and timber sleepers Archaeological remains of former platform structures Archaeological remains of the former race platform and retaining wall Archaeological remains of the storage sidings for the Canterbury Racecourse special trains and the shunting of the local goods sidings Archaeological remains of early infrastructure such as culverts, tanks, drains (brick, stone or concrete), electrical conduits and pits, sleepers, signalling equipment and rail track Archaeological remains associated with the early phase of minor railway buildings (such as toilets) prior to track realignment such as postholes, brick footings, former floor surfaces, and early infrastructure such as ceramic service pipes, brick drainage pits, electrical conduits and pits, stanchion bases, sleepers and rail track It is unlikely that artefact-bearing deposits associated with the early station accumulated or survived subsequent development and upgrades. 	Moderate	Potentially Local

Phase	Archaeological resource	Potential	Significance
5 (1943-present)	<ul style="list-style-type: none"> Archaeological remains associated with upgrades such as utilities and drainage 	Moderate to high	Unlikely to reach the threshold for local significance

Figure 4-22: Archaeological potential for Canterbury Station Catchment and construction site



4.5 Archaeological Impacts

4.5.1 Proposed Works

Proposed works within the Canterbury Station Catchment would involve the construction of new station platforms along the rail corridor, construction of a station service building, construction of a retaining wall along the southern boundary of the station and rail corridor, addition of Metro South West running tracks (MSWs), installation of drainage pipes, single grate drainage pits, gas pipelines and CSR utilities and the construction of a proposed segregation fence along the northwest boundary of the rail corridor. These works would involve trenching and subsurface ground disturbance. The construction site would include clearing and grubbing, fencing, stockpiling, and material laydown.

4.5.2 Potential Archaeological Impacts

Although the location of the Canterbury Sugar Company works mill and former associated structures is outside of the study area, there is potential that remains of outbuildings and mining activities may exist within the rail corridor and compound site. These have the potential to reach the threshold for State significance, if intact or substantial remains are found to exist within the study area. There is also potential that remains associated with the Canterbury township Phases 2 and 3 may be present.

The proposed works within the Canterbury Station Catchment and construction site involve trenching and subsurface ground disturbance. There is potential for impacts to occur to local and State significant archaeology within the Canterbury Station Catchment footprint and compound site.

4.6 Archaeological Management

The area within the Canterbury Station Catchment and construction site has been assessed as having nil to low potential to contain archaeological remains associated with Phase 1 and moderate to high potential to contain archaeological remains associated with Phase 2 and 3 occupation of the site. Potential archaeological remains associated with Phase 2 occupation may have State heritage significance due to their association with the Canterbury township and SHR listed Old Sugarmill. Potential remains associated with Phase 3 and Phase 4 may have potential to have local heritage significance. Potential remains associated with Phase 1 and 5 are not considered likely to reach the threshold of local or State significance.

Excavation work within Canterbury Station Catchment and construction site would require archaeological management. Ground disturbance and excavation work with potential to impact significant archaeological remains would require archaeological mitigations. This would involve salvage excavations in areas for potential remains of Phase 2 and Phase 3, and test/salvage excavations for Phase 4. Areas of potential for Phase 1 and 5 would be covered by the Unexpected Finds Procedure. Archaeological salvage excavations would be supervised by a suitably qualified Excavation Director with experience in managing State significant archaeology in areas where State significant archaeology is expected, or locally significant archaeology where locally significant archaeology is expected.

The archaeological mitigation is summarised in Table 4-4.

Table 4-4: Summary of archaeological mitigation for Canterbury Station Catchment and construction site

Phase	Potential archaeology	Impact	Mitigation
1 (1788-1841)	Nil to low potential for archaeological features associated with land clearance such as tree boles, evidence of estate farming activities such as fence line postholes, former shed postholes, field drains, isolated artefact scatters. Unlikely to reach the threshold for local significance	Excavation for the construction of new station platforms, station service building, retaining wall, tracks, services, utilities, and fencing. Clearing and grubbing of the construction site.	<ul style="list-style-type: none"> • Unexpected Finds Procedure
2 (1841 – 1855)	Moderate to high potential for potentially State significant archaeological remains of outbuildings, landscape modifications, fence lines, drains and other structural remains associated with the Australasian Sugar Company works. Archaeological remains of the outbuildings such as footings, timber slabs remnants, underfloor deposits, post holes, artefact deposits, cess pits, wells, cisterns, fencelines, and yard surfaces. Evidence of small scale mining activities, archaeological evidence of farming includes fence line postholes, former shed postholes, brick or paved yard surfaces, field drains, isolated artefact scatters. Archaeological remains of early residential cottages including wells, cisterns and refuse pits.	Excavation for retaining walls, tracks, services, utilities, and fencing. Clearing and grubbing of the construction site.	<ul style="list-style-type: none"> • AMS • Salvage excavations
3 (1855 – 1895)	Moderate to high potential for potentially locally significant archaeological remains of early residential cottages including wells, cisterns and refuse pits. Archaeological remains of outbuildings, landscape modifications, fence lines, drains and other structural remains associated with the	Excavation for retaining walls, tracks, services, utilities, and fencing. Clearing and grubbing of the construction site.	<ul style="list-style-type: none"> • AMS • Salvage excavations

Phase	Potential archaeology	Impact	Mitigation
	Blackett and Co Canterbury Engineering Works.		
4 (1895-1943)	<p>Moderate potential for locally significant archaeological remains and evidence of early railway construction including rails, refuse pits, drains and timber sleepers. Archaeological remains of former platform structures. Archaeological remains of the former race platform and retaining wall. Archaeological remains of the former race platform and retaining wall. Archaeological remains of the storage sidings for the Canterbury Racecourse special trains and the shunting of the local goods sidings. Archaeological remains of early infrastructure such as culverts, tanks, drains (brick, stone or concrete), electrical conduits and pits, sleepers, signalling equipment and rail track. Archaeological remains associated with the early phase of minor railway buildings (such as toilets) prior to track realignment such as postholes, brick footings, former floor surfaces, and early infrastructure such as ceramic service pipes, brick drainage pits, electrical conduits and pits, stanchion bases, sleepers and rail track. It is unlikely that artefact-bearing deposits associated with the early station accumulated or survived subsequent development and upgrades.</p>	<p>Excavation for the construction of new station platforms, station service building, retaining wall, tracks, services, utilities, and fencing.</p>	<ul style="list-style-type: none"> AMS Test/Salvage excavations
5 (1943-present)	<p>Moderate to high potential for archaeological remains associated with upgrades such as utilities and drainage. Unlikely to reach the threshold for local significance.</p>	<p>Excavation for the construction of new station platforms, station service building, retaining wall, tracks, services, utilities, and fencing.</p>	<ul style="list-style-type: none"> Unexpected Finds Procedure

4.6.1 Archaeological Methodology

The following archaeological methodology for the Canterbury Station Catchment and construction site is based on impacts known at project approval stage. Explanation and further details regarding the archaeological process and methodologies identified below are provided in Section 7.0.

- An AMS would be prepared prior to construction works commencing at the Canterbury Station Catchment and construction site. This AMS would:
 - Review scope of works and construction methodology
 - Reassess potential for impacts to significant archaeological resources based on construction methodology
 - Review contamination reports and provide archaeological mitigation strategies for any remediation with the potential to impact significant archaeology
 - Identify opportunity for in situ conservation of archaeological remains in these areas
 - Outline how the archaeological program would be undertaken within the construction program
 - Provide a detailed archaeological mitigation for potential impacts in these areas, such as salvage excavation
 - Consider opportunities to provide information regarding the archaeological findings to the public.
- Salvage excavations would be undertaken to investigate and record archaeological remains related to Phase 2 and 3 if impacts were proposed in areas of identified potential.
- Test/salvage excavations would be undertaken to investigate and record archaeological remains related to Phase 4 if impacts were proposed in areas of identified potential.
- Unexpected finds procedure would apply to all other areas within the Canterbury Station Catchment and construction site.
- The archaeological investigations would be supervised by a suitably qualified Excavation Director with experience in managing State significant archaeology.
- A preliminary results report would be written once archaeological fieldwork has been completed.
- Post-excavation analysis of fieldwork results, artefacts, samples and other archaeological data would be undertaken and included in a final archaeological investigation report.
- Significant archaeological findings would be considered for inclusion in heritage interpretation for the project.

4.6.2 Research Questions

The historical themes associated with Canterbury Station Catchment and construction site study area are presented in Table 4-5.

Table 4-5: Historical themes associated with Canterbury Station Catchment and construction site

Australian theme	NSW theme	Explanatory notes	Comments
3. Developing local, regional and national economies	Agriculture	Activities relating to the cultivation and rearing of plant and animal species, usually for commercial purposes, can include aquaculture	Evidence of early grazing, and farming activity associated with the Canterbury Farm could provide information about the development of agriculture in the area.
3. Developing local, regional and national economies	Communication	Activities relating to the creation and conveyance of information	Evidence of the post office could provide information in regards to the early post offices.
3. Developing local, regional and national economies	Industry	Activities associated with the manufacture, production and distribution of goods	Evidence of small scale industries such as timber cutting, wool washing and mining could be present in the study area and provide information about industrial development of Canterbury. The establishment of the Australasian Sugar Company works and construction of associated structures and outbuildings (some within study area) and small scale residential settlement in form of cottages could provide information about industry and workers accommodation.
3. Developing local, regional and national economies	Mining	Activities associated with the identification, extraction, processing and distribution of mineral ores, precious stones and other such inorganic substances.	Scottish stonemasons were employed to mine the local stone to construct the sugar works and a quarry was located in the study area. Evidence of the quarry could provide information about the processing of the stone and tools used.
3. Developing local, regional and national economies	Transport	Activities associated with the moving of people and goods from one place to another, and systems for the provision of such movements	Canterbury Railway Station is associated with the provision of transport in developing local economies. Evidence of the development of the Bankstown line could provide information about the changing technologies in rail infrastructure. Evidence could include early rail infrastructure.
4. Building settlements, towns and cites	Towns, suburbs and villages	Activities associated with creating, planning and managing urban functions, landscapes and lifestyles in towns, suburbs and villages	Evidence of the early subdivision pattern of the study area could provide information about the development of the site, which would complement existing historical plans. It is possible that ephemeral evidence of fencelines and postholes, may exist.
4. Building settlements, towns and cites	Land tenure	Activities and processes for identifying forms of ownership and occupancy of land and water, both Aboriginal and non-Aboriginal	Evidence of the early subdivision pattern of the study area could provide information about the development of the site, which would complement existing historical plans. It is possible that ephemeral evidence of fencelines and postholes, may exist.

Australian theme	NSW theme	Explanatory notes	Comments
4. Building settlements, towns and cites	Utilities	Activities associated with the provision of services, especially on a communal basis	Evidence of early culverts, wells and cesspits can provide information about the provision of services and changes in technology, and often contain artefact deposits that have research potential. Early in-ground services including sandstone, brick and ceramic drains could be present in the study area.
4. Building settlements, towns and cites	Accommodation	Activities associated with the provision of accommodation, and particular types of accommodation – does not include architectural styles – use the theme of Creative Endeavour for such activities.	Early plans suggest that eight slab huts and cottages existed on the site. Evidence of early housing could provide information about the changes in technology, supply of materials, and preferences for houses during this time.
6. Educating	Education	Activities associated with teaching and learning by children and adults, formally and informally.	A school was located within the study area to provide for the children of the workers of the sugar mill. Evidence of the school could provide information about the provision of education during the period.
8. Developing Australia's cultural life	Domestic life	Activities associated with creating, maintaining, living in and working around houses and institutions.	Early plans suggest that slab huts and cottages existed on the site. Evidence of the slab huts and cottages could consist of footings, postholes, artefact deposits, deposits containing evidence of occupation including underfloor deposits and yard scatters, evidence for gardens, layout and use of the yard areas, and refuse associated with domestic activities. These types of evidence can provide information about how people lived in early Canterbury, the class distinction of the occupants and their archaeological signature, what people ate, and the arrangement of houses at the time. Depending on the evidence, artefacts could also provide information on gender roles, family dynamics, and the occupants of the houses.
8. Developing Australia's cultural life	Sport	Activities associated with organised recreational and health promotional activities	Canterbury Station provided transport on race days to Canterbury Park Racecourse.

The following research questions should be used to guide archaeological investigation.

- What evidence of early land clearing and land modification, if any, is present on the site?
- Is there any evidence of former platforms located below or within the present-day station platforms?
- What similar sites have been investigated within the local or broader context?
- What evidence of transport developments and changes in transport technology exist on the site?
- What evidence remains of early services, including early cisterns, tanks, wells, cesspits, in-ground services including sandstone, timber, brick and ceramic drains?

- Does this provide information about the provision of services and changes in technology?
- What were the living conditions of the people occupying the study area?
- Can the archaeological remains of the buildings inform the internal and external layout of the huts and cottages and the use of space?
- Can the archaeological remains inform changes in building technology, supply of materials and architectural preferences for the period? Do the houses provide evidence of class/status distinction?
- Is there evidence that the employees were engaged in activities outside of their working life? (gaming, smoking, sewing, etc)
- Is there evidence of the conditions in which the employees worked?
- Does the artefact assemblage provide information on the daily life of the occupants of the cottages? Can gender and class/status be discerned from the archaeological record?
- Do any intact under floor deposits provide useful spatial information, identify discrete activity area or provide spatial data on the range of tasks undertaken within the building over time?
- What food were the residence of the huts and cottages consuming? Is there evidence of the cooking methods used?
- Is there evidence of male, females, and children occupying the cottages? Does this provide information about family dynamics in early Canterbury?
- What evidence is there of gardens, and the layout and use of the yard areas? Does this show evidence of recreational activities, e.g. marbles or games? What can the gardens inform about daily life and food habits?
- Do any refuse deposits indicate a domestic setting? Do refuse deposits inform about daily eating habits?
- Is there evidence of quarrying on the site?
- What evidence is there of the school? Do artefactual remains relate to the provision of education?
- Is there artefactual or architectural evidence related to the sugar works in the study area?
- Is there evidence of the division of labour spaces, yards and sheds?
- How does the study area compare to other mixed residential and industrial sites? Is the archaeological record typical for Sydney?
- What does the evidence indicate about the development of rail infrastructure and technology?
- How does the evidence inform the historical development of the Bankstown rail line and Canterbury Station?
- Is there any evidence of former platforms located below or within the present-day station platforms?
- Interpret the results in terms of broader themes, posing questions that help to inform the Statement of Significance.

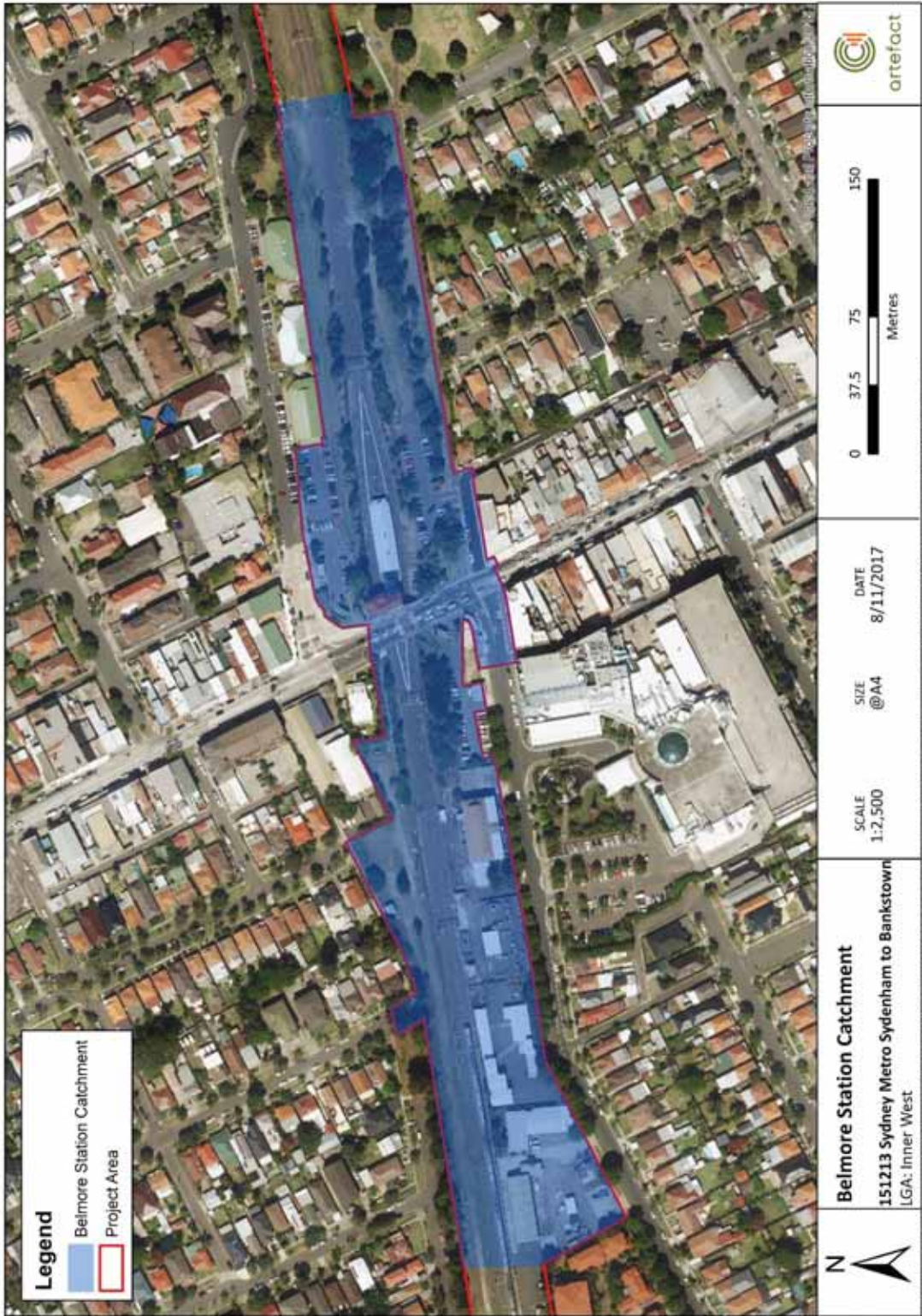
Additional research questions may be posed (and existing questions modified) as the archaeological excavation progresses and the extant and condition of the archaeological resource is revealed.

5.0 BELMORE STATION CATCHMENT

5.1 Site Location

Belmore Station is located to the east of the Burwood Road overbridge. To the north and south, the station area is bounded by commuter car parks fronting Redman Parade and Tobruk Avenue respectively. To the west, the station area is bounded by Burwood Road. The existing station entrance is located on the Burwood Road overbridge.

Figure 5-1: Belmore Station Catchment



5.2 Historical Analysis

5.2.1 1788-1880: Early Land Grants

In the early nineteenth century the most direct route between the Cooks and Georges Rivers was via the Punchbowl/Milperra Road, which also served as a convenient access road from Sydney to Reverend Johnson's Canterbury Farm. At this time a track, today's Burwood Road, connected Punchbowl Road with King's Grove Farm to the south-east. The track passed through the area that would become known as Belmore.

A number of land grants were located in the vicinity, and the timber they provided was cut to supply Sydney with firewood and railway sleepers.⁴⁶ Following the clearance of the land, numerous farms were established. Blossom Farm, to the north-west of the present-day railway station, was owned by the Bradburn family. St Clair Farm, to the east of the railway station, was owned by William Redman (son of John Redman of "Johns Farm" near Campsie) and contained a vineyard and grazing paddocks (Figure 5-2). No known structures occupied the property. A number of small poultry farms were also located throughout the area.⁴⁷

5.2.2 1880-1920s: Subdivision and Belmore Railway Station

Subdivision of the large estates and farms began around 1880, and accelerated with the opening of the railway line, the first stage of which terminated at Burwood Road (Figure 5-3). Early subdivisions occurred at Blossom Farm, referred to as the Terminus Estate, immediately north-west of Belmore railway station. In the centre of Belmore, Redman's estates (Figure 5-4) and Collins' Clear, immediately north-east and south of the station, were not subdivided until after 1911. These early subdivisions consisted of large suburban blocks. There was, however, a shortage of subdivided land in the immediate vicinity of the station, and the suburb centre developed relatively slowly as a result.⁴⁸

⁴⁶ Muir and Madden, 2009.

⁴⁷ Muir and Madden, 2009.

⁴⁸ Muir and Madden, 2009

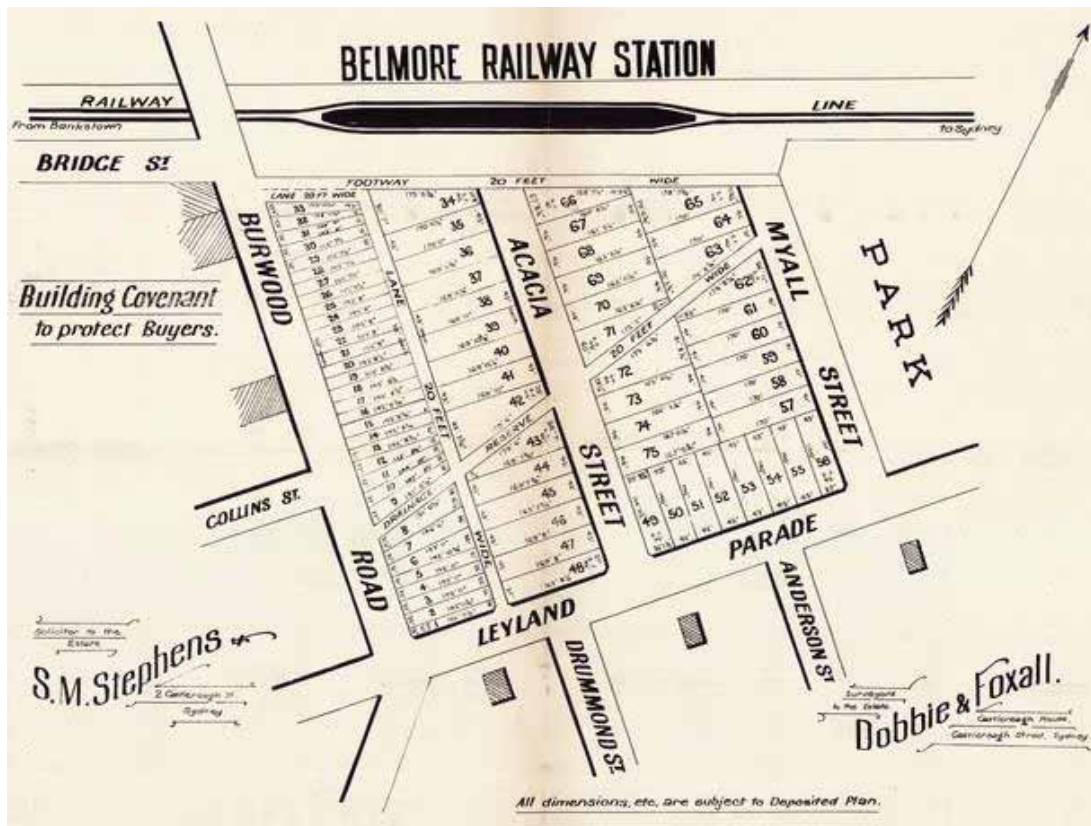
Figure 5-2: Undated plan showing approximate alignment of the proposed railway, and Redman's St Clair Estate (outlined in red). Source: SLNSW call no. Z/SP/B12.



Figure 5-3: 1903 parish map of Belmore Station. Source: LPI.



Figure 5-4: 1922 plan of Redman's Estate subdivision, showing that development on the southern side of the railway line consists of larger blocks of land at this time. Source: SLNSW call no. Z/SP/B12.



Belmore Station was opened as the initial terminus station on the Bankstown Line on 1 February 1895 (Figure 5-5 and Figure 5-6). Its initial construction name was Burwood Road but it was named Belmore on opening.⁴⁹

The station was built when Belmore was still rural. The station layout featured a typical brick station building on an island platform with brick platform and edge (Figure 5-7). A sandstone layer within the walls of the platform at Belmore provides evidence of the original coping height.⁵⁰ The station building is of ornate design, eight bays in length with the bays defined by engaged brick piers. A station master's residence, a brick cottage, was also built in 1895 and is still extant at 346 Burwood Road, opposite the station, but is now in private ownership.⁵¹ The first stationmaster, George John Whyte, occupied the cottage for many years.

The original layout of the station catchment is illustrated in a plan dated to 1895, shown in Figure 5-8.⁵² A goods shed was also part of the station catchment and located to the north of the line, near today's Wortley Avenue, within the proposed Belmore Compound Area. What may be a goods platform is located on the opposite side of the rail line, near Bridge Road and within a what is now a modern carpark.

The platform was lengthened in 1907 and again in 1926. Prior to 1909 there were sidings for the storage of locomotives due to the railway terminating at Belmore. Suburban development intensified post World War I when many War Service homes were built in the area. Sidings at the station were

⁴⁹ State Heritage Inventory 'Belmore Railway Station Group' Accessed 9 July 2016.

⁵⁰ Australian Museum Consulting 2015 Heritage Platforms Conservation Management Strategy

⁵¹ *Ibid*

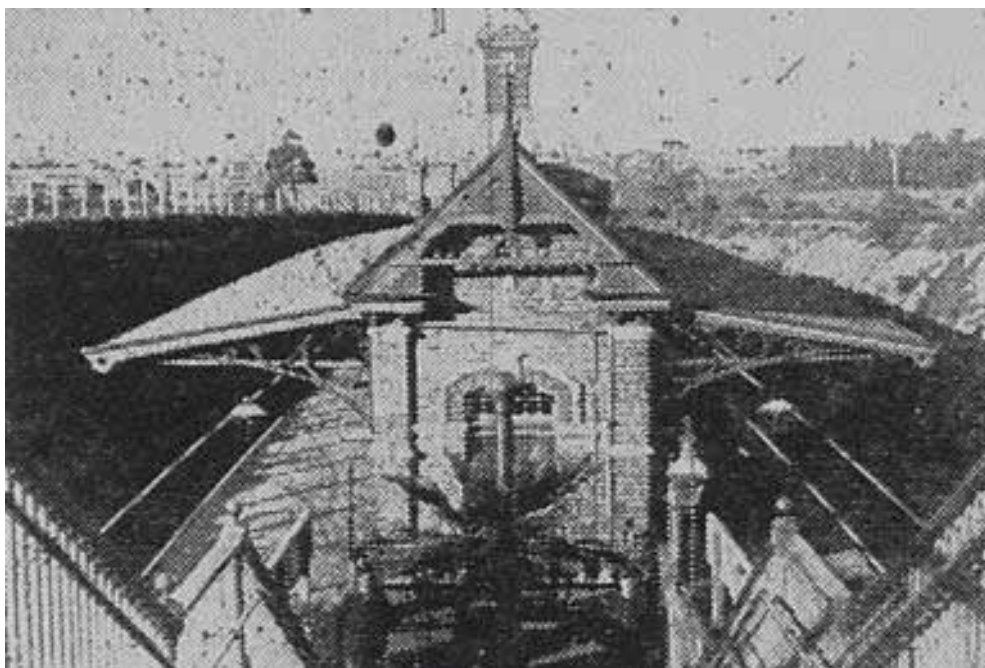
⁵² *Ibid*

extended during the 1920s for Belmore and Canterbury Councils for the purposes of unloading timber and other material for house construction and municipal works.⁵³

Figure 5-5: c.1900 photograph of Belmore Station. Source: City of Canterbury Local History Photograph Collection.



Figure 5-6: Belmore Station in 1901. Source: Canterbury City Council.



⁵³ State Heritage Inventory 'Belmore Railway Station Group' Accessed 9 July 2016.

Figure 5-7: Configuration of the Belmore Station. Source: SLNSW call no. Z/SP/B12.

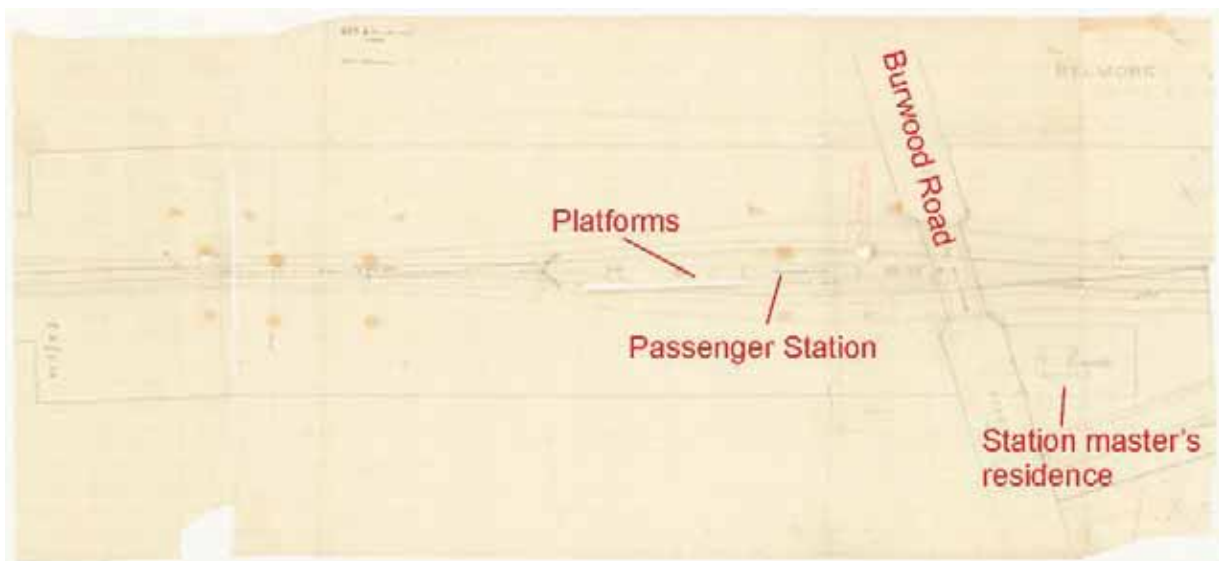
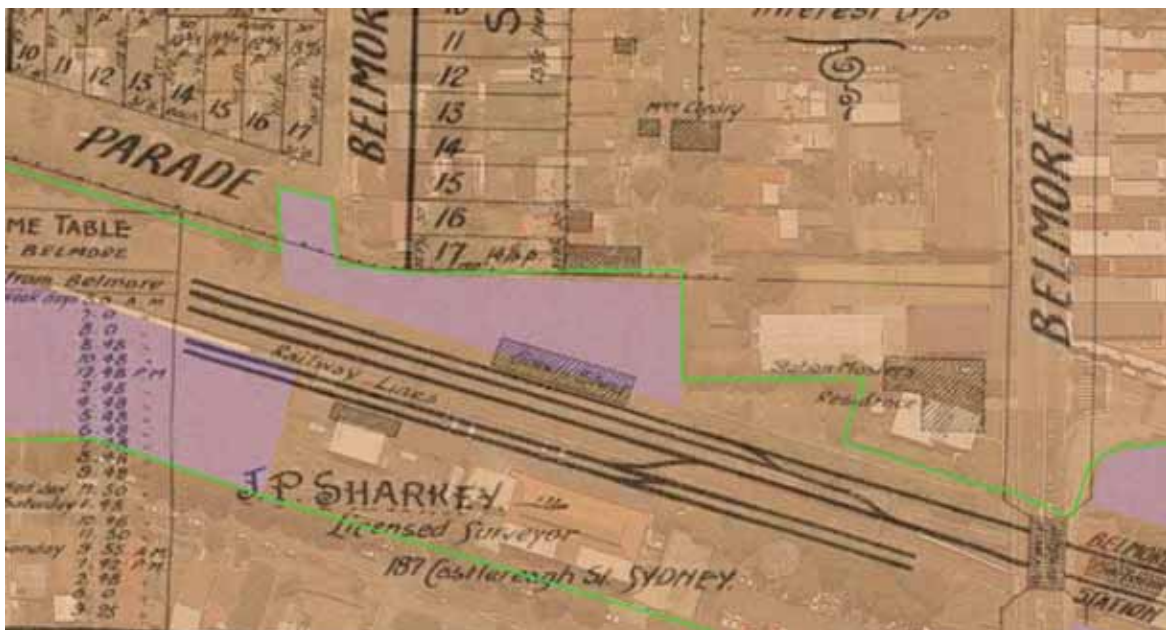


Figure 5-8: 1895 plan of the Terminus Estate subdivision, showing location of the goods shed, sidings, platform and station master's residence at Belmore Station. Compound areas are highlighted in blue. Source: SLNSW call no. Z/SP/B12.



5.2.3 1920s-present: Station Development

Following the First World War, between 1920 and 1925, a number of returned servicemen were settled in Belmore, with housing financed by the War Service Homes Commission. Many of the men found work at the new railway yards in Enfield.⁵⁴

The commercial centre of Belmore developed rapidly from this time, with the Post Office opening in 1924, and the Belmore Hotel in 1928. In the latter half of the twentieth century many of the early residences were demolished to make way for apartment blocks.

⁵⁴ Muir and Madden, 2009.

In 1925-26 a number of works were undertaken at the station in preparation for electrification of the railway line including a sub-station and platform extension. The sub-station is now used as a signals training facility.

The overhead timber booking office at Belmore was constructed c.1937 at the top of the steps fronting onto the down side of Burwood Road to take the ticket selling and parcel functions. The change was also made to most other stations built to a similar configuration. The station master's office remained in the platform building for another forty years, but this function too has now moved to the street level building and the platform building remains largely unused.⁵⁵ The construction of a shop on railway land to the north of the station in c1922 has also been noted.⁵⁶

Further modifications were made to the station, with the original timber overbridge being replaced in part in 1961, and the booking office being substantially modified in 2008 by opening up the front wall on Burwood Road, and new stairs and lifts constructed.

Figure 5-9: 1943 aerial of Belmore Station. Source: SIX maps



⁵⁵ State Heritage Inventory 'Belmore Railway Station Group' Accessed 9 July 2016.

⁵⁶ State Heritage Inventory 'Belmore Railway Station Group' Accessed 9 July 2016.

5.3 Archaeological Potential

5.3.1 Previous Archaeological Studies

Artefact Heritage 2017. *Sydney Metro City & Southwest: Sydenham to Bankstown, Non-Aboriginal Heritage Impact Assessment*. Prepared for Transport for NSW.

The technical paper considered the construction and operational impacts on listed heritage items and potential archaeological resources within the study area. It included identification of items and areas of heritage significance that would be materially affected by the project, with consideration of the potential impacts on the values, settings and integrity of heritage items and archaeological resources located within the project area. The paper outlined proposed mitigation and management measures in accordance with relevant best practice guidelines.

5.3.2 Land Use Summary

The historical development of the Belmore Station Catchment and surrounds can be divided into the following phases of activity:

- Phase 1 (1788 – 1880) early land grants: land clearance, timber getting, grazing and farming activity
- Phase 2 (1880 – 1920s) subdivision and railway station: larger estates subdivided from 1880 into suburban blocks, limited in immediate vicinity of station, accelerated with the construction of railway station in 1895, extended to Bankstown in 1909, sidings extended in 1920s, substation and platform extension in 1925-26
- Phase 3 (1930s – present) railway station: overhead booking office constructed in 1937, replaced in part in 1961, and upgraded in 2008; continual upgrades and use of the station.

5.3.3 Previous Impacts

Construction of the railway station and rail line in the late nineteenth and early twentieth century would have included a considerable amount of ground disturbance and excavation. Rail and station upgrades throughout the twentieth century would have resulted in high levels of ground impacts throughout the station catchment. These impacts include, but are not limited to, the following:

- Subsurface excavations to varying depths to grade and level land within the rail corridor and railway station
- Trenching within and adjacent to the rail corridor and railway station to accommodate services and utilities
- Vegetation clearance
- Subsurface excavations associated with subsequent upgrades to the rail corridor and railway station

5.3.4 Potential Archaeological Remains

Phase 1 (1788 – 1880)

A number of land grants were located in the study area and were utilised for timber cutting. Following the clearance of the land, numerous farms were established, such as Blossom Farm and St Clair Farm, which were used for vineyards and grazing. No known structures occupied the property. A number of small poultry farms were also located throughout the area during this time.

There are no documentary evidence of specific activities or development with the site. Potential archaeological remains dating to this phase would be associated with low intensity land use such as grazing and farming include tree boles, fence line postholes, field drains and isolated artefact scatters.

Phase 2 (1880 – 1920s)

Large estates were subdivided in 1880 into suburban blocks which was accelerated with the construction of Belmore Station in 1895. Belmore Station was the original terminus and the line was later extended to Bankstown in 1909. Sidings for the station were extended in the 1920s. A substation and platform extension were implemented with the electrification of the line in 1925-26.

There is no documentary evidence of specific activities such as residential development within the site prior to the station being constructed. Archaeological features associated with continued grazing and farming could include fence line and shed postholes, field drains, isolated artefact scatters and drains or culverts.

Potential archaeological remains relating to the early station could include remains of early infrastructure such as ceramic service pipes, brick drainage pits, electrical conduits and pits, stanchion bases, sleepers and rail track. Archaeological remains associated with the railway station could include remains of the goods shed and goods platform occupying land to the near today's Wortley Avenue and a goods platform to the south near Bridge Road, such as rail tracks, timber sleepers, footings of the platform, engine pit, and other rail infrastructure. Archaeological remains located on the 1925 plan could be present in the study area such as a converter room, coal bin, ash pit, lamp shed, auto box, land agent, boot maker, toilets, and brick culvert. Archaeological remains of these structures could include footings, cuts of the pit, drains, ceramic service pipes, and the brick culvert. Archaeological remains of former platform structures. Archaeological remains located within the platform structure could include footings of former footbridge, fences, and footings of the building that was originally located under the stairs. Archaeological remains of tank located to the north of the station could remain.

Phase 3 (1930s – present)

During this time the station underwent continual upgrades including the construction of the overhead timber booking office at the top of the steps fronting onto the down side of Burwood Road. This was then replaced in part in 1961, and later modified in 2008. Archaeological remains of this phase would be associated with upgrades to the station such as utilities and drainage.

Based on the history of the site and disturbance that has occurred in the area, archaeological remains are likely to consist of post-railway structures and services.

5.3.5 Summary of Archaeological Potential

Based on historical information, land use data and evidence of sub-surface impacts, a summary of the potential archaeological remains at Belmore Station Catchment is presented in Table 6-1.

Table 5-1: Summary of potential archaeological remains for Belmore Station Catchment

Phase	Likely archaeological remains	Potential
1 (1788-1880s)	<ul style="list-style-type: none"> No documentary evidence of specific activities or development with the site. Archaeological features associated with low intensity land use such as grazing and farming include tree boles, fence line postholes, field drains and isolated artefact scatters. 	Nil-low
2 (1880 – 1920s)	<ul style="list-style-type: none"> No known documentary evidence of specific activities such as residential development within the site. Archaeological features associated with continued grazing and farming include fence line and shed postholes, field drains, isolated artefact scatters and drains or culverts Archaeological remains of early infrastructure such as ceramic service pipes, brick drainage pits, electrical conduits and pits, stanchion bases, sleepers and rail track. Archaeological remains associated with the railway station goods shed and goods platform occupying land to the near today's Wortley Avenue and a goods platform to the south near Bridge Road, such as rail tracks, timber sleepers, footings of the platform, engine pit, and other rail infrastructure. Archaeological remains located on the 1925 plan such as converter room, coal bin, ash pit, lamp shed, auto box, land agent, boot maker, toilets, and brick culvert. Archaeological remains could include footings, cuts of the pit, drains, ceramic service pipes, and the brick culvert. Archaeological remains of former platform structures. Archaeological remains located within the platform structure such as footings of former footbridge, fences, and footings of the building that was originally located under the stairs. Archaeological remains of tank located to the north of the station. 	Low -moderate
3 (1930s – present)	<ul style="list-style-type: none"> Archaeological remains associated with upgrades such as utilities and drainage 	Moderate

5.4 Archaeological Significance

The following assessment of significance is based on the guidelines discussed in Section 2.4 of this report.

Table 5-2: Assessment of archaeological significance for Belmore Station Catchment

Criteria	Discussion
Research potential	<ul style="list-style-type: none"> It is unlikely that archaeological remains associated with Phase 1 and the beginning of Phase 2 would be present within the site. Any remains would likely be highly truncated and would not have research potential. Potential archaeological remains associated with Phase 2 former rail infrastructure such as services and sidings would be unlikely to contribute additional information not available from other historical resources. Potential remains associated with the goods shed has the potential to yield information regarding early railway storage practices and construction methods related to utilitarian structures.
Association with individuals, events or groups of historical importance	<ul style="list-style-type: none"> The potential archaeological remains are not associated with any particular individual of historical importance. The development of the rail network facilitated economic development and suburban growth in Sydney in the latter half of the nineteenth and early twentieth

Criteria	Discussion
	centuries. Belmore Station was built as the first part of the Bankstown Line in 1895 which was extended to accommodate the remainder of the Bankstown Line between (1909-1939). The potential Phase 2 archaeological remains are associated with the historical development of the Bankstown rail lines.
Aesthetic or technical significance	<ul style="list-style-type: none"> The potential archaeological remains are not likely to hold aesthetic value. Remains of former rail infrastructure may demonstrate changes in technology and rail engineering over time. However, they are not expected to demonstrate technical significance.
Ability to demonstrate the past through archaeological remains	<ul style="list-style-type: none"> The potential archaeological remains have the ability to illustrate the early development of the railway station particularly activities surrounding the goods shed and sidings.

5.4.1 Statement of Archaeological Significance

There is nil to low potential for archaeological remains associated with nineteenth century farming. Any remains unlikely to have research value. There is low to moderate potential for archaeological remains of former 'works' such as sidings, drains, rails and sleepers. Though the potential Phase 2 archaeological remains are associated with the historical development of the Bankstown rail line and Belmore Station, they are likely to be truncated and not contribute further information regarding this development phase. There is low to moderate potential for the remains of a former goods shed to exist within the area. If intact and substantial remains of the goods shed were found, they would provide information relating to late 19th century railway building construction methods and activities surrounding the goods line. If intact remains associated with later Phase 2 development associated with the goods shed were uncovered, they would have the potential to reach the threshold for local heritage significance. Potential archaeological remains associated with Phase 2 may reach the threshold for local significance.

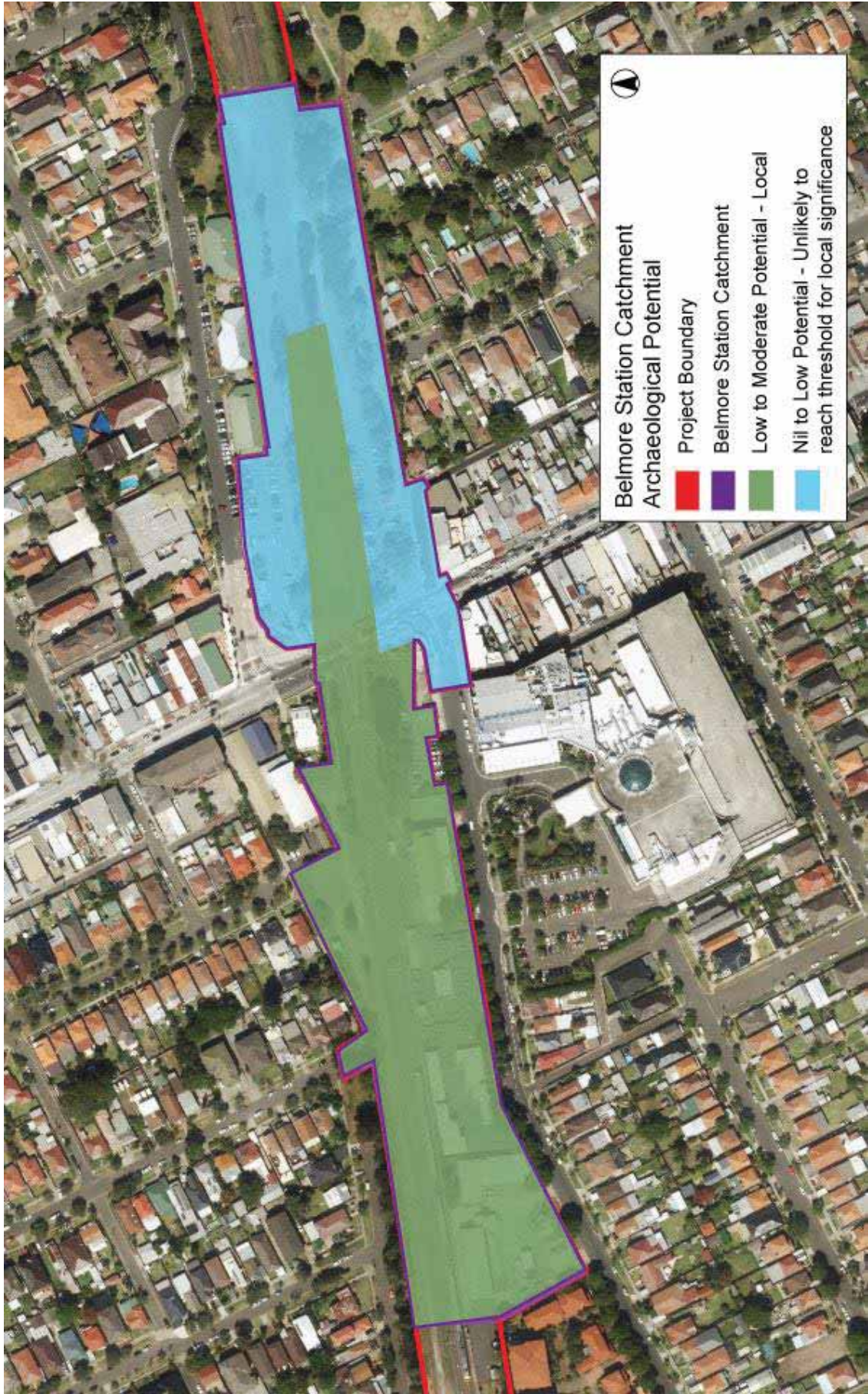
A summary of the significance of potential archaeological resources is provided in Table 5-3 and Figure 5-10 below.

Table 5-3: Summary of areas with potential for significant archaeology for Belmore Station Catchment

Phase	Archaeological resource	Potential	Significance
1 (1788-1880s)	<ul style="list-style-type: none"> Archaeological features associated with low intensity land use such as grazing and farming include tree boles, fence line postholes, field drains and isolated artefact scatters. 	Nil-low	Unlikely to reach the threshold for local significance
2 (1880 – 1920s)	<ul style="list-style-type: none"> Archaeological features associated with continued grazing and farming include fence line and shed postholes, field drains, isolated artefact scatters and drains or culverts Archaeological remains of early infrastructure such as ceramic service pipes, brick drainage pits, electrical conduits and pits, stanchion bases, sleepers and rail track Archaeological remains associated with the railway station goods shed 	Low -moderate	Potentially local

Phase	Archaeological resource	Potential	Significance
	<p>and goods platform occupying land to the near today's Wortley Avenue and a goods platform to the south near Bridge Road, such as rail tracks, timber sleepers, footings of the platform, engine pit, and other rail infrastructure</p> <ul style="list-style-type: none"> Archaeological remains located on the 1925 plan such as converter room, coal bin, ash pit, lamp shed, auto box, land agent, boot maker, toilets, and brick culvert. Archaeological remains could include footings, cuts of the pit, drains, ceramic service pipes, and the brick culvert. Archaeological remains of former platform structures. Archaeological remains located within the platform structure such as footings of former footbridge, fences, and footings of the building that was originally located under the stairs. Archaeological remains of tank located to the north of the station. 		
3 (1930s – present)	<ul style="list-style-type: none"> Archaeological remains associated with upgrades such as utilities and drainage 	Moderate	Unlikely to reach the threshold for local significance

Figure 5-10: Archaeological potential for Belmore Station Catchment



5.5 Archaeological Impacts

5.5.1 Proposed Works

Proposed impacts within the Belmore Station Catchment would include the construction of a new island platform within the rail corridor, construction of a station service building, construction of a retaining walls along the southern and northern boundary of the station and rail corridor, addition of Metro South West running tracks (MSWs), installation of drainage pipes, single grate drainage pits, gas pipelines and CSR utilities and the construction of a proposed segregation fence along the northwest boundary of the rail corridor. The majority of these works would involve trenching and subsurface ground disturbance within the existing rail and road corridor.

5.5.2 Potential Archaeological Impacts

The proposed works would involve excavation of the current platform structure, and excavation for service building, retaining wall, new tracks, drainage pipes and pits, gas pipelines, CSR utilities and segregation fence. There is potential that locally significant remains associated with the former goods shed may be impacted by the proposal.

5.6 Archaeological Management

The area within the Belmore Station Catchment has been assessed as having nil to low potential to contain archaeological remains associated with Phase 1 and low to moderate potential to contain archaeological remains associated with Phase 2 and 3. The majority of potential archaeological remains are not considered likely to reach the threshold of local significance. However, remains associated with the goods shed may reach the threshold for local significance if intact or substantial deposits are found to exist within the project area.

As there is potential for remains associated with Phase 2 occupation of the site (former goods shed) to have local significance, it is recommended that an Archaeological Method Statement be prepared when construction impacts are finalised, which would detail whether archaeological monitoring or a program of test and salvage would be undertaken. Areas of potential for Phase 1 and 3 would be covered by the Unexpected Finds Procedure.

The archaeological monitoring or test and salvage would be supervised by a suitably qualified Excavation Director with experience in managing locally significant archaeology.

The archaeological mitigation is summarised in Table 5-4.

Table 5-4: Summary of archaeological mitigation for Belmore Station Catchment

Phase	Potential archaeology	Impact	Mitigation
1 (1788-1880s)	Nil to low potential for archaeological features associated with low intensity land use such as grazing and farming include tree boles, fence line postholes, field drains and isolated artefact scatters. Unlikely to reach the threshold for local significance.	Excavation for the construction of new station platforms, station service building, retaining wall, tracks, services, utilities, and fencing.	Unexpected Finds Procedure

Phase	Potential archaeology	Impact	Mitigation
2 (1880 – 1920s)	<p>Low to moderate potential for Archaeological features associated with continued grazing and farming include fence line and shed postholes, field drains, isolated artefact scatters and drains or culverts. Archaeological remains of early infrastructure such as ceramic service pipes, brick drainage pits, electrical conduits and pits, stanchion bases, sleepers and rail track. Archaeological remains associated with the railway station goods shed and goods platform occupying land to the near today's Wortley Avenue and a goods platform to the south near Bridge Road, such as rail tracks, timber sleepers, footings of the platform, engine pit, and other rail infrastructure. Archaeological remains located on the 1925 plan such as converter room, coal bin, ash pit, lamp shed, auto box, land agent, boot maker, toilets, and brick culvert. Archaeological remains could include footings, cuts of the pit, drains, ceramic service pipes, and the brick culvert. Archaeological remains of former platform structures. Archaeological remains located within the platform structure such as footings of former footbridge, fences, and footings of the building that was originally located under the stairs. Archaeological remains of tank located to the north of the station. Archaeological remains of the early goods shed and siding have the potential to reach local significance.</p>	Excavation for the construction of new station platforms, station service building, retaining wall, tracks, services, utilities, and fencing.	AMS Monitoring or Test/Salvage Excavations
3 (1930s – present)	Moderate potential for archaeological remains associated with upgrades such as utilities and drainage. Unlikely to reach the threshold for local significance.	Excavation for the construction of new station platforms, station service building, retaining wall, tracks, services, utilities, and fencing.	Unexpected Finds Procedure

5.6.1 Archaeological Methodology

The following archaeological methodology for the Belmore Station Catchment is based on impacts known at project approval stage. Explanation and further details regarding the archaeological process and methodologies identified below are provided in Section 7.0.

- An AMS would be prepared prior to construction works commencing at the Belmore Station Catchment. This AMS would:
 - Review scope of works and construction methodology
 - Reassess potential for impacts to significant archaeological resources based on construction methodology
 - Review contamination reports and provide archaeological mitigation strategies for any remediation with the potential to impact significant archaeology

- Outline how the archaeological program would be undertaken within the construction program
 - Provide a detailed archaeological mitigation for potential impacts in these areas, such as monitoring or test and salvage excavation
 - Consider opportunities to provide information regarding the archaeological findings to the public.
- Monitoring or test and salvage excavations would be undertaken to investigate and record archaeological remains related to Phase 2
 - Unexpected finds procedure would apply to all other areas within Belmore Station Catchment.
 - The archaeological investigations would be supervised by a suitably qualified Excavation Director with experience in managing local significant archaeology.
 - A preliminary results report would be written once archaeological fieldwork has been completed.
 - Post-excavation analysis of fieldwork results, artefacts, samples and other archaeological data would be undertaken and included in a final archaeological investigation report.
 - Significant archaeological findings would be considered for inclusion in heritage interpretation for the project.

5.6.2 Research Questions

The historical themes associated with Belmore Station Catchment study area are presented in Table 4-5.

Table 5-5: Historical themes associated with Belmore Station Catchment

Australian theme	NSW theme	Explanatory notes	Comments
3. Developing local, regional and national economies	Agriculture	Activities relating to the cultivation and rearing of plant and animal species, usually for commercial purposes, can include aquaculture	Evidence of land clearance, timber getting, grazing and farming activity could provide information about the development of agriculture in the area.
3. Developing local, regional and national economies	Transport	Activities associated with the moving of people and goods from one place to another, and systems for the provision of such movements	Belmore Railway Station is associated with the provision of transport in developing local economies. Evidence of the development of the Bankstown line could provide information about the changing technologies in rail infrastructure. Evidence could include early rail infrastructure.
4. Building settlements, towns and cities	Towns, suburbs and villages	Activities associated with creating, planning and managing urban functions, landscapes and lifestyles in towns, suburbs and villages	Evidence of the early subdivision pattern of the study area could provide information about the development of the site, which would complement existing historical plans. It is possible that ephemeral evidence of fencelines and postholes, may exist.

Australian theme	NSW theme	Explanatory notes	Comments
4. Building settlements, towns and cites	Land tenure	Activities and processes for identifying forms of ownership and occupancy of land and water, both Aboriginal and non-Aboriginal	Evidence of the early subdivision pattern of the study area could provide information about the development of the site, which would complement existing historical plans. It is possible that ephemeral evidence of fencelines and postholes, may exist.
4. Building settlements, towns and cites	Utilities	Activities associated with the provision of services, especially on a communal basis	Evidence of early culverts, wells and cesspits can provide information about the provision of services and changes in technology, and often contain artefact deposits that have research potential. Early in-ground services including sandstone, brick and ceramic drains could be present in the study area.

The following research questions should be used to guide archaeological investigation.

- What evidence of early land clearing and land modification, if any, is present on the site?
- What evidence of the pre-station landscape exist within the site? Is there evidence of early subdivision?
- What evidence of the former goods line and goods shed exist? How does this inform early railway storage practices and construction methods related to utilitarian structures?
- Is there any evidence of former platforms located below or within the present-day station platforms?
- What similar sites have been investigated within the local or broader context?
- What evidence of transport developments and changes in transport technology exist on the site?
- What evidence remains of early services, including early cisterns, tanks, wells, cesspits, in-ground services including sandstone, timber, brick and ceramic drains?
- Does this provide information about the provision of services and changes in technology?
- What physical evidence of former activities survives within the site?
- What is the integrity of the remains? Have they been truncated by later development or excavation work within the study area?
- What does the evidence indicate about the development of rail infrastructure and technology?
- How does the evidence inform the historical development of the Bankstown rail line and Belmore Station?
- Interpret the results in terms of broader themes, posing questions that help to inform the Statement of Significance.

Additional research questions may be posed (and existing questions modified) as the archaeological excavation progresses and the extant and condition of the archaeological resource is revealed.

6.0 LAKEMBA STATION CATCHMENT

6.1 Site Location

Lakemba Station is located about 60 metres to the west of the Haldon Street overbridge. The station area is bounded by Railway Parade to the north and The Boulevarde to the south. Access to the station is provided off Railway Parade and The Boulevarde.

Figure 6-1: Lakemba Station Catchment



6.2 Historical Analysis

6.2.1 1788-1880s: Early Land Grants

The suburb of Lakemba was originally located within John Wall's 1831 grant of 50 acres, called "Ashford". During this time the area was relatively undeveloped with much of the land being forest. In August 1881 Ben Taylor leased "Ashford", before purchasing the property in 1890 (Figure 6-2). Figure 6-3 shows Taylors house on this grant prior to the construction of the railway line, consisting of a house and stable building. Additional outbuildings may have occupied land around the main property, and therefore within the study area.

6.2.2 1880s-1909: Pioneer Settlement

In 1883, Taylor married his second wife Lucy Annie Johnston, the granddaughter of missionaries based on Lakeba Island in Fiji (pronounced Lakemba).⁵⁷ Soon after their marriage, Taylor named his house “Lakemba,” and by the 1920s it was a substantial two-storey residence to the south of the study area (Figure 6-4, Figure 6-5, Figure 6-6).

It is possible the stables were demolished to make way for the construction of Railway Crescent/The Boulevard in the early twentieth century. After the arrival of the railway “Lakemba” was located on the corner of Haldon Street and the newly formed Railway Crescent/The Boulevard.

Taylor was a staunch Methodist, and donated the land for the Methodist (now Uniting) Church on the south eastern corner of Haldon Street and The Boulevarde (Figure 6-5 and Figure 6-7). “Lakemba” was demolished in the late 1920s or early 1930s to make room for shops (Figure 6-8).

Figure 6-2: Undated plan showing approximate alignment of the proposed railway. Wall and Taylor's grant has been outlined in red. Source: SLNSW call no. Z/SP/B12.



⁵⁷ City of Canterbury Library, Madden 2014 "Lakemba - Name Origin" Accessed 8 July 2016.

Figure 6-3: Plan showing the subdivision of the Lakemba Park Estate in 1895, prior to the construction of the railway line and Lakemba Station (outlined in green), showing location of Ben Taylor's house and stables. Source: SLNSW call no. Z/SP/B12.

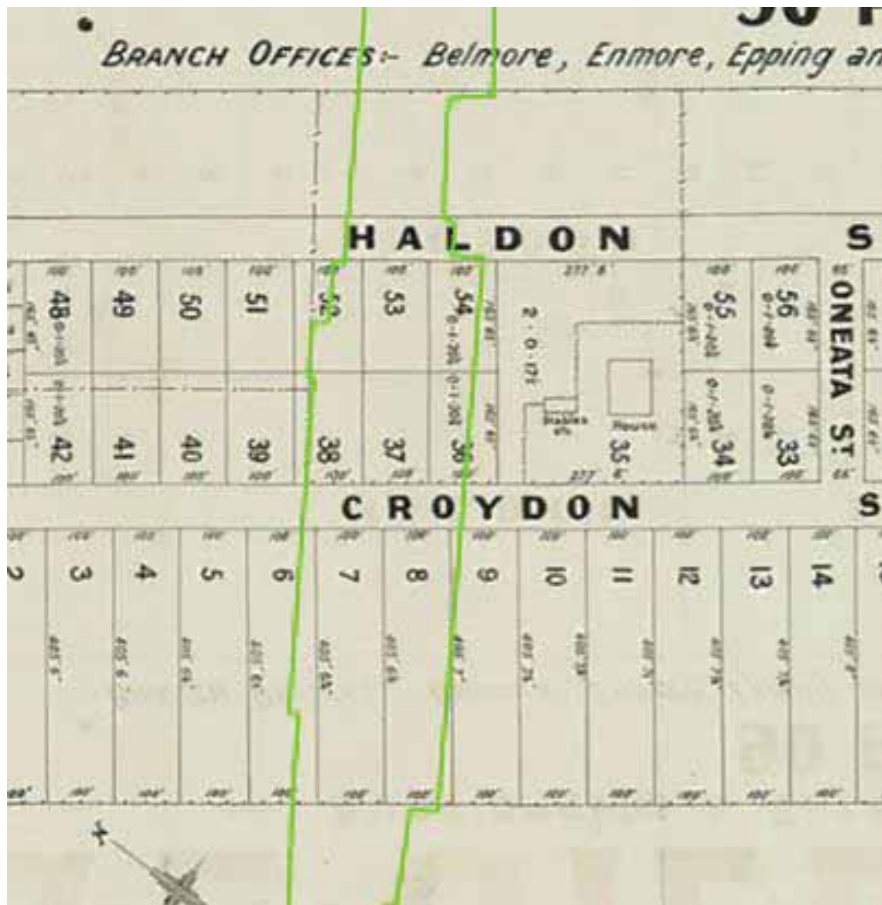


Figure 6-4: Ben Taylor's "Lakemba" in 1921, during the Anzac Day March on Haldon Street.
Source: City of Canterbury, Pictorial Canterbury, image no. 020227.



Figure 6-5: The Methodist Church during construction c.1920, with Taylor's "Lakemba" house in the background.
Source: City of Canterbury, Pictorial Canterbury, image no. 210002.



Figure 6-6: Construction of timber bridge over railway line at Haldon Street, with Lakemba house in the background right c. 1931. Source: Pictorial Canterbury, City of Canterbury Council.



Figure 6-7: Lakemba Station and surrounds in 1919. Source: SLNSW call no. Z/SP/B12.

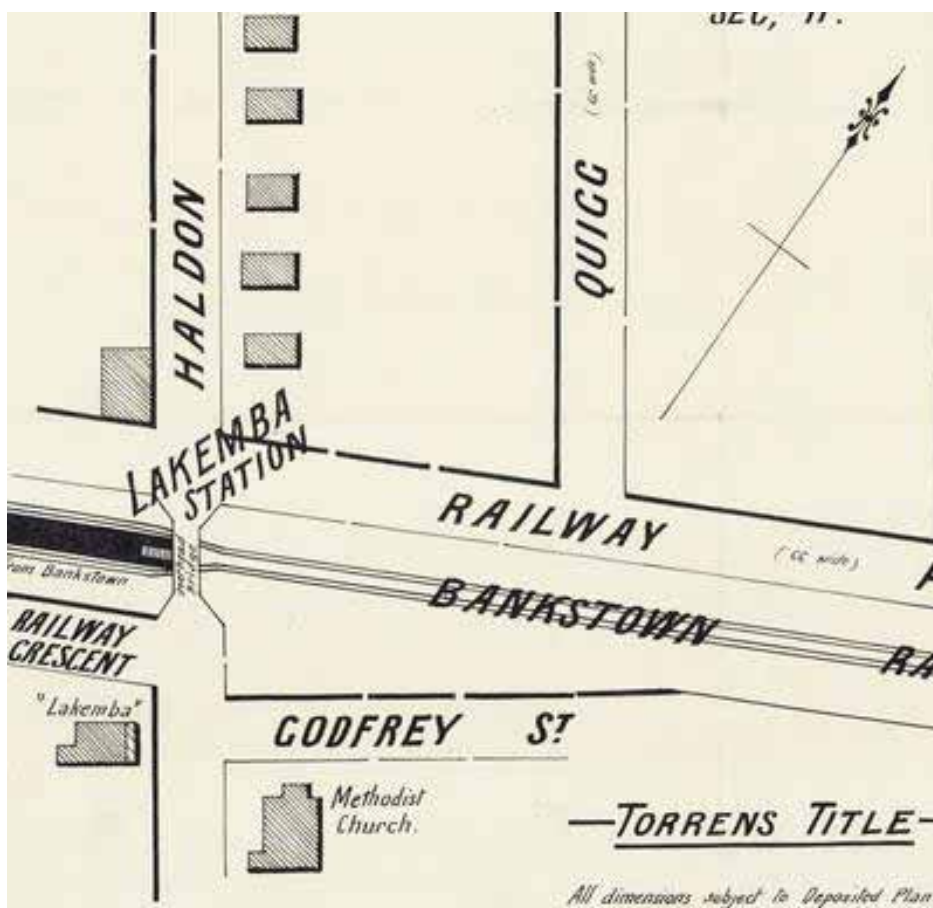


Figure 6-8: Site of the residence of Lakemba after it was demolished. Source: Canterbury City Council.



6.2.3 1909-1919: Lakemba Railway Station and development

Prior to the arrival of the railway, the surrounding area consisted predominantly of bushland dotted with the occasional small homestead (Figure 6-9). Early industry included a tannery in Wangee Road, charcoal burning and brickmaking.⁵⁸ Commercial nurseries, such as Horton's, and small poultry farms, were also located throughout the area. A piggery was originally located on Haldon Street (Figure 6-10).⁵⁹

Land values, however, rose dramatically after the construction of Lakemba Station, and shopfronts on Haldon Street were highly sought after by the mid-1920s (Figure 6-14). In 1932 the Chamber of Commerce (established in 1922), suggested that Haldon Street be concreted, as befitting its status as a busy commercial street (Figure 6-15).

Lakemba Station was opened on 14 April 1909. The original station at Lakemba had an island platform with entrance steps from the Haldon Street overbridge. A small timber station building with a ticket and parcels office was at the Belmore end with a small signal frame on the Bankstown side of the building (Figure 6-11).

On 24 December 1919, a new brick platform building with cantilever awnings replaced the earlier timber structure (Figure 6-12) and a signal box was opened at the Bankstown end of the station.

⁵⁸ Jervis 1951: 92.

⁵⁹ City of Canterbury Library "Lakemba NSW" Accessed 8 July 2016.

Figure 6-9: Plan of the land to be resumed for Lakemba Railway Station. Source: Sydney Trains Plan Room.

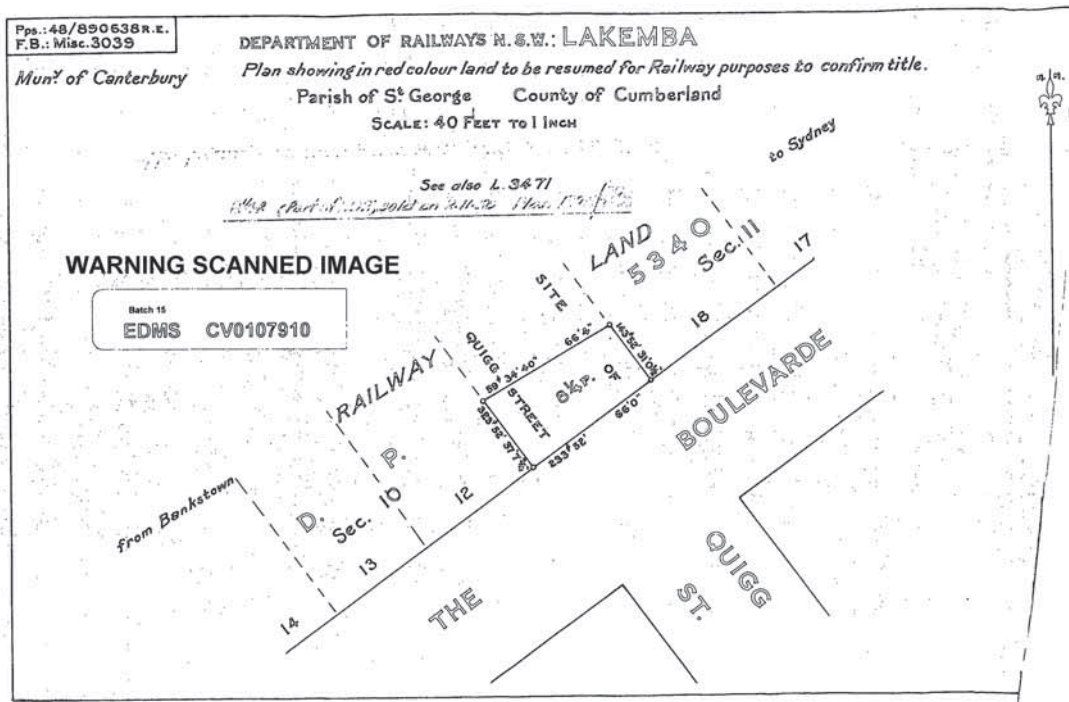


Figure 6-10: Haldon Street c1910 showing shop fronts. Source: Canterbury Bankstown Express.



Figure 6-11: Lakemba Station in c.1910. Source: Bankstown Library Collection via Pictorial Canterbury, items 020204(L) and 020215 (R).

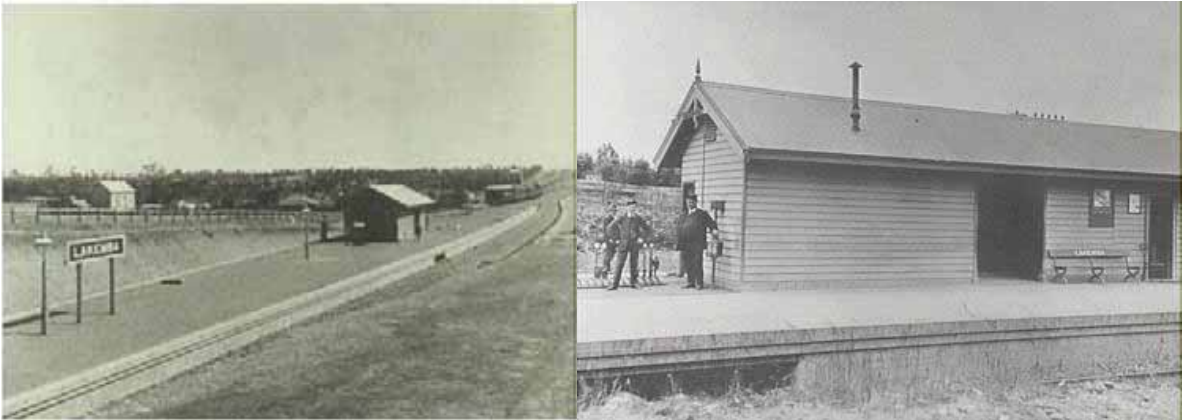


Figure 6-12: Lakemba Station c.1920. Source: National Library of Australia nla.pic-vn4543845-v.



Figure 6-13: Opening of the overhead bridge. Source: City of Canterbury Library Collection via Pictorial Canterbury, Image No. 30416.



Figure 6-14: Lakemba c.1920, looking south down Haldon Street from the junction with The Boulevarde. Source: Bankstown Library Collection via Pictorial Canterbury, item 020214.



Figure 6-15: Lakemba c.1932, concreting Haldon Street. Source: Bankstown Library Collection via Pictorial Canterbury, item 020201.



6.2.4 1919-present: Railway Station Upgrades

Shops and businesses continued to grow in the Lakemba area and, in 1922, the Chamber of Commerce was opened.

On 31 January 1921, a shunting neck was introduced to the west of the station allowing services to terminate at Lakemba. This was no longer required after electrification was introduced in 1926.

The station was modified for electrification in 1926 and a haunched beam footbridge with overhead timber-framed booking office erected (Figure 6-13).⁶⁰ The booking office was demolished after fire damage and replaced by a modern metal and glass structure on the footbridge in 2001 consisting of a new booking office, a central concourse and a concessionaire.

A war memorial, consisting of a sandstone block on a plinth located in a small lawn area, was opened outside the station entrance on 19 April 1953 by State Governor John Northcott (Figure 6-17).⁶¹

⁶⁰ State Heritage Inventory 'Lakemba Railway Station Group' Accessed 8 July 2016.

⁶¹ State Heritage Inventory 'Lakemba Railway Station Group' Accessed 8 July 2016.

Figure 6-16: 1943 aerial of Lakemba Station. Source: SIX maps.



Figure 6-17: War Memorial at Lakemba Railway Station Group. Source: RailCorp.



6.3 Archaeological Potential

6.3.1 Previous Archaeological Studies

Artefact Heritage 2017. *Sydney Metro City & Southwest: Sydenham to Bankstown, Non-Aboriginal Heritage Impact Assessment*. Prepared for Transport for NSW.

The technical paper considered the construction and operational impacts on listed heritage items and potential archaeological resources within the study area. It included identification of items and areas of heritage significance that would be materially affected by the project, with consideration of the potential impacts on the values, settings and integrity of heritage items and archaeological resources located within the project area. The paper outlined proposed mitigation and management measures in accordance with relevant best practice guidelines.

6.3.2 Land Use Summary

The historical development of the Lakemba Station Catchment and surrounds can be divided into the following phases of activity:

- Phase 1 (1788 – 1880s) early land grants: land clearance, grazing and farming activity
- Phase 2 (1880s – 1909) pioneer settlement: farming activity, homesteading, stables, tanneries, commercial nurseries, poultry farms and piggery
- Phase 3 (1909 – 1919) railway station and development: railway station constructed in 1909, suburban and commercial development follows
- Phase 4 (1919 – present) railway station upgrades: new brick station building replaces original timber structure, electrification of the line in 1926 and addition of footbridge and overhead booking office, continued use of railway.

6.3.3 Previous Impacts

Construction of the railway station and rail line in the twentieth century would have included a considerable amount of ground disturbance and excavation. Rail and station upgrades throughout the second half of the twentieth century would have resulted in high levels of ground impacts throughout the station catchment. These impacts include, but are not limited to, the following:

- Subsurface excavations to varying depths to grade and level land within the rail corridor and railway station
- Trenching within and adjacent to the rail corridor and railway station to accommodate services and utilities
- Vegetation clearance
- Subsurface excavations associated with subsequent upgrades to the rail corridor and railway station

6.3.4 Potential Archaeological Remains

Phase 1 (1788 – 1880s)

The suburb of Lakemba was originally located within John Wall's 1831 grant of 50 acres, called "Ashford". In August 1881 Ben Taylor leased "Ashford", before purchasing the property in 1890.

Potential archaeological remains associated with this phase would be representative of the initial land owners moderately sized grants which were used for agricultural and pastoral purposes. Archaeological remains could include features associated with low intensity land use such as timber getting, grazing and farming including tree boles, fence line postholes, field drains and isolated artefact scatters.

Phase 2 (1880s – 1909)

Taylor named his house "Lakemba," and by the 1920s it was a substantial two-storey residence to the south of the study area. It is possible the stables were demolished to make way for the construction of Railway Crescent/The Boulevarde in the early twentieth century. After the arrival of the railway "Lakemba" was located on the corner of Haldon Street and the newly formed Railway Crescent/The Boulevarde. "Lakemba" was demolished in the late 1920s or early 1930s to make room for shops.

Potential archaeological remains associated with this phase would relate to the establishment of the Taylor House (Lakemba), stables and potential outbuildings. Archaeological features would be associated with farming activities, and include domestic and agricultural structures, refuse pits and drains or culverts.

Phase 3 (1909 – 1919)

Lakemba Station was opened on 14 April 1909. The original station at Lakemba had an island platform with entrance steps from the Haldon Street overbridge. A small timber station building with a ticket and parcels office was at the Belmore end with a small signal frame on the Bankstown side of the building.

Potential archaeological remains of this phase would be associated with the first timber island platform and initial railway infrastructure, such as brick drainage pits, electrical conduits and pits, stanchion bases, timber footings and postholes, sleepers and rail track.

Phase 4 (1919 – present)

On 24 December 1919, a new brick platform building with cantilever awnings replaced the earlier timber structure and a signal box was opened at the Bankstown end of the station. On 31 January 1921, a shunting neck was introduced to the west of the station allowing services to terminate at Lakemba. This was no longer required after electrification was introduced in 1926.

The station was modified for electrification in 1926 and a haunched beam footbridge with overhead timber-framed booking office erected.⁶² The booking office was demolished after fire damage and replaced by a modern metal and glass structure on the footbridge in 2001 consisting of a new booking office, a central concourse and a concessionaire.

Potential archaeological remains of this phase would be associated with station and rail corridor upgrades such as utilities and drainage.

Based on the history of the site and disturbance that has occurred in the area, archaeological remains are likely to consist of post-railway structures and services, although potential remains of outbuildings associated with Lakemba may exist in the area.

⁶² State Heritage Inventory 'Lakemba Railway Station Group' Accessed 8 July 2016.

6.3.5 Summary of Archaeological Potential

Based on historical information, land use data and evidence of sub-surface impacts, a summary of the potential archaeological remains at Lakemba Station Catchment is presented in Table 6-1.

Table 6-1: Summary of potential archaeological remains for Lakemba Station Catchment

Phase	Likely archaeological remains	Potential
1 (1788-1880s)	<ul style="list-style-type: none"> Initial land owners associated with moderately sized grants used for agricultural and pastoral purposes Archaeological features associated with low intensity land use such as timber getting, grazing and farming include tree boles, fence line postholes, field drains and isolated artefact scatters. 	Nil-low
2 (1880s – 1909)	<ul style="list-style-type: none"> Establishment of the Taylor House (Lakemba), stables and potential outbuildings Archaeological features associated with farming activities, domestic and agricultural structures, refuse pits and drains or culverts 	Low
3 (1909 – 1919)	<ul style="list-style-type: none"> Archaeological remains associated with the first timber island platform and initial railway infrastructure such as brick drainage pits, electrical conduits and pits, stanchion bases, timber footings and postholes, sleepers and rail track. 	Low to moderate
4 (1919 – present)	<ul style="list-style-type: none"> Archaeological remains associated with station and rail corridor upgrades such as utilities and drainage 	Moderate

6.4 Archaeological Significance

The following assessment of significance is based on the guidelines discussed in Section 2.4 of this report.

Table 6-2: Assessment of archaeological significance for Lakemba Station Catchment

Criteria	Discussion
Research potential	<ul style="list-style-type: none"> It is unlikely that archaeological remains associated with Phase 1 and Phase 2 would be present within the site. Any remains would be highly truncated and would not have research potential. However, if intact or substantial remains associated with 'Lakemba' were found to exist, they may have the ability to yield information regarding early residential occupation in the area. Potential archaeological remains associated with Phase 3 former rail infrastructure would unlikely contribute additional information not available from other historical resources.
Association with individuals, events or groups of historical importance	<ul style="list-style-type: none"> The potential archaeological remains of 'Lakemba' are associated with Ben Taylor and his second wife Lucy Annie Johnston. Ben Taylor was a prominent local political figure, who was employed as an alderman, mayor and town clerk for the locality.
Aesthetic or technical significance	<ul style="list-style-type: none"> The potential archaeological remains are not likely to hold aesthetic value although exposed in situ archaeological remains may have distinctive/attractive visual qualities.

Criteria	Discussion
Ability to demonstrate the past through archaeological remains	<ul style="list-style-type: none"> The potential archaeological remains associated with structures or remains of 'Lakemba' have the ability to illustrate the historical development of the suburb of Lakemba. The potential archaeological remains of the 1909 Lakemba Station platform have the ability to demonstrate past development phases associated with Lakemba Railway Station and changes to the suburb over time.

6.4.1 Statement of Archaeological Significance

There is nil to low potential for archaeological remains associated with nineteenth century farming. Potential remains of structures or deposits associated with 'Lakemba' may have research and associative value. There is low to moderate potential for archaeological remains of former 'works'. Though the potential Phase 3 archaeological remains are associated with the historical development of the Bankstown rail line, remains associated with former rail infrastructure are unlikely to reach the threshold for local heritage significance. Remains associated with the 1919 Lakemba Station timber island platform have the potential to demonstrate early development phases within the suburb of Lakemba. Potential remains associated with 'Lakemba' and the Lakemba 1909 timber island platform may have local heritage significance.

A summary of the significance of potential archaeological resources is provided in Table 6-3 and Figure 6-18 below.

Table 6-3: Summary of areas with potential for significant archaeology for Lakemba Station Catchment

Phase	Archaeological resource	Potential	Significance
1 (1788-1880s)	<ul style="list-style-type: none"> Initial land owners associated with moderately sized grants used for agricultural and pastoral purposes Archaeological features associated with low intensity land use such as timber getting, grazing and farming include tree boles, fence line postholes, field drains and isolated artefact scatters. 	Nil-low	Unlikely to reach the threshold for local significance
2 (1880s – 1909)	<ul style="list-style-type: none"> Establishment of the Taylor House (Lakemba), stables and potential outbuildings Archaeological features associated with farming activities, domestic and agricultural structures, refuse pits and drains or culverts 	Low	Potentially local
3 (1909 – 1919)	<ul style="list-style-type: none"> Archaeological remains associated with the first timber island platform and initial railway infrastructure such as brick drainage pits, electrical conduits and pits, stanchion bases, timber footings and postholes, sleepers and rail track. 	Low to moderate	Potentially local
4 (1919 – present)	<ul style="list-style-type: none"> Archaeological remains associated with station and rail corridor upgrades such as utilities and drainage 	Moderate	Unlikely to reach the threshold for local significance

Figure 6-18: Archaeological potential for Lakemba Station Catchment



6.5 Archaeological Impacts

6.5.1 Proposed Works

Proposed impacts within the Lakemba Station Catchment would involve the construction of a new island platform within the rail corridor, construction of a station service building to the south of the rail corridor, construction of a retaining wall along the southern and northern boundary of the station, installation drainage pipes, single grate drainage pits, cess drain, gas pipelines and CSR utilities, addition of Metro South West running tracks (MSWs) and the construction of a security fence along the southern boundary of the rail corridor. These works would involve earthworks, trenching and subsurface ground disturbance.

6.5.2 Potential Archaeological Impacts

The proposed works would involve excavation of the current platform structure, and excavation for service building, retaining wall, new tracks, drainage pipes and pits, gas pipelines, CSR utilities and fence. There is a low potential for the potentially locally significant remains associated with 'Lakemba' to exist within the study area and be impacted by the proposal, and low to moderate potential for the potentially locally significant remains of the 1919 Lakemba island platform to be impacted.

6.6 Archaeological Management

The area within the Lakemba Station Catchment has been assessed as having nil to low potential to contain archaeological remains associated with Phase 1, low potential to contain archaeological remains of Phase 2 and low to moderate potential to contain archaeological remains associated with Phase 3 and 4 occupation of the site. Potential archaeological remains associated with Phase 2 and 3 may reach the threshold for local significance. Potential archaeological remains associated with Phase 4 are unlikely to reach the threshold for local significance.

As there is low to moderate potential for remains associated with Phase 3 occupation of the site to have local significance, it is recommended that an Archaeological Method Statement be prepared when construction impacts are finalised, which would detail whether archaeological monitoring or a program of test and salvage would be undertaken. Areas of potential for Phase 1, 2 and 4 would be covered by the Unexpected Finds Procedure.

The archaeological monitoring or test and salvage would be supervised by a suitably qualified Excavation Director with experience in managing locally significant archaeology.

The archaeological mitigation is summarised in Table 6-4.

Table 6-4: Summary of archaeological mitigation for Lakemba Station Catchment

Phase	Potential archaeology	Impact	Mitigation
1 (1788-1880s)	Nil to low potential for archaeological remains associated with the initial land owners associated with moderately sized grants used for agricultural and pastoral purposes. Archaeological features associated with low intensity land use such as timber getting, grazing and farming include tree boles, fence line postholes, field drains and isolated artefact scatters. Unlikely to reach the threshold for local significance.	Excavation for the construction of new station platforms, station service building, retaining wall, tracks, services, utilities, and fencing.	<ul style="list-style-type: none"> Unexpected Finds Procedure

Phase	Potential archaeology	Impact	Mitigation
2 (1880s – 1909)	Low potential for locally significant archaeological remains associated with the establishment of the Taylor House (Lakemba), stables and potential outbuildings. Archaeological features associated with farming activities, domestic and agricultural structures, refuse pits and drains or culverts.	Excavation for the construction of new station platforms, station service building, retaining wall, tracks, services, utilities, and fencing.	<ul style="list-style-type: none"> Unexpected Finds Procedure
3 (1909 – 1919)	Low to moderate potential for locally significant archaeological remains associated with the first timber island platform and initial railway infrastructure such as brick drainage pits, electrical conduits and pits, stanchion bases, timber footings and postholes, sleepers and rail track.	Excavation for the construction of new station platforms, station service building, retaining wall, tracks, services, utilities, and fencing.	<ul style="list-style-type: none"> AMS Monitoring or Test/Salvage
4 (1919 – present)	Moderate potential for archaeological remains associated with station and rail corridor upgrades such as utilities and drainage. Unlikely to reach the threshold for local significance.	Excavation for the construction of new station platforms, station service building, retaining wall, tracks, services, utilities, and fencing.	<ul style="list-style-type: none"> Unexpected Finds Procedure

6.6.1 Archaeological Methodology

The following archaeological methodology for Lakemba Station Catchment is based on impacts known at project approval stage. Explanation and further details regarding the archaeological process and methodologies identified below are provided in Section 7.0.

- An AMS would be prepared prior to construction works commencing at the Lakemba Station Catchment. This AMS would:
 - Review scope of works and construction methodology
 - Reassess potential for impacts to significant archaeological resources based on construction methodology
 - Review contamination reports and provide archaeological mitigation strategies for any remediation with the potential to impact significant archaeology
 - Outline how the archaeological program would be undertaken within the construction program
 - Provide a detailed archaeological mitigation for potential impacts in these areas, such as monitoring or test and salvage excavation
 - Consider opportunities to provide information regarding the archaeological findings to the public.
- Monitoring or test and salvage excavations would be undertaken to investigate and record archaeological remains related to Phase 3
- Unexpected finds procedure would apply to all other areas within Lakemba Station Catchment.
- The archaeological investigations would be supervised by a suitably qualified Excavation Director with experience in managing local significant archaeology.
- A preliminary results report would be written once archaeological fieldwork has been completed.

- Post-excavation analysis of fieldwork results, artefacts, samples and other archaeological data would be undertaken and included in a final archaeological investigation report.
- Significant archaeological findings would be considered for inclusion in heritage interpretation for the project.

6.6.2 Research Questions

The historical themes associated with Lakemba Station Catchment study area are presented in Table 4-5.

Table 6-5: Historical themes associated with Lakemba Station Catchment

Australian theme	NSW theme	Explanatory notes	Comments
3. Developing local, regional and national economies	Agriculture	Activities relating to the cultivation and rearing of plant and animal species, usually for commercial purposes, can include aquaculture	Evidence of land clearance, timber getting, grazing and farming activity could provide information about the development of agriculture in the area.
3. Developing local, regional and national economies	Pastoralism	Activities associated with the breeding, raising, processing and distribution of livestock for human use	Evidence of outbuildings associated with 'Lakemba' would provide information associated with early homesteads in the region, and activities associated with raising of livestock.
3. Developing local, regional and national economies	Transport	Activities associated with the moving of people and goods from one place to another, and systems for the provision of such movements	Lakemba Railway Station is associated with the provision of transport in developing local economies. Evidence of the development of the Bankstown line could provide information about the changing technologies in rail infrastructure. Evidence could include early rail infrastructure.
4. Building settlements, towns and cites	Towns, suburbs and villages	Activities associated with creating, planning and managing urban functions, landscapes and lifestyles in towns, suburbs and villages	Evidence of the early subdivision pattern of the study area could provide information about the development of the site, which would complement existing historical plans. It is possible that ephemeral evidence of fencelines and postholes, may exist.
4. Building settlements, towns and cites	Land tenure	Activities and processes for identifying forms of ownership and occupancy of land and water, both Aboriginal and non-Aboriginal	Evidence of the early subdivision pattern of the study area could provide information about the development of the site, which would complement existing historical plans. It is possible that ephemeral evidence of fencelines and postholes, may exist.
4. Building settlements, towns and cites	Utilities	Activities associated with the provision of services, especially on a communal basis	Evidence of early culverts, wells and cesspits can provide information about the provision of services and changes in technology, and often contain artefact deposits that have research potential. Early in-ground services including sandstone, brick and ceramic drains could be present in the study area.

Australian theme	NSW theme	Explanatory notes	Comments
4. Building settlements, towns and cites	Accommodation	Activities associated with the provision of accommodation, and particular types of accommodation – does not include architectural styles – use the theme of Creative Endeavour for such activities.	Evidence associated with 'Lakemba' would provide information about the early homesteads of the region.

The following research questions should be used to guide archaeological investigation.

- What evidence of early land clearing and land modification, if any, is present on the site?
- What evidence of the pre-station landscape exist within the site? Is there evidence of early subdivision?
- What evidence of 'Lakemba' remains within the study area? Is there evidence of the stables and outbuildings?
- If evidence associated with 'Lakemba' exists, how does this inform early homesteads in the region? Is there evidence of early farming activities?
- Can the archaeological remains of the outbuildings inform the internal and external layout of the buildings and the use of space?
- Can the archaeological remains inform changes in building technology, supply of materials and architectural preferences for the period? Do the remains provide evidence of class/status distinction?
- Does the artefact assemblage provide information on the daily life of the occupants of 'Lakemba'? Can gender and class/status be discerned from the archaeological record?
- Do any refuse deposits indicate a domestic setting? Do refuse deposits inform about daily eating habits?
- Is there any evidence of former platforms located below or within the present-day station platforms?
- What similar sites have been investigated within the local or broader context?
- What evidence of transport developments and changes in transport technology exist on the site?
- What evidence remains of early services, including early cisterns, tanks, wells, cesspits, in-ground services including sandstone, timber, brick and ceramic drains?
- Does this provide information about the provision of services and changes in technology?
- What physical evidence of former activities survives within the site?
- What is the integrity of the remains? Have they been truncated by later development or excavation work within the study area?
- What does the evidence indicate about the development of rail infrastructure and technology?
- How does the evidence inform the historical development of the Bankstown rail line and Lakemba Station?

- Interpret the results in terms of broader themes, posing questions that help to inform the Statement of Significance.

Additional research questions may be posed (and existing questions modified) as the archaeological excavation progresses and the extent and condition of the archaeological resource is revealed.

7.0 ARCHAEOLOGICAL METHODOLOGIES

The following provides explanation and details regarding the archaeological methodologies to be applied for the project.

7.1 Heritage Induction

Archaeological heritage would be included in the general project induction for all personnel. At a minimum this would include an overview of the project obligations and archaeological management zones, the role of the archaeological team, and the project unexpected finds procedure including typical potential archaeological remains encountered in railway contexts.

7.2 Archaeological Investigation

Archaeological investigation refers to active archaeological involvement in the construction program. It is undertaken to manage and mitigate archaeological impacts. It refers to:

- Monitoring and recording
- Test excavation
- Test/Salvage excavation
- Salvage excavation

Each site has specific, or a combination of, archaeological investigation methods appropriate to the level of impacts and construction methodology known at EIS stage.

7.2.1 Excavation Director

Archaeological investigations would be managed by a suitably qualified Primary and Secondary Excavation Directors with experience in the historical archaeology of Sydney.

- For sites with potential for locally significant remains the Excavation Director should meet the NSW Heritage Council criteria for locally significant archaeological sites. Archaeological investigations at the following sites would be directed by a locally significant qualified Excavation Director:
 - Bankstown Line rail corridor
 - Marrickville Station Catchment
 - Belmore Station Catchment
 - Lakemba Station Catchment
- For sites with potential for State significant archaeology the Primary Excavation Director should meet the NSW Heritage Council criteria for State significant archaeological sites. Archaeological investigations at the following sites would be directed by a State significant qualified Excavation Director:
 - Canterbury Station construction site and catchment

7.2.2 Specialists

Archaeological investigation teams would include a number of specialists in addition to experienced field archaeologists. These include an artefact specialist with experience in historical archaeological assemblages in NSW, qualified surveyor and archaeological illustrator, consultant historian for any additional research required, and other specialists as required.

7.3 Work Stage Specific Archaeological Method Statements

Information on the full extent of construction impacts was not available for the NAHIA and EIS stage of the project. A Work Stage Specific Archaeological Method Statement (AMS) is a brief document intended to clarify archaeological management requirements once the construction methodology is known. The AMS would adhere to the methodology provided in the approved AARD. An AMS would be prepared prior to construction works with potential to impact archaeological resources, as identified in this document. Staged construction programs may require more than one AMS to be prepared for each site. An AMS would include all archaeological management requirements including Aboriginal archaeology and its relationship to historical archaeology where relevant.

Detailed site-specific AMS requirements are provided in the Archaeological Management section in each site chapters of this report. In regard to historical archaeology the AMS preparation generally would include the following:

- Review available geotechnical data, and existing services surveys if required
- Review detailed design, scope of works, construction program and methodology
- Reassessment of potential for impacts to significant archaeological resources based on construction methodology and program
- Review of contamination reports and archaeological mitigation requirements during any remediation program
- Identify opportunity for in situ conservation of archaeological remains, such as altering construction methodology to avoid impacts, where possible
- Confirm appropriate archaeological investigation methodology to mitigate various impacts
- Provide additional archival information and archaeological research questions if required
- Provide environmental sampling and sieving strategies where appropriate
- Outline opportunities to provide information regarding the archaeological investigations to the public
- Provide details of Aboriginal archaeological investigation if required at a particular site where relevant

7.4 In Situ Conservation

In situ conservation is considered the most appropriate approach for highly intact State significant archaeological resources. State significant resources are likely at the Canterbury construction site. If avoidance or conservation in situ is not feasible then appropriate archaeological investigation would be undertaken.

7.5 Research Questions

Archaeological investigations would be undertaken within a research framework. The research framework is based on the potential significance of the archaeological resource. Research questions have been developed for sites where the construction activities have potential to impact significant archaeological remains and archaeological investigation is required.

The research questions are included in the site sections (Sections 2.0 to Section 6.0). These are not exhaustive and additional research questions could be developed depending on further archaeological research, archaeological findings, theoretical approaches, or particular research interests of the Excavation Director. Additional research questions could be prepared as part of the AMS for the work stage.

7.6 Test Excavation

Archaeological test excavation involves excavation of small sample trenches within a potential archaeological site. Testing is usually undertaken prior to construction to clarify the extent of the potential remains, archaeological significance, potential of a construction task to impact significant archaeology and inform requirements for further archaeological investigation, such as salvage excavation or monitoring.

7.7 Test/Salvage Excavation

Archaeological test/salvage refers to a staged archaeological program where testing is undertaken to refine the archaeological impacts and the extent of any salvage excavation. It generally applies to areas of moderate potential to impact locally significant archaeology and low-moderate or moderate potential to impact State significant archaeology.

Following the testing stage, trenches would be expanded to open areas for salvage excavation as required. Areas would only be handed back to the construction team once the Excavation Director has given clearance.

Test/salvage is generally undertaken following demolition and prior to excavation.

7.8 Salvage Excavation

Archaeological salvage generally refers to open-area archaeological excavation under the control of the Excavation Director. Salvage includes the archaeological excavation of the entire historical archaeological site. It is undertaken following demolition and prior to bulk excavation. Open area salvage excavation is a method of archaeological investigation in which the full horizontal extent of a site is investigated and cleared, whilst preserving the stratigraphic record.

It involves removal of modern fills and disturbance to the top of archaeological layers by machine under archaeological supervision. On the identification of any historical / archaeological fills, salvage excavation would commence. This investigation would be undertaken using hand tools, by a qualified archaeological team. The archaeological remains are then cleaned by hand, investigated (excavated) and recorded in detail by the archaeological team. In urban archaeological sites careful machine excavation may also be employed to assist the detailed archaeological excavation process.

Salvage excavation would be undertaken prior to construction impacts where there is moderate-high potential for archaeological remains, such as at Marrickville Station Catchment, and Canterbury Station Catchment and construction site. Salvage excavation would also be undertaken if

archaeological testing or monitoring at other sites identifies substantial and intact significant archaeological remains in areas of construction impact.

Construction works would not proceed until the salvage excavation is completed and the Excavation Director has provided clearance.

7.8.1 Manual excavation

Upon encountering archaeological material, mechanical excavation would cease and excavation using hand tools would be undertaken by archaeologists trained in on-site historical excavation methods, under the guidance of the Excavation Director.

Should any intact and deep structural features be encountered it may be necessary to remove any demolition or fill material within by mechanical excavation under the supervision of an archaeologist. Any material removed by excavator would be examined for artefacts by the archaeologists.

Structural remains of wells, cisterns and cesspits often contain large amounts of backfilled material or artefactual remains. If structures such as these are encountered they may be found to be partially constructed into the natural bedrock. If this is found to be the case then complete excavation of the fill may not be possible due to Occupational Health and Safety requirements. In this situation fill would be removed to a safe depth to allow for the recording of the structure and collection of a representative stratified sample of any fill or artefacts.

It is possible that further excavation or monitoring of particularly deep structures, such as wells, may be able to be undertaken by machine at a later date. As this would involve the removal of substantial amounts of soil, the archaeological program would need to have been finalised in the immediate vicinity to avoid disturbance to any archaeological relics or deposits.

The archaeological program also has the potential to encounter underfloor or occupation deposits that may have accumulated beneath floorboards. Deposits of this type are sensitive and are often investigated via a methodical system utilising grid squares, careful excavation with hand tools and sample sieving. This type of investigation can recover data that may be utilised in the analyses of interior spaces and in the identification of activities within those spaces.

In the event that unexpectedly intact archaeological remains, or significant remains not identified in the archaeological assessment, are encountered during the salvage program, the Heritage Division would be consulted.

7.9 Monitoring

Archaeological monitoring is where an archaeologist is in attendance and supervising construction excavation work with potential to expose or impact archaeological remains. Monitoring is generally undertaken where there is lower potential for significant archaeological remains and/or where minor excavation work is in an area of archaeological sensitivity.

Archaeological monitoring is required for works affecting Bankstown Line rail corridor for the WWII air raid shelter, Marrickville Station Catchment, Belmore Station Catchment, and Lakemba Station Catchment

Historical archaeological monitoring may also be undertaken in conjunction with Aboriginal heritage testing and salvage programs.

If archaeological remains are identified during archaeological monitoring, they would be recorded and assessed to determine if further investigation is required. Localised stoppages in the construction

work would be required to facilitate this process. Works would not recommence until the monitoring archaeologist has completed the recording and is satisfied that further investigation is not required.

If significant archaeological remains are identified, then further investigation such as salvage would be required prior to construction impacts.

7.10 Archaeological Recording

The archaeological archival recording would be undertaken in accordance with best practice and NSW Heritage Division guidelines. The level of recording detail would be in accordance with the significance of the archaeological remains. State significant remains would require more detailed recording, in particular photographic, survey and photogrammetry.

The recording methodology includes the following:

- A site datum would be established
- A standard context recording system would be employed. The locations, dimensions in plan and characteristics of all archaeological features and deposits would be recorded on a sequentially numbered register
- Significant archaeological structural remains, deposits and features would be recorded on context sheets
- Photographic recording of all phases of the work on site would be undertaken
- Digital photography, in RAW format, using photographic scales and photo boards where appropriate. A photographic record of all phases of the work on site would be undertaken.
- Detailed survey and/or measured drawings would be prepared and include location of remains within the overall site
- Significant artefacts would be collected by context for later analysis
- Building material, soil and pollen samples would be collected for further analysis (as appropriate)
- Registers of contexts, photos, samples and drawings would be kept.

7.11 Underfloor and Cesspit / Well Deposits

7.11.1 Underfloor Deposits

Underfloor deposits may be present within the Canterbury Station construction site. Underfloor deposits may provide particularly useful archaeological information in the context of domestic or industrial / manufacturing spaces.

Intact underfloor deposits would be excavated in a grid system, either 50 centimetre or 1 metre depending on extent of deposit. Excavation would be by context if stratigraphic layers are identifiable. If the deposit is homogenised excavation would proceed in 5 or 10 centimetre spits. Excavated material would be wet sieved, or dry sieved if possible.

7.11.2 Cesspit / Well Deposits

Accumulated material at the base of cesspits, wells and even drains can also contain archaeological material of high research value. Stratified well and cesspit backfills or deposits would be excavated by context. Homogenised deposits and fills would be excavated in spits (10 or 20 centimetre spits for example). The material would be sample sieved or 100% sieved depending on the significance of the deposit. Excavated material would be wet sieved, or dry sieved if possible.

It is noted that the excavation of wells may pose safety risks due to the depths required. Normal archaeological excavation techniques may need to be altered to include staged mechanical excavation and benching.

7.11.3 Sieving Strategy

The range and percentage of archaeological material collected from sieving would be in accordance with a sieving strategy developed by the Excavation Director and artefact specialist. The strategy would consider research agendas and potential interpretation outcomes.

7.12 Environmental Samples

Archaeological remains such as primary fills or accumulated deposits in underfloor spaces, wells, cesspits and drains could contain ecofacts (fossil pollens, plant seeds etc) of high research potential regarding environmental conditions, diet and disease.

7.12.1 Sampling Strategy

Salvage excavations would include an environmental sampling strategy developed by the Excavation Director in consultation with a geomorphologist and palynologist, and other relevant specialists. Retention of environmental samples should focus on those which would contribute to research questions and for archiving of significance deposits.

7.13 Artefacts

Artefacts are likely to be uncovered during excavations and are an integral part of archaeological investigations and datasets. The archaeological team would include an artefact specialist to advise the excavation team on artefact retention strategies.

Artefacts from significant and *in situ* contexts would be collected and recorded (by context). Retrieval of artefacts should focus on those whose analysis would contribute to research agendas, or would be representative of the site, which warrant archiving or consideration for interpretative displays or similar heritage interpretation.

Retention of all artefacts from archaeological investigations in urban contexts is neither possible nor expected in current historical archaeological practice. Large amounts of fill and disturbed material is common on urban sites. Whilst these layers can provide important archaeological information regarding site formation and phasing, the material often contains artefacts of unknown provenance and limited research value. Potentially significant deposits such as occupation-related material within former structures could contain numerous artefacts of varying levels of significance or value.

Should diagnostic or significant artefacts be present within the fill layers (out-of-context), a sample would be retained to inform the research agenda, consideration in interpretation and as part of the archaeological record.

Retained artefacts would be cleaned, processed, catalogued, and analysed by an archaeologist experienced in historical artefact assemblages. Artefact analysis would include production of a database in accordance with best practice archaeological data recording. The resulting information would be included in the final excavation report.

Artefacts recovered from the archaeological investigations would be the property of TfNSW and would be securely stored by them following completion of post-excavation analysis.

7.14 Unexpected Finds Procedure

Unexpected archaeological finds would be managed under the project Unexpected Finds Procedure.

7.15 Human Skeletal Remains

If suspected human skeletal remains were uncovered at any time during earthworks for the project, the following actions would need to be followed:

- Immediately cease all excavation activity
- Notify NSW Police and NSW Coroner's Office
- Consult a forensic anthropologist to determine the nature of the remains
- Notify Office of Environment and Heritage via the Environment Line on 131 555 to provide details of the remains and their location
- Ensure no recommencement of excavation activity unless authorised in writing by OEH.

If human skeletal remains are identified, and determined to be historical, any archaeological investigation would be undertaken in accordance with the Skeletal Remains: Guidelines for Management of Human Skeletal Remains (Heritage Council of NSW, 1998).

Human skeletal remains would be managed in accordance with the Sydney Metro Exhumation Policy.

7.16 Aboriginal Heritage

Archaeological management for historical archaeology would be completed where necessary in combination with Aboriginal archaeological management requirements. The requirements outlined in the Aboriginal Cultural Heritage Assessment Report (ACHAR) would be considered during preparation of the AMS and prior to any historical archaeological investigation works.

7.17 Contaminated Materials

Due to the potential for contaminants across the study area, archaeological excavation would also be undertaken in accordance with the specified WH&S protocols established for the site, prior to the commencement of works on site. Should the discovery of contaminants on site likely result in the potential harm to archaeological staff working on site, there may be a requirement to deviate from the proposed archaeological methodology, in order to ensure the health and safety of onsite staff. This may include the use of protective clothing, face masks, and specified gloves, additional washing protocols, through to the need to cease hand excavation on site.

Should the requirement to employ mechanical excavation rather than hand excavation arise, archival recording of archaeological material would need to be taken in the form of photographic, and possibly

3d scanning, from a safe distance (as specified in the WH&S requirements of the remediation specialists).

7.18 Preliminary Results Reporting

Interim or preliminary archaeological findings reports would be prepared following completion of archaeological investigation stages. This report would outline the main archaeological findings, post-excavation and analysis requirements, and would also include any further archaeological investigation requirements for a particular site or future construction task. The preliminary results report would also identify if the findings should be considered for public interpretation.

7.19 Post-Excavation Analysis and Final Report

Following the completion of on-site archaeological works, post-excavation analysis of the findings would be undertaken. This would include artefact analysis, environmental and building material sample analysis, stratigraphic reporting and production of Harris Matrices, production of detailed site survey plans, illustrations and interpretative drawings, generation of catalogues, data records and site registers.

A final excavation report detailing the archaeological program and results would be prepared. The report would be prepared in accordance with the standard conditions of archaeological permits issued under the Heritage Act. It would include the results of the archaeological excavation and analysis, additional historical information if needed, photographs, illustrations and plans, catalogue and analysis of artefacts, and also respond to the research questions. The report would also include a reassessment of archaeological significance based on the investigation results. Opportunities for archaeological interpretation would also be included in the final report.

7.20 Public Interpretation

There is potential for significant archaeological remains within the project sites, in particular Marrickville Station Catchment, and Canterbury Station Catchment and construction site. There is opportunity to interpret the archaeology and engage the public with the significance and stories of Sydney's past.

Significant findings from the archaeological investigation program would be included in heritage interpretation for the project (mitigation measure NAH1). Preliminary results reporting and final reporting would identify significant findings which should be considered as part of heritage interpretation.

There may also be opportunity for public engagement such as open days or media releases during archaeological investigations. Information regarding State significant archaeological remains, such as at Canterbury Station Catchment and construction site, would be provided to the public. This could include hoarding signage, pamphlets, media releases, information on the project website, social media and blog content during the excavation process.

8.0 ARCHAEOLOGICAL MANAGEMENT SUMMARY

8.1 Introduction

Detailed archaeological management strategies have been prepared for each project site which was assessed to have archaeological potential in the NAHIA based on the design and understanding of potential impacts submitted with the EIS. These are presented in Sections 2.0 to 6.0 of this report. This section provides a summary of the archaeological management requirements (Section 8.2) and provides management zone mapping (Section 8.3) for each site.

8.1.1 Archaeological Management Zones

The sites have been divided into archaeological management zones based on archaeological potential and current construction impacts (as submitted with the EIS). Archaeological management zone mapping (Section 8.3) is based on a traffic light code:

- **Red** (Zone 1): Direct impact to significant archaeology. Archaeological investigation required prior to any construction impacts (bulk excavation etc.). Prepare Archaeological Method Statement (AMS) once construction methodology and impacts are known.
- **Amber** (Zone 2): Potential impact to significant archaeology. Prepare Archaeological Method Statement (AMS) once construction methodology and impacts are known. Archaeological investigation is likely required
- **Green** (Zone 3): Unlikely to contain significant archaeology. Construction to proceed with Unexpected Finds Procedure as nil-low potential for significant archaeological remains.

8.2 Summary of Site Specific Archaeological Management

8.2.1 Bankstown Line

The unexpected finds procedure would be an appropriate archaeological management measure for the Bankstown Line railway corridor. The following provides a summary of the archaeological management requirements (Table 8-1). Further detail is provided in Section 2.6.

Table 8-1: Summary of archaeological management requirements for the Bankstown Line

Phase	Potential archaeology	Impact	Management zone	Mitigation
1 (1788 - 1890s)	<p>Nil to low potential for archaeological features associated with land clearance such as tree boles, and farming activities such as fence line postholes, former shed postholes, field drains, isolated artefact scatters. May reach threshold for local significance.</p>	<p>Excavation for station platforms, gas pipelines and CSR utility installation and trenching. Installation of drainage pipes, single and multi-grate drainage pits, retaining walls, noise walls, security and segregation fences, attenuation basins, and traction substations. Clearance for construction sites, and vegetation removal.</p>	3	<ul style="list-style-type: none"> Unexpected Finds Procedure
2 (1890s – present)	<p>Low potential for archaeological remains of former rail related buildings such as signalling boxes and huts such as brick and concrete footings.</p> <p>Low potential for archaeological remains associated with the early infrastructure such as culverts and drains (brick, stone or concrete), ceramic service pipes, brick drainage pits, electrical conduits and pits, sleepers, ballast, signalling equipment, rail point technology, and rail track. There is potential for artefact remains to be located within drains and culverts. Unlikely to reach the threshold for local significance.</p>	<p>Excavation for station platforms, gas pipelines and CSR utility installation and trenching. Installation of drainage pipes, single and multi-grate drainage pits, retaining walls, noise walls, security and segregation fences, attenuation basins, and traction substations. Clearance for construction sites, and vegetation removal.</p>	3	<ul style="list-style-type: none"> Unexpected Finds Procedure

8.2.2 Marrickville Station Catchment

Archaeological impact mitigation is required, including salvage excavations and archaeological monitoring during the construction program, for Marrickville Station Catchment. The following provides a summary of the archaeological management requirements (Table 8-2 and Figure 8-1). Further detail is provided in Section 3.6.

Table 8-2: Summary of archaeological management requirements at Marrickville Station Catchment

Phase	Potential archaeology	Impact	Management zone	Mitigation
1 (1788-1850s)	Nil to low potential for archaeological features associated with land clearance such as tree boles, evidence of dairy farming and market gardening including fence line postholes, former shed postholes, brick or paved yard surfaces, field drains, isolated artefact scatters. Unlikely to reach the threshold for local significance.	Gas pipeline and CSR utility installation and trenching, the installation of drainage pipes, single grate drainage pits, gas pipelines and CSR utilities. Construction of noise wall.	3	<ul style="list-style-type: none">Unexpected Finds Procedure
2 (1850s – 1890s)	Nil to low potential for archaeological features associated with farming such as fence or shed postholes, field drains and isolated artefacts, drains or culverts associated with the former creek. Unlikely to reach the threshold for local significance.	Gas pipeline and CSR utility installation and trenching, the installation of drainage pipes, single grate drainage pits, gas pipelines and CSR utilities. Construction of noise wall.	3	<ul style="list-style-type: none">Unexpected Finds Procedure

Phase	Potential archaeology	Impact	Management zone	Mitigation
3 (1890s – 1920s)	Moderate to high potential for potentially local significant archaeological remains associated with the early phase of railway infrastructure such as culverts, ceramic service pits, brick drainage pits, electrical conduits and pits, stanchion bases, sleepers and rail track.			
	Identified remains of original stone copings, earlier alignment of platforms, footscrapers, buried services, original lever set, footings of former platform stairs, platform brick dwarf walls, and building footings.	Construction of station platforms, gas pipeline and CSR utility installation and trenching, the installation of drainage pipes, single grate drainage pits, gas pipelines and CSR utilities, the removal and replacement of the Illawarra Road overbridge, and construction of noise wall.	1	<ul style="list-style-type: none"> AMS Salvage excavations
	Moderate potential for footings of former platform canopies Low potential for former level crossing at the current Illawarra Road overbridge. Moderate potential for archaeological remains of the former Earlwood tram line that ran across Illawarra Road overbridge such as tram tracks and associated infrastructure			
	Low potential for footings of former coal loading and storage facilities. Low potential for archaeological remains of the former sleeper bridge such as bridge footings.	Construction of gas pipeline and CSR utility installation and trenching, the installation of drainage pipes, single grate drainage pits, gas pipelines and CSR utilities.	3	<ul style="list-style-type: none"> Unexpected Finds Procedure

Phase	Potential archaeology	Impact	Management zone	Mitigation
4 (1930s – present)	Moderate to high potential for archaeological remains associated with upgrades such as utilities and drainage, footings of signalling huts and boxes, and footings associated with the commuter car parking structure and the Illawarra Road footbridge. Unlikely to reach the threshold for local significance.	Construction of station platforms, gas pipeline and CSR utility installation and trenching, the installation of drainage pipes, single grate drainage pits, gas pipelines and CSR utilities, the removal and replacement of the Illawarra Road overbridge, and construction of noise wall.	3	<ul style="list-style-type: none"> Unexpected Finds Procedure
	Moderate potential for locally significant archaeological remains associated with the WWII air raid shelter such as the cut of the pit, sandbags, iron, concrete sandbags, roofing, drainage infrastructure, and associated artefacts.	Excavation for utilities and drainage and clearance of vegetation	2	<ul style="list-style-type: none"> AMS Test/Salvage Excavations

8.2.3 Canterbury Station Catchment and construction site

Archaeological impact mitigation is required, including archaeological salvage during the construction program, for Canterbury Station Catchment and construction site. The following provides a summary of the archaeological management requirements (Table 8-3 and Figure 8-2). Further detail is provided in Section 4.6.

Table 8-3: Summary of archaeological management requirements for Canterbury Station Catchment and construction site

Phase	Potential archaeology	Impact	Management zone	Mitigation
1 (1788-1841)	Nil to low potential for archaeological features associated with land clearance such as tree boles, evidence of estate farming activities such as fence line postholes, former shed postholes, field drains, isolated artefact scatters. Unlikely to reach the threshold for local significance	Excavation for the construction of new station platforms, station service building, retaining wall, tracks, services, utilities, and fencing. Clearing and grubbing of the construction site.	3	<ul style="list-style-type: none"> Unexpected Finds Procedure
2 (1841 – 1855)	Moderate to high potential for potentially State significant archaeological remains of outbuildings, landscape modifications, fence lines, drains and other structural remains associated with the Australasian Sugar Company works. Archaeological remains of the outbuildings such as footings, timber slabs remnants, underfloor deposits, post holes, artefact deposits, cess pits, wells, cisterns, fencelines, and yard surfaces. Evidence of small scale mining activities, archaeological evidence of farming includes fence line postholes, former shed postholes, brick or paved yard surfaces, field drains, isolated artefact scatters. Archaeological remains of early residential cottages including wells, cisterns and refuse pits.	Excavation for retaining walls, tracks, services, utilities, and fencing. Clearing and grubbing of the construction site.	1	<ul style="list-style-type: none"> AMS Salvage excavations
3 (1855 – 1895)	Moderate to high potential for potentially locally significant archaeological remains of early residential cottages including wells, cisterns and refuse pits. Archaeological remains of outbuildings, landscape modifications, fence lines, drains and other structural remains associated with the Blackett and Co Canterbury Engineering Works.	Excavation for retaining walls, tracks, services, utilities, and fencing. Clearing and grubbing of the construction site.	1	<ul style="list-style-type: none"> AMS Salvage excavations

Phase	Potential archaeology	Impact	Management zone	Mitigation
4 (1895-1943)	<p>Moderate potential for locally significant archaeological remains and evidence of early railway construction including rails, refuse pits, drains and timber sleepers. Archaeological remains of former platform structures. Archaeological remains of the former race platform and retaining wall.</p> <p>Archaeological remains of the storage sidings for the Canterbury Racecourse special trains and the shunting of the local goods sidings. Archaeological remains of early infrastructure such as culverts, tanks, drains (brick, stone or concrete), electrical conduits and pits, sleepers, signalling equipment and rail track. Archaeological remains associated with the early phase of minor railway buildings (such as toilets) prior to track realignment such as postholes, brick footings, former floor surfaces, and early infrastructure such as ceramic service pipes, brick drainage pits, electrical conduits and pits, stanchion bases, sleepers and rail track. It is unlikely that artefact-bearing deposits associated with the early station accumulated or survived subsequent development and upgrades.</p>	<p>Excavation for the construction of new station platforms, station service building, retaining wall, tracks, services, utilities, and fencing.</p>	2	<ul style="list-style-type: none"> AMS Test/Salvage Excavations
5 (1943-present)	<p>Moderate to high potential for archaeological remains associated with upgrades such as utilities and drainage. Unlikely to reach the threshold for local significance.</p>	<p>Excavation for the construction of new station platforms, station service building, retaining wall, tracks, services, utilities, and fencing.</p>	3	<ul style="list-style-type: none"> Unexpected Finds Procedure

8.2.4 Belmore Station Catchment

Archaeological impact mitigation is required, including archaeological monitoring or test and salvage during the construction program, for Belmore Station Catchment. The following provides a summary of the archaeological management requirements (Table 8-4 and Figure 8-3). Further detail is provided in Section 5.6.

Table 8-4: Summary of archaeological management requirements for Belmore Station Catchment

Phase	Potential archaeology	Impact	Management zone	Mitigation
1 (1788-1880s)	Nil to low potential for archaeological features associated with low intensity land use such as grazing and farming include tree boles, fence line postholes, field drains and isolated artefact scatters. Unlikely to reach the threshold for local significance.	Excavation for the construction of new station platforms, station service building, retaining wall, tracks, services, utilities, and fencing.	3	<ul style="list-style-type: none">Unexpected Finds Procedure

Phase	Potential archaeology	Impact	Management zone	Mitigation
2 (1880 – 1920s)	<p>Low to moderate potential for archaeological features associated with continued grazing and farming include fence line and shed postholes, field drains, isolated artefact scatters and drains or culverts.</p> <p>Archaeological remains of early infrastructure such as ceramic service pipes, brick drainage pits, electrical conduits and pits, stanchion bases, sleepers and rail track. Archaeological remains associated with the railway station goods shed and goods platform occupying land to the near today's Wortley Avenue and a goods platform to the south near Bridge Road, such as rail tracks, timber sleepers, footings of the platform, engine pit, and other rail infrastructure. Archaeological remains located on the 1925 plan such as converter room, coal bin, ash pit, lamp shed, auto box, land agent, boot maker, toilets, and brick culvert. Archaeological remains could include footings, cuts of the pit, drains, ceramic service pipes, and the brick culvert. Archaeological remains of former platform structures.</p> <p>Archaeological remains located within the platform structure such as footings of former footbridge, fences, and footings of the building that was originally located under the stairs. Archaeological remains of tank located to the north of the station.</p> <p>Archaeological remains of the early goods shed and siding have the potential to reach local significance.</p>	<p>Excavation for the construction of new station platforms, station service building, retaining wall, tracks, services, utilities, and fencing.</p>	2	<ul style="list-style-type: none"> AMS Monitoring or Test/Salvage Excavations
3 (1930s – present)	<p>Moderate potential for archaeological remains associated with upgrades such as utilities and drainage. Unlikely to reach the threshold for local significance.</p>	<p>Excavation for the construction of new station platforms, station service building, retaining wall, tracks, services, utilities, and fencing.</p>	3	<ul style="list-style-type: none"> Unexpected Finds Procedure

8.2.5 Lakemba Station Catchment

Archaeological impact mitigation is required, including archaeological monitoring or test and salvage during the construction program, for Lakemba Station Catchment. The following provides a summary of the archaeological management requirements (Table 8-5 and Figure 8-4). Further detail is provided in Section 6.6.

Table 8-5: Summary of archaeological management requirements for Lakemba Station Catchment

Phase	Potential archaeology	Impact	Management zone	Mitigation
1 (1788-1880s)	Nil to low potential for archaeological remains associated with the initial land owners associated with moderately sized grants used for agricultural and pastoral purposes. Archaeological features associated with low intensity land use such as timber getting, grazing and farming include tree boles, fence line postholes, field drains and isolated artefact scatters. Unlikely to reach the threshold for local significance.	Excavation for the construction of new station platforms, station service building, retaining wall, tracks, services, utilities, and fencing.	3	<ul style="list-style-type: none"> Unexpected Finds Procedure
2 (1880s – 1909)	Low potential for locally significant archaeological remains associated with the establishment of the Taylor House (Lakemba), stables and potential outbuildings. Archaeological features associated with farming activities, domestic and agricultural structures, refuse pits and drains or culverts.	Excavation for the construction of new station platforms, station service building, retaining wall, tracks, services, utilities, and fencing.	3	<ul style="list-style-type: none"> Unexpected Finds Procedure
3 (1909 – 1919)	Low to moderate potential for locally significant archaeological remains associated with the first timber island platform and initial railway infrastructure such as brick drainage pits, electrical conduits and pits, stanchion bases, timber footings and postholes, sleepers and rail track.	Excavation for the construction of new station platforms, station service building, retaining wall, tracks, services, utilities, and fencing.	2	<ul style="list-style-type: none"> AMS Monitoring or Test/Salvage
4 (1919 – present)	Moderate potential for archaeological remains associated with station and rail corridor upgrades such as utilities and drainage. Unlikely to reach the threshold for local significance.	Excavation for the construction of new station platforms, station service building, retaining wall, tracks, services, utilities, and fencing.	3	<ul style="list-style-type: none"> Unexpected Finds Procedure

8.3 Archaeological Management Zone Mapping

Figure 8-1: Marrickville Station Catchment archaeological management zones

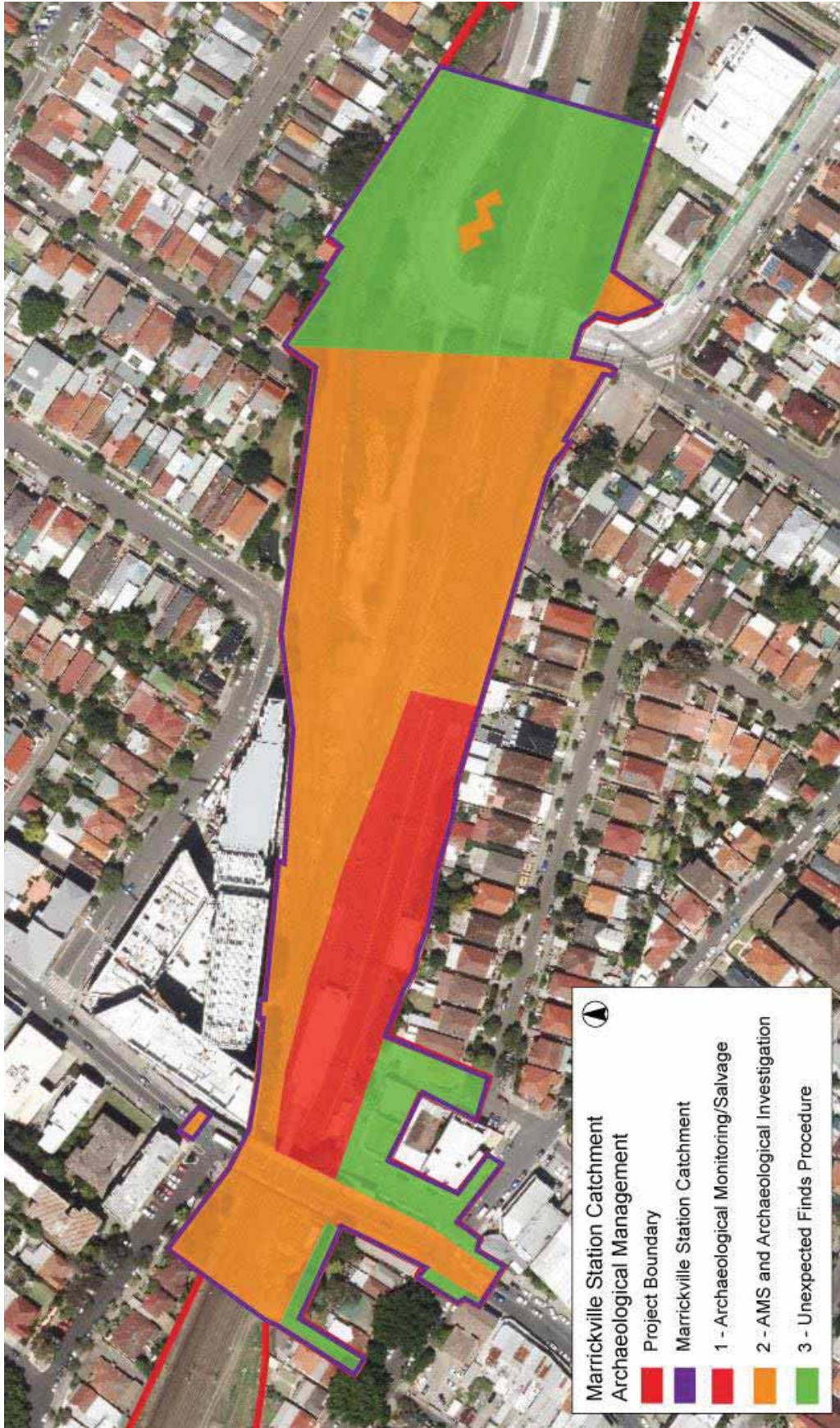


Figure 8-2: Canterbury Station Catchment and construction site archaeological management zones

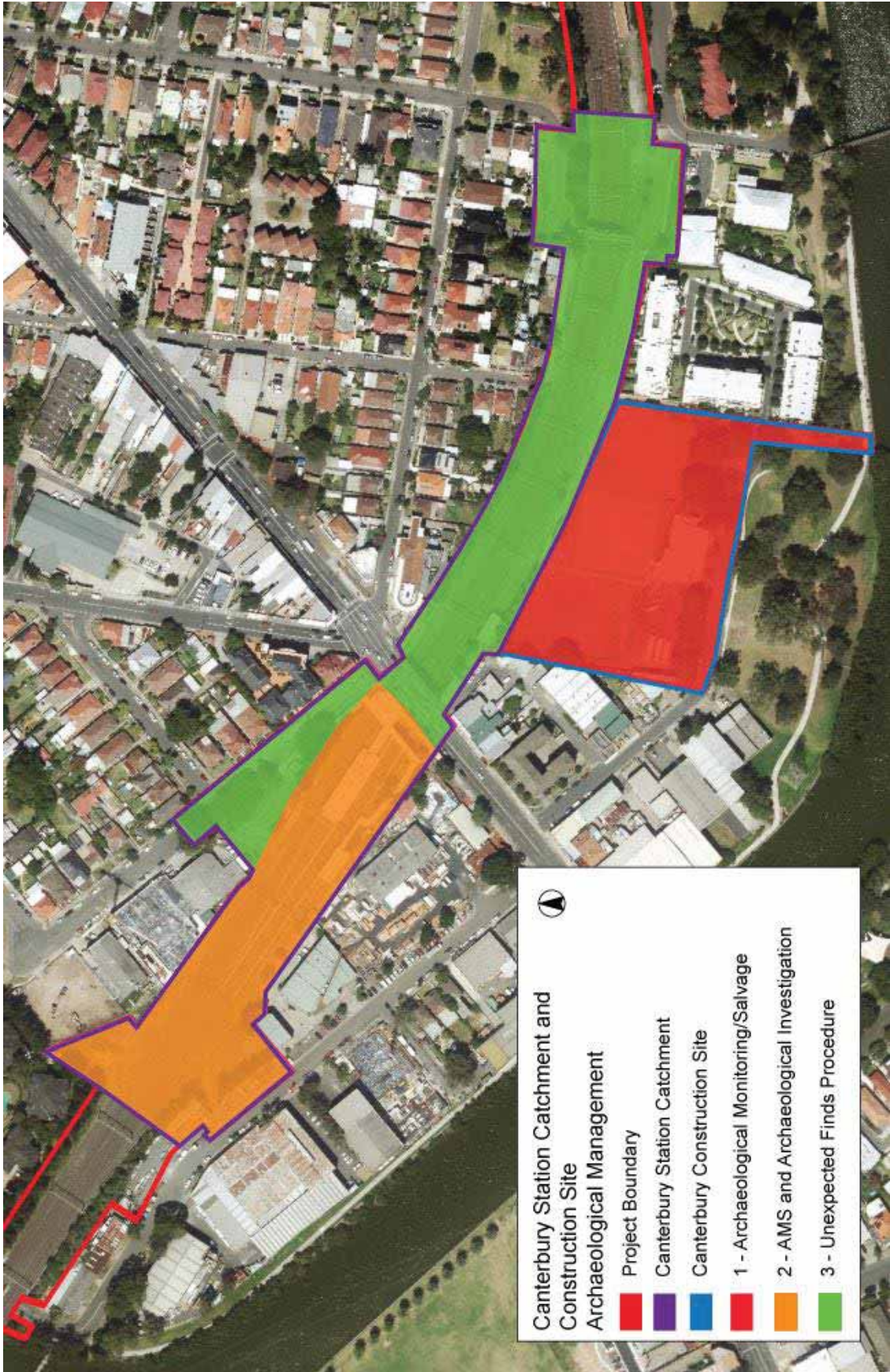


Figure 8-3 Belmore Station Catchment archaeological management zones

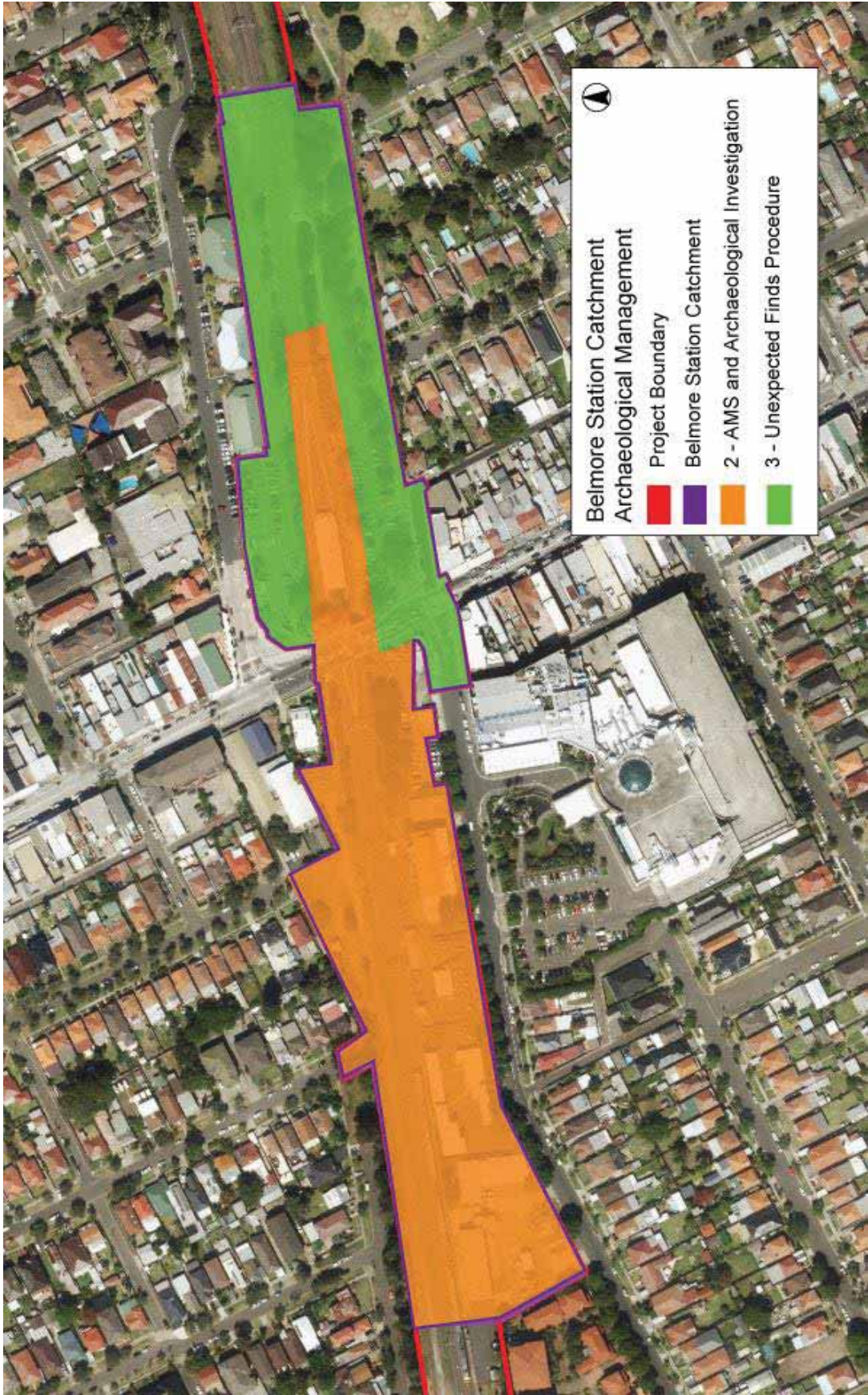
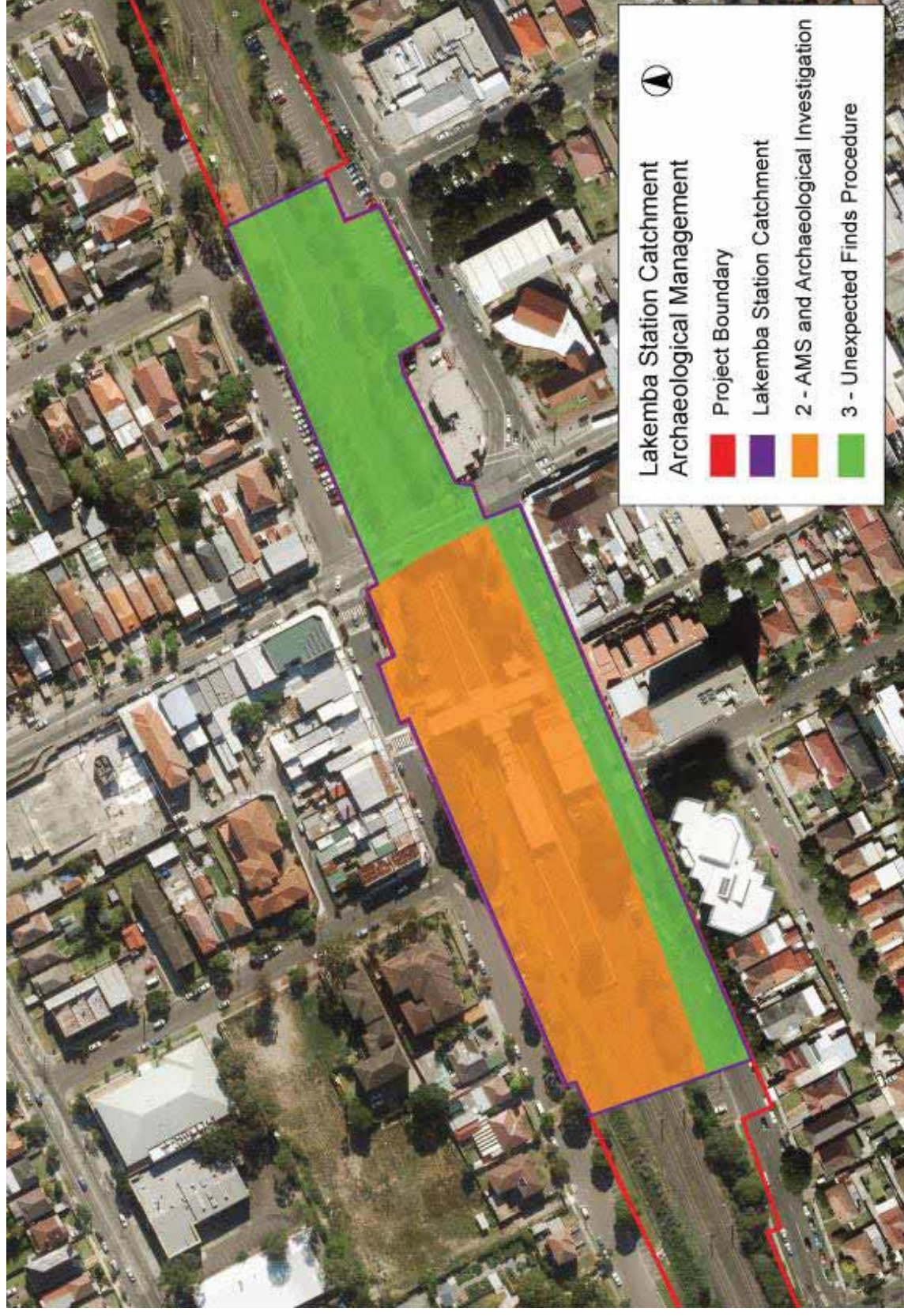


Figure 8-4: Lakemba Station Catchment archaeological management zones



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SYDENHAM TO BANKSTOWN

SUBMISSIONS AND PREFERRED INFRASTRUCTURE REPORT

> Appendix I – Archaeological assessment and research design report