



City & Southwest

SYDENHAM TO BANKSTOWN
**SUBMISSIONS
AND PREFERRED
INFRASTRUCTURE
REPORT**

> Volume 3 - Appendices



Volume 3 – Appendices

Volume 3

Appendix G - Landscape and visual impact assessment

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City & Southwest

SYDENHAM TO BANKSTOWN

SUBMISSIONS AND PREFERRED INFRASTRUCTURE REPORT

> Appendix G – Landscape and visual
impact assessment





Sydney Metro, City & Southwest

Sydenham to Bankstown Upgrade

Submissions and Preferred Infrastructure Report

Landscape and Visual Impact Assessment

June 2018

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1. Introduction

1.1. Approach and structure

This report considers the landscape and visual impacts of the preferred project. It identifies the landscape and visual impacts of the exhibited project and the changes in landscape and visual impact resulting from the preferred project.

This includes the re-assessment of landscapes and views previously assessed for the exhibited project, which require reconsideration in light of the changes incorporated into the preferred project.

This report includes an assessment of the landscape impact, daytime visual impact, night time visual impact and a summary of impact for each station and the corridor works. Bankstown Station has not been included in this assessment as there would be no changes from the exhibited project at this station.

1.2. Methodology

The methodology for the assessment of landscape and visual impacts is detailed in the Environmental Impact Statement (August 2017), Technical Paper 7: Landscape and Visual Impact Assessment, at pages 20-25. It includes the following key steps:

- identification of the existing environment
- identification of the landscape and visual sensitivity of key receptors
- an assessment of landscape impact during construction and operation
- an assessment of the daytime visual impact during construction and operation
- a general assessment of night time visual impact during construction and operation
- identification of mitigation measures.

The components of the preferred project during construction and operations, are described in Appendix B of the Submissions and Preferred Infrastructure Report.

2. Marrickville Station

2.1. Landscape character

2.1.1. Landscape character impacts of the exhibited project

A **minor adverse** landscape impact during construction was identified for the Marrickville Station precinct, given an expected reduction in precinct accessibility and legibility with the diversion of passengers around construction works, and a reduced level of comfort due to the removal of trees.

This station has recently been upgraded by a Transport Access Program (TAP) project. However, due to the changes proposed for the exhibited project, a further **minor beneficial** landscape impact was identified during operation. This was due to further improvements to station accessibility including the provision of a new ramp from Illawarra Road and upgrades to the Station Street entrance including a widened plaza, 'shared zone' and interchange.

2.1.2. Landscape character impacts of the preferred project

The preferred project would require less construction activity at the Marrickville Station and station precinct. The re-leveling of the platforms would be the main source of impact for users of the station, reducing accessibility and legibility with the station during these works. There would be minor works undertaken in the precinct and works to construct the services building would have a limited impact on access to the station and transport interchange facilities. Trees within the precinct, including along the southern rail corridor boundary, on the corner of Leofrene Avenue and beside the Station Street entrance would be retained. Overall, due to the works required within the station there would be a noticeable reduction in the landscape quality and functioning of this precinct, which is of local sensitivity. This would result in a **minor adverse** landscape impact during construction.

During operation, the preferred project would maintain the quality of the existing interchange facilities and station access. The new services building would be located within the corridor and not impact access or use of the station or precinct. Overall, this would result in no perceived change in the landscape quality and functioning of this precinct, which is of local sensitivity, and a **negligible** landscape impact during operation.

2.1.3. Change to landscape character impacts

There would be no change to the landscape impact during construction, which would remain as **minor adverse**. This impact would, however, be experienced for a shorter duration and over a reduced area.

During operation, the **minor beneficial** landscape impacts identified for the exhibited project would be reduced to a **negligible** landscape impact as the degree of intervention at the station and across the precinct is lessened. The accessibility and legibility of this station has been improved through the recent TAP project and would remain unaffected by the preferred project.

Table 2-1 includes a summary of these landscape character impacts. Any assessments that would increase or decrease from the exhibited project have been highlighted in bold.

Table 2-1 Marrickville Station – landscape character impacts

Location	Sensitivity rating	Construction impact		Operation impact	
		Exhibited project	Preferred project	Exhibited project	Preferred project
Marrickville Station precinct	Local	Minor adverse	Minor adverse	Minor beneficial	Negligible

2.2. Daytime visual amenity

2.2.1. Daytime visual amenity impacts of the exhibited project

The following viewpoints were selected as representative of views to the Marrickville Station site:

- view south-east from Illawarra Road
- view south-west from O’Hara Street playground
- view north from Riverdale Avenue
- view north from Schwebel Street
- view north from Station Street.

During construction, the assessment of the exhibited project identified that a potential **minor adverse** visual impact would be experienced for views from surrounding residential areas including Victoria Road, Schwebel and Station streets in the south, and from the O’Hara Street playground in the north, due to the extent of works in Station Street and at the proposed location of the services building. There was also a potential **minor adverse** visual impact from the medium rise apartments on Byrnes Street in the north which overlook the station and site of the proposed services building.

The assessment of the exhibited project also identified a **moderate adverse** visual impact in views from Illawarra Road to the project during construction, given the increased sensitivity of Illawarra Road as a more frequently used route to access the station, and views from the Marrickville commercial precinct, combined with the extent of work proposed at the station entry.

During operation, a **negligible** visual impact was identified in all views to the station owing to the improved finishes and the creation of a plaza and ‘shared zone’ in Station Street, and consistency of the proposed works with the character of the existing station.

2.2.2. Daytime visual amenity impacts of the preferred project

There would not be any alterations to the station entry and therefore in views from Illawarra Road, there would be no perceived change in the amenity of these views which are of local sensitivity and a **negligible** visual impact. (Refer to Table 2-2, Viewpoint 1).

Views from elevated residential areas to the north of the station, including the apartments on Byrnes Street and houses on O’Hara Street would have some visibility of construction as the platform works are undertaken within the station. These areas, as well as the playground and footpath east of O’Hara Street would also have views to the construction of the services building, located within the rail corridor, between the Metropolitan Goods Line and the station. This work would be seen in the context of the existing station and rail corridor. This would result in a considerable reduction in the amenity of these

views which are of neighbourhood sensitivity and a **minor adverse** visual impact during construction. (Refer to Table 2-2, Viewpoint 2).

The extent of works required for the preferred project would be largely contained within the station and rail corridor. As a result, views to the construction activity would be limited from properties on Victoria Road, Riverdale Avenue and Schwebel Street, resulting in there being no perceived change in amenity of these views and a **negligible** visual impact during construction. Where views of construction activities on the existing platforms and the rail corridor are possible from a section of the footpath along the southern boundary of the rail corridor, and from the rear of a small number of properties on Leofrene Avenue, there would be a noticeable reduction in the amenity of views, which are of neighbourhood sensitivity. This would result in a **minor adverse** visual impact during construction. (Refer to Table 2-2, Viewpoint 3).

There would be minimal works expected in Station Street, apart from some intermittent construction vehicle access and support site activities. During these works there would be a noticeable reduction in the amenity of views along Station Street, which are of local and neighbourhood sensitivity and a **negligible** visual impact during construction. (Refer to Table 2-2, Viewpoint 4 and 5).

Following construction, the preferred project would substantially reduce the extent of change in views to the station, with works largely contained within the station itself except for the services building located in the rail corridor between the Metropolitan Goods Line and the station. As a result, there would be no perceived change in the amenity of views from Schwebel Street, Riverdale and Leofrene avenues, and the footpath to the south of the corridor. These views are of neighbourhood sensitivity and as the new platform works and services building would be largely absorbed into the character of the station precinct, there would be a **negligible** visual impact during operation. (Refer to Table 2-2, Viewpoint 3).

There would be no perceived change in the amenity of views from Illawarra Road and along Station Street which are of local and neighbourhood sensitivity, as there would be no changes to the station entry, affording a negligible visual impact during operation. (Refer to Table 2-2 Viewpoint 1 and 4 and 5 and Figure 2-1 View southeast from Illawarra Road).

Views from residential areas to the north of the station, including the apartments on Byrnes Street and terrace houses and playground on O'Hara Street, would include the new platforms and the services building. Whilst the platform works would be absorbed into the view, the new services building would be visually prominent and would result in a noticeable reduction in the amenity of these views which are of neighbourhood sensitivity and a **negligible** visual impact during operation. (Refer to Table 2-2, Viewpoint 2 and Figure 2-2 View southwest from O'Hara Street playground to site of proposed services building).



Figure 2-1 View southeast from Illawarra Road



Figure 2-2 View southwest from O'Hara Street Playground to site of proposed services building

2.2.3. Change to daytime visual amenity impacts

As there would no longer be extensive works in Station Street and the platforms would not be extended to the east, impacts to views from surrounding residential areas in the south including Victoria Road, Schwebel and Station streets would be reduced from a **minor adverse** to a **negligible** visual impact during construction. Although there would be some **minor adverse** visual impacts experienced from the footpath along the southern boundary of the rail corridor, and from the rear of properties on Leofrene Avenue, this would be in a more compact area.

There would be a reduced impact in views from the medium rise apartments on Byrnes Street in the north which overlook the station from **moderate adverse** to a **minor adverse** visual impact. There would continue to be a **minor adverse** impact on views to the services building, from O’Hara Street and the playground as the preferred project has not changed in this area.

In views from Illawarra Road, the **moderate adverse** visual impact would be reduced to a **negligible** visual impact as views to the station entry and concourse building would no longer be changed by the project. Similarly, in views from Station Street, the impact of the preferred project would be reduced from **minor adverse** to **negligible** visual impact during construction.

The preferred project would result in no perceived change in views to the station during operation. The works to the platforms within the station and services building would have limited visibility beyond the immediate station surrounds and these elements would be visually absorbed into the existing station and rail corridor character. Overall the visual impact levels for all views to the site would remain as identified in the exhibited project as a **negligible** visual impact.

Table 2-2 includes all impacts identified for the exhibited project as well as the assessment of the preferred project. Any assessments that would increase or decrease from the exhibited project have been highlighted in bold.

Table 2-2 Marrickville Station – daytime visual amenity impacts

	Viewpoint	Sensitivity rating	Construction impact		Operation impact	
			Exhibited project	Preferred project	Exhibited project	Preferred project
1	View south-east from Illawarra Road	Local	Moderate adverse	Negligible	Negligible	Negligible
2	View south-west from O’Hara Street playground	Neighbourhood	Minor adverse	Minor adverse	Negligible	Negligible
3	View north from Riverdale Avenue	Neighbourhood	Minor adverse	Minor adverse	Negligible	Negligible
4	View north from Schwebel Street	Neighbourhood	Minor adverse	Negligible	Negligible	Negligible
5	View north from Station Street	Neighbourhood	Minor adverse	Negligible	Negligible	Negligible

2.3. Night-time visual amenity

2.3.1. Night-time visual impacts of the exhibited project

At night there would be a **minor adverse** visual impact during construction with the introduction of night works in close proximity to residential areas, particularly at Leofrene, Riverdale and Charlotte avenues in the south, and O’Hara, Cavey and Queen Streets in the north. There would also be elevated views over the construction compounds and worksites from residential units on Byrnes Street.

During operation there would be a **minor adverse** visual impact from adjacent residential streets in the southeast with the increased intensity of lighting created by the active transport corridor and extended platforms, located near residential properties particularly to the south of the rail corridor (including Leofrene Avenue, Riverdale Avenue, Byrnes and O’Hara streets).

2.3.2. Night-time visual amenity impacts of the preferred project

The preferred project would require night works to minimise impact on the operations of the rail network. Night works in close proximity to residential areas adjacent to the station platforms, including properties on Leofrene, Riverdale and Charlotte avenues in the south, and O’Hara Street in the north, would have a **minor adverse** visual impact. There would also be elevated views over the construction compounds and worksites from residential units on Byrnes Street.

When operational, the preferred project would have a consistent character to the existing station and setting at night which is of E3: Medium district brightness, resulting in a **negligible** visual impact to views at night.

2.3.3. Change to night-time visual amenity impacts

Whilst the preferred project would give rise to some **minor adverse** visual impacts where night works are required, these impacts would be experienced across a substantially reduced area and over a shorter duration.

During operation at night the visual impact would be reduced from a **minor adverse** visual impact to a **negligible** visual impact. By not extending the platforms to the east, the potential night time visual impact on adjacent residential areas to the north and south of the rail corridor would be lessened.

Table 2-3 includes a summary of these night-time visual amenity impacts. Any assessments that would increase or decrease from the exhibited project have been highlighted in bold.

Table 2-3 Marrickville Station – night-time visual amenity impacts

Location	Sensitivity rating	Construction impact		Operation impact	
		Exhibited project	Preferred project	Exhibited project	Preferred project
Marrickville Station precinct	E3: Medium district brightness	Minor adverse	Negligible	Minor adverse	Negligible

3. Dulwich Hill Station

3.1. Landscape character

3.1.1. Landscape character impacts of the exhibited project

A **moderate adverse** landscape impact was identified during construction because of the extent of works which was to include the construction of a new footbridge with station entrances at Bedford Crescent and Ewart Lane, and the demolition of the existing concourse building. These works would have required several changes to station access, the removal of approximately 4-6 trees, closure of car parks, and the temporary diversion of pedestrian pathways, reducing the connectivity, legibility and amenity of the station precinct. These impacts would extend from Bedford Crescent in the north to Ewart Lane in the south, and from Wardell Road in the east towards Ewart Street and the Dulwich Hill light rail stop and Jack Shanahan Park in the west.

During operation of the exhibited project a **minor beneficial** landscape impact was identified for the station and station precinct. Accessibility and legibility of the station entry would be considerably improved by the new footbridge, station entries, plaza along Ewart Lane and consolidated interchange facilities. The canopies over the footbridge, stairs along the platforms would improve the level of comfort at the stations.

3.1.2. Landscape character impacts of the preferred project

Construction of a new footbridge would extend from the existing light rail lift and stairs at Bedford Crescent to the central platform and works to re-level the platform level would extend across the central platform. These activities would temporarily reduce accessibility and legibility to the station at times. There would be construction activity in Bedford Crescent and a compound in Ewart Lane. In addition, there would be works to reconfigure of the carpark and plaza space at Bedford Crescent, construct the services building and reconfigure the commuter carpark on Ewart Lane following the footbridge construction. Although the light rail access lift and stair would remain open, this construction activity would reduce the legibility of the interchange between transport modes during these works. Some trees would be removed, including two street trees on Bedford Crescent, and several trees within the rail corridor at the location of the proposed footbridge. Overall, due to the extent and nature of works required within the station and in adjacent precinct areas, there would be a noticeable reduction in the landscape quality and functioning of this precinct, which is of local sensitivity. This would result in a **moderate adverse** landscape impact.

The preferred project would retain the existing concourse building and station access on Wardell Road, maintaining the current level of access and legibility of the station when accessed from Wardell Road. The new footbridge would connect the existing light rail lift and stair with the central platform of the station. This footbridge would facilitate accessible interchange between these two modes. The services building, to the south of the station, would be located on Ewart Lane and be aligned to create a 'V' shape to enable service access from the existing carpark. The shape and location of this services building has the potential to reduce the opportunity for surveillance from the station and along the lane between Ewart Lane and Wardell Road. The preferred project includes the upgrade of the lane between Ewart Street and Wardell Road including improved lighting. CPTED principles would need to be further considered during detailed design of the laneway and services building.

There would be several additional trees retained on the rail corridor. Kerbside facilities would be improved with minor reconfigurations on Bedford Crescent including improved lighting along the pathway to Keith Lane. Additional trees and planting would be provided around the station to replace the trees removed during construction. Overall, the works would result in a noticeable improvement in the landscape quality and functioning of this precinct, which is of local sensitivity, and a **minor beneficial** landscape impact during operation.

3.1.3. Change to landscape character impacts

The construction impacts of the preferred project would remain as a **moderate adverse** impact during construction. Whilst the preferred project footprint would be revised and work in Ewart Lane and in the vicinity of the existing station concourse building in particular, the works to construct the proposed new footbridge and works to re-level the platforms would result in reduced legibility and accessibility within the precinct.

During operation the preferred project provides less north to south connectivity for the precinct and less shade within the station itself. However, improved interchange between the metro and light rail would be achieved with the new footbridge, and there would be improved kerbside facilities on Bedford Crescent, and a reconfigured carpark on Ewart lane. The **minor benefit** identified for the exhibited project would remain however, the accessibility and connectivity benefits proposed for the exhibited project would not be fully realised.

Table 3-1 includes a summary of these landscape character impacts.

Table 3-1 Dulwich Hill Station – landscape character impacts

Location	Sensitivity rating	Construction impact		Operation impact	
		Exhibited project	Preferred project	Exhibited project	Preferred project
Dulwich Hill Station precinct	Local	Moderate adverse	Moderate adverse	Minor beneficial	Minor beneficial

3.2. Daytime visual amenity

3.2.1. Daytime visual amenity impacts of the exhibited project

The following viewpoints were selected as representative of views to the Dulwich Hill Station site:

- view south from Jack Shanahan Reserve
- view southeast from Dulwich Hill light rail stop
- view south from Bedford Crescent to Dulwich Hill light rail stop entrance
- view west to Dulwich Hill Station from Wardell Road bridge
- view west from corner of Wardell Road and Dudley Street
- view southeast from Ewart Lane.

The assessment of the exhibited project identified a potential minor to **moderate adverse** visual impact in views to the project during construction. This was due to the extent of the works located near to residential areas, and the extent of works in Ewart Lane and Bedford Crescent. This would include a **moderate adverse** visual impact in views from the Wardell Road bridge.

During operation there would be **minor beneficial** visual impact in views from Ewart Lane owing to the public realm improvements and quality of the architecture. However, the view from Wardell Road would present a **minor adverse** visual impact due to the obstruction and enclosure of the heritage platform buildings and district views currently appreciated from this location.

3.2.2. Daytime visual amenity impacts of the preferred project

In views from Jack Shanahan Park during construction, there would be less work visible as the platforms would not be extended to the west and the corridor would not be widened. Most of the construction works for the footbridge would be out of view and the compound on Ewart Lane would be seen in the background of this view. This would result in no perceived change in the amenity of these views and a **negligible** visual impact. (Refer to Table 3-2, Viewpoint 1).

In views from the Dulwich Hill light rail stop, works to construct the new footbridge would be visible in the middle ground of the view, extending from the existing light rail stair and lift to the central platform of the station. There would also be some visibility of the construction compound on Ewart Lane in the background. Although the extent of bridge construction would be revised, the works closest to the viewer would be required. Overall, there would be a noticeable reduction in the amenity of this view, which is of local sensitivity resulting a **minor adverse** visual impact during construction (Refer to Table 3-2, Viewpoint 2 and Figure 3-1 View southeast from Dulwich Hill light rail stop).



Figure 3-1 View southeast from Dulwich Hill light rail stop

From Bedford Crescent, views to construction of the new footbridge would be visible prominently in the middle ground of this view, alongside the existing light rail lift and stair. As the station is in cutting, works on the platform and below street level would not be visible from this location. However, the nature and proximity of this work would result in a noticeable reduction in the amenity of this view which is of local sensitivity. This results in a **minor adverse** visual impact during construction. (Refer to Table 3-2, Viewpoint 3).

From the Wardell Road bridge, the construction of the footbridge, lifts and stairs would be visible in the middle ground, and a compound on Ewart Lane would be visible in the background. At the intersection with Dudley Street, the retained station entry building would partly obstruct views to these construction works. Where it is visible, views to the footbridge construction would partly obstruct district views to the west. As the existing station concourse building would be retained, there would be no construction activity in the middle and foreground of this view. This would result in a noticeable reduction in the amenity of this view which is of local sensitivity and a **minor adverse** visual impact during construction (Refer to Table 3-2, Viewpoint 4 and 5, and Figure 3-2 View west from the corner of Wardell Road and Dudley Street).



Figure 3-2 View west from the corner of Wardell Road and Dudley Street

From Ewart Lane and residential properties to the south and southwest there would be a considerable reduction in the amenity of views during construction. This is due to the extent of the works, which would include a construction compound in the fore and middle ground, and the works to construct the footbridge in the middle and background. As these views are of neighbourhood sensitivity, this would result in a **minor adverse** visual impact during construction. The extent of works would be revised within the lane and the footbridge would not extend from the central platform to Ewart Lane, so that the area over which this impact would be experienced would be reduced. (Refer to Table 3.2, Viewpoint 6).

During operation there would be limited visibility of the project from areas to the west including Jack Shanahan Park and the residential areas on Ewart Lane, resulting in a **negligible** visual impact. Views from the light rail stop would include the new footbridge, however these new structures would be consistent with the character of the surrounding rail and light rail infrastructure. This would not result in a perceived change in the amenity this view, which is of local sensitivity, and a **negligible** visual impact during operation. (Refer to Table 3-2, Viewpoint 1 and 2).

In views from residential properties on Bedford Crescent, the new footbridge would be seen rising above the existing built form and in the context of the existing light rail station structures. The project would create a noticeable reduction in the amenity of this view, which is of local sensitivity, resulting in a **minor adverse** visual impact during operation. (Refer to Table 3-2, Viewpoint 3).

The existing station buildings would be retained, and the new footbridge would be seen in the middle ground of the view from Wardell Road. The visually lighter weight and smaller footbridge would be less visually dominant behind the heritage platform building. Some of this structure would rise above the horizon, obstructing part of the longer distance views over the surrounding district. Overall, it is expected

that the functional character of the station and rail corridor would allow the project to be absorbed into the view, and that the project would not detract from character or visibility of the existing station architecture. Therefore, the project would create no perceived change in the amenity this view, which is of local sensitivity, resulting in a **negligible** visual impact during operation (Refer to Table 3-2, Viewpoint 4 and 5, and Figure 3-3 View west to Dulwich Hill Station from Wardell Road bridge).



Figure 3-3 View west to Dulwich Hill Station from Wardell Road bridge

In views from Ewart Lane the new footbridge would be seen in the middle ground of views and seen against the existing cutting. It would be compatible with the existing light rail and station structures. The new services building would be located within the middle ground of these views and reinforce the 'back of house' character of this lane. However, upgrades to the lane, including new lighting and fencing, would be seen in the foreground of this view would provide some improvement to the view. Overall, there would be no perceived change in the amenity of these views due to this visual consistency and distance. This view is of neighbourhood sensitivity and there would be a **negligible** visual impact during operation. (Refer to Table 3-2, Viewpoint 6).

3.2.3. Change to daytime visual amenity impacts

During construction views from Jack Shanahan Reserve in the west would have a **negligible** visual impact which is reduced from a **minor adverse** visual impact identified for the exhibited project. This is because the platforms would not be extended, and the works to widen the corridor (including retaining walls) would not be required. The visual impact in views from the light rail station would remain as **minor adverse** as although the footbridge would be reduced in length, and there would be less construction activity visible, the character of the middle ground would continue to be dominated by construction of the footbridge.

The impact on views from residential properties on Bedford Crescent would also remain as **minor adverse** during construction as the works in the middle ground of these views would be largely unchanged.

During construction, the impact in views from Wardell Road would reduce from a **moderate** to **minor adverse**, and from **minor adverse** to **negligible** in views from the corner of Wardell and Dudley Street. This is because the preferred project does not propose the demolition of the existing concourse building.

Views from Ewart Lane and adjacent residential areas to the south would continue to have a **minor adverse** visual impact during construction with a compound required in the adjacent rail corridor. Whilst these impacts would be of the same level, they would extend to fewer viewers due to the revised footprint of the construction works on the lane itself and the footbridge works would not extend as close to these viewers.

During operation, as the platforms would not be extended to the west, the impact on views from surrounding residential areas in the south from Ewart Street, and in the north from Jack Shanahan Reserve, would be remain as **negligible**.

As the new footbridge structure would be similar to the exhibited project in views from the light rail stop and from residential properties on Bedford Crescent, the impact would remain **negligible** and **minor adverse** respectively during operation.

The impact on views from Wardell Road would be reduced from **minor adverse** to **negligible** as the existing station entry would remain in place and the footbridge would be more readily absorbed into the view.

As there would no longer be extensive changes in Ewart Lane, the **minor beneficial** visual impacts identified in views from the corner of Wardell Road and Dudley Street would be reduced to a **negligible** visual impact.

Table 3-2 includes all impacts identified for the exhibited project as well as the assessment of the preferred project. Any assessments that would increase or decrease from the exhibited project have been highlighted in bold.

Table 3-2 Dulwich Hill Station – daytime visual amenity impacts

	Viewpoint	Sensitivity rating	Construction impact		Operation impact	
			Exhibited project	Preferred project	Exhibited project	Preferred project
1	View south from Jack Shanahan Reserve	Local	Minor adverse	Negligible	Negligible	Negligible
2	View southeast from Dulwich Hill light rail Stop	Local	Minor adverse	Minor adverse	Negligible	Negligible
3	View south from Bedford Crescent to Dulwich Hill light rail stop entrance	Local	Minor adverse	Minor adverse	Minor adverse	Minor adverse
4	View west to Dulwich Hill Station from Wardell Road bridge	Local	Moderate adverse	Minor adverse	Minor adverse	Negligible
5	View west from corner of Wardell Road and Dudley Street	Local	Minor adverse	Negligible	Minor beneficial	Negligible
6	View southeast from Ewart Lane	Neighbourhood	Minor adverse	Minor adverse	Negligible	Negligible

3.3. Night-time visual amenity

3.3.1. Night-time visual amenity impacts of the exhibited project

The assessment of the exhibited project identified a **minor adverse** visual impact at night during construction with the introduction of night works in close proximity to residential areas, particularly at Bedford Crescent in the north and Ewart Lane and Street in the south. There would also be additional lighting visible in elevated views over the construction compounds and worksites from residential units on Wardell Road in the south.

During operation there would be a **minor adverse** visual impact in views at night from adjacent residential streets to the southeast, due to the increased intensity of lighting from the station in proximity to residential properties (including properties on Bedford Crescent, Wardell Road and Ewart Lane).

3.3.2. Night-time visual amenity impacts of the preferred project

The preferred project would require night works during construction to minimise interruptions to the operation of the rail network. Night works would be undertaken in close proximity to residential areas to the north, including properties on Bedford Crescent, and to the south on Ewart Lane, Ewart Street, and residential units on Wardell Road. Although the extent of works would be revised, these views would have a considerable reduction in amenity during these times and a **minor adverse** visual impact.

During operations, views to the preferred project would include a lit footbridge and station entry on Bedford Crescent as well as an increased frequency of trains with headlights passing through the station. This would result in additional lighting near Bedford Crescent, including the new footbridge, station entry plaza, and interchange areas which would be brightly lit. This brings additional lighting near to residential properties on Bedford Crescent. The lighting would be at a greater distance from Ewart Lane so that the lighting would be more easily absorbed into these views. Overall, it is expected that during operation the lighting of the project would create a noticeable reduction in visual amenity, particularly from adjacent residential properties on Bedford Crescent. As this is a medium district brightness environment, the project would give rise to a **minor adverse** visual impact at night.

3.3.3. Change to night-time visual amenity impacts

The **minor adverse** visual impacts identified in the assessment of the exhibited project would remain with the construction of the preferred project where night works are required. This impact level would be unchanged due to the consistent nature of the works however, these impacts would be experienced across a smaller area and for a shorter duration.

During operation the visual impact would remain as a **minor adverse** at night, as by not extending the platforms (with lighting) to the east, the potential night time visual impact on adjacent residential areas to the west and south of the rail corridor would be reduced. Similarly, by not extending the footbridge from the station to Ewart Lane, the level of lighting viewed from residential areas in the south would reduce. However, there would be some visual impact experienced in views from Bedford Crescent in the north as a result of the new footbridge.

Table 3-3 includes a summary of these night time visual amenity impacts.

Table 3-3 Dulwich Hill Station – night-time visual amenity impacts

Location	Sensitivity rating	Construction impact		Operation impact	
		Exhibited project	Preferred project	Exhibited project	Preferred project
Dulwich Hill Station precinct	E3: Medium district brightness	Minor adverse	Minor adverse	Minor adverse	Minor adverse

4. Hurlstone Park Station

4.1. Landscape Character

4.1.1. Landscape character impacts of the exhibited project

There would be a **moderate adverse** landscape impact at the Hurlstone Park Station precinct during construction due to a reduction in the legibility and accessibility as the existing station would be demolished and a new station built, and due to the removal of vegetation to the south of the rail corridor.

During operation, there would be a **moderate beneficial** landscape impact as station accessibility would be improved with a larger and more spacious station entry and concourse addressing the Duntroon Street bridge and improved interchange facilities.

4.1.2. Landscape character impacts of the preferred project

The preferred project would require less construction activities at Hurlstone Park Station and station precinct. The construction of two new lift shafts and replacement of the existing stairs, as well as the re-leveling of the platforms would be the main source of impact for users of the station, reducing the legibility and accessibility of the station during these works. There would be minor works undertaken in the precinct on Floss street to the west of the station in the commuter carpark and also on Floss Street to the east of the station. Works to construct the services building and construction of the emergency egress stairs at the end of the platforms would have a limited impact on access to the station and transport interchange facilities. Several additional trees within the precinct would also be retained, improving the provision of shade and comfort. Overall, due to the works required within the station there would be a noticeable reduction in the landscape quality and functioning of this precinct during construction. The station precinct is of local landscape sensitivity, resulting in a **minor adverse** landscape impact.

During operation, the quality of the interchange facilities and station access would be improved by the new lifts and stairs at the station and with the provision of kerbside facilities. The new services building would be located within the corridor and not impact access or use of the station or precinct. Additional trees and planting would be provided around the station to replace the trees removed during construction. Overall, this would result in no perceived change in the landscape quality and functioning of this precinct, which is of local sensitivity, and a **negligible** landscape impact during operation.

4.1.3. Change to landscape character impacts

The construction impacts of the preferred project would reduce from a **moderate adverse** to a **minor adverse** landscape impact during construction. The preferred project includes the retention of the existing station entry building and would result in less impact on legibility and accessibility within the precinct.

During operation, the **minor beneficial** landscape impacts identified for the exhibited project would be reduced to a **negligible** landscape impact as the degree of intervention at the station and across the precinct would be less. Whilst the legibility and accessibility of the station would be improved with the new lifts, stairs, and improved kerbside facilities on Floss Street, the benefits proposed for the exhibited project would not be fully realised.

Table 4-1 includes a summary of these landscape character impacts. Any assessments that would increase or decrease from the exhibited project have been highlighted in bold.

Table 4-1 Hurlstone Park Station – landscape character impacts

Location	Sensitivity rating	Construction impact		Operation impact	
		Exhibited project	Preferred project	Exhibited project	Preferred project
Hurlstone Park Station precinct	Local	Moderate adverse	Minor adverse	Minor beneficial	Negligible

4.2. Daytime visual amenity

4.2.1. Daytime visual amenity impacts of the exhibited project

The following viewpoints were selected as representative of views to the Hurlstone Park Station site:

- view southwest from the Floss Street commuter car park
- view southwest across Floss Street
- view southwest from the Duntroon Street bridge
- view north from Commons Street
- view from Railway Street.

During construction, there would be a **minor to moderate adverse** visual impact in views to the exhibited project given the magnitude of the works, located near to residential areas in the south and commercial areas on Floss Street in the north.

During operation of the exhibited project there would be a **minor adverse** visual impact in views from Railway Street from the removal of vegetation and introduction of a services building within the corridor and from residential properties directly adjacent to the station given the proximity of the buildings. There was also a **moderate adverse** visual impact identified in views from the Duntroon Street bridge due to the size of the proposed new station entry building.

4.2.2. Daytime visual amenity impacts of the preferred project

As the existing station entry building would be retained on Floss Street, there would be substantially less construction activity seen in views from the Floss Street Commuter car park, the commercial areas on Floss Street, and the Duntroon Street bridge. A construction compound would be established on the Floss Street commuter carpark and would result in a considerable reduction in the amenity of views from this location, which are of local sensitivity, and a **moderate adverse** visual impact during construction. (Refer to Table 4-2, Viewpoint 1).

Works to upgrade the station entry building and the construction of two lifts would be visible in the foreground and middle ground of views from the Duntroon Street Bridge and Floss Street, and would include site hoarding and fencing, and vehicles accessing the site. During construction, there would be a noticeable reduction in the amenity of these views, which are of local visual sensitivity, and a **minor adverse** visual impact in views to the project. (Refer to Table 4-2, Viewpoint 2 and 3).

As the platforms would not be lengthened to the west, and the existing heritage buildings would be retained at the station, the extent of construction activity that would be seen in views from residences on

Commons Street, to the south of the site, would be reduced. Views of works to re-level the platforms and installation of the lifts and replaced stairs at the rear of the station entry building would be seen to varying degrees. This would result in a noticeable reduction in the amenity of these views, which are of neighbourhood sensitivity, and a **negligible** visual impact. (Refer to Table 4-2, Viewpoint 4).

In views from residential areas to the southwest of the site, including properties on Railway Street, construction of the services building would remain unchanged from the exhibited project. This would include the removal of trees along the rail corridor and establishment of a worksite to construct a services building between the permanent way and Railway Street. This would result in a considerable reduction in the amenity of these views, and a **minor adverse** visual impact during construction. (Refer to Table 4-2, Viewpoint 5 and Figure 4-1 View from Railway Street).



Figure 4-1 View from Railway Street

During operation of the project the Floss Street commuter carpark would be reinstated, and the existing station would be seen through new perimeter security fencing. The re-levelled platforms, new lifts and stairs may be seen in the middle ground, within the context of the retained heritage station buildings. There would be no perceived change in the amenity of this view, which is of local sensitivity, and a **negligible** visual impact. (Refer to Table 4-2, Viewpoint 1).



Figure 4-2 View south from Duntroon Street

The newly renovated heritage station entry building would be seen in the fore and middle ground of views from Duntroon and Floss streets. These views would include two new lift shafts rising from the rear of the building. These lifts would rise above the flat roofline of the existing station building. They would have contemporary materials and finishes that complement the heritage building but would be clearly differentiated as a new addition. The addition of these structures would increase the prominence of the station entry in these views. Although these additions would be clearly visible, they would not detract from the amenity of these views. Therefore, there would be no perceived change in the amenity of these views, which are of local sensitivity, and a **negligible** visual impact. (Refer to Figure 4-2, Viewpoint 2 and 3, and Figure 4-2 View south from Duntroon Street).

Views from residential areas in the south, including properties on Commons and Duntroon streets, would include the re-levelled platforms, new lifts and stairs at the rear of the existing station entry building, and new emergency egress at the end of the existing station platforms. As the station would only include minimal changes, which would be consistent with the character of the existing station, there would be no perceived change in the amenity of these views. From these locations, which are of neighbourhood sensitivity, there would be a **negligible** visual impact during operation. (Refer to Table 4-2, Viewpoint 4).

Further to the southwest, residential properties on Railway Street would have views to the new services building. Views to the rail corridor would be somewhat opened-up by the removal of trees, however, as the platforms would not be extended to the west the only change seen in these views would be to system segregation fencing along the metro track. The proximity of these new structures to residents would contrast with the surrounding leafy street and would create a considerable reduction in the amenity of this view. The view has neighbourhood sensitivity, resulting in a **minor adverse** visual impact during operation. (Refer to Table 4-2, Viewpoint 5).

4.2.3. Change to daytime visual amenity impacts

During construction a **moderate adverse** visual impact would remain in views from the Floss Street commuter carpark as the site would be required as a construction compound. As the preferred project would retain the existing heritage buildings at the station, there would be a revised level of construction seen in views from Floss and Duntroon streets to the station entry. Accordingly, the potential visual impact would reduce from the **moderate adverse** visual impact identified for the exhibited project to a **minor adverse** visual impact. Views from residential areas to the south and west of the site as a result of the preferred project would reduce the impact from the **minor adverse** visual impact identified for the exhibited project, to a **negligible** visual impact.

During operation, views from the Floss Street commuter carpark, Floss and Duntroon streets to the station entry would remain as a **negligible** visual impact during operation. For the exhibited project, the reason for this impact level was the compatibility of a prominent station entry in this location. Whereas in the preferred project, the rationale for this impact level arises as the alterations to the station entry do not detract from the character of the retained heritage station entry building. In closer range views, such as the view southwest from the Duntroon Street bridge, the **moderate adverse** visual impact identified for the exhibited project, due to the proximity to the adjacent building, would be reduced to a **negligible** visual impact as the station entry building would be largely unchanged.

Views from residential areas to the south and west of the site would have a reduced visual impact from the **minor adverse** visual impact identified for the exhibited project, to a **negligible** visual impact in Commons Street. This is due to the existing station being retained and the platforms not being extended to the west. From Railway Street, however, the services building would be unchanged and there would continue to be a **minor adverse** visual impact during operation.

Table 4-2 includes all impacts identified for the exhibited project as well as the assessment of the preferred project. Any assessments that would increase or decrease from the exhibited project have been highlighted in bold.

Table 4-2 Hurlstone Park Station – daytime visual amenity impacts

	Viewpoint	Sensitivity rating	Construction impact		Operation impact	
			Exhibited project	Preferred project	Exhibited project	Preferred project
1	View southwest from the Floss Street commuter carpark	Local	Moderate adverse	Moderate adverse	Negligible	Negligible
2	View southwest across Floss Street	Local	Moderate adverse	Minor adverse	Negligible	Negligible
3	View southwest from the Duntroon Street bridge	Local	Moderate adverse	Minor adverse	Moderate adverse	Negligible
4	View north from Commons Street	Neighbourhood	Minor adverse	Negligible	Minor adverse	Negligible
5	View from Railway Street	Neighbourhood	Minor adverse	Minor adverse	Minor adverse	Minor adverse

4.3. Night-time visual amenity

4.3.1. Night-time visual amenity impacts of the exhibited project

At night, a **minor adverse** visual impact during construction was identified for the exhibited project, as night construction activity would occur in close proximity to residential areas, including properties on Floss, Duntroon, Commons, Hopetoun and Railway streets.

Similarly, there was a potential **minor adverse** visual impact identified at night during operation due to the increased intensity of lighting created by the proposed station works near these residential areas.

4.3.2. Night-time visual amenity impacts of the preferred project

There would be night works required to construct the preferred project to minimise impact on the operations of the rail network. Night works would be undertaken in close proximity to residential areas to the south, including properties on Duntroon, Commons, Hopetoun and Railway streets. As the platforms would not be extended to the west, the extent of this impact would be reduced. Overall, these views would have a considerable reduction in amenity, and a **minor adverse** visual impact during construction.

During operations, views to the preferred project would include minor changes to the station entry building including the addition of two lift structures. There would also be new kerbside facilities on Floss Street to the north of the station and bicycle parking to the west in the existing commuter carpark. These structures and kerbside facilities would be lit, increasing the amount of lighting near commercial and residential properties on Floss Street, Duntroon and Commons streets. Overall, during operation the lighting of the project would be largely absorbed into the existing station setting, a medium district brightness environment, giving rise to a **negligible** visual impact at night.

4.3.3. Change to night-time visual amenity impacts

At Hurlstone Park, there would be a **minor adverse** visual impact experienced in residential areas surrounding the site which is unchanged from the exhibited project. These impacts would be experienced across a substantially reduced area and over a shorter duration.

During operation the visual impact would be reduced from a **minor adverse** visual impact at night to **negligible** as a result of the preferred project. By not extending the platforms to the east, and not replacing the station entry building with a new concourse, the potential additional lighting seen from adjacent residential areas to the north and south would be minimal.

Table 4-3 includes a summary of these landscape character impacts. Any assessments that would increase or decrease from the exhibited project have been highlighted in bold.

Table 4-3 Hurlstone Park Station – night-time visual amenity impacts

Location	Sensitivity rating	Construction impact		Operation impact	
		Exhibited project	Preferred project	Exhibited project	Preferred project
Hurlstone Park Station precinct	E3: Medium district brightness	Minor adverse	Minor adverse	Minor adverse	Negligible

5. Canterbury Station

5.1. Landscape character

5.1.1. Landscape character impacts of the exhibited project

The assessment of the exhibited project identified a potential **moderate adverse** landscape impact at the Canterbury Station precinct during construction owing to a reduction in legibility and accessibility as work would transition from construction at the site of the new station, to demolition of the existing concourse, and removal of vegetation. This vegetation included trees to the southwest of the corridor and along Broughton Street in the northwest.

During operation, there would be a **moderate beneficial** landscape impact, as station accessibility would be improved with a new east and west entry, set back from the constrained environment of Canterbury Road, with new plazas and improved interchange facilities.

5.1.2. Landscape character impacts of the preferred project

The preferred project would require less construction activity at Canterbury Station and station precinct. Worksites would be established to the southwest of the rail corridor on Charles street and to the north of the station on Broughton Street. The worksite to the north of the station would be reduced in size and the existing street trees and Art Deco amenities building on Broughton Street would be retained.

The existing heritage station entry building on Canterbury Road would be retained and there would be works at the station entry to construct a new ramp and remove brick walls to improve station access and legibility. There would be two new lift shafts constructed at the station entry building, the existing stairs would be replaced, and the platforms would be re-levelled. This work would reduce the legibility and accessibility of the station during construction.

The services building would be constructed on land to the northwest of the station. This activity, as well as works to construct the emergency egress stairs at the end of the existing platforms, would have a limited impact on access to the station and transport interchange facilities. Trees would be removed for the footprint of construction, however, due to the reduced footprint of construction, several additional trees would be retained. Overall, due to the works required within the station, there would be a noticeable reduction in the landscape quality and functioning of this precinct during construction. The station precinct is of local landscape sensitivity, resulting in a **minor adverse** landscape impact.

During operation, the quality of the interchange facilities and station access would be improved by the new lifts and stairs at the station and kerbside facilities on Broughton Street. The new services building would be located within the corridor and not impact access or use of the station or station precinct. . Additional trees and planting would be provided around the station to replace the trees removed during construction. Overall, this would result in a noticeable improvement in the landscape quality and functioning of this precinct, which is of local sensitivity, and a **minor beneficial** landscape impact during operation.

5.1.3. Change to landscape character impacts

The construction impacts of the preferred project would reduce from a **moderate adverse** to **minor adverse** landscape impact during construction. The preferred project includes the retention of the existing station entry building. This would result in less impacts on trees, legibility and accessibility within the precinct.

During operation, the **moderate beneficial** landscape impacts of the exhibited project would be reduced to **minor beneficial**. While the existing station would be retained and upgraded, the station building would continue to be constrained by the proximity of the station entry to the busy Canterbury Road. The preferred project would not achieve the improvements to connectivity and accessibility offered by the exhibited project whereby the station was relocated to the west and provided an additional northeast to southwest pedestrian connection across the railway corridor. Although the legibility and accessibility of the station would be improved with the new lifts, stairs, and improved kerbside facilities on Broughton Street, the same degree of improvement would not be achieved by the preferred project.

Table 5-1 includes a summary of these landscape character impacts. Any assessments that would increase or decrease from the exhibited project have been highlighted in bold.

Table 5-1 Canterbury Station – landscape character impacts

Location	Sensitivity rating	Construction impact		Operation impact	
		Exhibited project	Preferred project	Exhibited project	Preferred project
Canterbury Station precinct	Local	Moderate adverse	Minor adverse	Moderate beneficial	Minor beneficial

5.2. Daytime visual amenity

5.2.1. Daytime visual amenity impacts of the exhibited project

The following viewpoints were selected as representative of views to the Canterbury Station site:

- view southwest from Robert Street
- view northwest from Broughton Street
- view southwest from corner of Broughton Street and Canterbury Road
- view northeast from Charles Street.

During construction, a minor to **moderate adverse** visual impact was identified for the exhibited project due to the extent of the works, and removal of mature trees. The works would be overlooked by residential properties on Broughton Street to the northeast, and from elevated residential apartments on Charles Street to the southwest.

When operational, there would be a **negligible** visual impact in views to the station, as the new built form would be largely absorbed into the surrounding, dense urban townscape.

5.2.2. Daytime visual amenity impacts of the preferred project

There would be a construction compound established on Broughton Street, visible in the middle ground of views from Robert Street, and foreground of views from Broughton Street. In these views, works to upgrade the kerbside facilities along Broughton Street and construction vehicles accessing the compound

site would be seen. Whilst the mature street trees and Art Deco amenities building on Broughton Street would be retained, there would be trees removed to accommodate the construction compound on the land between Broughton Street and the rail corridor. This would result in a noticeable reduction in the amenity in views from Robert and Broughton streets, which are of neighbourhood and local sensitivity, and a **negligible** and **minor adverse** visual impact respectively. (Refer to Table 5-2 Viewpoint 1 and 2).

Works to upgrade the station entry building, including works to incorporate a ramp from Broughton Street into the entry, and the construction of two lifts behind the station entry building would be visible in the foreground and middle ground of views from Broughton Street and Canterbury Road. This would create a noticeable reduction in the amenity of these views, which are of local visual sensitivity and the preferred project would have a **minor adverse** visual impact in views towards the station entry. (Refer to Table 5-2 Viewpoint 3).

There would be views to the preferred project from the southwest including from Charles Street, elevated residential properties on Charles Street, and the laneway to the south of the corridor. These views would include works to re-level the platforms and installation of the lifts and replaced stairs at the rear of the station entry building. The extent and nature of this work would be relatively small and would be visible to varying degrees from different properties depending on the orientation of the balcony or window and viewing height. Overall, this would result in a noticeable reduction in the amenity of these views, which are of local and neighbourhood sensitivity, and a negligible and **minor adverse** visual impact. (Refer to Figure 5-1 Viewpoint 5: View from Laneway south of Canterbury Station, Refer to Table 5-2 Viewpoint 4 and 5).



Figure 5-1 Viewpoint 5: View from laneway south of Canterbury Station

Further to the northwest, there would be views from residential properties which overlook the rail corridor, including those on Charles Street and Broughton Street, to works to construct a new services building. This services building would be located on a parcel of land to the north of the railway line. There

would be middle and foreground views from the adjacent mid-rise apartments, however, views from the older apartments are enclosed somewhat by dense trees, and the newer apartments have smaller windows oriented towards the rail corridor. This work would result in a noticeable reduction in the amenity of view, which is of neighbourhood sensitivity, resulting in a **negligible** visual impact during construction. (Refer to Table 5-2 Viewpoint 6).

During operation there would be minor changes visible in views from the north. This would include upgraded kerbside facilities along Broughton Street visible alongside the existing retained mature streets trees and Art Deco amenities building, which would be retained. There would be additional trees to replace those removed during construction. This would result in no perceived change in the amenity of views from Robert and Broughton streets, which are of neighbourhood and local sensitivity, and a **negligible** visual impact. (Refer to Table 5-2 Viewpoint 1 and 2).

The newly upgraded heritage station entry building would be seen in the fore and middle ground of views from Broughton Street and Canterbury Road. These views would include two new lift shafts rising above the roofline of the existing station entry building and located at the rear and southwest of the building. These structures would have contemporary materials and finishes that complement the heritage building that would clearly differentiate them as new additions. Whilst the lifts would contrast with the distinctive roofline of the existing station building, adding to the mix of architectural elements in this view, the lifts would be seen against a backdrop of contemporary medium rise development. The addition of these structures would increase the prominence of the station entry in these views somewhat. Although these additions would be visible they would not detract from the amenity of these views. Therefore, there would be no perceived change in the amenity of these views, and a **negligible** visual impact. (Refer to Figure 5-2 and Figure 5-3, and Table 5-2 Viewpoint 3).

In views to the preferred project from residential areas and the laneway in the south, there would be little change visible. These views would include works to re-level the platforms, install the lifts and replace the stairs at the rear and southwest of the station entry building. The new lifts would be seen in the context of the busy Canterbury Road and not obstruct views to the existing heritage platform buildings. This would result in a noticeable reduction in the amenity of these views, which are of neighbourhood sensitivity, and a **negligible** visual impact. (Refer to Figure 5-2 Viewpoint 5).

In views from residential areas in the southwest, on Charles Street, the new services building would be visible in the middle ground. Whilst the platforms would not be extended to the west, emergency egress stairs would be located at the end of the existing platforms, and there would be new system segregation fencing visible along the metro track. The character of these new elements would be largely consistent with the surrounding highly developed urban landscape and existing rail corridor. Overall, there would be a noticeable reduction in the amenity of these views, which are of neighbourhood sensitivity, resulting in a **negligible** visual impact during operation. (Refer to Figure 5-2 Viewpoint 4).



Figure 5-2 View southwest from Broughton Street

5.2.3. Change to daytime visual amenity impacts

During construction, views from Robert and Broughton streets would decrease from **minor adverse** to **negligible** as the construction of a new concourse and footbridge would no longer be required, and work within Broughton Street would be substantially reduced.

The visual impact of the preferred project would be reduced from **moderate** to **minor adverse** during construction in views from Broughton Street and Canterbury Road. This is because the existing station buildings would not be demolished and would be refreshed, requiring less construction activity.

The views from residential properties to the northwest of the station, on Charles Street, would remain as negligible as the services building would be absorbed into the developed character of the rail corridor.

During operation the impacts would remain **negligible**, this is because the existing station entry building on Canterbury Road would be retained and refreshed, and additional trees would be retained. The services building would also be absorbed into the character of views from adjacent residential properties.

Table 5-2 includes all impacts identified for the exhibited project as well as the assessment of the preferred project. Any assessments that would increase or decrease from the exhibited project have been highlighted in bold. One additional view, Viewpoint 5, has been added to cover a new area of potential visual impact.

Table 5-2 Canterbury Station – daytime visual amenity impacts

	Viewpoint	Sensitivity rating	Construction impact		Operation impact	
			Exhibited project	Preferred project	Exhibited project	Preferred project
1	View southwest from Robert Street	Neighbourhood	Minor adverse	Negligible	Negligible	Negligible
2	View northwest from Broughton Street	Local	Moderate adverse	Minor adverse	Negligible	Negligible
3	View southwest form corner of Broughton Street and Canterbury Road	Local	Moderate adverse	Minor adverse	Negligible	Negligible
4	View northeast from Charles Street	Neighbourhood	Negligible	Negligible	Negligible	Negligible
5	View from the lane south of Canterbury Station	Local	N/A	Minor adverse	N/A	Negligible

5.3. Night-time visual amenity

5.3.1. Night-time visual amenity impacts of the exhibited project

At night there would be a **minor adverse** visual impact during construction due to the introduction of night construction activity in close proximity to residential areas including properties on Broughton and Charles streets.

There would also be a **minor adverse** visual impact in views at night during operation. This would be due to the increased intensity of lighting that would be created by the station, brought closer to residential properties on Charles and Broughton streets.

5.3.2. Night-time visual amenity impacts of the preferred project

There would be night works required to construct the preferred project to minimise impact on the operations of the rail network. Night works would be undertaken in close proximity to residential areas to the northwest and southwest, including residential properties on Broughton and Charles streets. The preferred project would lessen the extent and magnitude of this night work. These views would have a noticeable reduction in amenity, in a landscape which is of medium district brightness, and there would be a **negligible** visual impact during construction.

During operations, views to the preferred project would include minor changes to the station entry building including the addition of two lift structures. There would also be new kerbside facilities on Broughton Street to the northwest of the station. These structures and kerbside facilities would be lit, increasing the amount of lighting near adjacent residential properties on Charles and Broughton streets. Overall, during operation the lighting of the project would be largely absorbed into the existing station setting, a medium district brightness environment, giving rise to a **negligible** visual impact at night.

5.3.3. Change to night-time visual amenity impacts

There would be a **negligible** visual impact experienced in residential areas surrounding the site which is a decrease from the **minor adverse** impact for the exhibited project. This is because a new elevated

concourse building would no longer be constructed, and the platforms would not be extended to the northwest. These impacts would be experienced across a reduced area and over a shorter duration.

During operation the visual impact would be reduced from a **minor adverse** visual impact at night to **negligible** due to the preferred project. By not extending the platforms to the east, and not replacing the station entry building with a new elevated concourse, the potential additional lighting seen from adjacent residential areas to the northwest and southwest would be minimal.

Table 5-3 includes a summary of these landscape character impacts. Any assessments that would increase or decrease from the exhibited project have been highlighted in bold.

Table 5-3 Canterbury Station – night-time visual amenity impacts

Location	Sensitivity rating	Construction impact		Operation impact	
		Exhibited project	Preferred project	Exhibited project	Preferred project
Canterbury Station precinct	E3: Medium district brightness	Minor adverse	Negligible	Minor adverse	Negligible

6. Campsie Station

6.1. Landscape character

6.1.1. Landscape character impacts of the exhibited project

There would be a **moderate adverse** landscape impact at the Campsie Station precinct during construction due a reduction in the legibility and accessibility as work is staged and customer access is diverted to a temporary access structure during demolition works and construction of the new station concourse and vertical transport structures.

During operation, there would be a **minor beneficial** landscape impact, as a broader more open station entry concourse is created, set back from the constrained footpath environment of Beamish Street.

6.1.2. Landscape character impacts of the preferred project

During construction, the preferred project would require less construction activity at Campsie Station and station precinct. A construction compound would be established to the north of the rail corridor on North Parade. The existing station would be refreshed, the platforms re-levelled, and emergency egress stairs constructed at the end of the existing platforms. There would be some minor adjustments to North Parade to construct bicycle parking and kerbside facilities. Several trees between the station and North Parade would be retained. This work would reduce the legibility and accessibility of the station during construction. A services building and traction substation would be constructed on Lilian Street to the south of the rail corridor and west of the station. This activity would have a limited impact on access to the station and transport interchange facilities as this site is located outside the station precinct. Trees would be removed for the footprint of these buildings. Overall, due to the works required within the station, there would be a noticeable reduction in the landscape quality and functioning of this precinct during construction. The station precinct is of local landscape sensitivity, resulting in a **minor adverse** landscape impact.

During operation, there would be minor improvements to the kerbside facilities including additional bicycle parking, kiss and ride, and taxi rank on the southern side of North Parade. There would also be additional trees retained. The new services building would be located out of the station precinct and not impact access or use of the station. Overall, this would result in no perceived change in the landscape quality and functioning of this precinct, which is of local sensitivity, and a **negligible** landscape impact during operation.

6.1.3. Change to landscape character impacts

During construction the landscape character impacts would reduce from a **moderate adverse** to **minor adverse** during construction. This is because the preferred project would retain the existing station entry building, the platforms would not be extended to the west, and there would not be works to demolish and rebuild the buildings to the east of Beamish Street.

The **minor beneficial** landscape impacts identified in the exhibited project assessment during operation would be reduced to a **negligible** impact with the preferred project. The preferred project would not achieve the precinct improvements offered by the exhibited project. In the exhibited project, the station was rebuilt with a less constrained entry to Beamish Street and kerbside facilities were to be provided alongside over rail retail buildings along Beamish Street to the east of the Beamish Street Bridge.

Table 6-1 includes a summary of these landscape character impacts. Where the assessment of impact has changed from the exhibited project, the impact has been highlighted in bold.

Table 6-1 Campsie Station – landscape character impacts

Location	Sensitivity rating	Construction impact		Operation impact	
		Exhibited project	Preferred project	Exhibited project	Preferred project
Campsie Station precinct	Local	Moderate adverse	Minor adverse	Minor beneficial	Negligible

6.2. Daytime visual amenity

6.2.1. Daytime visual amenity impacts of the exhibited project

The following viewpoints were selected as representative of views to the Campsie Station site:

- view southeast from corner of Wilfred Avenue and London Street
- view west along North Parade
- view southwest from Beamish Street
- view northeast from Lilian Lane
- view west from Lilian Street
- view east from Lilian Street.

During construction, there would be a **minor adverse** visual impact on views from Beamish Street where the works are located in close proximity to the local commercial centre. There would also be a **minor adverse** visual impact on views to the project works from Lilian Street and Lane, to the south of the corridor. This impact is due to the extent and nature of the works and establishment of a construction compound, overlooked by residential properties. Similarly, there would be **minor adverse** visual impact from Wilfred Avenue and North Parade, where demolition and reconstruction of the station and over rail retail buildings along Beamish Street would be seen.

During operation of the project there would be a **minor beneficial** visual impact in views from Beamish Street, where the increased dimensions and more open form of the new station structures would provide a level of prominence which marks it as an entry to the station. The station architecture would be visually consistent with the character of the surrounding commercial precinct.

6.2.2. Daytime visual amenity impacts of the preferred project

There would be a construction compound established on North Parade, visible in the middle ground of views from Wilfred Avenue, and foreground of views from North Parade. In these views, works to upgrade the kerbside facilities along North Parade and construction vehicles accessing the compound site would be seen. Works would avoid the existing trees on North Parade so that several additional trees would be retained. There may also be glimpses to works associated with the re-levelling of the station platforms, viewed beyond the construction compound. Overall, this would result in a noticeable reduction in the amenity in views from Wilfred Avenue and North Parade, which are of neighbourhood sensitivity, and a **negligible** visual impact during construction. (Refer to Figure 6-2 Viewpoint 1).



Figure 6-1 View southwest from Beamish Street



Figure 6-2 View northeast from Lilian Lane

In views from North Parade, east of Beamish Street, there would not be any works visible as the demolition and reconstruction of the station and retail on the Beamish Street rail bridge would not be a

part of the preferred project. This would result in no perceived change in the amenity of views from this area, which are of neighbourhood visual sensitivity, and a **negligible** visual impact during construction. (Refer to Figure 6-1 View southwest from Beamish Street and Table 6-2 Viewpoint 2).

The preferred project would include minor upgrades to the existing station entry building on Beamish Street. With the preferred project, there would be very little construction activity seen in this view. This would result in no perceived change in the amenity of this view, which are of local visual sensitivity, and a **negligible** visual impact in views towards the station entry. (Refer to Table 6-2 Viewpoint 3).

Lilian Lane would not be required for construction and would remain open during construction. The existing vegetation along the rail embankment would be retained and views to the existing heritage platform buildings would remain visible through the perimeter security fencing. From some locations on Lilian Lane there would be glimpses through the rail corridor fencing to works to re-level the station. This work would result in no perceived change in the amenity of these views, which are of neighbourhood sensitivity, and a **negligible** visual impact. (Refer to Figure 6-2 View northeast from Lilian Lane and Table 6-2 Viewpoint 4)

To the west of the station works to construct a traction power station and services building would be seen from residential properties on Lilian Lane and Street which overlook the rail corridor. In these views, several existing buildings and existing trees would be removed, and a construction compound would be established on rail land and extending across the existing car park. This compound would be enclosed by temporary security fencing and hoarding, which would be seen along the road in the middle ground and enclosing these views. Construction of a service building would be seen in the middle and background of views, rising above the hoarding. This would result in a considerable reduction in the amenity of these views, which are of neighbourhood sensitivity, resulting in a **minor adverse** visual impact during construction. (Refer to Table 6-2 Viewpoint 5 and 6).

There would be minor changes in the foreground of views from North Parade and Wilfred Avenue with the improved kerbside facilities on the southern verge of North Parade. The existing trees would be retained. In the middle ground of these views, glimpses of the station platforms would now include glass screen doors, partly obstructing views to the existing heritage platform buildings. These elements would be consistent with the character of the station, and there would be no perceived change in the amenity of views from North Parade and Wilfred Avenue. As these views are of neighbourhood sensitivity, this would result in a **negligible** visual impact. (Refer to Table 6-2 Viewpoint 1).

In views from North Parade, east of Beamish Street, there would not be any additional elements of the project visible as the existing station entry building and retail on the Beamish Street rail bridge would remain. This would result in no perceived change in the amenity of views from this area, which are of neighbourhood visual sensitivity, and a **negligible** visual impact during operation. (Refer to Figure 6-1 View southwest from Beamish Street and Table 6-2 Viewpoint 2).

The minor upgrades to the existing station entry building on Beamish Street would not be visible in views from Beamish Street. Given this, there would be no perceived change in the amenity of this view, which is of local visual sensitivity, and a **negligible** visual impact in views towards the station entry. (Refer to Table 6-2 Viewpoint 3).

Lilian Lane would not be altered in the preferred project. The existing vegetation along the rail embankment would be seen as would the existing heritage platform buildings through the existing security fencing. The new platform screen doors may be seen on the platforms, but these would not be prominent in the view from Lilian Lane. Overall there would be no perceived change in the amenity of

these views, which are of neighbourhood sensitivity, and a **negligible** visual impact during operation. (Refer to Table 6-2 Viewpoint 4).

During operation views to the open rail corridor and linear carpark along the rail corridor would be replaced by a services building and traction power substation. These buildings would be prominent new structures in these views, obstructing views to the rail corridor and residential areas to the north. These buildings would be seen filtered through existing mature trees on the road verge. The buildings would also be seen in this view, creating a built edge along the northern side of Lilian Street. These changes would be generally consistent in character with the mix of residential and commercial development along the rail corridor. Overall, there would be no perceived change in the amenity of these views, which are of neighbourhood sensitivity, resulting in a **negligible** visual impact during operation. (Refer to Table 6-2 Viewpoint 5 and 6).

6.2.3. Change to daytime visual amenity impacts

During construction, views from Wilfred Avenue and North Parade would be reduced from **minor adverse** to **negligible** as the construction of a new concourse and footbridge would no longer be required. The visual impact of the preferred project would be reduced from **minor adverse** to negligible during construction in views from North Parade, east of Beamish Street. This is because the preferred project would not include the demolition of the retail east of the Beamish Street bridge, and construction of kerbside facilities over the rail corridor in this location. In views from Beamish Street to the existing station entry, the visual impact would reduce from **moderate adverse** to **negligible** as the existing station buildings would not be demolished and would be refreshed, requiring only minor construction activity. Similarly, the preferred project would no longer include works in Lilian Lane, and therefore the visual impact would reduce from **minor adverse** to **negligible**. The **minor adverse** visual impact in views from Lilian Street to the traction power station and services building, however, would remain as the preferred project would be unchanged in this location from the exhibited project.

During operation the impact in views from Wilfred Avenue, North Parade and Lilian Lane would all remain as **negligible** visual impact. For the exhibited project this impact level was due to the compatibility of the new station entry building and substantial precinct works with the urban setting. Whereas the preferred project would either not change these views or would be absorbed into the existing view. In views from Beamish Street, the **minor beneficial** visual impact identified for the exhibited project would not be achieved as the existing station building would be retained. This impact would reduce to **negligible** due to there being no change in this existing view. In views from Lilian Street, the impacts would remain as **negligible** as the preferred project would be unchanged in this view from the exhibited project.

Table 6-2 includes all impacts identified for the exhibited project as well as the assessment of the preferred project. Any assessments that would increase or decrease from the exhibited project have been highlighted in bold.

Table 6-2 Campsie Station – daytime visual amenity impacts

	Viewpoint	Sensitivity rating	Construction impact		Operation impact	
			Exhibited project	Preferred project	Exhibited project	Preferred project
1	View southeast from corner of Wilfred Avenue and London Street	Neighbourhood	Minor adverse	Negligible	Negligible	Negligible
2	View west along North Parade	Neighbourhood	Minor adverse	Negligible	Negligible	Negligible
3	View southwest from Beamish Street	Local	Moderate adverse	Negligible	Minor beneficial	Negligible
4	Northeast from Lilian Lane	Neighbourhood	Minor adverse	Negligible	Negligible	Negligible
5	View west from Lilian Street	Neighbourhood	Minor adverse	Minor adverse	Negligible	Negligible
6	View east from Lilian Street	Neighbourhood	Minor adverse	Minor adverse	Negligible	Negligible

6.3. Night-time visual amenity

6.3.1. Night-time visual amenity impacts of the exhibited project

At night there would be a **minor adverse** visual impact during construction due to the introduction of night construction activity in close proximity to residential areas, particularly on Lilian Street.

There would also be a **minor adverse** visual impact in views at night during operation with the increased intensity of lighting created by the station, and extending along the platforms to the west, bringing this light closer to residential properties on Lilian Street and Wilfred Avenue.

6.3.2. Night-time visual amenity impacts of the preferred project

There would be some night works required to construct the preferred project to minimise impact on the operations of the rail network. The preferred project would lessen the extent of this night work. This work would be largely contained within the station and not in close proximity to nearby residential areas. There would be no perceived change in the amenity of the station and station precinct during these times, and there would be a **negligible** visual impact during construction.

During operations, the lighting levels at the station would remain unchanged and not be extended as the platforms would not be extended to the west. There would be some additional lighting at the new kerbside facilities on North Parade and Wilfred Avenue, increasing the amount of lighting near commercial and residential properties on North Parade and Wilfred Avenue. Overall, during operation, the lighting of the project would be largely absorbed into the existing station setting, a medium district brightness environment, giving rise to a **negligible** visual impact at night.

6.3.3. Change to night-time visual amenity impacts

During construction the impact at night would reduce from a **minor adverse** visual impact to **negligible** due to the reduction in night construction activity required, particularly in the vicinity of Lilian Street.

The visual impact at night during operation would also reduce from a **minor adverse** visual impact to negligible. With the preferred project, there would be limited areas where there would be an increased intensity of lighting, the platforms would not be extended to the west, and there would not be additional lighting closer to residential properties on Lilian Street and Wilfred Avenue.

Table 6-3 includes a summary of these night-time visual amenity impacts. Any assessments that would increase or decrease from the exhibited project have been highlighted in bold.

Table 6-3 Campsie Station – night-time visual amenity impacts

Location	Sensitivity rating	Construction impact		Operation impact	
		Exhibited project	Preferred project	Exhibited project	Preferred project
Campsie Station precinct	E3: Medium district brightness	Minor adverse	Negligible	Minor adverse	Negligible

7. Belmore Station

7.1. Landscape character

7.1.1. Landscape character impacts of the exhibited project

There would be a **moderate adverse** landscape impact at the Belmore Station precinct during construction due to a reduction in the legibility and accessibility as work is staged and construction compounds are established to the north and south of the station. There would also be a direct impact on vegetation which would be removed from the reserve at Tobruk Avenue.

During operation, there would be a **minor beneficial** landscape impact, as the open spaces are reinstated and refreshed, a new southern plaza and shared zone would be established, improving accessibility, legibility and the amenity of the precinct.

7.1.2. Landscape character impacts of the preferred project

The preferred project would require less construction activity at Belmore Station and station precinct, however compounds would be established on the public carpark to the north of the station on Redmond Parade, and south on Tobruk Avenue. More trees would be retained and the heritage Art Deco buildings on Redmond Parade would be retained. These compounds would impact on the legibility and accessibility of the station in some areas as the commuter car parks would be temporarily closed. There would be a direct impact on the public reserve on Tobruk Avenue and the park and trees located to the south of the rail corridor to allow for the construction of a services building at Myall Street. This work may require temporary diversions of the shared path which leads to the Terry Lamb Reserve in the south east. Several additional trees would be retained. Overall, due to the works required within the station, there would be a noticeable reduction in the landscape quality and functioning of this precinct during construction. The station precinct is of local landscape sensitivity, resulting in a **minor adverse** landscape impact.

During operation, the quality of the interchange facilities and station access would be improved by the new kerbside facilities on Tobruk Avenue. The new services building would be located within the corridor and not impact access or use of the station or station precinct. Additional trees and planting would be provided around the station to replace the trees removed during construction. Overall, this would result in no perceived change in the landscape quality and functioning of this precinct, which is of local sensitivity, and a **negligible** landscape impact during operation.

7.1.3. Change to landscape character impacts

The construction impacts of the preferred project would reduce from a **moderate adverse** to **minor adverse** landscape impact during construction. As the existing station buildings would be retained, and the new station concourse building would no longer be built, the preferred project would result in substantially less construction activity. Consequently, there would be less of an impact on trees, legibility and accessibility within the precinct.

During operation, the **minor beneficial** landscape impacts identified for the exhibited project would be reduced to **negligible** as the existing station would be retained and upgraded. Whilst there would be some improvement to kerbside facilities, the improved north to south connectivity achieved in the exhibited project which set the station east of Burwood Road, would not be achieved by the preferred project.

Table 7-1 includes a summary of these landscape character impacts. Any assessments that would increase or decrease from the exhibited project have been highlighted in bold.

Table 7-1 Belmore Station – landscape character impacts

Location	Sensitivity rating	Construction impact		Operation impact	
		Exhibited project	Preferred project	Exhibited project	Preferred project
Belmore Station precinct	Local	Moderate adverse	Minor adverse	Minor beneficial	Negligible

7.2. Daytime visual amenity

7.2.1. Daytime visual amenity impacts of the exhibited project

The following viewpoints were selected as representative of views to the Belmore Station site:

- view east from Burwood Road overbridge
- view northeast from Tobruk Avenue
- view northwest from shared path linking to the Terry Lamb Reserve
- view west from the Terry Lamb Reserve
- view southwest from Redman Parade.

During construction, there would be a **moderate adverse** impact on views to the project works from the Burwood Road overbridge, Tobruk Avenue and Redman Parade, given the extent of the works including the establishment of construction compounds and retaining wall construction in close proximity to public realm areas. There would also be a **minor adverse** impact on views from residential areas to the south of the station on Acacia Lane and Street.

During operation of the project there would be a **minor adverse** impact in views from Burwood Road overbridge as the elevated concourse and canopy structure would rise above the existing heritage platform building and given the intensification of built development to views within the station.

There would also be a **minor adverse** impact in views from the Terry Lamb Reserve with the introduction of the services building within a parkland setting. However, there would be a **minor beneficial** impact in views to the new southern station entry and plaza on Tobruk Avenue, as although some mature trees would be removed, there would be improved amenity with a new plaza and park treatment. The setting of the northern station entry, viewed from Redman Parade, would have the capacity to absorb the new station buildings.

7.2.2. Daytime visual amenity impacts of the preferred project

In the view from the Burwood Road overbridge works to re-level the station platforms would be visible, however, the remainder of the station would be largely unchanged as the existing station would be retained. There would be glimpses to a construction compound on the carpark to the south of the corridor (right of view). Overall, this work would result in a noticeable reduction in the amenity in views from the Burwood Road overbridge, which is of local sensitivity, and a **minor adverse** visual impact during construction. (Refer to Table 7-2 Viewpoint 1 and Figure 7-1 View east from Burwood Road overbridge).



Figure 7-1 View east from Burwood Road overbridge



Figure 7-2 View northeast from Tobruk Avenue

In views from Tobruk Avenue a construction compound would be seen on the site of the existing carpark. Existing trees would be removed within the carpark, and site fencing erected and construction vehicle

access provided via Tobruk Avenue. This would result in a noticeable reduction in the amenity of these views, which are of local sensitivity, and a **minor adverse** visual impact during construction. (Refer to Table 7-2 Viewpoint 2 and Figure 7-2 View northeast from Tobruk Avenue).

In views from the southeast, along the shared path linking to the Terry Lamb Reserve and adjacent residential properties, there would be views to a construction compound which would be established on the existing carpark. This work would require the removal of trees and would be enclosed by site fencing. Haulage vehicles may be visible along Tobruk Avenue, with site access at the eastern end of the commuter car park. Due to the removal of vegetation and introduction of construction activity into an area of open space, these works would create a considerable reduction in the amenity of this view, which is of neighbourhood sensitivity, resulting in a **minor adverse** visual impact during construction. (Refer to Table 7-2 Viewpoint 3).

In views from the Terry Lamb Reserve and adjacent residential properties, work to construct the services building would be seen. This would include unobstructed views to a worksite which would be established along the rail corridor and within this linear section of park. This work would require the removal of trees and would be enclosed by site fencing. (Refer to Table 7-2 Viewpoint 4).

In views from Redman Parade, to the north of the station, the existing car park would be replaced with a construction compound and enclosed by temporary security fencing and hoarding. Construction vehicle movement and site access would be seen on Redman Parade. Removal of vegetation along the railway corridor would be seen. Due to the extent and proximity of the works in views from Redman Parade, this would create a considerable reduction in the amenity of this view, which is of local sensitivity, resulting in a **moderate adverse** visual impact during construction. (Refer Table 7-2 Viewpoint 5).

Once operational, in views from the Burwood Road overbridge, the re-levelled platforms and platform screen doors would be visible, however, the remainder of the station would be largely unchanged. These changes would be largely absorbed into the character of the existing station. Overall, there would be no perceived change in the amenity in views from the Burwood Road overbridge, which is of local sensitivity, and a **negligible** visual impact during operation. (Refer to Table 7-2 Viewpoint 1).

From Tobruk Avenue new kerbside facilities would be visible alongside the reinstated commuter carpark along with new tree planting. This would result in no perceived change in the amenity of these views, which are of local sensitivity, and a **negligible** visual impact during operation. (Refer to Table 7-2 Viewpoint 2).

In views from the southeast, along the shared path linking to the Terry Lamb Reserve and adjacent residential properties, the existing carpark would be reinstated with new trees replacing those which were removed for construction. This would result in no perceived change in the amenity of this view, which is of neighbourhood sensitivity, resulting in a **negligible** visual impact during operation. (Refer to Table 7-2 Viewpoint 3).

From the Terry Lamb Reserve and adjacent residential properties, the new services building would be visible. The new services building would obstruct views to the rail corridor. A new entry road would be seen, extending between the services building and Myall Street, across the existing path, to a gated hardstand area surrounding the building. The services building would be slightly larger than the adjacent residential dwellings, however, there would be some visual separation provided by the open space and additional trees along the existing path. The removal of vegetation and introduction of new built form

would result in a considerable reduction in the amenity of this view, which is of neighbourhood sensitivity, resulting in a **minor adverse** visual impact during operation. (Refer to Table 7-2 Viewpoint 4).

In views from Redman Parade, to the north of the station, the car park would be reinstated. Much of the existing vegetation would be retained, and therefore this would result in little change in the view. Overall, the project would create no perceived change in the amenity of this view, which is of local sensitivity, resulting in a **negligible** visual impact during operation. (Refer to Table 7-2 Viewpoint 5).

7.2.3. Change to daytime visual amenity impacts

During construction, in views from Burwood Road into the station and from Tobruk Avenue, the visual impact would reduce from **moderate adverse** to **minor adverse**, as the extent of work required at the station and within the precinct has been refined for the preferred project.

Minor adverse visual impacts would continue to be experienced in views from the southeast from the shared path linking to the Terry Lamb Reserve, as a construction compound would be established on the existing carpark. In views from the southeast from the shared path linking to the Terry Lamb Reserve, the impact would remain as a **minor adverse** visual impact, as works to construct the services building would be unchanged from the exhibited project.

Views southwest from Redman Parade would also remain as a **minor adverse** visual impact, as a construction compound would be established on the Redman Parade commuter carpark.

During operation, the impact on views from Burwood Road and across the station would reduce from **minor adverse** to **negligible**, as the construction of a new concourse and footbridge would no longer be required.

In views from Tobruk Avenue the level of impact would reduce from **minor beneficial** to **negligible** as the new plaza as part of the exhibited project would not be part of the preferred project, and the works to upgrade the kerbside facilities would be consistent in character with the existing view.

The shared path linking to the Terry Lamb Reserve, and adjacent residential areas, to the southeast of the station, would have a visual impact which is reduced from a **minor adverse** to **negligible**. This is because the new concourse and footbridge proposed in the exhibited project would not be installed and the view would be largely unchanged. Views from the Terry Lamb Reserve and adjacent areas would remain as **minor adverse**, as the new services building would remain as shown in the exhibited project.

View southwest from Redman Parade to the preferred project would remain as a **negligible** visual impact, as the commuter carpark would be reinstated.

Table 7-2 includes all impacts identified in the exhibited project as well as the assessment of the preferred project. Any assessments that would increase or decrease from the exhibited project have been highlighted in bold.

Table 7-2 Belmore Station – daytime visual amenity impacts

	Viewpoint	Sensitivity rating	Construction impact		Operation impact	
			Exhibited project	Preferred project	Exhibited project	Preferred project
1	View east from Burwood Road overbridge	Local	Moderate adverse	Minor adverse	Minor adverse	Negligible
2	View northeast from Tobruk Avenue	Local	Moderate adverse	Minor adverse	Minor beneficial	Negligible
3	View northwest from shared path linking to the Terry Lamb Reserve	Neighbourhood	Minor adverse	Minor adverse	Minor adverse	Negligible
4	View west from the Terry Lamb Reserve	Neighbourhood	Minor adverse	Minor adverse	Minor adverse	Minor adverse
5	View southwest from Redman Parade	Local	Moderate adverse	Minor adverse	Negligible	Negligible

7.3. Night-time visual amenity

7.3.1. Night-time visual amenity impacts of the exhibited project

At night there would be a **minor adverse** visual impact during construction due to a reduction in the amenity of views from residential properties in Redman Parade, upper Acacia Lane and Acacia Street, and Myall Street.

There would also be a **minor adverse** visual impact in views at night during operation, particularly from adjacent residential properties, due to the intensification and greater area of lighting, seen in close proximity.

7.3.2. Night-time visual amenity impacts of the preferred project

There would be night works required to construct the preferred project to minimise impact on the operations of the station. This work would be contained mainly within the station. However, there would also be night activity in the construction compounds which are in close proximity to residential areas in the north on Redman Parade, and Acacia Street and Lane to the south. As the platforms would not be extended to the east, the extent of this impact would be reduced. These views would have a noticeable reduction in amenity at night, and there would be a **negligible** visual impact during construction.

During operations, the preferred project would include new kerbside facilities on Tobruk Avenue which would require additional lighting. There would also be new bicycle facilities to the north on Redman Avenue. During operation, the lighting of the project would be largely absorbed into the existing station setting, a medium district brightness environment, giving rise to a **negligible** visual impact at night.

7.3.3. Change to night-time visual amenity impacts

During construction, at night the **minor adverse** visual impact identified for the exhibited project would reduce to **negligible**. Whilst there would be some night works seen, the extent of night works would be reduced with the preferred project. This impact would also be experienced for a shorter duration.

During operation, at night the **minor adverse** visual impact identified for the exhibited project would reduce to **negligible**. This is due to the revised extent of precinct works, which would not be near adjacent residential areas.

Table 7-3 includes a summary of these night-time visual amenity impacts. Any assessments that would increase or decrease from the exhibited project have been highlighted in bold.

Table 7-3 Belmore Station – night-time visual amenity impacts

Location	Sensitivity rating	Construction impact		Operation impact	
		Exhibited project	Preferred project	Exhibited project	Preferred project
Belmore Station precinct	E3: Medium brightness district	Minor adverse	Negligible	Minor adverse	Negligible

8. Lakemba Station

8.1. Landscape character

8.1.1. Landscape character impacts of the exhibited project

There would be a **moderate adverse landscape impact** at the Lakemba Station precinct during construction due to a reduction in the legibility and accessibility as work is staged and customer access is diverted to a temporary access structure, during demolition works and construction of the new station.

During operation, there would be a **negligible landscape impact**, as the open space and public realm and interchange facilities are reinstated.

8.1.2. Landscape character impacts of the preferred project

The preferred project would require less construction activity at Lakemba Station and station precinct. Construction compounds would be established to the north and south of the rail corridor, on Railway Parade and The Boulevarde. Most of the trees within the precinct would be retained including several mature gum trees along Railway Parade. There would be work undertaken within the station to re-level the station platforms. New kerbside facilities would be constructed on the southern side of Railway Parade, and new taxi kerbside facilities on the northern side of The Boulevarde. This work would reduce the legibility and accessibility of the station during construction. A services building would be constructed along the rail corridor to the southwest of the station. This activity, as well as works to construct the emergency egress stairs at the end of the existing platforms, would have a limited impact on access to the station and transport interchange facilities. Overall, due to the works required within the station, there would be a noticeable reduction in the landscape quality and functioning of this precinct during construction. The station precinct is of local landscape sensitivity, resulting in a **minor adverse** landscape impact.

During operation, the preferred project would alter a smaller area as Lakemba Station has recently been upgraded as a part of the Transport Access Program (TAP) and has a new station concourse building. New bike parking and new kiss and ride kerbside facilities on the southern side of Railway Parade, and new taxi kerbside facilities on The Boulevarde would improve the accessibility of the station precinct. Most trees within the precinct would remain, as would the Lakemba War Memorial. Any impact on the surrounding gardens would have been reinstated and additional trees and planting would be provided to replace any trees removed during construction. The new services building would be located within the corridor, beyond the immediate environs of the station, and not impact access or use of the station or station precinct. Overall, this would result in no perceived change in the landscape quality and functioning of this precinct, which is of local sensitivity, and a **negligible** landscape impact during operation.

8.1.3. Change to landscape character impacts

The construction impacts of the preferred project would reduce from a **moderate adverse** to **minor adverse** landscape impact during construction as there would be less work at the station due to the retention of the existing station entry building. This would result in less impact on trees, legibility and accessibility within the precinct during construction.

During operation, the **minor beneficial** landscape impacts identified for the exhibited project would be reduced to a **negligible** landscape impact as the existing station would be retained. The Lakemba Station

has been recently upgraded by a Transport Access Program (TAP) project and the proposed additional kerbside facilities would further improve the existing accessibility of the station and station precinct.

Table 8-1 includes a summary of these landscape character impacts. Any assessments that would increase or decrease from the exhibited project have been highlighted in bold.

Table 8-1 Lakemba Station – landscape character impacts

Location	Sensitivity rating	Construction impact		Operation impact	
		Exhibited project	Preferred project	Exhibited project	Preferred project
Lakemba Station precinct	Local	Moderate adverse	Minor adverse	Minor beneficial	Negligible

8.2. Daytime visual amenity impacts

8.2.1. Daytime visual amenity impacts of the exhibited project

The following viewpoints were selected as representative of views to the Lakemba Station site:

- view northeast from Railway Parade
- view southwest along The Boulevard
- view southwest from The Boulevard commuter car park
- view southeast from Jubilee Reserve.

During construction, there would be a **moderate adverse** visual impact on views to the project works from Railway Parade and The Boulevard. There would also be **minor adverse** impact on views to the project works from Jubilee Reserve and areas within The Boulevard car park, beyond the immediate setting of the station. This is due to the extent and nature of the construction activity, including construction compounds and temporary station access structures, as well as demolition and station construction works.

During operation, there would be a **minor adverse** impact in views towards the station from Railway Parade as the existing mature eucalypts would be lost, altering the nature and amenity of the view. However, there would be a **minor beneficial** impact in views from The Boulevard as the strong architectural statement highlights the station entry, alongside a reinstated parkland setting.

8.2.2. Daytime visual amenity impacts of the preferred project

In views from Railway Parade, during construction, a worksite would be seen established along Railway Parade. The existing mature gum trees would be retained. Construction works to re-level the platforms, install fencing and kerbside facilities, would be seen to the west of the station concourse building (right of view). Construction vehicles would be seen accessing the worksite via Railway Parade. These works would create a noticeable reduction in the amenity of this view, which is of local visual sensitivity, resulting in a **minor adverse** visual impact during construction. (Refer to Table 8-2 Viewpoint 1 and Figure 8-1 View northeast from Railway Parade).



Figure 8-1 View northeast from Railway Parade

View southwest along The Boulevard would include some activity to construct kerbside facilities on the northern verge. The extent of this work would be minor and not result in a perceived change in amenity during construction. Overall, as this view is of local visual sensitivity, there would be a **negligible** visual impact. (Refer to Table 8-2 Viewpoint 2).

The view from The Boulevard commuter car park would include a construction compound in the centre of this view, established across the rail corridor and adjacent car parking area. All vegetation within the compound area along the corridor fence line would be removed. The worksite and compound would be enclosed by site perimeter hoarding, obstructing views to the rail corridor from this viewpoint and from adjacent residences. Construction vehicles would be seen accessing the compound via The Boulevard. It is expected that the project would create a considerable reduction in the amenity of this view, which is of neighbourhood visual sensitivity, resulting in a **minor adverse** visual impact during construction. (Refer to Table 8-2 Viewpoint 3).

As the platforms would not be extended to the west, there would be no works visible in the fore and middle ground of views from the Jubilee Reserve during construction. In the background of the view, beyond the rail corridor, the vegetation in the background of this view, on the southern side of the rail corridor, would be removed for the construction compound. This change would result in no perceived change in the amenity of this view, which is of neighbourhood visual sensitivity, resulting in **negligible** visual impact during construction. (Refer to Table 8-2 Viewpoint 4).

During operation in views from Railway Parade, the large existing gum trees would be retained, filtering views to the existing concourse building and retained heritage platform buildings. There would be glimpses of the station platforms which would have been re-levelled, and platform screen doors. Overall, it is expected that there would be no perceived change in the amenity of this view, as the works would be

absorbed into the view. This view is of local visual sensitivity, resulting in **negligible** visual impact during operation. (Refer to Table 8-2 Viewpoint 1).

In views from The Boulevard, the existing station building, war memorial and gardens would remain, and there would be additional kerbside facilities established along the northern verge. Due to the minor changes in this view, and consistency with the urban character of the station, this would result in no perceived change in the amenity of this view, which is of local visual sensitivity, and a **negligible** visual impact during operation. (Refer to Table 8-2 Viewpoint 2).

During operation, a reconfigured commuter car park would be visible in the fore and middle ground of views from The Boulevard in the vicinity of the carpark. A new single storey services building would be visible at the western end of the carpark, in the background. It would be set at street level, and partly enclosed by the adjacent rail embankment. The removal of trees along the rail corridor would open-up views to the rail corridor, including new corridor segregation fencing and signalling equipment. This would result in a noticeable reduction in the amenity of this view, which is of neighbourhood visual sensitivity, and a **negligible** visual impact during operation. (Refer to Table 8-2 Viewpoint 3).

From Jubilee Reserve there would be segregation fencing and signalling equipment visible along the rail corridor, in the middle ground of the view. It is expected that the services building, west of the station, would also be seen rising above the rail corridor embankment in the background of the view. These elements would be absorbed into the character of the existing rail corridor. This would result in no perceived change in the amenity of this view, which is of neighbourhood sensitivity resulting in a **negligible** visual impact during operation. (Refer to Table 8-2 Viewpoint 4 and Figure 8-2 View southeast from Jubilee Reserve).



Figure 8-2 View southeast from Jubilee Reserve

8.2.3. Change to daytime visual amenity impacts

During construction, the impact on views from Railway Parade would remain as **minor adverse**. Whilst the demolition of the existing concourse and construction of a new station entry building would not be a part of the preferred project, the establishment of a construction compound and the removal of the mature eucalypt trees would continue to have an adverse effect on the amenity of these views.

Views from The Boulevard in the vicinity of the station entry, would have a reduced visual impact from **moderate adverse** to **negligible**. This is because the existing station buildings would not be demolished and rebuilt, requiring substantially less construction activity.

The construction of the services building, as seen in views from The Boulevard and adjacent residential areas, would remain as a **minor adverse** visual impact, as the preferred project is unchanged from the exhibited project.

From the Jubilee Reserve the extent of construction works has been refined so that the station platforms would not be extended west and there would be no major retaining walls required. The preferred project would have a **negligible** visual impact in views from this location, reduced from a **minor adverse** visual impact identified for the exhibited project.

During operation the impacts would remain **minor adverse** in views from Railway Parade mainly due to the removal of the mature trees. In views from The Boulevard in the vicinity of the station, the visual impact would reduce from **minor beneficial** to **negligible**, this is because the improvements envisaged in the exhibited project would not be achieved by the preferred project. In views from The Boulevard commuter car park, the visual impact of the preferred project would remain as **negligible**. From the Jubilee Reserve, the visual impact would also remain as **negligible**. However, in the exhibited project the negligible visual impact was due to the consistency between the station and existing rail corridor setting, whereas the preferred project proposes a lower level of modification to the view, with the station platforms no longer being extended to the west.

Table 8-2 includes all impacts identified in the exhibited project as well as the assessment of the preferred project. Any assessments that would increase or decrease from the exhibited project have been highlighted in bold.

Table 8-2 Lakemba Station – daytime visual amenity impacts

	Viewpoint	Sensitivity rating	Construction impact		Operation impact	
			Exhibited assessment	Preferred project	Exhibited assessment	Preferred project
1	View northeast from Railway Parade	Local	Minor adverse	Minor adverse	Minor adverse	Negligible
2	View southwest along The Boulevard	Local	Moderate adverse	Negligible	Minor beneficial	Negligible
3	View southwest from The Boulevard commuter car park	Neighbourhood	Minor adverse	Minor adverse	Negligible	Negligible
4	View southeast from Jubilee Reserve	Neighbourhood	Minor adverse	Negligible	Negligible	Negligible

8.3. Night-time visual amenity

8.3.1. Night-time visual amenity impacts of the exhibited project

At night there would be a **minor adverse** visual impact during construction relating to the impacts on the amenity of views from residential properties adjacent to the rail corridor in Railway Parade, and The Boulevard. There would also be a **minor adverse** visual impact in views at night during operation, as the new metro platforms would extend lighting to the west, and within close proximity to residential areas.

8.3.2. Night-time visual amenity impacts of the preferred project

There would be night works required to construct the preferred project to minimise impact on the operations of the rail network. Much of the night works would occur within the station and adjacent areas including the construction compounds southeast of the station on The Boulevard, and northwest of the station on Railway Parade. This construction activity may result in some additional light seen in views from residential properties on Railway Parade and The Boulevard. Overall, it is expected that this lighting would create a noticeable reduction in the amenity of these views and a **minor adverse** visual impact at night.

During operations, views to the preferred project would include minor changes to the kerbside facilities on the northern verge of The Boulevard and the southern verge of Railway Parade which would be lit, increasing the amount of lighting near adjacent commercial and residential properties. There would also be headlights seen on the additional metro trains using the station. Overall, this lighting would be generally consistent with the surrounding medium district brightness environment, and there would be no perceived change in amenity, resulting in a **negligible** visual impact at night.

8.3.3. Change to night-time visual amenity impacts

At night the visual impact during construction would remain as a **minor adverse** visual impact during construction as there would be construction activity introducing light into areas adjacent to residential properties on Railway Parade and The Boulevard. However, the duration and area over which this impact would be experienced, would be less for the preferred project.

During operation the **minor adverse** visual impact would be reduced to a **negligible** visual impact at night. This is due to the revised nature of works, including the platforms not being extended to the west, so that there is less additional lighting near residential properties.

Table 8-3 includes a summary of these night-time visual amenity impacts. Any assessments that would increase or decrease from the exhibited project have been highlighted in bold.

Table 8-3 Lakemba Station – night-time visual amenity impacts

Location	Sensitivity rating	Construction impact		Operation impact	
		Exhibited project	Preferred project	Exhibited project	Preferred project
Lakemba Station precinct	E3: Medium district brightness	Minor adverse	Minor adverse	Minor adverse	Negligible

9. Wiley Park Station

9.1. Landscape character

9.1.1. Landscape character impacts of the exhibited project

Construction works in the Wiley Park Station precinct have a **minor adverse** landscape impact. This is due to a reduction in the legibility and accessibility of the precinct as work is staged and customer access is diverted to a temporary access structure during demolition works and the new station is constructed.

During operation, there would be a **minor beneficial** landscape impact, as the public realm and interchange enhancements provide improved legibility, connectivity, and amenity. These improvements would be a catalyst for urban renewal within the precinct.

9.1.2. Landscape character impacts of the preferred project

The preferred project would require less construction activity at Wiley Park Station and station precinct. Construction compounds would be established to the west of the rail corridor on Stanlea Parade to the north of the station and The Boulevarde to the south. The worksite to the east of the station would be reduced in size and the existing street trees along The Boulevarde and on the rail corridor cuttings would be retained. The existing heritage listed station entry building would be retained, however, the retail building and disused premises at the station entrance on King Georges Road would be demolished. Two new lifts and two new stairs would be constructed at the rear of the station entry building. The existing ramps to the platforms would be retained and the heritage listed platform buildings would be retained and work would be undertaken to re-level the platforms. This activity would be spread across the station and precinct and would have minor impacts on access to the station. Overall, there would be a noticeable reduction in the landscape quality and functioning of this precinct during construction. The station precinct is of local landscape sensitivity, resulting in a **minor adverse** landscape impact.

During operation, the quality of the interchange facilities and station access would be improved by the new lifts and stairs at the station and kerbside facilities on The Boulevarde. There would be improvements to the lane between King Georges Road and Stanlea Parade including lighting and landscaping. There would also be additional trees provided around the station to replace the trees removed during construction. Overall, this would result in no perceived change in the landscape quality and functioning of this precinct, which is of local sensitivity, and a **negligible** landscape impact during operation.

9.1.3. Change to landscape character impacts

Although the existing station entry building would be retained, there would be works spread across the precinct and some demolition and construction works within the existing station entry building. Therefore, there would be a noticeable reduction in the landscape quality and functioning of this precinct during construction, and the impact of the preferred project would remain as a **minor adverse** landscape impact.

During operation, the **minor beneficial** landscape impacts identified for the exhibited project would be reduced to **negligible**. The existing station entrance would be retained and upgraded, and the existing retail building and disused premises, which flank the heritage station building, would be removed. This would improve the visual prominence and therefore the legibility of the station entry, however, the station would continue to be constrained by the proximity of the entry to King Georges Road. Whilst the

preferred project would not achieve the level of improvement to connectivity and accessibility of the exhibited project, which proposed to set the station entry back from King Georges Road, the legibility and accessibility of the station would be improved by the new lifts and stairs at the station, additional lighting and landscape treatment to Stanlea Parade, and additional kerbside facilities on The Boulevarde

Table 9-1 includes a summary of these landscape character impacts. Any assessments that would increase or decrease from the exhibited project have been highlighted in bold.

Table 9-1 Wiley Park Station – landscape character impacts

Location	Sensitivity rating	Construction impact		Operation impact	
		Exhibited project	Preferred project	Exhibited project	Preferred project
Wiley Park Station precinct	Local	Minor adverse	Minor adverse	Minor beneficial	Negligible

9.2. Daytime visual amenity

9.2.1. Daytime visual amenity impacts of the exhibited project

The following viewpoints were selected as representative of views to the Wiley Park Station site:

- view southwest from laneway at King Georges Road
- view northwest across King Georges Road
- view northwest along The Boulevarde
- view northeast from The Boulevarde.

During construction, there would be a **moderate adverse** visual impact on views to the project works from adjacent streets, residential areas and schools to the north and south of the rail corridor, and from King Georges Road. This is due to the extent and nature of the works including construction compounds, temporary access structures and proximity of the construction works from these locations.

During operation, there would be a **minor adverse** visual impact in views towards the station from residential properties to the north of the station as the character would be different from the existing station character, with the station buildings having an increased scale and extending west of the existing station footprint, in closer proximity to adjacent residential properties. However, there would be a minor beneficial visual impact in views from King Georges Road as the new station architecture would improve the visual prominence of the station entry and be visually appropriate within the commercial setting.

9.2.2. Daytime visual amenity impacts of the preferred project

In views from the laneway at King Georges Road, and adjacent residential areas along Stanlea Parade, the establishment of a construction compound site along the rail corridor, the removal of several trees and construction vehicles accessing the compound site would be visible. Whilst the station entry building and platform access ramps would be retained, works to demolish the retail building and disused premises, either side of the station, construction of two new lift shafts and stairs, and re-levelling of the platforms at the station would be visible. This would create a considerable reduction the amenity of views from this area, which are of neighbourhood visual sensitivity, resulting in a **minor adverse** visual impact during construction. (Refer to Table 9-2, Viewpoint 1).

From King Georges Road, works to demolish the retail building and disused premises either side of the station building, and the removal of several trees would be seen. Construction of the lifts at the rear of the station building would be seen, rising above the roofline of the retained heritage station entry building. This would result in a noticeable reduction in the amenity of this view, which is of local visual sensitivity, and a **minor adverse** visual impact during construction. (Refer to Table 9-2, Viewpoint 2).



Figure 9-1 View northwest across King Georges Road

During construction, views from The Boulevard to the station would include works to the rear of the station entry building, including demolition of the existing disused premises at the corner with King Georges Road, and works to construct two new lift shafts and stairs. Work to re-level the platforms within the station would also be visible in the middle ground of this view. This work would extend across much of the existing view to the station and would result in a noticeable reduction in the amenity of views from the Boulevard, which are of neighbourhood visual sensitivity, and a **negligible** visual impact during construction. (Refer to Table 9-2, Viewpoint 3).

In views northeast from The Boulevard a construction compound would be established along the northern road verge, west of the station. This would include the removal of mature trees and vegetation along the rail corridor, opening-up views to the rail corridor. Construction vehicles would be seen accessing the worksite as would works to construct the services building. This would result in a considerable reduction in the amenity of views from the Boulevard, which are of neighbourhood visual sensitivity, and a **minor adverse** visual impact during construction. (Refer to Table 9-2, Viewpoint 4).

During operation, in views from the laneway at King Georges Road and residential areas to the north of the station, new finishes including lighting and landscaping on the lane would improve the amenity of the foreground. The new lifts and stairs would be seen adjacent to the existing station entry building. Within the station the view would include re-levelled platforms and screen doors. The improvements to the precinct would balance the additional built elements that would be visible adjacent to the existing station

buildings, and result in no perceived change in the amenity of views from this area, which are of local visual sensitivity, resulting in a **negligible** visual impact. (Refer to Table 9-2, Viewpoint 1).

In views from King Georges Road, the station entry would be less cluttered as the existing retail building and disused premises, either side of the station entry, would have been removed. The new lift structures would be glimpsed above the existing heritage listed station entry building. These lifts would have contemporary materials and finishes that complement the existing heritage building. The addition of these structures and removal of retail and disused premises around the station entry would somewhat increase the prominence of the station entry in these views. Although these additions would be visible, they would not detract from the amenity of these views. Therefore, there would be no perceived change in the amenity of this view, which is of local visual sensitivity, and a **negligible** visual impact during operation. (Refer to Table 9-2, Figure 9-1 View northwest across King Georges Road).

In views from The Boulevard to the station, the new lifts and stairs would be seen to the rear of the existing station entry building and there would also be glimpses to the re-levelled station platforms and the platform screen doors. These new elements would be largely absorbed into the character of the existing station. It would therefore result in no perceived change in the amenity of views from the Boulevard, which are of neighbourhood visual sensitivity, and a **negligible** visual impact during operation. (Refer to Table 2-2 Viewpoint 3 and Figure 9-2 View northeast from The Boulevard).



Figure 9-2 View northeast from The Boulevard

A new single storey services building would be seen in the middle ground of north-easterly views from the Boulevard, alongside the commuter carpark. The removal of existing trees would open-up views to the new rail corridor and residential areas to the north of the station. This view of the corridor would include new corridor segregation fencing, signalling equipment, overhead wires and catenary structures. The re-levelled platforms and platform screen doors would be seen along the length of the existing platform. It is expected, the preferred project would result in a noticeable reduction in visual amenity of

this view, which is of neighbourhood visual sensitivity, resulting in **negligible** visual impact during operation. (Refer to Table 9-2, Viewpoint 4: View northeast along The Boulevard).

9.2.3. Change to daytime visual amenity impacts

During construction a **minor adverse** visual impact would remain in views from the laneway at King Georges Road, as there would be a construction compound established along the northern side of the rail corridor and there would be works across the station. The preferred project would retain the existing heritage buildings at the station, resulting in less construction seen in this view and the impact would be experienced for a shorter duration.

Similarly, in views from King Georges Road, the **minor adverse** visual impact would remain as although the existing station would be retained, there would be works to demolish the existing retail building and disused premises, either side of the station entry, and the construction of new lifts would be seen.

Views from The Boulevard towards the station would remain as **minor adverse** during construction as although changes have been made to the exhibited project, there would be construction activity undertaken across the station for the preferred project that would be seen in this view. The duration of this impact would be reduced as the extent of work at the station has been revised.

Views from The Boulevard to the construction compound at the location of the services building construction works would remain **negligible**, as although the station platforms would not be extended to the west in the preferred project, the works for the construction compound would remain.

During operation the impact on views from the laneway between King Georges Road and Stanlea Parade would reduce from **minor adverse** to **negligible**, as the existing station buildings would be retained, there would be upgrades to the laneway, and works to the station platforms would be absorbed into the view.

The impact on views from King Georges Road would be reduced from a **minor benefit** to **negligible**. This is because the existing station entry building on King Georges Road would be retained and refreshed, and the benefits offered by the proposed new station building in the exhibited project would not be achieved.

Views from The Boulevard during operation would remain as a **negligible** visual impact, as the location and layout of the services building would remain unchanged, and the works to the station would be consistent in character with the existing station.

Table 9-2 includes all impacts identified in the exhibited project as well as the assessment of the preferred project. Any assessments that would increase or decrease from the exhibited project have been highlighted in bold.

Table 9-2 Wiley Park Station – daytime visual amenity impacts

	Viewpoint	Sensitivity rating	Construction impact		Operation impact	
			Exhibited project	Preferred project	Exhibited project	Preferred project
1	View southwest from laneway at King Georges Road	Local	Minor adverse	Minor adverse	Minor adverse	Negligible
2	View northwest across King Georges Road	Local	Minor adverse	Minor adverse	Minor beneficial	Negligible
3	View northwest along The Boulevarde	Neighbourhood	Negligible	Negligible	Negligible	Negligible
4	View northeast from The Boulevarde	Neighbourhood	Minor adverse	Minor adverse	Negligible	Negligible

9.3. Night-time visual amenity

9.3.1. Night-time visual amenity impacts of the exhibited project

At night there would be a **minor adverse** visual impact during construction due to the impacts on the amenity of views from nearby residential properties adjacent to the rail corridor in The Boulevard, Stanlea Parade, Lane at King Georges Road, Shadforth Street and Urunga Parade.

During operation the level of lighting during operation would be consistent with development along King Georges Road, the lit platforms, extending west, would create a **minor adverse** visual impact at night, from residential properties to the north and south of the rail corridor.

9.3.2. Night-time visual amenity impacts of the preferred project

There would be night works required to construct the preferred project to minimise impact on the operations of the rail network. Night works would be undertaken in close proximity to residential areas to the north and south of the corridor, including properties on The Boulevard, Stanlea Parade, Lane at King Georges Road and King Georges Road. As the platforms would not be extended to the west, the extent of this impact would be reduced. These views would have a considerable reduction in amenity during these times, and there would be a **minor adverse** visual impact during construction.

During operations, views to the preferred project would include minor changes to the station entry building including the addition of two lift structures. There would also be new kerbside facilities and accessible parking on The Boulevard, to the east of King Georges Road. These structures and kerbside facilities would be lit, increasing the amount of lighting near residential properties on The Boulevard, Stanlea Parade, Lane at King Georges Road and King Georges Road. Overall, during operation the lighting of the project would be largely absorbed into the existing station setting, a medium district brightness environment, resulting in a **negligible** visual impact at night.

9.3.3. Change to night-time visual amenity

A **minor adverse** visual impact would remain at night during construction due to the introduction of night construction activity in close proximity to residential areas, particularly on The Boulevard, where tree removal would open up views to the corridor.

During operation, the visual impact on views at night would reduce from **minor adverse** to **negligible**, due to the preferred project.

Table 9-3 includes a summary of these night-time visual amenity impacts. Any assessments that would increase or decrease from the exhibited project have been highlighted in bold.

Table 9-3 Wiley Park Station – night-time visual amenity impacts

Location	Sensitivity rating	Construction impact		Operation impact	
		Exhibited project	Preferred project	Exhibited project	Preferred project
Wiley Park Station precinct	E3: Medium district brightness	Minor adverse	Minor adverse	Minor adverse	Negligible

10. Punchbowl Station

10.1. Landscape character

10.1.1. Landscape character impacts of the exhibited project

There would be a **moderate adverse** landscape impact at the Punchbowl Station precinct during construction due to a reduction in legibility and accessibility, and the introduction of construction compounds within the Warren Reserve and commuter car parks, to the north and south of the station.

During operation, there would be a **moderate beneficial** landscape impact, as the public realm and interchange enhancements provide an improvement to the legibility, connectivity, safety and amenity of the station precinct.

10.1.2. Landscape character impacts of the preferred project

The preferred project would require less construction activity at Punchbowl Station and station precinct. Construction compounds would be established to the north and south of the rail corridor, within Warren Reserve and commuter car park. However, the footprint of construction works has been refined in size and the existing street trees on Urunga Parade and The Boulevard would be retained. The existing station entrances would be retained and upgraded, and there would be works at the station entry to construct three new lifts, and a footbridge with two new stairs. The existing heritage listed platform would be re-levelled. This work would reduce the legibility and accessibility of the station during construction. Trees would be removed for the footprint of construction, however, due to the refined construction footprint, several additional trees would be retained. Overall, due to the works required within the station, there would be a noticeable reduction in the landscape quality and functioning of this precinct during construction. The station precinct is of local landscape sensitivity, resulting in a **minor adverse** landscape impact.

During operation, the preferred project would improve accessibility as station access would include new lifts, footbridge and stairs at the station and kerbside facilities on The Boulevard. New bike parking would be provided at the northern and southern station entrances and there would be a new signalised pedestrian crossing to the north of the station on Punchbowl Road. However, the legibility of the existing station building would not be improved by the preferred project, as the existing station remains tucked in behind retail development on The Boulevard and within Warren Reserve and is not achieving the same level of improvement for CPTED. Additional trees and planting would be provided around the station to replace the trees removed during construction. Overall, during operations there would be a noticeable improvement in the landscape quality and functioning of this precinct, which is of local sensitivity, and a **minor beneficial** landscape impact during operation.

10.1.3. Change to landscape character impacts

The construction impacts of the preferred project would reduce from a **moderate adverse** to **minor adverse** landscape impact during construction. Work at the station and station precinct as part of the preferred project, including retention of the existing station buildings and overhead booking office, and less works in Warren Reserve for the construction compound, would result in the removal of fewer trees, and improved accessibility within the precinct.

During operation, the **moderate beneficial** landscape impacts identified for the exhibited project would be reduced to **minor beneficial**. Although the existing station would be retained and upgraded, the new

overhead footbridge with spacious northern and southern station entry plazas would not be delivered. Furthermore, the preferred project would not achieve the improvements to public realm and kerbside facilities offered by the exhibited project, at the station interface with Warren Reserve and The Boulevard. Furthermore, whilst the legibility and accessibility of the station would be improved with the new lifts, stairs, and improved kerbside facilities on The Boulevard, the same degree of improvement would not be achieved by the preferred project. Notwithstanding the preferred project would have a **minor beneficial** impact during operation.

Table 10-1 includes a summary of these landscape character impacts. Any assessments that would increase or decrease from the exhibited project have been highlighted in bold.

Table 10-1 Punchbowl Station – landscape character impacts

Location	Sensitivity rating	Construction impact		Operation impact	
		Exhibited project	Preferred project	Exhibited project	Preferred project
Punchbowl Station precinct	Local	Moderate adverse	Minor adverse	Moderate beneficial	Minor beneficial

10.2. Daytime visual amenity

10.2.1. Daytime visual amenity impacts of the exhibited project

The following viewpoints were selected as representative of views to the Punchbowl Station site:

- view south from Warren Reserve
- view east along Urunga Parade
- view west along The Boulevard at Matthew Street
- view north from The Boulevard.

During construction there would be a **minor adverse** impact on views to the project works from residential properties on adjacent residential areas on Urunga Parade, Warren Reserve and surrounding streets and public realm areas. This is due to the extent and nature of the works, including construction compounds, in close proximity to these locations.

During operation, there would be a **minor beneficial** impact in views from the Warren Reserve, as the new station buildings would create a strong architectural statement, highlighting the northern station entry. A new northern plaza would also improve the amenity of the rail side interface with the reserve. However, there would be a **minor adverse** impact in views from residential properties on Urunga Parade, given the intensification of rail infrastructure and removal of vegetation within the corridor.

10.2.2. Daytime visual amenity impacts of the preferred project

During construction, in views from south from Warren Reserve, there would be construction activity seen to the north of the rail corridor, extending into Warren Reserve. Some trees in this area within Warren Reserve would be removed. Works to upgrade the station entry building, including extension of the existing concourse footbridge to accommodate new lifts and stairs would be visible in the foreground and middle ground of views from the reserve. This activity would create a noticeable reduction in the amenity of this view, which is of local visual sensitivity, and a **minor adverse** impact in views towards the station entry. (Refer to Table 10-2, Viewpoint 1 and Figure 10-1 View south from Warren Reserve).

Views to the station works from the northeast, including residential properties on Urunga Parade, would be limited during construction as vegetation alongside the rail corridor and in Warren Reserve would be retained, screening views to the station entry upgrade works. There would be, however, a construction compound established to the east of the station for construction of a services building. This work would require the removal of trees within this area, also opening up views to work within and south of the corridor. Overall, there would be a noticeable reduction in the amenity of these views, which are of neighbourhood sensitivity, and a **negligible** visual impact. (Refer to Table 10-2 Viewpoint 2).

In views from the south, along The Boulevard there would be a construction compound established on an existing commuter car park along the rail corridor. Whilst some trees along the rail corridor would be removed, the street trees and existing commercial buildings along The Boulevard would be retained. Works to upgrade the station entry building, including extension of the existing concourse footbridge to accommodate new lifts and stairs would be visible in the foreground and middle ground of views and glimpsed through gaps between the existing retail buildings. Minor works for the construction of the kerbside facilities would be seen in the foreground of views along The Boulevard. This activity would create a noticeable reduction in the amenity of views along The Boulevard, which are of local visual sensitivity, and a **minor adverse** visual impact. (Refer to Table 10-2, Viewpoints 3 and 4).

During operation there would be minor changes visible in views from Warren Reserve to the north of the station. The existing station entrance would be retained and upgraded. The existing concourse footbridge would be extended to the north, and new lift and stairs would be seen. The lift structures would rise above the existing station roofline and increase the overall size of the station entry in this view. However, these elements would be consistent in size with the existing heritage listed station and be clearly differentiated as contemporary additions through the selection of materials. Overall there would be no perceived change in the amenity of views from Warren Reserve, which is a view of local sensitivity, resulting in a **negligible** visual impact during operation. (Refer to Table 10-2 Viewpoint 1 and Figure 10-2 View to station entry from Warren Reserve).

In views to the preferred project from residential areas to the northeast and along Urunga Parade, there would be limited views to works at the station which would be mostly concealed behind vegetation alongside the rail corridor and in Warren Reserve. There would, however, be views to the services building to the east of the station, which would be visible in the middle ground of these views. The removal of vegetation would open up views to the rail corridor. This would result in a noticeable reduction in the amenity of these views, which are of neighbourhood sensitivity, and a **negligible** visual impact. (Refer to Table 10-2, Viewpoint 2).

Views north from The Boulevard, would include an extended concourse footbridge and stairs, extending south towards the viewer, and filling the gap between the existing commercial buildings facing The Boulevard. Beyond this, views to the station upgrade would be minor with glimpses of the lift structures possible. However, much of the station and preferred project would be concealed behind the existing retail buildings along The Boulevard. In the foreground of these views there would be upgraded kerbside facilities on The Boulevard and the street trees removed during construction would be reinstated, visually softening the additional built elements. Overall this work would be largely consistent in character with this dense urban area and there would be no perceived change in the amenity of these views, which are of local sensitivity, resulting in a **negligible** visual impact during operation. (Refer to Table 10-2, Viewpoint 3 and 4 and Figure 10-2 View north from The Boulevard).



Figure 10-1 View to station entry from Warren Reserve



Figure 10-2 View north from The Boulevard

10.2.3. Change to daytime visual amenity impacts

During construction, views from Warren Reserve and The Boulevard would remain as **minor adverse** visual impact as although a new concourse and footbridge located to the east of the existing station would no longer be required, there would be substantial construction work required at the station entry including the removal of several trees.

The visual impact of the preferred project on views from Urunga Parade would be reduced from **minor adverse** to **negligible** during construction. The removal of vegetation within the worksite and along Urunga Parade for the construction of a new station concourse building would no longer be required. The platforms would also not be extended to the east and the retaining walls would also no longer be required.

Views from The Boulevard would remain as a **minor adverse** visual impact. Although the new station would not be constructed to the east of the existing station, and existing retail buildings would not be demolished, there would be a construction compound required on The Boulevard and work would extend from the existing station towards the Boulevard. As the extent and nature of this work would be less, this impact would be experienced for a shorter duration.

During operation the impact of the preferred project on views from Warren Reserve would reduce from **minor beneficial** to **negligible**, as the improvements to the character and visual prominence of the station entry envisaged in the exhibited project would not be achieved by the renovation of the existing station.

In Urunga Parade, the visual impact of the preferred project on views from this residential area would reduce from **minor adverse** to **negligible**, as the proposed new station buildings to the east of the existing station, and closer to these viewers, would no longer be constructed and the existing vegetation in this area would be retained. There would be a new services building and vegetation removed along the southern verge of the Urunga Parade, however this impact would be limited due to the lower sensitivity of this viewing area.

In views from The Boulevard the visual impact during operations would be reduced from **moderate beneficial** and **negligible** to **negligible**. The improvements to the prominence of the station entry achieved by the exhibited project would not be achieved by the preferred project, as the upgraded existing station entrance would be concealed amongst the existing retail buildings along The Boulevard.

Table 10-2 includes all impacts identified for the exhibited project as well as the assessment of the preferred project. Any assessments that would increase or decrease from the exhibited project have been highlighted in bold.

Table 10-2 Punchbowl Station – daytime visual amenity impacts

	Viewpoint	Sensitivity rating	Construction impact		Operation impact	
			Exhibited project	Preferred project	Exhibited project	Preferred project
1	View south from Warren Reserve	Local	Minor adverse	Minor adverse	Minor beneficial	Negligible
2	View east along Urunga Parade	Neighbourhood	Minor adverse	Negligible	Minor adverse	Negligible
3	View west along The Boulevard at Matthew Street	Local	Minor adverse	Minor adverse	Moderate beneficial	Negligible
4	View north from The Boulevard	Local	Minor adverse	Minor adverse	Negligible	Negligible

10.3. Night-time visual amenity

10.4. Night-time visual amenity impacts of the exhibited project

At night there would be a **minor adverse** visual impact during construction owing to the impacts on the amenity of views from residential properties to the north of the rail corridor on Urunga Parade. Although during operation, lighting would be consistent with development along The Boulevarde, the lit platforms, extending west, would create a **minor adverse** visual impact at night, from residential properties to the north of the corridor.

10.4.1. Night-time visual amenity impacts of the preferred project

There would be night works required to construct the preferred project to minimise impact on the operations of the rail network. Night works would be undertaken in close proximity to commercial and recreational areas to the north and south of the existing station, including properties on The Boulevarde and Punchbowl Road. As the platforms would not be extended to the east and a new station building would no longer be constructed, the extent of this impact would be reduced. There would, however, be some works undertaken for the construction of the services building, in close proximity to residential areas north of Urunga Parade. These views would result in a noticeable reduction in amenity during these times, and a **minor adverse** visual impact during construction.

During operations, views to the preferred project would include changes to the station entry building including extending the brightly lit station environment north into Warren Reserve and south towards The Boulevarde. There would also be new kerbside facilities on The Boulevarde and bicycle parking at the northern and southern station entrances. These structures and kerbside facilities would be well lit, increasing the amount of lighting near commercial properties on The Boulevarde and Punchbowl Road, where it would be absorbed into the existing brightly lit setting. Overall, during operation, the lighting of the project would be consistent with the existing station setting, a medium district brightness environment, giving rise to a **negligible visual** impact at night.

10.4.2. Change to night-time visual amenity impacts

The visual impact of construction works at night would remain as **minor adverse**, due to the introduction of night construction activity in close proximity to residential, commercial and recreational areas and given the impact would be experienced over a shorter duration.

During operation the visual impact in views at night would reduce from **minor adverse** to **negligible**, with the decreased extent and intensity of lighting created by the preferred project which remains located adjacent to the commercial area rather than being closer to residential areas to the northeast.

Table 10-3 includes a summary of these night-time visual amenity impacts. Any assessments that would increase or decrease from the exhibited project have been highlighted in bold.

Table 10-3 Punchbowl Station – night-time visual amenity impacts

Location	Sensitivity rating	Construction impact		Operation impact	
		Exhibited project	Preferred project	Exhibited project	Preferred project
Punchbowl Station precinct	E3: Medium district brightness	Minor adverse	Minor adverse	Minor adverse	Negligible

11. Ancillary Works - Rail corridor

11.1. Landscape character impacts

11.1.1. Landscape character impacts of the exhibited project

The ancillary works would give rise to a **minor adverse** landscape impact along most of the corridor during construction, between Dulwich Hill Station to Bankstown Station, and in areas west of Bankstown Station. This would be due to the establishment of construction compounds and worksites, particularly to the south of the corridor, the clearance of vegetation and major earthworks.

There would be a **moderate adverse** landscape impact, however, between Marrickville and Dulwich Hill stations from the extension of construction activity into a portion of McNeilly Park in Marrickville, creating a direct impact on this park and temporarily reducing access for recreation.

During operation, there would be a **minor adverse** landscape impact experienced along all sections of the rail corridor, between Marrickville Station and Bankstown Station, and in areas west of the Bankstown. This is because removed trees would not be reinstated along much of the corridor and there would be an intensification of rail corridor infrastructure, including new retaining walls, embankments, drainage swales, noise barriers, overhead lines and support structures, signalling equipment, telecommunication masts, segregation fencing, and other operational infrastructure, reinforcing the corridor as a physical and visual barrier within the landscape.

11.1.2. Landscape character impacts of the preferred project

The following rail corridor sections were assessed:

- Marrickville Station to Dulwich Hill Station
- Dulwich Hill Station to Hurlstone Park Station
- Hurlstone Park Station to Canterbury Station
- Canterbury Station to Campsie Station
- Power supply feeder south of Canterbury
- Campsie Station to Belmore Station
- Belmore Station to Lakemba Station
- Lakemba Station to Wiley Park Station
- Wiley Park Station to Punchbowl Station
- Punchbowl Station to Bankstown Station
- Areas west of Bankstown Station.

Rail corridor - Marrickville Station to Dulwich Hill Station

During construction, compounds and worksites would be established within the corridor and on the southern side of the tracks. This would require the removal of some corridor vegetation. However, the drainage works would not be required so that there would not be works in McNeilly Park west of Marrickville Station or on School Parade and Dudley Street east of Dulwich Hill station. In addition, throw screens would be installed on the Abermarle Bridge rather than the bridge being replaced. Works to construct the power supply route and construction of the traction power station on Randall Street would be undertaken. Overall, it is expected that there would be a noticeable reduction in the landscape quality of the corridor between Marrickville and Dulwich Hill Station, due particularly to impacts on trees and

works to upgrade services. This section of the rail corridor is of local sensitivity, resulting in a **minor adverse** landscape impact during construction.

During operation, the replacement of open space with a traction power station on Randall Street, removed vegetation and increased infrastructure within the corridor would result in a noticeable reduction in the landscape quality of this section of the rail corridor, which is of local sensitivity, resulting in a **minor adverse** landscape impact during operation.

Rail corridor - Dulwich Hill Station to Campsie Station

Compounds and worksites would be established within the corridor and on the southern side of the tracks requiring some corridor vegetation to be removed during construction. Construction support works would occur outside the rail corridor on land at Garnet Street / The Parade, Dulwich Hill; Melford Street / Canberra Street, Hurlstone Park and on Close Street Canterbury. Works to upgrade and replace road bridges and underpasses has been refined for the preferred project and is limited to work to providing enhanced protection to existing bridge piers, installation of anti-throw screens, vertical protection screens, vehicle collision barriers and general maintenance work, as required. There would be some trackwork to create a crossover east of Campsie Station, however, this work would be contained within the corridor. Overall, it is expected that there would be a noticeable reduction in the landscape quality of the corridor between Dulwich Hill Station and Campsie Station, due particularly to impacts on trees and works to upgrade services. This section of the rail corridor is of local sensitivity, resulting in a **minor adverse** landscape impact during construction.

During operation, whilst the worksites would be reinstated, the removed vegetation would generally not be replaced on the corridor. There would also be increased infrastructure within the corridor. This would result in a noticeable reduction in the landscape quality of this section of the rail corridor, which is of local sensitivity, resulting in a **minor adverse** landscape impact during operation.

Power supply feeder south of Canterbury Station

The substation connection would require temporary works within the road corridors along which it is proposed to pass. There would potentially be street trees removed as a part of the works. The alignment would change for the preferred project so that it would no longer traverse Hughes Park and would instead follow Westfield Street. This would result in a noticeable reduction in the amenity of the corridor which is of local sensitivity, and a **minor adverse** landscape impact during construction.

There would be no permanent aboveground elements, and there would be no perceived change in the quality of this landscape, which is of local sensitivity, resulting in a **negligible** landscape impact during operation.

Rail corridor – Campsie Station to Belmore Station

There would be changes to the existing track between Campsie and Belmore Station. This would require additional construction activity and may give rise to an increased landscape impact in these sections of the corridor with increased tree removal potentially required in these areas. There would also be works to construct the traction substation at Lillian Street. However, upgrades to the drainage works in Lillian Street would not be required. This would result in a noticeable reduction in the amenity of the corridor, which is of local sensitivity and a **minor adverse** visual impact during construction.

During operation, an area of open space would be replaced with a traction power station at Lillian Street, there would be changes to the rail alignment requiring additional vegetation to be removed and increased infrastructure within the corridor. This would result in a noticeable reduction in the landscape

quality of this section of the rail corridor, which is of local sensitivity, resulting in a **minor adverse** landscape impact during operation.

Rail corridor – Belmore Station to Wiley Park Station

Compounds and worksites would be established within the corridor and on the southern side of the tracks requiring some corridor vegetation to be removed. Works to upgrade and replace road bridges and underpasses has been refined for the preferred project and is limited to work to providing enhanced protection to existing bridge piers, installation of anti-throw screens, vertical protection screens, vehicle collision barriers and general maintenance work, as required. Further, no retaining walls would be built. There would, however, be works to construct power upgrades along the corridor and a traction substation at Lakemba. Overall, it is expected that there would be a noticeable reduction in the landscape quality of the corridor between Belmore Station and Wiley Park Station, due particularly to impacts on trees and works to upgrade services. This section of the rail corridor is of local sensitivity, resulting in a **minor adverse** landscape impact during construction.

During operation, whilst the worksites would be reinstated the removed vegetation would generally not be replaced in the corridor. There would also be increased infrastructure within the corridor including a traction substation at Lakemba. This would result in a noticeable reduction in the landscape quality of this section of the rail corridor, which is of local sensitivity, resulting in a **minor adverse** landscape impact during operation.

Rail corridor - Wiley Park Station to Punchbowl Station

The compounds and worksites would be established within the corridor and on the southern side of the tracks. This would require the removal of some corridor vegetation. Road bridges and underpasses would not be replaced. Overall, it is expected that there would be a noticeable reduction in the landscape quality of the corridor due to impacts on trees and works to upgrade services. This section of the rail corridor is of local sensitivity, resulting in a **minor adverse** landscape impact during construction.

The removed vegetation and increased infrastructure within the corridor would result in a noticeable reduction in the landscape quality of this section of the rail corridor, which is of local sensitivity, resulting in a **minor adverse** landscape impact during operation.

Rail corridor – Punchbowl Station to areas west of Bankstown Station

There would be changes to the existing track at Bankstown, services upgrades and a traction substation constructed at Punchbowl. This would require additional construction activity and may give rise to an increased landscape impact in these sections of the corridor with increased tree removal possible. Due to impacts on trees and works to upgrade services there would be a noticeable reduction in the landscape quality of this section of the rail corridor, which is of local sensitivity, resulting in a **minor adverse** landscape impact during construction.

During operation, an area of open space would be replaced with a traction power station at Punchbowl. Whilst the protected vegetation would be retained within the corridor, there would be trees removed and increased infrastructure introduced to the corridor. This would result in a noticeable reduction in the landscape quality of this section of the rail corridor, which is of local sensitivity, resulting in a **minor adverse** landscape impact during operation.

11.1.3. Change to landscape character impacts

The landscape character impact of the preferred project on the rail corridor between Marrickville Station and Dulwich Hill Station would reduce from **moderate adverse** to **minor adverse**. This is because works would not extend into McNeilly Park and the Albermarle Bridge would not be replaced. The retention of the existing track alignment including no change to existing embankments and cuttings would also allow for more vegetation to be retained.

All of the other sections of the corridor would continue to have **minor adverse** landscape character impacts for the preferred project. This is because works would be required for power upgrades, the construction of substations, noise barriers, security and segregation fencing and there would be some tree removal in various locations along the corridor.

During operation the landscape impact would remain as **minor adverse** along the corridor, and a **negligible** landscape impact on the power supply feeder south of Canterbury, which is unchanged from the exhibited project.

Table 11-1 includes a summary of these landscape character impacts.

Table 11-1 Ancillary Works – landscape character impacts

	Viewpoint	Sensitivity rating	Construction impact		Operation impact	
			Exhibited project	Preferred project	Exhibited project	Preferred project
1	Rail corridor – Marrickville Station to Dulwich Hill Station	Local	Moderate adverse	Minor adverse	Minor adverse	Minor adverse
2	Rail corridor –Dulwich Hill Station to Hurlstone Park Station	Local	Minor adverse	Minor adverse	Minor adverse	Minor adverse
3	Rail corridor –Hurlstone Park Station to Canterbury Station	Local	Minor adverse	Minor adverse	Minor adverse	Minor adverse
4	Rail corridor –Canterbury Station to Campsie Station	Local	Minor adverse	Minor adverse	Minor adverse	Minor adverse
5	Power supply feeder south of Canterbury	Local	Minor adverse	Minor adverse	Negligible	Negligible
6	Rail corridor –Campsie Station to Belmore Station	Local	Minor adverse	Minor adverse	Minor adverse	Minor adverse
7	Rail corridor –Belmore Station to Lakemba Station	Local	Minor adverse	Minor adverse	Minor adverse	Minor adverse
8	Rail corridor –Lakemba Station to Wiley Park Station	Local	Minor adverse	Minor adverse	Minor adverse	Minor adverse
9	Rail corridor –Wiley Park Station to Punchbowl Station	Local	Minor adverse	Minor adverse	Minor adverse	Minor adverse
10	Rail corridor –Punchbowl Station to Bankstown Station	Local	Minor adverse	Minor adverse	Minor adverse	Minor adverse
11	Areas west of Bankstown Station	Local	Minor adverse	Minor adverse	Minor adverse	Minor adverse

11.2. Daytime visual amenity impacts

11.2.1. Daytime visual amenity impacts of the exhibited project

The following viewpoints were selected as representative of views to ancillary works and along the corridor site:

- view northwest in McNeilly Park, Marrickville
- view west from the Livingstone Road rail bridge, Marrickville
- view east from Challis Avenue, Dulwich Hill
- view east from Wardell Road overbridge, Dulwich Hill
- view north from Foord Avenue, Hurlstone Park
- view northeast from Sawyer Reserve, Hurlstone Park
- view west along Hutton Street, Hurlstone Park
- view south from Church Street Park, Hurlstone Park
- view northeast from Close Street, Canterbury
- view east from the Terry Lamb Reserve, Belmore
- view northeast from The Boulevarde, Lakemba
- view east from Scott Street, Punchbowl
- view north from the Bankstown Arts Centre courtyard
- general passenger views from a train.

During construction, there would be a **moderate adverse** visual impact on views to the exhibited project works at McNeilly Park in Marrickville, and Close Street, Canterbury, where the construction footprint expands into areas of open space adjacent to the rail corridor. There would also be a **minor adverse** visual impact on views to the project from areas of Marrickville, Dulwich Hill, Hurlstone Park, Belmore, Lakemba and Punchbowl due to the removal of vegetation within the corridor, and extent of the works including construction compounds and worksites in close proximity to residential areas and parks.

During operation, there would be mainly **minor adverse** visual impacts to views from surrounding streets and residential properties including areas of Marrickville, Dulwich Hill, Hurlstone Park, Canterbury, and Lakemba, where vegetation is generally not replaced in the corridor and the intensification of rail corridor infrastructure, including new retaining walls, embankments, drainage swales, noise barriers, overhead lines and support structures, signalling equipment, telecommunication masts, segregation fencing, and other operational infrastructure would be seen in close proximity.

11.2.2. Daytime visual amenity impacts of the preferred project

During construction the visual impacts as a result of the preferred project would be reduced from that assessed in the exhibited project where impacts were derived from track works (all areas excluding Bankstown and Campsie where track work would be undertaken), the construction of retaining walls, drainage works, pedestrian and road bridge and underpass upgrades. The impacts would not be changed where the impact is derived by the construction compound sites, power upgrades and at traction power stations, installation of noise barriers, security and segregation fencing, which are assumed to remain the same as for the exhibited project.

During operation, the impact in views would reduce where trees have been retained, where there are no new retaining walls and larger bridge and underpass structures have not been built. The impacts would

not be changed where the impact is derived from the traction power stations, noise barriers, security and segregation fencing, which are assumed to remain the same as for the exhibited project.

11.2.3. Change to daytime visual amenity impacts

Table 11-2 includes all impacts identified for the exhibited project as well as the assessment of the preferred project. Any assessments that would increase or decrease from the exhibited project have been highlighted in bold.

Table 11-2 Ancillary Works – daytime visual amenity impacts

	Viewpoint	Sensitivity rating	Construction impact		Operation impact	
			Exhibited project	Preferred project	Exhibited project	Preferred project
1	View northwest in McNeilly Park, Marrickville	Local	Moderate adverse	Negligible	Minor adverse	Negligible
2	View west from the Livingstone Road rail bridge, Marrickville	Neighbourhood	Minor adverse	Minor adverse	Negligible	Negligible
3	View east from Challis Avenue, Dulwich Hill	Neighbourhood	Minor adverse	Negligible	Negligible	Negligible
4	View east from Wardell Road overbridge, Dulwich Hill	Local	Minor adverse	Minor adverse	Minor adverse	Negligible
5	View north from Foord Avenue, Hurlstone Park	Neighbourhood	Minor adverse	Negligible	Negligible	Negligible
6	View northeast from Sawyer Reserve, Hurlstone Park	Neighbourhood	Negligible	Negligible	Negligible	Negligible
7	View west along Hutton Street, Hurlstone Park	Neighbourhood	Minor adverse	Minor adverse	Minor adverse	Minor adverse
8	View south from Church Street Park, Hurlstone Park	Neighbourhood	Negligible	Negligible	Negligible	Negligible
9	View northeast from Close Street, Canterbury	Local	Moderate adverse	Moderate adverse	Minor adverse	Minor adverse
10	View east from the Terry Lamb Reserve, Belmore	Local	Minor adverse	Negligible	Negligible	Negligible
11	View northeast from The Boulevard Lakemba	Neighbourhood	Minor adverse	Minor adverse	Minor adverse	Minor adverse
12	View east from Scott Street, Punchbowl	Neighbourhood	Minor adverse	Minor adverse	Negligible	Negligible
13	View north from the Bankstown Arts Centre courtyard	Local	Minor adverse	Negligible	Negligible	Negligible
14	General passenger views from a train	Local	Minor adverse	Negligible	Minor adverse	Negligible

11.3. Night-time visual amenity

11.3.1. Night-time visual impacts of the exhibited project

At night there would be a **negligible** visual impact during construction due to the absorption of the works into the existing, brightly lit night scene.

During operation, the rail corridor would not be lit at night, however, the headlights and internal lighting of a more frequent Metro train service, would be seen along the alignment, and the substations would require some lighting for security. This would be generally consistent with the surrounding night scene and would result in a **minor adverse** visual impact along the railway corridor between Marrickville Station and Punchbowl, and a **negligible** visual impact in Bankstown.

11.3.2. Night-time visual impacts of the preferred project

At night there would be works required at night for the preferred project. There would be a **negligible** visual impact during construction due to the absorption capacity of the existing, brightly lit night scene.

During operation, at night the preferred project would not include lighting along the rail corridor. There would, however, be additional headlights and internal lighting from a more frequent Metro train service, seen in views to the alignment. The substations would require some lighting for security as described in the exhibited project. This would result in a **minor adverse** visual impact for the railway corridor between Marrickville Station and Punchbowl, and a **negligible** visual impact in Bankstown.

11.3.3. Change to night-time visual amenity impacts

The impacts at night would remain unchanged during construction and operation.

Table 11-3 includes a summary of these night-time visual amenity impacts. Any assessments that would increase or decrease from the exhibited project have been highlighted in bold.

Table 11-3 Ancillary works – night-time visual amenity impacts

Location	Sensitivity rating	Construction impact		Operation impact	
		Exhibited project	Preferred project	Exhibited project	Preferred project
Rail corridor (excluding Bankstown)	E3: Medium district brightness	Minor adverse	Minor adverse	Minor adverse	Minor adverse
Rail corridor through Bankstown	E4: High district brightness	Negligible	Negligible	Negligible	Negligible

SYDENHAM TO BANKSTOWN

SUBMISSIONS AND PREFERRED INFRASTRUCTURE REPORT

> Appendix G - Landscape and visual impact assessment



City & Southwest

SYDENHAM TO BANKSTOWN

SUBMISSIONS AND PREFERRED INFRASTRUCTURE REPORT

> Appendix H – Utilities management framework





Sydney Metro City and Southwest

Sydenham to Bankstown Upgrade

Utilities Management Framework

Project:	Sydney Metro City and Southwest Sydenham to Bankstown Upgrade	Date:	15 December 2017
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Revision	Revision date	Status	Brief reason for update	Name/ position/ company	Author/ Reviewer/ Approver	Signature
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02	29/06/17	Final	Sydney Metro review	Carolyn McCallig / Panning Manager / Sydney Metro	Carolyn Riley / Senior Panning Manager / Sydney Metro	
03	10/11/17	Revised draft	To address major utilities outside of the corridor	Kristen Foley / Environmental Scientist / AECOM	Catherine Brady / Technical Director / AECOM	
04	15/12/17	Final	Sydney Metro review	Kristen Foley / Environmental Scientist / AECOM	Catherine Brady / Technical Director / AECOM	

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1. Introduction

It is anticipated that the project will require the relocation, adjustment and protection of public utilities such as electricity, communications, gas, water and sewerage. While it is expected that the majority of utility relocations/adjustments would be contained within the rail corridor or existing road corridor), there will be occasions where a utility needs to be relocated in a new corridor or in some instances outside the project area. The details of each utility relocation are currently being determined as part of design development and early contractor involvement. To identify potential impacts associated with these works, which would typically be undertaken as part of construction phase of the project, a risk based approach has been adopted and is contained within this Utilities Management Framework (UMF).

This UMF has also been prepared to address the following Secretary's Environmental Assessment Requirements (SEARs) for the Sydney Metro City and Southwest Sydney Bankstown upgrade project (the project):

Key issue and Desired Performance Outcome	Requirement (specific assessment requirements in addition to the general requirement above)
<p>16. Utilities</p> <p>This project is designed, constructed and operated to minimise impacts to utilities and provision of such to the public.</p>	<ol style="list-style-type: none"> 1. The Proponent must identify impacts on key identified active or disused public trunk utilities infrastructure (including communications, electricity, gas, and water and sewerage). 2. Where impacts on utilities are expected, the Proponent must prepare a utilities management framework, to identify a management strategy for options, including relocation or adjustment of the utilities. 3. The utilities management framework must identify ways in which opportunities to integrate with and support initiatives adopted by Councils and utilities providers and how access to assets will be maintained during construction.

Chapter 4 includes a list of major utilities along the existing rail corridor that may require relocation / protection works. These utilities include:

- communications (Optus and Telstra)
- gas (Jemena and Qenos)
- power (Ausgrid and Transgrid)
- sewer (Sydney Water).

Environmental and community constraints have also been identified within proximity to the above utilities.

This document provides an overview of the type and location of utilities potentially affected by the construction and operation of the proposal and the principles and practices that would apply to the management of utilities during the construction of the project. It includes a list of active utilities located within and/or crossing the project area (either underground, aboveground or via existing road overbridges) with the potential to be affected by construction of the project, and outlines the approach to management of these utilities at a strategic level.

Should the project be approved, it is anticipated that Conditions of Approval (CoAs) for the project will require preparation of a Construction Environmental Management Plan (similar to

Chatswood to Sydenham project) that includes detail of the required utilities related activities (such as relocation, adjustment and protection works) during the construction phase (refer below for extract from the Chatswood to Sydenham project CoA):

UTILITIES AND SERVICES

Utilities, services and other infrastructure potentially affected by construction must be identified before works affecting the item, to determine requirements for access to, diversion protection, and/or support. The relevant owner and/or provider of services must be consulted to make suitable arrangements for access to diversion, protection, and/or support of the affected infrastructure as required. The Proponent must ensure that disruption to any service is minimised and be responsible for advising local residents and businesses affected before any planned disruption of service. All excavations adjacent to RMS road infrastructure must meet the requirements of RMS Technical Direction (GTD 2012/0001) 'Excavation adjacent to RMS infrastructure'.

In addition, the following CoA was applied to Chatswood to Sydenham (extract below) and it is expected that similar would be applied to Sydenham to Bankstown approval. This condition indicates that low impact activities such as utilities relocation and adjustments is outside the definition of construction for the purposes of planning approval unless it could impact heritage items or threatened species etc in which case the activity would be addressed as a construction matter in the project Construction Environmental Management Plan.

Construction includes all physical work required to construct the CSSI, including demolition, other than the following low impact work:

(j) relocation and connection of utilities where the relocation or connection has a minor impact to the environment as determined by the ER;

However, where heritage items, or threatened species, populations or ecological communities (within the meaning of the EP&A Act) are affected or potentially affected by any low impact work, that work is construction, unless otherwise determined by the Secretary in consultation with OEH or DPI Fisheries (in the case of impact upon fish, aquatic invertebrates or marine vegetation). The low impact work described in this definition becomes construction with the approval of a Construction Environmental Management Plan.

This UMF provides a mechanism for identifying, assessing and minimising impacts to the public because of required utilities relocation/adjustments.

2. Utilities overview

The location of trunk utilities has been determined by the design team to the current stage of design, based on Dial Before You Dig searches; and a review of utility data, including as-built surveys, and agency and council records. Preliminary consultation has also been held with utility owners, including Sydney Water, Ausgrid, Telstra, Axicom, TPG, Qenos, Transgrid, Optus, Jemena and NBN.

The following utility owners have assets which may require adjustment, protection, and/or relocation as part of the project:

- Sydney Water:
 - potable water mains
 - stormwater drains and channels
 - wastewater mains/tunnels including potentially disused assets
- Ausgrid:
 - underground electricity cables (potentially up to 132 kV)
 - 33 kV underground electricity cables
 - high voltage underground electricity cables
 - low voltage overhead and underground electricity cables
 - abandoned underground cables
- Jemena:
 - high pressure gas main (primary and secondary mains)
 - medium pressure gas main
 - low pressure gas main
- Qenos:
 - high pressure gas pipeline (150 millimetre diameter)
- Telstra:
 - underground cables
 - underground and above ground service connections (i.e. to stations)
 - optic fibre underground cables
 - underground copper wire
 - vacant cable conduits
- National Broadband Network (NBN):
 - network cables
- Optus:
 - underground optic fibre cables.

3. Approach to utilities management

A risk-based approach to the management of utilities would be adopted during the construction phase of the project to avoid damage throughout the project lifecycle. To ensure a consistent approach across all project activities the following steps would be undertaken:

- confirm utilities requiring relocation or protection works
- design refinement
- detailed assessment
- consultation with asset owners and relevant stakeholders
- integration with other assets
- construction management.

These stages are described below:

3.1. Confirm utilities requiring relocation or protection works

Dial Before You Dig searches and targeted site investigations have been undertaken to establish the full extent of services with the potential to be impacted by construction.

Utilities identified through the above searches and investigations have been mapped along the existing rail corridor. This mapping (using a web based GIS program) has been analysed to identify major utilities that may require relocation or protection works. Major utilities include communications, gas, power and sewer services.

Information such as size / type and owner of each major utility has been obtained, along with environmental and community constraints in proximity to each major utility that require consideration during any relocation / protection works.

Further assessment would be undertaken to confirm those major utilities that require relocation or protection works where they are in conflict with the proposed design.

3.2. Confirm preferred approach

Where an existing utility conflicts with the proposed design, it may be necessary to:

1. Provide physical protection where the utility is not directly affected but may be indirectly affected by vibration or accidental impact. This could include:
 - constructing a piled wall between the work site and the utility
 - plating over the utility to minimise the impact of construction traffic
 - marking or fencing the location of the utility to avoid it being accidentally damaged.
2. Modify construction methods to avoid impacting a nearby utility. For example, this could involve using hand excavation and compaction tools such as hand digging tools, a vibration plate, or pedestrian rollers where compacting within a specified distance of utilities.
3. Wrap and support the utility service to provide mechanical protection.
4. Divert the utility around the construction site.

5. Relocate the utility.
6. Abandon the utility.

3.3. Detailed assessment

Designs would be developed in accordance with each utility owner's specification once the provider requirements are agreed. Design packages would be produced for each geographic area, which would describe the utilities in the area, so that utility owners have confidence that the potential impacts have been adequately assessed. The design packages would be sent to the relevant utility owner for approval.

3.4. Opportunities to integrate with utility owners and other affected stakeholders

To manage integration with utility owners, Sydney Metro has established an internal Utilities Working Group. Ongoing consultation with all relevant utility owners and other stakeholders, including the Inner West and Canterbury Bankstown councils will be undertaken following project approval through the Sydney Metro Utilities Working Group. The following utility providers have dedicated resources / points of contact for Sydney Metro: Ausgrid, Sydney Water, Qenos, Transgrid, Telstra, Optus, TPG and Axicom.

Construction works that may directly or indirectly impact utilities would be coordinated with the relevant utility owners, including consideration of any proposed utility upgrades and access requirements, particularly maintaining access during project construction. Access to utilities within the project area would be maintained at all times.

4. Existing environment

4.1. Marrickville precinct

Environmental and community constraints have been identified within proximity to major utilities along the rail corridor that may require relocation / protection works. Major utilities include:

- communications (Optus and Telstra)
- gas (Jemena and Qenos)
- power (Ausgrid and Transgrid)
- sewer (Sydney Water).

Table 1 presents a list of the environmental and community constraints within the vicinity of each utility, as shown on 1 to Figure 4. The following constraints have been identified within 50 metres of each major utility:

- registered Aboriginal sites
- non-Aboriginal heritage (State Heritage Register, local heritage items listed under a local environmental plan, and Section 170 Heritage Register)
- biodiversity constraints (threatened species and ecological communities).

Community sensitive receivers (e.g. schools, churches) have the potential to be indirectly impacted by the project through the generation of noise and dust, and have therefore been identified within 100 metres of each utility along the rail corridor.

Some utilities extend across more than one precinct. In this instance, utility information for these services has been repeated, however environmental constraints have been identified for each precinct.

Table 1 Constraints within the vicinity of major utilities within the Marrickville precinct

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ¹
Gerald Street to Livingstone Road				
Gas (OT0100) Size: DN150 affected length: 830 Utility information: Pipeline traverses corridor. Alignment as per DSS information received from Sydney Trains apart from missing alignment	Qenos	Runs along the rail corridor	<ul style="list-style-type: none"> • State Heritage Register – Sewage Pumping Station 271 (01342) • Local heritage - Marrickville Railway (Sewer vent, Pumping Station and Edwardian House including interiors) (I167); Stone House including interiors (I114) • Section 170 Heritage Register - Marrickville Sewage Pumping Station 	<ul style="list-style-type: none"> • KIKOFF Fraser Park Soccer centre • Braddock Playground • Fraser Park

¹ Constraints have been derived from the Environmental Impact Statement prepared for the project

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ¹
<p>information around northern boundary of Fraser Park. Prior to and along Meeks Road, Pipe in the order of 1.2 - 1.5 m deep as advised by Freyssinet.</p>				
<p>Gas (OT0120)</p> <p>Size: DN150</p> <p>Affected length: 190</p> <p>Utility information: Between suburban line and goods line tacks south of Meeks Road east of intersection with Victoria Road, Pipe in the order of 1.2 - 1.5 m deep as advised by Freyssinet.</p>	<p>Qenos</p>	<p>Runs along the rail corridor</p>	<ul style="list-style-type: none"> • State Heritage Register – Sewage Pumping Station 271 (01342) • Local heritage - Marrickville Railway (Sewer vent, Pumping Station and Edwardian House including interiors) (I167); Stone House including interiors (I114) • Section 170 Heritage Register - Marrickville Sewage Pumping Station 	<ul style="list-style-type: none"> • KIKOFF Fraser Park Soccer centre • Braddock Playground • Fraser Park
<p>Gas (OT0200)</p> <p>Size: DN150</p> <p>Affected length: 990</p> <p>Utility information: depth to be confirmed. Pipeline traverses corridor. Alignment as per DSS information received from Sydney Trains. Pipe crosses under Victoria Road, approx. CH 6 km 320, and just under the bridge at Livingstone Road, approx CH 7 km 150, as advised by Freyssinet.</p>	<p>Qenos</p>	<p>Runs along the rail corridor</p>	<ul style="list-style-type: none"> • Marrickville Railway Station Group (01186) • Stone House including interiors (I114); Marrickville Station including interiors (I89) • Marrickville Station Group 	<ul style="list-style-type: none"> • McNeilly Park

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ¹
<p>Gas (OT0210)</p> <p>Size: DN150 Affected length: 355</p> <p>Utility information: Under Illawarra Road Bridge. Pipe sitting in concrete culvert on top of sewer at track level as advised by Freyssinet.</p>	Qenos	Runs along the rail corridor	<ul style="list-style-type: none"> Marrickville Railway Station Group (01186) Stone House including interiors (I114); Marrickville Station including interiors (I89) Marrickville Station Group 	<ul style="list-style-type: none"> McNeilly Park
<p>Sewer (WW2800)</p> <p>Size: Varied Affected length: 135</p> <p>Utility information: Part 914 x 1219 brick tunnel passing under railway tracks and part 1828 x 3352 RC tunnel longitudinal to tracks to pumping station.</p>	SWC - sewer	Off Meeks Road	<ul style="list-style-type: none"> State Heritage Register – Sewage Pumping Station 271 (01342) Local heritage - Marrickville Railway (Sewer vent, Pumping Station and Edwardian House including interiors) (I167) Section 170 Heritage Register - Marrickville Sewage Pumping Station 	<ul style="list-style-type: none"> KIKOFF Fraser Park Soccer centre Braddock Playground Fraser Park
<p>Sewer (WW3008)</p> <p>Size: 660 mm x 990 mm Brick Tunnel Affected length: 140</p> <p>Utility information: Brick tunnel.</p>	SWC - sewer	Off Way Street	<ul style="list-style-type: none"> State Heritage Register – Sewage Pumping Station 271 (01342) Local heritage - Marrickville Railway (Sewer vent, Pumping Station and Edwardian House including interiors) (I167) Section 170 Heritage Register - Marrickville Sewage Pumping Station 	<ul style="list-style-type: none"> KIKOFF Fraser Park Soccer centre Braddock Playground Fraser Park
<p>Sewer (WW2900)</p> <p>Size: DN225 VC Affected length: 125</p> <p>Utility information: passing under goods line railway tracks north of SPS 0271.</p>	SWC - sewer	Meeks Road	<ul style="list-style-type: none"> State Heritage Register – Sewage Pumping Station 271 (01342) Local heritage - Marrickville Railway (Sewer vent, Pumping Station and Edwardian House including interiors) (I167) Section 170 Heritage Register - Marrickville Sewage Pumping Station 	<ul style="list-style-type: none"> KIKOFF Fraser Park Soccer centre Braddock Playground Fraser Park

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ¹
Sewer (WW3015) Size: See comments Affected length: 53 Lateral Longitudinal: Yes Utility information: Heritage listed Sydney Water Pumping Station SPS 0271.	SWC - sewer	Off Meeks Road	<ul style="list-style-type: none"> State Heritage Register – Sewage Pumping Station 271 (01342) Local heritage - Marrickville Railway (Sewer vent, Pumping Station and Edwardian House including interiors) (I167) Section 170 Heritage Register - Marrickville Sewage Pumping Station 	<ul style="list-style-type: none"> KIKOFF Fraser Park Soccer centre Braddock Playground Fraser Park
Sewer (WW3003) Size: DN750 MSCL Affected length: 330 Utility information: Pressure sewer main.	SWC - sewer	Off Myrtle Street	<ul style="list-style-type: none"> State Heritage Register – Sewage Pumping Station 271 (01342) Local heritage - Marrickville Railway (Sewer vent, Pumping Station and Edwardian House including interiors) (I167); Stone House including interiors (I114) Section 170 Heritage Register - Marrickville Sewage Pumping Station 	<ul style="list-style-type: none"> KIKOFF Fraser Park Soccer centre Braddock Playground Fraser Park
Sewer (WW3007) Size: TBC Affected length: 65 Utility information: Disused sewer main.	SWC - sewer	Off Myrtle Street	<ul style="list-style-type: none"> State Heritage Register – Sewage Pumping Station 271 (01342) Local heritage - Marrickville Railway (Sewer vent, Pumping Station and Edwardian House including interiors) (I167) Section 170 Heritage Register - Marrickville Sewage Pumping Station 	<ul style="list-style-type: none"> KIKOFF Fraser Park Soccer centre Braddock Playground Fraser Park
Sewer (WW3005) Size: TBC Affected length: 124 Utility information: Disused sewer main.	SWC - sewer	Off Myrtle Street	<ul style="list-style-type: none"> State Heritage Register – Sewage Pumping Station 271 (01342) Local heritage - Marrickville Railway (Sewer vent, Pumping Station and Edwardian House including interiors) (I167); Stone House including interiors (I114) Section 170 Heritage Register - Marrickville Sewage Pumping Station 	<ul style="list-style-type: none"> KIKOFF Fraser Park Soccer centre Braddock Playground Fraser Park

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ¹
Sewer (WW3006) Size: TBC Affected length: 103 Utility information: Disused sewer main.	SWC - sewer	Off Myrtle Street	<ul style="list-style-type: none"> State Heritage Register – Sewage Pumping Station 271 (01342) Local heritage - Marrickville Railway (Sewer vent, Pumping Station and Edwardian House including interiors) (I167); Stone House including interiors (I114) Section 170 Heritage Register - Marrickville Sewage Pumping Station 	<ul style="list-style-type: none"> KIKOFF Fraser Park Soccer centre Braddock Playground Fraser Park
Sewer (WW3001) Size: DN225 VC Affected length: 450	SWC - sewer	Off Riverdale Avenue / Myrtle Street	<ul style="list-style-type: none"> State Heritage Register – Sewage Pumping Station 271 (01342) Local heritage - Marrickville Railway (Sewer vent, Pumping Station and Edwardian House including interiors) (I167); Stone House including interiors (I114) Section 170 Heritage Register - Marrickville Sewage Pumping Station 	<ul style="list-style-type: none"> KIKOFF Fraser Park Soccer centre Fraser Park
Sewer (WW3010) Size: DN600 CICAL Affected length: 663 Utility information: Pressure sewer main.	SWC - sewer	Station Street / Illawarra Road	<ul style="list-style-type: none"> State Heritage Register – Sewage Pumping Station 271 (01342); Marrickville Railway Station Group (01186) Local heritage - Marrickville Railway (Sewer vent, Pumping Station and Edwardian House including interiors) (I167); Stone House including interiors (I114); Marrickville Station including interiors (I89) Section 170 Heritage Register - Marrickville Sewage Pumping Station; Marrickville Railway Station Group 	<ul style="list-style-type: none"> KIKOFF Fraser Park Soccer centre Braddock Playground Fraser Park McNeilly Park
Sewer (WW3004) Size: TBC Affected length: 120 Utility information: Disused sewer main.	SWC - sewer	Off Riverdale Avenue / Myrtle Street	<ul style="list-style-type: none"> State Heritage Register – Sewage Pumping Station 271 (01342) Local heritage - Marrickville Railway (Sewer vent, Pumping Station and Edwardian House including interiors) (I167); Stone House including interiors (I114) Section 170 Heritage Register - Marrickville Sewage Pumping Station 	<ul style="list-style-type: none"> KIKOFF Fraser Park Soccer centre Braddock Playground Fraser Park

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ¹
<p>Sewer (WW3002)</p> <p>Size: DN600 concrete pipe Affected length: 395 Utility information: Disused main.</p>	SWC - sewer	Off Riverdale Avenue / Myrtle Street	<ul style="list-style-type: none"> State Heritage Register – Sewage Pumping Station 271 (01342) Local heritage - Marrickville Railway (Sewer vent, Pumping Station and Edwardian House including interiors) (I167); Stone House including interiors (I114) Section 170 Heritage Register - Marrickville Sewage Pumping Station 	<ul style="list-style-type: none"> KIKOFF Fraser Park Soccer centre Braddock Playground Fraser Park
<p>Sewer (WW3000)</p> <p>Size: DN225 SGW Affected length: 58 Utility information: In tunnel. Passing under railway tracks west of Victoria Road underpass.</p>	SWC - sewer	Victoria Road / Myrtle Street	<ul style="list-style-type: none"> Local heritage - Stone House including interiors (I114) 	<ul style="list-style-type: none"> None
<p>Sewer (WW3020)</p> <p>Size: DN600 CICL Affected length: 252 Utility information: DBYD plans show it as a disused sewer main.</p>	SWC - sewer	Station Street / Illawarra Road	<ul style="list-style-type: none"> State Heritage Register – Marrickville Railway Station Group (01186) Local heritage - Stone House including interiors (I114); Marrickville Station including interiors (I89) Section 170 Heritage Register – Marrickville Station Group 	<ul style="list-style-type: none"> None
<p>Power (AG6360)</p> <p>Size: Direct laid cables Affected length: 302 Utility information: Direct buried cables from Meeks Road under goods line tracks along Fraser park and under existing suburban tracks towards Meeks Road stabling.</p>	Ausgrid	Off Maude Street	<ul style="list-style-type: none"> State Heritage Register – Sewage Pumping Station 271 (01342) Local heritage - Marrickville Railway (Sewer vent, Pumping Station and Edwardian House including interiors) (I167) Section 170 Heritage Register - Marrickville Sewage Pumping Station 	<ul style="list-style-type: none"> KIKOFF Fraser Park Soccer centre Braddock Playground Fraser Park

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ¹
<p>Through 4 x 100 conduits in 2 x 2 configuration under goods line, section RK1 on DBYD plans, with 0.9 m cover over the conduits and 0.8 m cover over the direct buried cables.</p>				
<p>Power (AG6400)</p> <p>Size: 4 x 100 steel conduits Affected length: 45 Utility information: Passing under existing tracks from Meeks Road to Carrington Road. HV, LV and AUX cables through conduits as per details on DBYD plans. DBYD plans show 1.2 m cover over the conduits under the tracks.</p>	Ausgrid	Meeks Road	<ul style="list-style-type: none"> State Heritage Register – Sewage Pumping Station 271 (01342) Local heritage - Marrickville Railway (Sewer vent, Pumping Station and Edwardian House including interiors) (I167) Section 170 Heritage Register - Marrickville Sewage Pumping Station 	<ul style="list-style-type: none"> KIKOFF Fraser Park Soccer centre Braddock Playground Fraser Park
<p>Power (AG6420)</p> <p>Size: 3 x 225 PE and 2 x 80 PE conduits Affected length: 280 Utility information: Passing under goods line and suburban line tracks from Meeks Road west of Sydney Water Pumping Station. Conduits through a 900 mm bore under existing tracks. DBYD plans show the bore being 3.0 - 4.5 m below ground.</p>	Ausgrid	Meeks Road / Myrtle Street	<ul style="list-style-type: none"> State Heritage Register – Sewage Pumping Station 271 (01342) Local heritage - Marrickville Railway (Sewer vent, Pumping Station and Edwardian House including interiors) (I167); Stone House including interiors (I114) Section 170 Heritage Register - Marrickville Sewage Pumping Station 	<ul style="list-style-type: none"> KIKOFF Fraser Park Soccer centre Braddock Playground Fraser Park

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ¹
Power (AG6440) Size: 3 x 225 PE and 2 x 80 PE conduits Affected length: 280 Utility information: Parallel to AG6420. Passing under goods line and suburban line tracks from Meeks Road west of Sydney Water Pumping Station. Conduits through a 900 mm bore under existing tracks. DBYD plans show the bore being 3.0 - 4.5 m below ground.	Ausgrid	Meeks Road / Myrtle Street	<ul style="list-style-type: none"> State Heritage Register – Sewage Pumping Station 271 (01342) Local heritage - Marrickville Railway (Sewer vent, Pumping Station and Edwardian House including interiors) (I167); Stone House including interiors (I114) Section 170 Heritage Register - Marrickville Sewage Pumping Station 	<ul style="list-style-type: none"> KIKOFF Fraser Park Soccer centre Braddock Playground Fraser Park
Power (AG6460) Size: Direct laid cables Affected length: 60 Utility information: Under eastern footpath of Victoria Road underpass. 4 off direct laid HV and AUX cables with 0.6 m cover as per details on DBYD plans.	Ausgrid	Victoria Road	<ul style="list-style-type: none"> Local heritage - Stone House including interiors (I114) 	<ul style="list-style-type: none"> None
Power (AG6470) Size: TBC Affected length: 34 Utility information: Overhead powerlines at corner of Victoria Road and Charlotte Avenue.	Ausgrid	Victoria Road / Charlotte Avenue	<ul style="list-style-type: none"> Local heritage - Stone House including interiors (I114) 	<ul style="list-style-type: none"> None

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ¹
<p>Power (AG6480)</p> <p>Size: See comments</p> <p>Affected length: 36</p> <p>Utility information: In Victoria Road underpass. Part underground, 1 x 19 GI conduit with SL cable and 0.4 m cover as per detail on DBYD plan and part overhead lines.</p>	<p>Ausgrid</p>	<p>Victoria Road</p>	<ul style="list-style-type: none"> Local heritage - Stone House including interiors (I114) 	<ul style="list-style-type: none"> None
<p>Power (TG2100)</p> <p>Size: 330 kV 2100 mm OD cased bore</p> <p>Affected length: 202</p> <p>Utility information: Buried. Transgrid Cable No. 42 passes under existing tracks at western side of Fraser Park. 1.32 m - 1.49 m deep where it crosses the railway tracks south of Fraser Park. Approx. 1.1 m deep where longitudinal along Fraser Park southern boundary.</p>	<p>Transgrid</p>	<p>Carrington Road</p>	<ul style="list-style-type: none"> State Heritage Register – Sewage Pumping Station 271 (01342) Local heritage - Marrickville Railway (Sewer vent, Pumping Station and Edwardian House including interiors) (I167) Section 170 Heritage Register - Marrickville Sewage Pumping Station 	<ul style="list-style-type: none"> KIKOFF Fraser Park Soccer centre Braddock Playground Fraser Park

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ¹
Gas (JE2100) Size: 250 mm Affected length: 96 Utility information: Steel main, secondary main 1050 kPa. Passing under existing track from Meeks Road to Carrington Road west of JE2000.	Jemena	Meeks Road west of Fraser Park	<ul style="list-style-type: none"> State Heritage Register – Sewage Pumping Station 271 (01342) Local heritage - Marrickville Railway (Sewer vent, Pumping Station and Edwardian House including interiors) (I167) Section 170 Heritage Register - Marrickville Sewage Pumping Station 	<ul style="list-style-type: none"> KIKOFF Fraser Park Soccer centre Braddock Playground Fraser Park
Gas (JE2000) Size: 250 mm Affected length: 96 Utility information: Steel main, secondary main 1050 kPa. Passing under existing track from Meeks Road to Carrington Road west of JE2000.	Jemena	Traverses the alignment between Meeks Road and Carrington Road	<ul style="list-style-type: none"> State Heritage Register – Sewage Pumping Station 271 (01342) Local heritage - Marrickville Railway (Sewer vent, Pumping Station and Edwardian House including interiors) (I167) Section 170 Heritage Register - Marrickville Sewage Pumping Station 	<ul style="list-style-type: none"> KIKOFF Fraser Park Soccer centre Braddock Playground Fraser Park
Communications (OP3000) Size: TBC Affected length: 87 Utility information: Through Victoria Road underpass. Optus owned underground cable and conduit.	Optus	Victoria Road / Charlotte Avenue	<ul style="list-style-type: none"> Local heritage - Stone House including interiors (I114) 	<ul style="list-style-type: none"> None

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ¹
<p>Communications (TE9150)</p> <p>Size: P20 Type: TBC Affected length: 46 Utility information: In Victoria Road underpass.</p>	Telstra	Victoria Road / Myrtle Street	<ul style="list-style-type: none"> Local heritage - Stone House including interiors (I114) 	<ul style="list-style-type: none"> None
<p>Power (AG6475)</p> <p>Size: TBC Affected length: 300 Utility information: Overhead powerlines longitudinal to railway corridor, cycleway, along full length of Marrickville Station.</p>	Ausgrid	Along cycleway from Station Street to Riverdale Avenue / Charlotte Avenue	<ul style="list-style-type: none"> State Heritage Register - Marrickville Railway Station Group (01186) Local heritage - Stone House including interiors (I114); Marrickville Station including interiors (I89) Section 170 Heritage Register – Marrickville Station Group 	<ul style="list-style-type: none"> None
<p>Communications (TE9300)</p> <p>Size: P20 Type: Service Connection Affected length: 50 Utility information: Service to platform building at Marrickville Station. Distribution/local area network.</p>	Telstra	Station Street / Illawarra Road	<ul style="list-style-type: none"> State Heritage Register - Marrickville Railway Station Group (01186) Local heritage – Marrickville Station including interiors (I89) Section 170 Heritage Register – Marrickville Station Group 	<ul style="list-style-type: none"> None

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ¹
<p>Communications (TE9200)</p> <p>Size: 3 x A100 conduits</p> <p>Type: Optic Fibre</p> <p>Affected length: 39</p> <p>Utility information: Through Illawarra Road Bridge western footway. Major cable/conduit network.</p>	Telstra	Illawarra Road bridge	<ul style="list-style-type: none"> State Heritage Register - Marrickville Railway Station Group (01186) Local heritage – Marrickville Station including interiors (I89) Section 170 Heritage Register – Marrickville Station Group 	<ul style="list-style-type: none"> McNeilly Park
<p>Gas (JE3000)</p> <p>Size: 110mm NY</p> <p>Affected length: 38</p> <p>Utility information: 110 mm nylon main inserted into 9 inch cast iron main, network main 210 kPa. Through Illawarra Road Bridge eastern footway.</p>	Jemena	Illawarra Road / Arthur Street	<ul style="list-style-type: none"> State Heritage Register - Marrickville Railway Station Group (01186) Local heritage – Marrickville Station including interiors (I89) Section 170 Heritage Register – Marrickville Station Group 	<ul style="list-style-type: none"> None
<p>Power (AG6481)</p> <p>Size: TBC</p> <p>Affected length: 14</p> <p>Utility information: Overhead powerlines at southern end of Illawarra Road Bridge.</p>	Ausgrid	Illawarra Road bridge	<ul style="list-style-type: none"> State Heritage Register - Marrickville Railway Station Group (01186) Local heritage – Marrickville Station including interiors (I89) Section 170 Heritage Register – Marrickville Station Group 	<ul style="list-style-type: none"> McNeilly Park

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ¹
<p>Sewer (WW3100)</p> <p>Size: 1270 mm x 1574 mm Brick Tunnel</p> <p>Affected length: 60</p> <p>Utility information: Brick tunnel. Passing under railway tracks and station under Illawarra Road Bridge.</p>	SWC - sewer	Illawarra Road / Arthur Street	<ul style="list-style-type: none"> State Heritage Register - Marrickville Railway Station Group (01186) Local heritage – Marrickville Station including interiors (I89) Section 170 Heritage Register – Marrickville Station Group 	<ul style="list-style-type: none"> McNeilly Park
<p>Power (AG6482)</p> <p>Size: TBC</p> <p>Affected length: 12</p> <p>Utility information: Overhead powerlines at northern end of Illawarra Road Bridge.</p>	Ausgrid	Illawarra Road / Arthur Street	<ul style="list-style-type: none"> State Heritage Register - Marrickville Railway Station Group (01186) Local heritage – Marrickville Station including interiors (I89) Section 170 Heritage Register – Marrickville Station Group 	<ul style="list-style-type: none"> None
<p>Sewer (WW3200)</p> <p>Size: DN225 VC</p> <p>Affected length: 35</p> <p>Utility information: Passing under railway tracks at McNeilly Park.</p>	SWC - sewer	Traverses the alignment off McNeilly Park	<ul style="list-style-type: none"> No heritage listed items 	<ul style="list-style-type: none"> McNeilly Park
<p>Sewer (WW3300)</p> <p>Size: 1371 mm x 1676 mm Brick Tunnel</p> <p>Affected length: 46</p> <p>Utility information: Brick tunnel. Passing under railway tracks east of Livingstone Road.</p>	SWC - sewer	Traverses the alignment off Jersey Street	<ul style="list-style-type: none"> Local heritage - Interwar Residential Precincts - Hollands Avenue (C35); St Nicholas Greek Orthodox Church, including interiors (I102) 	<ul style="list-style-type: none"> Ness Park St Nicholas Greek Orthodox Church

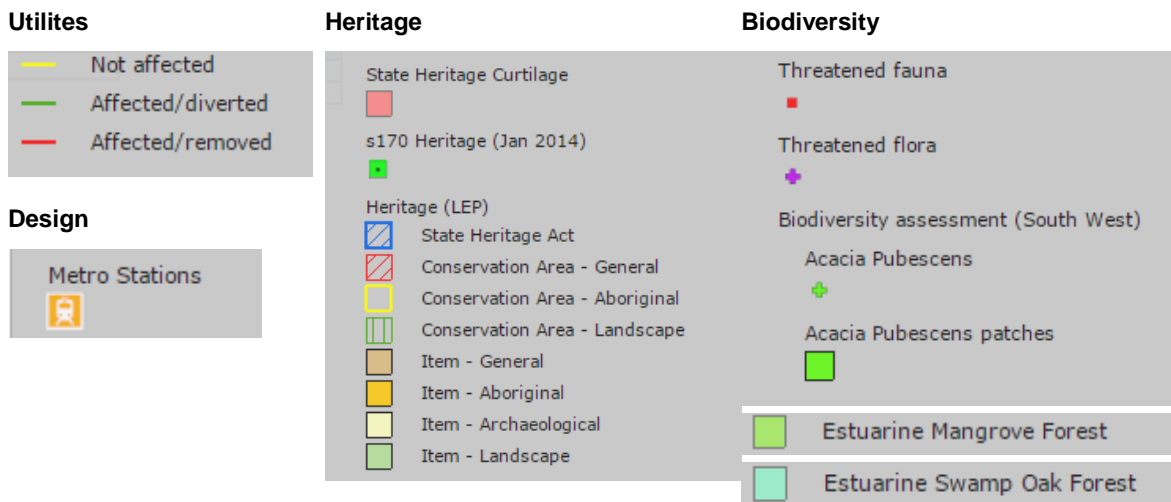


Figure 1 Heritage and biodiversity constraints within the Marrickville precinct

4.2. Dulwich Hill precinct

Environmental and community constraints identified within the vicinity of major utilities in the Dulwich Hill precinct are presented in Table 2 and shown on Figure 2.

Table 2 Constraints within the vicinity of major utilities within the Dulwich Hill precinct

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ²
Livingstone Road to Garnet Street				
Gas (OT0200) Size: DN150 Affected length: 990 Utility information: depth to be confirmed. Pipeline traverses corridor. Alignment as per DSS information received from Sydney Trains. Pipe crosses under Victoria Road, approx. CH 6 km 320, and just under the bridge at Livingstone Road, approx CH 7 km 150, as advised by Freyssinet.	Qenos	Runs along the rail corridor	<ul style="list-style-type: none"> Local heritage - Interwar Residential Precincts - Hollands Avenue (C35) 	<ul style="list-style-type: none"> Ness Park St Nicholas Greek Orthodox Church

² Constraints have been derived from the Environmental Impact Statement prepared for the project

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ²
<p>Gas (OT0300)</p> <p>Size: DN150 Affected length: 1775</p> <p>Utility information: depth and location to be confirmed. Pipeline traverses corridor. No DSS information available. Pipe in steel casing on top of embankment under Wardell Road Bridge, approx. CH 7 km 820, and crosses under Terrace Road, approx. Ch 8 km 180 as advised by Freyssinet. At Hurlstone Park Station, approx CH 8 km 700 – 8 km 900 the pipe sits on top of the retaining wall, same height as gutter then runs down embankment and at back of building, and crosses under Foord St, approx CH 9 km 090.</p>	Qenos	Runs along the rail corridor	<ul style="list-style-type: none"> Local heritage - South Dulwich Hill Conservation Area (C29); Gladstone Hall, including interiors (I13) Section 170 Heritage Register – Gladstone Hall Section 170 Heritage Register - Dulwich Hill Railway Station Group 	<ul style="list-style-type: none"> The Maronite Sisters of the Holy Family Village Montessori Learning Tree Jack Shanahan Park Dulwich Hill Skate Park Dulwich Hill Child Care Centre
<p>Gas (OT0310)</p> <p>Size: DN150 Affected length: 22</p> <p>Utility information: west of Randall St. Depth and location to be confirmed as not shown on Sydney trains DSS. Freyssinet have advised the pipe is laid shallow.</p>	Qenos	Off Randall Street	<ul style="list-style-type: none"> Local heritage - South Dulwich Hill Conservation Area (C29) 	<ul style="list-style-type: none"> The Maronite Sisters of the Holy Family Village

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ²
<p>Gas (OT0320)</p> <p>Size: DN150 Affected length: 29</p> <p>Utility information: under Albermarle St bridge. Depth and location to be confirmed as not shown on Sydney Trains DSS. Freyssinet have advised the pipe is laid under the bridge.</p>	Qenos	Albermarle Street	<ul style="list-style-type: none"> Local heritage - South Dulwich Hill Conservation Area (C29) 	<ul style="list-style-type: none"> None
<p>Gas (OT0330)</p> <p>Size: DN150 Affected length: 15</p> <p>Utility information: west of Wardell Road Bridge. Depth and location to be confirmed as not shown on Sydney Trains DSS.</p>	Qenos	Wardell Road	<ul style="list-style-type: none"> Section 170 Heritage Register - Dulwich Hill Railway Station Group 	<ul style="list-style-type: none"> Montessori Learning Tree Jack Shanahan Park Dulwich Hill Skate Park
<p>Gas (OT0340)</p> <p>Size: DN150 affected length: 55</p> <p>Utility information: Adjacent to Dulwich Hill car park. Depth and location to be confirmed as not shown on Sydney Trains DSS.</p>	Qenos	Wardell Road	<ul style="list-style-type: none"> Section 170 Heritage Register - Dulwich Hill Railway Station Group 	<ul style="list-style-type: none"> Montessori Learning Tree Jack Shanahan Park Dulwich Hill Skate Park

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ²
<p>Gas (OT0350)</p> <p>Size: DN150 Affected length: 25</p> <p>Utility information: Depth and location to be confirmed as not shown on Sydney Trains DSS. Pipe passes under road edge at end of Garnet Street Bridge as advised by Freyssinet.</p>	Qenos	Garnett Street	<ul style="list-style-type: none"> No heritage listed items 	<ul style="list-style-type: none"> Dulwich Hill Child Care Centre
<p>Communications (TE9310)</p> <p>Size: 3 x A100 conduits Type: Optic Fibre Affected length: 59</p> <p>Utility information: Major cable/conduit network through Livingstone Road Bridge.</p>	Telstra	Livingstone Road bridge	<ul style="list-style-type: none"> Local heritage - Interwar Residential Precincts - Hollands Avenue (C35); St Nicholas Greek Orthodox Church, including interiors (I102) 	<ul style="list-style-type: none"> Ness Park St Nicholas Greek Orthodox Church
<p>Gas (JE3100)</p> <p>Size: 50 mm NY Affected length: 56</p> <p>Utility information: 50 mm nylon main inserted into 9 inch cast iron main, network main 210 kPa. Through Livingstone Rd Bridge deck.</p>	Jemena	Livingstone Road bridge	<ul style="list-style-type: none"> Local heritage - Interwar Residential Precincts - Hollands Avenue (C35); St Nicholas Greek Orthodox Church, including interiors (I102) 	<ul style="list-style-type: none"> Ness Park St Nicholas Greek Orthodox Church

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ²
Power (AG6492) Size: Direct laid cables Affected length: 53 Utility information: Direct laid cables through eastern footway of Livingstone Road Bridge. Number of cables and cover over cables to be confirmed.	Ausgrid	Livingstone Road bridge	<ul style="list-style-type: none"> Local heritage - Interwar Residential Precincts - Hollands Avenue (C35); St Nicholas Greek Orthodox Church, including interiors (I102) 	<ul style="list-style-type: none"> Ness Park St Nicholas Greek Orthodox Church
Power (AG6494) Size: Direct laid cables Affected length: 55 Utility information: 2 x direct laid cables, HV and AUX, in eastern footway of Livingstone Road Bridge parallel to 33kV cables.	Ausgrid	Livingstone Road bridge	<ul style="list-style-type: none"> Local heritage - Interwar Residential Precincts - Hollands Avenue (C35); St Nicholas Greek Orthodox Church, including interiors (I102) 	<ul style="list-style-type: none"> Ness Park St Nicholas Greek Orthodox Church
Power (AG6493) Size: Direct laid cables Affected length: 49 Utility information: Direct laid cables through western footway of Livingstone Road Bridge. Number of cables and cover over cables to be confirmed.	Ausgrid	Livingstone Road bridge	<ul style="list-style-type: none"> Local heritage - Interwar Residential Precincts - Hollands Avenue (C35); St Nicholas Greek Orthodox Church, including interiors (I102) 	<ul style="list-style-type: none"> Ness Park St Nicholas Greek Orthodox Church

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ²
Power (AG6491) Size: TBC Affected length: 75 Utility information: Overhead powerlines at Livingstone Road Bridge.	Ausgrid	Livingstone Road bridge	<ul style="list-style-type: none"> Local heritage - Interwar Residential Precincts - Hollands Avenue (C35); St Nicholas Greek Orthodox Church, including interiors (I102) 	<ul style="list-style-type: none"> Ness Park St Nicholas Greek Orthodox Church
Power (AG6495) Size: 2 x 150GI conduits Affected length: 57 Utility information: Conduits with HV and AUX cables and parallel 1 x direct laid cable in western footway of Livingstone Road Bridge parallel to 33kV cables.	Ausgrid	Livingstone Road bridge	<ul style="list-style-type: none"> Local heritage - Interwar Residential Precincts - Hollands Avenue (C35); St Nicholas Greek Orthodox Church, including interiors (I102) 	<ul style="list-style-type: none"> Ness Park St Nicholas Greek Orthodox Church
Power (AG6490) Size: TBC Affected length: 61 Utility information: Overhead powerlines at Albermarle Street Bridge.	Ausgrid	Albermarle Street / Kays Avenue	<ul style="list-style-type: none"> Local heritage - South Dulwich Hill Conservation Area (C29) 	<ul style="list-style-type: none"> None
Sewer (WW4000) Size: DN225 VC Affected length: 60 Utility information: passing under railway tracks east of Wilga Avenue to school Parade.	SWC - sewer	School Parade	<ul style="list-style-type: none"> Local heritage - South Dulwich Hill Conservation Area (C29) 	<ul style="list-style-type: none"> None

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ²
<p>Communications (TE9400)</p> <p>Size: 7 x A100 conduits</p> <p>Type: Optic Fibre</p> <p>Affected length: 53</p> <p>Utility information: Bank of conduits in a 2 x 3 conduit configuration plus a single conduit. Major cable/conduit network passing under existing railway tracks from Wilga Avenue to School Parade.</p>	Telstra	School Parade / Wilga Avenue	<ul style="list-style-type: none"> Local heritage - South Dulwich Hill Conservation Area (C29) 	<ul style="list-style-type: none"> None
<p>Sewer (WW4100)</p> <p>Size: 2032 mm x 2336 mm Brick Tunnel</p> <p>affected length: 90</p> <p>Utility information: In tunnel under existing station from Wardell Road to Dudley St.</p>	SWC - sewer	Wardell Road / Dudley Street	<ul style="list-style-type: none"> Section 170 Heritage Register - Dulwich Hill Railway Station Group Local heritage - South Dulwich Hill Conservation Area (C29) 	<ul style="list-style-type: none"> None

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ²
<p>Communications (TE9500)</p> <p>Size: 6 x A100 conduits</p> <p>Type: Optic Fibre</p> <p>Affected length: 52</p> <p>Utility information: Bank of conduits in a 2 x 3 conduits configuration. Major cable/conduit network. To be confirmed whether through eastern footpath in Wardell Road Bridge or through embankment and under existing platform.</p>	<p>Telstra</p>	<p>Wardell Road / Bedford Crescent</p>	<ul style="list-style-type: none"> Local heritage - South Dulwich Hill Conservation Area (C29) Section 170 Heritage Register - Dulwich Hill Railway Station Group 	<ul style="list-style-type: none"> None
<p>Power (AG6550)</p> <p>Size: TBC</p> <p>Affected length: 77</p> <p>Utility information: Overhead powerlines at Wardell Road Bridge.</p>	<p>Ausgrid</p>	<p>Wardell Road / Dudley Street</p>	<ul style="list-style-type: none"> Local heritage - South Dulwich Hill Conservation Area (C29) Section 170 Heritage Register - Dulwich Hill Railway Station Group 	<ul style="list-style-type: none"> None

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ²
<p>Power (AG6500)</p> <p>Size: 3 x 100 GI conduits</p> <p>Affected length: 46</p> <p>Utility information: Conduits with HV and AUX cables through eastern footway in Wardell Road Bridge as per details on DBYD plans. DBYD plans show 0.3 m cover over conduits.</p>	Ausgrid	Wardell Road bridge	<ul style="list-style-type: none"> Local heritage - South Dulwich Hill Conservation Area (C29) Section 170 Heritage Register - Dulwich Hill Railway Station Group 	<ul style="list-style-type: none"> None
<p>Sewer (WW4200)</p> <p>Size: DN225 VC</p> <p>Affected length: 58</p> <p>Utility information: In tunnel under existing station west of Wardell Road Bridge.</p>	SWC - sewer	Wardell Road / Dudley Street	<ul style="list-style-type: none"> Local heritage - South Dulwich Hill Conservation Area (C29) Section 170 Heritage Register - Dulwich Hill Railway Station Group 	<ul style="list-style-type: none"> None
<p>Power (AG6600)</p> <p>Size: See comments</p> <p>Affected length: 38</p> <p>Utility information: Under Terrace Road underpass. Direct buried HV and AUX cables with 0.6 m cover and LV cable through trench with 0.6 m cover as per details on DBYD plans.</p>	Ausgrid	Terrace Road / Ewart Street	<ul style="list-style-type: none"> Local heritage - Gladstone Hall including interiors (I13) Section 170 Heritage Register – Gladstone Hall 	<ul style="list-style-type: none"> Jack Shanahan Park Dulwich Hill Skate Park

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ²
<p>Gas (JE4100)</p> <p>Size: 550 mm Affected length: 38</p> <p>Utility information: Steel main, primary main 3500 kPa. In Terrace Road underpass.</p>	Jemena	Terrace Road / Ewart Street	<ul style="list-style-type: none"> Local heritage - Gladstone Hall including interiors (I13) Section 170 Heritage Register – Gladstone Hall 	<ul style="list-style-type: none"> Jack Shanahan Park Dulwich Hill Skate Park
<p>Power (AG6610)</p> <p>Size: TBC Affected length: 54</p> <p>Lateral Longitudinal:</p> <p>Utility information: Overhead powerlines through Terrace Rd underpass.</p>	Ausgrid	Terrace Road / Ewart Street	<ul style="list-style-type: none"> Local heritage - Gladstone Hall including interiors (I13) Section 170 Heritage Register – Gladstone Hall 	<ul style="list-style-type: none"> Jack Shanahan Park Dulwich Hill Skate Park
<p>Communications (TE9650)</p> <p>Size: 2 x E100 conduits</p> <p>Type: Optic Fibre</p> <p>Affected length: 44</p> <p>Utility information: In western footpath of Terrace Road underpass, 0.5 m cover. Major cable/conduit network.</p>	Telstra	Terrace Road / Ewart Street	<ul style="list-style-type: none"> Local heritage - Gladstone Hall including interiors (I13) Section 170 Heritage Register – Gladstone Hall 	<ul style="list-style-type: none"> Jack Shanahan Park Dulwich Hill Skate Park

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ²
Sewer (WW4300) Size: 1066 mm x 1371 mm Brick Tunnel Affected length: 74 Utility information: Brick tunnel/oviform, Ewart Street to Terrace Road west of Terrace Road underpass.	SWC - sewer	Ewart Street / Terrace Road	<ul style="list-style-type: none"> Local heritage - Gladstone Hall including interiors (I13) Section 170 Heritage Register – Gladstone Hall 	<ul style="list-style-type: none"> Jack Shanahan Park Dulwich Hill Skate Park

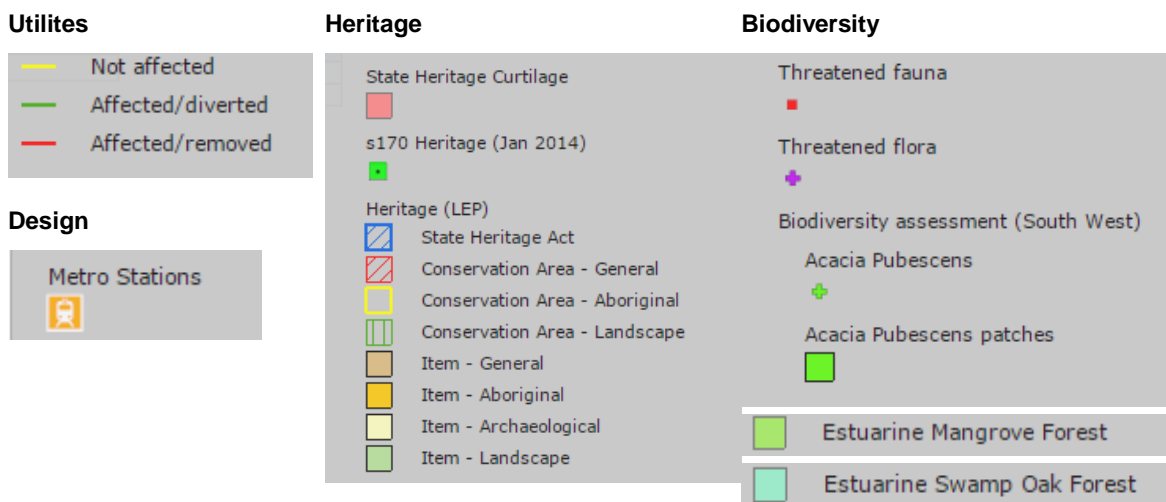
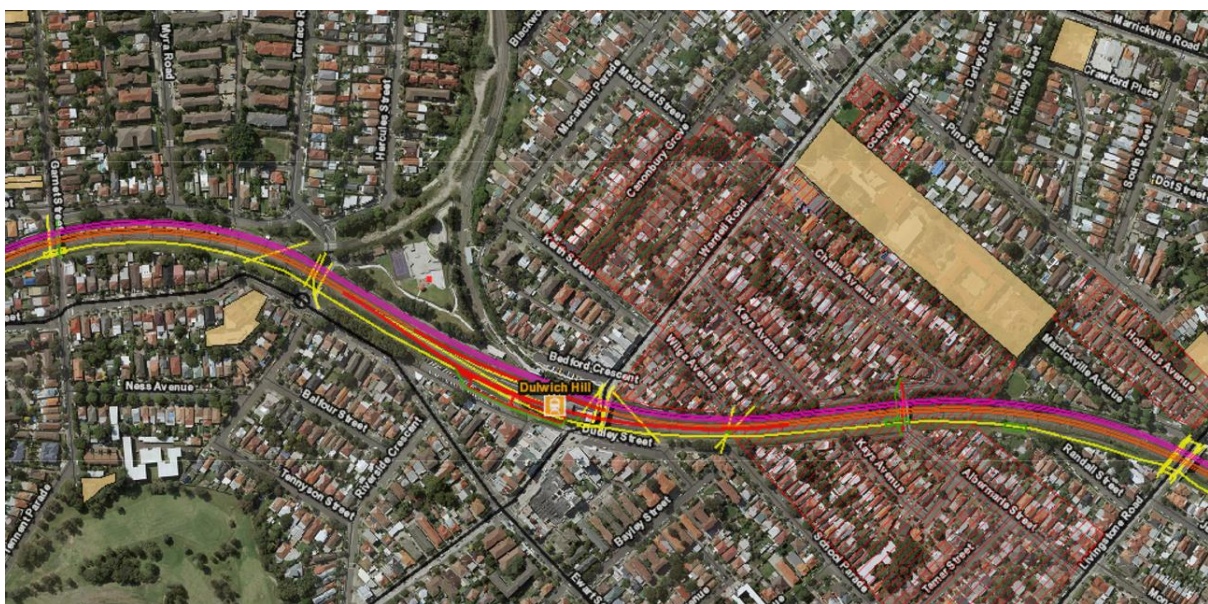


Figure 2 Heritage and biodiversity constraints within the Dulwich Hill precinct

4.3. Hurlstone Park precinct

Environmental and community constraints identified within the vicinity of major utilities in the Hurlstone Park precinct are presented in Table 3 and shown on Figure 3.

Table 3 Constraints within the vicinity of major utilities within the Hurlstone Park precinct

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ³
Garnet Street to Melford Street				
Gas (OT0300) Size: DN150 Affected length: 1775 Utility information: depth and location to be confirmed. Pipeline traverses corridor. No DSS information available. Pipe in steel casing on top of embankment under Wardell Road Bridge, approx. CH 7 km 820, and crosses under Terrace Road, approx. Ch 8 km 180 as advised by Freyssinet. At Hurlstone Park Station, approx CH 8 km 700 – 8 km 900 the pipe sits on top of the retaining wall, same height as gutter then runs down embankment and at back of building, and crosses under Foord St, approx CH 9 km 090.	Qenos	Runs along the rail corridor	<ul style="list-style-type: none"> Local heritage - Victorian and Federation Railway Station Buildings (I24); Railway underbridge (I126) Section 170 Heritage Register - Hurlstone Park Station Railway Group; Hurlstone Park Underbridge 	<ul style="list-style-type: none"> Dulwich Hill Child Care Centre

³ Constraints have been derived from the Environmental Impact Statement prepared for the project

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ³
<p>Gas (OT0360)</p> <p>Size: DN150 Affected length: 38</p> <p>Utility information: Depth and location to be confirmed as not shown on Sydney Trains DSS. Pipe passes under edge of approach to Duntroon Street Bridge as advised by Freyssinet. Approx. CH 8 km 700.</p>	<p>Qenos</p>	<p>Floss Street</p>	<ul style="list-style-type: none"> Local heritage - Victorian and Federation Railway Station Buildings (I24); Railway underbridge (I126) Section 170 Heritage Register - Hurlstone Park Station Railway Group; Hurlstone Park Underbridge 	<ul style="list-style-type: none"> None
<p>Gas (OT0370)</p> <p>Size: DN150 Affected length: 52</p> <p>Utility information: East of Foord Avenue underpass. Depth and location to be confirmed as not shown on Sydney Trains DSS.</p>	<p>Qenos</p>	<p>Off Railway Street</p>	<ul style="list-style-type: none"> Local heritage - Railway underbridge (I126) Section 170 Heritage Register - Hurlstone Park Underbridge 	<ul style="list-style-type: none"> None

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ³
<p>Gas (OT0400)</p> <p>Size: DN150 Affected length: 1665</p> <p>Utility information: depth to be confirmed. Pipeline traverses corridor. Alignment as per DSS information received from Sydney Trains apart from missing alignment between Cooks River and Canterbury Rd approx. track CH 10 km 350 - CH 10 km 100, and CH 9 km 300 - CH 9 km 100. Pipe set back from bridge at Canterbury Rd and runs offline from railway through to adjacent building however being relocated back to edge of property boundary to where shown on As-built /GIS, approx. CH 10 km 060 - CH 10 km 250. Pipe attached to bottom of rail bridge at Charles St. approx. CH 10 km 450.</p>	<p>Qenos</p>	<p>Traverses Melford Street</p>	<ul style="list-style-type: none"> Local heritage - Railway underbridge (I126) Section 170 Heritage Register - Hurlstone Park Underbridge 	<ul style="list-style-type: none"> Boat Harbour
<p>Communications (TE9690)</p> <p>Size: C150 conduit Type: TBC Affected Length: 40</p> <p>Utility Information: Through eastern footpath of Garnet Street Bridge. Major cable/conduit network.</p>	<p>Telstra</p>	<p>Garnet Street</p>	<ul style="list-style-type: none"> No heritage listed items 	<ul style="list-style-type: none"> Dulwich Hill Child Care Centre

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ³
<p>Power (AG6690)</p> <p>Size: TBC Affected Length: 44 Utility Information: Overhead powerlines at Garnet Street Bridge.</p>	Ausgrid	Garnet Street Bridge	<ul style="list-style-type: none"> No heritage listed items 	<ul style="list-style-type: none"> Dulwich Hill Child Care Centre
<p>Communications (OP5000)</p> <p>Size: P50 conduit Affected Length: 39 Utility Information: Through Duntroon Street Bridge eastern footway. Uecomm/Optus fibre optic cable. Location is approximate as sketched up from information obtained from DBYD and the alignment/location to be confirmed.</p>	Optus	Floss Street / Duntroon Street	<ul style="list-style-type: none"> Section 170 Heritage Register - Hurlstone Park Station Railway Group Local heritage - Victorian and Federation Railway Station Buildings (I24) 	<ul style="list-style-type: none"> None
<p>Communications (TE9700)</p> <p>Size: 2 x P100 conduits Type: Optic Fibre Affected Length: 39 Utility Information: Through eastern footpath of Duntroon Street Bridge, 0.2 m cover. Major cable/conduit network.</p>	Telstra	Duntroon Street / Floss Street	<ul style="list-style-type: none"> Section 170 Heritage Register - Hurlstone Park Station Railway Group Local heritage - Victorian and Federation Railway Station Buildings (I24) 	<ul style="list-style-type: none"> None

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ³
<p>Gas (JE5000)</p> <p>Size: 75 mm NY Affected Length: 40 Utility Information: 75 mm nylon main inserted into 4 inch cast iron main, network main 210 kPa. Through Duntroon Street Bridge eastern footway.</p>	Jemena	Floss Street	<ul style="list-style-type: none"> Section 170 Heritage Register - Hurlstone Park Station Railway Group Local heritage - Victorian and Federation Railway Station Buildings (I24) 	<ul style="list-style-type: none"> None
<p>Power (AG6710)</p> <p>Size: TBC Affected Length: Null Utility Information: Overhead power lines over bridge and Duntroon Street / Floss Street intersection.</p>	Ausgrid	Floss Street / Duntroon Street	<ul style="list-style-type: none"> Section 170 Heritage Register - Hurlstone Park Station Railway Group Local heritage - Victorian and Federation Railway Station Buildings (I24) 	<ul style="list-style-type: none"> None
<p>Power (AG6700)</p> <p>Size: See comments Affected Length: 100 Utility Information: Direct buried and part through 2 x 125 PVC conduits HV, AUX and abandoned cables through western footway of Duntroon Street Bridge, 0.4 - 0.6 m cover.</p>	Ausgrid	Floss Street / Duntroon Street	<ul style="list-style-type: none"> Section 170 Heritage Register - Hurlstone Park Station Railway Group Local heritage - Victorian and Federation Railway Station Buildings (I24) 	<ul style="list-style-type: none"> None
<p>Power (AG6705)</p> <p>Size: See comments Affected Length: 30 Utility Information: Direct buried HV and abandoned cables under Duntroon Street and Floss Street intersection.</p>	Ausgrid	Floss Street	<ul style="list-style-type: none"> Section 170 Heritage Register - Hurlstone Park Station Railway Group Local heritage - Victorian and Federation Railway Station Buildings (I24) 	<ul style="list-style-type: none"> None

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ³
<p>Communications (TE9801)</p> <p>Size: Aerial cable Type: Service Connection Affected Length: 17 Utility Information: Service connection to existing property. Distribution/local area network.</p>	Telstra	Duntroon Street / Floss Street	<ul style="list-style-type: none"> Section 170 Heritage Register - Hurlstone Park Station Railway Group Local heritage - Victorian and Federation Railway Station Buildings (I24) 	<ul style="list-style-type: none"> None
<p>Sewer (WW5001)</p> <p>Size: DN225 VC Affected Length: 48 Utility Information: Sewer line along back boundary of 107 Duntroon Street. Sewer approx. 2 m deep based on DBYD received plans.</p>	SWC - sewer	Duntroon Street	<ul style="list-style-type: none"> Section 170 Heritage Register - Hurlstone Park Station Railway Group Local heritage - Victorian and Federation Railway Station Buildings (I24) 	<ul style="list-style-type: none"> None
<p>Sewer (WW5002)</p> <p>Size: DN225 VC Affected Length: 48 Utility Information: Sewer line along back boundary of 107 Duntroon Street. Sewer approx. 2 m deep based on DBYD received plans.</p>	SWC - sewer	Duntroon Street	<ul style="list-style-type: none"> Section 170 Heritage Register - Hurlstone Park Station Railway Group Local heritage - Victorian and Federation Railway Station Buildings (I24) 	<ul style="list-style-type: none"> None
<p>Sewer (WW5000)</p> <p>Size: 1066 mm x 1371 mm Conc Affected Length: 97 Utility Information: Passing under railway tracks from back of lots at Floss Street.</p>	SWC - sewer	Off Commons Street	<ul style="list-style-type: none"> Section 170 Heritage Register- Hurlstone Park Station Railway Group Local heritage - Victorian and Federation Railway Station Buildings (I24) 	<ul style="list-style-type: none"> None

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ³
<p>Sewer (WW5100)</p> <p>Size: 482 mm x 736 mm Conc Affected Length: 72 Utility Information: In tunnel. Passing under railway tracks west of WW5000.</p>	SWC - sewer	Off Hopetoun Street	<ul style="list-style-type: none"> Section 170 Heritage Register - Hurlstone Park Station Railway Group Local heritage - Victorian and Federation Railway Station Buildings (124) 	<ul style="list-style-type: none"> None
<p>Power (AG6720)</p> <p>Size: See comments Affected Length: 52 Utility Information: Under Foord Rd underpass. Direct buried HV and abandoned cables with 0.8 m cover and LV cable through trench with 0.8 m cover as per details on DBYD plans.</p>	Ausgrid	Foord Avenue	<ul style="list-style-type: none"> Local heritage - Railway Underbridge (126) Section 170 Heritage Register - Hurlstone Park Underbridge 	<ul style="list-style-type: none"> None
<p>Communications (TE9950)</p> <p>Size: Direct buried cable Type: TBC Affected Length: 44 Utility Information: Passing under existing railway tracks to the west of Foord Avenue underpass. 0.3 - 0.4 m cover, to be confirmed.</p>	Telstra	Between Keir Avenue and Kilbride Street	<ul style="list-style-type: none"> No heritage listed items 	<ul style="list-style-type: none"> None



Utilities

- Not affected
- Affected/diverted
- Affected/removed

Design

- Metro Stations
-

Heritage

- State Heritage Curtilage
- s170 Heritage (Jan 2014)
- Heritage (LEP)
- State Heritage Act
- Conservation Area - General
- Conservation Area - Aboriginal
- Conservation Area - Landscape
- Item - General
- Item - Aboriginal
- Item - Archaeological
- Item - Landscape

Biodiversity

- Threatened fauna
-
- Threatened flora
- +
- Biodiversity assessment (South West)
- Acacia Pubescens
- +
- Acacia Pubescens patches
-
- Estuarine Mangrove Forest
- Estuarine Swamp Oak Forest

Figure 3 Heritage and biodiversity constraints within the Hurlstone Park precinct

4.4. Canterbury precinct

Environmental and community constraints identified within the vicinity of major utilities in the Dulwich Hill precinct are presented in Table 4 and shown on Figure 4.

Table 4 Constraints within the vicinity of major utilities within the Canterbury precinct

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ⁴
Melford Street to Cooks River				
Gas (OT0400) Size: DN150 Affected length: 1665 Utility information: depth to be confirmed. Pipeline traverses corridor. Alignment as per DSS information received from Sydney Trains apart from missing alignment between Cooks River and Canterbury Rd approx. track CH 10 km 350 - CH 10 km 100, and CH 9 km 300 - CH 9 km 100. Pipe set back from bridge at Canterbury Rd and runs offline from railway through to adjacent building however being relocated back to edge of property boundary to where shown on As-built /GIS, approx. CH 10 km 060 - CH 10 km 250. Pipe attached to bottom of rail bridge at Charles St. approx. CH 10	Qenos	Traverses Melford Street	<ul style="list-style-type: none"> State Heritage Register – Old Sugarmill (00290); Canterbury Railway Station Group (01109) Local heritage - Canterbury Sugar Mill (former) (I82); Federation Railway Station Buildings (I67); Federation post office building (formerly Canterbury Post Office) (I66); Inter war hotel (former Hotel Canterbury) (I82); Federation railway bridge (I172) Section 170 Heritage Register - Electricity substation No. 275; Canterbury Railway Group; Canterbury (Cooks River Underbridge) Estuarine Mangrove Forest 	<ul style="list-style-type: none"> Boat harbour Warwick Reserve Former Canterbury Bowling and Community Club Dog Park Tasker Park Canterbury Aquatic Centre Little Tasker Park Aerialize, Sydney Aerial Theatre

⁴ Constraints have been derived from the Environmental Impact Statement prepared for the project

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ⁴
km 450.				
Gas (OT0410) Size: DN150 Affected length: 175 Utility information: West of Melford St Bridge. Pipeline laid shallow through this section, 1m depth, as advised by Freyssinet.	Qenos	Hutton Street	<ul style="list-style-type: none"> No heritage listed items 	<ul style="list-style-type: none"> Boat Harbour Warwick Reserve
Gas (OT0420) Size: DN150 Affected length: 45 Utility information: Near western end of Canterbury Station platforms. Depth and location to be confirmed as not show on Sydney Trains DSS.	Qenos	Charles Street	<ul style="list-style-type: none"> State Heritage Register – Canterbury Railway Station Group (01109) Local heritage - Federation Railway Station Buildings (I67) Section 170 Heritage Register - Canterbury Railway Group 	<ul style="list-style-type: none"> None
Power (AG6740) Size: Direct laid cables Affected Length: 43 Utility Information: 6 off direct laid cables through Melford Street Bridge with checker plate over cables. DBYD plans show checker plate over cables with 0.3 m cover.	Ausgrid	Melford Street	<ul style="list-style-type: none"> No heritage listed items 	<ul style="list-style-type: none"> Boat Harbour

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ⁴
Power (AG6760) Size: TBC Affected Length: 43 Utility Information: Overhead powerlines at Melford Street Bridge.	Ausgrid	Melford Street	<ul style="list-style-type: none"> No heritage listed items 	<ul style="list-style-type: none"> Boat Harbour
Sewer (WW6000) Size: TBC Affected Length: 35 Utility Information: Disused sewer main at Church Street overpass.	SWC - sewer	Off Church Street	<ul style="list-style-type: none"> State Heritage Register – Old Sugarmill (00290) Local heritage - Canterbury Sugar Mill (former) (I82) Section 170 Heritage Register - Electricity substation No. 275 	<ul style="list-style-type: none"> Former Canterbury Bowling and Community Club Warwick Reserve Boat Harbour
Power (AG6780) Size: 1 x 125 PVC conduit Affected Length: 62 Utility Information: Through pedestrian/cycle bridge from Church Street to Hutton Street in bridge concrete duct. No cover depth recorded on DBYD plans.	Ausgrid	Off Church Street	<ul style="list-style-type: none"> State Heritage Register – Old Sugarmill (00290) Local heritage - Canterbury Sugar Mill (former) (I82) Section 170 Heritage Register - Electricity substation No. 275 	<ul style="list-style-type: none"> Former Canterbury Bowling and Community Club Warwick Reserve Boat Harbour
Sewer (WW6100) Size: TBC Affected Length: 35 Utility Information: Disused sewer main at Church Street overpass.	SWC - sewer	Off Church Street	<ul style="list-style-type: none"> State Heritage Register – Old Sugarmill (00290) Local heritage - Canterbury Sugar Mill (former) (I82) Section 170 Heritage Register - Electricity substation No. 275 	<ul style="list-style-type: none"> Former Canterbury Bowling and Community Club Warwick Reserve Boat Harbour

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ⁴
<p>Communications (TE10140)</p> <p>Size: P100 conduit Type: TBC Affected Length: 21 Utility Information: Under footpath at corner of Tincombe Street and Canterbury Road.</p>	Telstra	Canterbury Road	<ul style="list-style-type: none"> State Heritage Register - Canterbury Railway Station Group (01109) Local heritage - Federation Railway Station Buildings (I67); Federation post office building (formerly Canterbury Post Office) (I66); Inter war hotel (former Hotel Canterbury) (I82) Section 170 Heritage Register - Canterbury Railway Group 	<ul style="list-style-type: none"> Former Canterbury Bowling and Community Club
<p>Communications (TE10100)</p> <p>Size: 12 x P100 conduits Type: Optic Fibre Affected Length: 39 Utility Information: Through Canterbury Road Bridge northern footway. Bank of conduits in a 3 x 4 conduits configuration. Major cable/conduit network, 0.4 - 0.7 m cover.</p>	Telstra	Canterbury Road	<ul style="list-style-type: none"> State Heritage Register - Canterbury Railway Station Group (01109) Local heritage - Federation Railway Station Buildings (I67); Federation post office building (formerly Canterbury Post Office) (I66); Inter war hotel (former Hotel Canterbury) (I82) Section 170 Heritage Register - Canterbury Railway Group 	<ul style="list-style-type: none"> Former Canterbury Bowling and Community Club
<p>Communications (TE10200)</p> <p>Size: P20 Type: TBC Affected Length: 35 Utility Information: Service line to Canterbury Station concourse.</p>	Telstra	Canterbury Road	<ul style="list-style-type: none"> State Heritage Register - Canterbury Railway Station Group (01109) Local heritage - Federation Railway Station Buildings (I67); Federation post office building (formerly Canterbury Post Office) (I66); Inter war hotel (former Hotel Canterbury) (I82) Section 170 Heritage Register - Canterbury Railway Group 	<ul style="list-style-type: none"> Former Canterbury Bowling and Community Club

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ⁴
<p>Communications (TE10120)</p> <p>Size: P20 Type: TBC Affected Length: 16 Utility Information: Under Canterbury Road on western side of Canterbury Road Bridge.</p>	Telstra	Canterbury Road	<ul style="list-style-type: none"> State Heritage Register - Canterbury Railway Station Group (01109) Local heritage - Federation Railway Station Buildings (I67); Federation post office building (formerly Canterbury Post Office) (I66); Inter war hotel (former Hotel Canterbury) (I82) Section 170 Heritage Register - Canterbury Railway Group 	<ul style="list-style-type: none"> Former Canterbury Bowling and Community Club
<p>Gas (JE6000)</p> <p>Size: 110 mm NY Affected Length: 40 Utility Information: 110 mm nylon main inserted into 12 inch cast iron main, network main 210 kPa. Through Canterbury Rd Bridge eastern footway.</p>	Jemena	Canterbury Road	<ul style="list-style-type: none"> State Heritage Register - Canterbury Railway Station Group (01109) Local heritage - Federation Railway Station Buildings (I67); Federation post office building (formerly Canterbury Post Office) (I66); Inter war hotel (former Hotel Canterbury) (I82) Section 170 Heritage Register - Canterbury Railway Group 	<ul style="list-style-type: none"> Former Canterbury Bowling and Community Club
<p>Gas (JE6200)</p> <p>Size: 75 mm NY Affected Length: 22 Utility Information: 75 mm nylon main inserted into 4 inch cast iron main, network main 7 kPa. Through Canterbury Road Bridge western footway.</p>	Jemena	Canterbury Road	<ul style="list-style-type: none"> State Heritage Register - Canterbury Railway Station Group (01109) Local heritage - Federation Railway Station Buildings (I67); Federation post office building (formerly Canterbury Post Office) (I66); Inter war hotel (former Hotel Canterbury) (I82) Section 170 Heritage Register - Canterbury Railway Group 	<ul style="list-style-type: none"> Former Canterbury Bowling and Community Club

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ⁴
Power (AG6800) Affected Length: 40 Utility Information: 8 off direct laid HV and abandoned cables through eastern footway of Canterbury Road Bridge with 0.6-0.7 m cover as per details on DBYD plans.	Ausgrid	Canterbury Road	<ul style="list-style-type: none"> State Heritage Register - Canterbury Railway Station Group (01109) Local heritage - Federation Railway Station Buildings (I67); Federation post office building (formerly Canterbury Post Office) (I66); Inter war hotel (former Hotel Canterbury) (I82) Section 170 Heritage Register - Canterbury Railway Group 	<ul style="list-style-type: none"> Former Canterbury Bowling and Community Club
Power (AG6820) Size: TBC Affected Length: 56 Utility Information: Overhead powerlines at Canterbury Rd Bridge.	Ausgrid	Canterbury Road	<ul style="list-style-type: none"> State Heritage Register - Canterbury Railway Station Group (01109) Local heritage - Federation Railway Station Buildings (I67); Federation post office building (formerly Canterbury Post Office) (I66); Inter war hotel (former Hotel Canterbury) (I82) Section 170 Heritage Register - Canterbury Railway Group 	<ul style="list-style-type: none"> Former Canterbury Bowling and Community Club
Sewer (WW6200) Size: DN225 VC Affected Length: 54 Utility Information: Passing under railway tracks east of Charles St underpass.	SWC - sewer	Off Charles Street	<ul style="list-style-type: none"> State Heritage Register - Canterbury Railway Station Group (01109) Local heritage - Federation Railway Station Buildings (I67) Section 170 Heritage Register - Canterbury Railway Group 	<ul style="list-style-type: none"> Canterbury Park Racecourse.

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ⁴
<p>Communications (OP6000)</p> <p>Size: TBC</p> <p>Affected Length: 30</p> <p>Utility Information: Under Charles Street west of Canterbury Station. Optus owned underground cable and conduit.</p>	<p>Optus</p>	<p>Charles Street</p>	<ul style="list-style-type: none"> No heritage listed items 	<ul style="list-style-type: none"> None



Utilities

- Not affected
- Affected/diverted
- Affected/removed

Design

- Metro Stations
-

Heritage

- State Heritage Curtilage
- s170 Heritage (Jan 2014)
- Heritage (LEP)
 - State Heritage Act
 - Conservation Area - General
 - Conservation Area - Aboriginal
 - Conservation Area - Landscape
 - Item - General
 - Item - Aboriginal
 - Item - Archaeological
 - Item - Landscape

Biodiversity

- Threatened fauna
- Threatened flora
- Biodiversity assessment (South West)
 - Acacia Pubescens
 - Acacia Pubescens patches
 - Estuarine Mangrove Forest
 - Estuarine Swamp Oak Forest

Figure 4 Heritage and biodiversity constraints within the Canterbury precinct

4.5. Campsie precinct

Environmental and community constraints identified within the vicinity of major utilities in the Campsie precinct are presented in Table 5 and shown on Figure 5.

Table 5 Constraints within the vicinity of major utilities within the Campsie precinct

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ⁵
Cooks River to Browning and Park Streets				
Gas (OT0400) Size: DN150 Affected length: 1665 Utility information: depth to be confirmed. Pipeline traverses corridor. Alignment as per DSS information received from Sydney Trains apart from missing alignment between Cooks River and Canterbury Rd approx. track CH 10 km 350 - CH 10 km 100 and CH 9 km 300 - CH 9 km 100. Pipe set back from bridge at Canterbury Rd and runs offline from railway through to adjacent building however being relocated back to edge of property boundary to where shown on As-built /GIS, approx. CH 10 km 060 - CH 10 km 250. Pipe attached to bottom of rail bridge at Charles St. approx. CH 10 km 450.	Qenos	Traverses Wairose Street	<ul style="list-style-type: none"> Local heritage - Federation railway bridge (I172) Section 170 Heritage Register - Canterbury River Underbridge) Estuarine Mangrove Forest 	<ul style="list-style-type: none"> Tasker Park Canterbury Aquatic Centre Little Tasker Park Canterbury Olympic Ice Rink

⁵ Constraints have been derived from the Environmental Impact Statement prepared for the project

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ⁵
<p>Gas (OT0500)</p> <p>Size: DN150 Affected length: 1770</p> <p>Utility information: Depth to be confirmed. Pipeline traverses corridor. Alignment as per DSS information received from Sydney Trains. Pipeline crosses under Wairoa St, approx. CH 10km 720, at Campsie Station, CH 11 km 600 - CH 11 km 800, it runs up platform at 1m - 0.5 m from edge of lift well, and it then crosses and follows the good line.</p>	Qenos	South Parade	<ul style="list-style-type: none"> Threatened flora - Acacia bynoeana (Bynoe's Wattle) 	<ul style="list-style-type: none"> Canterbury Aquatic Centre Little Tasker Park Canterbury Olympic Ice Rink
<p>Power (TG3000)</p> <p>Size: 132kV Affected Length: 144</p> <p>Utility Information: Overhead 132kV transmission lines west of Canterbury Station and The Cooks River.</p>	Transgrid	Cooks River	<ul style="list-style-type: none"> Local heritage - Federation railway bridge (172) Section 170 Heritage Register - Canterbury (Cooks River Underbridge) Estuarine Mangrove Forest Estuarine Swamp Oak Forest 	<ul style="list-style-type: none"> Little Tasker Park Tasker Park Canterbury Aquatic Centre Canterbury Olympic Ice Rink Canterbury Park Racecourse
<p>Communications (TE10250)</p> <p>Size: P100 conduit Type: Mains Copper Affected Length: 57</p> <p>Utility Information: In Wairoa Street underpass, 0.3 - 0.5 m cover.</p>	Telstra	Wairoa Street	<ul style="list-style-type: none"> No heritage listed items 	<ul style="list-style-type: none"> Canterbury Aquatic Centre Canterbury Olympic Ice Rink Little Tasker Park

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ⁵
<p>Gas (JE6300)</p> <p>Size: 110 mm NY Affected Length: 55</p> <p>Utility Information: Network main 7 kPa. In Wairoa St underpass. Location is approximate as sketched up from information obtained from DBYD and the alignment/location to be confirmed.</p>	Jemena	Wairoa Street	<ul style="list-style-type: none"> No heritage listed items 	<ul style="list-style-type: none"> Canterbury Aquatic Centre Canterbury Olympic Ice Rink Little Tasker Park
<p>Power (AG6850)</p> <p>Size: 3 x 120 PVC conduits Affected Length: 59</p> <p>Utility Information: In Wairoa St underpass. Conduits with HV, AUX, LV and SL cables with 0.6 m cover over the conduits as per details on DBYD plans.</p>	Ausgrid	Wairoa Street	<ul style="list-style-type: none"> No heritage listed items 	<ul style="list-style-type: none"> Canterbury Aquatic Centre Canterbury Olympic Ice Rink Little Tasker Park
Browning and Park Streets to Lincoln Street / Thorncraft Parade				
<p>Gas (OT0510)</p> <p>Size: DN150 Affected length: 272</p> <p>Utility information: runs up back of car park between Park St and Beamish Lane just outside railway fence line then crossing at 90 degrees, as advised by Freyssinet. Depth to be confirmed.</p>	Qenos	South Parade	<ul style="list-style-type: none"> Local heritage - Federation house (I61); Federation villa (I62); Inter war commercial building - Station House (I42); Federation commercial building - Coffill's Buildings (I41) Section 170 Heritage Register - Campsie Railway Station Group 	<ul style="list-style-type: none"> Campsie Public School

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ⁵
<p>Gas (OT0520)</p> <p>Size: DN150 Affected length: 23 Utility information: At western end of Campsie Station platforms. Depth to be confirmed.</p>	Qenos	Canterbury Station	<ul style="list-style-type: none"> Local heritage - Federation railway station buildings (I40) Section 170 Heritage Register - Campsie Railway Station Group 	<ul style="list-style-type: none"> Campsie Medical and Dental Centre Anzac Park and Square (mall) Campsie RSL Club
<p>Gas (OT0500)</p> <p>Size: DN150 Affected length: 1770 Utility information: Depth to be confirmed. Pipeline traverses corridor. Alignment as per DSS information received from Sydney Trains. Pipeline crosses under Wairoa St, approx. CH 10km 720, at Campsie Station, CH 11 km 600 - CH 11 km 800, it runs up platform at 1m - 0.5 m from edge of lift well, and it then crosses and follows the good line.</p>	Qenos	Runs along the rail corridor	<ul style="list-style-type: none"> Local heritage - Federation house (I61); Federation villa (I62); Inter war commercial building - Station House (I42); Federation commercial building - Coffill's Buildings (I41); Federation railway station buildings (I40); Inter war court house (former Campsie Court House) (I44) Section 170 Heritage Register - Campsie Railway Station Group 	<ul style="list-style-type: none"> Campsie Public School Campsie Medical and Dental Centre Anzac Park and Square (mall) Campsie RSL Club Campsie Day Surgery Campsie Police Station
<p>Power (AG6900)</p> <p>Size: 2 x 150AC conduits Affected Length: 45 Utility Information: Crossing the railway corridor from North Parade to South Parade. Part direct buried and part through 2 x 150 AC conduits, under tracks, cables with 1.3-1.8 m cover as per details on DBYD plans.</p>	Ausgrid	Browning Street / Park Street	<ul style="list-style-type: none"> No heritage listed items 	<ul style="list-style-type: none"> None

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ⁵
<p>Sewer (WW6500)</p> <p>Size: DN1500 RC Affected Length: 68 Utility Information: Passing under railway tracks from Browning St to Park St.</p>	SWC - sewer	Browning Street / Park Street	<ul style="list-style-type: none"> No heritage listed items 	<ul style="list-style-type: none"> None
<p>Communications (TE10300)</p> <p>Size: 8 x P100 conduits Type: Optic Fibre Affected Length: 53 Utility Information: Passing under existing track east of Campsie Station and along Bowing Street to Park Street alignment. Bank of conduits in a 2 x 4 conduits configuration. Major cable/conduits network.</p>	Telstra	Browning Street / Park Street	<ul style="list-style-type: none"> No heritage listed items 	<ul style="list-style-type: none"> None
<p>Communications (TE10500)</p> <p>Size: Varied Type: TBC Affected Length: 75 Utility Information: Cables and conduits of varied configuration both major cable/conduit and distribution/local area network cables through western footpath on Beamish Road Bridge</p>	Telstra	North Parade / Beamish Street	<ul style="list-style-type: none"> Local heritage - Federation railway station buildings (I40); Federation commercial building - Coffill's Buildings (I41); Interwar commercial building - Station house (I42); War memorial clock tower (I34) Section 170 Heritage Register - Campsie Railway Station Group 	<ul style="list-style-type: none"> Campsie Medical and Dental Centre Campsie Public School

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ⁵
<p>Power (AG7000)</p> <p>Size: Direct laid cables</p> <p>Affected Length: 52</p> <p>Utility Information: 9 off direct laid HV and abandoned cables through eastern footway of Beamish Street Bridge with 0.2-0.6 m cover as per details on DBYD plans.</p>	Ausgrid	Beamish Street	<ul style="list-style-type: none"> Local heritage - Federation railway station buildings (I40); Federation commercial building - Coffill's Buildings (I41); Interwar commercial building - Station house (I42); War memorial clock tower (I34) Section 170 Heritage Register - Campsie Railway Station Group 	<ul style="list-style-type: none"> Campsie Medical and Dental Centre Campsie Public School
<p>Power (AG7050)</p> <p>SIZE: TBC</p> <p>Affected Length: 52</p> <p>Utility Information: Overhead powerlines at Beamish Street Bridge.</p>	Ausgrid	Beamish Street	<ul style="list-style-type: none"> Local heritage - Federation railway station buildings (I40); Federation commercial building - Coffill's Buildings (I41); Interwar commercial building - Station house (I42); War memorial clock tower (I34) Section 170 Heritage Register - Campsie Railway Station Group 	<ul style="list-style-type: none"> Campsie Medical and Dental Centre Campsie Public School
<p>Gas (JE7000)</p> <p>Size: 110mm NY</p> <p>Affected Length: 52</p> <p>Utility Information: 110 mm nylon main inserted into 6 inch cast iron main, network main 7 kPa. Through Beamish St Bridge eastern footway.</p>	Jemena	Beamish Street	<ul style="list-style-type: none"> Local heritage - Federation railway station buildings (I40); Interwar commercial building - Station house (I42); Federation commercial building - Coffill's Buildings (I41); War memorial clock tower (I34) Section 170 Heritage Register - Campsie Railway Station Group 	<ul style="list-style-type: none"> Campsie Medical and Dental Centre Campsie Public School

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ⁵
<p>Power (AG7100)</p> <p>Size: 2 x 125 PVC conduits</p> <p>Affected Length: 77</p> <p>Utility Information: HV cables through conduits under western footway of Beamish Street Bridge with 0.5 m cover as per details on DBYD plans.</p>	Ausgrid	Beamish Street	<ul style="list-style-type: none"> Local heritage - Federation railway station buildings (I40); Federation commercial building - Coffill's Buildings (I41); Interwar commercial building - Station house (I42); War memorial clock tower (I34) Section 170 Heritage Register - Campsie Railway Station Group 	<ul style="list-style-type: none"> Campsie Medical and Dental Centre Campsie Public School
<p>Gas (JE7100)</p> <p>Size: 75mm NY</p> <p>Affected Length: 52</p> <p>Utility Information: 75 mm nylon main inserted into 4 inch cast iron main, network main 7 kPa. Through Beamish Street Bridge western footway.</p>	Jemena	Beamish Street	<ul style="list-style-type: none"> Local heritage - Federation railway station buildings (I40); Federation commercial building - Coffill's Buildings (I41); Interwar commercial building - Station house (I42); War memorial clock tower (I34) Section 170 Heritage Register - Campsie Railway Station Group 	<ul style="list-style-type: none"> Campsie Medical and Dental Centre Campsie Public School
<p>Communications (TE10400)</p> <p>Size: Varied</p> <p>Type: TBC</p> <p>Affected Length: 60</p> <p>Utility Information: Cables and conduits of varied configuration both major cable/conduit and distribution/local area network cables through western footpath on Beamish Road Bridge</p>	Telstra	Beamish Street	<ul style="list-style-type: none"> Local heritage - Federation railway station buildings (I40); Federation commercial building - Coffill's Buildings (I41); Interwar commercial building - Station house (I42); War memorial clock tower (I34) Section 170 Heritage Register - Campsie Railway Station Group 	<ul style="list-style-type: none"> Campsie Medical and Dental Centre Campsie Public School

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ⁵
Sewer (WW7000) Size: DN225 VC Affected Length: 50 Utility Information: Relined sewer. Passing under railway tracks from Assets Street to Lillian Street.	SWC - sewer	Assets Street / Dewar Street	<ul style="list-style-type: none"> Local heritage - Federation railway station buildings (I40) Section 170 Heritage Register - Campsie Railway Station Group 	<ul style="list-style-type: none"> Campsie RSL Club Campsie Medical and Dental Centre Anzac Park and Square (mall)
Power (AG7200) Size: 6 x 100 PVC conduits Affected Length: 51 Utility Information: Passing under existing tracks from Assets St to Dewar Street with 2 m cover over the conduits as per details on DBYD plans. Depth to be confirmed.	Ausgrid	Assets Street / Dewar Street	<ul style="list-style-type: none"> Local heritage - Federation railway station buildings (I40) Section 170 Heritage Register - Campsie Railway Station Group 	<ul style="list-style-type: none"> Campsie RSL Club Campsie Medical and Dental Centre Anzac Park and Square (mall)
Gas (JE7200) Size: 75 mm NY Affected Length: 42 Utility Information: 75 mm nylon main inserted into 6 inch cast iron main, network main 7 kPa. Through Loch Street Bridge western footway.	Jemena	Loch Street	<ul style="list-style-type: none"> No heritage listed items 	<ul style="list-style-type: none"> None
Sewer (WW7100) Size: DN225 VC Affected Length: 45 Utility Information: Passing under railway tracks from Loftus Street to Lillian Lane.	SWC - sewer	Near Loch Street	<ul style="list-style-type: none"> No heritage listed items 	<ul style="list-style-type: none"> None

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ⁵
<p>Power (AG7300)</p> <p>Size: See comments</p> <p>Affected Length: 79</p> <p>Utility Information: 3 x 75 GI, 2 x 150 GI and 1 x 100 GI conduits, section HL1 on DBYD plans, passing under existing tracks at junction with freight line with HV and AUX cables through conduits. DBYD show 0.7-1.8 m cover over the conduits.</p>	<p>Ausgrid</p>	<p>Loftus Street/ Lilian lane</p>	<ul style="list-style-type: none"> No heritage listed items 	<ul style="list-style-type: none"> Peter Moore Fields

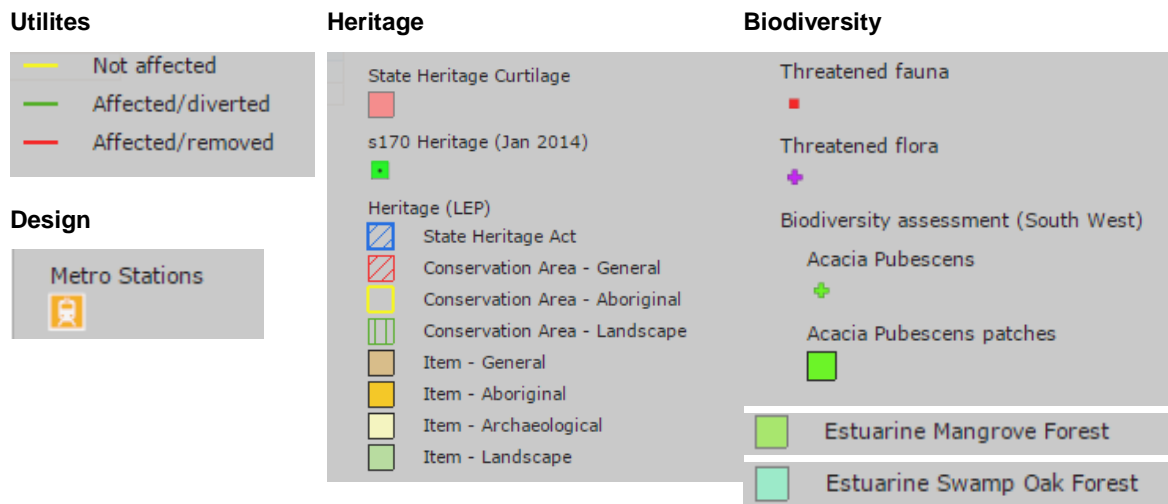
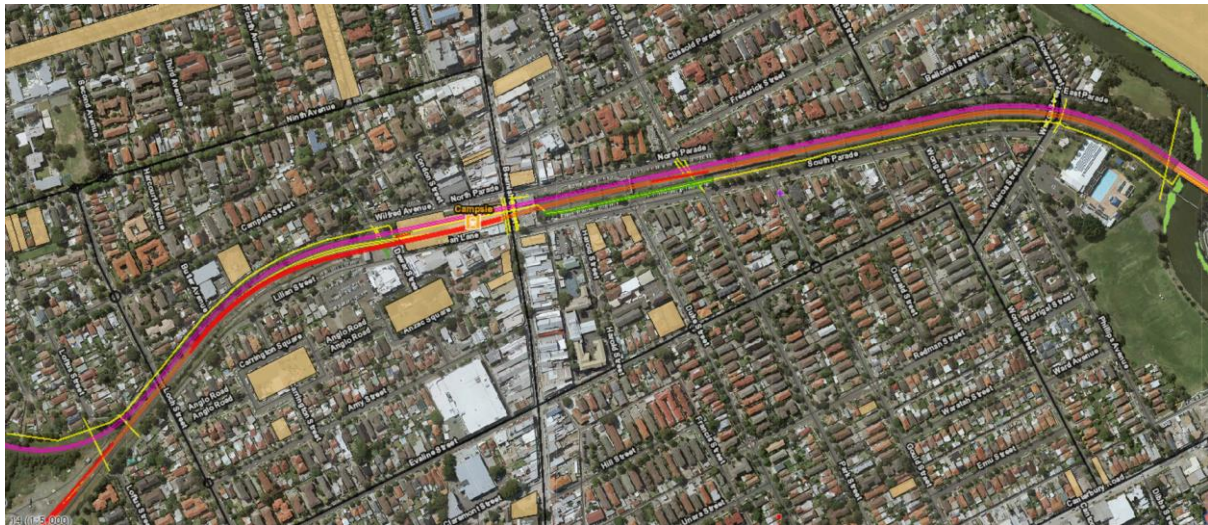


Figure 5 Heritage and biodiversity constraints within the Campsie precinct

4.6. Belmore precinct

Environmental and community constraints identified within the vicinity of major utilities in the Dulwich Hill precinct are presented in Table 6 and shown on Figure 6.

Table 6 Constraints within the vicinity of major utilities within the Belmore precinct

Utility ID	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ⁶
Lincoln Street / Thorncraft Parade to Peel Street			
Sewer (WW7500) Size: DN400 VC Affected Length: 54 Utility Information: Relined sewer. In Belmore Park underpass.	Off Redman Parade	<ul style="list-style-type: none"> No heritage listed items 	<ul style="list-style-type: none"> Belmore Sports Ground
Power (AG8000) Size: 4 x 150 PVC conduits Affected Length: 95 Utility Information: Passing under existing tracks east of Belmore Station in a varied configuration (1 x 4 and 2 x 2 configuration) with HV and abandoned cables through conduits. DBYD plans show 1.8-2.2 m cover over the conduits.	Redman Parade	<ul style="list-style-type: none"> No heritage listed items 	<ul style="list-style-type: none"> Belmore Sports Ground Belmore Youth and Resource Centre
Communications (TE10510) Size: Varied Type: Optic Fibre Affected Length: Null Utility Information: From jointing pits in Redman Parade, 50 mm and 35 mm PVC ducts with optic fibre cables to existing buildings.	Redman Parade	<ul style="list-style-type: none"> State Heritage Register - Belmore Railway Station Group (01081) Local heritage - Federation railway station buildings (I11); Post-war bus shelter and public lavatories (I29) Section 170 Heritage Register - Belmore Railway Station Group 	<ul style="list-style-type: none"> Regis Delphi House Belmore The Maronite Sisters of the Holy Family Preschool, Montessori Australia Belmore Senior Citizens Centre Belmore Youth and Resource Centre Belmore Sports Ground

⁶ Constraints have been derived from the Environmental Impact Statement prepared for the project

Utility ID	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ⁶
<p>Communications (TE10550)</p> <p>Size: G20 Type: Mains Copper</p> <p>Affected Length: 14</p> <p>Utility Information: Service line to Belmore Station concourse.</p>	Burwood Road	<ul style="list-style-type: none"> State Heritage Register - Belmore Railway Station Group (01081) Local heritage - Federation house (former station master's cottage) (I10); Federation railway station buildings (I11); Post-war bus shelter and public lavatories (I29) Section 170 Heritage Register - Belmore Railway Station Group 	<ul style="list-style-type: none"> Canterbury Leagues Club PCYC Belmore Regis Delphi House Belmore
<p>JE8000</p> <p>Size: 18 inch</p> <p>Affected Length: 32</p> <p>Utility Information: Cast iron main, network main 7 kPa. Through Burwood Road eastern footway.</p>	Burwood Road	<ul style="list-style-type: none"> State Heritage Register - Belmore Railway Station Group (01081) Local heritage - Federation house (former station master's cottage) (I10); Federation railway station buildings (I11); Post-war bus shelter and public lavatories (I29) Section 170 Heritage Register - Belmore Railway Station Group 	<ul style="list-style-type: none"> Canterbury Leagues Club PCYC Belmore Regis Delphi House Belmore
<p>Power (AG8050)</p> <p>Size: TBC</p> <p>Affected Length: 40</p> <p>Utility Information: Overhead powerlines at Burwood Road Bridge.</p>	Burwood Road	<ul style="list-style-type: none"> State Heritage Register - Belmore Railway Station Group (01081) Local heritage - Federation house (former station master's cottage) (I10); Federation railway station buildings (I11); Post-war bus shelter and public lavatories (I29) Section 170 Heritage Register - Belmore Railway Station Group 	<ul style="list-style-type: none"> Canterbury Leagues Club PCYC Belmore Regis Delphi House Belmore



Utilites

- Not affected
- Affected/diverted
- Affected/removed

Design

- Metro Stations
-

Heritage

- State Heritage Curtilage ■
- s170 Heritage (Jan 2014) ■
- Heritage (LEP)
 - State Heritage Act
 - Conservation Area - General
 - Conservation Area - Aboriginal
 - Conservation Area - Landscape
 - Item - General
 - Item - Aboriginal
 - Item - Archaeological
 - Item - Landscape

Biodiversity

- Threatened fauna ■
- Threatened flora +
- Biodiversity assessment (South West)
 - Acacia Pubescens +
 - Acacia Pubescens patches
 - Estuarine Mangrove Forest
 - Estuarine Swamp Oak Forest

Figure 6 Heritage and biodiversity constraints within the Belmore precinct

4.7. Lakemba precinct

Environmental and community constraints identified within the vicinity of major utilities in the Lakemba precinct are presented in Table 7 and shown on Figure 7.

Table 7 Constraints within the vicinity of major utilities within the Lakemba precinct

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ⁷
Peel Street to Ernest Street				
Power (AG8200) Size: Direct laid cables Affected Length: 41 Utility Information: 4 off direct laid HV and abandoned cables under eastern footway on Moreton Street Bridge. DBYD plans show 0.2 m cover over the cables.	Ausgrid	Moreton Street	<ul style="list-style-type: none"> No heritage listed items 	<ul style="list-style-type: none"> Peel Park
Power (AG8300) Size: TBC Affected Length: 49 Utility Information: Overhead powerlines at Moreton Street Bridge.	Ausgrid	Moreton Street	<ul style="list-style-type: none"> No heritage listed items 	<ul style="list-style-type: none"> Peek Park
Gas (JE9200) Size: 250 mm Affected Length: 47 Utility Information: Steel main, secondary main 1050 kPa. Passing under existing tracks along Dennis Street alignment from Railway Parade to The Boulevarde.	Jemena	Denis Street	<ul style="list-style-type: none"> No heritage listed items 	<ul style="list-style-type: none"> Canterbury City Community Centre The Lakemba Club
Sewer (WW9000) Size: DN225 SGW Affected Length: 47 Utility Information: In tunnel along Dennis St alignment.	SWC - sewer	Dennis Street	<ul style="list-style-type: none"> No heritage listed items 	<ul style="list-style-type: none"> Canterbury City Community Centre The Lakemba Club

⁷ Constraints have been derived from the Environmental Impact Statement prepared for the project

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ⁷
<p>Communications (TE10650)</p> <p>Size: 24 x A100 conduits</p> <p>Type: Optic Fibre</p> <p>Affected Length: 38</p> <p>Utility Information: Passing under existing tracks east of Lakemba Station and just to the east of Quigg Street alignment. Bank of conduits in a 6 x 4 conduits configuration. Major cable/conduits network.</p>	Telstra	Near Quigg Street	<ul style="list-style-type: none"> No heritage listed items 	<ul style="list-style-type: none"> The Lakemba Club Canterbury City Community Centre Lakemba Uniting Church
<p>Communications (Optus, OP9000)</p> <p>Size: TBC</p> <p>Affected Length: 38</p> <p>Utility Information: Passing under existing tracks east of Lakemba Station along Quigg Street alignment. Optus fibre through Telstra conduits. Refer Telstra asset.</p>	Optus	Near Quigg Street	<ul style="list-style-type: none"> No heritage listed items 	<ul style="list-style-type: none"> The Lakemba Club Canterbury City Community Centre Lakemba Uniting Church
<p>Power (AG9150)</p> <p>Size: TBC</p> <p>Affected Length: 46</p> <p>Utility Information: Overhead powerlines at Haldon Street Bridge.</p>	Ausgrid	Haldon Street	<ul style="list-style-type: none"> Local heritage - Federation railway station buildings (I143); Inter war post office building (I144) Section 170 Heritage Register- Lakemba Railway Station Group 	<ul style="list-style-type: none"> Lakemba Uniting Church Lakemba Medical Services Family Medical Centre
<p>Power (AG9000)</p> <p>Size: Direct laid cable</p> <p>Affected Length: 46</p> <p>Utility Information: 1 off direct laid HV cable in chase under eastern footpath on Haldon Street Bridge. DBYD plans show 0.4 m cover over the cable.</p>	Ausgrid	Haldon Street	<ul style="list-style-type: none"> Local heritage - Federation railway station buildings (I143); Inter war post office building (I144) Section 170 Heritage Register - Lakemba Railway Station Group 	<ul style="list-style-type: none"> Lakemba Uniting Church Lakemba Medical Services Family Medical Centre

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ⁷
Power (AG9050) Size: Direct laid cable Affected Length: 25 Utility Information: 1 off direct laid cable at southern approach to Haldon Street Bridge. Lateral to road. Cover depth and alignment to be confirmed.	Ausgrid	Haldon Street	<ul style="list-style-type: none"> Local heritage - Federation railway station buildings (I143); Inter war post office building (I144) Section 170 Heritage Register - Lakemba Railway Station Group 	<ul style="list-style-type: none"> Lakemba Uniting Church Lakemba Medical Services Family Medical Centre
Power (AG9100) Size: Direct laid cables Affected Length: 60 Utility Information: 4 off direct laid HV and abandoned cables in chase under western footpath on Haldon Street Bridge. DBYD plans show 0.2 m cover over the cables.	Ausgrid	Haldon Street	<ul style="list-style-type: none"> Local heritage - Federation railway station buildings (I143); Inter war post office building (I144) Section 170 Heritage Register - Lakemba Railway Station Group 	<ul style="list-style-type: none"> Canterbury City Community Centre Lakemba Uniting Church Lakemba Medical Services Family Medical Centre
Communications (TE10600) Size: Varied Type: TBC Affected Length: Null Utility Information: Cables and conduits of varied configuration both major cable/conduit and distribution/local area network cables through Haldon Street Bridge.	Telstra	Haldon Street	<ul style="list-style-type: none"> Local heritage - Federation railway station buildings (I143); Inter war post office building (I144) Section 170 Heritage Register - Lakemba Railway Station Group 	<ul style="list-style-type: none"> Lakemba Uniting Church Lakemba Medical Services Family Medical Centre
Sewer (WW9100) Size: DN400 VC Affected Length: 53 Utility Information: Passing under railway tracks from Bellevue Ave to Sproule St.	SWC - sewer	Bellevue Avenue / Sproule Street	<ul style="list-style-type: none"> No heritage listed items 	<ul style="list-style-type: none"> Anowara Health Care Centre Jubilee Reserve

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ⁷
<p>JE9100</p> <p>Size: 6 inch Affected Length: 35 Utility Information: Cast iron main, network main 7 kPa. Passing under existing tracks from Railway Pde to The Boulevard. Location is approximate as sketched up from information obtained from DBYD and the alignment/location to be confirmed.</p>	<p>Jemena</p>	<p>Bellevue Avenue / Sproule Street</p>	<ul style="list-style-type: none"> No heritage listed items 	<ul style="list-style-type: none"> Anowara Health Care Centre Jubilee Reserve Earnest Street Mosque

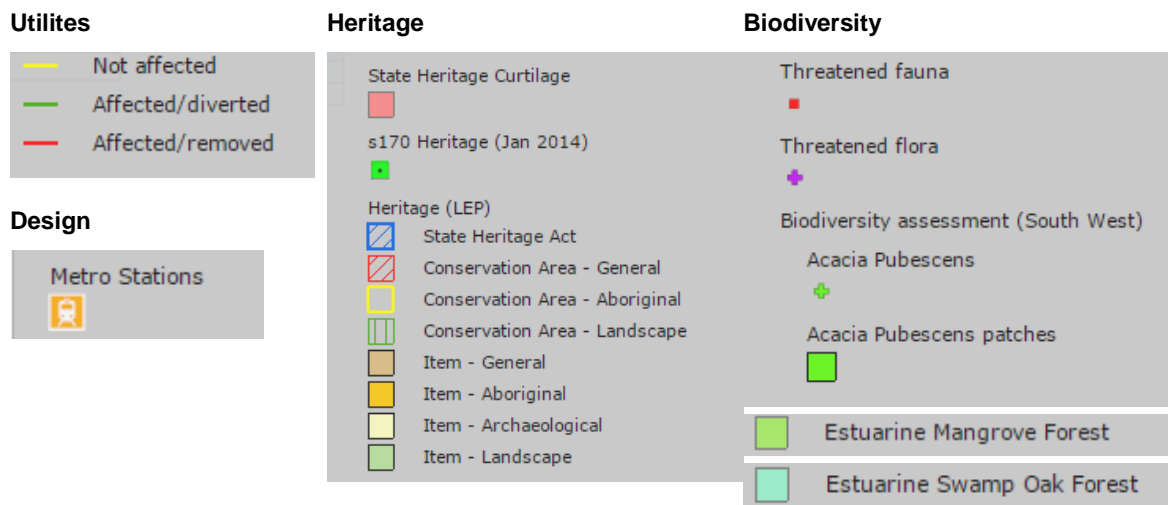


Figure 7 Heritage and biodiversity constraints within the Lakemba precinct

4.8. Wiley Park precinct

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ⁸
Ernest Street to Robinson Street				
Power (AG9300) Size: 3 x 100 PVC conduits Affected Length: 43 Utility Information: Passing under existing tracks from Railway Parade south to Kathleen Street. Conduits with HV, AUX and abandoned cables through them with 0.6 m cover over the conduits as per details on DBYD plans.	Ausgrid	Kathleen Street	<ul style="list-style-type: none"> No heritage listed items 	None
Power (AG10000) Size: 3 x 125 PVC conduits Affected Length: 54 Utility Information: HV cables through conduits in eastern footway of King Georges Road Bridge. DBYD plans show 0.3 m cover.	Ausgrid	King Georges Road	<ul style="list-style-type: none"> Local heritage - Inter war railway station buildings Section 170 Heritage Register - Wiley Park Railway Station Group 	<ul style="list-style-type: none"> Wiley Park Public School Lakemba Public School Wiley Park Family Practice
Power (AG10200) Size: TBC Affected Length: 67 Utility Information: Overhead powerlines at King Georges Road Bridge.	Ausgrid	King Georges Road	<ul style="list-style-type: none"> Local heritage - Inter war railway station buildings Section 170 Heritage Register - Wiley Park Railway Station Group 	<ul style="list-style-type: none"> Wiley Park Public School Lakemba Public School Wiley Park Family Practice

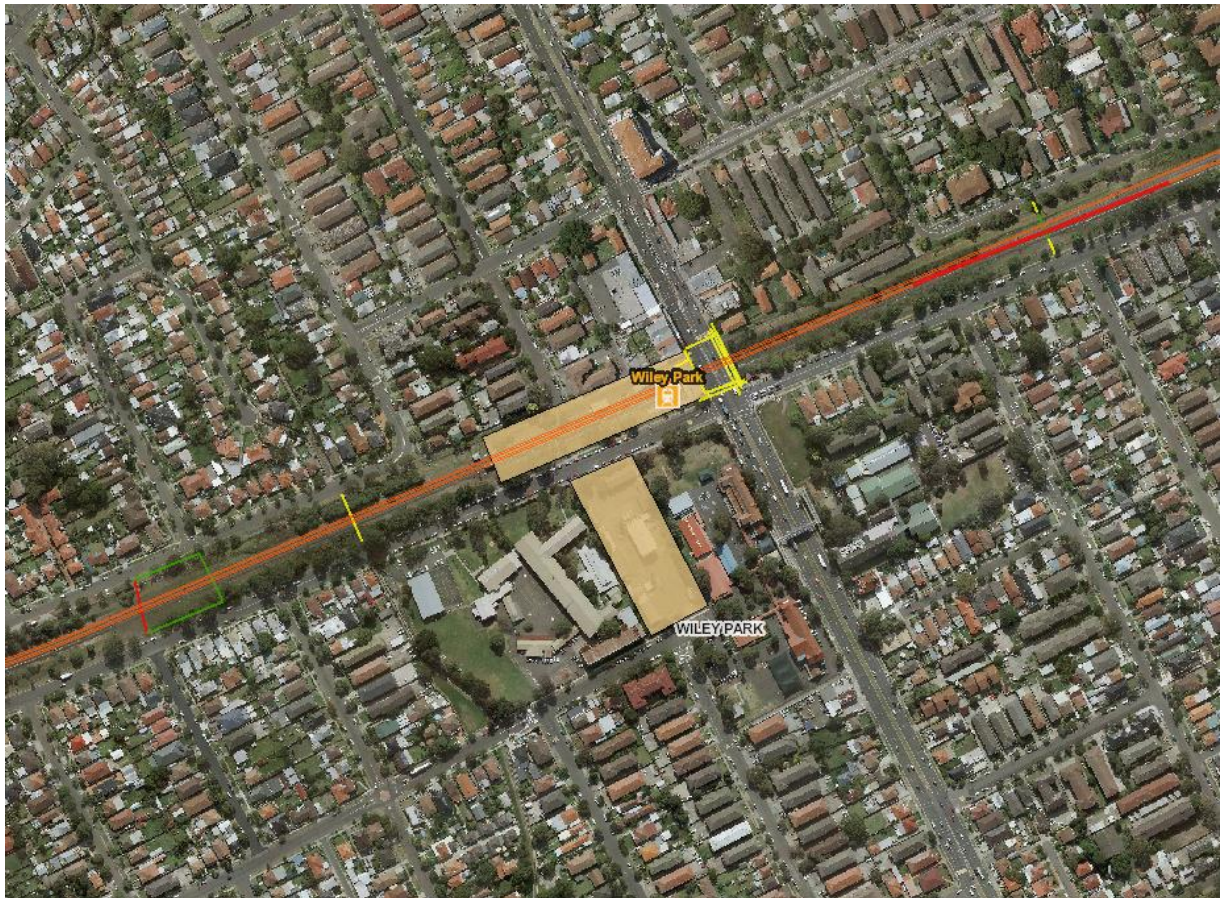
⁸ Constraints have been derived from the Environmental Impact Statement prepared for the project

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ⁸
<p>Gas (JE10000)</p> <p>Size: 6 inch Affected Length: 54 Utility Information: Cast iron main, network main 7 kPa. Through King Georges Road Bridge eastern footway.</p>	Jemena	King Georges Road	<ul style="list-style-type: none"> Local heritage - Inter war railway station buildings Section 170 Heritage Register - Wiley Park Railway Station Group 	<ul style="list-style-type: none"> Wiley Park Public School Lakemba Public School Wiley Park Family Practice
<p>Power (AG10150)</p> <p>Size: 4 x 140 AC conduits Affected Length: 27 Utility Information: HV cables through conduits, section FV1 on DBYD plans, under King Georges Road on northern approach to King Georges Road Bridge. DBYD plans shoe 0.6 m cover over the conduits.</p>	Ausgrid	King Georges Road	<ul style="list-style-type: none"> Local heritage - Inter war railway station buildings Section 170 Heritage Register - Wiley Park Railway Station Group 	<ul style="list-style-type: none"> Wiley Park Public School Lakemba Public School Wiley Park Family Practice
<p>Communications (TE11040)</p> <p>Size: P50 Type: Mains Copper Affected Length: 30 Utility Information: Part underground and part overhead service line to Wiley Park Station.</p>	Telstra	King Georges Road	<ul style="list-style-type: none"> Local heritage - Inter war railway station buildings Section 170 Heritage Register - Wiley Park Railway Station Group 	<ul style="list-style-type: none"> Wiley Park Public School Lakemba Public School

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ⁸
<p>Gas (JE10100)</p> <p>Size: 6 inch Affected Length: 36</p> <p>Utility Information: Cast iron main, network main 7 kPa. Through King Georges Rd Bridge western footway.</p>	Jemena	King Georges Road	<ul style="list-style-type: none"> Local heritage - Inter war railway station buildings Section 170 Heritage Register - Wiley Park Railway Station Group 	<ul style="list-style-type: none"> Wiley Park Public School Lakemba Public School
<p>Communications (TE11000)</p> <p>Size: Varied Type: Mains Copper Affected Length: 37</p> <p>Lateral Longitudinal:</p> <p>Utility Information: Part underground and part overhead service line to Wiley Park Station concourse.</p>	Telstra	King Georges Road	<ul style="list-style-type: none"> Local heritage - Inter war railway station buildings Section 170 Heritage Register - Wiley Park Railway Station Group 	<ul style="list-style-type: none"> Wiley Park Public School Lakemba Public School
<p>Power (AG10100)</p> <p>Size: 4 x 150 AC conduits Affected Length: 41</p> <p>Utility Information: HV cables through conduits under King Georges Rd on southern approach to King Georges Road Bridge. DBYD plans show 0.9-1.5 m cover over the conduits.</p>	Ausgrid	King Georges Road	<ul style="list-style-type: none"> Local heritage - Inter war railway station buildings Section 170 Heritage Register - Wiley Park Railway Station Group 	<ul style="list-style-type: none"> Wiley Park Public School Lakemba Public School

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ⁸
<p>Communications (TE11020)</p> <p>Size: 2 x C100 conduits</p> <p>Type: TBC</p> <p>Affected Length: 30</p> <p>Utility Information: Through King Georges Road and The Boulevard intersection on southern approach to bridge.</p>	Telstra	King Georges Road	<ul style="list-style-type: none"> Local heritage - Inter war railway station buildings Section 170 Heritage Register - Wiley Park Railway Station Group 	<ul style="list-style-type: none"> Wiley Park Public School Lakemba Public School
<p>Sewer (WW10000)</p> <p>Size: DN375 CI</p> <p>Affected Length: 42</p> <p>Utility Information: Passing under railway tracks from Renown Avenue to The Boulevard and also shown as being under a 3048 x 1448 RC stormwater channel.</p>	SWC - sewer	Between Uringa Parade and the Boulevard	<ul style="list-style-type: none"> No heritage listed item 	<ul style="list-style-type: none"> Wiley Park Girls High School
<p>Power (AG10050)</p> <p>Size: See comments</p> <p>Affected Length: 44</p> <p>Utility Information: Underground HV cable through 1 x 150 GI conduit with parallel LV direct buried cable, section CN1 on DBYD plans, passing under existing tracks from Uringa Parade to Faux St. DBYD plans show 1.1 m cover over.</p>	Ausgrid	Between Defoe Street and Faux Street	<ul style="list-style-type: none"> No heritage listed item 	<ul style="list-style-type: none"> None

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ⁸
<p>Power (AG11050)</p> <p>Size: 3 x 125 PVC conduits</p> <p>Affected Length: 44</p> <p>Utility Information: Underground conduits with HV and AUX cables passing under existing tracks from Uringa Parade to The Boulevard. DBYD plans show 0.5 m cover over conduits.</p>	<p>Ausgrid</p>	<p>Near Rosemont Street</p>	<ul style="list-style-type: none"> No heritage listed item 	<ul style="list-style-type: none"> None



Utilities

- Not affected
- Affected/diverted
- Affected/removed

Design

- Metro Stations
-

Heritage

- State Heritage Curtilage
- State Heritage Curtilage
- s170 Heritage (Jan 2014)
- s170 Heritage (Jan 2014)
- Heritage (LEP)
- State Heritage Act
- Conservation Area - General
- Conservation Area - Aboriginal
- Conservation Area - Landscape
- Item - General
- Item - Aboriginal
- Item - Archaeological
- Item - Landscape

Biodiversity

- Threatened fauna
- Threatened fauna
- Threatened flora
- Threatened flora
- Biodiversity assessment (South West)
- Acacia Pubescens
- Acacia Pubescens
- Acacia Pubescens patches
- Acacia Pubescens patches
- Estuarine Mangrove Forest
- Estuarine Swamp Oak Forest

Figure 8 Heritage and biodiversity constraints within the Wiley Park precinct

4.9. Punchbowl precinct

Environmental and community constraints identified within the vicinity of major utilities in the Dulwich Hill precinct are presented in Table 8 and shown on Figure 9.

Table 8 Constraints within the vicinity of major utilities within the Punchbowl precinct

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ⁹
Robinson Street to Mount Lewis Avenue and Gowrie Avenue				
Power (AG11000) Size: 1 x 75 GI conduit Affected Length: 42 Utility Information: Underground conduit LV cable passing under existing tracks from Uringa Parade to The Boulevard to the east of The Broadway. DBYD plans show 0.6 m cover over the conduit.	Ausgrid	Dudley Street	<ul style="list-style-type: none"> No heritage listed item 	<ul style="list-style-type: none"> Playtime Preschool and Long Day Care Centre
Sewer (WW11000) Size: DN225 VC Affected Length: 94 Utility Information: In tunnel. Passing under existing railway tracks at eastern end of the station.	SWC - sewer	Between Uringa Parade and Matthews Street	<ul style="list-style-type: none"> Local heritage - Federal railway station buildings; Post-war civic building Section 170 Heritage Register - Punchbowl Railway Station Group 	<ul style="list-style-type: none"> Warren Reserve Punchbowl Childrens Centre Punchbowl Medical and Dental Centre
Power (AG11100) Size: 4 x 125 PVC conduits Affected Length: 66 Utility Information: HV cables through conduits in concrete bridge	Ausgrid	Punchbowl Road	<ul style="list-style-type: none"> Local heritage - Federal railway station buildings Section 170 Heritage Register - Punchbowl Railway Station Group 	<ul style="list-style-type: none"> Church of Jesus Christ of Latter Day Saints South Terrace Health Centre Warren Reserve Punchbowl Medical and Dental Centre

⁹ Constraints have been derived from the Environmental Impact Statement prepared for the project

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ⁹
structure in eastern footway of Punchbowl Road Bridge covered with removable footway covers. DBYD plans show 0.2-0.5 m cover.				
<p>Communications (Telstra, TE11200)</p> <p>Size: TBC Type: TBC Affected Length: 65 Utility Information: Through western footway in Punchbowl Road Bridge.</p>	Telstra	Punchbowl Road	<ul style="list-style-type: none"> Local heritage - Federal railway station buildings Section 170 Heritage Register - Punchbowl Railway Station Group Threatened flora - Acacia Pubescens 	<ul style="list-style-type: none"> Church of Jesus Christ of Latter Day Saints Punchbowl Boys High School South Terrace Health Centre Warren Reserve Punchbowl Medical and Dental Centre
<p>Power (AG11200)</p> <p>Size: 3 x 125 PVC conduits Affected Length: 66 Utility Information: HV cables through conduits in concrete bridge structure in western footway of Punchbowl Road Bridge. DBYD plans show 0.3 m cover.</p>	Ausgrid	Punchbowl Road	<ul style="list-style-type: none"> Local heritage - Federal railway station buildings Section 170 Heritage Register - Punchbowl Railway Station Group Threatened flora - Acacia Pubescens 	<ul style="list-style-type: none"> Church of Jesus Christ of Latter Day Saints Punchbowl Boys High School South Terrace Health Centre Warren Reserve Punchbowl Medical and Dental Centre
<p>Gas (JE11000)</p> <p>Size: 150 mm Affected Length: 62 Utility Information: Steel main, network main 7 kPa. Through Punchbowl Road Bridge western footway.</p>	Jemena	Punchbowl Road	<ul style="list-style-type: none"> Local heritage - Federal railway station buildings Section 170 Heritage Register - Punchbowl Railway Station Group Threatened flora - Acacia Pubescens 	<ul style="list-style-type: none"> Church of Jesus Christ of Latter Day Saints Punchbowl Boys High School South Terrace Health Centre Warren Reserve Punchbowl Medical and Dental Centre

Utility ID	Owner	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ⁹
<p>Power (AG11300)</p> <p>Size: TBC</p> <p>Affected Length: 50</p> <p>Utility Information: Overhead powerlines over railway corridor west of Punchbowl Road Bridge.</p>	Ausgrid	Near Kelly Street	<ul style="list-style-type: none"> No heritage listed item Threatened flora - Acacia Pubescens 	<ul style="list-style-type: none"> Punchbowl Boys High School Mary Barry Park South Terrace Health Centre Church of Jesus Christ of Latter Day Saints
<p>Sewer (WW11100)</p> <p>Size: DN225 VC</p> <p>Affected Length: 42</p> <p>Utility Information: In tunnel. Passing under railway tracks west of Punchbowl Road from Punchbowl Boys High School to South Terrace.</p>	SWC - sewer	Off South Terrace	<ul style="list-style-type: none"> No heritage listed items 	<ul style="list-style-type: none"> Punchbowl Boys High School Mary Barry Park South Terrace Health Centre



Utilities

	Not affected
	Affected/diverted
	Affected/removed

Design

	Metro Stations
--	----------------

Heritage

	State Heritage Curtilage
	s170 Heritage (Jan 2014)
Heritage (LEP)	
	State Heritage Act
	Conservation Area - General
	Conservation Area - Aboriginal
	Conservation Area - Landscape
	Item - General
	Item - Aboriginal
	Item - Archaeological
	Item - Landscape

Biodiversity

	Threatened fauna
	Threatened flora
Biodiversity assessment (South West)	
	Acacia Pubescens
	Acacia Pubescens patches
	Estuarine Mangrove Forest
	Estuarine Swamp Oak Forest

Figure 9 Heritage and biodiversity constraints within the Punchbowl precinct

4.10. Bankstown precinct

Environmental and community constraints identified within the vicinity of major utilities in the Bankstown precinct are presented in Table 9 and shown on Figure 2 to Figure 9. No utilities require relocation / protection west of Meredith Street.

Table 9 Constraints within the vicinity of major utilities within the Bankstown precinct

Utility ID	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ¹⁰
Mount Lewis Avenue and Gowrie Avenue to Stacey Street			
Sewer (WW11200) Size: DN300 CICL Affected Length: 48 Utility Information: In tunnel. Passing under railway tracks.	Off Stansfield Avenue	<ul style="list-style-type: none"> No heritage listed item 	<ul style="list-style-type: none"> Bankstown Academy Childcare
Power (AG11400) Size: See comments Affected Length: 55 Utility Information: Underground transmission pilot cables. Type of transmission cables (11, 33 or 132kV) TBC as not shown on DBYD plans. DBYD plans show them to have 6 m cover, section CB1 on DBYD plans.	Between Stansfield Avenue and South Terrace	<ul style="list-style-type: none"> No heritage listed item 	<ul style="list-style-type: none"> None
Power (AG11450) Size: See comments Affected Length: 80 Utility Information: Underground 3 x 150 GI conduits with abandoned	Between Stansfield Avenue and South Terrace	<ul style="list-style-type: none"> No heritage listed item 	<ul style="list-style-type: none"> None

¹⁰ Constraints have been derived from the Environmental Impact Statement prepared for the project

Utility ID	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ¹⁰
<p>cables through them and 4 direct laid abandoned cables. To be confirmed with Ausgrid if abandoned. DBYD plans show them having 0.7-1.5 m cover.</p>			
<p>Power (TG4000)</p> <p>Size: 132kV Affected Length: 130 Utility Information: Overhead 132kV transmission lines east of Stacey Street, North Terrace to South Terrace.</p>	<p>Across South Terrace to Carnation Avenue</p>	<ul style="list-style-type: none"> No heritage listed item 	<ul style="list-style-type: none"> None
<p>Sewer (WW11300)</p> <p>Size: DN450 SGW Affected Length: 67 Utility Information: Passing under railway track and embankments.</p>	<p>South Terrace</p>	<ul style="list-style-type: none"> No heritage listed item 	<ul style="list-style-type: none"> None
<p>Stacey Street to Meredith Street and Bankstown Arts Centre</p>			
<p>Power (AG11500)</p> <p>Size: See comments Affected Length: 93 Utility Information: 1 x 100 PVC conduit with HV cable through it and direct laid SL cable through Stacey Street Bridge western footway including power poles. DBYD plans show 0.2 m</p>	<p>Stacey Street</p>	<ul style="list-style-type: none"> No heritage listed item 	<ul style="list-style-type: none"> St Euphemia College

Utility ID	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ¹⁰
cover.			
<p>Power (AG11550)</p> <p>Size: 1 x 100 PVC conduit</p> <p>Affected Length: 93</p> <p>Utility Information: 1 x 100 PVC conduit SL cable through Stacey Street Bridge western footway including power poles. DBYD plans show 0.2 m cover.</p>	Stacey Street	<ul style="list-style-type: none"> No heritage listed item 	<ul style="list-style-type: none"> St Euphemia College
<p>Power (AG11600)</p> <p>Size: 5 x 100 PVC conduits</p> <p>Affected Length: 59</p> <p>Utility Information: Bore under railway tracks with HV cables through conduits from North Terrace to South Terrace west of Stacey St Bridge. No cover depth recorded under existing tracks. DBYD plans indicate 2.0 m cover on northern end of bore and 1.2 m cover on southern end of bore.</p>	Between Lady Cutler Avenue and South Terrace	<ul style="list-style-type: none"> No heritage listed item 	<ul style="list-style-type: none"> St Euphemia College
<p>Sewer (WW11400)</p> <p>Size: DN450 SGW</p> <p>Affected Length: 65</p> <p>Utility Information: Concrete encased. In subway underpass east</p>	North and South Terrace Connector	<ul style="list-style-type: none"> No heritage listed item Threatened flora - Acacia Pubescens 	<ul style="list-style-type: none"> Himalaya Emporium Function Centre Roly Poly Educational Child Care

Utility ID	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ¹⁰
of Bankstown Station and under stormwater channel.			
<p>Communications (TE11220)</p> <p>Size: TBC</p> <p>Type: TBC</p> <p>Affected Length: 45</p> <p>Utility Information: Underground cables and conduits to existing building on northern side of Bankstown Station, to be confirmed.</p>	North Terrace	<ul style="list-style-type: none"> Local heritage - former accommodation house (I2); Bankstown Railway Station building and Platform (I4); Bankstown Parcels Office (former) (I4) Section 170 Heritage Register - Bankstown Railway Station Group; Bankstown Parcels Office (former) (I4) 	<ul style="list-style-type: none"> None
<p>Sewer (WW11410)</p> <p>Size: DN225 SGW</p> <p>Affected Length: 144</p> <p>Utility Information: DBYD plans show the sewer as being between 1.2 - 1.9 m deep along the identified length.</p>	North Terrace	<ul style="list-style-type: none"> Local heritage - former accommodation house (I2); Bankstown Railway Station building and Platform (I4); Bankstown Parcels Office (former) (I4) Section 170 Heritage Register - Bankstown Railway Station Group; Bankstown Parcels Office (former) (I4) 	<ul style="list-style-type: none"> None
<p>Communications (TE11250)</p> <p>Size: P20</p> <p>Type: TBC</p> <p>Affected Length: 12</p> <p>Utility Information: Service line to Bankstown Station concourse.</p>	Bankstown City Plaza	<ul style="list-style-type: none"> Local heritage - former accommodation house (I2); Bankstown Railway Station building and Platform (I4) Section 170 Heritage Register - Bankstown Railway Station Group 	<ul style="list-style-type: none"> None
<p>Communications (TE11350)</p> <p>Size: 6 x P100 conduits</p> <p>Type: Optic Fibre</p> <p>Affected Length:</p>	Bankstown City Plaza	<ul style="list-style-type: none"> Local heritage - former accommodation house (I2); Bankstown Railway Station building and Platform (I4) Section 170 Heritage Register - Bankstown Railway Station Group 	<ul style="list-style-type: none"> None

Utility ID	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ¹⁰
<p>35</p> <p>Utility Information: Bank of conduits in a 3 x 2 conduits configuration. Major cable/conduit network through eastern footpath of South Terrace to North Terrace bridge over station.</p>			
<p>Communications (TE11400)</p> <p>Size: Varied Type: TBC Affected Length: 24</p> <p>Utility Information: Through western footpath of South Terrace to North Terrace bridge.</p>	<p>Bankstown City Plaza</p>	<ul style="list-style-type: none"> Local heritage - Bankstown Railway Station building and Platform (14) Section 170 Heritage Register - Bankstown Railway Station Group 	<ul style="list-style-type: none"> None
<p>Communications (TE11450)</p> <p>Size: 7 x A100 conduits Type: Optic Fibre Affected Length: 88</p> <p>Utility Information: Passing under the existing tracks from Dale Parade to Marion Street west of Bankstown Station. Bank of conduits in a 3 x 2 bank plus a single conduit configuration. Major cable/conduit network.</p>	<p>Between Depot Place and Dale Parade</p>	<ul style="list-style-type: none"> No heritage listed items 	<ul style="list-style-type: none"> Bankstown Art Centre Bankstown Sports Bowls
<p>Power (AG11700)</p> <p>Size: See Comments Affected Length: 36</p>	<p>Between Depot Place and Dale Parade</p>	<ul style="list-style-type: none"> No heritage listed items 	<ul style="list-style-type: none"> Bankstown Art Centre Bankstown Sports Bowls

Utility ID	Location (nearest road)	Constraints identified within 50 metres of the utility	Community receivers identified within 100 metres of the utility ¹⁰
Utility Information: 4 x 100 GI conduits under tracks splitting into 2 x 150 AC conduits and direct buried cables north of tracks towards Depot Place. Passing under the railway tracks west of Bankstown Station from Depot Place to Dale Parade.			

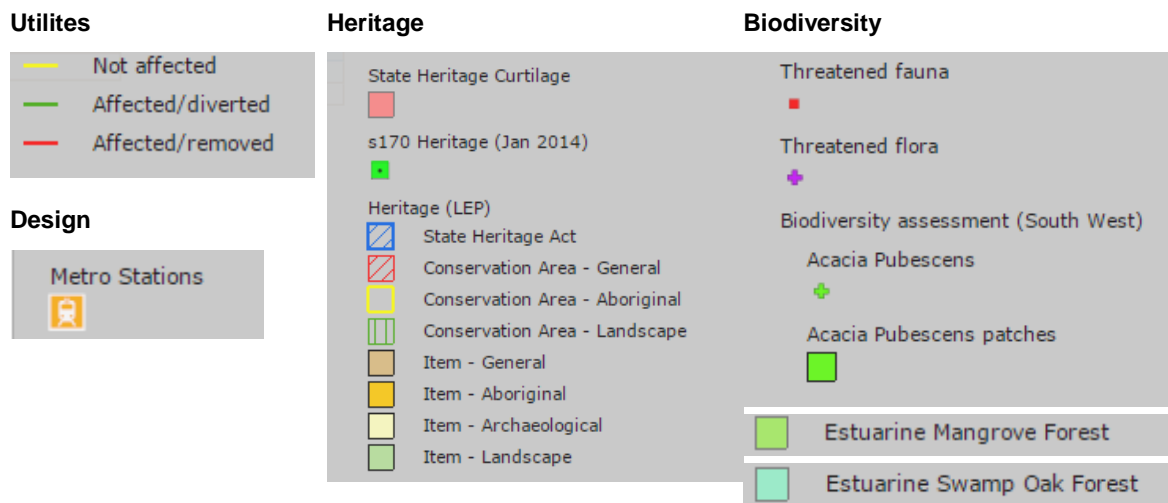
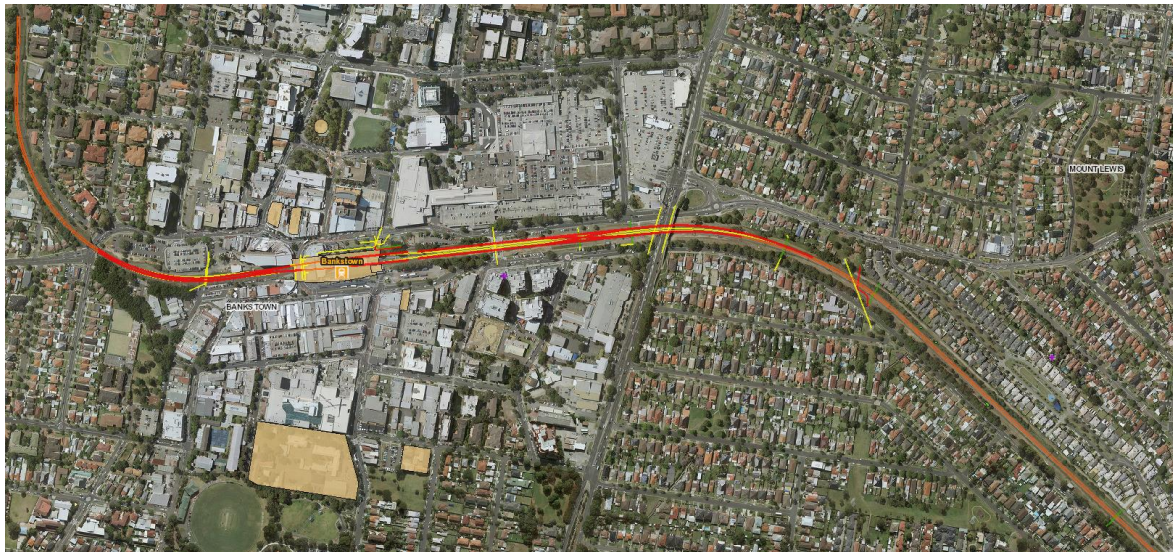


Figure 10 Heritage and biodiversity constraints within the Bankstown precinct

5. Environmental assessment and approval

Minor relocations within the existing rail corridor would be undertaken in accordance with a work method statement provided in the project Construction Environmental Management Plan. For relocations outside the rail corridor, the need for additional assessment and approval would be determined in line with the approach to design refinements for the project, described in Section 28.2 of the EIS.

5.1. Overview and context

In some cases construction works for the project will require the relocation/adjustment of utilities and in other cases utilities will require protection from potential impacts during construction works associated with other aspects of the project. If utilities are not managed adequately, by adjusting, relocating, or protecting them prior to construction, there would be the potential for rupture or breakage of connections. This could lead to service disruptions and/or pose a hazard in the form of electrocution, release of sewage from a wastewater main, or fire if a gas main is impacted. It may be necessary to establish a construction work zone (ie compound area and hard stand area etc) during the utility relocation/adjustment.

5.1.1. Potential impacts on utilities

Construction would have the potential to impact on utilities as a result of works to and around stations, track works, excavation, and works to overbridges. In most cases, utility impacts would be minimised by protecting utilities in place, or, where required, constructing a replacement utility ahead of re-connection thus minimising the duration of outages. Connection activities would be undertaken during planned periods of disruption, which would be notified in advance to affected communities. However, there is also the possibility of accidental damage or incidents if utilities are uncovered in locations not previously identified, leading to unplanned disruptions. Such disruptions can result in impacts to the operation of utility networks.

All works would be undertaken in accordance with the requirements of the relevant asset owners, which would be determined following consultation.

5.1.2. Utilities relocation/adjustment

Most utilities to be relocated/adjusted are located within the rail corridor and likely to be relocated within the rail corridor, as this is where the highest density of utilities typically occurs. In these situations, the works associated with relocating utilities would be consistent with the typical construction activities identified and assessed in the EIS.

However, in some locations, works would be required outside the rail corridor but still within the project area, for example at a construction compound site or a rail overbridge. Also, depending on the utility and the utility owners requirements, it may not always be possible to divert the utility at the point of intersection with the project, requiring consideration of upstream and downstream impacts. These impacts would be considered on a case by case basis drawing on a risk based framework outlined in Section 5.2 below.

5.2. Risk based environmental assessment

This framework establishes a risk based approach to the assessment and management of potential impacts associated with utilities management.

Typical environmental impacts associated with a range of anticipated utilities works likely to be required during the construction phase of the project are identified below:

Environmental aspect	Typical impacts
Traffic and access	<ul style="list-style-type: none"> • Additional construction related traffic • Changes/disruption to traffic movements • Changes/disruption to property access • Changes/disruption to bus services/routes • Changes/disruption to pedestrian and cyclist movements • Temporary reduction in available car parking
Noise and vibration	<ul style="list-style-type: none"> • Vibration depending on utility removal/installation technique eg horizontal directional drilling or trenching • Road traffic noise due to construction vehicle movements/haulage routes and changes in traffic movements associated with detours • Construction noise associated with physical works and type of plant of equipment proposed
Non Aboriginal Heritage	<ul style="list-style-type: none"> • Potential intrusion within heritage curtilage • Works within heritage conservation area • Potential impact to, or removal of, heritage trees • Potential impacts to views and vistas associated with heritage items • Potential impacts to heritage buildings/fabric from vibration
Biodiversity	<ul style="list-style-type: none"> • Removal of vegetation and/or trees • Impact to tree protection zone • Loss of habitat such as trees and other vegetation types causing habitat fragmentation • Impacts to fauna from construction related noise and vibration eg bats
Air quality	<ul style="list-style-type: none"> • Dust from construction works • Exhaust emissions from equipment, machinery and construction vehicles
Hazard and risk	<ul style="list-style-type: none"> • Potential electric and magnetic field impacts during operation (where electricity infrastructure is relocated to a new area) • Hazards specific to the Qenos pipeline relocation work include: <ul style="list-style-type: none"> • Abrasive blasting - potential contamination of air/soil/water from blasting material. • Radiation exposure – use of xray to inspect the new welds. • Welding – grinding/welding operation has risk of fire or injury to personnel • Horizontal directional drilling – potential for frac-out and damage to buried services • Hydrostatic testing – potential for injury to workers due to failure of high pressure fittings • Remaining ethylene product in the pipeline – there could be a minimal amount of product left in the pipeline that we need to be aware of during tie-in.

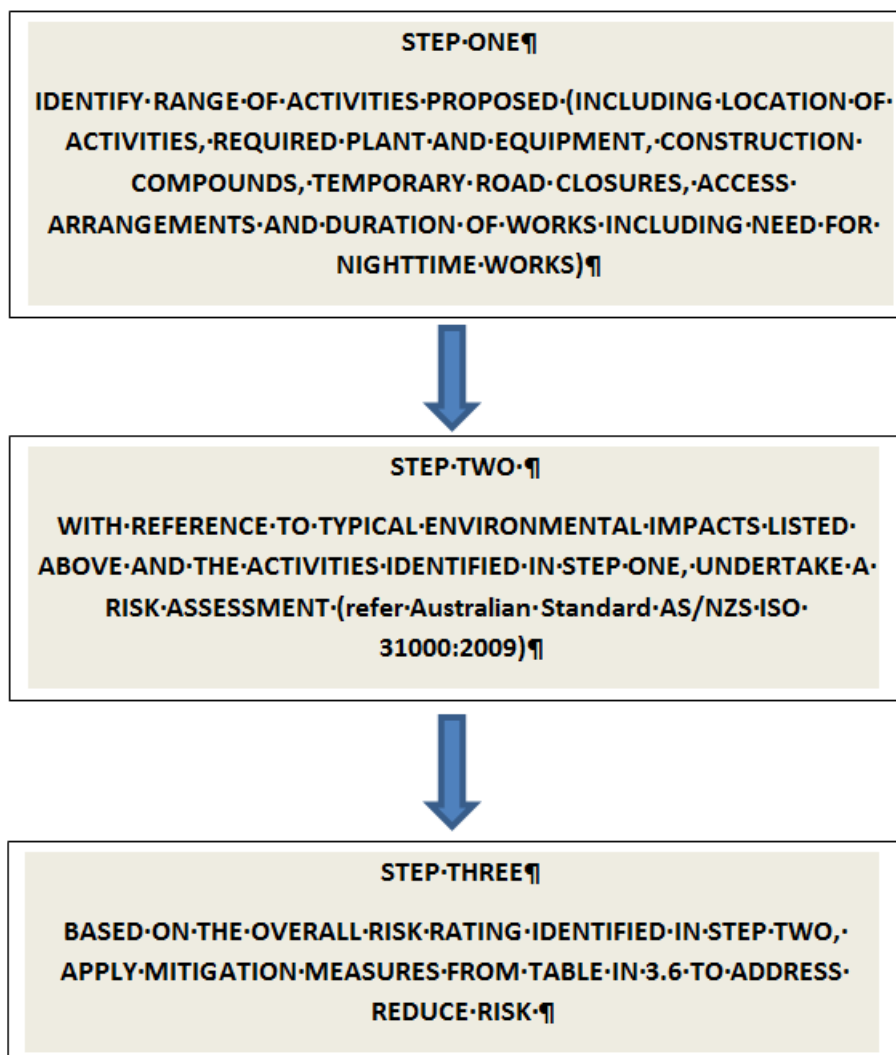
Environmental aspect	Typical impacts
Property and land use	<ul style="list-style-type: none"> • Potential leasing of property for construction works • Potential changes to, or requirements for, easement arrangements for utility
Soils and contamination	<ul style="list-style-type: none"> • Potential disturbance, handling and disposal of contaminated material including acid sulphate soils during construction
Landscaping/urban design matters	<ul style="list-style-type: none"> • Erection of fencing, barricades, gates and lighting • Potential light spill from night-works • General construction activities within the construction footprint, trenching, stockpiling of materials and the parking/use of construction plant and vehicles • Rehabilitation of land (potential replanting etc) following relocation/adjustment works
Aboriginal heritage	<ul style="list-style-type: none"> • Potential disturbance to registered sites • Potential disturbance to areas of potential archaeological deposits • Unexpected finds during utility relocation/adjustment works.

Note: this is not intended to limit the range of environmental aspects considered for a specific relocation, but rather provides a guide for likely matters to consider.

This utilities management framework is underpinned by the Australian Standard for risk management - [AS/NZS ISO 31000:2009, Risk management - Principles and guidelines](#). An analysis of potential impacts associated with utilities relocation/adjustments would be undertaken by considering consequence and likelihood as set out in the Australia Standard.

		Consequence					
		How severe could the outcomes be if the risk event occurred? →					
		1 Insignificant	2 Minor	3 Significant	4 Major	5 Severe	
Likelihood	↑ What's the chance the of the risk occurring?	5 Almost Certain	5 Medium	10 High	15 Very high	20 Extreme	25 Extreme
	4 Likely	4 Medium	8 Medium	12 High	16 Very high	20 Extreme	
	3 Moderate	3 Low	6 Medium	9 Medium	12 High	15 Very high	
	2 Unlikely	2 Very low	4 Low	6 Medium	8 Medium	10 High	
	1 Rare	1 Very low	2 Very low	3 Low	4 Medium	5 Medium	

The steps associated with the assessment are outlined in the figure below:



An assessment of these aspects and any other site specific matters would be undertaken prior to construction and mitigation adopted in the project Construction Environmental Management Plan.

6. Construction management

Construction would be managed in accordance with the requirements of the Construction Environmental Management Framework and the Construction Environmental Management Plan. This plan would address contingency management for any unplanned utilities interruptions.

Notwithstanding, the table below presents example mitigation measures that could be adapted to specific utilities work associated with the construction phase of the project

Environmental aspect	Typical mitigation measures to be adopted as required
Traffic and access	<p>During detailed design:</p> <ul style="list-style-type: none"> • Road occupancy licence(s) for temporary closure of roads would be obtained prior to construction, where required, from the relevant road authority. • A Traffic Control Plan would be developed during detailed design and would identify all traffic control arrangements required to be implemented during construction. • To keep the road user delays to a minimum, all works would be planned and staged to avoid road occupancies during peak periods, where possible. • An emergency response plan would be developed for construction traffic incidents. • A pre and post-construction assessment of road pavement assets would be conducted in areas likely to be used by construction traffic or disturbed by the proposed trenching and HDD activities. <p>During construction:</p> <ul style="list-style-type: none"> • Heavy vehicles would be restricted to allowable routes. • Where schools or child care centres occur in the immediate vicinity of the construction sites, heavy vehicle movement would be minimised (where reasonable and feasible), between 8 am and 9.30 am and 2.30 pm–400 pm Monday to Friday (on school days). • Traffic controllers would be located at worksite access point(s) as required to direct vehicle movements, vehicle deliveries, pedestrians and cyclists, where required. • Public communications would be conducted to notify the community and local residents of vehicle movements and anticipated effects on the local road network relating to the site works. • Access to all private properties adjacent to the works would be maintained during construction, where possible. Where access is known to be restricted, all proposed changes to existing access arrangements would be discussed with residents and/or businesses prior to the commencement of works. Upon completion of the construction works, the original property access would be reinstated. • Early advanced communication with affected properties would be undertaken to identify alternative arrangements. • During Project inductions, all heavy vehicle drivers would be provided with the emergency response plan for construction traffic incidents. • Project staging, vehicle movement and scheduling, equipment and resourcing would be coordinated to minimise impacts. • Construction vehicle parking would be discouraged on local roads and construction staff encouraged to use public transport, car share, or in some cases workers can park in a designated off-site area and ferried to site via a shuttle bus. • Temporary closure or relocation of any bus stops impacted by the works would be coordinated with bus companies and advertised locally in advance.

Environmental aspect	Typical mitigation measures to be adopted as required
Noise and vibration	<p>During construction:</p> <ul style="list-style-type: none"> • Carry out work mainly during standard construction hours when in the vicinity of residential receivers. • Use a portable barrier (or similar protection) to shield the drilling equipment where works occur in proximity to residential receivers where reasonable and feasible. The height and nature of the barrier would be determined when the equipment selection is finalised. The barrier would be constructed of a material of minimum mass 12 kilograms per metre squared such as 20 millimetre plywood or a proprietary barrier such as Echobarrier. • Provide periods of respite from use of the road saw. • Schedule the use of the road saw to times when the community are less sensitive by avoiding early morning and late evening/night periods, where feasible with respect to the proposed construction methodology. • Inform surrounding residents by mail of planned works prior to the works commencing. • Organise the site to avoid unnecessary use of reversing alarms on vehicles. • Truck drivers to use approved access routes to the site. • Orientate and place water pumps and vacuum trucks away from receivers. • Turn equipment off when not in use and avoid idling machinery or trucks near sensitive receivers. • Utilise vehicles, obstacles and stockpiles on site to provide shielding to receivers, where possible. • Avoid dropping tools or materials from height, striking materials or making metal-metal contact • Operate the excavator in a manner that avoids maximum noise levels associated with striking or shaking the bucket. • Educate workers on the importance of minimising noise and avoid creating short duration high noise level events. • Carry out a survey of sensitive receivers to ensure adequate acoustic performance of façade. <p>During reinstatement/rehabilitation works:</p> <ul style="list-style-type: none"> • Schedule deliveries to be carried out to avoid sensitive periods in the early morning and late evening/night. • Turn equipment off when not in use and avoid idling machinery or trucks near sensitive receivers. • Provide respite periods from tipper and compactor usage. • Select equipment such as a compactor and tipper trucks, based on lower noise emissions and use equipment that has lower noise levels • Inform surrounding residents by mail of planned works prior to the works commencing.
Non Aboriginal heritage	<ul style="list-style-type: none"> • Construction works associated with utilities relocation/adjustment with the potential to impact non Aboriginal heritage would be managed through a Heritage Management Plan that would be prepared for the Sydney Metro Sydenham to Bankstown upgrade project. • The presence or potential presence of a heritage item or archaeological deposit would inform the construction method adopted, for instance underboring using HDD may be preferable to trenching in some sensitive locations.

Environmental aspect	Typical mitigation measures to be adopted as required
Biodiversity	<p>During construction</p> <ul style="list-style-type: none"> • Where vegetation clearing is required, pre-clearing surveys would be completed to mitigate potential impacts and identify risks to flora, fauna and habitat prior to construction activities occurring and to identify the presence of any unidentified threatened or endangered species. • Where impacts to existing street trees are unavoidable, both the relevant Council and an ecologist or arborist would be consulted prior to removal or pruning of any trees • If the removal of any tree with hollows/dead trees/tree stump is unavoidable (subject to detailed design and advice from contractor) further assessment by a qualified ecologist would be undertaken. • Any sensitive areas along alignment would be identified during detailed design and/or pre-construction planning activities and would be indicated on a site environmental plan for the proposed works. Protective fencing and environmental signage would be installed as required. • Vegetation removal would only be carried out under a permit system. • Flora and/or fauna located during works would be subject to a Vegetation Clearing Procedure and/or Fauna Rescue Procedure. • Site office, stockpiles, machinery wash down areas, and plant storage areas would be located outside of any ecologically sensitive areas. • Fuel (or other chemical) storage would be located outside all identified riparian zones, and at least 10 metres from any retained ecologically sensitive areas onsite.

Environmental aspect	Typical mitigation measures to be adopted as required
Air quality	<p>During construction:</p> <ul style="list-style-type: none"> • Trucks carrying spoil onto or off site are to be covered. • Any stockpiling of materials would be located away from sensitive receivers, where feasible and reasonable, and protected from the elements through barriers or appropriate coverings. • On-going monitoring for dust (e.g. site inspections) would be undertaken during trenching works to assess the effectiveness of mitigation measures. • Water sprays and/or water carts would be used as required for dampening exposed surfaces to control dust generation. • Silt accumulated in sediment control devices (e.g. silt fences and spoon drains) would be removed on a regular basis to prevent dust generation. • Cutting, grinding or sawing equipment (such as for concrete/bitumen surfaces) must only be used in conjunction with suitable dust suppression techniques, such as water sprays or local extraction. • Dust generating activities would be assessed during periods of strong winds and rescheduled, where required. • Exhaust systems of construction plant, vehicles and machinery would be maintained to minimise exhaust emissions to the atmosphere. All equipment and vehicles are to be regularly maintained and records kept of maintenance. • Engines would be switched off when vehicles and plant are not in use, to minimise idling, and refuelling areas would be away from areas of public access and sensitive receivers. • Plant would be well maintained and serviced in accordance with manufacturers' recommendations. • Low emission vehicles and plant fitted with catalysts, diesel particulate filters or similar devices would be used, where feasible and reasonable. • Plant and other machinery (including generators) would be sited away from sensitive receivers, such as dwellings and schools, where feasible and reasonable. • The amount of excavated material stored on site would be minimised, and replaced within the open trench as soon as possible. • Dust generating activities would be assessed during periods of strong winds and rescheduled where required. • Dust complaints would be handled accordance with the complaints handling process in the Community Communication Strategy to be developed by each Sydney Metro Principal Contractor.

Environmental aspect	Typical mitigation measures to be adopted as required
Hazard and risk	<p>With regard to EMF:</p> <ul style="list-style-type: none"> • Where practical, site the electrical infrastructure in the carriageway of roads, away from residential property boundaries, so that the magnetic field contribution at and beyond them would be lower. • Adopt an underground cable concept rather than overhead lines. • Use 3-core cables, which greatly increase the rate at which the magnetic field levels drop off with increasing distance from the source when compared to the single core alternative. • Include consideration of public awareness/education as part of community information material to identify the minimal impacts with respect to EMF. <p>General:</p> <ul style="list-style-type: none"> • Hazardous substances would only be used onsite as required, in accordance with the manufacturer/ supplier instructions. • The use of any hazardous substance that could result in a spill would be undertaken away from drainage or stormwater lines and, wherever possible, within defined bunds • Contractors to operate under appropriate Work Health and Safety Plan
Property and land use	<p>During pre-construction:</p> <ul style="list-style-type: none"> • In consultation with utility providers, the ongoing maintenance and access requirements would be identified and the potential impact to an existing easement or need for a new easement considered. • The proposal would not permanently restrict any future access to residential, commercial, industrial or recreational land uses.
Soils and contamination	<p>During construction:</p> <ul style="list-style-type: none"> • All fuels, chemicals and hazardous liquids would be stored in accordance with Australian standards and EPA guidelines. • Any refuelling undertaken on site would be undertaken in designated areas only. • Spill kits would be available as part of any worksite for use in case of fuels, chemical or other spill(s) which may occur during construction. • All spills or leakages would be immediately contained and absorbed. • Should any signs of contamination be identified during work within the site, the material would be tested against the National Environment Protection Council's National Environment Protection (Assessment of Site Contamination) Measure 1999, and managed accordingly. • Soil excavated in areas with identified surrounding industrial land uses (including former uses) would be assessed for either its potential re-use on-site or classified for waste disposal purposes. • If groundwater is encountered during the works, groundwater quality would be investigated and appropriate management measures implemented to avoid further impacts. • In the event of unexpected finds of contamination a Contamination Unexpected Finds and Contingency (refer to the CSWMP) procedure would be implemented.

Environmental aspect	Typical mitigation measures to be adopted as required
Landscaping/urban design matters	<p>During construction:</p> <ul style="list-style-type: none"> • Visual mitigation measures would be implemented as soon as feasible and practical and remain in place during the construction period. • All effort would be made for vegetation to be retained where practical and feasible. • Site sheds, where required, would be located to minimise visual impact where it is feasible and reasonable to do so. • Hoarding banners for the external faces of hoardings and fences at each construction site would be a non-obtrusive colour, which would comply with the Sydney Metro style guidelines (co-branding). • Hoarding would be maintained in an excellent condition with prompt removal of graffiti. • No signage, advertising or branding (other than safety signage or other required signage) would be placed on the external face of any hoarding or fence without the prior written approval of TfNSW. • Temporary works to be designed and constructed as per the requirements of crime prevention through environmental design. • Temporary fencing, walls, and hoarding would be designed and implemented to increase natural surveillance with straight runs. • Way finding signage to direct pedestrians, commuters and vehicles around the construction site would be installed as required. • The storage of materials and construction machinery would be minimised as far as possible. • The site would be maintained in an orderly and tidy fashion through good housekeeping. • Cut-off and directed lighting would be used to ensure glare and light spill are minimised during night work periods (where this is required).
Aboriginal heritage	<p>During construction</p> <ul style="list-style-type: none"> • If suspected Aboriginal objects are located during construction, an archaeologist would be notified to assess the nature and significance of the find. If the find is an Aboriginal object, further investigation and permits may be required before works commence. If the find is an Aboriginal object, then OEH and the relevant Local Aboriginal Land Council (LALC) would be notified. • If suspected human skeletal remains were uncovered at any time within the area of the utility works, the following actions would need to be followed: <ul style="list-style-type: none"> ○ immediately cease all excavation activity in the vicinity of the remains ○ notify NSW Police ○ notify OEH via the Environment Line on 131 555 to provide details of the remains and their location ○ no recommencement of activity in the vicinity of the remains unless authorised in writing by OEH

6.1. Rehabilitation and re-instatement

Mitigation measures required for reinstatement or work sites will be incorporated into the CEMP and will include as a minimum:

- Principal Contractors will clear and clean all working areas and accesses at project completion
- At the completion of construction all plant, temporary buildings or vehicles not required for the subsequent stage of construction will be removed from the site
- All land, including roadways, footpaths, loading facilities or other land having been occupied temporarily will be returned to their pre-existing condition or better
- Reinstatement of community spaces, infrastructure and services will occur as soon as possible after completion of construction.

6.2. Communications and notifications

Throughout construction, Sydney Metro and the Principal Contractors will work closely with stakeholders and the community to ensure they are well informed regarding the construction works.

Stakeholders and the community will be informed of significant events or changes that affect or may affect individual properties, residences and businesses. These will include:

- Significant milestones
- Design changes
- Changes to traffic conditions and access arrangements for road users and the affected public
- Construction operations which will have a direct impact on stakeholders and the community including noisy works, interruptions to utility services or construction work outside of normal work hours.

A Community Communication Strategy will be developed by the Principal Contractor. Key elements of the Community Communication Strategy, which will be implemented at appropriate times in the construction process, will include:

- Notification (including targeted letterbox drops and email) of any works that may disturb local residents and businesses (such as noisy activities and night works) at least seven days prior to those works commencing
- Notification (including targeted letterbox drops and email) of works that may affect transport (such as road closures, changes to pedestrian routes and changes to bus stops)
- Traffic alerts (via email) to all key traffic and transport stakeholders advising of any changes to access and local traffic arrangements (at least seven days prior to significant events)
- Print and radio advertisements regarding major traffic changes
- 24-hour toll-free community project information phone line
- Complaints management process
- Community information sessions, as required

- Regular updates to the Sydney Metro website (sydneymetro.info), including uploading of all relevant documents, and contact details for the stakeholder and community relations team
- Provision of information to the Sydney Metro Community Information Centre including community newsletters, information brochures and fact sheets and interactive web based activities
- Clear signage at the construction sites
- Regular newspaper advertisements in local and metropolitan papers
- Regular inter-agency group meetings
- Community, business and stakeholder satisfaction surveys and feedback forms
- Translator and interpreter services
- The Principal Contractor's Community Relations Team will liaise with the Sydney Metro Project Communications team as the point of contact for the community.

Community liaison and complaints handling will be undertaken in accordance with the Construction Complaints Management System and will include:

- Principal Contractors will deal with complaints in a responsive manner so that stakeholders' concerns are managed effectively and promptly
- A verbal response will be provided to the complainant as soon as possible and within a maximum of two hours from the time of the complaint (unless the complainant requests otherwise). A detailed written response will then be provided, if required, to the complainant within one week.

7. Conclusion

This framework acts as an input and a reference for the development of the Construction Environmental Management Plan. This framework will guide the project team's approach to the management of utilities and integration with utility providers and relevant stakeholders, during the construction phase of the project.

SYDENHAM TO BANKSTOWN
SUBMISSIONS AND PREFERRED INFRASTRUCTURE REPORT

> Appendix H - Utilities management framework



City & Southwest

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



Artefact Heritage
ABN 73 144 973 526
Level 4, Building B
35 Saunders Street
Pyrmont NSW 2009

+61 2 9518 8411
office@artefact.net.au

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
Canterbury Station Catchment and construction site	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
	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
	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
Belmore Station Catchment	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

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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 Cudgegong 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.

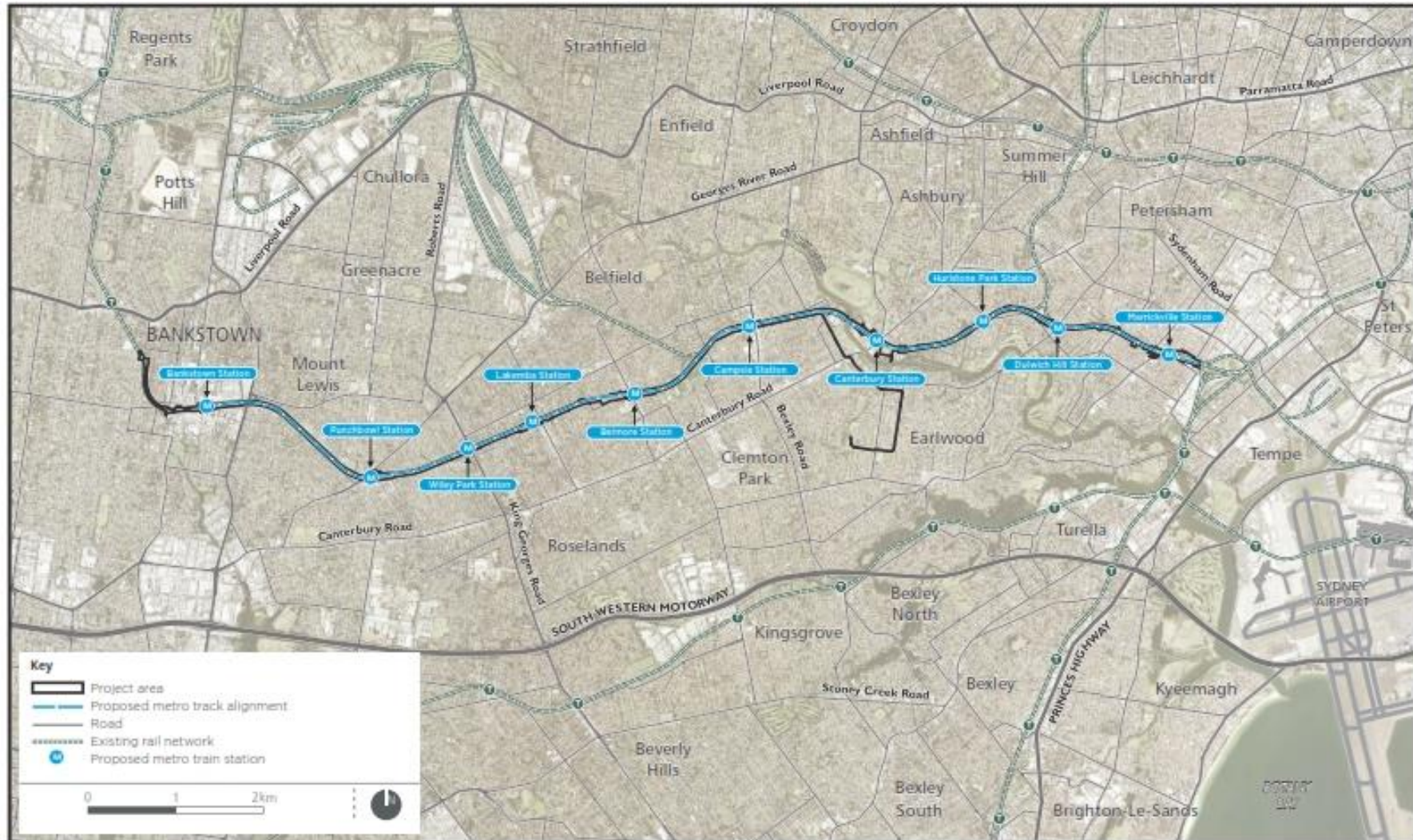
1.3 Location

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.

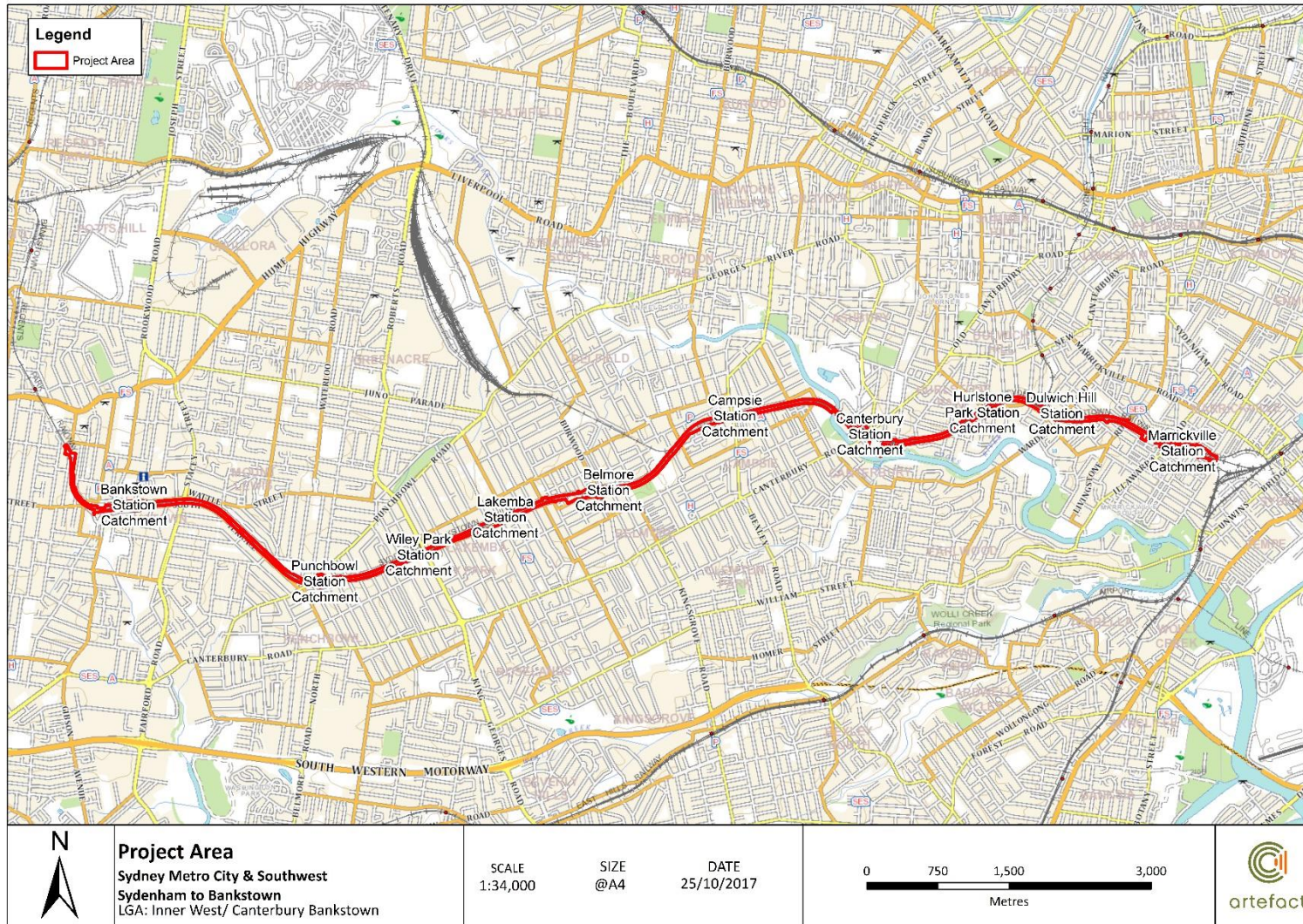
2.0 BANKSTOWN LINE

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



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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

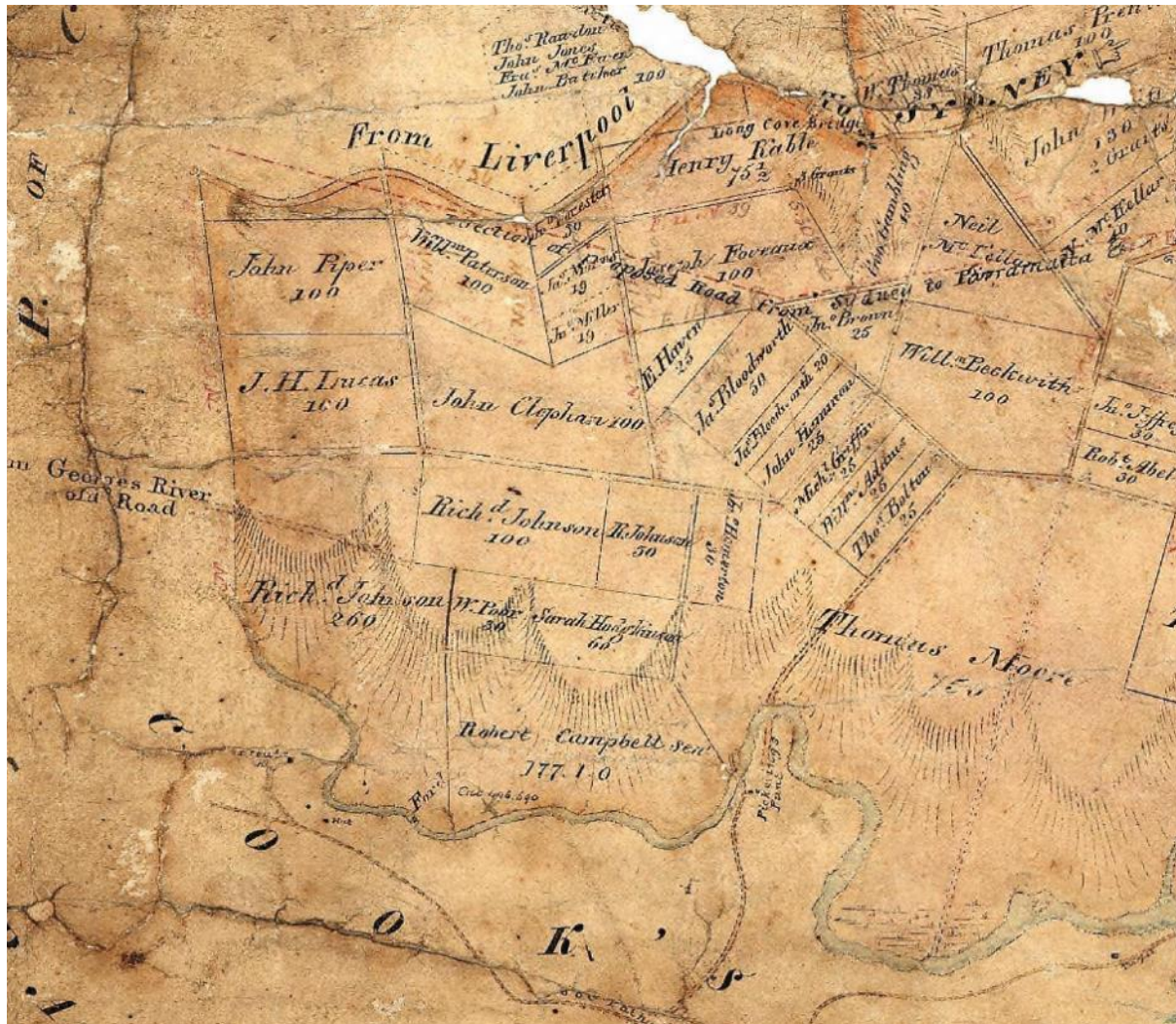
Development of the area north of the Cooks River was relatively slow until the arrival of the railway. The introduction of the railway shifted the mode of settlement from one that was primarily guided by topography to one that was guided by infrastructure. Early parish maps show that the progression 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.

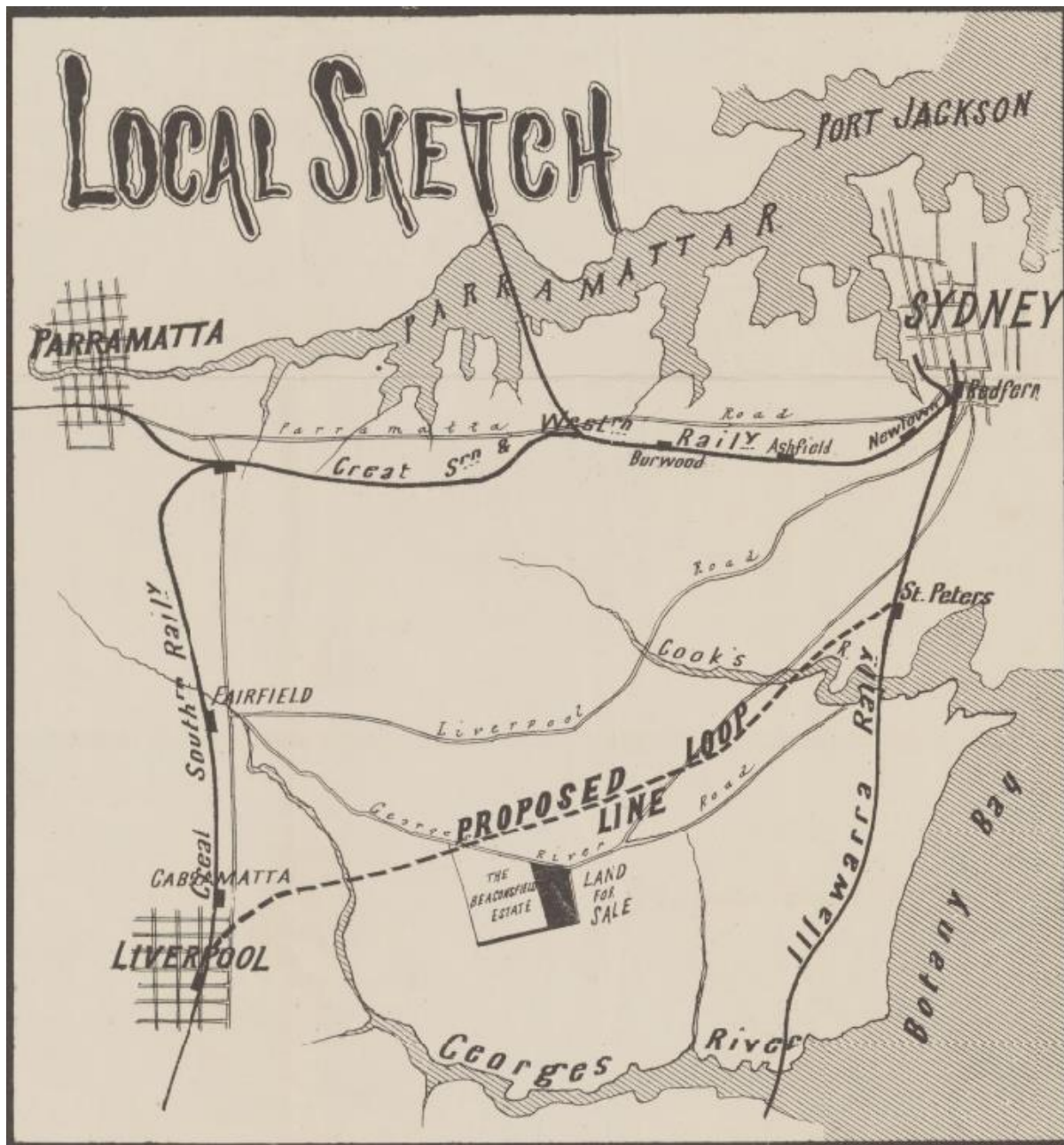


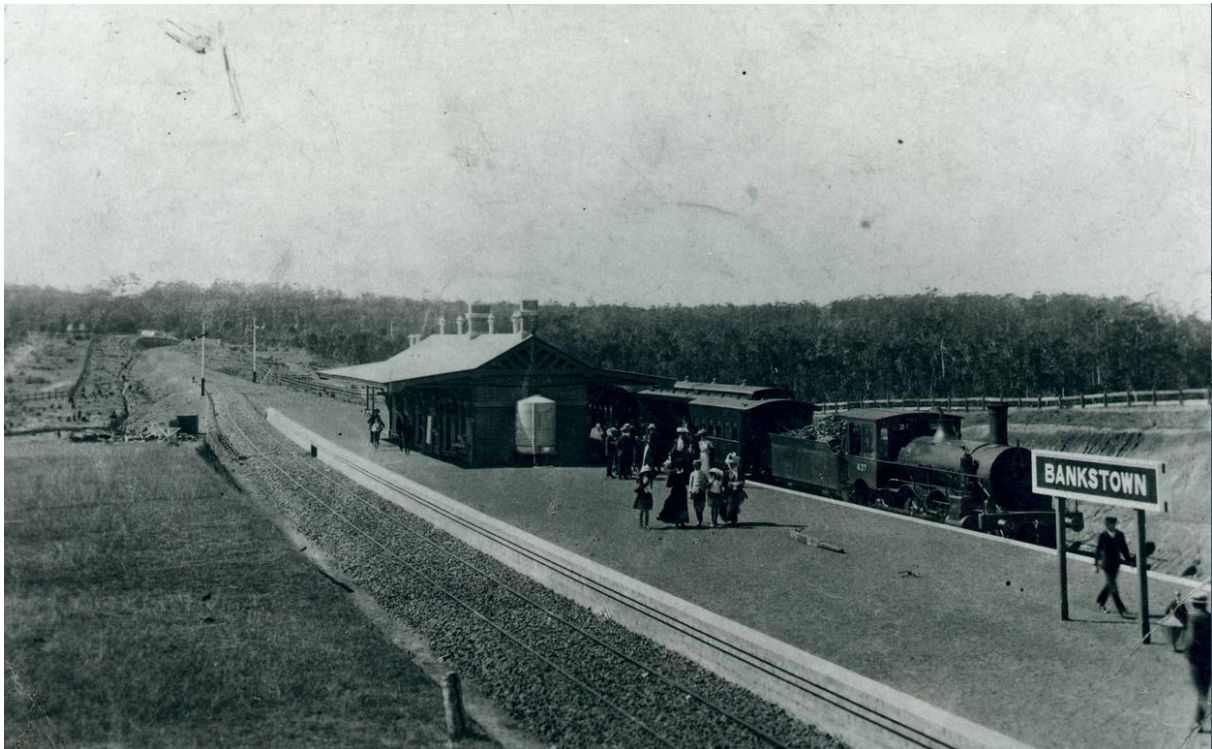
Figure 2-4 Belmore Station as constructed in 1890s. Source: OEH SHI.



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 & Whhoouse & 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

debris. 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

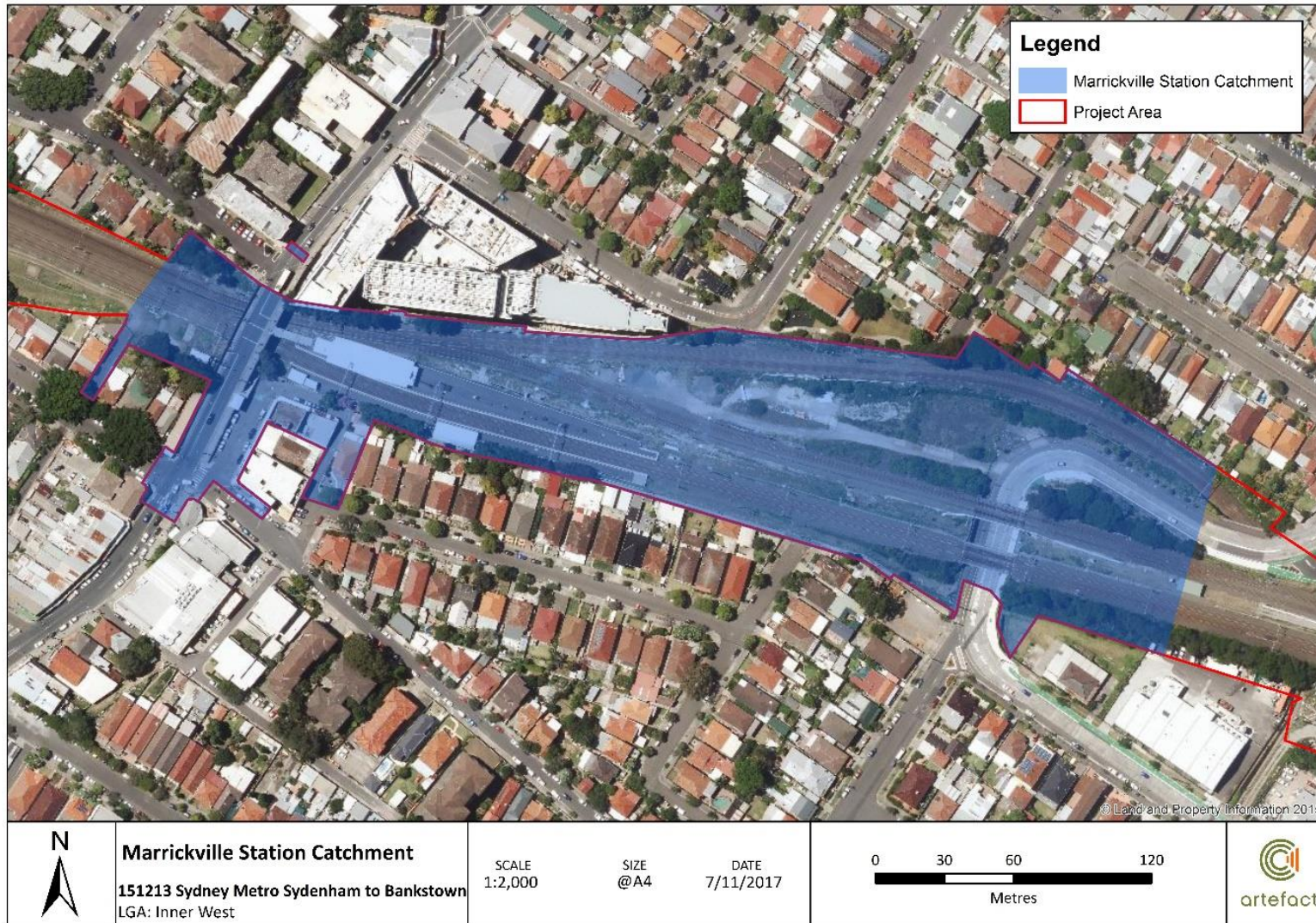
Phase	Potential archaeology	Impact	Mitigation
2 (1890s – present)	<p>Low potential for archaeological remains of former rail related buildings such as signalling boxes and huts such as brick and concrete footings.</p> <p>Low potential for archaeological remains associated with the early infrastructure 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



File Path: C:\Users\GIS\Desktop\GIS\GIS_Mapping\151213_Sydney_Metro_Bankstown_Sydenham\MXD\Heritage_Detail_Marrickville

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.



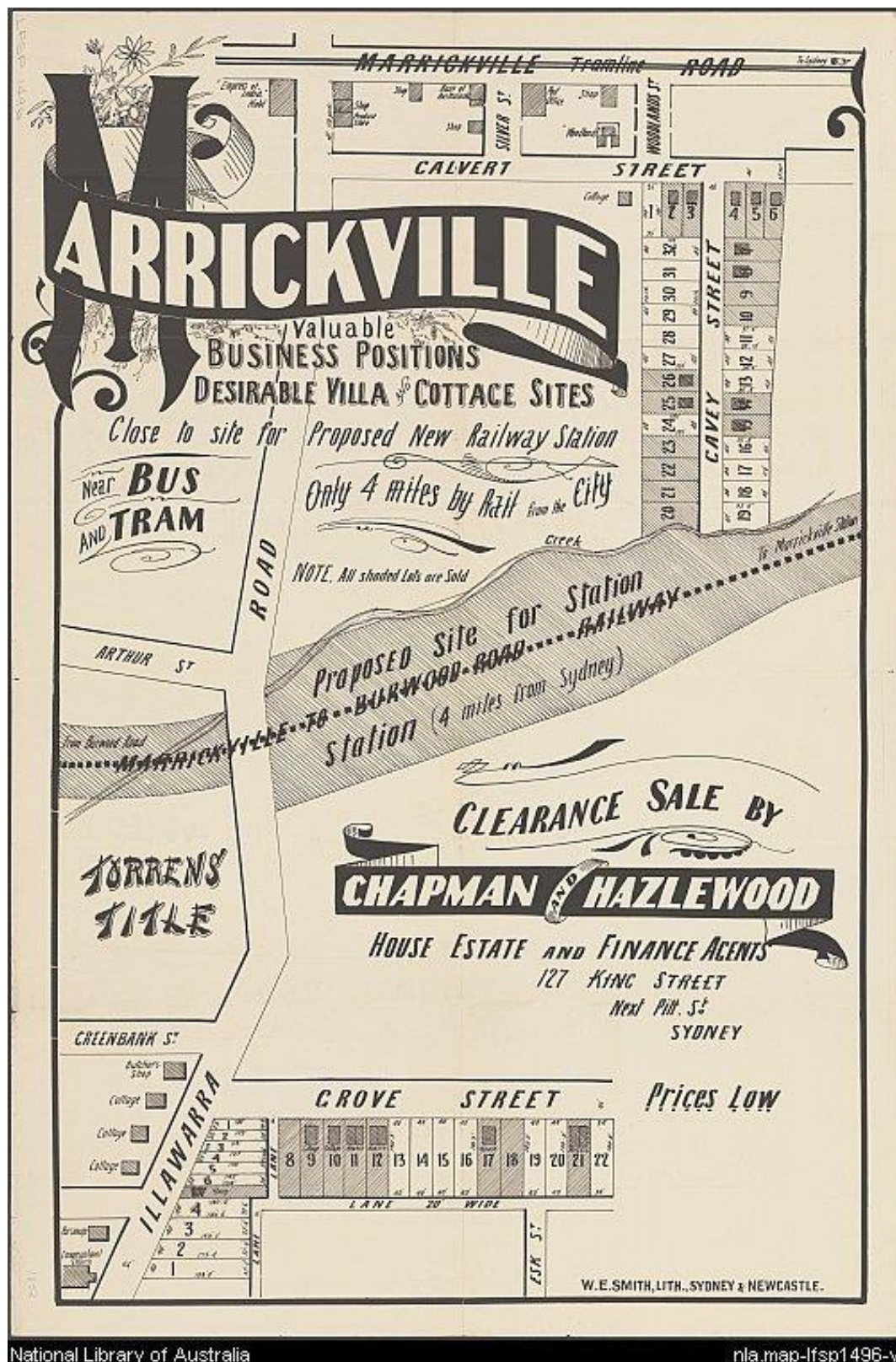
²¹ *Ibid*

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.

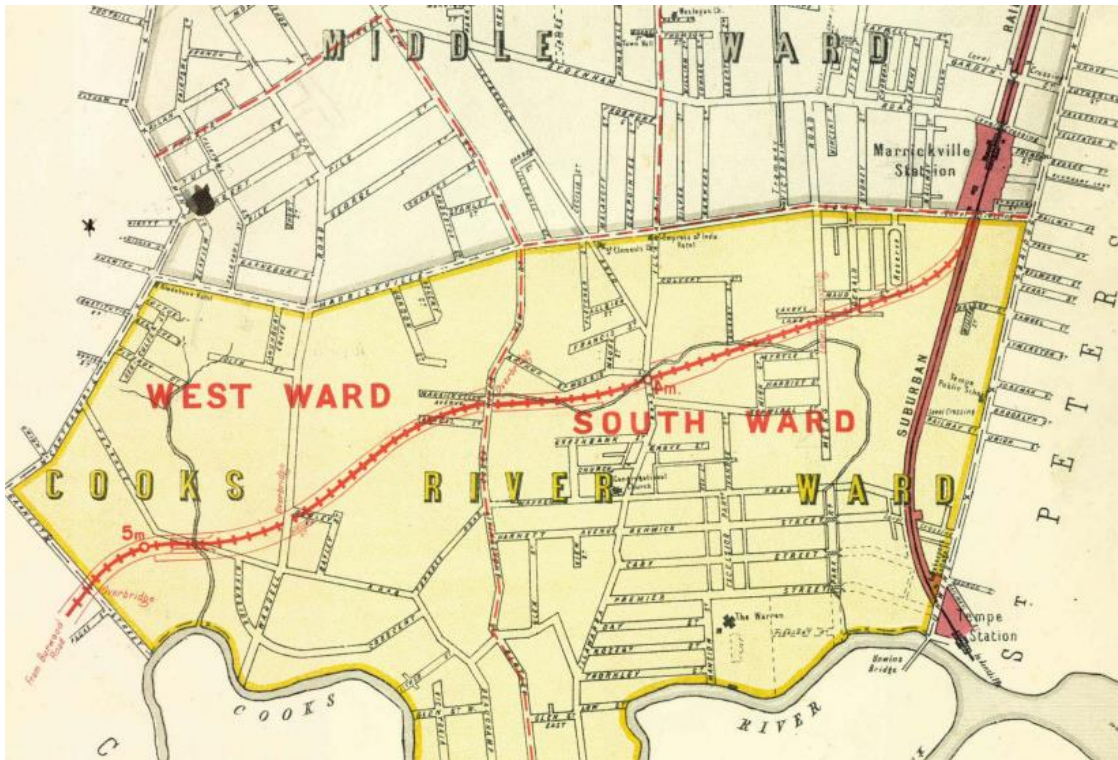


Figure 3-6: Group portrait at Marrickville Station, c. 1890, showing original platform surface and interlocking pit. Source: NLA nla.pic-vn4697485.



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.

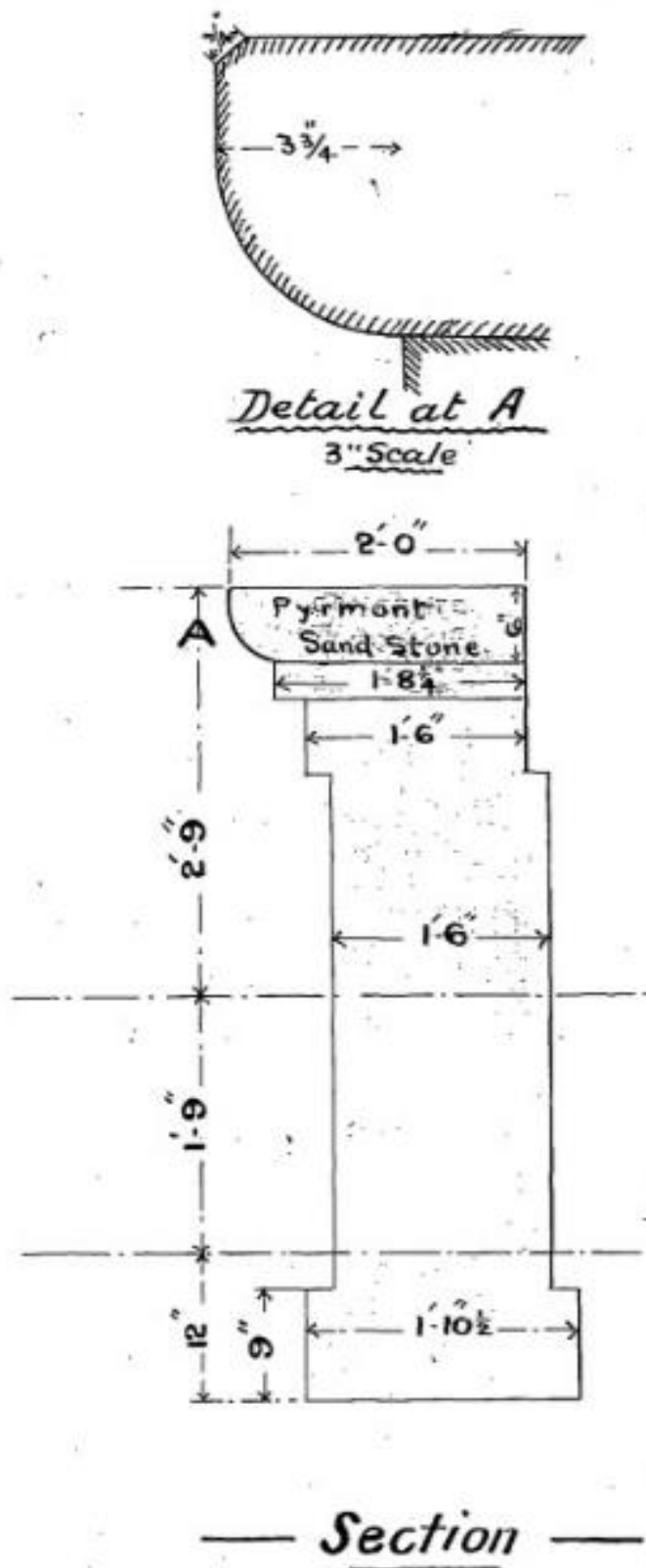


Figure 3-11: Postcard of Marrickville Station, after 1911 showing overhead bridge. Source: National Museum of Australia, Joseph Lebovic Collection.



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 Earlowood tram line over Illawarra Road overbridge. Source: NLA MAP Folder 100, LFSP 1504.

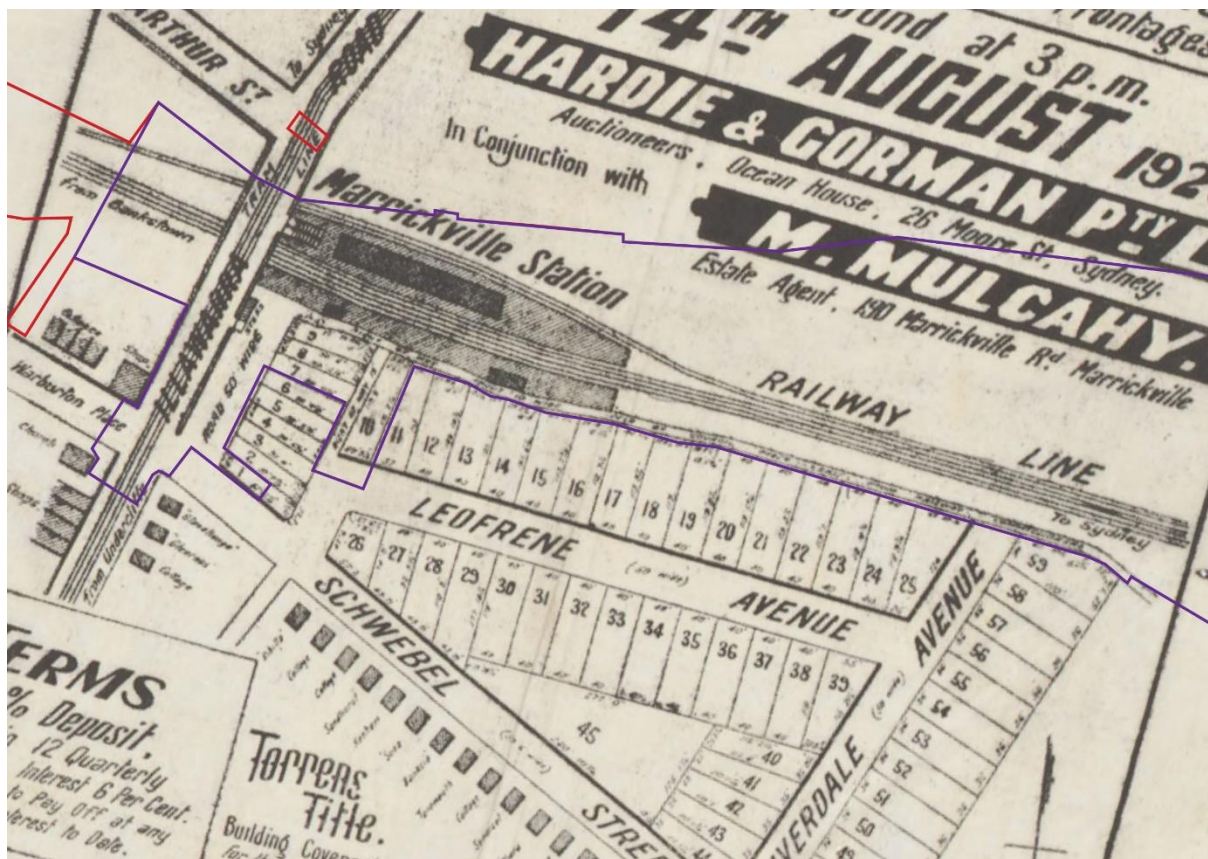


Figure 3-14: Sydney Steel Company, c.1920 [infilled Gumbramorra Swamp area]. Source: Marrickville Council.



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>

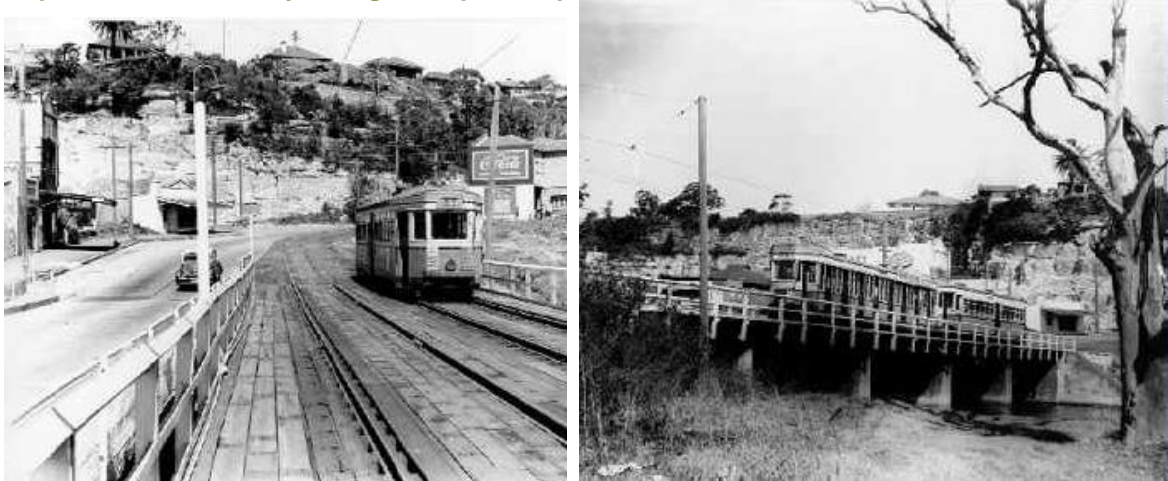


Figure 3-18: Tram in Illawarra Rd, Marrickville, 1957. Source: <https://www.flickr.com/>



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.

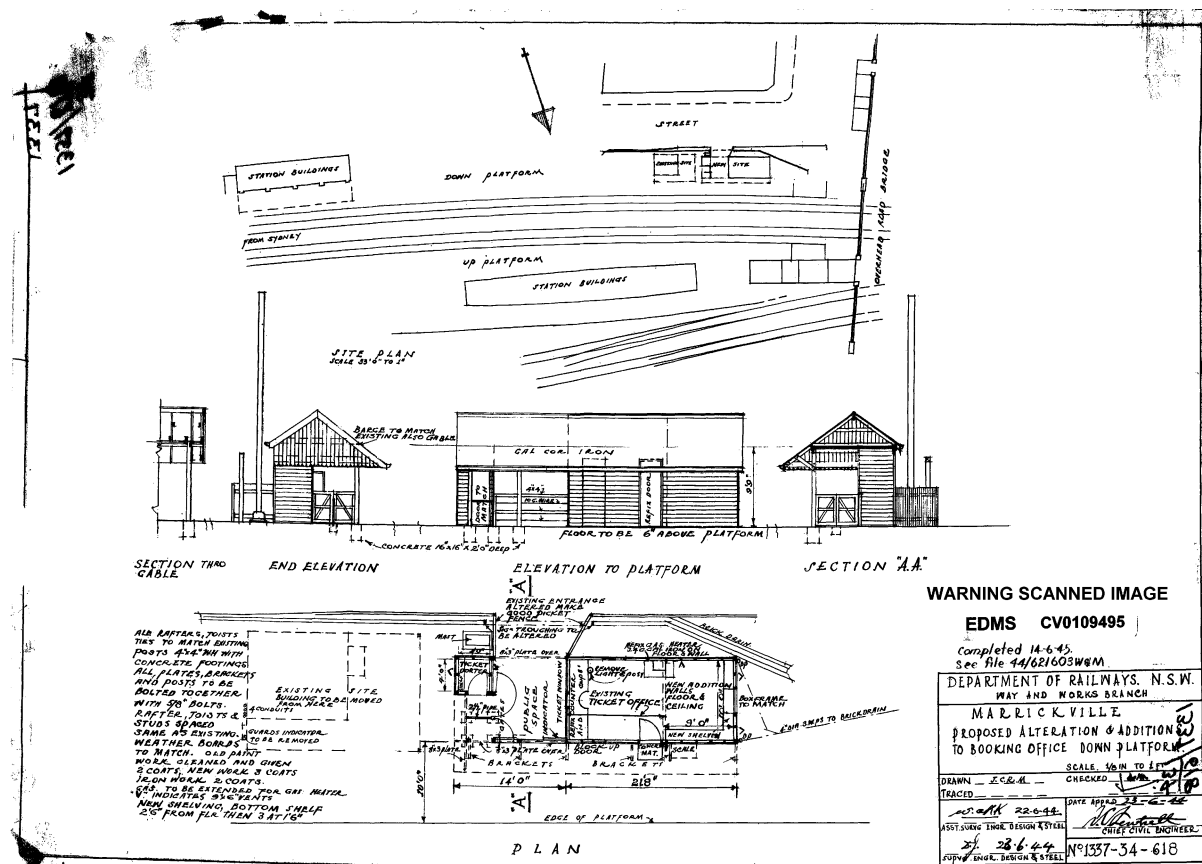


Figure 3-20: 1943 aerial of Marrickville Station, showing layout of station at the time. Source: SIX Maps.



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 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.
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?

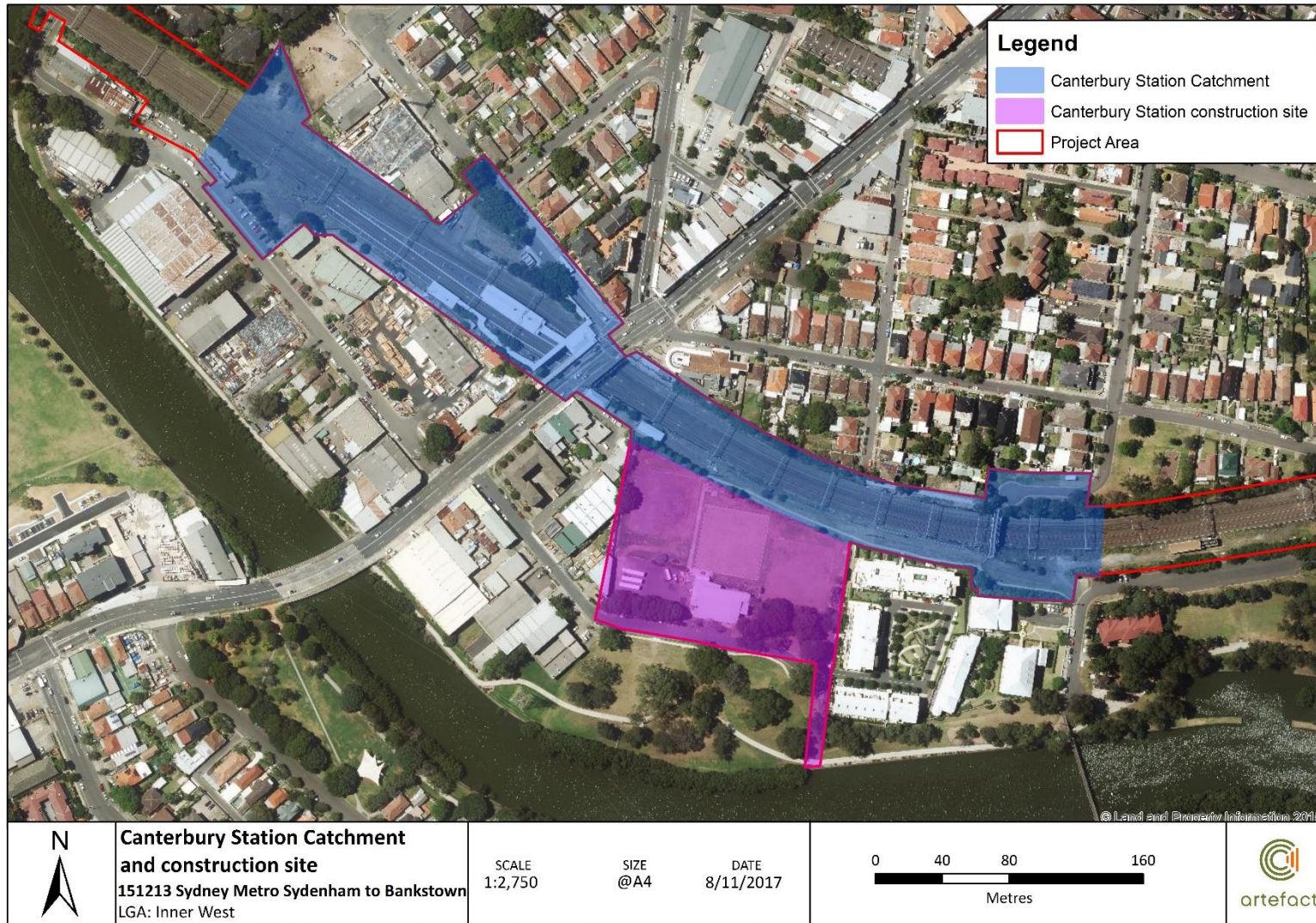
Additional research questions may be posed (and existing questions modified) as the archaeological excavation progresses and the extant and condition of the archaeological resource is revealed.

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



File Path: C:\Users\GIS\Desktop\GIS\GIS_Mapping\151213_Sydney_Metro_Bankstown_Sydenham\MXD\Heritage_Detail_Canterbury

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.

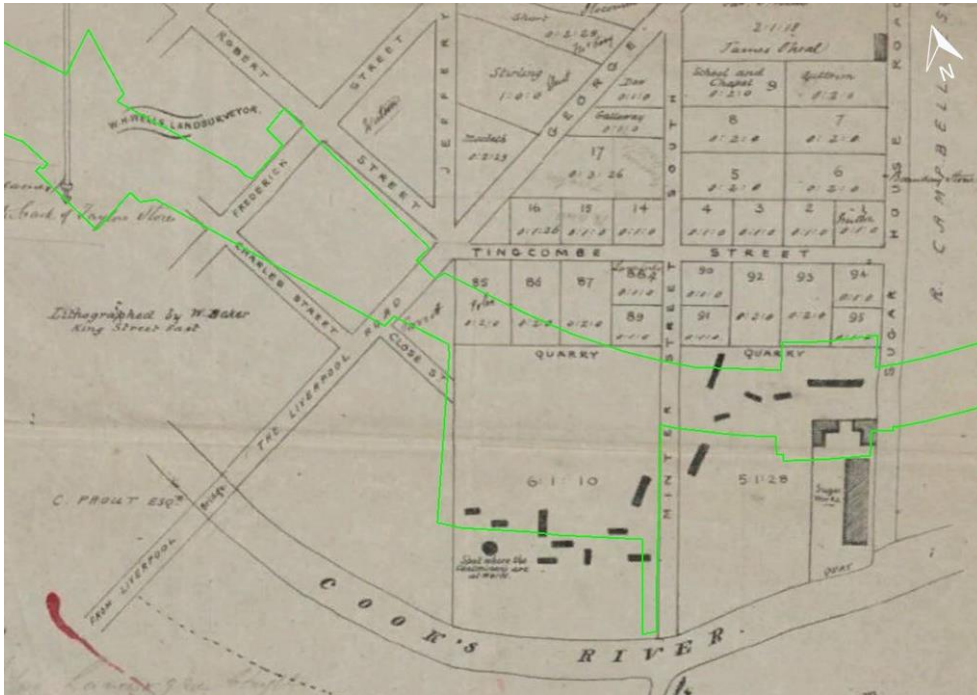


Figure 4-3 1842 Plan of the Canterbury estate showing land occupied by the Australasian Sugar Company and associated structures. Study area outlined in green. Source: State Library of NSW. Note. Plan shows approximate location of structures and may not be an accurate representation.

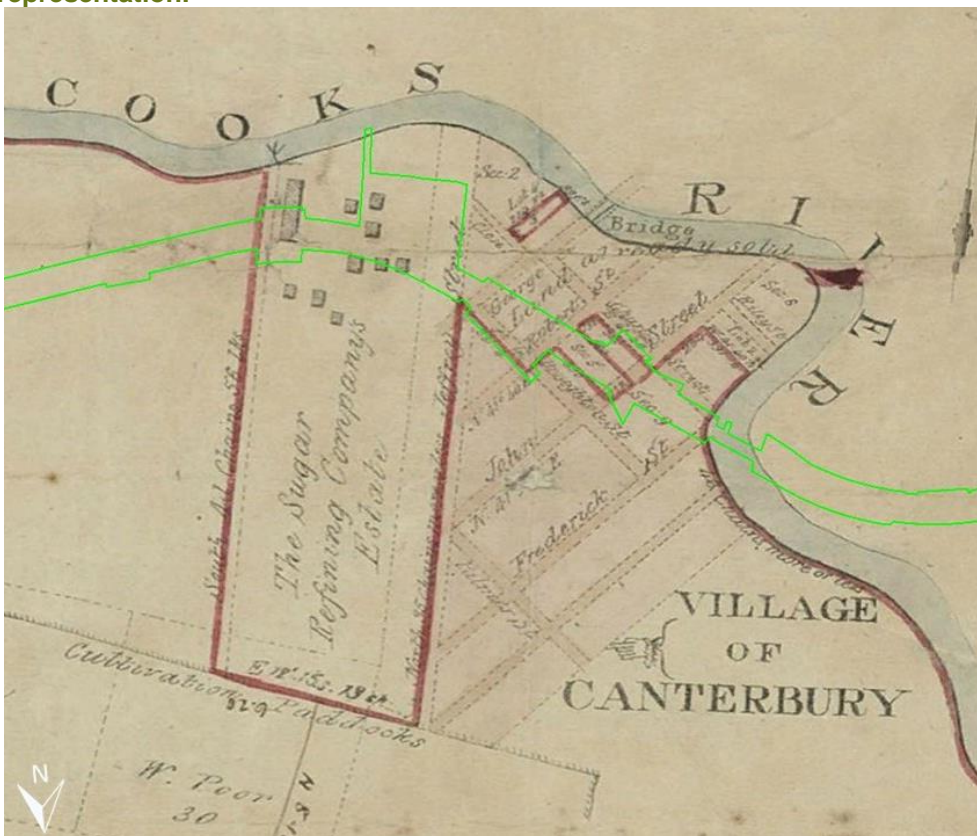


Figure 4-4 c.1859 Canterbury & Prout's Bridge on Cooks River by Henry Grant Lloyd, showing the Sugar works to the right of the painting. The cottages on the far side of the river to the left of the image are in the vicinity of Robert Street and present day Canterbury Road (George Street). Source: State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

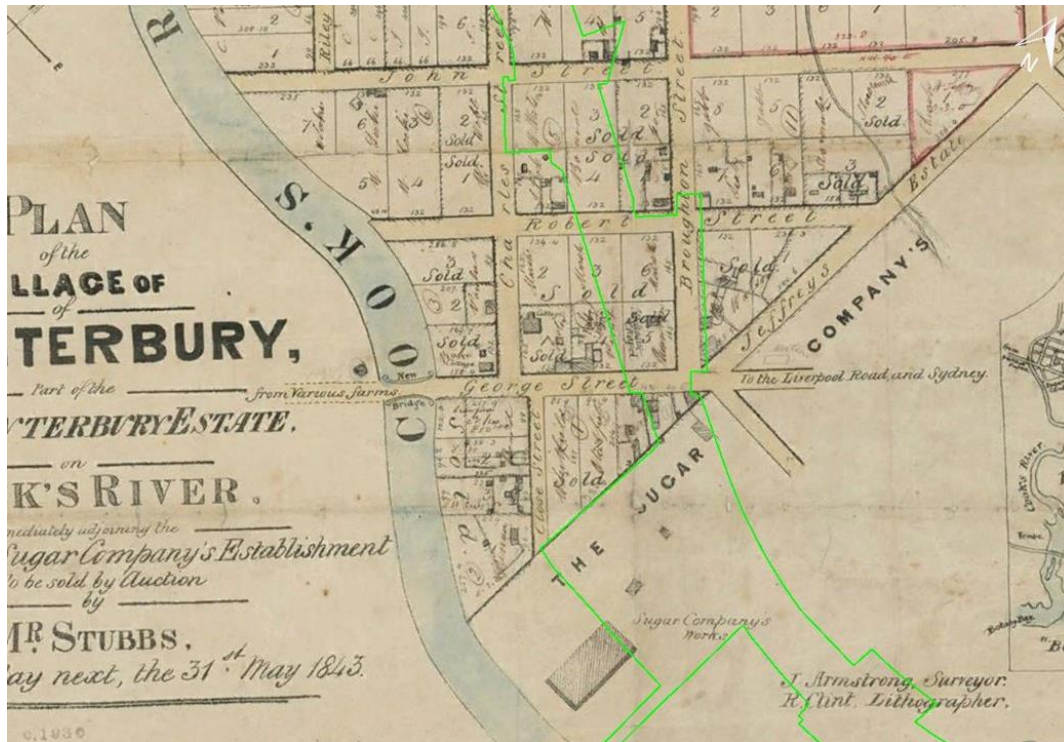
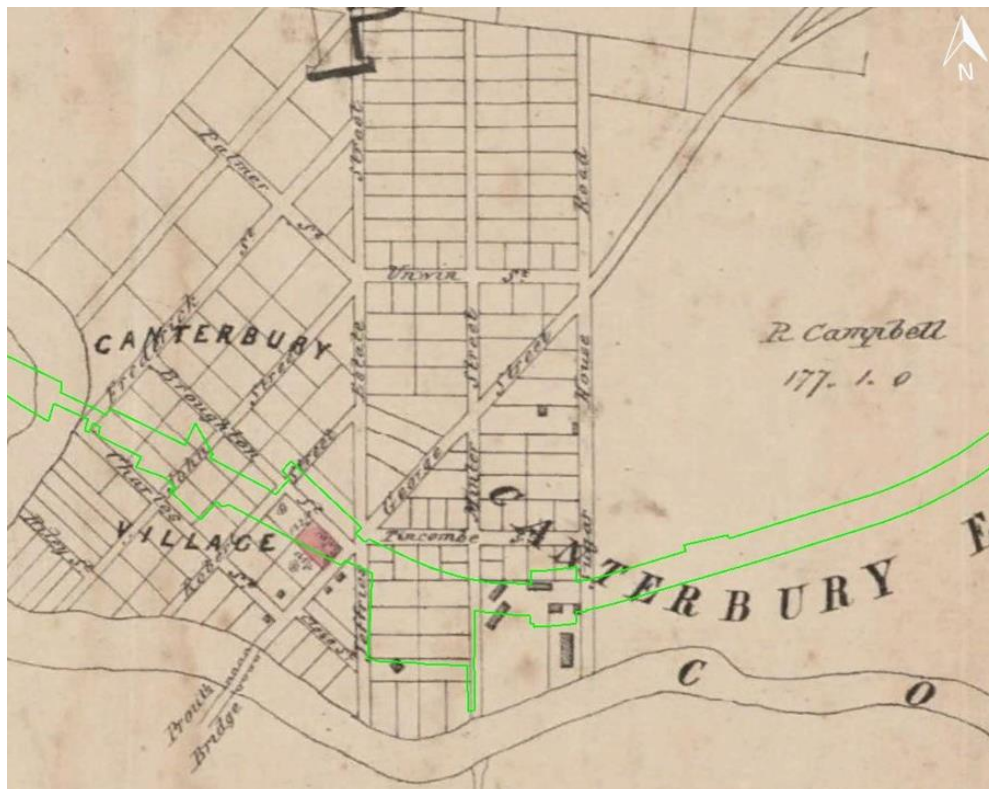


Figure 4-7: c1850 sketch showing Canterbury estate and Canterbury village with various buildings along what is now Canterbury and Church Street. Source: National Library of Australia. Note. Plan shows approximate location of structures and may not be an accurate representation.



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

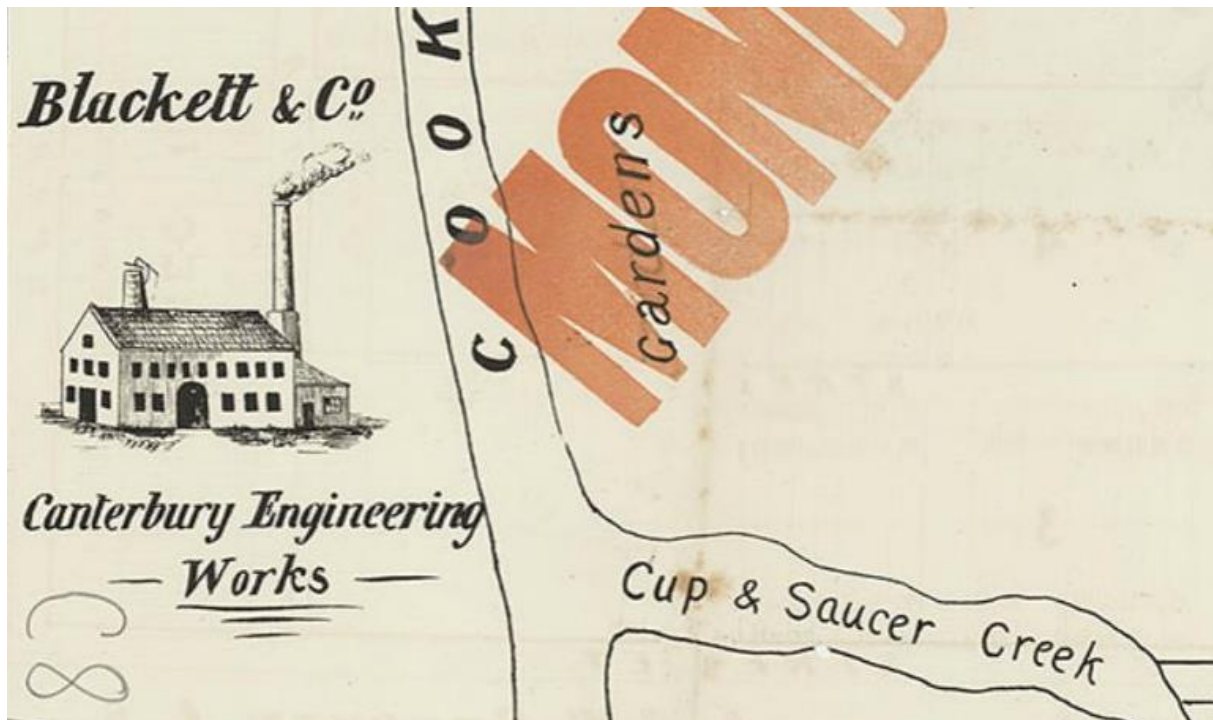
⁴¹ *Ibid.*: 176.

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 Blckett 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

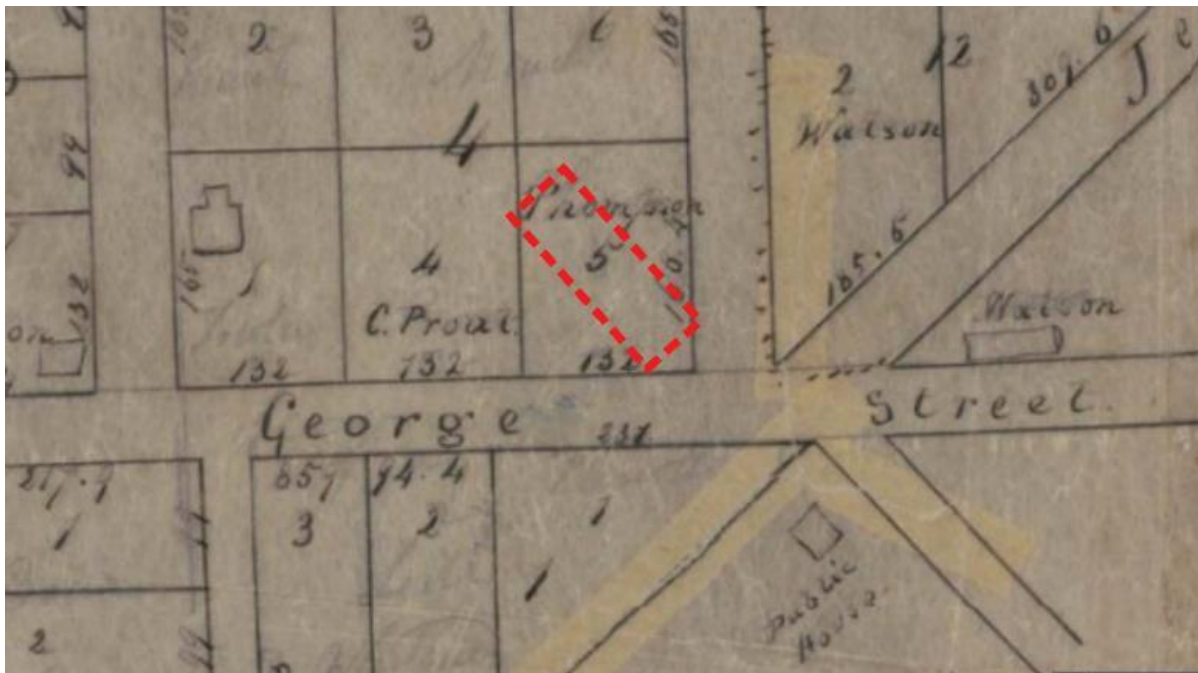
trains and the shunting of the local goods sidings. Extensions were added to the signal box in 1937 and 1968, and it was closed in 1996.

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.

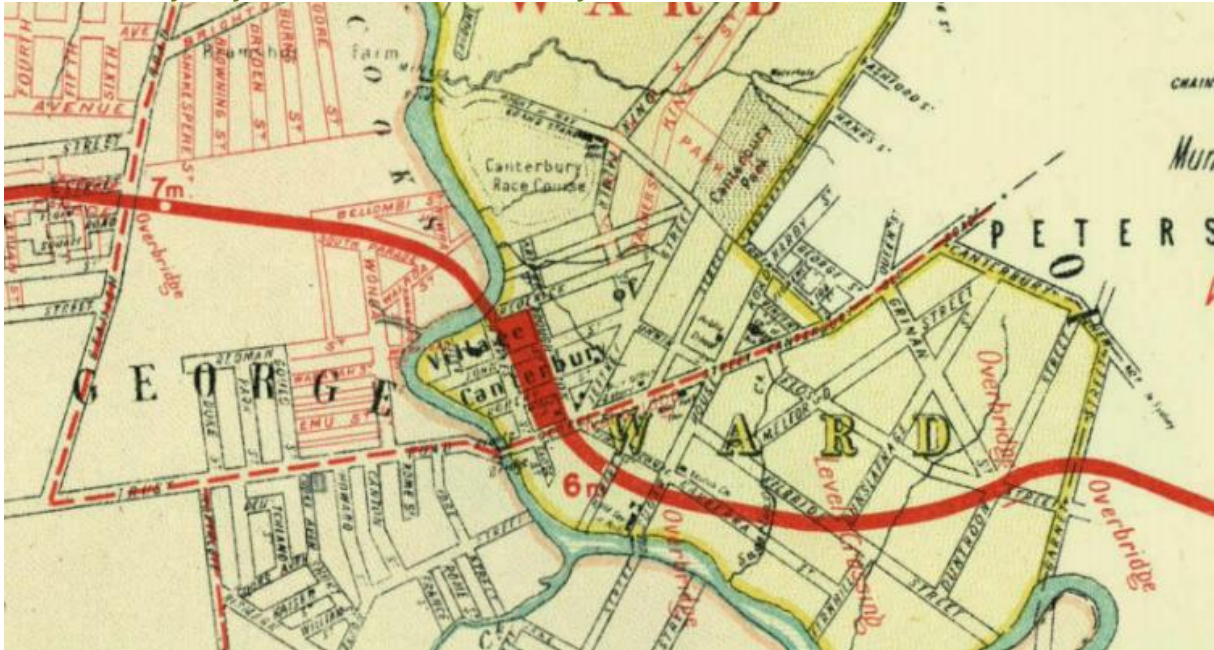


Figure 4-11: Railway acquisition in the vicinity of Bellombi Street and South Parade, between Canterbury and Campsie stations. The new subdivision either side of the line would be called the Silver Park Estate. Source: SLNSW call no. Z/ SP/ C8.

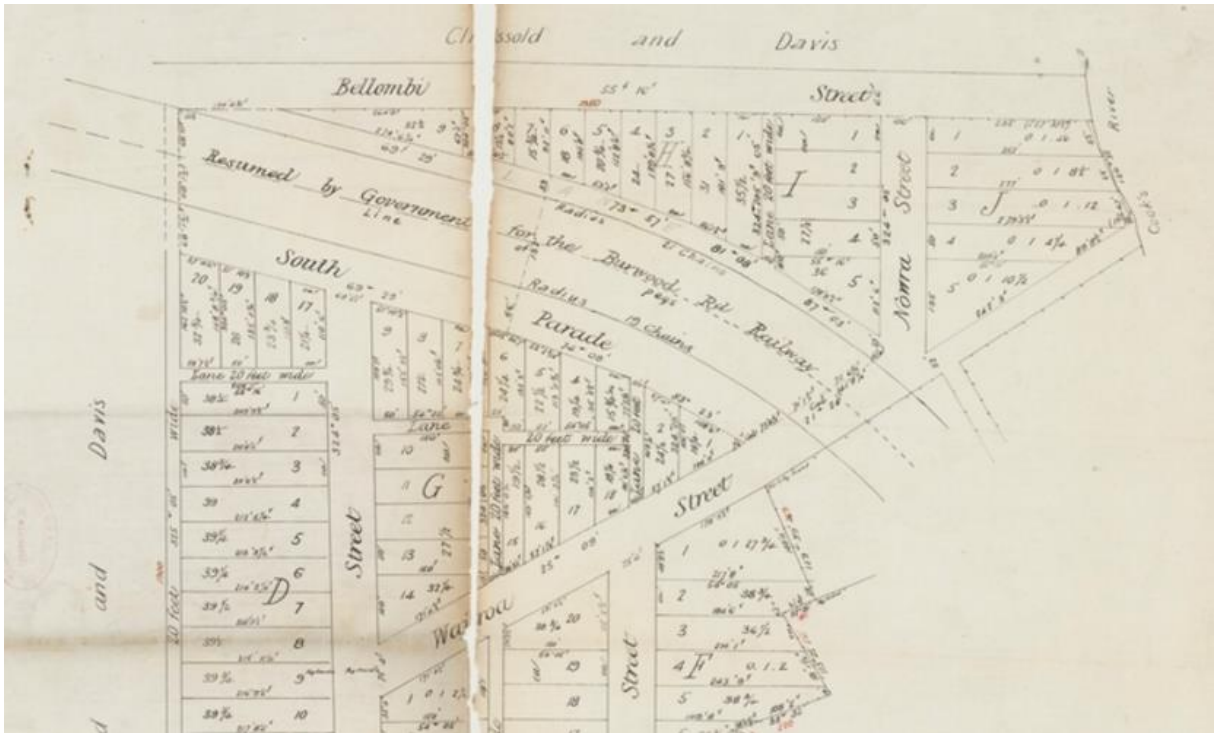


Figure 4-12: Canterbury Station between 1916 and 1927. Source: State Heritage Inventory 'Canterbury Railway Station Group'.



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.

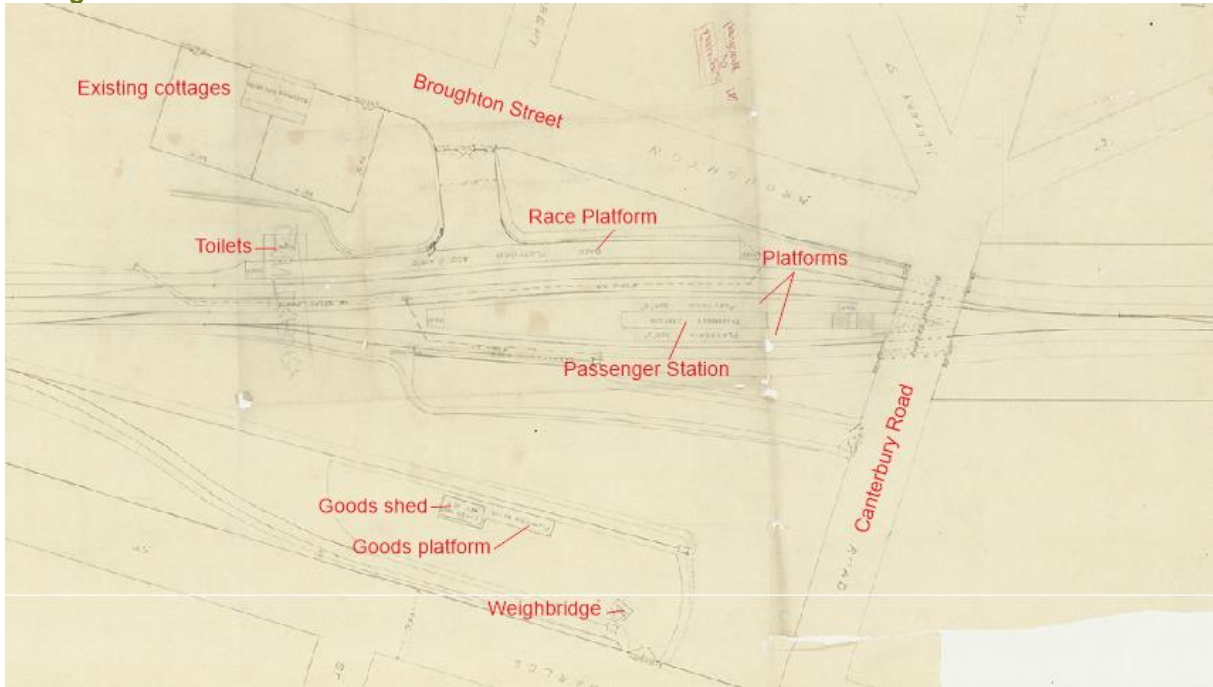


Figure 4-15: Electrification of the railway line c.1926, Canterbury Station. Source: SLNSW call no. Z/ SP/ C8.

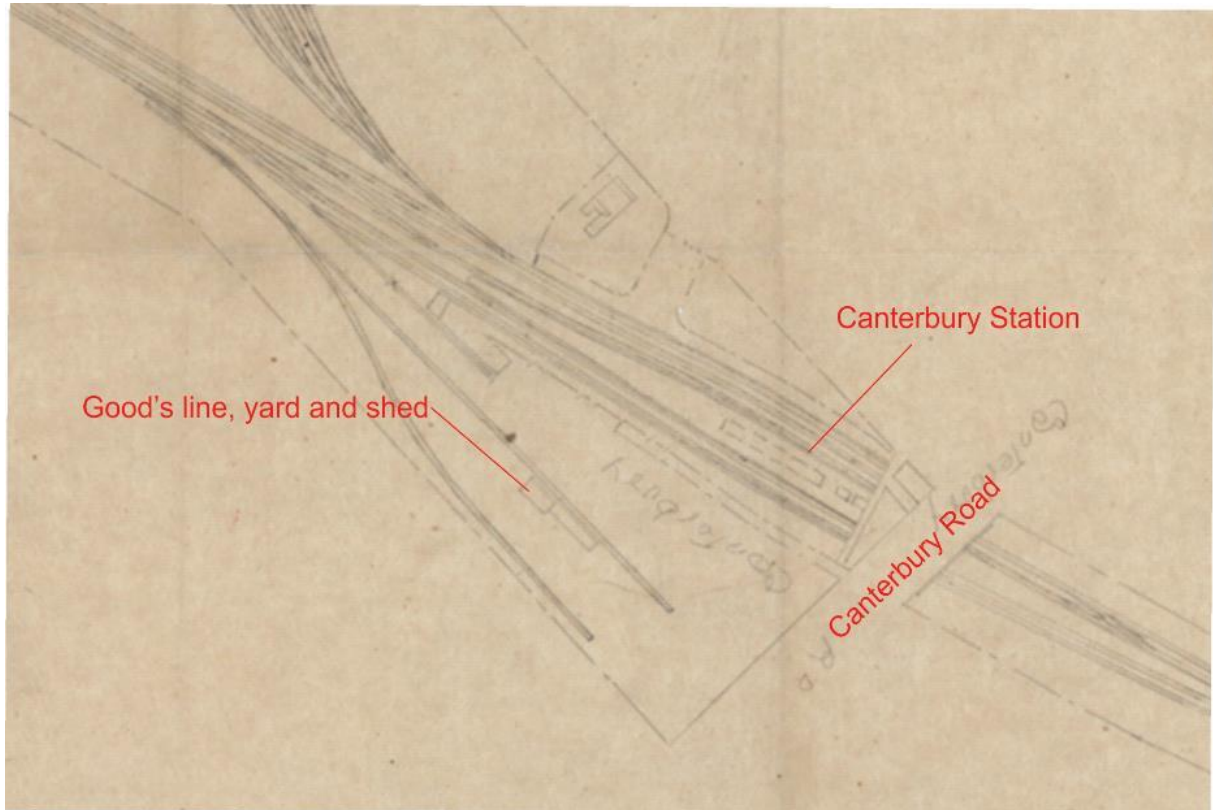
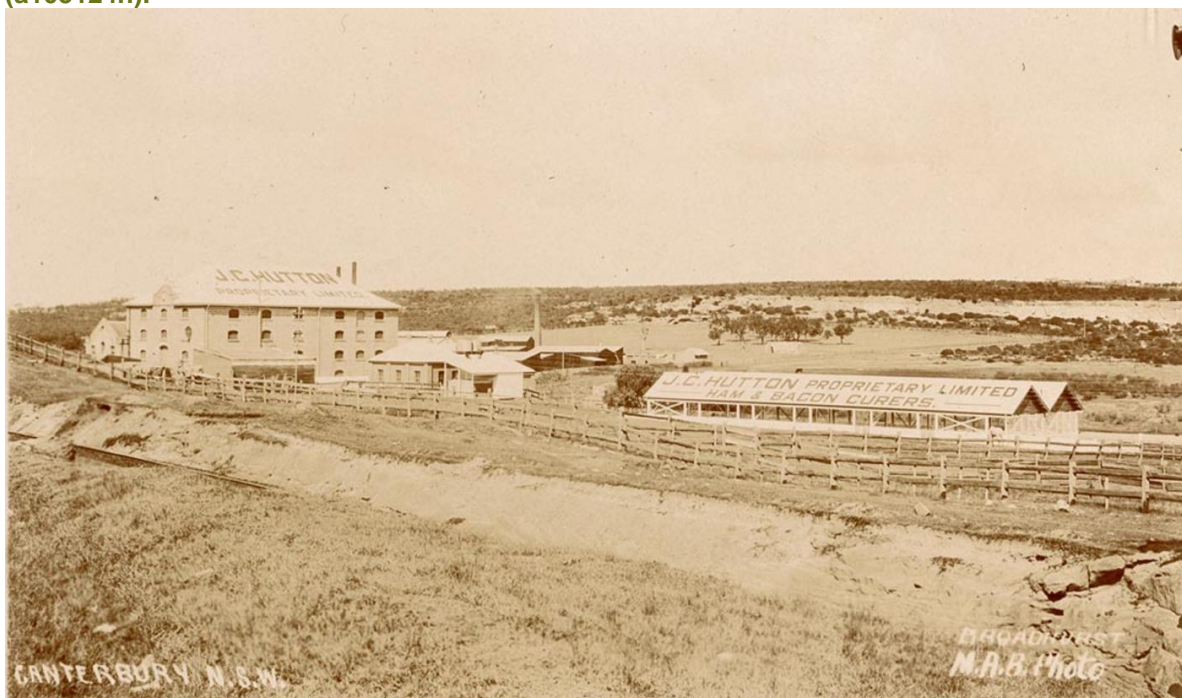


Figure 4-16: 1943 aerial of Canterbury Station. Source: SixMaps.



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.

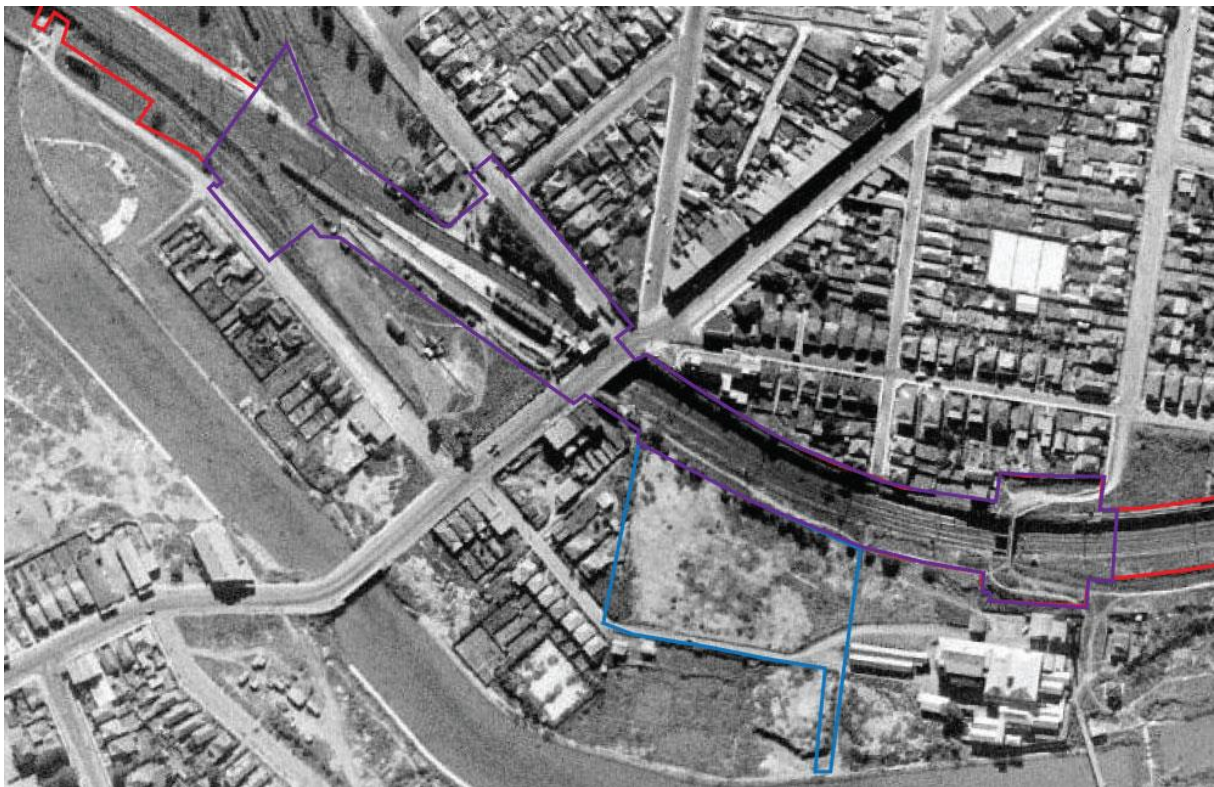


Figure 4-19. Satellite image showing Canterbury in 2016. Source: Google Earth.



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)

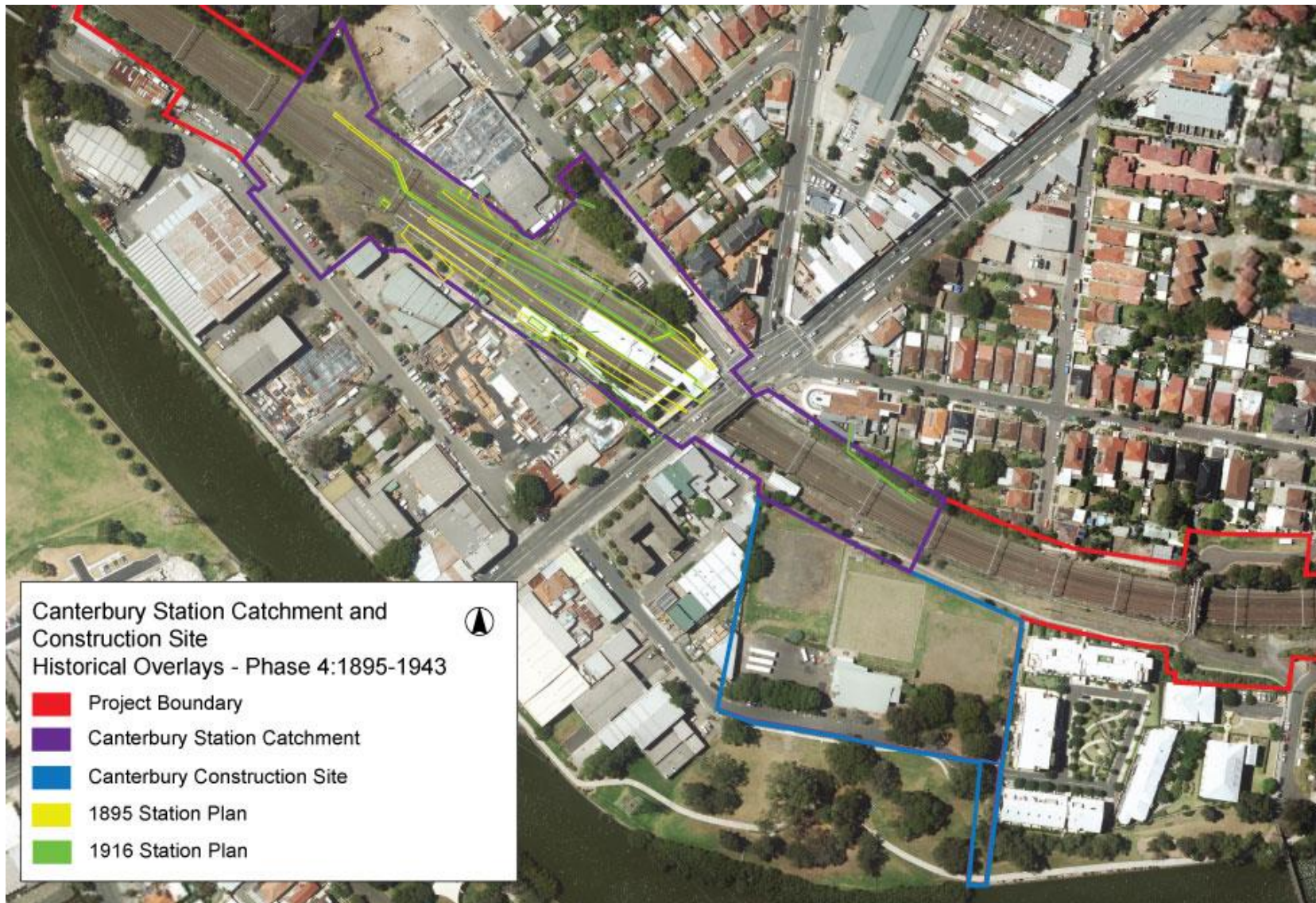
During this phase Canterbury underwent further suburban and urban development. The railway station had upgrades. Industrial, commercial and residential development occurred west of Canterbury Road and within the grassed park bounded by Close Street and the railway line. Potential archaeological remains 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 Blakett 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/ Blakett 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)	<p>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</p>	<p>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.</p>	<ul style="list-style-type: none"> • Unexpected Finds Procedure
2 (1841 – 1855)	<p>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.</p>	<p>Excavation for retaining walls, tracks, services, utilities, and fencing. Clearing and grubbing of the construction site.</p>	<ul style="list-style-type: none"> • AMS • Salvage excavations
3 (1855 – 1895)	<p>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</p>	<p>Excavation for retaining walls, tracks, services, utilities, and fencing. Clearing and grubbing of the construction site.</p>	<ul style="list-style-type: none"> • AMS • Salvage excavations

Phase	Potential archaeology	Impact	Mitigation
4 (1895-1943)	<p>Blackett and Co Canterbury Engineering Works.</p> <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.

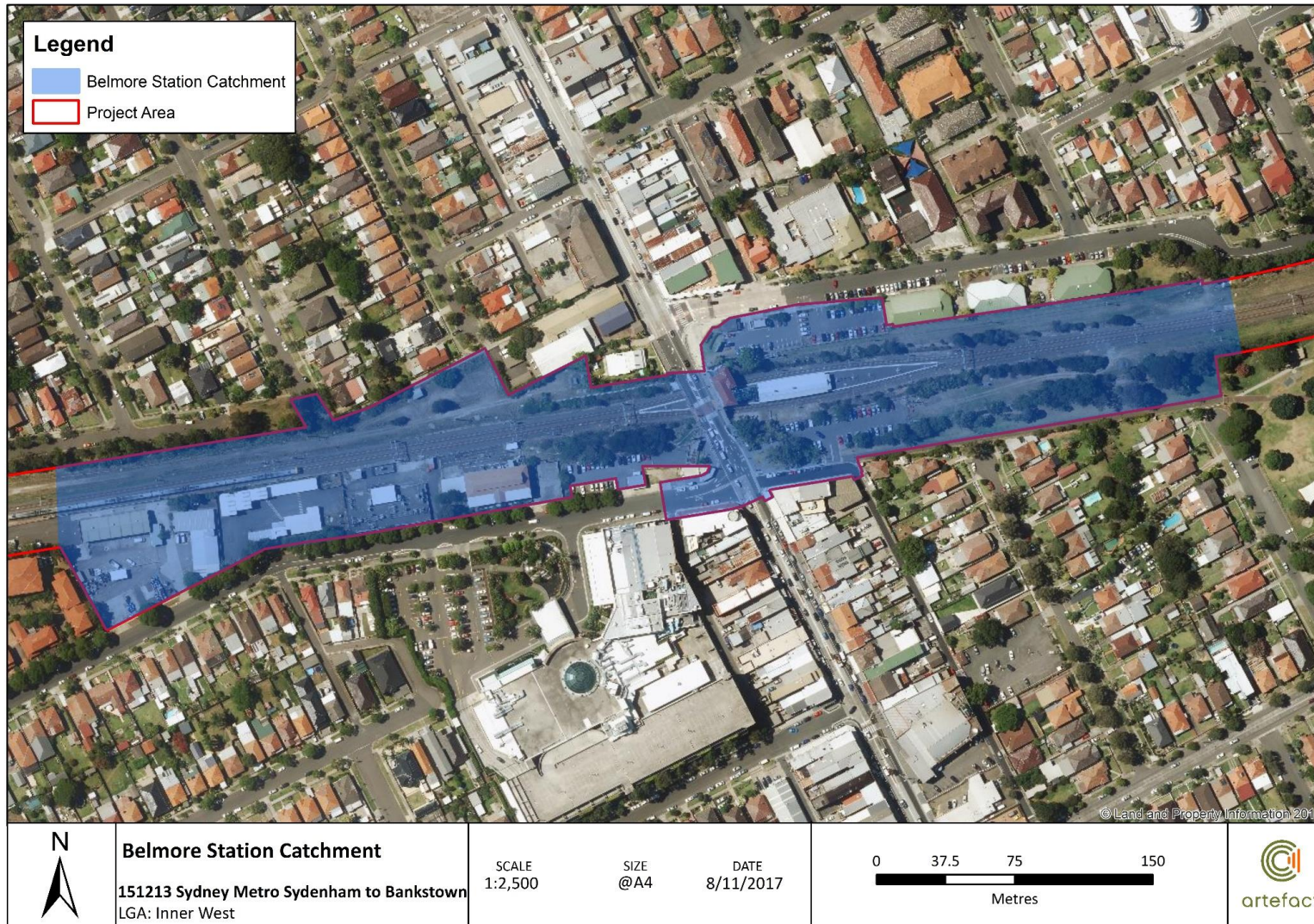
Additional research questions may be posed (and existing questions modified) as the archaeological excavation progresses and the extant and condition of the archaeological resource is revealed.

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



File Path: C:\Users\GIS\Desktop\GIS\GIS_Mapping\151213_Sydney_Metro_Bankstown_Sydenham\MXD\Heritage_Detail_Belmore

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.

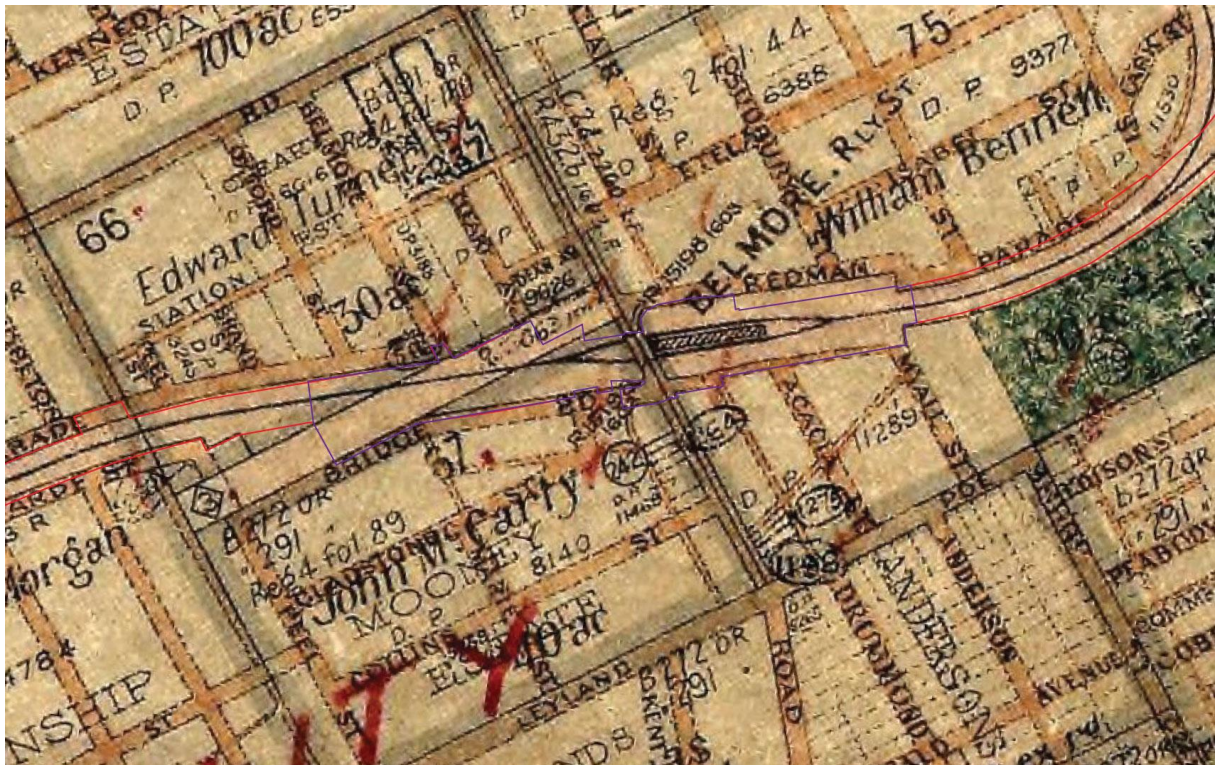
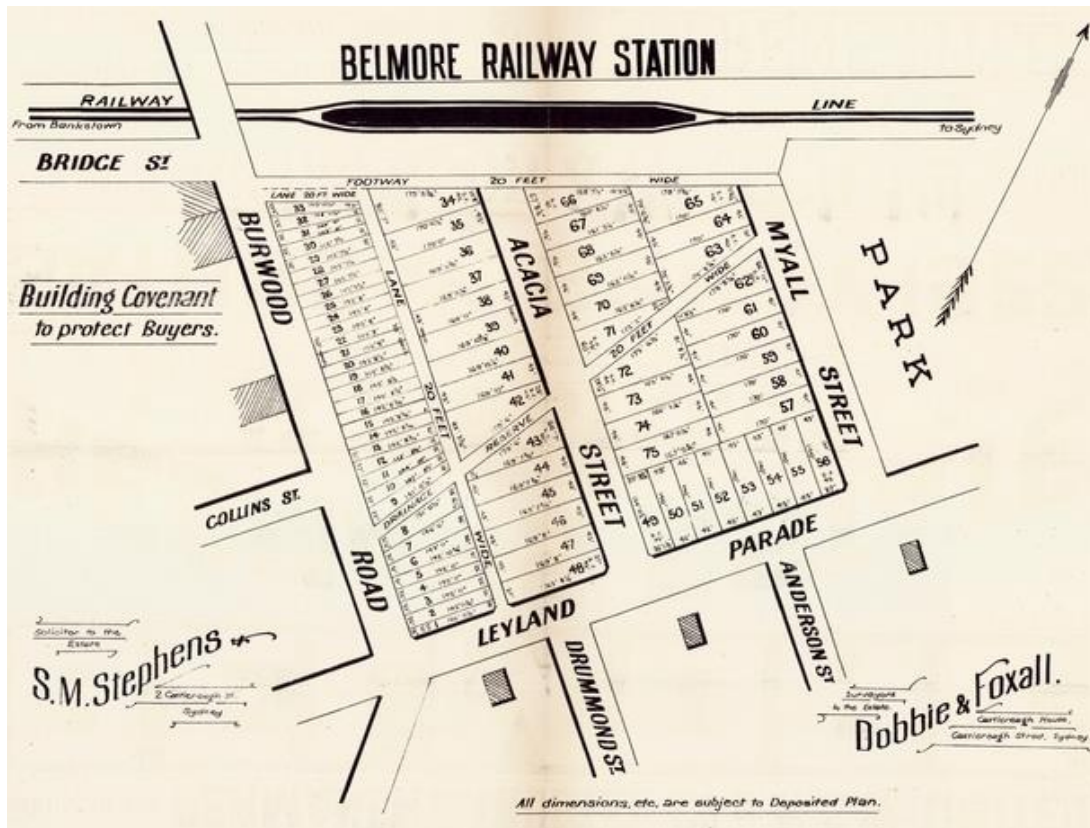


Figure 5-4: 1922 plan of Redman's Estate subdivision, showing that development on the southern side of the railway line consists of larger blocks of land at this time. Source: SLNSW call no. Z/SP/B12.



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*

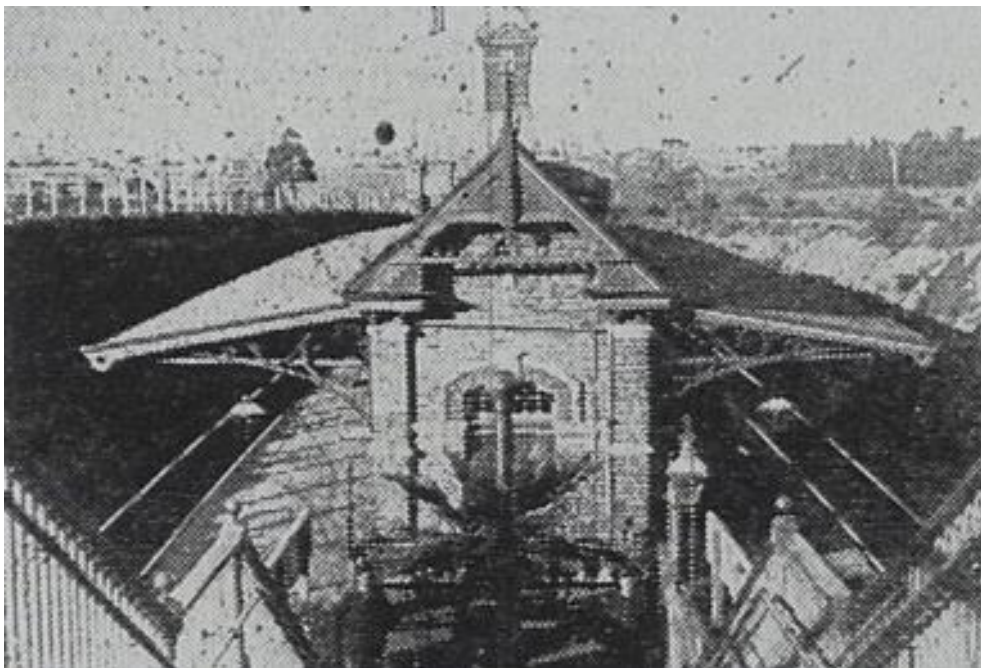
⁵² *Ibid*

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.

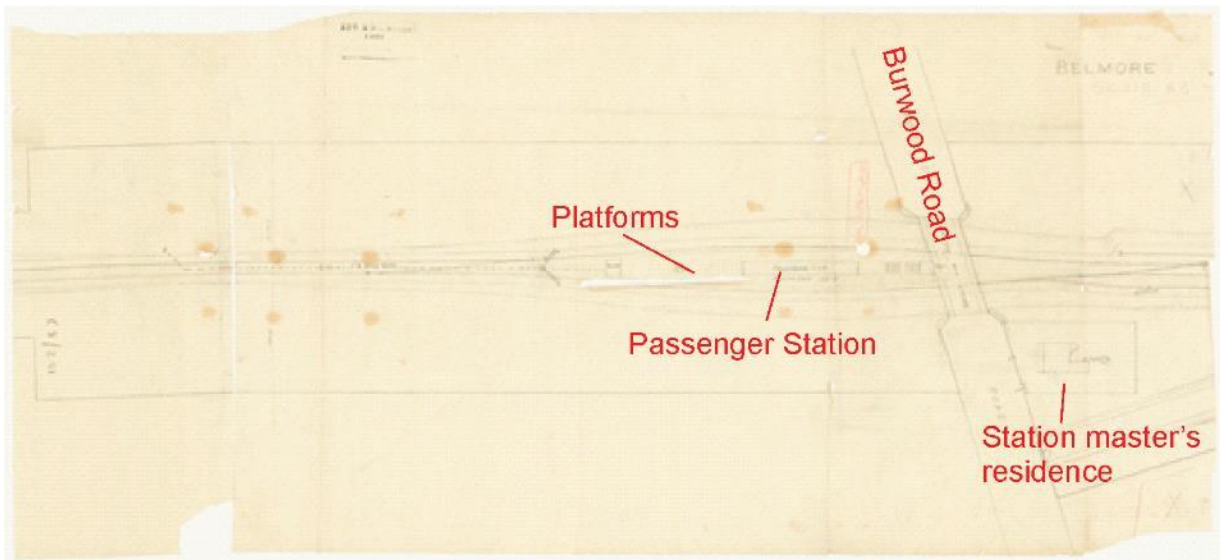
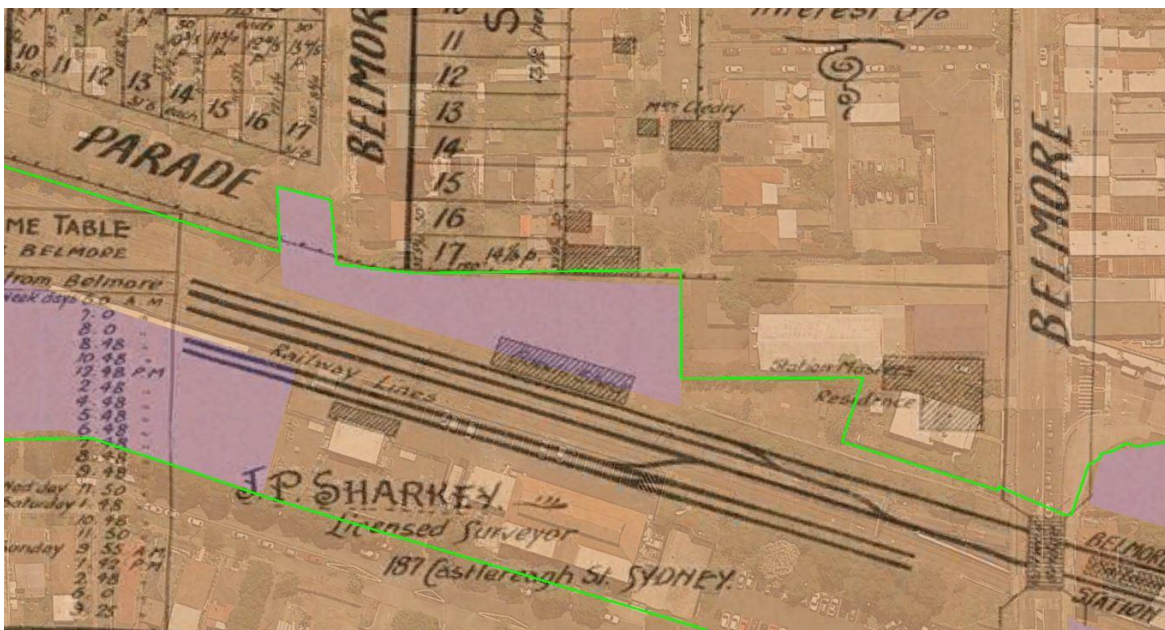


Figure 5-8: 1895 plan of the Terminus Estate subdivision, showing location of the goods shed, sidings, platform and station master's residence at Belmore Station. Compound areas are highlighted in blue. Source: SLNSW call no. Z/SP/B12.



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.

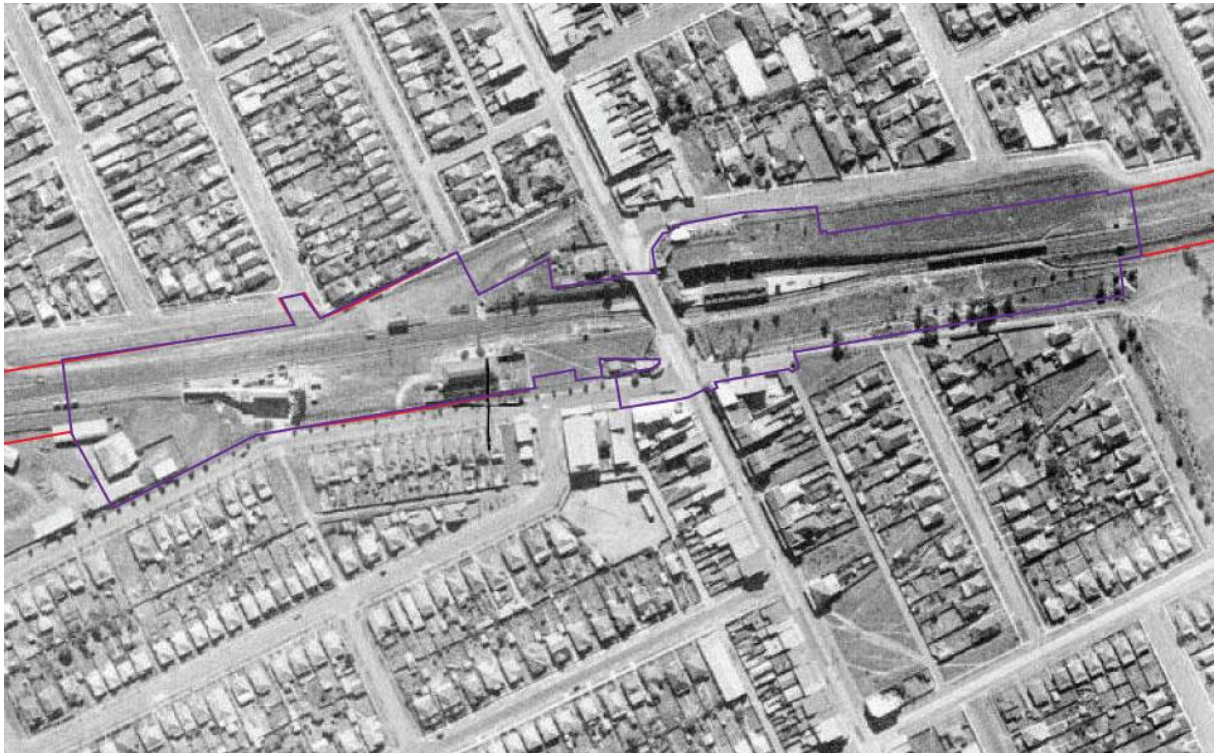
⁵⁴ Muir and Madden, 2009.

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>	<p>Excavation for the construction of new station platforms, station service building, retaining wall, tracks, services, utilities, and fencing.</p>	<p>AMS Monitoring or Test/Salvage Excavations</p>
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>	<p>Unexpected Finds Procedure</p>

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 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.

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.

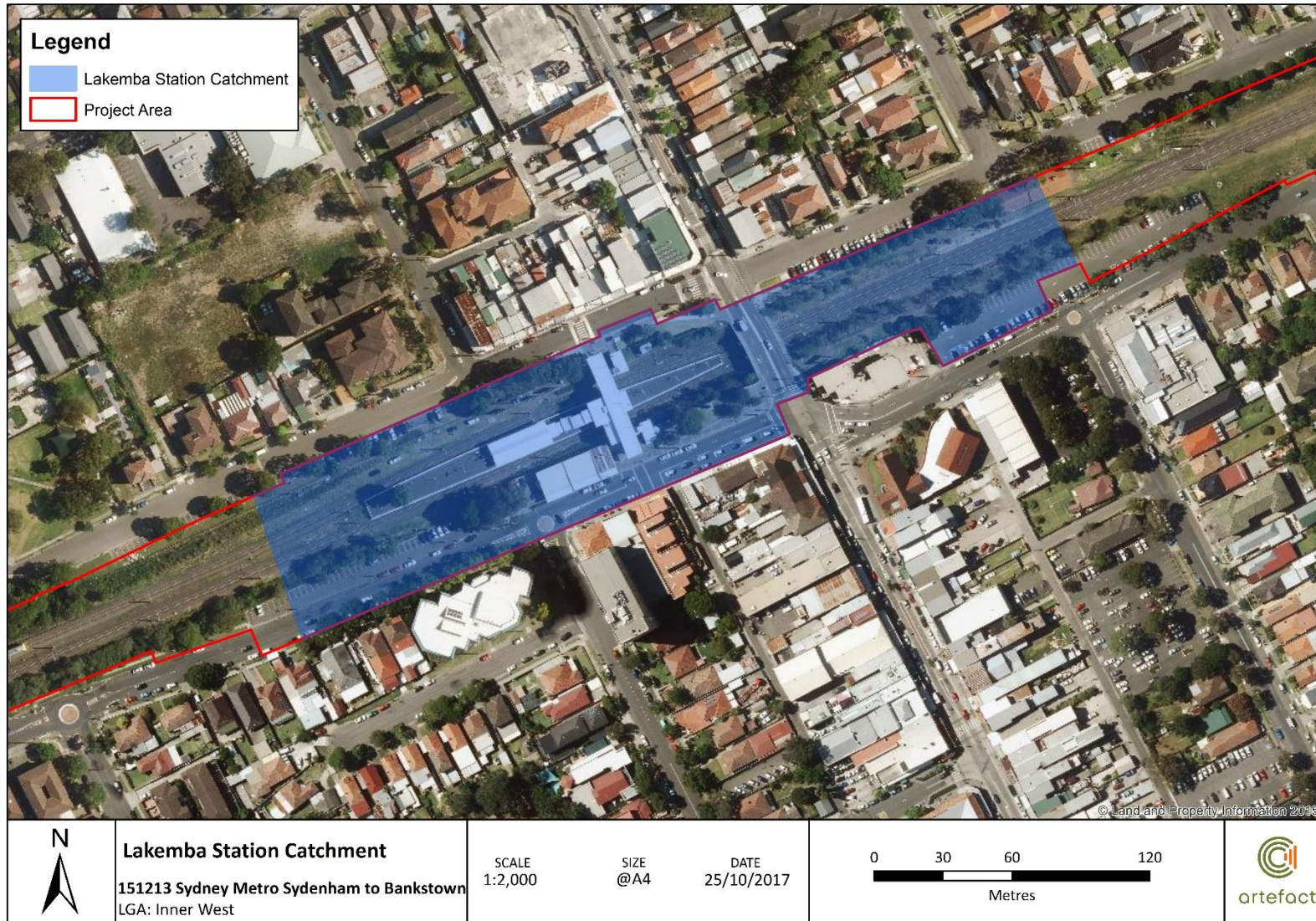
Additional research questions may be posed (and existing questions modified) as the archaeological excavation progresses and the extant and condition of the archaeological resource is revealed.

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 Boulevardde to the south. Access to the station is provided off Railway Parade and The Boulevardde.

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 Boulevard (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.

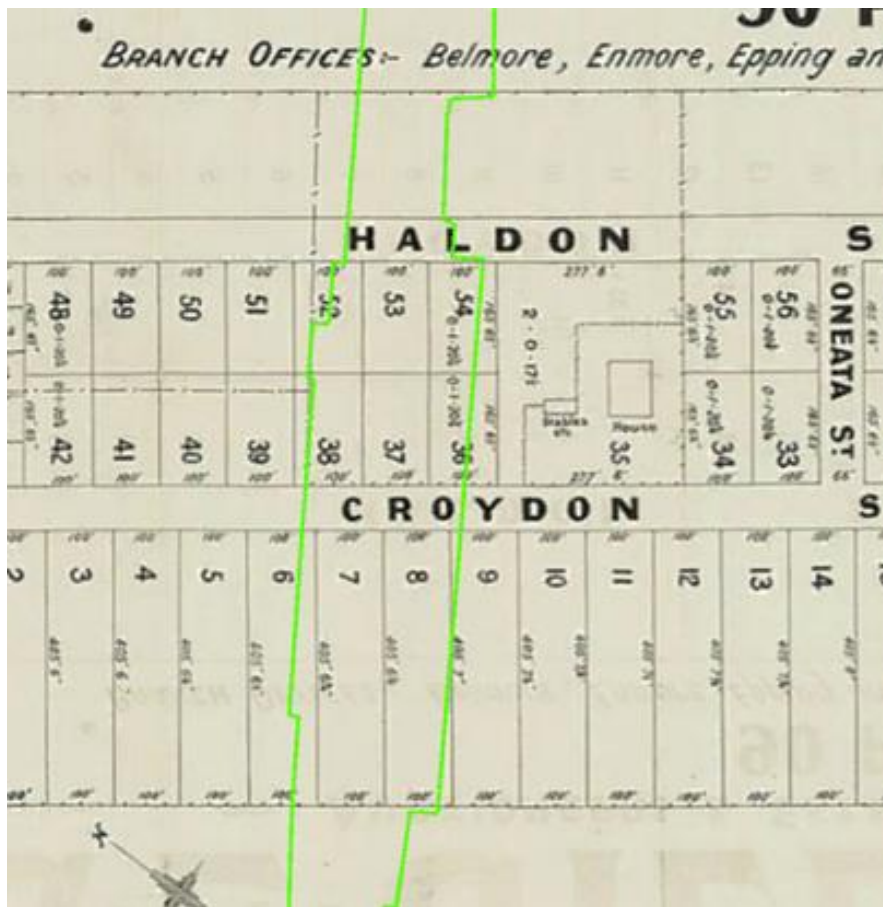


Figure 6-4: Ben Taylor's "Lakemba" in 1921, during the Anzac Day March on Haldon Street. Source: City of Canterbury, Pictorial Canterbury, image no. 020227.



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.

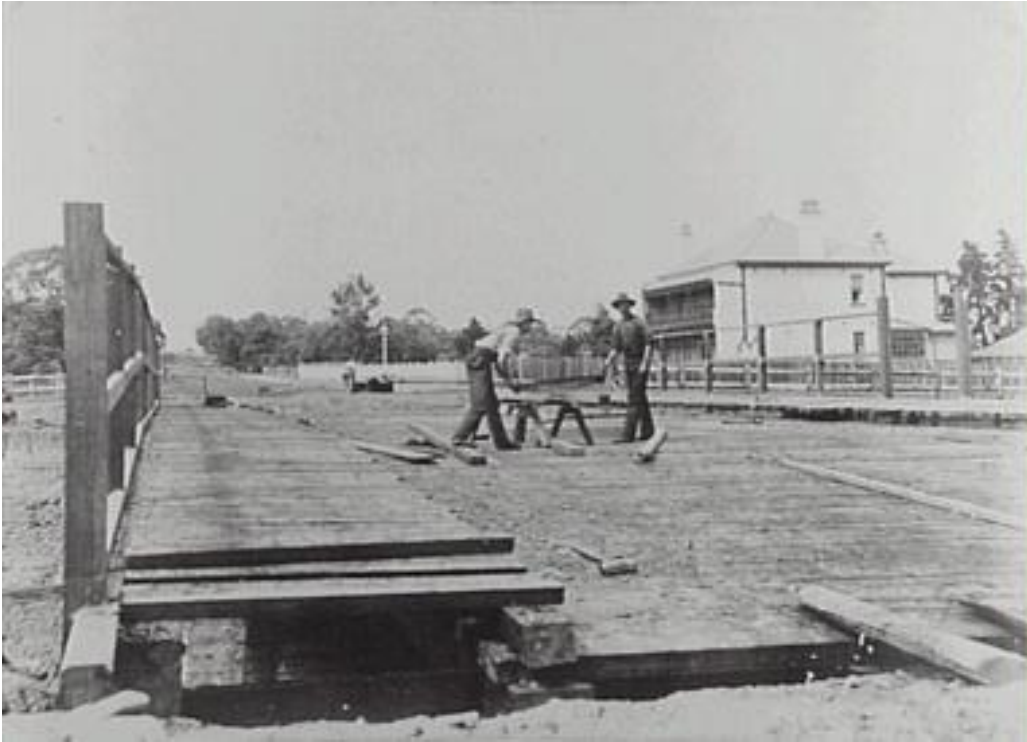


Figure 6-7: Lakemba Station and surrounds in 1919. Source: SLNSW call no. Z/SP/B12.

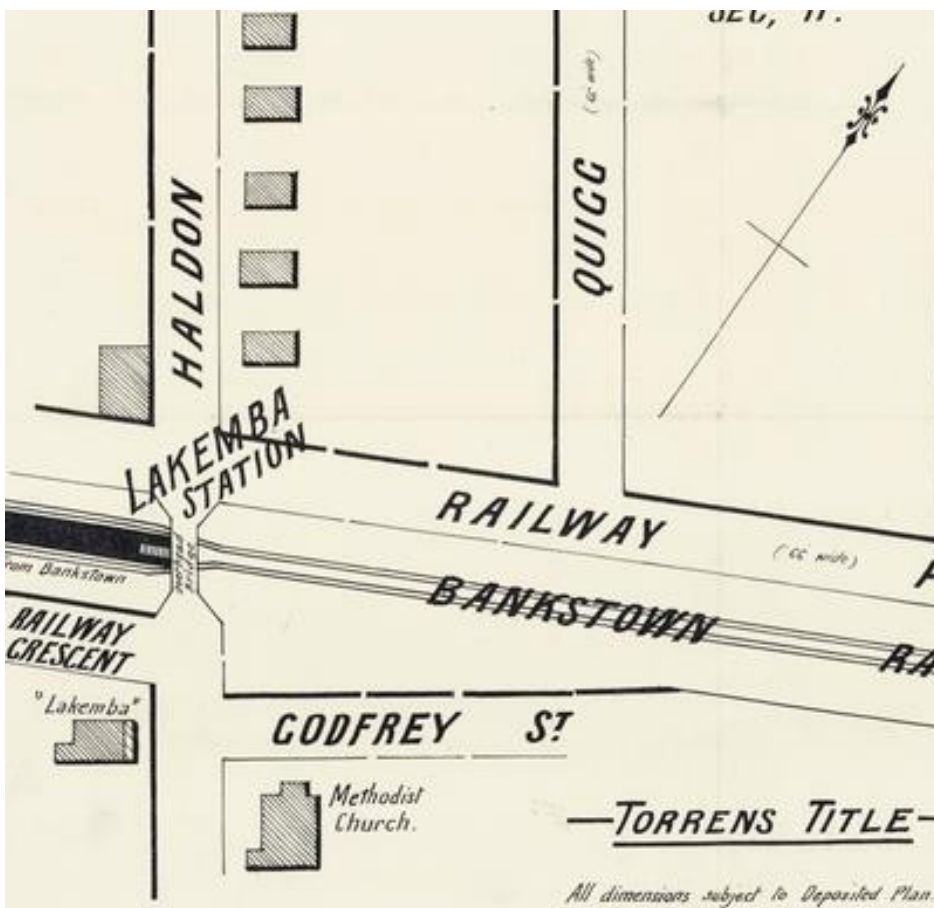


Figure 6-8: Site of the residence of Lakemba after it was demolished. Source: Canterbury City Council.



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.

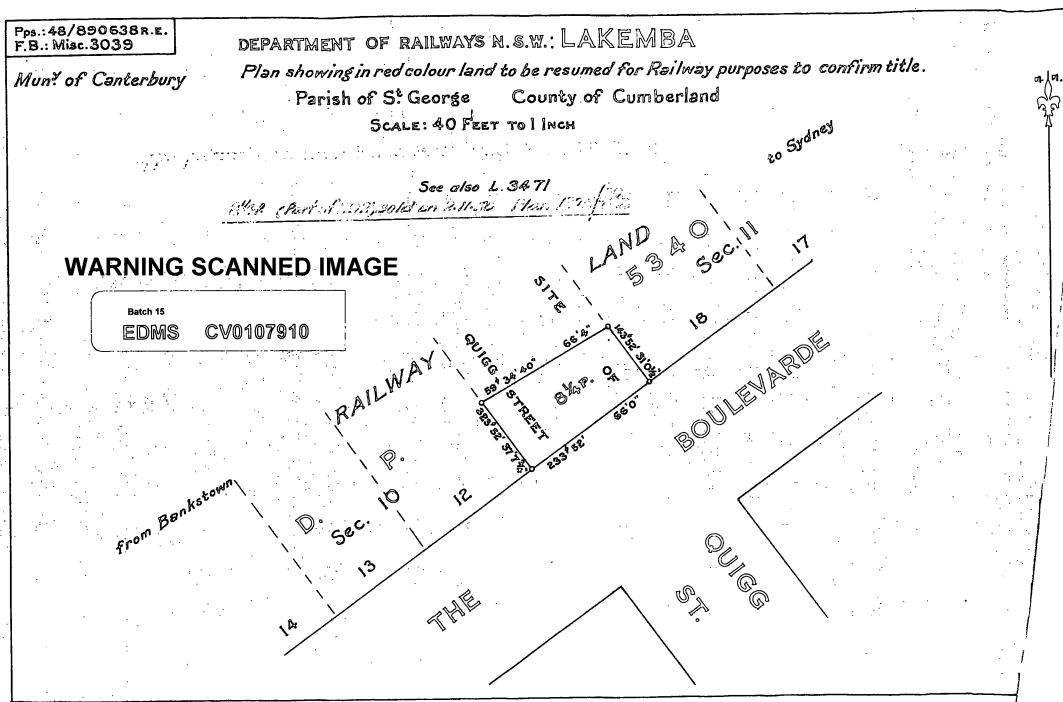


Figure 6-10: Haldon Street c1910 showing shop fronts. Source: Canterbury Bankstown Express.



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

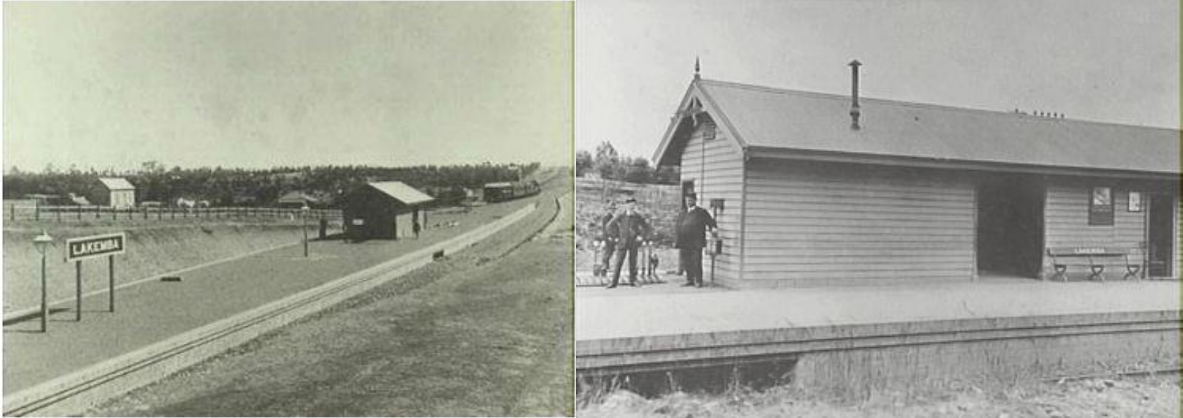


Figure 6-12: Lakemba Station c.1920. Source: National Library of Australia nla.pic-vn4543845-v.



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

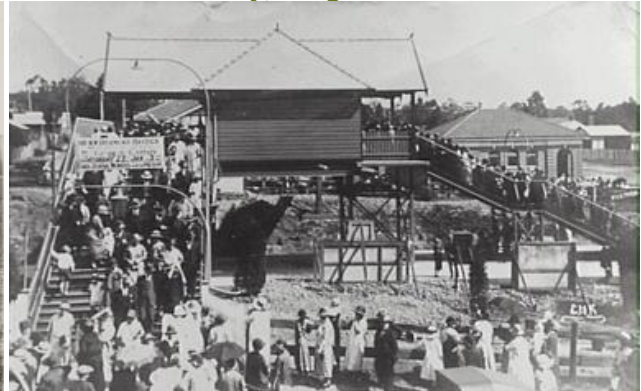


Figure 6-14: Lakemba c.1920, looking south down Haldon Street from the junction with The Boulevarde. Source: Bankstown Library Collection via Pictorial Canterbury, item 020214.



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 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. "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)	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.	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.	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>	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.	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)	<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>	<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.</p>	1	<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>	<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.</p>	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.</p> <p>It is unlikely that artefact-bearing deposits associated with the early station accumulated or survived subsequent development and upgrades.</p>	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 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>	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

8.2.4 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. 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.	2	<ul style="list-style-type: none"> 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.	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

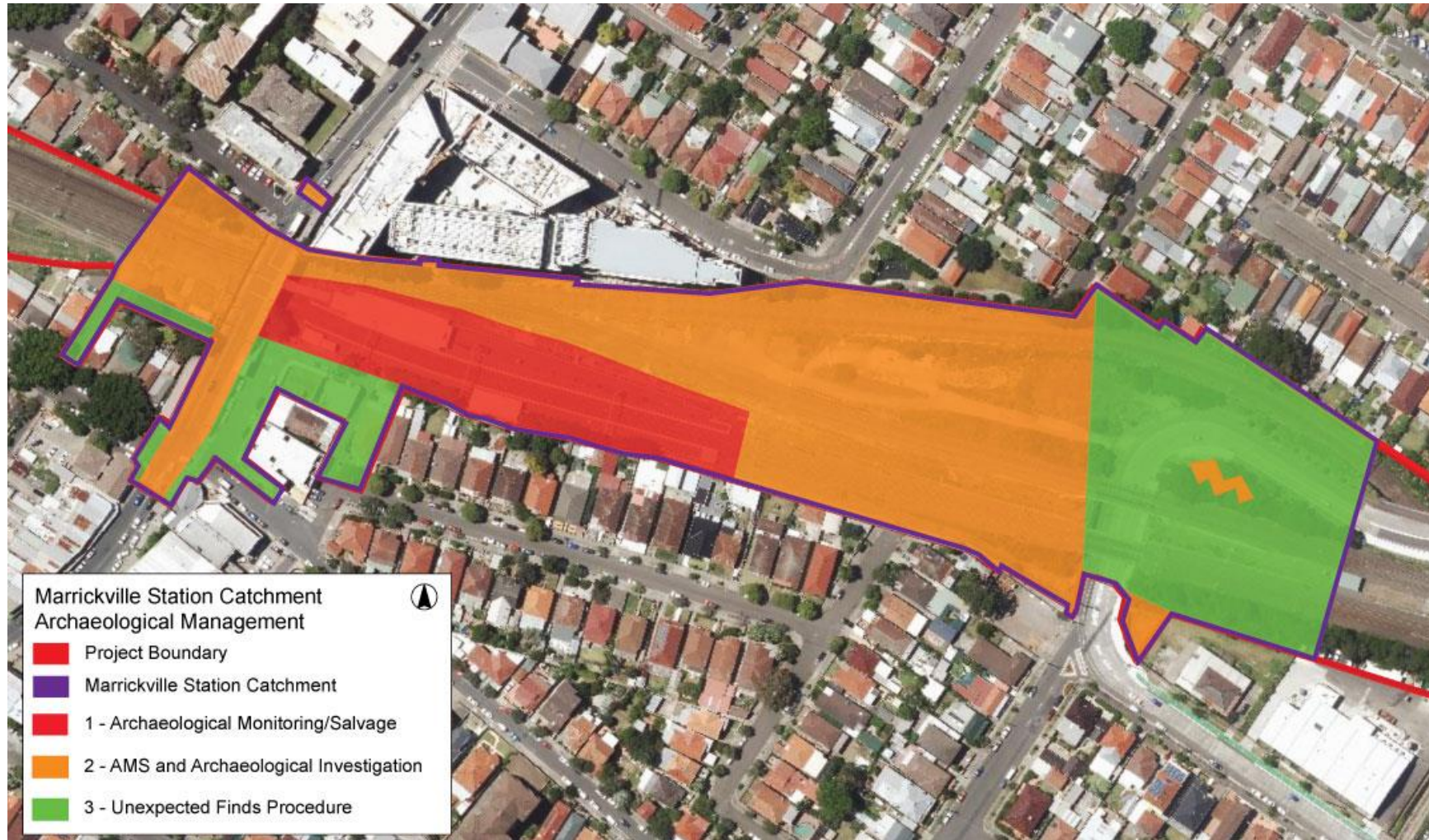


Figure 8-2: Canterbury Station Catchment and construction site archaeological management zones



Figure 8-3 Belmore Station Catchment archaeological management zones



Figure 8-4: Lakemba Station Catchment archaeological management zones



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artefact

Artefact Heritage

ABN 73 144 973 526
Level 4, Building B
35 Saunders Street
Pyrmont NSW 2009
Australia

+61 2 9518 8411
office@artefact.net.au
www.artefact.net.au

SYDENHAM TO BANKSTOWN

SUBMISSIONS AND PREFERRED INFRASTRUCTURE REPORT

> Appendix I - Archaeological assessment and research design report



City & Southwest

SYDENHAM TO BANKSTOWN

SUBMISSIONS AND PREFERRED INFRASTRUCTURE REPORT

> Appendix J – Aboriginal cultural heritage assessment report



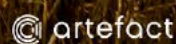
Sydney Metro City & Southwest Sydenham to Bankstown Upgrade

Aboriginal Cultural Heritage
Assessment Report

Inner West and Canterbury-
Bankstown Local Government Areas

Report to Transport for New South
Wales

June 2018



Artefact Heritage
ABN 73 144 973 526
Level 4, Building B
35 Saunders Street
Pyrmont NSW 2009
Australia

+61 2 9518 8411
office@artefact.net.au

Sydney Metro City & Southwest Sydenham to Bankstown Upgrade
Aboriginal Cultural Heritage Assessment

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EXECUTIVE SUMMARY

Note on this report

Since the preparation of this report, 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 ACHAR would remain the same.

Project overview

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, shown in Figure 1, 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 Cudgegong 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), new platforms at Central and upgrade of Sydenham Station and the upgrade of existing stations from Marrickville to Bankstown.

Sydney Metro City & Southwest comprises two core components (shown in Figure 1):

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

The project for which approval is sought

Transport for NSW is seeking approval to construct and operate the Sydenham to Bankstown upgrade component of Sydney Metro City & Southwest (the project).

The project involves upgrading 10 existing stations west of Sydenham (Marrickville to Bankstown inclusive), and a 13 kilometre long section of the Sydney Trains T3 Bankstown Line, which extends to the west of Bankstown Station, to improve accessibility for customers and meet the standards required for metro operations. The project would enable Sydney Metro to operate beyond Sydenham, 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).

Approach to Aboriginal heritage assessment

Artefact Heritage was engaged to prepare an Aboriginal heritage assessment for inclusion in the Environmental Impact Statement for the project. This assessment identified two areas of potential archaeological deposit (PAD). Further archaeological investigation has been recommended where there will be impact from the proposed works.

This Aboriginal Cultural Heritage Assessment Report (ACHAR) has been prepared within the context of the NSW Office of Environment and Heritage (OEH) *'Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation'*¹, the OEH *'Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW'*² and the OEH *'Aboriginal cultural heritage consultation requirements for proponents 2010'*.³

The objectives of this ACHAR are to:

- assess the Aboriginal cultural heritage values of the study area, including archaeological and community cultural values, and the significance of identified values
- identify Aboriginal cultural heritage values that may be impacted by the project, including consideration of cumulative impacts, and measures to avoid significant impacts
- ensure appropriate Aboriginal community consultation in the assessment process
- identify any recommended further investigations, mitigation and management measures.

¹ Department of Environment and Conservation 2005

² OEH 2011

³ Department of Environment, Climate Change and Water 2010

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ABBREVIATIONS

AAS	Aboriginal Archaeology Service
AGD	Australian Geodetic Datum
AHC	Australian Heritage Council
AHIP	Aboriginal Heritage Impact Permit
AHIMS	Aboriginal Heritage Information System
ALR Act	<i>Aboriginal Land Rights Act 1983</i>
Artefact Heritage	Artefact Heritage Services Pty Ltd
ACHAR	Aboriginal Cultural Heritage Assessment Report
BP	Before Present (that is 1950)
Consultation Requirements	Aboriginal cultural heritage consultation requirements for proponents 2010
CHL	Commonwealth Heritage List
the Code of Practice	Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales 2010
DACHA	Darug Aboriginal Cultural Heritage Assessments
DCP	Development Control Plan
DECCW	Department of Environment, Climate Change and Water (now OEH)
DLO	Darug Land Observations Pty Ltd
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EPBC Act	<i>Environment Protection and Diversity Conservation Act 1999</i>
EIS	Environmental Impact Statement
ESD	Ecological Sustainable Development
GDA	Geodetic datum
GPS	Global Positioning System
GTTS	Gundungurra Tribal Technical Services
the Guide	Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW
ha	hectares
KYWG	Kamilaroi-Yankuntjatjara Working Group
LALC	Local Aboriginal Land Council

LEP	Local Environmental Plan
LGA	Local Government Area
MBMAC	Murri Bidgee Mullangari Aboriginal Corporation
NHL	National Heritage List
NPW Act	<i>National Parks and Wildlife Act 1974</i>
OEH	Office of Environment and Heritage
PAD	potential archaeological deposit
the project	Sydenham to Bankstown upgrade component of Sydney Metro City & Southwest
the proponent	Transport for NSW
RAP	Registered Aboriginal Party
RNE	Register of the National Estate
SEARs	Secretary's Environmental Assessment Requirements

1.0 INTRODUCTION

Note on this report

Since the preparation of this report, 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 ACHAR 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, shown in Figure 1, 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 Cudgegong 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), new platforms at Central and upgrade of Sydenham Station and the upgrade of existing stations from Marrickville to Bankstown.

Sydney Metro City & Southwest comprises two core components (shown in Figure 1):

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

1.1.1 The project for which approval is sought

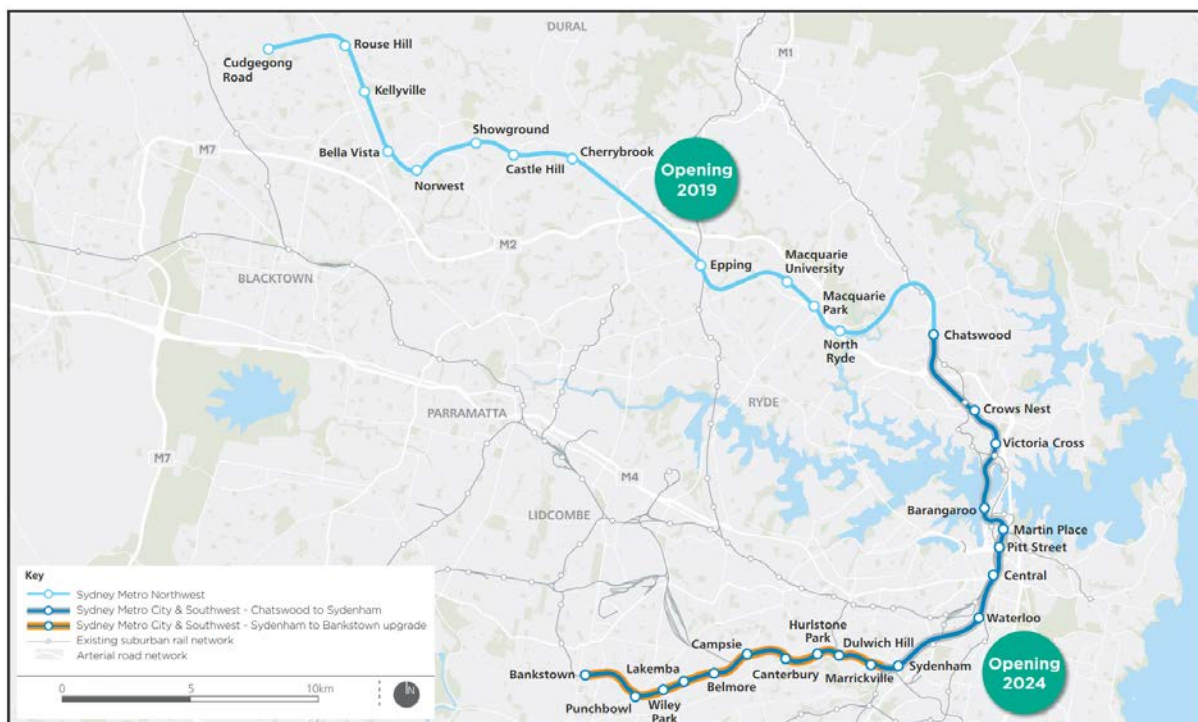
Transport for NSW is seeking approval to construct and operate the Sydenham to Bankstown upgrade component of Sydney Metro City & Southwest (the project).

The project involves upgrading 10 existing stations west of Sydenham (Marrickville to Bankstown inclusive), and a 13 kilometre long section of the Sydney Trains T3 Bankstown Line, which extends to the west of Bankstown Station, to improve accessibility for customers and meet the standards required for metro operations. The project would enable Sydney Metro to operate beyond Sydenham, 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).

Figure 1: The Sydney Metro network



1.2 The project

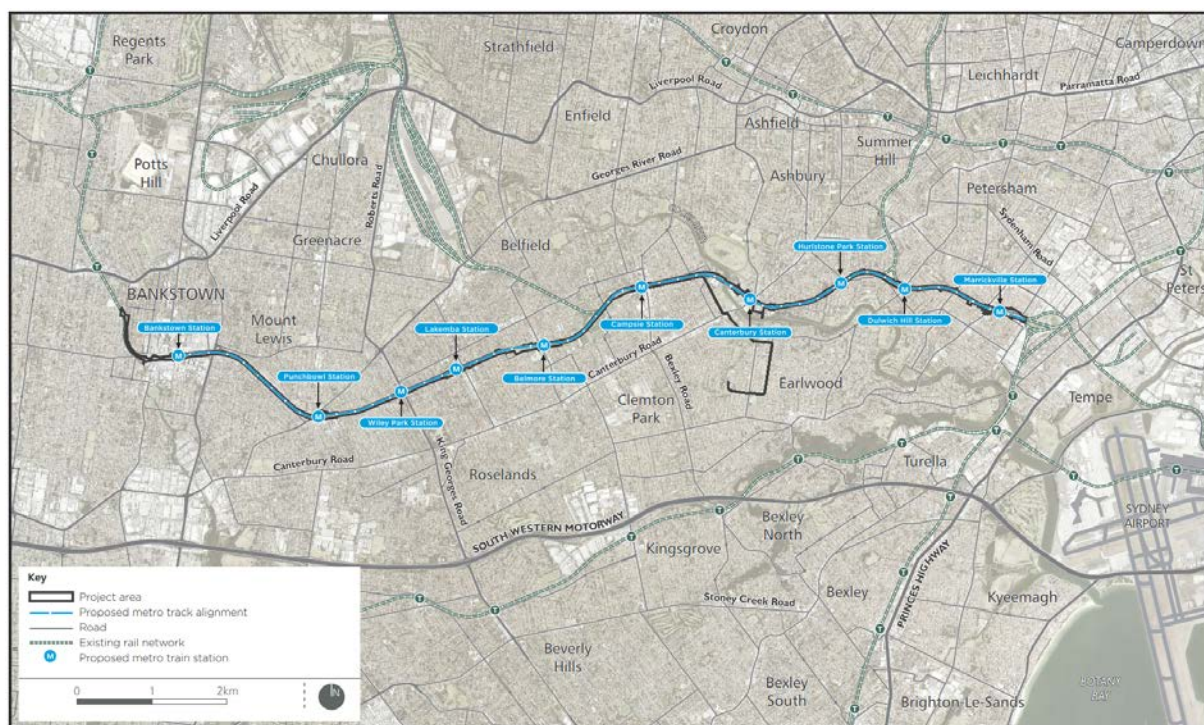
1.2.1 Location

The location of the project is shown in Figure 2.

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.

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 (as described above), the 10 existing stations within the corridor, and areas surrounding the rail corridor as shown in Figure 1.

Figure 2: Overview of the project



1.3 Purpose and Scope of this Report

An Environmental Impact Statement has been prepared for the project and to support that Environmental Impact Statement an Aboriginal Heritage Impact Assessment (Technical Paper 4) was prepared (Artefact Heritage 2017). Technical Paper 4 provides a comprehensive description of the environmental, Aboriginal historical and archaeological context of the project in conjunction with the Aboriginal archaeological survey methodology and results. It is not the intention of this report to replicate every detail of information presented in Technical Paper 4 but to summarise it.

As part of Technical Paper 4 an archaeological survey was prepared for the project area which identified two areas of potential archaeological deposit (PAD). Only one of these, S2B PAD02, would be impacted by the project. Artefact Heritage (2017) recommended sample testing of the portion of S2B PAD02 that would be impacted to allow the nature and significance of this PAD to be more accurately assessed. This ACHAR has been prepared to document the following through consultation with the registered Aboriginal parties (RAPs):

- the Aboriginal cultural heritage values of the project area and identification of any specific areas of cultural significance
- details of Aboriginal stakeholder consultation
- a methodology for archaeological management including test excavation and salvage where required

This ACHAR has been undertaken in accordance with the following guidelines:

- Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales 2010⁴

⁴ Department of Environment Climate Change & Water [DECCW] 2010a

- Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW⁵
- Aboriginal cultural heritage consultation requirements for proponents 2010⁶
- The Burra Charter 2013⁷.

1.3.1 Report structure

The structure of this ACHAR is as follows:

- Section 1: Project overview and background and report purpose and structure
- Section 2: State and Commonwealth legal framework
- Section 3: Describes the Aboriginal consultation process
- Section 4: Discussion of the environmental context of the study area, the Aboriginal and historical context of the study area, the archaeological context of the study area including a discussion of previous archaeological work in the area, and a description and analysis of archaeological potential
- Section 5: Development of a significance assessment for the project
- Section 6: Impact assessment
- Section 7: Excavation methodology
- Section 8: Management measures.

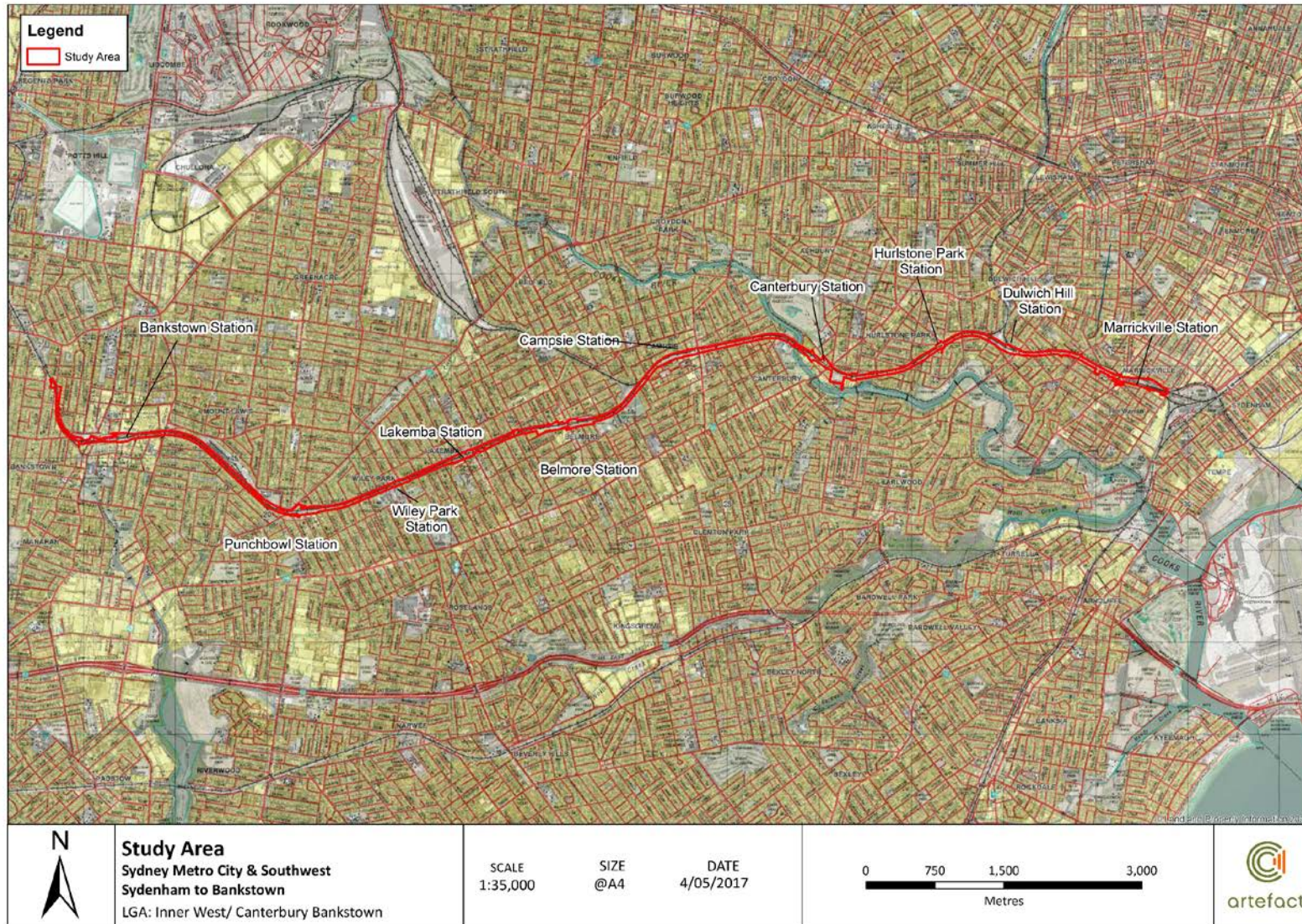
A map showing the study area is included as Figure 3.

⁵ Office of Environment & Heritage 2011

⁶ DECCW 2010b

⁷ Australia ICOMOS 2013.

Figure 3: The study area



Document Path: C:\Users\GIS\Desktop\GIS\Mapping\151213_Sydney_Metro_Bankstown_Sydenham\MXD\Aboriginal\Project_Area_20170504.mxd

1.4 Project framework

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).. Secretary's Environmental Assessment Requirements (SEARs) were issued on 23 March 2017 (Reference CSSI 17_8256). This report is intended to be included in the project approval submission to DP&E.

1.5 Authors and contributors

This ACHAR was prepared by Josh Symons (Principal, Artefact Heritage). This ACHAR is predominantly based on information supplied in Technical Paper 4 (Appendix 1) with updated Aboriginal consultation (Appendix 2). A review was undertaken by Dr Sandra Wallace (Managing Director, Artefact Heritage).

Archaeological survey for Technical Paper 4 was conducted in June 2017 by Jay Daley, Culture and Heritage Officer at Metropolitan Local Aboriginal Land Council (Metropolitan LALC), Brady Maybury and Carrell Fabar, Cultural and Heritage Officers at Gandangarra Local Aboriginal Land Council (Gandangara LALC), and Josh Symons and Claire Rayner (Artefact).

Site inspection in March 2017 was conducted by Brad Maybury from Gandangara LALC, Nathan Moran from Metropolitan LALC, and Duncan Jones (Artefact).

2.0 LEGISLATIVE CONTEXT

2.1 State legislation

2.1.1 *National Parks and Wildlife Act 1974*

The *National Parks and Wildlife Act 1974* (NPW Act) provides statutory protection to all Aboriginal places and objects. An Aboriginal Place is declared by the Minister, under Section 84 of the NPW Act in recognition of its special significance with respect to Aboriginal culture. Under Section 86 of the NPW Act Aboriginal objects and Aboriginal places are protected. An Aboriginal object is defined as:

any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains.

The protection provided to Aboriginal objects applies irrespective of the level of their significance or issues of land tenure. However, areas are only gazetted as Aboriginal places if the Minister is satisfied that sufficient evidence exists to demonstrate that the location was and/or is of special significance to Aboriginal culture.

There are no gazetted Aboriginal places in the study area. All Aboriginal objects, whether recorded or not are protected under the NPW Act.

The project is subject to assessment under Part 5.1 of the *Environmental Planning & Assessment Act 1979* and therefore permits issued under the NPW Act are not required, however similar processes would be followed where required.

2.1.2 *Environmental Planning & Assessment Act 1979*

The *Environmental Planning & Assessment Act 1979* (EP&A Act) provides planning controls and requirements for environmental assessment in the development approval process. The EP&A Act consists of three main parts of direct relevance to Aboriginal cultural heritage; Part 3 which governs the preparation of planning instruments, Part 4 which relates to development assessment processes for local government (consent) authorities, and Part 5 which relates to activity approvals by governing (determining) authorities. 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), which establishes an assessment and approval regime for Critical State Significant Infrastructure (CSSI). An Environmental Impact Statement has been prepared to assess the impacts of the project, in accordance with SEARs.

2.1.3 *Aboriginal Land Rights Act 1983*

The *Aboriginal Land Rights Act 1983* is administered by the NSW Department of Human Services - Aboriginal Affairs. This Act established Aboriginal Land Councils (at State and Local levels). These bodies have a statutory obligation under the Act to:

- take action to protect the culture and heritage of Aboriginal persons in the council's area, subject to any other law, and

- promote awareness in the community of the culture and heritage of Aboriginal persons in the council's area.

The study area is located within the Metropolitan LALC and Gandangara LALC boundaries.

2.2 Commonwealth legislation

2.2.1 *Environment Protection and Biodiversity Conservation Act 1999*

The *Environment and Heritage Legislation Amendment Act (No. 1) 2003* amends the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) to include 'national heritage' as a matter of National Environmental Significance and protects listed places to the fullest extent under the Constitution. It also establishes the National Heritage List (NHL) and the Commonwealth Heritage List (CHL).

The *Australian Heritage Council Act 2003* (AHC Act) establishes a new heritage advisory body - the Australian Heritage Council (AHC), to the Minister for the Environment and Heritage and retains the Register of the National Estate (RNE).

The *Australian Heritage Council (Consequential and Transitional Provisions) Act 2003* repeals the *Australian Heritage Commission Act 1975*, amends various Acts as a consequence of this repeal and allows the transition to the current heritage system.

Together the above three Acts provide protection for Australia's natural, Indigenous and non-Indigenous heritage. The new features include:

- a new NHL of places of national heritage significance
- a new CHL of heritage places owned or managed by the Commonwealth
- the creation of the AHC, an independent expert body to advise the Minister on the listing and protection of heritage places
- continued management of the Register of the National Estate (RNE).

National Heritage List

The NHL is a list of places with outstanding heritage value to our nation, including places overseas. So important are the heritage values of these places that they are protected under the EPBC Act. This means that a person cannot take an action that has, will have, or is likely to have, a significant impact on the national heritage values of a national heritage place without the approval of the Australian Government Minister for the Environment and Heritage. It is a criminal offence not to comply with this law and there are significant penalties.

Commonwealth Heritage List

The CHL is a list of places managed or owned by the Australian Government and not of relevance to this project.

Register of the National Estate

The RNE is an evolving record of Australia's natural, cultural and Aboriginal heritage places that are worth keeping for the future. The AHC compiles and maintains the RNE under the *Australian Heritage Council Act 2003*. Places on the RNE that are in Commonwealth areas, or subject to actions by the Australian Government, are protected under the EPBC Act by the same provisions that protect Commonwealth heritage places (see above).

Following amendments to the *Australian Heritage Council Act 2003*, the RNE was frozen on 19 February 2007, meaning no new places can be added, or removed. From 2012, all references to the RNE were removed from the EPBC Act and the AHC Act. The RNE is now maintained on a non-statutory basis as a publicly available archive.

2.2.2 *Aboriginal and Torres Strait Islander Heritage Protection Act 1984*

Most State Aboriginal heritage databases provide protection for those sites with physical evidence. The Commonwealth Act, *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* deals with Aboriginal cultural property in a wider sense. Such cultural property includes any places, objects and folklore that 'are of particular significance to Aboriginals in accordance with Aboriginal tradition'. In most cases, archaeological sites and objects registered under the State Act will also be Aboriginal places subject to the provisions of the Commonwealth Act.

There is no cut-off date and the Commonwealth Act may apply to contemporary Aboriginal cultural property as well as ancient sites. The Commonwealth Act takes precedence over State cultural heritage legislation where there is conflict. The responsible Minister may make a declaration under Section 10 of the Commonwealth Act in situations where state or territory laws do not provide adequate protection of heritage places.

2.2.3 *Native Title Act 1994*

The *Native Title Act 1994* was introduced to work in conjunction with the Commonwealth Native Title Act. Native Title claims, registers and Indigenous Land Use Agreements are administered under the Act.

No Native Title Claims within the study area are shown in the National Native Title Tribunal (NNTT) *Native Title Vision* mapping service.⁸

⁸ Accessed on 8 July 2016 http://www.ntv.nntt.gov.au/IntraMaps80/default.htm?project=NTV_NSW

3.0 CONSULTATION

Aboriginal community consultation has been guided by the Office of Environment and Heritage (OEH) Aboriginal cultural heritage consultation requirements for proponents⁹ as best practice. A registered stakeholder list has been drawn up for the Sydney Metro City and Southwest Chatswood to Sydenham and Sydenham to Bankstown projects. Although one registered stakeholder list has been used for the whole Sydney Metro City and Southwest project, separate ACHARs have been provided for both the Chatswood to Sydenham and Sydenham to Bankstown projects.

A summary of consultation to date related to the project is provided below. Note that consultation was sent to Councils below prior to amalgamations.

In accordance with Step 4.1.2 of the OEH consultation requirements, a letter was sent to the following organisations requesting the details of Aboriginal people who may hold cultural knowledge relevant to determining the Aboriginal significance of Aboriginal objects and/or places within and adjacent to the project area which includes both the Sydney Metro City and Southwest Chatswood to Sydenham and Sydenham to Bankstown projects:

- Regional Operations Group, Metropolitan Region, OEH
- Metropolitan Local Aboriginal Land Council (Metropolitan LALC)
- Gandangara Local Aboriginal Land Council (Gandangara LALC)
- The Registrar, *Aboriginal Land Rights Act 1983*
- National Native Title Tribunal
- NTSCORP
- City of Canterbury Council
- City of Sydney Council
- North Sydney Council
- Greater Sydney Catchment Management Authority

In accordance with Step 4.1.3 of the consultation requirements, an advertisement was placed in the Sydney Morning Herald and Koori Mail on 4 May 2016. The advertisement invited all Aboriginal persons and organisations who hold cultural knowledge relevant to determining the significance of Aboriginal objects and places in the project area to register their interest by 18 May 2016.

Letters were sent to all Aboriginal persons or organisations identified through responses from agencies contacted as part of Step 4.1.2. The letters provided details about the location and nature of the project, as well as an invitation to register as an Aboriginal stakeholder for the project by 9 June 2016.

Following the completion of Steps 4.1.2 and 4.1.3, fifteen Aboriginal stakeholders registered as persons or organisations that may hold cultural knowledge relevant to determining the Aboriginal cultural values of the project area. The registered Aboriginal parties (RAPs) are listed below.

- Darug Land Observations Pty Ltd (DLO) – Gordon Workman
- Darug Land Observations Pty Ltd (DLO) – Jamie Workman
- Murri Bidgee Mullangari Aboriginal Corporation (MBMAC)
- Tocomwall
- Darug Aboriginal Cultural Heritage Assessments (DACHA)

⁹ Department of Environment, Climate Change and Water 2010b

- Kamilaroi-Yankuntjatjara Working Group (KYWG)
- Woronora Plateau Gundangarra Elders Council
- Aboriginal Archaeology Service Inc (AAS)
- Gandangara Local Aboriginal Land Council
- Metropolitan Local Aboriginal Land Council
- Gundungurra Tribal Technical Services (GTTS)

In accordance with Step 4.1.6 of the consultation requirements, a list of registered Aboriginal stakeholders and a copy of the published Step 4.1.3 advertisement were forwarded to both OEH, and the Metropolitan LALC.

Representatives from the Metropolitan LALC and Gandangara LALC attended the site survey in 2016 and assisted in identifying areas of PAD. Additional site inspections were conducted on 8 and 9 March 2017. A representative from Gandangara LALC was present for site inspections on 8 March 2017 and a representative from Metropolitan LALC was present for site inspections on 9 March 2017.

An ACHAR methodology letter was sent to all RAPs on 11 September 2017.

Comments by RAPs on the ACHAR methodology letter are provided in Table 2 below.

Table 1: RAP comments on ACHAR methodology letter

Name	Organisation	Comments
Jamie Workman	DLO	Supports the ACHAR methodology. Requested involvement in any excavation or archaeological monitoring.
Phil Khan	KYWG	All areas are highly significant for Aboriginal people as they were used for camping and hunting grounds. Recommended test excavation in areas of little disturbance.

Registered Aboriginal stakeholders were invited to participate in an Aboriginal Focus Group (AFG) meeting during the preparation of the ACHAR. This AFG was held on the 11 October 2017. Comments were sought on any areas of cultural significance and also on the excavation methodology.

Comments by RAPs on the project at the AFG are provided in Table 2 below.

Table 2: RAP comments during AFG

Name	Organisation	Comments
Anthony Johnson	MBMAC	Reburial of artefacts is the best option for long-term care and management of retrieved artefacts as it is most respectful to Traditional Owners
Tony Williams	AAS	Would like to see educational outcomes from the excavation and investigation process. This could include providing videos of the excavation process and findings to schools.
Phil Khan	KYWG	Would like to see a keeping place for retrieved artefacts, or an interpretative display for housing some, or all, of the retrieved assemblage.

The draft ACHAR was sent to RAPs on 1 November 2017. Follow up calls were made the following week to make sure all RAPs had received the ACHAR and to see if they had any questions prior to responding.

Comments by RAPs on the ACHAR are provided in Table 3 below.

Table 3: RAP comments on the draft ACHAR

Name	Organisation	Comments
Darleen Carroll	MBMAC	Endorsed the recommendations of the ACHAR
Jamie Workman	DLO	Supports the methodology. In relation to the long-term storage of recovered artefacts, if any, Darug Land Observations Pty Ltd strongly agrees that recovered artefacts should be re-buried on Country (the project area). Furthermore, Darug Land Observations Pty Ltd would be involved in archaeological test excavations and/or all other form of works to be carried out on the site.
Phil Khan	KYWG	Supports the ACHAR and excavation methodology.

The majority of comments were in support of the assessment and proposed mitigation measures.

Three comments were made on how any collected artefact assemblages should be managed. Two preferred reburial, while the other recommended a keeping place or use in an interpretive display. Consultation regarding management of Aboriginal objects retrieved would be ongoing and would be decided in the context of the nature of finds during the project and the outcomes of the Chatswood to Sydenham project. This has been referred to in section 7.11.

Tony Williams (AAS) commented that he would like to see educational outcomes as a result of any excavation undertaken. This would be considered as part of the interpretive programme for the project and has been discussed in Section 7.12

4.0 SUMMARY AND ANALYSIS OF BACKGROUND INFORMATION

The following information has been summarised from Technical Paper 4.

4.1 Geology and soils

The project area is located within the Sydney Basin, a large depositional geological feature that spans from Batemans Bay to the south, Newcastle to the north and Lithgow to the west. The underlying geology of the project area consists of Wianamatta Group shales overlying Hawkesbury sandstone. Ashfield Shale is the most extensive formation of the Wianamatta Group and is the dominant underlying geology of the study area west of Canterbury Station, with some minor instances of Bringelly Shale underlying the western portion of the project area.

Hawkesbury Sandstone is one of the most ubiquitous geological layers of the Sydney Basin. Hawkesbury Sandstone surrounds the incised Cooks River Valley and is the dominant geology underlying Dulwich Hill and Hurlstone Park stations. This geological formation was used extensively by both Aboriginal people and British colonists for a variety of shelter and subsistence requirements. Evidence of Aboriginal use of Hawkesbury Sandstone in the Sydney area includes occupation deposits in natural shelter formations created by weathering processes in exposed sandstone, grinding grooves where edge-ground stone axes were manufactured or maintained, and rock engravings or pigment motifs that were applied to exposed sandstone.

The occurrence of Bringelly Shale in the project area is restricted to the eastern portion of Wiley Park Station. Bringelly Shale overlies Ashfield Shale and is the topmost layer of the Wianamatta Group. The formation consists of shale carbonaceous claystone, laminate and fine to medium grained lithic sandstone. Bringelly Shale is generally associated with alluvial and estuarine coastal plain environments. The Blacktown soil landscape overlies Bringelly Shale within the project area.

Quaternary sediments occur in association with the Cooks River alignment and former shores of Botany Bay. These deep alluvial and estuarine sediments occur within the south-eastern corner of the Canterbury Station area, and the eastern portion of the Marrickville Station area.

4.2 Land use, hydrology and geotechnical

4.2.1 Land use

The majority of the project area consists of modified rail corridor cut into the natural landform. Prior to the construction of the railway, the study area was typified by the undulating landform of the Cumberland Plain. This is evident throughout the areas surrounding the rail corridor. The rail line generally runs along a low lying undulating ridge.

4.2.2 Hydrology

Various watercourses transect the project area. The Cooks River intersects the project area between Canterbury Station and Campsie Station. The former alignment of Sheas Creek (now Alexandra Canal) lies 2.1 kilometres south-east of Marrickville Station, Coxs Creek intersects the project area just west of Wiley Park Station and Salt Pan Creek is located approximately 600 metres south-west of Bankstown Station.

4.2.3 Geotechnical information

Geotechnical investigations show that the majority of the Marrickville to Bankstown rail corridor is topped with fill layers to varying depths, generally dependant on topography.

From around Marrickville Station to Punchbowl Station the profile is generally a fill layer over thin layers of residual soil, or straight onto Ashfield shale on Hawkesbury Sandstone bedrock within cuttings or areas that have been levelled. Pockets of truncated alluvial deposits are located near Canterbury Station.

Near Punchbowl Station, Bringelly shale rises with some associated residual soils evident in core samples. This profile continues with varying depth of residual soil to Bankstown Station.

4.3 Ethnographic context

The following information has been summarised from Technical Paper 4.

4.3.1 Aboriginal history and contact period

Prior to the appropriation of their land by colonialists, Aboriginal people lived in small family or clan groups that were associated with particular territories or places. It seems that territorial boundaries were fluid, although details are not known. The language group spoken across Sydney was known as Darug (Dharruk – alternate spelling). This term was used for the first time in 1900, as before the 1800s language groups or dialects were not discussed in the literature.¹⁰ The Darug coastal dialect is thought to have covered the area south from Port Jackson, north from Botany Bay, and west from Parramatta.¹¹

The name Gadigal and its alternative spellings (Cadigal, Cadi) was used in the earliest historical records of early settlement in Sydney to describe the Aboriginal band or clan that lived on the southern shore of Port Jackson, from South Head west to the Darling Harbour area. The project area is located within the area thought to have been inhabited by the Wangal clan. The Wangal clan's territory extended between the Parramatta River and the Cooks River from Darling Harbour to Rosehill¹².

The study area is located within an area rich with resources. The wetlands associated with the Cooks River and Gumbramorra Swamp would have been reliable fresh water and food sources. The Hawkesbury Sandstone around the Cooks River would have provided Aboriginal people with shelter and the surrounding environment would have provided ample materials for tools and other material culture.

Observations of Aboriginal people living on the Cooks River made early after the British arrival in Australia indicate the importance of these riverine and estuarine environments for Aboriginal people. Watkin Tench noted a camp consisting of twelve huts near the Cooks River in 1788¹³, whilst another account by James Backhouse details the construction of canoes using heat from fires in the 1830s¹⁴. Other accounts observed Aboriginal people in canoes and shell middens indicate the procurement of fish and shell fish for food¹⁵. The discovery of butchered dugong bones during the excavation of Alexandria Canal in the late 19th century highlights the ways in which Aboriginal people took

¹⁰ Matthews and Everitt 1900; Attenbrow 2010: 31.

¹¹ Attenbrow 2010: 34

¹² *ibid*

¹³ Muir 2013 <http://dictionaryofsydney.org/entry/aboriginal_people_of_the_cooks_river_valley> accessed 19 May 2016

¹⁴ Backhouse 1834

¹⁵ *ibid*

advantage of their environments particularly during periods of climate change around 6,000 years ago¹⁶.

Figure 4: From Mud Bank Botany Bay – Mouth of Cooks River 1830 - three Aboriginal people can be seen seated in the foreground next to wooden spears, one of which appears to have a barbed head.¹⁷



4.4 Archaeological context

4.4.1 Registered Aboriginal sites

The locations and details of Aboriginal sites are considered culturally sensitive information. Culturally sensitive information will be removed prior to this report being made public.

An extensive search of the Aboriginal Heritage Information System (AHIMS) database was conducted on 12 May 2017 for sites registered within the following parameters:

GDA 1994 MGA 56	[REDACTED]
Buffer	50 m
Number of sites	13
AHIMS Search ID	281006

The AHIMS search area encompasses the wider region around the project area, in order to give context. The distribution of recorded sites within the AHIMS search area is shown in Figure 5. The frequency of site feature types is summarised in Table 4: . K1 (AHIMS ID 45-6-2358) is listed as a

¹⁶ Etheridge, Edgeworth David & Grimshaw 1896: 158–185

¹⁷ Thompson, J Collection of the State Library of N.S.W [DL PXX 31, 2a]

deleted site. This site is the same as View Street (AHIMS ID 45-6-2198). Therefore, it has been excluded from the discussion and the total number of AHIMS sites in the extensive search area is six.

Table 4: Frequency and percentage of site features in extensive AHIMS search

Site Feature	Frequency	Percentage
Artefact	5	38
Shell and artefact	5	38
Shell, artefact and art (engraved or pigment)	1	8
Artefact, Potential Archaeological Deposit (PAD)	1	8
Potential Archaeological Deposit (PAD)	1	1

'Artefact' and 'shell and artefact' are the most frequent site types in the search area. Three of the sites containing shells are listed with the site type as midden. Two of the sites (AHIMS ID 45-6-0615 and 45-6-2568) are listed in association with rock shelters. The sites are clustered around the eastern end of the extensive search area, particularly in relation to the Cooks River and Wolli Creek. The frequency of sites with shell in proximity to the Cooks River correlates with the estuarine resources that would likely have been available in that environment (shell sites n=3, 50 per cent).

The recorded coordinates of Fraser Park PAD (AHIMS ID 45-6-2654), place the PAD approximately 650 metres north-east of the project area boundary. However, information contained in the associated test excavation report¹⁸ indicates that the area of PAD is the Fraser Park sporting complex, located approximately 130 metres east of the project area. The discrepancy in site location is likely due to coordinate projection errors on the AHIMS site register. No Aboriginal objects have been identified during site inspection at AHIMS ID 45-6-2654, or retrieved from AHIMS ID 45-6-2654 during excavation, therefore this listing is not an Aboriginal site as defined under Section 83 of the NPW Act.

It is likely that the discrepancy between the coordinates listed on AHIMS and the actual location of the PAD is due to a coordinate projection error. The recorded coordinates are in Australian Geodetic Datum (AGD), and therefore the discrepancy could be associated with the 200 metre error that can occur between AGD and Geocentric Datum of Australia (GDA) coordinates.

¹⁸ McIntyre-Tamwoy 2003

Figure 5: Distribution of AHIMS registered sites



4.4.2 Previous archaeological investigations

A number of archaeological investigations have been conducted in the vicinity of the study area. The results of those investigations and implications for the study area are discussed in detail in Technical Paper 4. A summary of each is presented in Table 5: .

Table 5: Summary of previous archaeological investigations

Year	Report title	Company	Description of study
2015	WestConnex New M5, Technical Working Paper: Aboriginal Heritage	AECOM	<p>Aboriginal heritage assessment conducted as part of Environmental Impact Statement. Assessment area located to the south of the project area encompassing areas of similar geology and soils.</p> <p>Assessment based on location of previously recorded AHIMS sites and disturbance levels. Identified five new sites consisting of sandstone overhangs with associated PAD south of the Cooks River and outside the current project area.</p> <p>Predictive statements - potential for archaeological deposits to occur within areas of the Gymea, Blacktown and Birrong soil landscapes across all landforms.</p>
2005	Archaeological assessment of Aboriginal site (45-6-615) a rock shelter with art and midden at 32 Undercliffe Road, Undercliffe, NSW	Jo MacDonald Cultural Heritage Management	<p>AHIMS ID 45-6-615 consists of rock shelter with art and shell midden at front of the shelter and is located approximately 1.5 kilometres south of the project area. The shelter itself is located in an outcrop of Hawkesbury sandstone which originally formed part of an outcrop along a ridge crest landform context</p> <p>The underlying geology is similar to that outside the project area at Sydenham, which consists of Quaternary sediments overlying Hawksbury sandstone.</p> <p>Site assessed as demonstrating high archaeological significance at the local and regional level and considered to be rare within the Sydney basin context, especially in association with the shell midden.</p>
2005	Intermodal Logistics Centre at Enfield, EIS, Assessment of Indigenous Heritage	Navin Officer Heritage Consultants	<p>The Centre is located 1.4 kilometres north of Lakemba Station of the current project area.</p> <p>The assessment area was located within a similar environmental context to the Western portion of the current project area. This includes underlying shale and sandstone geology, and location within the Cooks River catchment area. A tributary of Cooks River, Coxs Creek, ran to the east. The</p>

Year	Report title	Company	Description of study
			<p>soils were described as Blacktown, Birrong and disturbed terrain. The elevation of parts of the assessment area would have provided vantage points over the surrounding areas.</p> <p>No Aboriginal objects or areas of archaeological potential identified by survey. Little to no topsoil had been preserved throughout the area which is typical where mechanical scraping has occurred within shallow soils such as the Blacktown soils. The assessment concluded that any Aboriginal sites that may have been located within the area had been destroyed by past land use activity.</p>
2003	MetroGrid Project Test Excavation of Buried Shell Bed at Fraser Park, Marrickville, NSW – Preliminary Report	McIntyre-Tamwoy	<p>Test excavations by machine conducted at Fraser Park, approximately 130 metres east of the current project area. Five test pits excavated along proposed underground service alignment. Excavation identified layers of introduced fill overlying natural swamp deposit and naturally deposited shell beds. It was noted that due to the nature of the silt associated with the shell bed the shell was deposited when that area was underwater. In conclusion prior to British settlement, the Fraser Park area had previously been underwater, and a low-lying swamp</p>
1984	St Peters Brick Pit, Sydney NSW Investigation of Shell Material	Attenbrow	<p>This report details a reassessment of AHIMS ID 45-6-1496, a shell midden identified within the St Peters Brick Pit. The reassessment was carried out by geologists, archaeologists and a malacologist. The site is located approximately 1.1 kilometres south-east of Sydenham Station.</p> <p>This reassessment considered the material to represent a former shoreline associated with Botany Bay rather than cultural consumption and discard. This hypothesis supported by the discovery of dugong bones during the excavations of the Alexandra Canal in the late 19th century. Another hypothesis proposed that the shell material had been introduced in association with brick production.</p> <p>It was recommended that the site card be updated and that AHIMS ID 45-6-1496 not be considered to be an Aboriginal site.</p>

4.4.3 Archaeological implications

The presence of intact Aboriginal archaeological deposits within the project area is largely dependent on the nature and extent of disturbance associated with historical construction activities. Subsurface disturbance such as the removal of top soil and other bulk earthworks would substantially lower the potential for intact archaeological deposits in those areas. This is especially relevant in areas of relatively shallow residual soils, which includes the majority of the project area.

In some instances, the various phases of construction may act to preserve intact soil profiles. For example, the introduced fill and rail ballast used in the construction of the railway at Wickham in Newcastle served to protect the underlying intact sand profile¹⁹. Excavations within the Sydney CBD have also identified sites in which the overlying construction phases have protected intact archaeological deposits²⁰. It is also likely that whilst intact soil profiles may occur, they may not contain evidence of Aboriginal occupation as was the case at AHIMS ID 45-6-1496, identified within the St Peters Brick Pit.

In summary, whilst the project area is likely to have been a site of Aboriginal occupation in the past, the likelihood of evidence of this occupation surviving to the present is influenced by a range of factors. These factors include the durability of the material evidence and subsequent impacts such as bulk earth works. The large-scale removal and modification of underlying Wianamatta Group geology and associated shallow residual soils during construction of the existing rail line, is likely to have significantly impacted or removed many former natural landform contexts and associated archaeological potential in the project area.

4.4.4 Predictive model

Archaeological data from the region has demonstrated the widespread and varying use of the area by Aboriginal people. The project area is located across a range of contexts, including areas within close proximity to marine and estuarine resources, fresh water and varying terrestrial subsistence resources.

Previous archaeological investigations of the greater Sydney area in general demonstrate the distribution of recorded Aboriginal sites as reflecting the use of the landscape by Aboriginal people, including movement between resources and activity areas. The distribution of recorded Aboriginal sites in built environments, such as the majority of the project area, is largely limited to areas that have been subject to archaeological excavation and/ or not impacted by development.

The distribution of overlapping and higher concentrations of stone artefacts in the Sydney area tended to be associated with high order watercourses and creek confluences, whilst lower density and more isolated activity areas in other parts of the landscape represented different and varying activities important to the understanding of overall landscape use.²¹

The predictive statements for the project area are as follows:

- The survivability of Aboriginal objects would be largely dependent on the extent and nature of subsequent phases of historical construction activities
- Subsurface artefact sites tend to consist of lower density isolated occurrences in areas away from major watercourses, including freshwater, marine and estuarine areas

¹⁹ Artefact Heritage 2016

²⁰ Baker 2004

²¹ White and McDonald 2010

- More frequent and higher concentrations of subsurface artefact sites are likely to occur in the vicinity of major watercourses
- Sandstone shelters suitable for archaeological deposit and outcrops suitable for engravings may be preserved in ridge crest and ridge slope landform contexts that correspond to the underlying Hawkesbury Sandstone geology
- Shell midden sites are more likely to be identified in close proximity to marine and estuarine areas. Note that due to land reclamation in the Botany Bay area former marine and estuarine areas may be set-back from contemporary shoreline areas.

Surviving portions of deeper soil profiles within the project area, including the Birrong soil landscape may provide stratified evidence of occupation.

4.5 Aboriginal archaeological survey

4.5.1 Timing and personnel

Archaeological survey for Technical Paper 4 was conducted in June 2017 by Jay Daley, Culture and Heritage Officer at Metropolitan LALC, Brady Maybury and Carrell Fabar, Cultural and Heritage Officer at Gandangara LALC, and Josh Symons and Claire Rayner (Artefact).

Site inspection in March 2017 was conducted by Brad Maybury from Gandangara LALC, Nathan Moran from Metropolitan LALC, and Duncan Jones (Artefact).

4.5.2 Survey strategy and methodology

The study area (project area) as defined in Section 1 has been divided into the following survey units:

- ten station (and associated construction compound) survey units
- four survey units for the remainder of the rail corridor.

A summary of the site inspection results is provided in Table 6: . A comprehensive description of site inspection, archaeological potential, archaeological significance and potential impacts as well as detailed mapping is provided in Technical Paper 4.

All survey units were covered on foot where it was safe to do so. Areas of surface visibility within the station areas were virtually non-existent, with the majority of each station area covered by buildings, roads and concrete footpaths. Discussions and observations during the survey focussed on archaeological potential and verifying background information on landform context.

Aerial photographs and topographic maps were carried by the survey team. A photographic record was kept of all sections of the study area. Photographs were taken to document the environment within the study area and are provided in Technical Paper 4.

4.6 Results

4.6.1 Station precincts and rail corridor

Only two areas of PAD were identified, one in the Belmore Station survey unit and one in the Punchbowl Station survey unit. These two areas of PAD are shown on Figure 6: and discussed in more detail in sections 4.6.2 and 4.6.3.

No Aboriginal sites were identified within the remainder of the station precinct or rail corridor survey units (Table 6:). This was predominantly due to the very high level of disturbance having removed the potential for Aboriginal archaeological objects and deposit particularly within the rail corridor where significant cutting below the original ground surface had occurred.

4.6.2 Belmore Station survey unit

Sydenham to Bankstown PAD01 (S2B PAD01)

A relatively intact area was identified during the site inspection located within a small Council park (Guide Park) located outside the rail corridor on Redman Parade within lot 11/DP802657 (Figure 7). The area is covered by dense grass and several trees. Visibility was low and exposures limited to the base of trees. The analysis of aerial photography indicates that the area has remained an open space since at least 1943 and no major ground disturbance has occurred. This area has been assessed as having Aboriginal archaeological potential and designated Sydenham to Bankstown PAD01 (S2B PAD01).

4.6.3 Punchbowl Station survey unit

Sydenham to Bankstown PAD02 (S2B PAD02)

An area of archaeological potential was identified during the site inspection within the small park located between Punchbowl Road and Urunga Parade (Figure 8). Analysis of aerial photography from 1943 and over the past 10 years indicates that there appears to have been little subsurface disturbance to S2B PAD02. Intact A horizons were observed in a cutting to the north of the Punchbowl Station survey unit. Therefore, there is low to moderate potential that intact archaeological deposits may be identified within this area. This area has been assessed as having Aboriginal archaeological potential and designated Sydenham to Bankstown PAD02 (S2B PAD02).

Table 6: Summary details of archaeological survey by unit

Survey unit	Site inspection results	Assessment of archaeological potential	Significance	Aboriginal sites
Marrickville Station	Low visibility generally inside and outside rail corridor due to sealed roads, pathways, structures and grass, rail station infrastructure and ballast. Extensive previous ground disturbance.	Nil to low	Low	None
Dulwich Hill Station	Rail corridor located within a cut. Visibility nil due to sealed roads, pathways and car parks, structures and vegetation. Located within a highly disturbed and modified landform. Any archaeological deposits would have been disturbed during the construction of the rail corridor which involved construction of a large cutting through underlying Hawkesbury Sandstone.	Nil to low	Low	None
Hurlstone Park Station	Rail corridor located within a cut through the Hawkesbury Sandstone. Outside rail corridor visibility was generally limited by sealed roads, pathways, carparks and structures. Inside rail corridor visibility impeded by structures, sealed surfaces, rail ballast and vegetation. Located within a highly disturbed and modified landform.	Nil to low	Low	None
Canterbury Station	Visibility generally low due to sealed roads, pathways, carparks and structures outside the rail corridor. Limited inside rail corridor due to existing structures, sealed surfaces, rail ballast and dense grass. Eastern portion cut into the existing crest landform. Western portion filled and raised above the surrounding landform.	Nil to low	Low	None
Campsie Station	Visibility low throughout due to the built up nature of the area. Visibility impeded by sealed surfaces, structures and vegetation. Some surface visibility within rail corridor. Introduced gravels evident across the ground surface. Located within a cut below street level.	Nil to low	Low	None

Survey unit	Site inspection results	Assessment of archaeological potential	Significance	Aboriginal sites
Belmore Station	Located within a heavily urbanised and developed area. The existing station and rail is located within a cut below street level. This indicates that any archaeological deposits within this area would have been highly disturbed during construction. Therefore, the archaeological potential within the rail corridor and areas that have been highly disturbed is considered to be nil to low.	Nil to low (existing station and rail corridor)	Low	Sydenham to Bankstown PAD01 (S2B PAD01)
	A relatively intact area identified within a small Council park (Guide Park) located outside the rail corridor on Redman Parade within lot 11/DP802657. The area is covered by dense grass and several trees therefore, visibility low and exposures limited. Analysis of aerial photography indicates the area has remained an open space since at least 1943 and no major ground disturbance has occurred.	Low to moderate (Lot 11/DP802657 outside rail corridor)	Low to moderate (S2B PAD01)	
Lakemba Station	Visibility low and exposures rare. Visibility was impeded by sealed surfaces, structures and vegetation. Existing station platforms and rail corridor located within a cut.	Nil to low	Low	None
Wiley Park Station	Located within a heavily urbanised and developed area. Rail corridor has been artificially cut into the natural landform in the eastern portion and built up on an artificial embankment to the west.	Nil to low	Low	None

Survey unit	Site inspection results	Assessment of archaeological potential	Significance	Aboriginal sites
Punchbowl Station	Visibility low impeded by sealed surfaces, structures and rail infrastructure as well as introduced fill and grass cover. Located within an urban area. Rail corridor artificially cut into the natural landform and at street level to the east and west of the existing station platforms.	Nil to low (existing station and rail corridor)	Low	Sydenham to Bankstown PAD02 (S2B PAD02)
	An area of archaeological potential identified within the small park located between Punchbowl Road and Urunga Parade. Analysis of aerial photography from 1943 indicates that there appears to have been little subsurface disturbance to the area. Intact A horizons were observed in a cutting to the north of the Punchbowl Station survey unit.	Low to moderate (S2B PAD02 outside rail corridor)	Low to moderate	
Bankstown Station	<p>Visibility generally nil due to sealed surfaces and structures. Some green spaces are located outside of the rail corridor and exposures occurred near the roots of trees in these areas. These exposures were inspected.</p> <p>Located within a highly modified and disturbed area. Station and rail are located within a cut indicating that any archaeological deposits would have been highly disturbed during the construction of the rail corridor.</p>	Nil to low	Low	None

Survey unit	Site inspection results	Assessment of archaeological potential	Significance	Aboriginal sites
Remaining rail corridor - general	<p>The rail corridor consists of an undulating landform including slope, crest and flat landform contexts. Large portions of the rail corridor are located through significantly modified landform contexts, including large cuts through the underlying shale and sandstone geology.</p> <p>Visibility was generally low throughout the corridor, impeded by vegetation, structures, fill, rail track and ballast. Soil exposures occurred within areas of erosion in vehicle access tracks and cuts. Impacts within the rail corridor are extensive, and include landform modification, subsurface infrastructure such as gas pipelines and galvanised steel troughs, electricity and telecommunications cables as well as rail infrastructure such as overhead wiring structures.</p>	Nil to low	Low	None
Remaining rail corridor – McNeilly Park Marrickville	<p>Located on level ground south of the rail corridor currently open space in the public park. Ground has been levelled flat and topsoil redeposited with introduced grasses and planted gardens.</p> <p>Historical aerial photos from 1943 show the area to be open ground to the south of the rail corridor. These aerials show evidence of ground disturbance, including the construction of wartime air raid shelters directly to the south of the western portion. Depressions in the ground have been infilled and topography cut down to make a level surface. The exposed soil profile shows introduced top dressing for the garden use.</p>	Nil to low	Low	None

Survey unit	Site inspection results	Assessment of archaeological potential	Significance	Aboriginal sites
Remaining rail corridor – Canterbury Bowling Club, Canterbury	The majority of this section of the survey unit consists of artificially cut or artificially filled ground. The steep hillslope on the northern bank of the Cooks River has been terraced to create level surfaces, with multiple retaining walls to stabilise the slope. Numerous services and stormwater drainage channels cut through the study area, with major sewerage lines along the alignment of Close Street.	Nil to low	Low	None
Remaining rail corridor – Brancourt Avenue Park, Bankstown	The ground in this section has been heavily eroded and redressed with imported soils. Clay exposures reveal the original shallow depth of the original topsoil in the area. As such, the original topsoil has been almost entirely removed.	Nil to low	Low	None

Figure 6: Location of S2B PAD01 and S2B PAD02 along the project area



Removed for Public Exhibition

Figure 7: Belmore Station survey unit and S2B PAD01



Figure 8: Punchbowl Station survey unit and S2B PAD02



Removed for Public Exhibition

5.0 Significance Assessment

5.1 Aboriginal material culture

There are no registered AHIMS sites located within the project sites. The Environmental Impact Statement assessment did not identify any previously unrecorded Aboriginal sites within the study area. Two areas of archaeological potential, S2B PAD01 and S2B PAD02 were identified at the Belmore Station survey unit and Punchbowl Station survey unit respectively.

5.2 Significance assessment criteria

An assessment of the cultural heritage significance of an item or place is required in order to form the basis of its management. OEH provides guidelines²², in accordance with the Burra Charter²³ for significance assessment with assessments being required to consider the following criteria:

- Social values – does the area have a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons
- Historic values – is the area important to the cultural or natural history of the local area and/or region and/or state
- Scientific values - does the area have the potential to yield information that will contribute to an understanding of the cultural and natural history of the local area and/or region and/or state
- Aesthetic values – is the area important in demonstrating aesthetic characteristics in the local and/or region and/or state.

Scientific values should be considered in light of the following criteria:

- Research potential - does the evidence suggest any potential to contribute to an understanding of the area and/or region and/or state's natural and cultural history?
- Representativeness - how much variability (outside and/or inside the subject area) exists, what is already conserved, how much connectivity is there?
- Rarity - is the subject area important in demonstrating a distinctive way of life, custom, process, land-use, function or design no longer practised? Is it in danger of being lost or of exceptional interest?
- Education potential - does the subject area contain teaching sites or sites that might have teaching potential?

It is important to note that heritage significance is a dynamic value.

²² OEH 2011

²³ Australia ICOMOS 2013

Table 7: Heritage significance criteria

Criterion	Description
Social	The spiritual, traditional, historical or contemporary associations and attachments the place or area has for Aboriginal people. Social or cultural value is how people express their connection with a place and the meaning that place has for them. Does the subject area have strong or special association with the Aboriginal community for social, cultural or spiritual reasons?
Historic	Historic value refers to the associations of a place with a historically important person, event, phase or activity in an Aboriginal community. Is the subject area important to the cultural or natural history of the local area and/or region and/or state?
Scientific	This refers to the importance of a landscape, area, place or object because of its rarity, representativeness and the extent to which it may contribute to further understanding and information. Information about scientific values will be gathered through any archaeological investigation undertaken. Does the subject area have potential to yield information that will contribute to an understanding of the cultural or natural history of the local area and/or region and/or state?
Aesthetic	This refers to the sensory, scenic, architectural and creative aspects of the place. It is often linked with the social values. It may consider form, scale, colour, texture and material of the fabric or landscape, and the smell and sounds associated with the place and its use. Is the subject area important in demonstrating aesthetic characteristics in the local area and/or region and/or state?

5.3 Social significance

5.3.1 Cultural landscape

The World Heritage Convention of United Nations Educational, Scientific and Cultural Organisation (UNESCO) defines a cultural landscape as one which has 'powerful religious, artistic or cultural associations of the natural element rather than material cultural evidence, which may be insignificant or even absent' (UNESCO 1991). The relationship between Aboriginal Australians and the land is conceived in spiritual terms rather than primarily in material terms (Andrews et al 2006). Aboriginal cultural knowledge has been defined as:

Accumulated knowledge which encompasses spiritual relationships, relationships with the natural environment and the sustainable use of natural resources, and relationships between people, which are reflected in language, narratives, social organisation, values, beliefs and cultural laws and custom (Andrews et al 2006).

Aboriginal cultural knowledge was traditionally bequeathed through oral traditions from generation to generation. Within all Aboriginal communities there was a time of dislocation and upheaval associated with the arrival of colonial settlers. This widespread disruption resulted in much of the detailed knowledge and understanding of many of the elements of the cultural landscape being lost from the Aboriginal community, nonetheless many Aboriginal people maintain a strong connection to the land of their ancestors and collectively possess a wealth of knowledge passed down through the generations.

5.3.2 Aboriginal cultural heritage values

Consultation has shown that the study area is part of a wider cultural landscape of high cultural significance to many of the registered Aboriginal parties.

5.4 Historic significance

The study area is located within an area rich with resources. The wetlands associated with the Cooks River and Gumbramorra Swamp would have been reliable fresh water and food sources. The Hawkesbury Sandstone around the Cooks River would have provided Aboriginal people with shelter and the surrounding environment would have provided ample materials for tools and other material culture.

Observations of Aboriginal people living on the Cooks River made early after the British arrival in Australia indicate the importance of these riverine and estuarine environments for Aboriginal people. Watkin Tench noted a camp consisting of twelve huts near the Cooks River in 1788²⁴, whilst another account by James Backhouse details the construction of canoes using heat from fires in the 1830s²⁵. Other historical accounts observed Aboriginal people in canoes, whilst the presence of shell middens indicates the procurement of fish and shell fish for food²⁶. Butchered dugong bones were identified during the excavation of Alexandria Canal in the late 19th century.²⁷ Alexandria Canal is located approximately 2.4 kilometres east of the project area.

5.5 Indicative archaeological (scientific) significance

5.5.1 Station and rail corridor survey units

With the exception of S2B PAD01 and S2B PAD02, the survey assessed the 10 station precincts (survey units) and the rail corridor as being of low archaeological significance primarily due to the very high level of disturbance particularly within the rail corridor and subsequently the nil to low archaeological potential. Any Aboriginal objects within the station and rail corridor survey units would likely be in very low densities and within highly disturbed contexts. Therefore, it is unlikely that these objects would be considered rare or that they would contribute to regional research questions.

5.5.2 S2B PAD01 and S2B PAD02

A draft summary of archaeological significance for each of the PADs recorded during the survey is provided below. Test excavation would be able to confirm the archaeological significance of these PADs.

The indicative archaeological significance of S2B PAD01 is considered to be low to moderate. The PAD has potential to contribute to research questions for this portion of the Cumberland Plain given the paucity of recorded sites in the local area.

The indicative archaeological significance of S2B PAD02 is considered to be moderate. Current design information indicates that the PAD would not be impacted. Should the project area be altered and the PAD potentially impacted, archaeological test excavation would be required to accurately determine the nature and significance of the impact.

²⁴ Muir 2013 <http://dictionaryofsydney.org/entry/aboriginal_people_of_the_cooks_river_valley> accessed 19 May 2016

²⁵ Backhouse 1834

²⁶ *ibid*

²⁷ Etheridge, Edgeworth David & Grimshaw 1896: 158–185

Table 8: Summary of impacts to S2B PAD01 and S2B PAD02

Work Site	Research Potential	Scientific Value	Representative Value	Rarity Value	Overall indicative significance assessment
S2B PAD01	Low-moderate	Low-moderate	Low-moderate	Low-moderate	Low-moderate
S2B PAD02	Moderate	Moderate	Moderate	Moderate	Moderate

5.6 Statement of significance

The study area is assessed as being of low archaeological significance due to the high levels of disturbance and subsequent low archaeological potential.

S2B PAD01 or S2B PAD 02 are indicatively considered to be of low to moderate and moderate archaeological significance.

6.0 AVOIDING AND MINIMISING HARM

6.1 Summary of impacts

A summary description of each survey unit, including identified impacts to Aboriginal heritage from proposed construction or operation of the project, is outlined below. Maps of each survey unit are provided in Technical Paper 4.

6.1.1 Marrickville Station survey unit

The Marrickville Station survey unit includes the Marrickville Station concourse, platforms and rail corridor and surrounds. The survey unit extends to the south incorporating Leofrene Avenue, Station Street and portions of Riverdale, Schwebel Street, Warburton Road and Illawarra Road. The survey unit also includes two construction compounds.

Identified impacts to Aboriginal heritage

No identified Aboriginal sites would be impacted by construction or operation of the project within the Marrickville Station survey unit.

Due to the landscape context and largely modified nature of the Marrickville Station survey unit the archaeological potential has been assessed as nil to low. Therefore, it is unlikely that the project would impact Aboriginal objects.

6.1.2 Dulwich Hill Station survey unit

The Dulwich Hill Station survey unit consists of the current Dulwich Hill Station concourse, platforms, the Dulwich Hill Light Rail Station platform and surrounds. It includes the Wardell Road overbridge and extends west along Ewart Lane. The survey unit also spans Bedford Crescent, and portions of Dudley Street and Wardell Lane and a construction compound.

Identified impacts to Aboriginal heritage

No identified Aboriginal sites would be impacted by construction or operation of the project within the Dulwich Hill Station survey unit.

Due to the landscape context and largely modified nature of the Dulwich Hill Station survey unit the archaeological potential has been assessed as nil to low. Therefore, it is unlikely that the project would impact Aboriginal objects.

6.1.3 Hurlstone Park Station survey unit

The Hurlstone Park Station survey unit extends approximately 130 metres to the east of the Crinan Street overbridge and approximately 370 metres to the west. The survey unit encompasses portions of Duntroon Street, Crinan Street, Mill Lane, Floss Street and surrounds. The survey unit also includes a proposed construction compound.

Identified impacts to Aboriginal heritage

No identified Aboriginal sites would be impacted by construction or operation of the project within the Hurlstone Park Station survey unit.

Due to the landscape context and largely modified nature of the Hurlstone Park Station survey unit the archaeological potential has been assessed as nil to low. Therefore, it is unlikely that the proposed works would impact Aboriginal objects.

6.1.4 Canterbury Station survey unit

The Canterbury Station survey unit includes the Canterbury Station concourse, platforms and rail corridor and surrounds. It extends approximately 115 metres east of the Canterbury Road overbridge and approximately 50 metres west from the station platforms. The survey unit encompasses portions of the surrounding streets, including Broughton Street, Charles Street and Canterbury Road and the major intersection to the north of the station concourse. The survey unit includes the buildings at the corner of Charles Street and Canterbury Road. The survey unit includes two proposed construction compounds.

Identified impacts to Aboriginal heritage

No identified Aboriginal sites would be impacted by construction or operation of the project within the Canterbury Station survey unit.

Due to the largely modified nature of the Canterbury Station survey unit, the archaeological potential has been assessed as nil to low. Therefore, it is unlikely that the project would impact Aboriginal objects.

6.1.5 Campsie Station survey unit

The Campsie Station survey unit consists of the Campsie Station concourse, platforms, rail corridor and surrounds. It extends east of the station structures to Duke Street and west to Dewar Street. The survey unit incorporates the surrounding streets to the north and south of the station, including North Parade, Beamish Street, South Parade and Lilian Street. The survey unit includes residential and commercial areas. The survey unit encompasses two construction compounds.

Identified impacts to Aboriginal heritage

No identified Aboriginal sites would be impacted by construction or operation of the project within the Campsie Station survey unit.

Due to the landscape context and largely modified nature of the Campsie Station survey unit the archaeological potential has been assessed as nil to low. Therefore, it is unlikely that the project would impact Aboriginal objects.

6.1.6 Belmore Station survey unit

The Belmore Station survey unit encompasses the Belmore Station concourse, platforms, rail corridor and surrounds. It extends east of the existing station to Myall Street and west to the Canterbury League Club. The survey unit includes the car park, structures and Redman Parade on the north side of the existing station and extends part way along Burwood Road, Acacia Street, Tobruk Avenue and Bridge Road.

The survey unit also includes two proposed construction compound areas. Part of the construction compound to the south of Belmore station is likely to have been used as a compound/stockpile area previously, as evidenced by introduced gravels across the ground surface. The proposed compound to the north of Belmore Station is located across an existing hardstand carpark and steep railway embankment contexts.

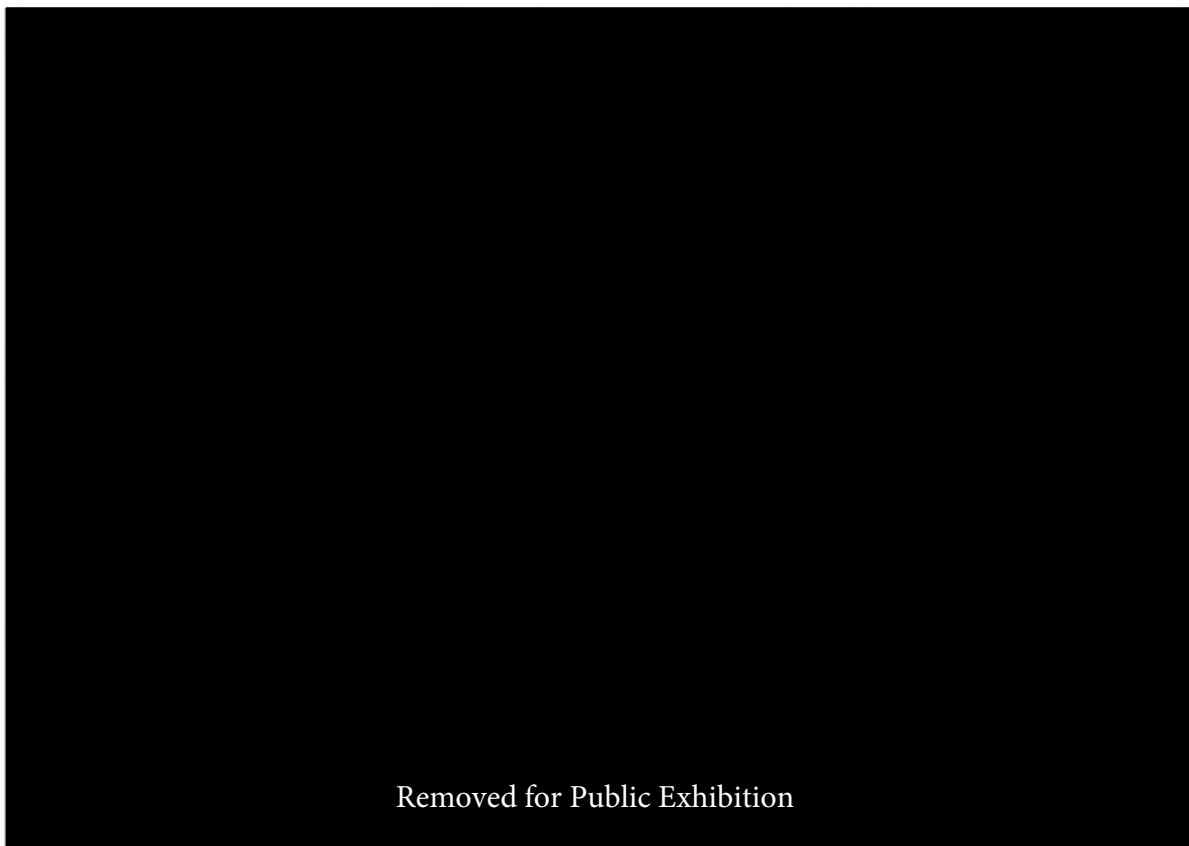
Identified impacts to Aboriginal heritage

No identified Aboriginal sites would be impacted by construction or operation of the project within the Belmore Station survey unit.

S2B PAD01 would not be impacted by the project as it is located outside of the project area boundary.

Due to the landscape context and largely modified nature of the remainder of the Belmore Station survey unit the archaeological potential has been assessed as nil to low. Therefore, it is unlikely that the project would impact Aboriginal objects in these areas.

Figure 9: Belmore Station survey unit and S2B PAD01



6.1.7 Lakemba Station survey unit

The Lakemba Station survey unit includes the Lakemba Station concourse, platforms, rail corridor commuter car parks and surrounds. The survey unit extends east of the existing station to Quigg Street North and Quigg Street South and extends approximately 45 metres west of the station platforms. The survey unit encompasses Railway Parade to the north and The Boulevarde to the south, including portions of Haldon Street North and Haldon Street South. The survey unit also includes three construction compounds.

Identified impacts to Aboriginal heritage

No identified Aboriginal sites would be impacted by construction or operation of the project within the Lakemba Station survey unit.

Due to the landscape context and largely modified nature of the Lakemba Station survey unit the archaeological potential has been assessed as nil to low. Therefore, it is unlikely that the project would impact Aboriginal objects.

6.1.8 Wiley Park Station survey unit

The Wiley Park Station survey unit consists of the Wiley Park Station concourse, platforms and rail corridor and surrounds. It extends approximately 100 metres east of the King George Road overbridge and west to Cornelia Street. The survey unit encompasses Stanlea Parade and a section of King Georges Road to the north and The Boulevarde to the south. The survey unit also includes two proposed construction compounds.

Identified impacts to Aboriginal heritage

No identified Aboriginal sites would be impacted by construction or operation of the project within the Wiley Park Station survey unit.

Due to the landscape context and largely modified nature of the Wiley Park Station survey unit the archaeological potential has been assessed as nil to low. Therefore, it is unlikely that the project would impact Aboriginal objects.

6.1.9 Punchbowl Station survey unit

The Punchbowl Station survey unit includes the Punchbowl Station concourse, platforms, rail corridor and surrounds. The survey unit extends approximately 185 metres east of the eastern end of the platforms and the western boundary is defined by the Punchbowl Road overbridge. The survey unit extends north along Punchbowl Road and east along Urunga Parade including the small park in between these roads. The survey unit encompasses The Boulevarde along the southern boundary. The survey unit includes two proposed compound locations north and south of Punchbowl Station.

Identified impacts to Aboriginal heritage

No identified Aboriginal sites would be impacted by construction or operation of the project within the Punchbowl Station survey unit.

A portion of S2B PAD02 would be impacted by the proposed new access way from Punchbowl Road to Punchbowl Station, as well as a small portion impacted by proposed landscaping works. The proposed layout of Punchbowl Station and associated landscaping and access track works in relation to S2B PAD02 is shown in Figures 10 and 11.

Due to the landscape context and largely modified nature of the remainder of the existing Punchbowl Station survey unit, the archaeological potential has been assessed as nil to low. Therefore, it is unlikely that the project would impact Aboriginal objects.

Figure 10: Punchbowl Station survey unit and S2B PAD02

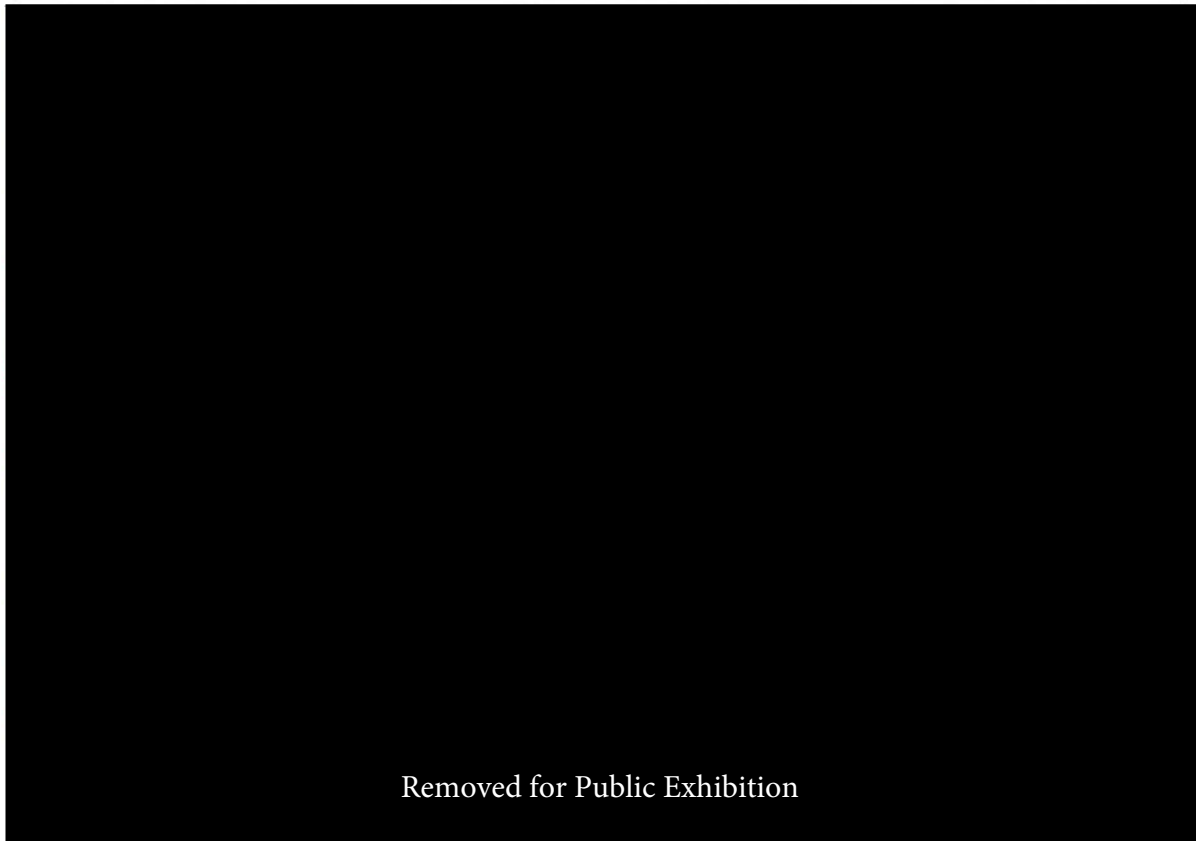
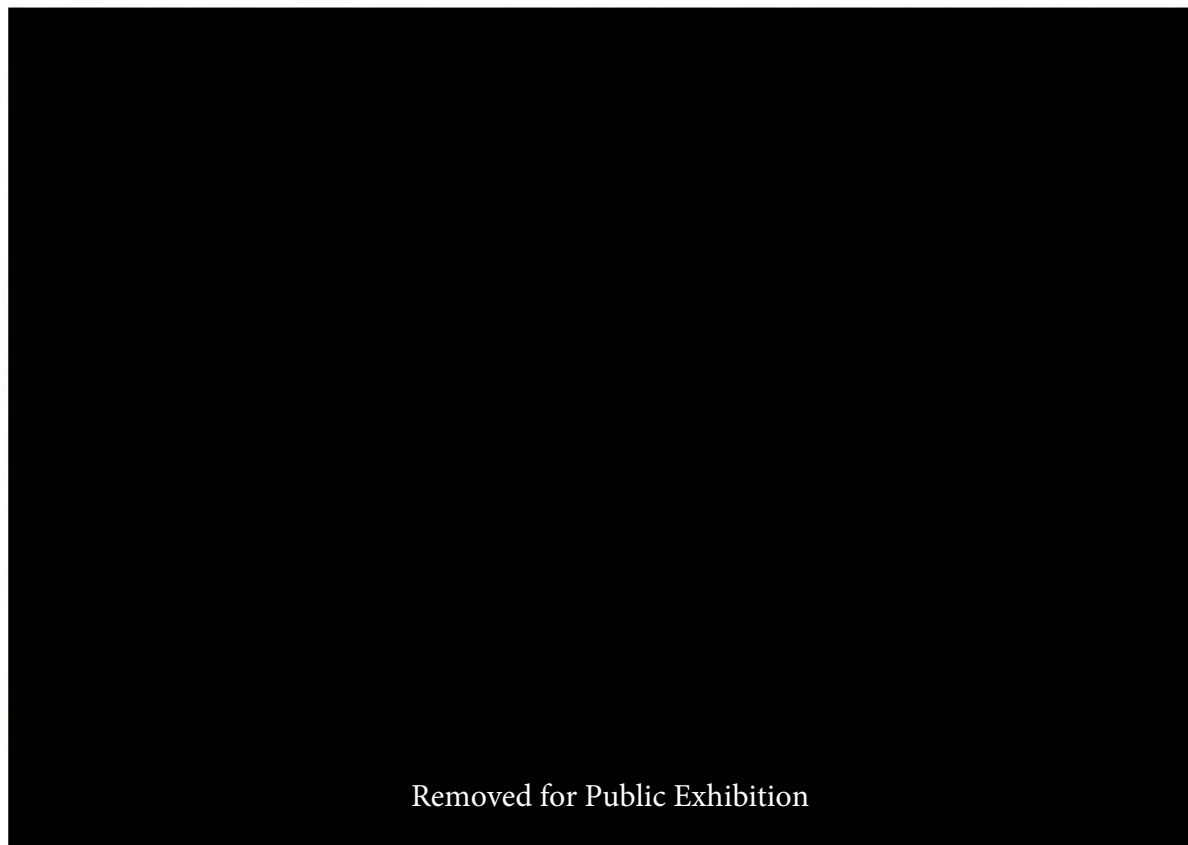


Figure 11: Indicative layout of Punchbowl Station with reference to S2B PAD02



6.1.10 Bankstown Station survey unit

The Bankstown Station survey unit includes the existing Bankstown station concourse, platforms, rail corridor and surrounds. The survey unit encompasses the Bankstown City Plaza and extends east to the West Terrace overbridge including North and South Terrace. The survey unit also includes two proposed constructions compound north and south of the station. The construction compound south of the station includes a landscaped area and bus interchange. The construction compound to the north of the station includes the commuter car park and small park between the rail corridor and North Terrace.

Identified impacts to Aboriginal heritage

No identified Aboriginal sites would be impacted by construction or operation of the project within the Bankstown Station survey unit.

Due to the landscape context and largely modified nature of majority of the Bankstown Station survey unit, the archaeological potential has been assessed as nil to low. Therefore, it is unlikely that the project would impact Aboriginal objects in areas of nil to low potential.

6.1.11 Remaining areas of the rail corridor

The rail corridor consists of an undulating landform including slope, crest and flat landform contexts. Large portions of the rail corridor are located through significantly modified landform contexts, including large cuts through the underlying shale and sandstone geology.

Identified impacts to Aboriginal heritage

No identified Aboriginal sites would be impacted by construction or operation of the project within this section of the survey unit.

6.2 Summary of impacts

The works would not impact any registered Aboriginal sites.

Two areas of archaeological potential have been identified within the project area, S2B PAD01 at Belmore Station, and S2B PAD02 at Punchbowl Station. The proposed works will not impact S2B PAD01. Construction of the proposed new Punchbowl Station concourse and associated landscaping will partially impact the identified extent of S2B PAD02.

Due largely to disturbance from construction of the existing rail line, the remainder of the project area has been identified as demonstrating nil to low archaeological potential, with no identified impacts to Aboriginal objects or areas of archaeological potential from the proposed works.

Table 9: Indicative impact assessment for S2B PAD01 and S2B PAD02

Work Site	Archaeological Potential	Type of Harm	Degree of Harm	Consequence of Harm
S2B PAD01	Low-moderate	None	None	No loss of value
S2B PAD02	Moderate	Direct	Partial	Partial loss of value

6.3 Consideration of alternatives and justification of impacts

Chapter 6 of the Environmental Impact Statement provides a detailed analysis of the need and options assessment for the project.

The Sydney Metro City & Southwest Sydenham to Bankstown project has been deemed necessary by Transport for NSW in light of the above factors to provide a long term solution to increasing demand on public transport services. The project is mainly located within an existing rail corridor that has generally been substantially modified.

The project would not impact any existing AHIMS registered sites. This ACHAR has been compiled in part to propose mitigation measures to manage the impacts to areas of archaeological potential where these impacts are considered to be unavoidable. Aboriginal objects encountered throughout the project will be impacted, either through archaeological excavation or works and the impact is likely to be very low.

6.4 Ecologically Sustainable Development principles

In accordance with the OEH 'Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW'²⁸, Ecologically Sustainable Development (ESD) principles have been considered in the preparation of this ACHAR, including options to avoid impacts to Aboriginal cultural heritage, assessment of unavoidable impacts, identification of mitigation and management measures, and taking into account Aboriginal community views.

The principles of ESD are detailed in the NSW *Protection of the Environment Administration Act 1991*. Chapter 29 of the EIS discusses the ESD principles in regards to the project as a whole. The ESD principles relevant to the assessment of the project as it relates to Aboriginal cultural heritage are considered below.

6.4.1 The integration principle

Decision-making processes should effectively integrate both long term and short term economic, environmental, social and equitable considerations (the 'integration principle'). The project would comply with the integration principle in regards to Aboriginal heritage. The Aboriginal heritage values of the study area have been considered as part of the planning process for the project. Through the consideration of various design options²⁹ Transport for NSW have considered the findings of the Aboriginal Heritage assessment³⁰.

6.4.2 The precautionary principle

If there are threats of serious or irreversible environmental damage, lack of full scientific confidence should not be used as a reason for postponing measures to prevent environmental degradation (the 'precautionary principle').

The construction phase of the project will impact a portion of the identified extent of S2B PAD02, which has been indicatively assessed as demonstrating moderate archaeological significance. Where these impacts are unavoidable this ACHAR proposes mitigation measures such as archaeological excavations to ensure that full scientific confidence is achieved prior to irreversible impacts occurring.

²⁸ OEH 2011

²⁹ EIS Chapter Chapter 4

³⁰ Artefact Heritage 2016

6.4.3 The principle of intergenerational equity

The present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations (the 'principle of intergenerational equity').

The construction phase of the project will impact a portion of the identified extent of S2B PAD02, which has been indicatively assessed as demonstrating moderate archaeological significance. Where these impacts are unavoidable this ACHAR proposes mitigation measures to ensure that full scientific confidence is achieved prior to irreversible impacts occurring.

6.4.4 Conservation of biodiversity

Cultural values of biodiversity are intertwined with the lives of Aboriginal people and their use of the landscape. Biological impacts of the project are considered as part of the Environmental Impact Statement.

6.4.5 Improved valuation, pricing and incentive mechanisms

Transport for NSW are committed to delivering transport services, projects, operations and programs in a manner that balances economic, environmental and social issues to ensure a sustainable transport system for NSW. In order to achieve this, the *Transport Environment and Sustainability Policy Framework* (the Framework) is applied at all levels of planning policy development and project delivery.

The Framework is a collective and coordinated approach to deliver the NSW Government's environmental and sustainability agenda across the Transport cluster (Transport for NSW, RailCorp, Roads and Maritime). The Framework is outcomes based and seeks to improve Transport's environmental sustainability performance.

In regards to heritage Transport for NSW aims to promote a transport system that conserves and celebrates the rich Aboriginal heritage for which they are the custodian by focussing on³¹:

- minimising transport operation and construction impacts on heritage
- ensuring heritage is used positively to enrich the customer experience.

³¹ TfNSW 2013 Transport Environment and Sustainability Policy Framework Attachment 3:25

7.0 EXCAVATION METHODOLOGY

This excavation methodology for S2B PAD02 is prepared to meet requirements AH2 and AH3 of the Environmental Impact Statement as detailed in Table 8 below:

Table 10: Mitigation measures AH2 and AH3

Reference	Mitigation measure	Portion of the study area
AH2	<p>An Aboriginal cultural heritage assessment report (this document) would be prepared in accordance with the OEH <i>Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW</i>. The Aboriginal cultural heritage assessment report would include:</p> <ul style="list-style-type: none"> • Details of Aboriginal stakeholder consultation conducted in accordance with AH1 • An assessment of cultural significance for the project area and identification of any specific areas of cultural significance based on consultation with Aboriginal stakeholders <p>A methodology for archaeological management, including test excavation and salvage (refer to AH3).</p>	All
AH3	<p>Archaeological test excavation (and salvage if required) would be carried out S2B PAD02 (Punchbowl). Excavations would be conducted in accordance with the methodology outlined in the Aboriginal cultural heritage assessment report (Section 7.0).</p>	Punchbowl Station

Archaeological excavation at S2B PAD02 would be conducted in two stages, Stage one test excavation and if required Stage two salvage excavation. Stage two salvage excavation would occur where a series of triggers are met during Stage one excavation, as outlined in Section 7.5.2.

7.1 Excavation justification

The proposed works will partially impact the identified extent of S2B PAD02. The background context in the Environmental Impact Statement and summarised in Section 4 demonstrates that the extent of previous archaeological investigations in the vicinity of the project area is limited. Archaeological investigation provides a unique opportunity to investigate the intactness and significance of S2B PAD02.

7.1.1 Research questions

Key research questions for the proposed excavation at S2B PAD02 include:

- **Intactness** – investigate the intactness of an identified area of archaeological potential in an urban context.
- **Nature and extent** – establish the nature and extent of S2B PAD02. Is the PAD aligned with landform or disturbance footprint?

- **Significance** – assess the archaeological and cultural significance of S2B PAD02 in consultation with RAPs.
- **Comparative** – compare the results and significance of identified Aboriginal sites with previous archaeological investigations in the region.

7.2 Archaeological Method Statements

An Archaeological Method Statement (AMS) will be prepared by the nominated Aboriginal archaeological Excavation Director for excavation at S2B PAD02. The AMS would adhere to the excavation methodology outlined below and provide detailed information on site-specific and/ or activity specific archaeological management requirements.

The Aboriginal archaeological excavation director (ED) would oversee preparation of the AMS. It is anticipated that site inspections would be conducted, where required, during preparation of the AMS. The Aboriginal archaeological ED must meet the qualification requirements as outlined in Section 1.6 of the OEH code of practice.

7.3 Participation in archaeological investigations

RAP representatives would participate in all Aboriginal archaeological excavations. The AMS prepared for S2B PAD02 would be provided to RAPs prior to archaeological work commencing. RAP sign off on the AMS would not be required as the AMS would be prepared in adherence to the approved ACHAR.

7.4 Geomorphology

It is anticipated that a geomorphology specialist would be involved in the investigative process, where required as per the AMS.

7.5 Excavation methodology

7.5.1 Stage one

The methodology of Stage one test excavation would be influenced by:

- The extent of the potential archaeological resource available to test at S2B PAD02. The extent of Stage one excavation would depend upon worksite constructability, potential depth of the archaeological resource, and the area extent of any remaining potential archaeological resource.
- Proposed impacts. Excavation should not extend outside the proposed impact area unless required for safety reasons.

Stage one would require hand excavation of test pits in controlled Excavation Units. Excavation Units would comprise of one square metre test pits excavated in either arbitrary 100 mm spits or stratigraphic units where applicable. Excavation Units could be joined together to form a two square metre test pit, where appropriate. In some instances, where the available area to test in portions of S2B PAD02 is small, the Excavation Unit size would be smaller than one square metre.

Excavation Units would be excavated to a depth where archaeologically sterile deposit has been reached, enough information has been retrieved to trigger Stage two salvage excavation, or a depth of 1.5 metres (or safe working depth) has been reached, whichever is the shallowest. Although not

anticipated in the residual Blacktown soil landscape, if archaeological deposit extends below a safe depth (1.5 metres) deeper archaeological excavation should be considered which may require shoring or stepping.

A grid of Stage one test pits would be established across the portion of S2B PAD02 to be tested. The AMS would outline the number of Excavation Units to be excavated, the grid layout, and spacing of test pits. Where there are constraints on the grid layout, such as disturbed areas or services, test pits may be offset to an adjacent location within the area of proposed impact.

Machine excavation would be utilised to remove introduced fill layers where required, or to excavate below a safe depth where archaeological sterile deposits have not been reached.

7.5.2 Stage two

Triggers for Stage two excavation at S2B PAD02 would include:

- identification of more than 5 artefacts per Excavation Unit during Stage one excavation
- identification of rare artefacts, features or site type
- identification by the Aboriginal archaeological ED and/or the geomorphologist of Aboriginal artefacts in contexts that may provide significant information on site formation, including identification of contexts and/ or materials suitable for dating.

The Aboriginal archaeological ED would then assess the need for Stage two excavations given the nature and context of the find and the extent of proposed impacts. Stage two excavation would proceed under the methodology discussed in the AMS and in adherence to the core methodology presented in the ACHAR.

Stage two excavation would involve the continuation of hand excavation in one square metre Excavation Units to form open area excavation. Stage two will cease once the excavation has retrieved a sufficient sample to describe the intactness, nature, extent, significance and is a statistically comparable quantity. The number of Stage two open area excavations to be excavated, the extent of open area excavation, and the cessation of Stage two excavation, would be determined by the Aboriginal archaeological ED in accordance with the ACHAR, and the AMS and in consultation with the RAPs on site.

7.6 Specific methodological considerations

7.6.1 Historical archaeology contexts

Where historical archaeological contexts are encountered during controlled Stage one or Stage two excavation, the Aboriginal archaeological ED will consult with the historical ED for the project. on any requirements for an alteration to methodology to account for impacts to historical archaeological remains.

7.6.2 Artefacts retrieved from fill

Where artefacts are identified in fill that is not considered to be a historical archaeology context, the Aboriginal archaeological ED would first establish whether further investigation of the find is required. Further investigation may include sample excavation by machine and sieving of fill material. Where no further investigation is required, the find will be recorded and stored in the nominated temporary locked storage area.

7.6.3 Protection of the archaeological resource during excavation

Where there is a halt in excavation at S2B PAD02, such as a cessation of excavation due to inclement weather, establishment of the Punchbowl Station worksite, or for other reasons outside the control of the Aboriginal archaeological ED, suitable measures should be put in place to protect open Excavation Units until archaeological excavation re-commences.

Protective measures may include back-filling open Excavation Units under the guidance of an archaeologist and include protection of any remaining archaeological resource using geofab material or similar and clean back-fill. Other protective measures may include the site contractor deploying sand bags and sediment fencing to divert surface water away from open Excavation Units.

7.6.4 Sieving

All retrieved material from hand excavation would be sieved through nested 5mm and 3mm sieve mesh. It is likely that most material would be wet sieved, however dry sieving may be more appropriate in certain contexts.

7.6.5 Identification of rare site types

Where these site types are encountered, a more detailed approach to excavation, sampling and recording will be required for.

- hearths
- middens
- sites associated with outcropping sandstone, such as engravings or grinding grooves
- contact archaeology.

7.7 Unexpected finds

The Construction Heritage Management Plan (CHMP) prepared for the project by the main contractor, would include a detailed unexpected finds procedure for the project. The excavation methodology outlined in the ACHAR should be utilised for further investigation of unexpected finds, where required.

7.8 Site clearance

Site clearance at S2B PAD02 would be required from the Aboriginal ED at least 14 days prior to construction commencing. This clearance would be in the form of a memo or report.

7.9 Geomorphological investigations

It is anticipated that intrusive geomorphological investigations of different types will be conducted at S2B PAD02, if required. These investigations may retrieve samples for dating, or for providing more data for site formation analysis. The potential scope and outline of geomorphological investigation at S2B PAD02 would be outlined in the AMS.

7.10 Reporting and analysis

All Aboriginal objects retrieved during the course of archaeological excavation would be washed and placed in re-sealable bags for further analysis and recording. Once test excavation has been

completed, the artefact assemblage would be recorded and stored as stipulated in the OEH code of practice. This includes recording key attributes of material, artefact type, platform type, termination type and dimensions, as well as photographic and drawn records of representative artefacts. All recorded information would be entered into a Microsoft Excel (or similar) table with detail linked to the provenance of each artefact. Once entered into the Excel table, the data can be readily supplied with associated reporting to RAPs and the proponent in either electronic or hard-copy form. An archaeologist experienced in stone artefact recording will conduct the attribute recording and analysis.

All artefacts would be given a unique number and stored in double re-sealable snap lock bags. A permanent marker will be used to record the provenance and unique number of artefacts in each bag in writing on the outside of the bag and on an archival grade tag such as Dupont™ Tyvek® paper.

7.11 Temporary and long-term care and management of retrieved Aboriginal objects

The temporary repository of any retrieved artefacts will be a locked cupboard on the premises of the archaeological consultant.

Anthony Johnson (MBMAC) and Jamie Workman (DLO) recommended that artefacts recovered during excavation should be reburied. Phil Khan (KYWG) has recommended that they should be stored in a keeping place or as part of an interpretative display.

Further consultation with RAPs will be required during the project to determine the preferred long-term care and management of any retrieved Aboriginal artefacts once the nature, location, significance and size of the assemblage is known.

7.12 Interpretation and educational outcomes

Aboriginal heritage would be included in the Heritage Interpretation Strategy for the project, in consultation with the RAPs on accordance with mitigation measure AH4.

Mr Tony Williams (AAS) has recommended that the excavation and its findings be filmed and made available in suitable form for distribution to schools. This would be considered as part of the Heritage Interpretation Strategy if practicable and appropriate.

8.0 Management Measures

8.1 Management framework

Key heritage management plans/documentation relating to Aboriginal heritage required prior to construction which relate to the ACHAR will likely include:

- Construction Environmental Management Plan (CEMP)
- Construction Heritage Management Plan (CHMP) (Heritage sub-plan)
- Archaeological Method Statement for excavation at S2B PAD02.

8.2 Construction Heritage Management Plan

A CHMP should be prepared for the project that outlines the methodology discussed in this ACHAR and include an unexpected finds procedure. Details of RAPs and circumstances where additional consultation would be required must be included.

8.3 Discovery of human remains

If suspected human skeletal remains are uncovered the Unexpected Finds Procedure prepared by the delivery contractor and Sydney Metro Exhumation Management Procedure would be followed.

9.0 REFERENCES

- Australia ICOMOS. 2013. Australia ICOMOS Charter for Places of Cultural Significance. The Burra Charter, 2013.
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- JMCHM. 2005a, Archaeological salvage excavation of site CG1 (NPWS ID 45-5-2648), at the corner of Charles and George Streets, Parramatta, NSW. Report for Meriton Apartments Pty Ltd.
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- Matthews, RH, and Everitt, MM. 1900. *The Organisation, Language and Initiation Ceremonies of the Aborigines of the South-East Coast of NSW*, Journal and Proceedings of the Royal Society of NSW, 34: 262-281.
- McIntyre-Tamwoy, SM, 2003, MetroGrid Project Test Excavation of Buried Shell Bed at Fraser Park, Marrickville, NSW – Preliminary Report.
- Muir, L 2013, Aboriginal People of the Cooks River Valley, *Dictionary of Sydney*, <http://dictionaryofsydney.org/entry/aboriginal_people_of_the_cooks_river_valley> accessed 19 May 2016.
- Navin Officer Heritage Consultants 2005. Intermodal Logistics Centre at Enfield, EIS, Assessment of Indigenous Heritage.
- Office of Environment and Heritage. 2011. *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW*. Office of Environment and Heritage, Department of Premier and Cabinet, Sydney.

White, E. and J. McDonald. 2010. Lithic Artefact Distribution in the Rouse Hill Development Area, Cumberland Plain, New South Wales. *Australian Archaeology*, 70: 29-38.

10.0 Appendices

Please note: Contact information has been removed from the following appendices
for privacy reasons

10.1 Appendix 1 – Technical paper 4

Available at:

https://majorprojects.accelo.com/public/45e6e0aa483af8f3fdfa482b1c022a56/07_%20S2B%20ES%20Vol%204%20Technical%20paper%20-%20Aboriginal%20heritage%20assessment.pdf

10.2 Appendix 2 – Stakeholder consultation

Consultation Log

Contact / Organisation	Contacted by / Organisation	Method	Date / Time	Comments
	TfNSW	Advertisement	4/05/2016	Sydney Morning Herald
Metropolitan Local Aboriginal Land Council	TfNSW	Letter	12/05/2016	
Office of the Registrar	TfNSW	Letter	12/05/2016	Agency contact
Simone Schwarz/Marrickville Council	TfNSW	Letter	12/05/2016	Agency contact
Willoughby City Council	TfNSW	Letter	12/05/2016	Agency contact
Bryony Cooper/ City of Sydney	TfNSW	Letter	12/05/2016	Agency contact
Andy Sammut/Cit of Canterbury	TfNSW	Letter	12/05/2016	Agency contact
Graeme Beattie/Bankstown Council	TfNSW	Letter	12/05/2016	Agency contact
Brad Stafford/North Sydney Council	TfNSW	Letter	12/05/2016	Agency contact
Greater Sydney CMA	TfNSW	Letter	12/05/2016	Agency contact
National Native Title Tribunal	TfNSW	Emailed letter	12/05/2016	Agency contact
Gandangara LALC	TfNSW	Letter	12/05/2016	Agency contact
OEH Parramatta	TfNSW	Letter	12/05/2016	Agency contact
NTSCORP	TfNSW	letter	12/05/2016	Agency contact
Sandra Wallace/Artefact	Phillip Khan/ KYWG	Letter	6/05/2016	Registration of Interest
Sandra Wallace/Artefact	Gordon Workman/ DLO	Email	6/05/2016	Registration of Interest
Sandra Wallace/Artefact	Danny Franks/ Tocomwall	Email	9/05/2016	Registration of Interest
Sandra Wallace/Artefact	Ryan Johnson/ Murra Bidgee Mullangarri	Email	10/05/2016	Registration of Interest
Sandra Wallace/Artefact	Celestine Everingham/ DACHA	Phone	10/05/2016	Registration of Interest
Sandra Wallace/Artefact	Chris Payne/ Gandangara	Phone	11/05/2016	Registration of Interest
Sandra Wallace/Artefact	Tony Williams/ Aboriginal Archaeological Services	Email	11/05/2016	Registration of Interest
Claire Rayner/Artefact	Darlene Johnson/ Murra Bidgee Mullangarri	Phone	12/05/2016	Called to confirm receipt of registration
Sandra Wallace/ Artefact	Kayla Williamson/ Woronora Plateau Gundangarra Elders Council	Email	17/05/2016	Registration of Interest
Sandra Wallace/ Artefact	Susan Harrison/OEH	Letter	18/05/2016	List of stakeholders
Sandra Wallace/ Artefact	George Tonna/ NTSCorp	Letter	19/05/2016	Agency reply
Sandra Wallace/ Artefact	Joanna Stobinski/ Canterbury City Council	email	23/05/2016	Canterbury Aboriginal Advisory Group member list
Sandra Wallace/ Artefact	Bryony Cooper/ City of Sydney	Letter	23/05/2016	Agency reply
Sandra Wallace/ Artefact	Marcelo Occhiuzzi/ North Sydney Council	Letter	24/05/2016	Agency reply

Claire Rayner/Artefact	Celestine Everingham/ DACHA	Phone	26/05/2016	checking that she was registered
Sandra Wallace/ Artefact	Ann & Jamie Workman/ DLO	Email	27/05/2016	Registration of Interest (Gordon Workman had already registered DLO)
Mark Doran/TfNSW	Karia Lea Bond/ Badu	Email	30/05/2016	Invitation to register
Mark Doran/TfNSW	Seli Storer/ Biamanga	Email	30/05/2016	Invitation to register
Mark Doran/TfNSW	Simalene Carriage/ Bilinga	Email	30/05/2016	Invitation to register
Mark Doran/TfNSW	Jennifer Newman/ CAAG	Email	30/05/2016	Invitation to register
Mark Doran/TfNSW	Joan Tanter/ CAAG	Email	30/05/2016	Invitation to register
Mark Doran/TfNSW	John Blair/ CAAG	Email	30/05/2016	Invitation to register
Mark Doran/TfNSW	Andrew Bond / Dharug	Email	30/05/2016	Invitation to register
Mark Doran/TfNSW	Darren Duncan/ Duncan Suey & Associates	Email	30/05/2016	Invitation to register
Mark Doran/TfNSW	Basil Smith/ Goobah Developments	Email	30/05/2016	Invitation to register
Mark Doran/TfNSW	Terri Ann Hoskins/ GTTS	Email	30/05/2016	Invitation to register
Mark Doran/TfNSW	David Bell/ GTTS	Email	30/05/2016	Invitation to register
Mark Doran/TfNSW	Peter Foster/ GTTS	Email	30/05/2016	Invitation to register
Mark Doran/TfNSW	Tony Williams/ GTTS	Email	30/05/2016	Invitation to register
Mark Doran/TfNSW	Darlene Hoskins-McKenzie/ Gunyuu Cultural Heritage Technical Services	Email	30/05/2016	Invitation to register
Mark Doran/TfNSW	Kylie Ann Bell/ Gunyuu	Email	30/05/2016	Invitation to register
Mark Doran/TfNSW	Joanne Anne Stewart/ Jerringong	Email	30/05/2016	Invitation to register
Mark Doran/TfNSW	Kelly Slater, Vicky Slater/ Kawul Cultural Services	Email	30/05/2016	Invitation to register
Mark Doran/TfNSW	Aaron Broad/ Minnamunnung	Email	30/05/2016	Invitation to register
Mark Doran/TfNSW	Suzannah McKenzie/ Munyunga Cultural Heritage Technical Services	Email	30/05/2016	Invitation to register
Mark Doran/TfNSW	Roxanne Smith/ Murramarang	Email	30/05/2016	Invitation to register
Mark Doran/TfNSW	Wandai Kirkbright/ Wingikara Cultural Heritage Technical Services	Email	30/05/2016	Invitation to register
Mark Doran/TfNSW	Hika Te Kowhai/ Walbunja	Email	30/05/2016	Invitation to register
Mark Doran/TfNSW	Lee-Roy James Boota/ Wullung	Email	30/05/2016	Invitation to register
Mark Doran/TfNSW	Robert Parson/ Yerramurra	Email	30/05/2016	Invitation to register
Mark Doran/TfNSW	Newton Carriage/ Nundagurri	Email	30/05/2016	Invitation to register
Mark Doran/TfNSW	Mark Henry/ Murrumbul	Email	30/05/2016	Invitation to register
Mark Doran/TfNSW	Pemulwuy Johnson/ Pemulwuy CHTS	Email	30/05/2016	Invitation to register
Mark Doran/TfNSW	Hayley Bell/ Wingikara	Email	30/05/2016	Invitation to register
Mark Doran/TfNSW	Ronal Stewart/ Walgalu	Email	30/05/2016	Invitation to register

Mark Doran/TfNSW	Shane Carriage/ Thauaira	Email	30/05/2016	Invitation to register
Mark Doran/TfNSW	Robert Brown/ Bilinga Cultural Heritage Technical Services	Email	30/05/2016	Invitation to register
Mark Doran/TfNSW	Levi McKenzie-Kirkbright/ Murrumbul Cultural Heritage Technical Services	Email	30/05/2016	Invitation to register
Mark Doran/TfNSW	Wendy Smith/ Gulaga	Email	30/05/2016	Invitation to register
Mark Doran/TfNSW	Corey Smith/ Callendulla	Email	30/05/2016	Invitation to register
Mark Doran/TfNSW	Kaya Dawn Bell/ Munyanga	Email	30/05/2016	Invitation to register
Mark Doran/TfNSW	Margaret Williams/ CAAG	Letter	30/05/2016	Invitation to register
Mark Doran/TfNSW	Eric Keidge	Letter	30/05/2016	Invitation to register
Sandra Wallace/ Artefact	Chris Payne/ GTTS	Email	30/05/2016	Registering on behalf of Peter Foster and Dave Bell for GTTS
Mark Doran/ TfNSW	Chris Payne/ GTTS	Email	8/06/2016	Registering on behalf of Tony Williams for GTTS
Claire Rayner/Artefact	Chris Payne/GTTS	Phone	9/06/2016	called to check he was registered
Tony Williams/ AAS	Claire Rayner/ Artefact	Phone	10/06/2016	called to clarify email as the ACHAR methodology bounced back.
Gordon Workman/ DLO	Claire Rayner/ Artefact	Email	10/06/2016	sent ACHAR methodology
Jamie Workman/ DLO	Claire Rayner/ Artefact	Email	10/06/2016	sent ACHAR methodology
Christopher Payne/ GTTS	Claire Rayner/ Artefact	Email	10/06/2016	sent ACHAR methodology
Ryan Johnson/MBMAC	Claire Rayner/ Artefact	Email	10/06/2016	sent ACHAR methodology
Danny Franks/ Tocomwall	Claire Rayner/ Artefact	Email	10/06/2016	sent ACHAR methodology
Kayla Williamson/ WPGEC	Claire Rayner/ Artefact	Email	10/06/2016	sent ACHAR methodology
Tony Williams/ AAS	Claire Rayner/ Artefact	Email	10/06/2016	sent ACHAR methodology
Peter Foster/ GTTS via Chris Payne	Claire Rayner/ Artefact	Email	10/06/2016	sent ACHAR methodology
David Bell/ GTTS via Chris Payne	Claire Rayner/ Artefact	Email	10/06/2016	sent ACHAR methodology
Tony Williams/ GTTS via Chris Payne	Claire Rayner/ Artefact	Email	10/06/2016	sent ACHAR methodology
David Watts/ Aboriginal Heritage Office (North)	Claire Rayner/ Artefact	Letter	10/06/2016	sent ACHAR methodology
Celestine Everingham/ DACHA	Claire Rayner/ Artefact	Letter	10/06/2016	sent ACHAR methodology
Pollowan Phillip Kahn/ KYWG	Claire Rayner/ Artefact	Letter	10/06/2016	sent ACHAR methodology
GLALC	Claire Rayner/ Artefact	Letter	10/06/2016	sent ACHAR methodology
Nathan Moran/ MLALC	Claire Rayner/ Artefact	Letter	10/06/2016	sent ACHAR methodology
Mark Doran/TfNSW	Darren Duncan	Email	13/06/2016	late registration

Darren Duncan	Claire Rayner/ Artefact	Email	14/06/2016	sent ACHAR methodology
Claire Rayner/ Artefact	Chris Payne/ GTTS	phone	14/06/2016	Called to register, I advised him that he was already registered
Claire Rayner/ Artefact	Paul Cummings/ WPGEC	phone	20/06/2016	Called about another project but also enquired about how the project was progressing and possible involvement in the future.
Sandra Wallace/ Artefact	Phil Kahn/ KYWG	Letter	22/06/2016	agrees with methodology, would like to be involved in any fieldwork
Claire Rayner/ Artefact	Celestine Everingham/ DACHA	Phone	27/06/2016	Called to say agrees with the methodology, had some comments on the EIS chapter: Chatswood is an early contact site and the location of one of the earliest farms in the colony she enquired if a historic assessment had been done, I let her know it has. She also disagreed with the assessment of the archaeological potential as low as the area is near a remnant stream near the railway and is quite elevated making it a suitable spot for occupation. She suggested we have another look and monitor any subsurface impacts following demolition. She was also concerned with what was going to happen with the spoil from the dive site.
Celestine Everingham/ DACHA	Claire Rayner/ Artefact	Phone	27/06/2016	Let Celestine know that the ACHAR would be sent out next week and an AFG would be held in July so she can raise any concerns and ask any specific construction questions at that.

Sandra Wallace/ Artefact	Ryan Johnson/MBMAC	Email	28/06/2016	agrees with the methodology, noted that there are a number of Aboriginal sites within the study area and that the Sydney Harbour was a significant area for Aboriginal in the past and today
Claire Rayner/ Artefact	Brad Maybury/ GLALC	Email	28/06/2016	Brad submitted comments on the site inspection of the Bankstown station and rail corridor (southern end of the study area). He considered the areas of the station and surrounding the rail corridor do not require further investigation. He would like to inspect inside the rail corridor prior to works commencing
Gordon Workman/ DLO	Claire Rayner/ Artefact	Email	13/07/2016	Sent draft ACHAR and invitation to AFG 19 July 2016
Jamie Workman/ DLO	Claire Rayner/ Artefact	Email	13/07/2016	Sent draft ACHAR and invitation to AFG 19 July 2016
Christopher Payne/ GTTS	Claire Rayner/ Artefact	Email	13/07/2016	Sent draft ACHAR and invitation to AFG 19 July 2016
Ryan Johnson/MBMAC	Claire Rayner/ Artefact	Email	13/07/2016	Sent draft ACHAR and invitation to AFG 19 July 2016
Danny Franks/ Tocomwall	Claire Rayner/ Artefact	Email	13/07/2016	Sent draft ACHAR and invitation to AFG 19 July 2016
Kayla Williamson/ WPGEC	Claire Rayner/ Artefact	Email	13/07/2016	Sent draft ACHAR and invitation to AFG 19 July 2016
Tony Williams/ AAS	Claire Rayner/ Artefact	Email	13/07/2016	Sent draft ACHAR and invitation to AFG 19 July 2016
Peter Foster/ GTTS via Chris Payne	Claire Rayner/ Artefact	Email	13/07/2016	Sent draft ACHAR and invitation to AFG 19 July 2016
David Bell/ GTTS via Chris Payne	Claire Rayner/ Artefact	Email	13/07/2016	Sent draft ACHAR and invitation to AFG 19 July 2016
Tony Williams/ GTTS via Chris Payne	Claire Rayner/ Artefact	Email	13/07/2016	Sent draft ACHAR and invitation to AFG 19 July 2016
Darren Duncan	Claire Rayner/ Artefact	Email	13/07/2016	Sent draft ACHAR and invitation to AFG 19 July 2016

David Watts/ Aboriginal Heritage Office (North)	Claire Rayner/ Artefact	Letter	13/07/2016	Sent draft ACHAR and invitation to AFG 19 July 2016
Celestine Everingham/ DACHA	Claire Rayner/ Artefact	Letter	13/07/2016	Sent draft ACHAR and invitation to AFG 19 July 2016
Pollowan Phillip Kahn/ KYWG	Claire Rayner/ Artefact	Letter	13/07/2016	Sent draft ACHAR and invitation to AFG 19 July 2016
GLALC	Claire Rayner/ Artefact	Letter	13/07/2016	Sent draft ACHAR and invitation to AFG 19 July 2016
Nathan Moran/ MLALC	Claire Rayner/ Artefact	Letter	13/07/2016	Sent draft ACHAR and invitation to AFG 19 July 2016
Sandra Wallace/ Artefact & Matthew Errington	Darlene Hoskins-McKenzie	email	18/07/2016	Darlene manages and represents 5 registered Aboriginal stakeholder groups these are: Bilinga (Wandai Kirkbright), Gunyuu (Darlene), Munynga (Robert Brown), Murrumbal (Levi McKenzie-Kirkbright) and Wingikara (Suzanne McKenzie). She is registering on behalf of these groups.
Sandra Wallace/ Artefact	Ryan Johnson/MBMAC	email	19/07/2016	MBMAC agrees with the findings and recommendations of the ACHAR, no further comments
Sandra Wallace/ Artefact	Jamie Workman & Gordon Workman/ DLO	email	25/07/2016	DLO agree with the ACHAR, they want artefact reburied somewhere within the study area, would like a copy of the AHIP (this project is SSI), would like to be involved in monitoring topsoil removal and other forms of work to be carried out on site.
Wandai Kirkbright & Robert Brown/ Bilinga Cultural Heritage Technical Services	Claire Rayner/ Artefact	email	1/08/2016	sent ACHAR methodology and draft ACHAR, also sent to Darlene's gmail address

Darlene Hoskins-McKenzie/ Gunyuu Cultural Heritage Technical Services	Claire Rayner/ Artefact	email	1/08/2016	sent ACHAR methodology and draft ACHAR, also sent to Darlene's gmail address
Robert Brown & Suzanne McKenzie/ Munyunga Cultural Heritage Technical Services	Claire Rayner/ Artefact	email	1/08/2016	sent ACHAR methodology and draft ACHAR, also sent to Darlene's gmail address
Levi McKenzie-Kirkbright/ Murrumbul Cultural Heritage Technical Services	Claire Rayner/ Artefact	email	1/08/2016	sent ACHAR methodology and draft ACHAR, also sent to Darlene's gmail address
Suzannah McKenzie & Wandai Kirkbright/ Wingikara Cultural Heritage Technical Services	Claire Rayner/ Artefact	email	1/08/2016	sent ACHAR methodology and draft ACHAR, also sent to Darlene's gmail address
Claire Rayner/ Artefact	Chris Payne/ GTTS	phone	5/08/2016	Called to see if he would like to comment on the ACHAR, he was driving and will call back
Claire Rayner/ Artefact	Danny Franks/ Tocomwall	phone	5/08/2016	Left message to call me back about the ACHAR
Claire Rayner/ Artefact	Phil Kahn/ KYWG	phone	5/08/2016	Called to see if he would like to comment on the ACHAR, he said he was happy with the findings and recommendations of the ACHAR and would like to be involved in any field work
Claire Rayner/ Artefact	Kayla Williamson/ Woronora	phone	5/08/2016	Called to see if she would like to comment on the ACHAR, she said she was happy with the findings and recommendations of the ACHAR
Claire Rayner/ Artefact	Tony Williams/ AAS	phone	5/08/2016	Called to see if he would like to comment on the ACHAR, he will send an email with his comments
Claire Rayner/ Artefact	Darren Duncan	phone	5/08/2016	Called to see if he would like to comment on the ACHAR, no answer
Claire Rayner/ Artefact	David Watts/ AHO North Sydney	email	5/08/2016	after trying to call and getting a bad line I sent an email asking for comments on the ACHAR

Kayla Williamson	Veronica Norman/Artefact Heritage	Email	11/09/2017	Project information and ACHAR methodology sent to RAPS with date for AFG
Christopher Payne	Veronica Norman/Artefact Heritage	Email	11/09/2017	Project information and ACHAR methodology sent to RAPS with date for AFG
Gordon Workman	Veronica Norman/Artefact Heritage	Email	11/09/2017	Project information and ACHAR methodology sent to RAPS with date for AFG
Jamie Workman	Veronica Norman/Artefact Heritage	Email	11/09/2017	Project information and ACHAR methodology sent to RAPS with date for AFG
Peter Foster	Veronica Norman/Artefact Heritage	Email	11/09/2017	Project information and ACHAR methodology sent to RAPS with date for AFG
Tony Williams	Veronica Norman/Artefact Heritage	Email	11/09/2017	Project information and ACHAR methodology sent to RAPS with date for AFG
Danny Franks	Veronica Norman/Artefact Heritage	Email	11/09/2017	Project information and ACHAR methodology sent to RAPS with date for AFG
Ryan Johnson	Veronica Norman/Artefact Heritage	Email	11/09/2017	Project information and ACHAR methodology sent to RAPS with date for AFG
Darren Duncan	Veronica Norman/Artefact Heritage	Email	11/09/2017	Project information and ACHAR methodology sent to RAPS with date for AFG
Tony Williams	Veronica Norman/Artefact Heritage	Email	11/09/2017	Project information and ACHAR methodology sent to RAPS with date for AFG
David Bell	Veronica Norman/Artefact Heritage	Email	11/09/2017	Project information and ACHAR methodology sent to RAPS with date for AFG
Darlene Hoskins McKenzie	Veronica Norman/Artefact Heritage	Email	11/09/2017	Project information and ACHAR methodology sent to RAPS with date for AFG
Metro LALC	Veronica Norman/Artefact Heritage	Email	11/09/2017	Project information and ACHAR methodology sent to RAPS with date for AFG

Celestine Everingham	Veronica Norman/Artefact Heritage	Letter	11/09/2017	Project information and ACHAR methodology sent to RAPS with date for AFG
Phil Khan	Veronica Norman/Artefact Heritage	Letter	11/09/2017	Project information and ACHAR methodology sent to RAPS with date for AFG
Gandangara LALC	Veronica Norman/Artefact Heritage	Letter	11/09/2017	Project information and ACHAR methodology sent to RAPS with date for AFG
Metro LALC	Veronica Norman/Artefact Heritage	Letter	11/09/2017	Project information and ACHAR methodology sent to RAPS with date for AFG
Veronica Norman/Artefact Heritage	Tony Williams	Email	14/09/2017	Tony RSVPd to the meeting and said he could not access the dropbox link in the email
Tony Williams	Veronica Norman/Artefact Heritage	Email	14/09/2017	Responded to Tony's email with the contents of the link attached to email
Kayla Williamson	Veronica Norman/Artefact Heritage	Email	15/09/2017	Contacted RAPS regarding new date for AFG
Christopher Payne	Veronica Norman/Artefact Heritage	Email	15/09/2017	Contacted RAPS regarding new date for AFG
Gordon Workman	Veronica Norman/Artefact Heritage	Email	15/09/2017	Contacted RAPS regarding new date for AFG
Jamie Workman	Veronica Norman/Artefact Heritage	Email	15/09/2017	Contacted RAPS regarding new date for AFG
Peter Foster	Veronica Norman/Artefact Heritage	Email	15/09/2017	Contacted RAPS regarding new date for AFG
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Darren Duncan	Veronica Norman/Artefact Heritage	Email	15/09/2017	Contacted RAPS regarding new date for AFG
Tony Williams	Veronica Norman/Artefact Heritage	Email	15/09/2017	Contacted RAPS regarding new date for AFG

David Bell	Veronica Norman/Artefact Heritage	Email	15/09/2017	Contacted RAPs regarding new date for AFG
Darlene Hoskins McKenzie	Veronica Norman/Artefact Heritage	Email	15/09/2017	Contacted RAPs regarding new date for AFG
Metro LALC	Veronica Norman/Artefact Heritage	Email	15/09/2017	Contacted RAPs regarding new date for AFG
Veronica Norman/Artefact Heritage	Danny Franks/Tocomwall	Email	15/09/2017	Danny requested all communication be sent to Jen Norfolk
Danny Franks/Tocomwall	Veronica Norman/Artefact Heritage	Email	15/09/2017	Responded to Danny's email saying I had passed the information on to the rest of the office
Ryan Johnson/Murra Bidgee Mullangari	Veronica Norman/Artefact Heritage	Email	19/09/2017	Ryan said MMB would attend the AFG
Veronica Norman/Artefact Heritage	Kayla Williamson/Woronora Plateau Gundangara Elders Council	Email	19/09/2017	Kayla said Paul Cummins from WPGEC would attend the AFG
Veronica Norman/Artefact Heritage	Anna Workman/DLO	Email	26/09/2017	DLO will not be attending AFG, but would like to forward any minutes taken. DLO support the proposed ACHAR methodology
Veronica Norman/Artefact Heritage	Danny Franks/Tocomwall	Email	12/10/2017	Danny requested all communication be sent to himself and Scott Franks
Danny Franks/Tocomwall	Veronica Norman/Artefact Heritage	Email	12/10/2017	Responded to Danny's email saying I had passed the information on to the rest of the office
Gordon Workman / DLO	TfNSW	Email/Mail	1/11/2017	Draft ACHAR sent
Christopher Payne/ GTTS	TfNSW	Email/Mail	1/11/2017	Draft ACHAR sent
Peter Foster/ GTTS	TfNSW	Email/Mail	1/11/2017	Draft ACHAR sent
David Bell/ GTTS	TfNSW	Email/Mail	1/11/2017	Draft ACHAR sent
Ryan Johnson/ MBMAC	TfNSW	Email/Mail	1/11/2017	Draft ACHAR sent
Danny Franks/ Tocomwall	TfNSW	Email/Mail	1/11/2017	Draft ACHAR sent
Celestine Everingham/ DACHA	TfNSW	Email/Mail	1/11/2017	Draft ACHAR sent
Pollowan Phillip Kahn/ KYWG	TfNSW	Email/Mail	1/11/2017	Draft ACHAR sent
Kayla Williamson/ Woronora Plateau Gundangara	TfNSW	Email/Mail	1/11/2017	Draft ACHAR sent
Tony Williams/ AAS	TfNSW	Email/Mail	1/11/2017	Draft ACHAR sent
Brad Maybury/ Gandangara LALC	TfNSW	Email/Mail	1/11/2017	Draft ACHAR sent
Nathan Moran/ Metro LALAC	TfNSW	Email/Mail	1/11/2017	Draft ACHAR sent

Darren Duncan/ Duncan Suey & Associates	TfNSW	Email/Mail	1/11/2017	Draft ACHAR sent
Wandai Kirkbright/ Robert Brown	TfNSW	Email/Mail	1/11/2017	Draft ACHAR sent
Darlene Hoskins-McKenzie	TfNSW	Email/Mail	1/11/2017	Draft ACHAR sent
Robert Brown/ Suzanne McKenzie	TfNSW	Email/Mail	1/11/2017	Draft ACHAR sent
Levi McKenzie-Kirkbright	TfNSW	Email/Mail	1/11/2017	Draft ACHAR sent
Suzannah McKenzie/ Wandai Kirkbright	TfNSW	Email/Mail	1/11/2017	Draft ACHAR sent
Anna Workman / DLO	Julia McLachlan/ Artefact Heritage	Phone call	8/11/2017	Courtesy call to confirm draft ACHAR was received. Document received.
Christopher Payne/ GTTS	Julia McLachlan/ Artefact Heritage	Phone call	8/11/2017	Courtesy call to confirm draft ACHAR was received. Two attempts, no answer, no provision to leave voice message.
Peter Foster/ GTTS	Julia McLachlan/ Artefact Heritage	Phone call	8/11/2017	Courtesy call to confirm draft ACHAR was received. Two attempts, no answer, no provision to leave voice message.
David Bell/ GTTS	Julia McLachlan/ Artefact Heritage	Phone call	8/11/2017	Courtesy call to confirm draft ACHAR was received. Two attempts, no answer, no provision to leave voice message.
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Pollowan Phillip Kahn/ KYWG	Julia McLachlan/ Artefact Heritage	Phone call	8/11/2017	Courtesy call to confirm draft ACHAR was received. Document received.
Kayla Williamson/ Woronora Plateau Gundan	Julia McLachlan/ Artefact Heritage	Phone call	8/11/2017	Courtesy call to confirm draft ACHAR was received. Document received.

Tony Williams/ AAS	Julia McLachlan/ Artefact Heritage	Phone call	8/11/2017	Courtesy call to confirm draft ACHAR was received. Document received.
Brad Maybury/ Gandangara LALC	Julia McLachlan/ Artefact Heritage	Phone call	8/11/2017	Courtesy call to confirm draft ACHAR was received. Document received.
Nathan Moran/ Metro LALAC	Julia McLachlan/ Artefact Heritage	Phone call	8/11/2017	Courtesy call to confirm draft ACHAR was received. Document received.
Darren Duncan/ Duncan Suey & Associates	Julia McLachlan/ Artefact Heritage	Phone call	8/11/2017	Courtesy call to confirm draft ACHAR was received. Document received.
Wandai Kirkbright/ Robert Brown	Julia McLachlan/ Artefact Heritage	Phone call	8/11/2017	Courtesy call to confirm draft ACHAR was received. Phone number disconnected.
Darlene Hoskins-McKenzie	Julia McLachlan/ Artefact Heritage	Phone call	8/11/2017	Courtesy call to confirm draft ACHAR was received. Phone number disconnected.
Robert Brown/ Suzanne McKenzie	Julia McLachlan/ Artefact Heritage	Phone call	8/11/2017	Courtesy call to confirm draft ACHAR was received. Phone number disconnected.
Levi McKenzie-Kirkbright	Julia McLachlan/ Artefact Heritage	Phone call	8/11/2017	Courtesy call to confirm draft ACHAR was received. Phone number disconnected.
Suzannah McKenzie/ Wandai Kirkbright	Julia McLachlan/ Artefact Heritage	Phone call	8/11/2017	Courtesy call to confirm draft ACHAR was received. Phone number disconnected.
Christopher Payne/ GTTS	Julia McLachlan/ Artefact Heritage	Email	8/11/2017	Courtesy email to confirm draft ACHAR was received. Sent to Christopher on behalf of Peter Foster and David Bell.
Ryan Johnson/ MBMAC	Julia McLachlan/ Artefact Heritage	Email	9/11/2017	Courtesy email to confirm draft ACHAR was received.
Darlene Hoskins-McKenzie	Julia McLachlan/ Artefact Heritage	Email	9/11/2017	Courtesy email to confirm draft ACHAR was received.
Julia McLachlan/ Artefact Heritage	Ryan Johnson/ MBMAC	Email	10/11/2017	Notified that ACHAR was not received.

Agency Letters

12 May, 2016

Metropolitan Local Aboriginal Land Council
PO Box 1103
Strawberry Hills
SYDNEY NSW 2012

To Whom It May Concern

Re: Sydney Metro City & Southwest Aboriginal Cultural Heritage Assessment

Sydney Metro is Australia's largest public transport project. It will transform Sydney, delivering more trains and faster services for customers across the network.

Sydney Metro has two core components:

Stage 1: Sydney Metro Northwest – formerly the 36km North West Rail Link. This \$8.3 billion project is now under construction and will open in the first half of 2019 with a metro train every four minutes in the peak.

Stage 2: Sydney Metro City & Southwest – a new 30km metro line extending metro rail from the end of Sydney Metro Northwest at Chatswood under Sydney Harbour, through new CBD stations and southwest to Bankstown. It is due to open in 2024 with the capacity to run a metro train every two minutes each way through the centre of Sydney.

Sydney Metro City & Southwest is being assessed as two separate components, Chatswood to Sydenham and Sydenham to Bankstown.

The purpose of the Aboriginal community consultation is to assist the assessment of both components of Sydney Metro City & Southwest under the *Environmental Planning and Assessment Act 1979*. TfNSW therefore seeks to consult with all Aboriginal persons and organisations who hold cultural knowledge relevant to determining the significance of Aboriginal object or places within the project area.

In line with the relevant consultation guidelines, I am writing to you to request the names and contact details that your organisation has for Aboriginal people who may hold cultural knowledge relevant to determining the significance of Aboriginal objects or places within the Chatswood to Bankstown area. Please forward any information that you have before 25 May, 2016 to:

TfNSW c/o Dr Sandra Wallace
Director
Artefact Heritage
Level 4, Building B
35 Saunders Street
Pyrmont NSW 2009

For further information, please contact Sandra by email at sandra.wallace@artefact.net.au,
or on 9518 8411.

Kind Regards

Carolyn Riley

Senior Manager – Environmental Planning
Sydney Metro – City and Southwest

12 May, 2016

National Native Title Tribunal
GPO Box 9973
SYDNEY NSW 2001

To Whom It May Concern

Re: Sydney Metro City & Southwest Aboriginal Cultural Heritage Assessment

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Level 4, Building B
35 Saunders Street
Pyrmont NSW 2009

For further information, please contact Sandra by email at sandra.wallace@artefact.net.au,
or on 9518 8411.

Kind Regards

Carolyn Riley

Senior Manager – Environmental Planning
Sydney Metro – City and Southwest

12 May, 2016

Native Title Services Corporation Limited
PO Box 2105
Strawberry Hills
SYDNEY NSW 2012

To Whom It May Concern

Re: Sydney Metro City & Southwest Aboriginal Cultural Heritage Assessment

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Level 4, Building B
35 Saunders Street
Pyrmont NSW 2009

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or on 9518 8411.

Kind Regards

Carolyn Riley

Senior Manager – Environmental Planning
Sydney Metro – City and Southwest

12 May, 2016

North Sydney Council
PO Box 12
North Sydney
SYDNEY NSW 2059

Attention: Brad Stafford

Re: Sydney Metro City & Southwest Aboriginal Cultural Heritage Assessment

Sydney Metro is Australia's largest public transport project. It will transform Sydney, delivering more trains and faster services for customers across the network.

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Level 4, Building B
35 Saunders Street
Pyrmont NSW 2009

For further information, please contact Sandra by email at sandra.wallace@artefact.net.au,
or on 9518 8411.

Kind Regards

Carolyn Riley

Senior Manager – Environmental Planning
Sydney Metro – City and Southwest

12 May, 2016

Regional Operations Group
Office of Environment and Heritage
PO Box 644
Parramatta
SYDNEY NSW 2124

To Whom It May Concern

Re: Sydney Metro City & Southwest Aboriginal Cultural Heritage Assessment

Sydney Metro is Australia's largest public transport project. It will transform Sydney, delivering more trains and faster services for customers across the network.

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Director
Artefact Heritage
Level 4, Building B
35 Saunders Street
Pyrmont NSW 2009

For further information, please contact Sandra by email at sandra.wallace@artefact.net.au,
or on 9518 8411.

Kind Regards

Carolyn Riley

Senior Manager – Environmental Planning
Sydney Metro – City and Southwest

12 May, 2016

Office of the Registrar
PO Box
Glebe
SYDNEY NSW 2037

To Whom It May Concern

Re: Sydney Metro City & Southwest Aboriginal Cultural Heritage Assessment

Sydney Metro is Australia's largest public transport project. It will transform Sydney, delivering more trains and faster services for customers across the network.

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Director
Artefact Heritage
Level 4, Building B
35 Saunders Street
Pyrmont NSW 2009

For further information, please contact Sandra by email at sandra.wallace@artefact.net.au,
or on 9518 8411.

Kind Regards

Carolyn Riley

Senior Manager – Environmental Planning
Sydney Metro – City and Southwest

12 May, 2016

Heritage Officer
Sydney Metropolitan Catchment Management Authority
PO Box 3720
Parramatta
SYDNEY NSW 2124

To Whom It May Concern

Re: Sydney Metro City & Southwest Aboriginal Cultural Heritage Assessment

Sydney Metro is Australia's largest public transport project. It will transform Sydney, delivering more trains and faster services for customers across the network.

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Sydney Metro City & Southwest is being assessed as two separate components, Chatswood to Sydenham and Sydenham to Bankstown.

The purpose of the Aboriginal community consultation is to assist the assessment of both components of Sydney Metro City & Southwest under the *Environmental Planning and Assessment Act 1979*. TfNSW therefore seeks to consult with all Aboriginal persons and organisations who hold cultural knowledge relevant to determining the significance of Aboriginal object or places within the project area.

In line with the relevant consultation guidelines, I am writing to you to request the names and contact details that your organisation has for Aboriginal people who may hold cultural knowledge relevant to determining the significance of Aboriginal objects or places within the Chatswood to Bankstown area. Please forward any information that you have before 25 May, 2016 to:

TfNSW c/o Dr Sandra Wallace
Director
Artefact Heritage
Level 4, Building B
35 Saunders Street
Pyrmont NSW 2009

For further information, please contact Sandra by email at sandra.wallace@artefact.net.au,
or on 9518 8411.

Kind Regards

Carolyn Riley

Senior Manager – Environmental Planning
Sydney Metro – City and Southwest

12 May, 2016

Willoughby City Council
PO Box 57
Chatswood
SYDNEY NSW 2057

To Whom It May Concern

Re: Sydney Metro City & Southwest Aboriginal Cultural Heritage Assessment

Sydney Metro is Australia's largest public transport project. It will transform Sydney, delivering more trains and faster services for customers across the network.

Sydney Metro has two core components:

Stage 1: Sydney Metro Northwest – formerly the 36km North West Rail Link. This \$8.3 billion project is now under construction and will open in the first half of 2019 with a metro train every four minutes in the peak.

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35 Saunders Street
Pyrmont NSW 2009

For further information, please contact Sandra by email at sandra.wallace@artefact.net.au,
or on 9518 8411.

Kind Regards

Carolyn Riley

Senior Manager – Environmental Planning
Sydney Metro – City and Southwest

12 May, 2016

Bankstown Council
PO Box 8
Bankstown
SYDNEY NSW 1885

Attention: Graeme Beattie

Re: Sydney Metro City & Southwest Aboriginal Cultural Heritage Assessment

Sydney Metro is Australia's largest public transport project. It will transform Sydney, delivering more trains and faster services for customers across the network.

Sydney Metro has two core components:

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Director
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Level 4, Building B
35 Saunders Street
Pyrmont NSW 2009

For further information, please contact Sandra by email at sandra.wallace@artefact.net.au,
or on 9518 8411.

Kind Regards

Carolyn Riley

Senior Manager – Environmental Planning
Sydney Metro – City and Southwest

12 May, 2016

City of Canterbury
PO Box 77
Campsie
SYDNEY NSW 2194

Attention: Andy Sammut

Re: Sydney Metro City & Southwest Aboriginal Cultural Heritage Assessment

Sydney Metro is Australia's largest public transport project. It will transform Sydney, delivering more trains and faster services for customers across the network.

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Director
Artefact Heritage
Level 4, Building B
35 Saunders Street
Pyrmont NSW 2009

For further information, please contact Sandra by email at sandra.wallace@artefact.net.au,
or on 9518 8411.

Kind Regards

Carolyn Riley

Senior Manager – Environmental Planning
Sydney Metro – City and Southwest

12 May, 2016

City of Sydney
GPO Box 1591
SYDNEY NSW 2001

Attention: Bryony Cooper

Re: Sydney Metro City & Southwest Aboriginal Cultural Heritage Assessment

Sydney Metro is Australia's largest public transport project. It will transform Sydney, delivering more trains and faster services for customers across the network.

Sydney Metro has two core components:

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Director
Artefact Heritage
Level 4, Building B
35 Saunders Street
Pyrmont NSW 2009

For further information, please contact Sandra by email at sandra.wallace@artefact.net.au,
or on 9518 8411.

Kind Regards

Carolyn Riley

Senior Manager – Environmental Planning
Sydney Metro – City and Southwest

12 May, 2016

Gandangara Local Aboriginal Land Council
PO Box 1038
Liverpool BC
SYDNEY NSW 1871

To Whom It May Concern

Re: Sydney Metro City & Southwest Aboriginal Cultural Heritage Assessment

Sydney Metro is Australia's largest public transport project. It will transform Sydney, delivering more trains and faster services for customers across the network.

Sydney Metro has two core components:

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Director
Artefact Heritage
Level 4, Building B
35 Saunders Street
Pyrmont NSW 2009

For further information, please contact Sandra by email at sandra.wallace@artefact.net.au,
or on 9518 8411.

Kind Regards

Carolyn Riley

Senior Manager – Environmental Planning
Sydney Metro – City and Southwest

12 May, 2016

Marrickville Council
PO Box 14
Petersham
SYDNEY NSW 2049

Attention: Simone Schwarz

Re: Sydney Metro City & Southwest Aboriginal Cultural Heritage Assessment

Sydney Metro is Australia's largest public transport project. It will transform Sydney, delivering more trains and faster services for customers across the network.

Sydney Metro has two core components:

Stage 1: Sydney Metro Northwest – formerly the 36km North West Rail Link. This \$8.3 billion project is now under construction and will open in the first half of 2019 with a metro train every four minutes in the peak.

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Director
Artefact Heritage
Level 4, Building B
35 Saunders Street
Pyrmont NSW 2009

For further information, please contact Sandra by email at sandra.wallace@artefact.net.au,
or on 9518 8411.

Kind Regards

Carolyn Riley

Senior Manager – Environmental Planning
Sydney Metro – City and Southwest

Agency Responses



**Office of
Environment
& Heritage**

Our reference: SF16/1630

TfNSW c/o Dr Sandra Wallace
Artefact Heritage
Level 4, Building B
35 Saunders Street
PYRMONT NSW 2009

Dear Dr Wallace,

Thank you for your letter dated 12/5/2016 to the Office of Environment and Heritage (OEH) regarding obtaining a list of the Aboriginal stakeholders that may have an interest in the Sydney Metro Northwest and Sydney Metro City & Southwest Projects by Transport for NSW.

Before making an application for the issue of an Aboriginal Heritage Impact Permit, the applicant must carry out an Aboriginal community consultation process in accordance with the National Parks and Wildlife Regulation 2009 and completed to the stage described in subclause 80C.

Please find attached the list of Aboriginal stakeholders known to OEH that may have an interest in the project. OEH's list of regional stakeholders is a list of groups, organisations or individuals who may hold cultural knowledge relevant to a proposal in a region. You should contact the stakeholders who have indicated an interest in the Local Government Area (LGA) relevant to your project. Contact details are correct as at the time of registration. Consultation with Aboriginal people should not be confused with employment. Inclusion on the OEH's list is not an automatic right to employment. It is the decision of a proponent on who they choose to engage to deliver services based on a range of considerations including skills, relevant experience, and WHS considerations. To be clear, the proponent is under no obligation to employ Aboriginal people registered for consultation.

Further, receipt of this information does not remove the requirement of a proponent/consultant to advertise in local print media and contact other bodies seeking interested Aboriginal parties. Consultation with Aboriginal stakeholders must be in accordance with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* which can be found on the Office of Environment and Heritage (OEH) public website by accessing the following link:

<http://www.environment.nsw.gov.au/resources/cultureheritage/commconsultation/09781ACHconsultreq.pdf>

If you wish to discuss any of the above matters further please contact Sam Higgs, Archaeologist, on (02) 9995 6824.

Yours sincerely

S. Harrison 18/05/16

Susan Harrison
Senior Team Leader Planning
Greater Sydney Region
Regional Operations

1

LIST OF ABORIGINAL STAKEHOLDERS FOR THE GREATER SYDNEY REGION HELD BY OEH FOR THE PURPOSES OF THE ABORIGINAL CULTURAL HERITAGE CONSULTATION REQUIREMENTS FOR PROPONENTS 2010

These lists are provided to proponents in accordance with section 4.1.2 of the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (the "Consultation Requirements") which commenced on 12 April 2010.

The consultation process involves getting the views of, and information from, Aboriginal people and reporting on these. It is not to be confused with other field assessment processes involved in preparing a proposal and an application. Consultation does not include the employment of Aboriginal people to assist in field assessment and/or site monitoring. Aboriginal people may provide services to proponents through a contractual arrangement however, this is separate from consultation. The proponent is not obliged to employ those Aboriginal people registered for consultation. Consultation as per these requirements will continue irrespective of potential or actual employment opportunities for Aboriginal people.

A copy of the Consultation Requirements can be found on the OEH website at: <http://www.environment.nsw.gov.au/resources/cultureheritage/commconsultation/09781ACHconsultreq.pdf>.

Under the Consultation Requirements, a proponent is required to provide Aboriginal people who hold cultural knowledge relevant to determining the cultural significance of Aboriginal objects and/or places as relevant to the proposed project area, with an opportunity to be involved in consultation. Section 3.3.1 of the Consultation Requirements states that Aboriginal people who can provide this information are, based on Aboriginal lore and custom, the traditional owners or custodians of the land that is the subject of the proposed project.

The Consultation Requirements also state that:

Traditional owners or custodians with appropriate cultural heritage knowledge to inform decision making who seek to register their interest as an Aboriginal party are those people who:

- *continue to maintain a deep respect for their ancestral belief system, traditional lore and custom*
- *recognise their responsibilities and obligations to protect and conserve their culture and heritage and care for their traditional lands or Country*
- *have the trust of their community, knowledge and understanding of their culture, and permission to speak about it.*

Please note: the placement of an organisation's name on any OEH Aboriginal stakeholder list for the Consultation Requirements does not override a proponent's requirement to also advertise in the local newspaper and to seek from other sources the names of any other Aboriginal people who may hold cultural knowledge as required under clause 80C of the [National Parks and Wildlife Regulation 2009](#).

How to use this list

1. **Determine which Local Government Areas (LGA/s) your project area falls into**
2. **Identify which organisations and individuals on the list have an interest in the LGA/s relevant to your project – identified in column 6 of the list**
3. **Contact the organisations/individuals who have indicated an interest in the relevant LGA/s and invite them to register an interest in your project**

Do not reproduce the attached list in publically available reports and other documents. Your report should only contain the names of the organisations and individuals who you have invited to register an interest in your project and those who have registered as stakeholders for your project.

Organisation/ Individual	Contact Name	Phone Number	Email Address/ Fax	Postal Address	LGA's	Additional information
Deerubbin Local Aboriginal Land Council	Kevin Cavanagh				Hawkesbury Blacktown Penrith Fairfield Camden Campbelltown Wollondilly	Holroyd Blue Mountains The Hills Shire Parramatta Sutherland Liverpool
Tharawal Local Aboriginal Land Council	Not provided					
Metropolitan Local Aboriginal Land Council	Nathan Moran				The Hills Shire Sydney Kogarah Hurstville Rockdale Canterbury Marrickville Bankstown Strathfield Burwood Ashfield Auburn Canada Bay	Leichhardt Manly Mosman North Sydney Lane Cove Hunters Hill Hornsby Ku-Ring-Gai Pittwater Botany Bay Ryde Warringah Willoughby
Gandangara Local Aboriginal Land Council	Not provided				Liverpool Fairfield Holroyd Parramatta	Auburn Bankstown Sutherland
La Perouse Local Aboriginal Land Council	Chris Ingrey				Sutherland Randwick Botany Bay Waverly Parramatta	Woollahra Sydney Rockdale
Parramatta City Council Aboriginal Advisory Committee	Parramatta City Council					
Holroyd City Council Advisory Committee	Holroyd City Council					
Darug Custodian Aboriginal Corporation	Leanne Watson					
Darug Tribal Aboriginal Corporation	Not provided				Hawkesbury Blacktown Penrith Fairfield Holroyd Blue Mountains	Camden Campbelltown The Hills Shire Liverpool Parramatta
Darug Aboriginal Cultural Heritage Assessments	Gordon Morton				Hawkesbury Blacktown Penrith Fairfield Holroyd Blue Mountains	Camden Campbelltown The Hills Shire Liverpool Parramatta
					Hawkesbury Blacktown Penrith Fairfield Holroyd Blue Mountains	Strathfield Burwood Ashfield Auburn Canada Bay Leichhardt Manly Mosman North Sydney

Organisation/ Individual	Contact Name	Phone Number	Email Address/ Fax	Postal Address	LGA's	Additional information
					Liverpool Parramatta Sydney Kogarah Hurstville Rockdale Canterbury Marrickville Bankstown	Lane Cove Hunters Hill Hornsby Ku-Ring-Gai Pittwater Botany Bay Ryde Warringah Willoughby
Darug Land Observations	Gordon Workman				Hawkesbury Blacktown Penrith Fairfield Holroyd Blue Mountains	Camden Campbelltown The Hills Shire Liverpool Parramatta
Des Dyer					Hawkesbury Blacktown Penrith Fairfield Holroyd Sutherland Sutherland	Camden Campbelltown The Hills Shire Liverpool Parramatta
Ken Foster					Sutherland	
La Perouse Botany Bay Corporation	Yvonne Simms				Sutherland	
Norma Simms					Sutherland	
Matthew and Andrew Coe					Sutherland	
Gundungurra Aboriginal Heritage Association Inc	Merl Williams				Blue Mountains	
Gundungurra Tribal Council Aboriginal Corporation	Sharon Brown				Blue Mountains	
Trevor Robinson					Blue Mountains	
Widescope Indigenous Group	Steven Hickey and Donna Hickey				Blue Mountains	
Tania Matthews					Blue Mountains	
A1 Indigenous Services	Carolyn Hickey				Blue Mountains	Carolyn is Wonnarua
Cubbitch Barta	Glenda Chaliker Rebecca Chaliker				Camden Campbelltown	Liverpool Wollondilly
Eric Keidge					The Hills Shire Sydney Kogarah Hurstville Rockdale Canterbury Marrickville	Leichhardt Manly Mosman North Sydney Lane Cove Hunters Hill Hornsby

Organisation/ Individual	Contact Name	Phone Number	Email Address/ Fax	Postal Address	LGA's	Additional information
					Bankstown Strathfield Burwood Ashfield Auburn Canada Bay Hawkesbury Blacktown Penrith Fairfield	Ku-Ring-Gai Pittwater Botany Bay Ryde Warringah Willoughby Holroyd Camden Campbelltown Parramatta
Gunjeewong Cultural Heritage Aboriginal Corporation	Cherie Carroll Turrise				Hawkesbury Blacktown Penrith Fairfield	Cherie is a Ngunnawal Elder however lived in the Western Sydney area during her childhood. She recognises she is not from the area but has associations
Merrigam Indigenous Corporation	Shaun Carroll				Hawkesbury Blacktown Penrith Fairfield	Holroyd Camden Campbelltown Parramatta
Corroboree Aboriginal Corporation	Steve Johnson				Western Sydney Camden	Campbelltown Parramatta
Murri Bidgee Mullangari Aboriginal Corporation	Darleen Johnson				Hawkesbury Blacktown Penrith Fairfield	Holroyd Camden Campbelltown Parramatta
Muragadi Heritage Indigenous Corporation	Jesse Johnson				Western Sydney Camden	Campbelltown Parramatta
Bidjwong Aboriginal Corporation	James Carroll				Hawkesbury Blacktown Penrith Fairfield Holroyd	Camden Campbelltown Liverpool Parramatta
Phil Kahn					Camden Campbelltown	Wollondilly
Peter Falk Consultancy	Peter Falk				Hawkesbury Blacktown Penrith Fairfield Holroyd	Camden Campbelltown Liverpool Parramatta
Wurrumay Consultancy	Kerrie Slater				Camden Blacktown Penrith Fairfield Holroyd	Camden Campbelltown Liverpool Parramatta
Warragil Cultural Services	Aaron Slater (Manager)				Hawkesbury Blacktown Penrith Fairfield	Holroyd Camden Campbelltown Liverpool Parramatta
Kawul Cultural Services	Kelly Slater Vicky Slater (Manager)				Hawkesbury Blacktown Penrith Fairfield Holroyd	Camden Campbelltown Parramatta Wollondilly The Hills Shire

Organisation/ Individual	Contact Name	Phone Number	Email Address/ Fax	Postal Address	LGA's	Additional information
Waibunja	Hika Te Kowhai				<p>Liverpool Parramatta Sutherland Sydney Kogarah Hurstville Rockdale Canterbury Marrickville Banksstown Strathfield</p> <p>Hawkesbury Blacktown Penrith Fairfield Holroyd Camden Campbelltown Liverpool Parramatta Sutherland Sydney Kogarah Hurstville Rockdale Canterbury Marrickville Banksstown Strathfield</p>	<p>North Sydney Lane Cove Hunters Hill Hornsby Ku-Ring-Gai Pittwater Botany Bay Ryde Warringah Willoughby</p> <p>Burwood Ashfield Auburn Canada Bay Leichhardt Manly Mosman North Sydney Lane Cove Hunters Hill Hornsby Ku-Ring-Gai Pittwater Botany Bay Ryde Warringah Willoughby</p> <p>This group states that their boundaries (Murrin Peoples) extend from the Hawkesbury River to the Snowy River</p>
Badu	Karia Lea Bond				<p>Hawkesbury Blacktown Penrith Fairfield Holroyd Camden Campbelltown Liverpool Parramatta Sutherland Sydney Kogarah Hurstville Rockdale Canterbury Marrickville Banksstown Strathfield</p> <p>Hawkesbury Blacktown Ashfield Auburn Canada Bay Leichhardt Manly Mosman North Sydney Lane Cove Hunters Hill Hornsby Ku-Ring-Gai Pittwater Botany Bay Ryde Warringah Willoughby</p> <p>This group states that their boundaries (Murrin Peoples) extend from the Hawkesbury River to the Snowy River</p>	<p>Burwood Ashfield Auburn Canada Bay Leichhardt Manly Mosman North Sydney Lane Cove Hunters Hill Hornsby Ku-Ring-Gai Pittwater Botany Bay Ryde Warringah Willoughby</p> <p>Burwood Ashfield Auburn Canada Bay Leichhardt Manly Mosman</p> <p>This group states that their boundaries (Murrin Peoples) extend from the Hawkesbury River to the Snowy River</p>
Goobah Developments	Basil Smith				<p>Hawkesbury Blacktown Penrith Fairfield Holroyd Camden Campbelltown</p> <p>Hawkesbury Blacktown Ashfield Auburn Canada Bay Leichhardt Manly Mosman</p> <p>This group states that their boundaries (Murrin Peoples) extend from the Hawkesbury River to the Snowy River</p>	<p>Burwood Ashfield Auburn Canada Bay Leichhardt Manly Mosman</p> <p>Burwood Ashfield Auburn Canada Bay Leichhardt Manly Mosman</p> <p>This group states that their boundaries (Murrin Peoples) extend from the Hawkesbury River to the Snowy River</p>

Organisation/ Individual	Contact Name	Phone Number	Email Address/ Fax	Postal Address	LGA's	Additional information
					<p>Liverpool Parramatta Sutherland Sydney Kogarah Hurstville Rockdale Canterbury Marrickville Bankstown Strathfield</p> <p>North Sydney Lane Cove Hunters Hill Hornsby Ku-Ring-Gai Pittwater Botany Bay Ryde Warringah Willoughby</p>	
Wullung	Lee-Roy James Boota				<p>Hawkesbury Blacktown Penrith Fairfield Holroyd Camden Campbelltown Liverpool Parramatta Sutherland Sydney Kogarah Hurstville Rockdale Canterbury Marrickville Bankstown Strathfield</p> <p>Burwood Ashfield Auburn Canada Bay Leichhardt Manly Mosman North Sydney Lane Cove Hunters Hill Hornsby Ku-Ring-Gai Pittwater Botany Bay Ryde Warringah Willoughby</p>	This group states that their boundaries (Murrin Peoples) extend from the Hawkesbury River to the Snowy River
Yerramurra	Robert Parson				<p>Hawkesbury Blacktown Penrith Fairfield Holroyd Camden Campbelltown Liverpool Parramatta Sutherland Sydney Kogarah Hurstville Rockdale Canterbury Marrickville Bankstown Strathfield</p> <p>Burwood Ashfield Auburn Canada Bay Leichhardt Manly Mosman North Sydney Lane Cove Hunters Hill Hornsby Ku-Ring-Gai Pittwater Botany Bay Ryde Warringah Willoughby</p>	This group states that their boundaries (Murrin Peoples) extend from the Hawkesbury River to the Snowy River
Nundagurri	Newton Carriage				<p>Hawkesbury Blacktown Penrith Fairfield Holroyd Camden Campbelltown</p> <p>Burwood Ashfield Auburn Canada Bay Leichhardt Manly Mosman</p>	This group states that their boundaries (Murrin Peoples) extend from the Hawkesbury River to the Snowy River

Organisation/ Individual	Contact Name	Phone Number	Email Address/ Fax	Postal Address	LGA's	Additional information	
Murrumbul	Mark Henry				<p>Liverpool Parramatta Sutherland Sydney Hornsby Ku-Ring-Gai Pittwater Botany Bay Ryde Canterbury Marrickville Banksstown Strathfield</p> <p>Hawkesbury Blacktown Penrith Fairfield Holroyd Camden Campbelltown Liverpool Parramatta Sutherland Sydney Kogarah Hurstville Rockdale Canterbury Marrickville Banksstown Strathfield</p>	<p>North Sydney Lane Cove Hunters Hill Hornsby Ku-Ring-Gai Pittwater Botany Bay Ryde Warringah Willoughby</p> <p>Burwood Ashfield Auburn Canada Bay Leichhardt Manly Mosman North Sydney Lane Cove Hunters Hill Hornsby Ku-Ring-Gai Pittwater Botany Bay Ryde Warringah Willoughby</p>	<p>This group states that their boundaries (Murrin Peoples) extend from the Hawkesbury River to the Snowy River.</p>
Jerringong	Joanne Anne Stewart				<p>Hawkesbury Blacktown Penrith Fairfield Holroyd Camden Campbelltown Liverpool Parramatta Sutherland Sydney Kogarah Hurstville Rockdale Canterbury Marrickville Banksstown Strathfield</p> <p>Hawkesbury Blacktown Penrith Fairfield Holroyd Camden Campbelltown Liverpool Parramatta Sutherland Sydney Kogarah Hurstville Rockdale Canterbury Marrickville Banksstown Strathfield</p>	<p>Burwood Ashfield Auburn Canada Bay Leichhardt Manly Mosman North Sydney Lane Cove Hunters Hill Hornsby Ku-Ring-Gai Pittwater Botany Bay Ryde Warringah Willoughby</p> <p>Burwood Ashfield Auburn Canada Bay Leichhardt Manly Mosman North Sydney Lane Cove Hunters Hill Hornsby Ku-Ring-Gai Pittwater Botany Bay Ryde Warringah Willoughby</p>	<p>This group states that their boundaries (Murrin Peoples) extend from the Hawkesbury River to the Snowy River</p>
Pemulwuy CHTS	Pemulwuy Johnson				<p>Hawkesbury Blacktown Penrith Fairfield Holroyd Camden Campbelltown</p> <p>Hawkesbury Blacktown Penrith Ashfield Auburn Fairfield Holroyd Camden Campbelltown</p>	<p>Strathfield Burwood Ashfield Auburn Canada Bay Leichhardt Manly</p> <p>Strathfield Burwood Ashfield Auburn Canada Bay Leichhardt Manly</p>	<p>This group states that their boundaries (Murrin Peoples) extend from the Hawkesbury River to the Snowy River</p>

Organisation/ Individual	Contact Name	Phone Number	Email Address/ Fax	Postal Address	LGA's	Additional information
Bilinga	Simalene Carriage				<p>The Hills Shire Liverpool Parramatta Sutherland Sydney Kogarah Hurstville Rockdale Canterbury Marrickville Bankstown</p> <p>Hawkesbury Blacktown Penrith Fairfield Holroyd Camden Campbelltown Liverpool Parramatta Sutherland Sydney Kogarah Hurstville Rockdale Canterbury Marrickville Bankstown Strathfield</p> <p>Mosman North Sydney Lane Cove Hunters Hill Hornsby Ku-Ring-Gai Pittwater Botany Bay Ryde Warringah Willoughby</p>	This group states that their boundaries (Murrin Peoples) extend from the Hawkesbury River to the Snowy River.
Munyunga	Kaya Dawn Bell				<p>Hawkesbury Blacktown Penrith Fairfield Holroyd Camden Campbelltown Liverpool Parramatta Sutherland Sydney Kogarah Hurstville Rockdale Canterbury Marrickville Bankstown Strathfield</p> <p>Burwood Ashfield Auburn Canada Bay Leichhardt Manly Mosman North Sydney Lane Cove Hunters Hill Hornsby Ku-Ring-Gai Pittwater Botany Bay Ryde Warringah Willoughby</p>	This group states that their boundaries (Murrin Peoples) extend from the Hawkesbury River to the Snowy River.
Wingikara	Hayley Bell				<p>Hawkesbury Blacktown Penrith Fairfield Holroyd Camden Campbelltown</p> <p>Burwood Ashfield Auburn Canada Bay Leichhardt Manly Mosman</p>	This group states that their boundaries (Murrin Peoples) extend from the Hawkesbury River to the Snowy River.

Organisation/ Individual	Contact Name	Phone Number	Email Address/ Fax	Postal Address	LGA's	Additional information
					Liverpool Parramatta Sutherland Sydney Kogarah Hurstville Rockdale Canterbury Marrickville Bankstown Strathfield	North Sydney Lane Cove Hunters Hill Hornsby Ku-Ring-Gai Pittwater Botany Bay Ryde Warringah Willoughby
Minnamunnung	Aaron Broad				Hawkesbury Blacktown Penrith Fairfield Holroyd Camden Campbelltown Liverpool Parramatta Sutherland Sydney Kogarah Hurstville Rockdale Canterbury Marrickville Bankstown Strathfield	Burwood Ashfield Auburn Canada Bay Leichhardt Manly Mosman North Sydney Lane Cove Hunters Hill Hornsby Ku-Ring-Gai Pittwater Botany Bay Ryde Warringah Willoughby
Gundungurra Tribal Technical Services	Peter Foster				Hawkesbury Blacktown Penrith Fairfield Holroyd Camden Campbelltown Liverpool Parramatta Sutherland Sydney Kogarah Hurstville Rockdale Canterbury Marrickville Bankstown Strathfield	Burwood Ashfield Auburn Canada Bay Leichhardt Manly Mosman North Sydney Lane Cove Hunters Hill Hornsby Ku-Ring-Gai Pittwater Botany Bay Ryde Warringah Willoughby
						This individual is a member of Gundungurra Tribal Technical Services
	Christopher Payne Chairperson					This individual is a member of Gundungurra Tribal Technical Services
	Tony Williams Secretary					This individual is a member of Gundungurra Tribal Technical Services
	David Bell					This individual is a member of Gundungurra Tribal Technical Services
	Terri Ann Hoskins					This individual is a member of Gundungurra Tribal Technical Services
Walgalu	Ronald Stewart				Hawkesbury Blacktown Penrith Fairfield Holroyd	Ashfield Auburn Canada Bay Leichhardt Manly

Organisation/ Individual	Contact Name	Phone Number	Email Address/ Fax	Postal Address	LGA's	Additional information
					<p>Camden Campbelltown Liverpool Parramatta Sutherland Sydney Kogarah Hurstville Rockdale Canterbury Marrickville Bankstown Strathfield Randwick Woolahra</p>	
Thauaira	Shane Carriage				<p>Hawkesbury Blacktown Penrith Fairfield Holroyd Camden Campbelltown Liverpool Parramatta Sutherland Sydney Kogarah Hurstville Rockdale Canterbury Marrickville Bankstown Strathfield Randwick Woolahra</p>	This group states that their boundaries (Murrin Peoples) extend from the Hawkesbury River to the Snowy River
Dharug	Andrew Bond				<p>Ashfield Auburn Canada Bay Leichhardt Manly Mosman North Sydney Lane Cove Hunters Hill Hornsby Pittwater Botany Bay Ryde Warringah Willoughby Blue Mountains Burwood The Hills Waverly Wollondilly</p>	This group states that their boundaries (Murrin Peoples) extend from the Hawkesbury River to the Snowy River

Organisation/ Individual	Contact Name	Phone Number	Email Address/ Fax	Postal Address	LGA's	Additional information	
Bilinga Cultural Heritage Technical Services	Robert Brown				Strathfield Randwick Woollahra Hawkesbury Blacktown Penrith Fairfield Holroyd Camden Campbelltown Liverpool Parramatta Sutherland Sydney Kogarah Hurstville Rockdale Canterbury Marrickville Bankstown Strathfield Randwick Woollahra	Burwood The Hills Waverly Wollondilly Ashfield Auburn Canada Bay Leichhardt Manly Mosman North Sydney Lane Cove Hunters Hill Hornsby Ku-Ring-Gai Pittwater Botany Bay Ryde Warringah Willoughby Blue Mountains Burwood The Hills Waverly Wollondilly	This group is a member of the Mirramajah Group of RAPs
Gunyu Cultural Heritage Technical Services	Darlene Hoskins-McKenzie				Hawkesbury Blacktown Penrith Fairfield Holroyd Camden Campbelltown Liverpool Parramatta Sutherland Sydney Kogarah Hurstville Rockdale Canterbury Marrickville Bankstown Strathfield Randwick Woollahra	Ashfield Auburn Canada Bay Leichhardt Manly Mosman North Sydney Lane Cove Hunters Hill Hornsby Ku-Ring-Gai Pittwater Botany Bay Ryde Warringah Willoughby Blue Mountains Burwood The Hills Waverly Wollondilly	This group is a member of the Mirramajah Group of RAPs
Munyunga Cultural Heritage Technical Services	Suzannah McKenzie				Hawkesbury Blacktown Penrith Fairfield Holroyd Camden Campbelltown Liverpool	Ashfield Auburn Canada Bay Leichhardt Manly Mosman North Sydney Lane Cove	This group is a member of the Mirramajah Group of RAPs

Organisation/ Individual	Contact Name	Phone Number	Email Address/ Fax	Postal Address	LGA's	Additional information
					Parramatta Sutherland Sydney Kogarah Hurstville Rockdale Canterbury Marrickville Bankstown Strathfield Randwick Woollahra	
Murrumbul Cultural Heritage Technical Services	Levi McKenzie- Kirkbright				Hawkesbury Blacktown Penrith Fairfield Holroyd Camden Campbelltown Liverpool Parramatta Sutherland Sydney Kogarah Hurstville Rockdale Canterbury Marrickville Bankstown Strathfield Randwick Woollahra	This group is a member of the Mirramajah Group of RAPs
Wingikara Cultural Heritage Technical Services	Wandai Kirkbright				Hawkesbury Blacktown Penrith Fairfield Holroyd Camden Campbelltown Liverpool Parramatta Sutherland Sydney Kogarah Hurstville Rockdale Canterbury Marrickville Bankstown Strathfield Randwick Woollahra	This group is a member of the Mirramajah Group of RAPs

Organisation/ Individual	Contact Name	Phone Number	Email Address/ Fax	Postal Address	LGA's	Additional information
Gulaga	Wendy Smith				<p>Wollondilly</p> <p>Ashfield Auburn Canada Bay Leichhardt Manly Mosman North Sydney Lane Cove Hunters Hill Hornsby Ku-Ring-Gai Pittwater Botany Bay Ryde Warringah Willoughby Blue Mountains Burwood The Hills Waverly Wollondilly</p> <p>Hawkesbury Blacktown Penrith Fairfield Holroyd Camden Campbelltown Liverpool Parramatta Sutherland Sydney Kogarah Hurstville Rockdale Canterbury Marrickville Bankstown Strathfield Randwick Woollahra</p>	This group states that their boundaries (Murrin Peoples) extend from the Hawkesbury River to the Snowy River
Biamanga	Sei Storer				<p>Hawkesbury Blacktown Penrith Fairfield Holroyd Camden Campbelltown Liverpool Parramatta Sutherland Sydney Kogarah Hurstville Rockdale Canterbury Marrickville Bankstown Strathfield Randwick Woollahra</p> <p>Ashfield Auburn Canada Bay Leichhardt Manly Mosman North Sydney Lane Cove Hunters Hill Hornsby Ku-Ring-Gai Pittwater Botany Bay Ryde Warringah Willoughby Blue Mountains Burwood The Hills Waverly Wollondilly</p>	This group states that their boundaries (Murrin Peoples) extend from the Hawkesbury River to the Snowy River
Callendulla	Corey Smith				<p>Hawkesbury Blacktown Penrith Fairfield Holroyd Camden Campbelltown Liverpool Parramatta Sutherland Sydney</p> <p>Ashfield Auburn Canada Bay Leichhardt Manly Mosman North Sydney Lane Cove Hunters Hill Hornsby Ku-Ring-Gai</p>	This group states that their boundaries (Murrin Peoples) extend from the Hawkesbury River to the Snowy River

Organisation/ Individual	Contact Name	Phone Number	Email Address/ Fax	Postal Address	LGA's	Additional information
					Kogarah Hurstville Rockdale Canterbury Marrickville Bankstown Strathfield Randwick Woollahra Pittwater Botany Bay Ryde Warringah Willoughby Blue Mountains Burwood The Hills Waverly Wollondilly	
Murramarang	Roxanne Smith				Hawkesbury Blacktown Penrith Fairfield Holroyd Camden Campbelltown Liverpool Parramatta Sutherland Sydney Kogarah Hurstville Rockdale Canterbury Marrickville Bankstown Strathfield Randwick Woollahra Ashfield Auburn Canada Bay Leichhardt Manly Mosman North Sydney Lane Cove Hunters Hill Hornsby Ku-Ring-Gai Pittwater Botany Bay Ryde Warringah Willoughby Blue Mountains Burwood The Hills Waverly Wollondilly	This group states that their boundaries (Murrin Peoples) extend from the Hawkesbury River to the Snowy River
Duncan Suey & Associates	Darren Duncan				Hawkesbury Blacktown Penrith Parramatta Sydney Marrickville Strathfield Warringah Willoughby Blue Mountains Burwood The Hills Ryde Ashfield Auburn Canada Bay Leichhardt Manly Mosman North Sydney Lane Cove Hunters Hill Hornsby Ku-Ring-Gai Pittwater Wollondilly	

19 May 2016 ref: OE&H : 19-5-2016/1

TfNSW c/o Dr Sandra Wallace
Director
Artefact Heritage
Level 4, Building B
35 Sounders Street
Pymont NSW 2009

Dear Sir or Madam

Aboriginal Cultural Heritage Assessment

Sydney Metro City Northwest & Southwest

I refer to your letter of 12 May 2016 regarding the above matter.

We acknowledge that section 4.1.2 of the Office of Environment & Heritage's *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* require you to contact us in order to compile a list of Aboriginal people who may have an interest in the proposed project area and hold knowledge relevant to determining the cultural significance of Aboriginal objects and/or places.

However, we advise that NTSCORP's privacy guidelines restrict us from providing proponents with contact details of traditional owners who may have such an interest or hold such knowledge.

Please be advised that, in response to your notification, we will forward your correspondence to any individuals, groups and organisations whom NTSCORP is aware assert traditional interests within or hold cultural knowledge about the relevant area. Recipients of our correspondence will be invited to register their interest in the project directly with you ASAP.

Please be aware that NTSCORP cannot make a guarantee or undertaking that the recipients of our correspondence represent the entirety of traditional owners for the relevant area.

Yours faithfully,

A large, stylized handwritten signature in blue ink, appearing to be "G. Tonna".

George Tonna
Land & Notifications Officer
NTSCORP Limited

Claire Rayner

From: Sandra Wallace
Sent: Monday, 23 May 2016 4:00 PM
To: Claire Rayner
Subject: FW: Aboriginal Cultural Heritage Assessment
Attachments: ATT00001; Joanna Stobinski.vcf

Dr Sandra Wallace
Managing Director

ARTEFACT

Telephone: 61 2 8570 1203 **Mobile:** 0403565086
Address: Level 4, Building B, 35 Saunders Street, Pyrmont NSW 2009
Web: www.artefact.net.au

[Cultural Heritage Management](#) | [Archaeology](#) | [Heritage Interpretation](#)

Notice: This message contains privileged and confidential information intended only for the use of the addressee. If you are not the intended recipient you must not disseminate, copy or take any action in reliance upon it. If you received this in error, please notify us immediately.

From: Joanna Stobinski [mailto:Joannas@canterbury.nsw.gov.au]
Sent: Monday, 23 May 2016 3:46 PM
To: Sandra Wallace <Sandra.Wallace@artefact.net.au>
Subject: Aboriginal Cultural Heritage Assessment

Dear Dr Wallace,

At Canterbury City Council we have been operating a very active Canterbury Aboriginal Advisory Group for over ten years. However, over the last two years the numbers have dropped as some people moved out of the area or became too frail to attend our quarterly meetings.

The remaining members who may hold some cultural knowledge relevant to determining the significance of Aboriginal places around the Canterbury Bankstown area are:



Only this month, we have been amalgamated with the Bankstown City Council so future directions of the Canterbury Aboriginal Advisory Group will be decided in collaboration with our counterparts at Bankstown.

I hope this information will be of assistance to you in your Aboriginal cultural heritage assessment for the Sydney Metro City and Southwest project.

Kind regards,

Joanna Stobinski | Diversity Officer

Capacity Development Team

City of Canterbury 137 Beamish St Campsie NSW 2194

T: 9789 9472 | F: 9718 7227 | joannas@canterbury.nsw.gov.au | www.canterbury.nsw.gov.au



I would like to acknowledge the traditional owners of this land, the Bediagal people of Dharuk nation, and pay my respect to their Elders past and present.

City of Sydney
Town Hall House
456 Kent Street
Sydney NSW 2000

Telephone +61 2 9265 9333
council@cityofsydney.nsw.gov.au

GPO Box 1591 Sydney NSW 2001
cityofsydney.nsw.gov.au



23 May 2016

Our Ref: 2016/257823-01
File No: X000068

Dr Sandra Wallace
Transport for NSW
Director Artefact Heritage
Level 4, Building B
35 Saunders Street
Pyrmont, NSW 2009

Dear Dr Wallace

Sydney Metro City and South West Aboriginal Cultural Heritage Assessment

For areas within the City of Sydney LGA, Transport for NSW should contact the Metropolitan Local Aboriginal Land Council directly for cultural advice. For areas outside the City of Sydney LGA, TfNSW will need to contact the relevant land council for that area.

The Metropolitan Local Aboriginal Land Council is the custodian of Aboriginal culture and heritage within the Sydney region. The website is: <http://metrolalc.org.au>.

City of Sydney staff refer to the Metropolitan Local Aboriginal Land Council for any cultural advice or representation under the Principles of Cooperation signed by the Metropolitan Local Aboriginal Land Council and the City of Sydney in 2006 (http://www.cityofsydney.nsw.gov.au/__data/assets/pdf_file/0020/113672/Principles-of-cooperation.pdf).

The City also strongly recommends Sydney Metro consult with other long established organisations likely to hold cultural knowledge, including:

- National Centre of Indigenous Excellence
- Gadigal Information Services
- Redfern Aboriginal Medical Service
- Wyanga Aged Care
- Aboriginal Housing
- City of Sydney's Aboriginal and Torres Strait Islander Advisory Panel

For more information about Sydney's Aboriginal and Torres Strait Islander communities, please see the City's website:

<http://www.cityofsydney.nsw.gov.au/community/community-support/aboriginal-and-torres-strait-islander-communities>.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Bryony Cooper', with a long horizontal flourish extending to the right.

Bryony Cooper
Executive Manager City Access and Transport

cc Carolyn Riley, Senior Manager – Environmental Planning, Sydney Metro City and South West



address 200 Miller Street North Sydney NSW 2060

all correspondence General Manager North Sydney Council
PO Box 12 North Sydney NSW 2059
DX10587

telephone (02) 9936 8100

facsimile (02) 9936 8177

email council@northsydney.nsw.gov.au

internet www.northsydney.nsw.gov.au

ABN 32 353 260 317

Transport for New South Wales
C/- Dr Sandra Wallace
Director, Artefact Heritage
Level 4 Building B 35 Saunders Street
PYRMONT NSW 2009

BMS (CIS)

24 May 2016

Dear Dr Wallace,

**RE: SYDNEY METRO CITY & SOUTHWEST ABORIGINAL CULTURAL
HERITAGE ASSESSMENT**

I write with regard to a letter received from Transport for NSW dated 12 May 2016, in which Council is requested to provide you with information to assist you in undertaking the above assessment.

Council's Aboriginal Heritage Office has advised that the following organisations should be engaged directly during the assessment process:

- Sydney Metropolitan Local Aboriginal Lands Council at 36-38 George Street, Redfern; and
- Aboriginal Heritage Office, PO Box 12, North Sydney NSW 2059.

If you would like to discuss the above, please contact David Watts, Manager Aboriginal Heritage Office on 9936 8267, or Brad Stafford, Executive Planner Metro Project on 9936 8358.

Yours sincerely,

A handwritten signature in blue ink, appearing to read 'Marcelo Occhuzzi'.

Marcelo Occhuzzi

MANAGER STRATEGIC PLANNING



Advertisement

Registration for Aboriginal community consultation

Sydney Metro is Australia's largest public transport project. It will transform Sydney, delivering more trains and faster services for customers across the network.

Sydney Metro City & Southwest will extend metro rail between Chatswood and Bankstown, including a new crossing beneath Sydney Harbour, new railway stations in the lower North Shore and CBD, and the upgrade and conversion of the current line between Sydenham and Bankstown.

Transport for NSW invites local Aboriginal people with cultural knowledge of Aboriginal objects and places along the project route to register an interest in community consultation for the project.

Registration would be for the whole project with consultation undertaken for the individual Chatswood to Sydenham and Sydenham to Bankstown projects.

Sydney Metro City & Southwest is being assessed under the *Environmental Planning and Assessment Act 1979* as a Critical State Significant Infrastructure Project and will not require an Aboriginal Heritage Impact Permit in accordance with Part 6 of the *National Parks and Wildlife Act 1974*. However, Transport for NSW wishes to undertake Aboriginal community consultation in order to compile a list of Registered Aboriginal Parties for the project.

Anyone interested should register with Artefact Heritage Consultants.

Written registrations should provide their name, address, and phone number and be addressed to:

TfNSW c/o Dr Sandra Wallace,
Director, Artefact Heritage,
Level 4, Building B,
35 Saunders Street,
Pyrmont NSW 2009

Alternatively, email sandra.wallace@artefact.net.au or phone **02 9518 8411**.

Submissions should be registered by 18 May 2016.

Please mark all responses with the subject line:
'Sydney Metro – Confidential'

Please be advised that the details of all parties who register will be forwarded to the Office of Environment and Heritage and the Local Aboriginal Land Council unless specified otherwise.

Invitation to register



Transport
for NSW

27 May, 2016

Mr. Eric Keidge


Dear Mr. Eric Keidge

Re: Sydney Metro City & Southwest Aboriginal Cultural Heritage Assessment

Sydney Metro is Australia's largest public transport project. It will transform Sydney, delivering more trains and faster services for customers across the network.

Sydney Metro has two core components:

Stage 1: Sydney Metro Northwest – formerly the 36km North West Rail Link. This \$8.3 billion project is now under construction and will open in the first half of 2019 with a metro train every four minutes in the peak.

Stage 2: Sydney Metro City & Southwest – a new 30km metro line extending metro rail from the end of Sydney Metro Northwest at Chatswood under Sydney Harbour, through new CBD stations and southwest to Bankstown. It is due to open in 2024 with the capacity to run a metro train every two minutes each way through the centre of Sydney.

Sydney Metro City & Southwest is being assessed as two separate components, Chatswood to Sydenham and Sydenham to Bankstown.

The purpose of the Aboriginal community consultation is to assist the assessment of both components of Sydney Metro City & Southwest under the *Environmental Planning and Assessment Act 1979*. TfNSW therefore seeks to consult with all Aboriginal persons and organisations who hold cultural knowledge relevant to determining the significance of Aboriginal object or places within the project area.

Your organisation has been identified as possibility having an interest in the project area. If you hold cultural knowledge relevant to the Chatswood to Bankstown area, we invite you to register in the process of community consultation.

Please submit your expression of interest in writing before 9 June 2016 to:

TfNSW c/o Dr Sandra Wallace
Director
Artefact Heritage
Level 4, Building B
35 Saunders Street
Pyrmont NSW 2009

Please be advised that, in accordance with the consultation requirements, if you are registering an interest your details will be forwarded to Office of Environment & Heritage and the Metropolitan Local Aboriginal Land Council and Gandangara Local Aboriginal Land Council, unless you specify that you do not wish your details to be released.

For further information, please contact Sandra by email at sandra.wallace@artefact.net.au, or on 9518 8411.

Kind Regards



Carolyn Riley
Principal Manager – Environmental Planning
Sydney Metro – City & Southwest



Transport
for NSW

27 May, 2016

Goobah Developments



Dear Mr. Basil Smith

Re: Sydney Metro City & Southwest Aboriginal Cultural Heritage Assessment

Sydney Metro is Australia's largest public transport project. It will transform Sydney, delivering more trains and faster services for customers across the network.

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Kind Regards



Carolyn Riley
Principal Manager – Environmental Planning
Sydney Metro – City & Southwest



Transport
for NSW

27 May, 2016

Gulaga
[REDACTED]

Dear Wendy Smith

Re: Sydney Metro City & Southwest Aboriginal Cultural Heritage Assessment

Sydney Metro is Australia's largest public transport project. It will transform Sydney, delivering more trains and faster services for customers across the network.

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Artefact Heritage
Level 4, Building B
35 Saunders Street
Pymont NSW 2009

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Kind Regards



Carolyn Riley
Principal Manager – Environmental Planning
Sydney Metro – City & Southwest



Transport
for NSW

27 May, 2016

Gundunqurra Tribal Technical Services
[REDACTED]

Dear Mr. David Bell

Re: Sydney Metro City & Southwest Aboriginal Cultural Heritage Assessment

Sydney Metro is Australia's largest public transport project. It will transform Sydney, delivering more trains and faster services for customers across the network.

Sydney Metro has two core components:

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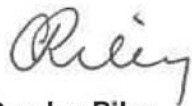
Please submit your expression of interest in writing before 9 June 2016 to:

TfNSW c/o Dr Sandra Wallace
Director
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Level 4, Building B
35 Saunders Street
Pymont NSW 2009

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For further information, please contact Sandra by email at sandra.wallace@artefact.net.au, or on 9518 8411.

Kind Regards



Carolyn Riley

Principal Manager – Environmental Planning
Sydney Metro – City & Southwest



Transport
for NSW

27 May, 2016

Gundungurra Tribal Technical Services
[REDACTED]

Dear Mr. Peter Foster

Re: Sydney Metro City & Southwest Aboriginal Cultural Heritage Assessment

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Artefact Heritage
Level 4, Building B
35 Saunders Street
Pyrmont NSW 2009

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For further information, please contact Sandra by email at sandra.wallace@artefact.net.au, or on 9518 8411.

Kind Regards




Carolyn Riley
Principal Manager – Environmental Planning
Sydney Metro – City & Southwest



Transport
for NSW

27 May, 2016

Gundungurra Tribal Technical Services


Dear Terri Ann Hoskins

Re: Sydney Metro City & Southwest Aboriginal Cultural Heritage Assessment

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For further information, please contact Sandra by email at sandra.wallace@artefact.net.au, or on 9518 8411.

Kind Regards



Carolyn Riley
Principal Manager – Environmental Planning
Sydney Metro – City & Southwest



**Transport
for NSW**

27 May, 2016

Gundunqurra Tribal Technical Services
[REDACTED]

Dear Mr. Tony Williams

Re: Sydney Metro City & Southwest Aboriginal Cultural Heritage Assessment

Sydney Metro is Australia's largest public transport project. It will transform Sydney, delivering more trains and faster services for customers across the network.

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For further information, please contact Sandra by email at sandra.wallace@artefact.net.au, or on 9518 8411.

Kind Regards



Carolyn Riley

Principal Manager – Environmental Planning
Sydney Metro – City & Southwest



Transport
for NSW

27 May, 2016

Gunyu Cultural Heritage Technical Services
[REDACTED]

Dear Darlene Hoskins-McKenzie

Re: Sydney Metro City & Southwest Aboriginal Cultural Heritage Assessment

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Kind Regards



Carolyn Riley

Principal Manager – Environmental Planning
Sydney Metro – City & Southwest



Transport
for NSW

27 May, 2016

Gunyuu
[REDACTED]

Dear Kylie Ann Bell

Re: Sydney Metro City & Southwest Aboriginal Cultural Heritage Assessment

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Kind Regards



Carolyn Riley
Principal Manager – Environmental Planning
Sydney Metro – City & Southwest



Transport
for NSW

27 May, 2016

Jerringong
[REDACTED]

Dear Joanne Anne Stewart

Re: Sydney Metro City & Southwest Aboriginal Cultural Heritage Assessment

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Kind Regards



Carolyn Riley
Principal Manager – Environmental Planning
Sydney Metro – City & Southwest



Transport
for NSW

27 May, 2016

Kawul Cultural Services


Dear Kelly & Vicky Slater

Re: Sydney Metro City & Southwest Aboriginal Cultural Heritage Assessment

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Carolyn Riley
Principal Manager – Environmental Planning
Sydney Metro – City & Southwest



Transport
for NSW

27 May, 2016

Minnamunnung


Dear Aaron Broad

Re: Sydney Metro City & Southwest Aboriginal Cultural Heritage Assessment

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Kind Regards



Carolyn Riley
Principal Manager – Environmental Planning
Sydney Metro – City & Southwest



Transport
for NSW

27 May, 2016

Munvunga Cultural Heritage Technical Services
[REDACTED]

Dear Suzannah McKenzie

Re: Sydney Metro City & Southwest Aboriginal Cultural Heritage Assessment

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Kind Regards



Carolyn Riley
Principal Manager – Environmental Planning
Sydney Metro – City & Southwest



Transport
for NSW

27 May, 2016

Munyunga
[REDACTED]

Dear Kaya Dawn Bell

Re: Sydney Metro City & Southwest Aboriginal Cultural Heritage Assessment

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Kind Regards



Carolyn Riley
Principal Manager – Environmental Planning
Sydney Metro – City & Southwest



Transport
for NSW

27 May, 2016

Murramarang
[REDACTED]

Dear Roxanne Smith

Re: Sydney Metro City & Southwest Aboriginal Cultural Heritage Assessment

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Kind Regards



Carolyn Riley
Principal Manager – Environmental Planning
Sydney Metro – City & Southwest



Transport
for NSW

27 May, 2016

Murrumbul Cultural Heritage Technical Services
[REDACTED]

Dear Mr. Levi McKenzie-Kirkbright

Re: Sydney Metro City & Southwest Aboriginal Cultural Heritage Assessment

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Kind Regards



Carolyn Riley
Principal Manager – Environmental Planning
Sydney Metro – City & Southwest



Transport
for NSW

27 May, 2016

Murrumbul
[REDACTED]

Dear Mr. Mark Henry

Re: Sydney Metro City & Southwest Aboriginal Cultural Heritage Assessment

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Carolyn Riley
Principal Manager – Environmental Planning
Sydney Metro – City & Southwest



Transport
for NSW

27 May, 2016

Nundagurri
[REDACTED]

Dear Newton Carriage

Re: Sydney Metro City & Southwest Aboriginal Cultural Heritage Assessment

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Kind Regards




Carolyn Riley
Principal Manager – Environmental Planning
Sydney Metro – City & Southwest



Transport
for NSW

27 May, 2016

Pemulwuy CHTS


Dear Pemulwuy Johnson

Re: Sydney Metro City & Southwest Aboriginal Cultural Heritage Assessment

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Kind Regards



Carolyn Riley
Principal Manager – Environmental Planning
Sydney Metro – City & Southwest



Transport
for NSW

27 May, 2016

Thauaira
[REDACTED]

Dear Shane Carriage

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Carolyn Riley
Principal Manager – Environmental Planning
Sydney Metro – City & Southwest



Transport
for NSW

27 May, 2016

Walbunja
[REDACTED]

Dear Hika Te Kowhai

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Kind Regards



Carolyn Riley
Principal Manager – Environmental Planning
Sydney Metro – City & Southwest



Transport
for NSW

27 May, 2016

Walgalu
[REDACTED]

Dear Ronal Stewart

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Carolyn Riley
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Sydney Metro – City & Southwest



Transport
for NSW

27 May, 2016

Wingikara Cultural Heritage Technical Services
[REDACTED]

Dear Wandai Kirkbright

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Pymont NSW 2009

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For further information, please contact Sandra by email at sandra.wallace@artefact.net.au, or on 9518 8411.

Kind Regards



Carolyn Riley
Principal Manager – Environmental Planning
Sydney Metro – City & Southwest



Transport
for NSW

27 May, 2016

Wingikara
[REDACTED]

Dear Hayley Bell

Re: Sydney Metro City & Southwest Aboriginal Cultural Heritage Assessment

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Kind Regards



Carolyn Riley
Principal Manager – Environmental Planning
Sydney Metro – City & Southwest



Transport
for NSW

27 May, 2016

Wullung


Dear Mr. Lee-Roy James Boota

Re: Sydney Metro City & Southwest Aboriginal Cultural Heritage Assessment

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Kind Regards



Carolyn Riley
Principal Manager – Environmental Planning
Sydney Metro – City & Southwest



Transport
for NSW

27 May, 2016

Yerramurra
[REDACTED]

Dear Mr. Robert Parson

Re: Sydney Metro City & Southwest Aboriginal Cultural Heritage Assessment

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Kind Regards



Carolyn Riley
Principal Manager – Environmental Planning
Sydney Metro – City & Southwest



Transport
for NSW

27 May, 2016

Badu



Dear Karia Lea Bond

Re: Sydney Metro City & Southwest Aboriginal Cultural Heritage Assessment

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Kind Regards



Carolyn Riley
Principal Manager – Environmental Planning
Sydney Metro – City & Southwest



Transport
for NSW

27 May, 2016

Biamanga
[REDACTED]

Dear Seli Storer

Re: Sydney Metro City & Southwest Aboriginal Cultural Heritage Assessment

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Kind Regards



Carolyn Riley
Principal Manager – Environmental Planning
Sydney Metro – City & Southwest



Transport
for NSW

27 May, 2016

Bilinga Cultural Heritage Technical Services
[REDACTED]

Dear Robert Brown

Re: Sydney Metro City & Southwest Aboriginal Cultural Heritage Assessment

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Kind Regards



Carolyn Riley
Principal Manager – Environmental Planning
Sydney Metro – City & Southwest



Transport
for NSW

27 May, 2016

Bilinga
[REDACTED]

Dear Simalene Carriage

Re: Sydney Metro City & Southwest Aboriginal Cultural Heritage Assessment

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Carolyn Riley
Principal Manager – Environmental Planning
Sydney Metro – City & Southwest



Transport
for NSW

27 May, 2016

Callendulla
[REDACTED]

Dear Corey Smith

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Carolyn Riley
Principal Manager – Environmental Planning
Sydney Metro – City & Southwest



Transport
for NSW

27 May, 2016

Canterbury Aboriginal Advisory Group
[REDACTED]

Dear Ms Jennifer Newman

Re: Sydney Metro City & Southwest Aboriginal Cultural Heritage Assessment

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Carolyn Riley
Principal Manager – Environmental Planning
Sydney Metro – City & Southwest



Transport
for NSW

27 May, 2016

Canterbury Aboriginal Advisory Group
[REDACTED]

Dear Joan Tanter

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Carolyn Riley
Principal Manager – Environmental Planning
Sydney Metro – City & Southwest



Transport
for NSW

27 May, 2016

Canterbury Aboriginal Advisory Group
[REDACTED]

Dear Mr John Blair

Re: Sydney Metro City & Southwest Aboriginal Cultural Heritage Assessment

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Carolyn Riley
Principal Manager – Environmental Planning
Sydney Metro – City & Southwest



Transport
for NSW

27 May, 2016

Canterbury Aboriginal Advisory Group



Dear Ms Margaret Williams

Re: Sydney Metro City & Southwest Aboriginal Cultural Heritage Assessment

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Carolyn Riley
Principal Manager – Environmental Planning
Sydney Metro – City & Southwest



Transport
for NSW

27 May, 2016

Dharug
[REDACTED]

Dear Mr. Andrew Bond

Re: Sydney Metro City & Southwest Aboriginal Cultural Heritage Assessment

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Kind Regards



Carolyn Riley
Principal Manager – Environmental Planning
Sydney Metro – City & Southwest



Transport
for NSW

27 May, 2016

Duncan Suey & Associates
[REDACTED]

Dear Mr. Darren Duncan

Re: Sydney Metro City & Southwest Aboriginal Cultural Heritage Assessment

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Kind Regards



Carolyn Riley
Principal Manager – Environmental Planning
Sydney Metro – City & Southwest

Claire Rayner

From: Gordow [REDACTED]
Sent: Friday, 6
To: Sandra Wallace
Subject: Sydney Metro
Attachments: Sydney Metro.doc

With Thank's

Uncle
Gordon Workman
Darug Elder

Registrations of interest

DARUG - LAND - OBSERVATIONS

Pty Ltd



6-5-2016

Sandra Wallace
Director Artefact Heritage

Notification and Registration of ALL Aboriginal Interests
Re: Sydney Metro - Confidential

Please be advice that D.L.O is seeking to be involved in any and all consultation meetings and field work.

This office specializes in Aboriginal and community consultation. An has a membership that comprises of Traditional owners from the area in question those retain strong story and song lines and oral history and continued contact. We would also like to state that we do not except or support any person or organization that are NOT from the DARUG Nation that comments regarding the said area. Please also be advised that this aboriginal Organization does not do volunteer work or attend unpaid meetings. I hope that you advise your client of this so that, This Group will not be discriminated against and refused paid field work.

to the following



Yours faithfully

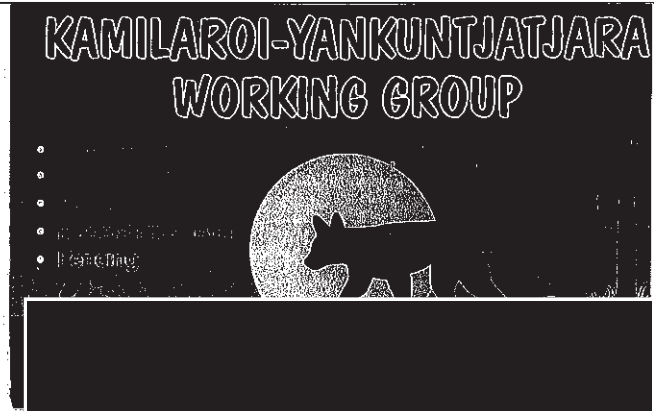
Uncle
Gordon Workman
Darug Elder

Sites Officer

Pollowan Phillip Khan



Sydney Metro - Confidential



TfNSW c/o Dr Sandra Wallace
Director Artefact Heritage
Level 4, Building B
35 Saunders Street
Pyrmont NSW 2009

06/05/16

Dear Sandra

Thank you for your advertisement in the Koori Mail that Artefact has been engaged to undertake archaeological work with Sydney Metro, City & Southwest and that you are inviting Aboriginal organisations to register, if they wish to be involved in the community consultation process.

As Senior Aboriginal person who has for the past forty of so years (40) actively participated in the Protection Aboriginal Cultural Heritage throughout the Sydney Basin , and particularly throughout Western Sydney, I, on behalf of the Kamilaroi Yankuntjatjara Working Group, wish to provide to you my organisations' registration of interest.

Information in my registration of interest:

1. I am a Senior Aboriginal and Principal of the Kamilaroi -Yankuntjatjara Working Group, and all Aboriginal entity (ABN33979702507).
2. I prefer communicating by, Mail, Telephone, and; and I am, the Principal, person to contact, and;
My contact details are:
Phillip Khan
3. I wish to be involved and participate in all levels of consultation/project involvement. I wish to attend all meetings, and, participate in available field work; and would receive a copy of the report.
4. I attach to this letter a copy of Kamilaroi- Yankuntjatjara Working Group's; GIO Public Liability Insurance; GIO Workers Compensation Certificate.

Should you wish me to provide further information, please do not hesitate to contact me on 0434545982.

Yours Sincerely,

Pollowan Phillip Khan

Claire Rayner

From: Danny Franks [REDACTED]
Sent: Monday, 9 May
To: Sandra Wallace
Cc: [REDACTED]
Subject:
Attachments: ROI-J0000111.pdf

Good Morning Sandra,

Please find attached Tocomwall's ROI for the above mentioned project.

Your sincerely,

Danny Franks
Cultural Heritage Manager



09 May 2016

Sandra.Wallace
Chatswood-Bankstown Rail Extension
Artefact Heritage
Level,4 Building B,
35 Saunders Street
Pyrmont NSW 2009

Dear Sandra,

RE: Aboriginal Registration for Community Consultation—Sydney Metro City And Southwest extension of Metro rail,Chatswood-Bankstown.

Registration of Interest (ROI)

Thank you for your notification regarding the Registration of Interest for the opportunity to provide cultural knowledge for the above mentioned project. Tocomwall respectfully requests primary involvement in all consultation meetings and fieldwork associated with the project.

Tocomwall represents traditional owners associated with the project area and retains local knowledge and oral history that will add significant value to the Project's heritage assessment. We have no objection to our contact information being provided to the Office of Environment and Heritage or the Local Aboriginal Land Council.

Tocomwall is also able to assist with input that can be incorporated into a written assessment of cultural values of the area. We employ a well-structured team with the capacity to support all necessary field work for the project. We can provide our schedule of rates and copies of relevant certificates of currency for business insurances upon request.

Tocomwall is a small business that relies upon a consistent cash flow that ensures we can continue to fulfil our client's needs. Unfortunately, the Tocomwall team is not in a position to provide volunteer work or attend meetings on a gratuitous basis. Tocomwall respectfully requests payment terms of 14 days from date of invoice. We would appreciate a copy of the contract and terms and conditions prior to commencement of the project.

Please provide all correspondence to Danny Franks at [redacted] an [redacted] or to the above postal address.

Should you have any further questions regarding this ROI please contact me directly on 0415 226 725.

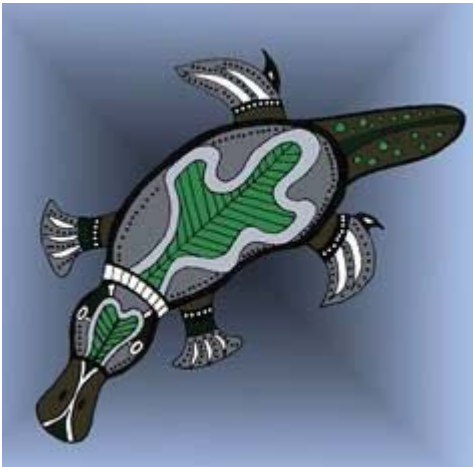
Yours faithfully

Danny Franks
Director and Cultural Heritage Manager

Claire Rayner

From: Ryan Johnson <[REDACTED]>
Sent: Tuesday, 10 Ma
To: Sandra Wallace
Subject: Sydney Metro - City & Southwest
Attachments: Sandra Artefact 001.jpg

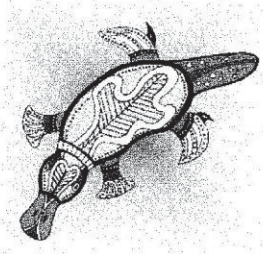
Dear Sandra,
Please find attached letter regarding the above Project. I look forward to hearing from you shortly.
Kind regards
Ryan Johnson | **Murra Bidgee Mullangari**



Aboriginal Corporation Cultural Heritage

[REDACTED]

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Murra Bidgee Mullangari

Aboriginal Corporation Cultural Heritage
ICN: 8112

Date: 10/05/2016

Attention: Sandra Wallace

Artefact Heritage
Level 4, Building B,
35 Saunders Street,
Pyrmont NSW 2009

Email: sandra.wallace@artefact.net.au

Dear Sandra,

Sydney Metro – City & Southwest

Murra Bidgee Mullangari Aboriginal Corporation would like to register an interest in the above project. Our members and family have lived and worked in the area for many of years and still do. I feel that our family and members have a traditional and historical connection to country. Murra Bidgee Mullangari Aboriginal Corporation hold cultural knowledge relevant to determining the significance of Aboriginal objects and or places in the proposed project.

I have worked with Artefact on projects involved with the RMS, and have worked with Aecom, ERM, Niche, Biosis, DSC, OzArk to name a few.

If you require further details please feel free to contact me either by mobile or email. I look forward to hearing from you shortly.

Kind regards


Rvan Johnson | Site Officer





11th May 2016

Ref: Sydney Metro, City and South West

To whom it may concern,

Aboriginal Archaeology Service is seeking *primary involvement* in all consultation meetings and fieldwork for the above-mentioned project. AAS immediate family has lived in the area from 1897 and retains local and oral history on behalf of its first nation people. We have no objection to our information being provided to the Office of Environment and Heritage and the Local Aboriginal Land Council.

AAS is able to assist with input that can be incorporated into a written assessment of cultural values of the area. We are also able to provide fit staff to assist with work that may involve physical labour. We can provide our schedule of rates and copies of relevant certificates of currency for business insurances on request.

All correspondence should be emailed to [REDACTED] or to the above postal address. The area is an important [REDACTED] d by our family.

Yours sincerely

Tony Williams



Director of **Aboriginal Archaeology Service INC.**

ABN 68724840084



11th May 2016

Re: Sydney Metro City and South West.

AAS immediate family has lived in the area from 1897 and retains local and oral history on behalf of its first nation people. A.A.S is registered in the Federal Court of Australia as a Traditional Owner of the Sydney Basin and has proven to the Federal Court its Aboriginal Connections to the area prior to settlement. This entitles A.A.S on behalf of the 'Williams' family to claim Native Title.

A.A.S has been working over the years with many archeological companies within the Cumberland Plains. A.A.S has extensive knowledge of the excavation process including identification of artifacts including Silcrete Cores, Bondi points and the like.

A.A.S regularly consults with State Government on Aboriginal Issues that affects the community.

A.A.S has various University qualifications. All A.A.S Staff have a Work cover induction card and are qualified in Senior First Aid.

A.A.S has lived within the site area and has extensive knowledge on changes that have occurred to the inhabitants of the area, past and present.

A.A.S can provide references from Ray Williams MP and David Elliott – Minister for Corrections Emergency Services and Veteran Affairs. A.A.S can also provide a reference from the Office of Environment and Heritage.

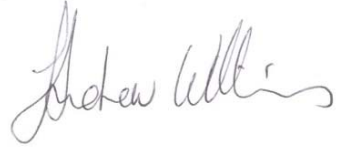
We have no objection to our information being provided to the Office of Environment and Heritage and the Local Aboriginal Land Council.

AAS is able to assist with input that can be incorporated into a written assessment of cultural values of the area. We are also able to provide fit staff to assist with work that may involve physical labour. We can provide our schedule of rates and copies of relevant certificates of currency for business insurances on request.

All correspondence should be emailed to [REDACTED] or to the above postal address. The area is an important part of [REDACTED] our family.

Yours truly

Andrew Williams

A handwritten signature in cursive script that reads "Andrew Williams". The signature is written in dark ink and is positioned below the printed name.

Director of A.A.S

Claire Rayner

From: Sandra Wallace
Sent: Tuesday, 17 May 2016 3:50 PM
To: Claire Rayner
Subject: FW: Sydney Metro City and Southwest Rail

Dr Sandra Wallace
Managing Director

ARTEFACT




Web: www.artefact.net.au

Cultural Heritage Management | Archaeology | Heritage Interpretation

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-----Original Message-----

From: Kayla Cummins 
Sent: Tuesday, 17 Ma
To: Sandra Wallace <Sandra.Wallace@artefact.net.au>
Subject: Sydney Metro City and Southwest Rail

Hi Sandra

Woronora Plateau Gundangarra Elders Council would like to register for the project Sydney Metro City and Southwest Rail extension.

Please forward any correspondence to the below address.

Woronora Plateau Gundangarra Elders Council
Att: Kayla Williamson



Kind Regards
Kayla Williamson

Claire Rayner

From: Sandra Wallace
Sent: Friday, 27 May 2016 2:22 PM
To: Claire Rayner
Subject: Fwd: Expressions of Interest - Sydney Metro City Northwest & Southwest
Attachments: Expressions of Interest letter ARTEFACT (Sydney Metro Northwest & Southwest).docx; ATT00001.htm

Sent from my iPhone

Begin forwarded message:

From: Darug Land Observations [REDACTED]
Date: 27 May 2016 2:19:54 pm A
To: sandra.wallace@artefact.net.au
Subject: Expressions of Interest - Sydney Metro City Northwest & Southwest

Hi Sandra,

Please see attached Expressions of Interest letter for the proposed construction of Sydney Metro Northwest & Southwest.

Look forward to working with you on this project.

Kind Regards,

Anna
Darug Land Observations Pty Ltd



**DARUG LAND
OBSERVATIONS PTY LTD
ABN 27 602 765 453**

27th May 2016

TfNSW C/- Dr Sandra Wallace
ARTEFACT HERITAGE
Level 4, Building B, 35 Saunders Street
PYRMONT NSW 2009

Notification and Registration of ALL Aboriginal Interests

RE: Proposed Construction of Sydney Metro Northwest & Southwest
Aboriginal Archaeological & Cultural Heritage Assessment

Dear Sandra,

Please be advised that Darug Land Observations Pty Ltd is seeking to be involved in any and all consultation meetings and fieldwork.

This office specialises in Aboriginal and community consultations, and has a membership that comprises of Traditional owners from the area in question. Those retain strong story, song lines, oral history and continued contact.

We would also like to state that we do not accept or support any person or organisation that are NOT from the DARUG Nation that comments regarding the said area.

Please also be advised that this Aboriginal organisation does not do volunteer work or attend unpaid meetings. I hope that you advise your client of this so that, 'This Group', will not be discriminated against and refused paid fieldwork. DLO's rate is \$440 half day (less than 4 hours) and \$880 per day (flat rate), including GST.

All correspondence should be emailed to: [REDACTED] and any further consultation during this project can be directed to Anna or Jamie Workman.

Yours sincerely,

Jamie Workman
Darug Land Observations Pty Ltd

Uncle Gordon Workman
Darug Elder

Claire Rayner

From: Sandra Wallace
Sent: Monday, 30 May 2016 4:46 PM
To: Claire Rayner
Subject: FW: Northwest and southwest railway link

Dr Sandra Wallace
Managing Director

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From: Chris Payne [REDACTED]
Sent: Monday, 30 May 2016 4:45 PM
To: Sandra Wallace <Sandra.Wallace@artefact.net.au>
Subject: Northwest and southwest railway link

To Sandra Wallace... im sending this email on behalf peter foster and Dave bell to express their interest in the project or community consultation and if Dave bell or peter foster can't attend a community consultation if u have any... i chris payne can do so in their place.. if you have any questions please feel free to contact me on [REDACTED] ... with kind regards Cjpayne gundgangurra Tribal technical services

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If you received this in error, please notify us immediately.

From: Gorman, Chris [REDACTED]
Sent: Tuesday, 14 June 2016 9:41 AM
To: Sandra Wallace <Sandra.Wallace@artefact.net.au>
Subject: FW: Aboriginal Cultural Heritage Assessment

Hi Sandra - fyi

From: Doran, Mark
Sent: Tuesday, 14 June 2016 9:04 AM
To: Gorman, Chris
Subject: FW: Aboriginal Cultural Heritage Assessment

Hi Chris

I received this response below to one of the Aboriginal Cultural Heritage Assessment emails.

Do you need me to make any response to this?

Kind Regards

Mark Doran

From: Darren J Duncan [REDACTED]
Sent: Monday, 13 June 2016 4:39 PM
To: Doran, Mark
Subject: Re: Aboriginal Cultural Heritage Assessment

Hi Mark

Please accept my expression of interest for the above site.

I'm a Gadigal man and also a Deerubbin member, have been working with both councils over the last 20 years or so assisting on significant archaeological digs around the Sydney area such as stage 1 Rouse Hill (1998-2004), Parramatta with Casey and Lowe. Also Tempe House with Metro Land Council.

I have attached my certificate of currency.

Looking forward to working with you.

Kind regards,

Darren J. Duncan



----- Original message -----

From: "[REDACTED]" >

Date: 30/05/2016 2:57 pm (GMT+10:00)

To: darrenjohnduncan@gmail.com

Cc: sandra.wallace@artefact.net.au

Subject: Aboriginal Cultural Heritage Assessment

Dear Mr. Darren Duncan

Please see attached a letter regarding the Aboriginal Cultural Heritage Assessment for the Sydney Metro City & Southwest project.

Your organisation has been identified as possibly having an interest in the project area.

Please submit your expression of interest in writing before 9 June 2016 to:

TfNSW c/o Dr Sandra Wallace

Director

Artefact Heritage

Level 4, Building B

35 Saunders Street

Pymont NSW 2009

For further information, please contact Sandra by email sandra.wallace@artefact.net.au

Kind Regards

Mark Doran
Project Support Officer

Sydney Metro

City & Southwest
Transport for NSW



Use public transport... plan your trip at transportnsw.info

Get on board with Opal at opal.com.au

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Proposed ACHAR Methodology



artefact

11 September 2017

Re: Sydney Metro City & Southwest – Sydenham to Bankstown: Project information and methodology for Aboriginal Cultural Heritage Assessment (ACHAR)

Thank you for registering as a stakeholder for the Sydney Metro City & Southwest project. This letter provides a brief overview of the project, the Aboriginal heritage assessment completed to date and a methodology for the Aboriginal Cultural Heritage Assessment Report (ACHAR) for the Sydenham to Bankstown portion of the project. Further information on the project, the Environmental Impact Statement (EIS), and Aboriginal Heritage Assessment can be found on the Department of Planning and Environment website:

http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=8256

Project Description

Sydney Metro is a new standalone rail network identified in Sydney's Rail Future. The Sydney Metro network consists of Sydney Metro City & Southwest and Sydney Metro Northwest.

The proposed Sydney Metro City & Southwest comprises two core components:

- The Chatswood to Sydenham project would involve construction and operation of an underground rail line between Chatswood and Sydenham
- The Sydenham to Bankstown upgrade would involve conversion of the 13 kilometre Bankstown line to metro standards and upgrade of existing stations between Sydenham and Bankstown.

Both components are subject to assessment by the Department of Planning and Environment and approval by the Minister for Planning under Part 5.1 of the NSW Environmental Planning and Assessment Act 1979 (EP&A Act). The Chatswood to Sydenham project was subject to a separate environmental impact assessment and an ACHAR was completed for this project in 2016.

The Sydenham to Bankstown upgrade 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 for metro operations.

A key element of the project is upgrading stations along the corridor from Marrickville to Bankstown, to improve access by providing infrastructure such as new concourses, levelling and straightening platforms, and lifts at stations. These upgrades aim to provide a better, more convenient and safer experience for public transport customers by delivering:

- stations that are accessible to people with a disability or limited mobility, the elderly, parents with prams, and people travelling with luggage
- modern buildings and facilities for all transport modes that meet the needs of a growing population

- modern interchanges that support an integrated transport network and allow seamless transfers between different modes for all customers.

An overview of the project is provided as Figure 1.

Aboriginal Heritage Assessment

The Sydenham to Bankstown rail corridor consists of an undulating landform including slope, crest and flat landform contexts. Large portions of the rail corridor are located through significantly modified landform contexts, including large cuts through the underlying shale and sandstone geology. The archaeological potential of the majority of the project area is considered to be nil to low. This is due to the significant disturbance and landform modifications which would have removed any archaeological deposits.

A survey of the study area was undertaken with the participation of the Metropolitan Local Aboriginal Land Council and the Gandangara Local Aboriginal land Council.

No previously recorded Aboriginal sites are located within the project area. Two areas of potential archaeological deposit (PAD) were identified during the assessment phase, as described below.

A relatively intact area was identified during the site inspection within a small council park, Guide Park, located outside the rail corridor adjacent to the Belmore Youth and Resource Centre on Redman Parade, Belmore. Analysis of aerial photography indicates that the area has remained an open space since at least 1943 and no major ground disturbance has occurred. This area has been assessed as having Aboriginal archaeological potential and designated as S2B PAD01. S2B PAD01 is outside the project area and would not be impacted.

S2B PAD02 was identified within Warren Reserve, Punchbowl between Punchbowl Road and Urunga Parade. Analysis of aerial photography from 1943 and over the past 10 years indicates that there appears to have been little subsurface disturbance to this open space area. Intact A horizons were observed in a cutting to the north of the Punchbowl Station survey unit. Therefore, there is low to moderate potential that intact archaeological deposits may be identified within this area. S2B PAD02 is within the project area and would be subject to impacts associated with construction of the northern entrance for Punchbowl Station.

ACHAR Methodology

Based on the Aboriginal heritage assessment conducted for the EIS, Artefact Heritage has been engaged to prepare an ACHAR in accordance with the Guide for investigating, assessing and reporting on Aboriginal cultural heritage in NSW (Office of Environment and Heritage [OEH] 2010).

The ACHAR will provide a description of the environmental background, proposed works and impact assessment. The ACHAR will also outline details of Aboriginal stakeholder consultation for the project, which is being conducted in accordance with the Aboriginal Cultural Heritage Consultation Requirements for Proponents (OEH, 2010).

To prepare the ACHAR, Artefact Heritage is seeking information on the cultural value to Aboriginal people, or places of cultural value, related to the subject area. Aboriginal stakeholders should advise Artefact Heritage of specific protocols and restrictions related to the knowledge provided concerning the cultural values of the subject area.

If you would like to provide written comments or discuss the proposed works, please contact:

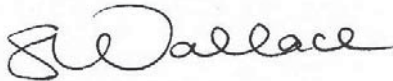
Transport for New South Wales
c/o Dr Sandra Wallace
Artefact Heritage
Building B, Level 4, 35 Saunders Street
Pyrmont NSW 2009
Or email Sandra.wallace@artefact.net.au

If you would like to comment on the proposed methodology for the preparation of the ACHAR, or provide relevant cultural knowledge, could you please contact me by **COB Tuesday 10 October**.

Following the preparation of a draft version of the ACHAR, a copy will be forwarded to your organisation for review and comment. Following a review period and finalisation of the ACHAR, it will be forwarded to OEH.

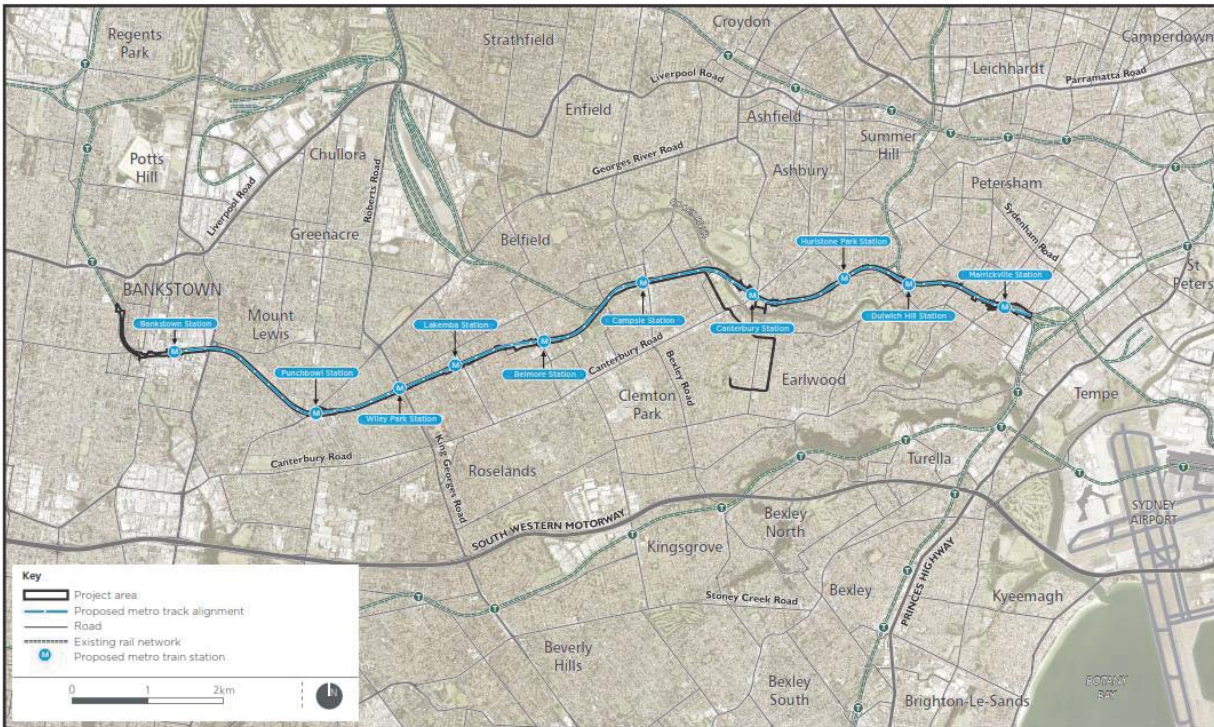
An Aboriginal Focus Group (AFG) is planned during the EIS exhibition period between September and October 2017. Invitations to attend the AFG will be sent out once the date has been confirmed.

Kind Regards,



Sandra Wallace
Director
Artefact Heritage
Sandra.wallace@artefact.net.au

Figure 1: Overview of project



Dear Gordon Workman,

Thank you for registering as a stakeholder for the Sydney Metro City & Southwest project.

Based on the Aboriginal heritage assessment conducted for the Environmental Impact Statement, Artefact Heritage has been engaged to prepare an Aboriginal Cultural Heritage Assessment Report (ACHAR) in accordance with the Guide for investigating, assessing and reporting on Aboriginal cultural heritage in NSW (Office of Environment and Heritage [OEH] 2010). To prepare the ACHAR, Artefact Heritage is seeking information on the cultural value to Aboriginal people, or places of cultural value, related to the subject area. A link to a letter outlining the project information and a methodology for the ACHAR is provided below. Please provide any comments on the proposed methodology or relevant cultural knowledge by **COB Tuesday 10 October**.

Project information and ACHAR: <https://artefact.box.com/s/cslw77agerwneri8fiubv3ddyr9govnw>

As part of the ongoing consultation for this project, an Aboriginal Focus Group (AFG) will be held on 22 September (venue to be confirmed). If you would like to attend the AFG, would you please confirm your attendance by **COB 20 September** by email (veronica.norman@artefact.net.au) or phone (9518 8411).

Kind regards,

Veronica Norman

Heritage Consultant


ARTEFACT

Telephone: 61 2 9518 8411 **Mobile:** 0415 660 490

Address: Level 4, Building B, 35 Saunders Street, Pyrmont NSW 2009

Web: www.artefact.net.au

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 *We acknowledge the Traditional Custodians of Country in which we live and work, and pay our respects to them, their culture and their Elders past, present and future*

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If you received this in error, please notify us immediately.

Please note: I am not in the office on Tuesdays.

Dear Christopher Payne,

Thank you for registering as a stakeholder for the Sydney Metro City & Southwest project.

Based on the Aboriginal heritage assessment conducted for the Environmental Impact Statement, Artefact Heritage has been engaged to prepare an Aboriginal Cultural Heritage Assessment Report (ACHAR) in accordance with the Guide for investigating, assessing and reporting on Aboriginal cultural heritage in NSW (Office of Environment and Heritage [OEH] 2010). To prepare the ACHAR, Artefact Heritage is seeking information on the cultural value to Aboriginal people, or places of cultural value, related to the subject area. A link to a letter outlining the project information and a methodology for the ACHAR is provided below. Please provide any comments on the proposed methodology or relevant cultural knowledge by **COB Tuesday 10 October**.

Project information and ACHAR: <https://artefact.box.com/s/cslw77agerwneri8fiubv3ddyr9govnw>

As part of the ongoing consultation for this project, an Aboriginal Focus Group (AFG) will be held on 22 September (venue to be confirmed). If you would like to attend the AFG, would you please confirm your attendance by **COB 20 September** by email (veronica.norman@artefact.net.au) or phone (9518 8411).

Kind regards,

Veronica Norman

Heritage Consultant


ARTEFACT

Telephone: 61 2 9518 8411 **Mobile:** 0415 660 490

Address: Level 4, Building B, 35 Saunders Street, Pyrmont NSW 2009

Web: www.artefact.net.au

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If you received this in error, please notify us immediately.

Please note: I am not in the office on Tuesdays.

Dear Ryan Johnson,

Thank you for registering as a stakeholder for the Sydney Metro City & Southwest project.

Based on the Aboriginal heritage assessment conducted for the Environmental Impact Statement, Artefact Heritage has been engaged to prepare an Aboriginal Cultural Heritage Assessment Report (ACHAR) in accordance with the Guide for investigating, assessing and reporting on Aboriginal cultural heritage in NSW (Office of Environment and Heritage [OEH] 2010). To prepare the ACHAR, Artefact Heritage is seeking information on the cultural value to Aboriginal people, or places of cultural value, related to the subject area. A link to a letter outlining the project information and a methodology for the ACHAR is provided below. Please provide any comments on the proposed methodology or relevant cultural knowledge by **COB Tuesday 10 October**.

Project information and ACHAR: <https://artefact.box.com/s/cslw77agerwneri8fiubv3ddyr9govnw>

As part of the ongoing consultation for this project, an Aboriginal Focus Group (AFG) will be held on 22 September (venue to be confirmed). If you would like to attend the AFG, would you please confirm your attendance by **COB 20 September** by email (veronica.norman@artefact.net.au) or phone (9518 8411).

Kind regards,

Veronica Norman

Heritage Consultant


ARTEFACT

Telephone: 61 2 9518 8411 **Mobile:** 0415 660 490

Address: Level 4, Building B, 35 Saunders Street, Pyrmont NSW 2009

Web: www.artefact.net.au

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If you received this in error, please notify us immediately.

Please note: I am not in the office on Tuesdays.

Dear Danny Franks,

Thank you for registering as a stakeholder for the Sydney Metro City & Southwest project.

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Project information and ACHAR: <https://artefact.box.com/s/cslw77agerwneri8fiubv3ddyr9govnw>

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Kind regards,

Veronica Norman

Heritage Consultant


ARTEFACT

Telephone: 61 2 9518 8411 **Mobile:** 0415 660 490

Address: Level 4, Building B, 35 Saunders Street, Pyrmont NSW 2009

Web: www.artefact.net.au

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Dear Kayla Williamson,

Thank you for registering as a stakeholder for the Sydney Metro City & Southwest project.

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Dear Tony Williams,

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Dear Peter Foster,

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Dear David Bell,

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Dear Darren Duncan,

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Dear Wandai Kirkbright,

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Dear Darlene Hoskins-McKenzie,

Thank you for registering as a stakeholder for the Sydney Metro City & Southwest project.

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Dear Robert Brown,

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Dear Levi McKenzie-Kirkbright,

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Dear Suzannah McKenzie,

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Dear David Watts,

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Dear Nathan Moran,

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Dear Jamie Workman,

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Assessment methodology mail out and invitation to AFG

Veronica Norman

From: Tony Williams [REDACTED] >
Sent: Thursday, September 14, 2017 11:46 AM
To: Veronica Norman
Subject: Rail Project

Hi Veronica
I will be attending the meeting .
I cannot open the link to your drop box.

Sent from [Mail](#) for Windows 10

Veronica Norman

From: Veronica Norman
Sent: Friday, September 15, 2017 7:14 PM
To: 'Danny Franks'
Subject: RE: Sydney Metro City & Southwest project: project information and ACHAR methodology

Thanks Danny,

I've sent an email to everyone letting them know. As we work off already prepared stakeholder lists there may be a few stray emails that get through to you but we will do our best to send all consultation and fieldwork enquiries to Jen.

Thanks,

Veronica

From: Danny Franks [REDACTED]
Sent: Friday, September 15, 2017 7:01 PM
To: Veronica Norman <Veronica.Norman@artefact.net.au>
Subject: Re: Sydney Metro City & Southwest project: project information and ACHAR methodology

Please make a note in your system so that all correspondence gets sent to Jennifer Norfolk

That would be much appreciated

Regards,

DannyFranks

Cultural Heritage Manager

Tocomwall Pty Ltd

[REDACTED]

Sent from my iPhone

On 15 Sep 2017, at 6:32 pm, Veronica Norman <Veronica.Norman@artefact.net.au> wrote:

Dear Danny Franks,

Please note the date of the AFG has been moved to **Wednesday 4th October**. Please confirm your attendance by COB Monday 2nd October.

Kind regards,

Veronica Norman
Heritage Consultant

ARTEFACT

Address: Level 4, Building B, 35 Saunders Street, Pyrmont NSW 2009
Web: www.artefact.net.au

Cultural Heritage Management | Archaeology | Heritage Interpretation

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Please note: I am not in the office on Tuesdays.

From: Veronica Norman
Sent: Monday, September 11, 2017 4:41 PM
To: 'danny@tocomwall.com.au' <danny@tocomwall.com.au>
Subject: Sydney Metro City & Southwest project: project information and ACHAR methodology

Dear Danny Franks,

Thank you for registering as a stakeholder for the Sydney Metro City & Southwest project.

Based on the Aboriginal heritage assessment conducted for the Environmental Impact Statement, Artefact Heritage has been engaged to prepare an Aboriginal Cultural Heritage Assessment Report (ACHAR) in accordance with the Guide for investigating, assessing and reporting on Aboriginal cultural heritage in NSW (Office of Environment and Heritage [OEH] 2010). To prepare the ACHAR, Artefact Heritage is seeking information on the cultural value to Aboriginal people, or places of cultural value, related to the subject area. A link to a letter outlining the project information and a methodology for the ACHAR is provided below. Please provide any comments on the proposed methodology or relevant cultural knowledge by **COB Tuesday 10 October**.

Project information and ACHAR: <https://artefact.box.com/s/cslw77agerwneri8fiubv3ddyr9govnw>

As part of the ongoing consultation for this project, an Aboriginal Focus Group (AFG) will be held on 22 September (venue to be confirmed). If you would like to attend the AFG, would you please confirm your attendance by **COB 20 September** by email (veronica.norman@artefact.net.au) or phone (9518 8411).

Kind regards,

Veronica Norman
Heritage Consultant

ARTEFACT

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Veronica Norman

From: Danny Franks [REDACTED]
Sent: Friday, September 15, 2017 7:01 PM
To: Veronica Norman
Subject: Re: Sydney Metro City & Southwest project: project information and ACHAR methodology

Please make a note in your system so that all correspondence gets sent to Jennifer Norfolk

That would be much appreciated

Regards,

DannyFranks

Cultural Heritage Manager

Tocomwall Pty Ltd



Sent from my iPhone

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Kind regards,

Veronica Norman
Heritage Consultant

ARTEFACT

Telephone: 61 2 9518 8411 Mobile: 0415 660 490



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From: Veronica Norman
Sent: Monday, September 11, 2017 4:41 PM
To: [REDACTED]
Subject: Sydney Metro City & Southwest project: project information and ACHAR methodology

Dear Danny Franks,

Thank you for registering as a stakeholder for the Sydney Metro City & Southwest project.

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Kind regards,

Veronica Norman
Heritage Consultant

[REDACTED]
Address: Level 4, Building B, 35 Saunders Street, Pyrmont NSW 2009

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Veronica Norman

From: Sandra Wallace
Sent: Monday, September 18, 2017 4:17 PM
To: Veronica Norman; Josh Symons
Subject: FW: Consultation


Follow Up Flag: Follow up
Flag Status: Flagged

FYI

Dr Sandra Wallace
Managing Director

[REDACTED]
[REDACTED] yrmont NSW 2009
Web: www.artefact.net.au

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From: Kelly Barton
Sent: Monday, 18 September 2017 4:16 PM
To: Sandra Wallace <Sandra.Wallace@artefact.net.au>
Subject: RE: Consultation

Hi Sandra,

Celestine Everingham – DACHA

- Spoke to Celestine and she noted the changed date on her diary, will await the formal invite to find out the venue etc.

Phillip Khan – Kamilaroi-Yankuntjatjara Working Group

- Phil gave his apologies as he will be in South Australia for a week and a half during that time.

Diane Van Aken (Acting Administration Manager) - Gandagara Aboriginal Land Council rep

- Spoke to Diane Van Aken, who gave her email details for further information, as no name noted below. Deborah Tuckwell is the current CEO at Gandagara LALC
Diane's email address is [REDACTED]

Nathan Moran (Chairperson) - Metro Aboriginal Land Council


- Left msg with details of new dates with Denita.
Nathan's email address is [REDACTED]

Yours in unity,
Kelly Barton
Administration Assistant

ARTEFACT
Telephone: 61 2 8570 1221

Address: Level 4, Building B, 35 Saunders Street, Pyrmont NSW 2009
Web: www.artefact.net.au

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From: Sandra Wallace

Sent: Monday, [REDACTED]

Subject: FW: Consultation

Hi Kelly,

Are you able to do me a favour and call the four groups below to let them know that the proposed date for the project meeting (Aboriginal Focus Group) for Metro Sydenham to Bankstown has been changed from this Friday 22nd to 4th October.

You can tell them that a formal invite will be sent shortly.


Frankie – hope that's OK with you.

Thanks

Dr Sandra Wallace
Managing Director

[REDACTED]
Address: Level 4, Building B, 35 Saunders Street, Pyrmont NSW 2009
Web: www.artefact.net.au

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From: Veronica Norman

Sent: Sunday, 17 September 2017 7:35 PM

To: Sandra Wallace <Sandra.Wallace@artefact.net.au>

Subject: Consultation

Hi Sandra,

Sheaffes Road consultation log is here: <https://artefact.app.box.com/file/214178119571>
Still no responses

Quay Quarter consultation is here: <https://artefact.app.box.com/folder/38240699481>

Sydenham to Bankstown: <https://artefact.app.box.com/file/225350298858>

Only one response from Tony Williams as an RSVP to the first AFG meeting date, no response to second meeting date. Don't forget the following groups will need to be called tomorrow regarding the date change:

Celestine Everingham	DACHA
Pollowan Phillip Kahn	Kamilaroi-Yankuntjatjara Working Group
Not Provided	Gandangara Local Aboriginal Land Council
Nathan Moran	Metropolitan Local Aboriginal Land Council




Thanks,
Veronica Norman
Heritage Consultant



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Veronica Norman

From: Kayla Williamson [REDACTED]
Sent: Tuesday, September 19, 2017 6:06 AM
To: Veronica Norman
Subject: Re: Sydney Metro City & Southwest project: project information and ACHAR methodology

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Veronica

Paul Cummins from Woronora Plateau Gundagara Elders Council will attend the AFG on the 4th October.

Kind Regards

Kayla Williamson
[REDACTED]

From: Veronica Norman <veronica.norman@artefact.net.au>
Sent: Friday, September 15, 2017 6:29 pm
Subject: RE: Sydney Metro City & Southwest project: project information and ACHAR methodology
To: <kayla_87@hotmail.com>

Dear Kayla Williamson,

Please note the date of the AFG has been moved to **Wednesday 4th October**. Please confirm your attendance by COB Monday 2nd October.

Kind regards,

Veronica Norman
Heritage Consultant

ARTEFACT

[REDACTED]

Address: Level 4, Building B, 35 Saunders Street, Pyrmont NSW 2009
Web: www.artefact.net.au

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From: Veronica Norman

Sent: Monday, September 11, 2017 4:37 PM

To: [REDACTED]

Subject: Sydney Metro City & Southwest project: project information and ACHAR methodology

Dear Kayla Williamson,

Thank you for registering as a stakeholder for the Sydney Metro City & Southwest project.

Based on the Aboriginal heritage assessment conducted for the Environmental Impact Statement, Artefact Heritage has been engaged to prepare an Aboriginal Cultural Heritage Assessment Report (ACHAR) in accordance with the Guide for investigating, assessing and reporting on Aboriginal cultural heritage in NSW (Office of Environment and Heritage [OEH] 2010). To prepare the ACHAR, Artefact Heritage is seeking information on the cultural value to Aboriginal people, or places of cultural value, related to the subject area. A link to a letter outlining the project information and a methodology for the ACHAR is provided below. Please provide any comments on the proposed methodology or relevant cultural knowledge by **COB Tuesday 10 October**.

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Kind regards,

Veronica Norman

Heritage Consultant

ARTEFACT
[REDACTED]

Address: Level 4, Building B, 35 Saunders Street, Pyrmont NSW 2009

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Veronica Norman

From: Ryan Johnson <[REDACTED]>
Sent: Tuesday, September 19, 2017 5:42 AM
To: Veronica Norman
Subject: Re: Sydney Metro City & Southwest project: project information and ACHAR methodology

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Veronica

We will be in attendance for the AFG meeting. Thank you for the update.

Kind regards

Ryan

Sent from my iPhone

On 15 Sep 2017, at 6:32 pm, Veronica Norman <Veronica.Norman@artefact.net.au> wrote:

Dear Ryan Johnson,

Please note the date of the AFG has been moved to **Wednesday 4th October**. Please confirm your attendance by COB Monday 2nd October.

Kind regards,

Veronica Norman
Heritage Consultant

ARTEFACT

[REDACTED]
Address: Level 4, Building B, 35 Saunders Street, Pyrmont NSW 2009
Web: www.artefact.net.au

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From: Veronica Norman
Sent: Monday, September 11, 2017 4:41 PM
To: [REDACTED]
Subject: Sydney Metro City & Southwest project: project information and ACHAR methodology

Dear Ryan Johnson,

Thank you for registering as a stakeholder for the Sydney Metro City & Southwest project.

Based on the Aboriginal heritage assessment conducted for the Environmental Impact Statement, Artefact Heritage has been engaged to prepare an Aboriginal Cultural Heritage Assessment Report (ACHAR) in accordance with the Guide for investigating, assessing and reporting on Aboriginal cultural heritage in NSW (Office of Environment and Heritage [OEH] 2010). To prepare the ACHAR, Artefact Heritage is seeking information on the cultural value to Aboriginal people, or places of cultural value, related to the subject area. A link to a letter outlining the project information and a methodology for the ACHAR is provided below. Please provide any comments on the proposed methodology or relevant cultural knowledge by **COB Tuesday 10 October**.

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Kind regards,

Veronica Norman

Heritage Consultant

ARTEFACT



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Veronica Norman

From: Kelly Barton
Sent: Tuesday, September 19, 2017 10:24 AM
To: Sandra Wallace
Cc: Veronica Norman
Subject: Paul Cummins call

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Sandra and Veronica,

Paul Cummins called to say he and his daughter Carla will attend the Project meeting (Aboriginal Focus Group) for Metro Sydenham to Bankstown on the 4th Oct.
Will await the formal invite for venue details and time.

Yours in unity,
Kelly Barton
Administration Assistant


ARTEFACT

Telephone: 61 2 8570 1221

Address: Level 4, Building B, 35 Saunders Street, Pyrmont NSW 2009

Web: www.artefact.net.au

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Veronica Norman

From: Darug Land Observations [REDACTED]
Sent: Tuesday, September 26, 2017 4:06 PM
To: Veronica Norman
Subject: Re: Sydney Metro City & Southwest project: project information and ACHAR methodology
Attachments: AHIP Comments ARTEFACT (Sydney Metro City & Southwest-Sydenham to Bankstown).docx
Follow Up Flag: Follow up
Flag Status: Flagged

Hi Veronica,

Thank you for the invitation to attend the Aboriginal Focus Group Meeting on Wednesday 4th October 2017.

Apologies, DLO will not be able to attend the meeting on Wednesday 4th October 2017. Please forward any further information and/or minutes of the meeting.

Please find attached a letter in reply to the project information and methodology for the Aboriginal Cultural Heritage Assessment Report for the Sydenham to Bankstown upgrade.

Kind Regards,

Anna

On Fri, Sep 15, 2017 at 6:31 PM, Veronica Norman <Veronica.Norman@artefact.net.au> wrote:

Dear Gordon Workman,

Please note the date of the AFG has been moved to **Wednesday 4th October**. Please confirm your attendance by COB Monday 2nd October.

Kind regards,

Veronica Norman


Heritage Consultant

ARTEFACT
[REDACTED]

Address: Level 4, Building B, [35 Saunders Street, Pyrmont NSW 2009](#)

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From: Veronica Norman

Se [REDACTED]

Subject: Sydney Metro City & Southwest project: project information and ACHAR methodology

Dear Gordon Workman,

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Kind regards,

Veronica Norman

Heritage Consultant


ARTEFACT

Telephone: 61 2 9518 8411 **Mobile:** 0415 660 490

Address: Level 4, Building B, [35 Saunders Street, Pyrmont NSW 2009](#)

Web: www.artefact.net.au

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**DARUG LAND
OBSERVATIONS PTY LTD
ABN 27 602 765 453**

26th September 2017

Transport for New South Wales
C/- Dr Sandra Wallace
Artefact Heritage
Building B, Level 4, 35 Saunders Street
PYRMONT NSW 2009

Dear Sandra,

**RE: SYDNEY METRO CITY AND SOUTHWEST – SYDENHAM TO
BANKSTOWN**

Project Information and Aboriginal Cultural Heritage Assessment Report

Darug Land Observations Pty Ltd has reviewed the project information and the methodology for the Aboriginal Cultural Heritage Assessment Report, and supports the methodology for the proposed Sydenham to Bankstown upgrade, involving the conversion of the 13 kilometre Bankstown Line to metro standards and the upgrade of existing stations between Sydenham and Bankstown.

Furthermore, Darug Land Observations Pty Ltd would be involved in the monitoring of the topsoil removal and/or all other form of works to be carried out on the site.

Yours sincerely,

Jamie Workman
Darug Land Observations Pty Ltd

Uncle Gordon Workman
Darug Elder

Veronica Norman

From: Veronica Norman
Sent: Thursday, October 12, 2017 10:35 AM
To: 'Danny Franks'
Subject: RE: Sydney Metro City & Southwest project: project information and ACHAR methodology

Thanks Danny, I'll pass that on to the rest of the office.


Veronica

Veronica Norman
Heritage Consultant

ARTEFACT

Telephone: 61 2 9518 8411 **Mobile:** 0415 660 490
Address: Level 4, Building B, 35 Saunders Street, Pyrmont NSW 2009
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From: Danny Franks [REDACTED]
Sent: Thursday, October 12, 2017 10:08 AM
To: Veronica Norman <Veronica.Norman@artefact.net.au>
Subject: Re: Sydney Metro City & Southwest project: project information and ACHAR methodology

Dear Veronica

As you may be aware Jennifer Norfolk is now working with Artefact so as to not cause a conflict of interest please start sending all correspondence for any and all work to myself and Scott Franks [REDACTED]

Thanks Veronica and have a nice day.

Also apologies for not sending anyone to the stakeholder meeting yesterday.

Regards

Danny Franks

Cultural Heritage Manager

Tocomwall Pty Ltd

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]



From: Veronica Norman <Veronica.Norman@artefact.net.au>
Date: Friday, 15 September 2017 at 8:13 pm
To: Danny Franks [REDACTED]
Subject: RE: Sydney Metro City & Southwest project: project information and ACHAR methodology

Thanks Danny,

I've sent an email to everyone letting them know. As we work off already prepared stakeholder lists there may be a few stray emails that get through to you but we will do our best to send all consultation and fieldwork enquiries to Jen.

Thanks,

Veronica

From: Danny Franks [<mailto:danny@tocomwall.com.au>]
Sent: Friday, September 15, 2017 7:01 PM
To: Veronica Norman <Veronica.Norman@artefact.net.au>
Subject: Re: Sydney Metro City & Southwest project: project information and ACHAR methodology

Please make a note in your system so that all correspondence gets sent to Jennifer Norfolk

That would be much appreciated

Regards,

DannyFranks

Cultural Heritage Manager

Tocomwall Pty Ltd

Sent from my iPhone

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Kind regards,

Veronica Norman
Heritage Consultant

ARTEFACT



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From: Veronica Norman

Sent: Monday, September 11, 2017 4:41 PM

To: 

Subject: Sydney Metro City & Southwest project: project information and ACHAR methodology

Dear Danny Franks,

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Kind regards,

Veronica Norman

Heritage Consultant

ARTEFACT

Telephone: 61 2 9518 8411 **Mobile:** 0415 660 490

Address: Level 4, Building B, 35 Saunders Street, Pyrmont NSW 2009

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Veronica Norman

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Sent: Thursday, October 12, 2017 10:08 AM
To: Veronica Norman
Subject: Re: Sydney Metro City & Southwest project: project information and ACHAR methodology

Dear Veronica

As you may be aware Jennifer Norfolk is now working with Artefact so as to not cause a conflict of interest please start sending all correspondence for any and all work to myself and Scott Franks Scott@tocomwall.com.au

Thanks Veronica and have a nice day.

Also apologies for not sending anyone to the stakeholder meeting yesterday.

Regards

Danny Franks
Cultural Heritage Manager



From: Veronica Norman <Veronica.Norman@artefact.net.au>
Date: Friday, 15 September 2017 at 8:13 pm
To: Danny Franks <danny@tocomwall.com.au>
Subject: RE: Sydney Metro City & Southwest project: project information and ACHAR methodology

Thanks Danny,

I've sent an email to everyone letting them know. As we work off already prepared stakeholder lists there may be a few stray emails that get through to you but we will do our best to send all consultation and fieldwork enquiries to Jen.

Thanks,

Veronica

From: Danny Franks [REDACTED]
Sent: Friday, September 15, 2017 7:01 PM
To: Veronica Norman <Veronica.Norman@artefact.net.au>
Subject: Re: Sydney Metro City & Southwest project: project information and ACHAR methodology

Please make a note in your system so that all correspondence gets sent to Jennifer Norfolk

That would be much appreciated

Regards,

DannyFranks

Cultural Heritage Manager

Tocomwall Pty Ltd



Sent from my iPhone

On 15 Sep 2017, at 6:32 pm, Veronica Norman <Veronica.Norman@artefact.net.au> wrote:

Dear Danny Franks,

Please note the date of the AFG has been moved to **Wednesday 4th October**. Please confirm your attendance by COB Monday 2nd October.

Kind regards,

Veronica Norman
Heritage Consultant

ARTEFACT

Telephone: 61 2 9518 8411 **Mobile:** 0415 660 490

Address: Level 4, Building B, 35 Saunders Street, Pyrmont NSW 2009

Web: www.artefact.net.au

Cultural Heritage Management | Archaeology | Heritage Interpretation

<image001.gif> *We acknowledge the Traditional Custodians of Country in which we live and work, and pay our respects to them, their culture and their Elders past, present and future*

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Please note: I am not in the office on Tuesdays.

From: Veronica Norman
Sent: Monday, September 11, 2017 4:41 PM
To: [REDACTED]
Subject: Sydney Metro City & Southwest project: project information and ACHAR methodology

Dear Danny Franks,

Thank you for registering as a stakeholder for the Sydney Metro City & Southwest project.

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Notice of AFG date change

Veronica Norman

From: Veronica Norman
Sent: Friday, September 15, 2017 6:32 PM
To: [REDACTED]
Subject: [REDACTED] roject information and ACHAR methodology

Dear Christopher Payne,

Please note the date of the AFG has been moved to **Wednesday 4th October**. Please confirm your attendance by COB Monday 2nd October.


Kind regards,

Veronica Norman
Heritage Consultant

ARTEFACT

[REDACTED]
Address: Level 4, Building B, 35 Saunders Street, Pyrmont NSW 2009
Web: www.artefact.net.au

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From: Veronica Norman
Sent: Monday, September 11, 2017 4:41 PM
To: [REDACTED]
Subject: Sydney Metro City & Southwest project: project information and ACHAR methodology

Dear Christopher Payne,

Thank you for registering as a stakeholder for the Sydney Metro City & Southwest project.

Based on the Aboriginal heritage assessment conducted for the Environmental Impact Statement, Artefact Heritage has been engaged to prepare an Aboriginal Cultural Heritage Assessment Report (ACHAR) in accordance with the Guide for investigating, assessing and reporting on Aboriginal cultural heritage in NSW (Office of Environment and Heritage [OEH] 2010). To prepare the ACHAR, Artefact Heritage is seeking information on the cultural value to Aboriginal people, or places of cultural value, related to the subject area. A link to a letter outlining the project information and a methodology for the ACHAR is provided below. Please provide any comments on the proposed methodology or relevant cultural knowledge by **COB Tuesday 10 October**.

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Veronica Norman

From: Danny Franks <[REDACTED]>
Sent: Friday, September 15, 2017 7:01 PM
To: Veronica Norman
Subject: Re: Sydney Metro City & Southwest project: project information and ACHAR methodology

Please make a note in your system so that all correspondence gets sent to Jennifer Norfolk

That would be much appreciated

Regards,

DannyFranks

Cultural Heritage Manager

Tocomwall Pty Ltd

[REDACTED]

Sent from my iPhone

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From: Veronica Norman

Sent: Monday, September 11, 2017 4:41 PM

To: [REDACTED]

Subject: Sydney Metro City & Southwest project: project information and ACHAR methodology

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[REDACTED]
[REDACTED]

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Veronica Norman

From: Veronica Norman
Sent: Friday, September 15, 2017 7:14 PM
To: 'Danny Franks'
Subject: RE: Sydney Metro City & Southwest project: project information and ACHAR methodology

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Thanks,

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Sent: Friday, September 15, 2017 7:01 PM
To: Veronica Norman <Veronica.Norman@artefact.net.au>
Subject: Re: Sydney Metro City & Southwest project: project information and ACHAR methodology

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That would be much appreciated

Regards,

DannyFranks

Cultural Heritage Manager

Tocomwall Pty Ltd



Sent from my iPhone

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Sent: Monday, September 11, 2017 4:41 PM

To: [REDACTED]

Subject: Sydney Metro City & Southwest project: project information and ACHAR methodology

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Veronica Norman

From: Danny Franks [REDACTED]
Sent: Thursday, October 12, 2017 10:08 AM
To: Veronica Norman
Subject: Re: Sydney Metro City & Southwest project: project information and ACHAR methodology

Dear Veronica

As you may be aware Jennifer Norfolk is now working with Artefact so as to not cause a conflict of interest please start sending all correspondence for any and all work to myself and Scott Franks Scott@tocomwall.com.au

Thanks Veronica and have a nice day.

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[REDACTED]
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Veronica Norman

From: Veronica Norman
Sent: Thursday, October 12, 2017 10:35 AM
To: 'Danny Franks'
Subject: RE: Sydney Metro City & Southwest project: project information and ACHAR methodology

Thanks Danny, I'll pass that on to the rest of the office.

Veronica


Veronica Norman
Heritage Consultant

ARTEFACT

[REDACTED] nt NSW 2009

Web: www.artefact.net.au

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Sent: Friday, September 15, 2017 7:01 PM
To: Veronica Norman <Veronica.Norman@artefact.net.au>
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Cultural Heritage Manager

Tocomwall Pty Ltd



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NSW 2009

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From: Veronica Norman

Sent: Monday, September 11, 2017 4:41 PM

To: 

Subject: Sydney Metro City & Southwest project: project information and ACHAR methodology

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Veronica Norman

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Sent: Friday, September 15, 2017 6:32 PM
To: [REDACTED]
Subject: thwest project: project information and ACHAR methodology

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Kind regards,


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ARTEFACT

[REDACTED] mont NSW 2009

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Veronica Norman

From: Veronica Norman
Sent: Friday, September 15, 2017 6:35 PM
To: [REDACTED]
Subject: RE: Sydney Metro City & Southwest project: project information and ACHAR methodology

Dear Darlene Hoskins-McKenzie,

Please note the date of the AFG has been moved to **Wednesday 4th October**. Please confirm your attendance by COB Monday 2nd October.


Kind regards,

Veronica Norman
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[REDACTED] ont NSW 2009

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From: Veronica Norman
Sent: Monday, September 11, 2017 4:50 PM
To: [REDACTED]
Subject: Sydney Metro City & Southwest project: project information and ACHAR methodology

Dear Darlene Hoskins-McKenzie,

I have emailed the following registered groups and received a bounce back error:

Bilinga Cultural Heritage Technical Services
Gunyuu Cultural Heritage Technical Services
Munyunga Cultural Heritage Technical Services
Murrumbul Cultural Heritage Technical Services
Wingikara Cultural Heritage Technical Services

As a representative of these groups, please find below the content of the email:

Thank you for registering as a stakeholder for the Sydney Metro City & Southwest project.

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Veronica Norman

From: Veronica Norman
Sent: Friday, September 15, 2017 6:30 PM
To: [REDACTED]
Subject: [REDACTED] est project: project information and ACHAR methodology

Dear Darren Duncan,

Please note the date of the AFG has been moved to **Wednesday 4th October**. Please confirm your attendance by COB Monday 2nd October.

Kind regards,

Veronica Norman
Heritage Consultant

[REDACTED] ont NSW 2009

Web: www.artefact.net.au

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Please note: I am not in the office on Tuesdays.

From: Veronica Norman
Sent: Monday, September 11, 2017 4:41 PM
To: [REDACTED]
Subject: Sydney Metro City & Southwest project: project information and ACHAR methodology

Dear Darren Duncan,

Thank you for registering as a stakeholder for the Sydney Metro City & Southwest project.

Based on the Aboriginal heritage assessment conducted for the Environmental Impact Statement, Artefact Heritage has been engaged to prepare an Aboriginal Cultural Heritage Assessment Report (ACHAR) in accordance with the Guide for investigating, assessing and reporting on Aboriginal cultural heritage in NSW (Office of Environment and Heritage [OEH] 2010). To prepare the ACHAR, Artefact Heritage is seeking information on the cultural value to Aboriginal people, or places of cultural value, related to the subject area. A link to a letter outlining the project information and a methodology for the ACHAR is provided below. Please provide any comments on the proposed methodology or relevant cultural knowledge by **COB Tuesday 10 October**.

Project information and ACHAR: <https://artefact.box.com/s/cslw77agerwneri8fiubv3ddyr9govnw>

As part of the ongoing consultation for this project, an Aboriginal Focus Group (AFG) will be held on 22 September (venue to be confirmed). If you would like to attend the AFG, would you please confirm your attendance by **COB 20 September** by email (veronica.norman@artefact.net.au) or phone (9518 8411).

Kind regards,

Veronica Norman


Heritage Consultant



Address: Level 4, Building B, 35 Saunders Street, Pyrmont NSW 2009

Web: www.artefact.net.au

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Veronica Norman

From: Veronica Norman
Sent: Friday, September 15, 2017 6:33 PM
To: [REDACTED]
Subject: RE: Sydney Metro City & Southwest project: project information and ACHAR methodology

Dear David Bell,


Please note the date of the AFG has been moved to **Wednesday 4th October**. Please confirm your attendance by COB Monday 2nd October.

Kind regards,

Veronica Norman
Heritage Consultant

[REDACTED]
Address: Level 4, Building B, 35 Saunders Street, Pyrmont NSW 2009
Web: www.artefact.net.au

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From: Veronica Norman
Sent: Monday, September 11, 2017 4:41 PM
To: [REDACTED]
Sub [REDACTED] ation and ACHAR methodology

Dear David Bell,

Thank you for registering as a stakeholder for the Sydney Metro City & Southwest project.

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Veronica Norman

From: Darug Land Observations [REDACTED]
Sent: Tuesday, September 26, 2017 4:06 PM
To: Veronica Norman
Subject: Re: Sydney Metro City & Southwest project: project information and ACHAR methodology
Attachments: AHIP Comments ARTEFACT (Sydney Metro City & Southwest-Sydenham to Bankstown).docx
Follow Up Flag: Follow up
Flag Status: Flagged

Hi Veronica,

Thank you for the invitation to attend the Aboriginal Focus Group Meeting on Wednesday 4th October 2017.

Apologies, DLO will not be able to attend the meeting on Wednesday 4th October 2017. Please forward any further information and/or minutes of the meeting.

Please find attached a letter in reply to the project information and methodology for the Aboriginal Cultural Heritage Assessment Report for the Sydenham to Bankstown upgrade.

Kind Regards,

Anna

On Fri, Sep 15, 2017 at 6:31 PM, Veronica Norman <Veronica.Norman@artefact.net.au> wrote:

Dear Gordon Workman,

Please note the date of the AFG has been moved to **Wednesday 4th October**. Please confirm your attendance by COB Monday 2nd October.

Kind regards,


Veronica Norman

Heritage Consultant

[REDACTED]
Address: Level 4, Building B, [35 Saunders Street, Pyrmont NSW 2009](#)

Web: www.artefact.net.au

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From: Veronica Norman

Sent: Monday, September 11, 2017 4:41 PM

To [REDACTED]

Subject: Sydney Metro City & Southwest project: project information and ACHAR methodology

Dear Gordon Workman,

Thank you for registering as a stakeholder for the Sydney Metro City & Southwest project.

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Kind regards,

Veronica Norman


Heritage Consultant

[REDACTED]

Address: Level 4, Building B, [35 Saunders Street, Pyrmont NSW 2009](#)

Web: www.artefact.net.au

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Veronica Norman

From: Veronica Norman
Sent: Friday, September 15, 2017 6:28 PM
To: 'daruglandobservations@gmail.com'
Subject: RE: Sydney Metro City & Southwest project: project information and ACHAR methodology

Dear Gordon Workman,

Please note the date of the AFG has been moved to **Wednesday 4th October**. Please confirm your attendance by COB Monday 2nd October.


Kind regards,

Veronica Norman
Heritage Consultant

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Web: www.artefact.net.au

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From: Veronica Norman
Sent: Monday, September 11, 2017 4:41 PM
To: 'daruglandobservations@gmail.com' <daruglandobservations@gmail.com>
Subject: Sydney Metro City & Southwest project: project information and ACHAR methodology

Dear Gordon Workman,

Thank you for registering as a stakeholder for the Sydney Metro City & Southwest project.

Based on the Aboriginal heritage assessment conducted for the Environmental Impact Statement, Artefact Heritage has been engaged to prepare an Aboriginal Cultural Heritage Assessment Report (ACHAR) in accordance with the Guide for investigating, assessing and reporting on Aboriginal cultural heritage in NSW (Office of Environment and Heritage [OEH] 2010). To prepare the ACHAR, Artefact Heritage is seeking information on the cultural value to Aboriginal people, or places of cultural value, related to the subject area. A link to a letter outlining the project information and a methodology for the ACHAR is provided below. Please provide any comments on the proposed methodology or relevant cultural knowledge by **COB Tuesday 10 October**.

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Veronica Norman

From: Veronica Norman
Sent: Friday, September 15, 2017 6:31 PM
To: 'daruglandobservations@gmail.com'
Subject: RE: Sydney Metro City & Southwest project: project information and ACHAR methodology

Dear Jamie Workman,


Please note the date of the AFG has been moved to **Wednesday 4th October**. Please confirm your attendance by COB Monday 2nd October.

Kind regards,

Veronica Norman
Heritage Consultant

Address: Level 4, Building B, 35 Saunders Street, Pyrmont NSW 2009
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From: Veronica Norman
Sent: Monday, September 11, 2017 4:37 PM
To: 'daruglandobservations@gmail.com' <daruglandobservations@gmail.com>
Subject: Sydney Metro City & Southwest project: project information and ACHAR methodology

Dear Jamie Workman,

Thank you for registering as a stakeholder for the Sydney Metro City & Southwest project.

Based on the Aboriginal heritage assessment conducted for the Environmental Impact Statement, Artefact Heritage has been engaged to prepare an Aboriginal Cultural Heritage Assessment Report (ACHAR) in accordance with the Guide for investigating, assessing and reporting on Aboriginal cultural heritage in NSW (Office of Environment and Heritage [OEH] 2010). To prepare the ACHAR, Artefact Heritage is seeking information on the cultural value to Aboriginal people, or places of cultural value, related to the subject area. A link to a letter outlining the project information and a methodology for the ACHAR is provided below. Please provide any comments on the proposed methodology or relevant cultural knowledge by **COB Tuesday 10 October**.

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Kind regards,


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Veronica Norman

From: Kayla Williamson <[REDACTED]>
Sent: Tuesday, September 19, 2017 6:06 AM
To: Veronica Norman
Subject: Re: Sydney Metro City & Southwest project: project information and ACHAR methodology

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Veronica

Paul Cummins from Woronora Plateau Gundagara Elders Council will attend the AFG on the 4th October.

Kind Regards

Kayla Williamson
[REDACTED]

From: Veronica Norman <veronica.norman@artefact.net.au>
Sent: Friday, September 15, 2017 6:29 pm
Subject: RE: Sydney Metro City & Southwest project: project information and ACHAR methodology
To: [REDACTED]

Dear Kayla Williamson,

Please note the date of the AFG has been moved to **Wednesday 4th October**. Please confirm your attendance by COB Monday 2nd October.

Kind regards,

Veronica Norman
Heritage Consultant

ARTEFACT
[REDACTED]

ont NSW 2009

Web: www.artefact.net.au

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From: Veronica Norman

Sent: Monday, September 11, 2017 4:37 PM

To: [REDACTED]

Subject: Sydney Metro City & Southwest project: project information and ACHAR methodology

Dear Kayla Williamson,

Thank you for registering as a stakeholder for the Sydney Metro City & Southwest project.

Based on the Aboriginal heritage assessment conducted for the Environmental Impact Statement, Artefact Heritage has been engaged to prepare an Aboriginal Cultural Heritage Assessment Report (ACHAR) in accordance with the Guide for investigating, assessing and reporting on Aboriginal cultural heritage in NSW (Office of Environment and Heritage [OEH] 2010). To prepare the ACHAR, Artefact Heritage is seeking information on the cultural value to Aboriginal people, or places of cultural value, related to the subject area. A link to a letter outlining the project information and a methodology for the ACHAR is provided below. Please provide any comments on the proposed methodology or relevant cultural knowledge by **COB Tuesday 10 October**.

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Kind regards,

Veronica Norman

Heritage Consultant

[REDACTED]

Address: Level 4, Building B, 35 Saunders Street, Pyrmont NSW 2009

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Veronica Norman

From: Veronica Norman
Sent: Friday, September 15, 2017 6:29 PM
To: [REDACTED]
Subject: Southwest project: project information and ACHAR methodology

Dear Kayla Williamson,

Please note the date of the AFG has been moved to **Wednesday 4th October**. Please confirm your attendance by COB Monday 2nd October.


Kind regards,

Veronica Norman
Heritage Consultant

ARTEFACT

[REDACTED]
Address: Level 4, Building B, 35 Saunders Street, Pyrmont NSW 2009
Web: www.artefact.net.au

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From: Veronica Norman
Sent: Monday, September 11, 2017 4:37 PM
To: [REDACTED]
Subject: Sydney Metro City & Southwest project: project information and ACHAR methodology

Dear Kayla Williamson,

Thank you for registering as a stakeholder for the Sydney Metro City & Southwest project.

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Veronica Norman

From: Veronica Norman
Sent: Friday, September 15, 2017 6:34 PM
To: [REDACTED]
Subject: RE: Sydney Metro City & Southwest project: project information and ACHAR methodology

Please note the date of the AFG has been moved to **Wednesday 4th October**. Please confirm your attendance by COB Monday 2nd October.


Kind regards,

Veronica Norman
Heritage Consultant

ARTEFACT

Telephone: 61 2 9518 8411 **Mobile:** 0415 660 490
Address: Level 4, Building B, 35 Saunders Street, Pyrmont NSW 2009
Web: www.artefact.net.au

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From: Veronica Norman
Sent: Monday, September 11, 2017 4:45 PM
To: [REDACTED]
Subject: FW: Sydney Metro City & Southwest project: project information and ACHAR methodology

Good afternoon,

I am forwarding the below email which could not be delivered to Nathan Moran at the email address:

[REDACTED]

Please let me know if there is an alternate email address I should send any consultation to.


Kind regards,

Veronica Norman
Heritage Consultant

ARTEFACT

Telephone: 61 2 9518 8411 **Mobile:** 0415 660 490
Address: Level 4, Building B, 35 Saunders Street, Pyrmont NSW 2009
Web: www.artefact.net.au

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From: Veronica Norman

Sent: Monday, September 11, 2017 4:37 PM

To: [REDACTED]

Subject: Sydney Metro City & Southwest project: project information and ACHAR methodology

Dear Nathan Moran,

Thank you for registering as a stakeholder for the Sydney Metro City & Southwest project.

Based on the Aboriginal heritage assessment conducted for the Environmental Impact Statement, Artefact Heritage has been engaged to prepare an Aboriginal Cultural Heritage Assessment Report (ACHAR) in accordance with the Guide for investigating, assessing and reporting on Aboriginal cultural heritage in NSW (Office of Environment and Heritage [OEH] 2010). To prepare the ACHAR, Artefact Heritage is seeking information on the cultural value to Aboriginal people, or places of cultural value, related to the subject area. A link to a letter outlining the project information and a methodology for the ACHAR is provided below. Please provide any comments on the proposed methodology or relevant cultural knowledge by **COB Tuesday 10 October**.

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Kind regards,


Veronica Norman

Heritage Consultant

[REDACTED]
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Veronica Norman

From: Veronica Norman
Sent: Friday, September 15, 2017 6:33 PM
To: [REDACTED]
Subject: RE: Sydney Metro City & Southwest project: project information and ACHAR methodology

Dear Peter Foster,


Please note the date of the AFG has been moved to **Wednesday 4th October**. Please confirm your attendance by COB Monday 2nd October.

Kind regards,

Veronica Norman
Heritage Consultant

[REDACTED]
Address: Level 4, Building B, 35 Saunders Street, Pyrmont NSW 2009
Web: www.artefact.net.au

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From: Veronica Norman
Sent: Monday, September 11, 2017 4:41 PM
To: [REDACTED]
Subject: Sydney Metro City & Southwest project: project information and ACHAR methodology

Dear Peter Foster,

Thank you for registering as a stakeholder for the Sydney Metro City & Southwest project.

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Veronica Norman

From: Ryan Johnson <[REDACTED]>
Sent: Tuesday, September 19, 2017 5:42 AM
To: Veronica Norman
Subject: Re: Sydney Metro City & Southwest project: project information and ACHAR methodology

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Veronica

We will be in attendance for the AFG meeting. Thank you for the update.

Kind regards

Ryan

Sent from my iPhone

On 15 Sep 2017, at 6:32 pm, Veronica Norman <Veronica.Norman@artefact.net.au> wrote:

Dear Ryan Johnson,

Please note the date of the AFG has been moved to **Wednesday 4th October**. Please confirm your attendance by COB Monday 2nd October.

Kind regards,

Veronica Norman
Heritage Consultant

ARTEFACT

[REDACTED] mont NSW 2009

Web: www.artefact.net.au

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<image001.gif> *We acknowledge the Traditional Custodians of Country in which we live and work, and pay our respects to them, their culture and their Elders past, present and future*

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From: Veronica Norman
Sent: Monday, September 11, 2017 4:41 PM
To: [REDACTED]
Subject: Sydney Metro City & Southwest project: project information and ACHAR methodology

Dear Ryan Johnson,

Thank you for registering as a stakeholder for the Sydney Metro City & Southwest project.

Based on the Aboriginal heritage assessment conducted for the Environmental Impact Statement, Artefact Heritage has been engaged to prepare an Aboriginal Cultural Heritage Assessment Report (ACHAR) in accordance with the Guide for investigating, assessing and reporting on Aboriginal cultural heritage in NSW (Office of Environment and Heritage [OEH] 2010). To prepare the ACHAR, Artefact Heritage is seeking information on the cultural value to Aboriginal people, or places of cultural value, related to the subject area. A link to a letter outlining the project information and a methodology for the ACHAR is provided below. Please provide any comments on the proposed methodology or relevant cultural knowledge by **COB Tuesday 10 October**.

Project information and ACHAR: <https://artefact.box.com/s/cslw77agerwneri8fiubv3ddyr9govnw>

As part of the ongoing consultation for this project, an Aboriginal Focus Group (AFG) will be held on 22 September (venue to be confirmed). If you would like to attend the AFG, would you please confirm your attendance by **COB 20 September** by email (veronica.norman@artefact.net.au) or phone (9518 8411).

Kind regards,

Veronica Norman

Heritage Consultant

ARTEFACT



Address: Level 4, Building B, 35 Saunders Street, Pyrmont NSW 2009

Web: www.artefact.net.au

Cultural Heritage Management | Archaeology | Heritage Interpretation

<image001.gif> *We acknowledge the Traditional Custodians of Country in which we live and work, and pay our respects to them, their culture and their Elders past, present and future*

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If you received this in error, please notify us immediately.

Please note: I am not in the office on Tuesdays.

Veronica Norman

From: Veronica Norman
Sent: Friday, September 15, 2017 6:32 PM
To: [REDACTED]
Subject: RE: Sydney Metro City & Southwest project: project information and ACHAR methodology

Dear Ryan Johnson,

Please note the date of the AFG has been moved to **Wednesday 4th October**. Please confirm your attendance by COB Monday 2nd October.


Kind regards,

Veronica Norman
Heritage Consultant

[REDACTED] ont NSW 2009

Web: www.artefact.net.au

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From: Veronica Norman
Sent: Monday, September 11, 2017 4:41 PM
To: [REDACTED]
Subject: Sydney Metro City & Southwest project: project information and ACHAR methodology

Dear Ryan Johnson,

Thank you for registering as a stakeholder for the Sydney Metro City & Southwest project.

Based on the Aboriginal heritage assessment conducted for the Environmental Impact Statement, Artefact Heritage has been engaged to prepare an Aboriginal Cultural Heritage Assessment Report (ACHAR) in accordance with the Guide for investigating, assessing and reporting on Aboriginal cultural heritage in NSW (Office of Environment and Heritage [OEH] 2010). To prepare the ACHAR, Artefact Heritage is seeking information on the cultural value to Aboriginal people, or places of cultural value, related to the subject area. A link to a letter outlining the project information and a methodology for the ACHAR is provided below. Please provide any comments on the proposed methodology or relevant cultural knowledge by **COB Tuesday 10 October**.

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Kind regards,

Veronica Norman


Heritage Consultant

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Veronica Norman

From: Veronica Norman
Sent: [REDACTED] :34 PM
To: [REDACTED]
Subject: thwest project: project information and ACHAR methodology

Dear Tony Williams,


Please note the date of the AFG has been moved to **Wednesday 4th October**. Please confirm your attendance by COB Monday 2nd October.

Kind regards,

Veronica Norman
Heritage Consultant

[REDACTED]
Address: Level 4, Building B, 35 Saunders Street, Pyrmont NSW 2009
Web: www.artefact.net.au

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From: Veronica Norman
Sent: Monday, September 11, 2017 4:41 PM
To: [REDACTED]
Subject: Sydney Metro City & Southwest project: project information and ACHAR methodology

Dear Tony Williams,

Thank you for registering as a stakeholder for the Sydney Metro City & Southwest project.

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Kind regards,

Veronica Norman

Heritage Consultant


ARTEFACT

Telephone: 61 2 9518 8411 **Mobile:** 0415 660 490

Address: Level 4, Building B, 35 Saunders Street, Pyrmont NSW 2009

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Veronica Norman

From: Veronica Norman
Sent: Friday, September 15, 2017 6:33 PM
To: 'Tony Williams'
Subject: RE: Sydney Metro City & Southwest project: project information and ACHAR methodology

Dear Tony Williams,

Please note the date of the AFG has been moved to **Wednesday 4th October**. Please confirm your attendance by COB Monday 2nd October.


Kind regards,

Veronica Norman
Heritage Consultant

[REDACTED] ont NSW 2009

Web: www.artefact.net.au

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From: Veronica Norman
Sent: Monday, September 11, 2017 4:41 PM
To: [REDACTED]
Subject: Sydney Metro City & Southwest project: project information and ACHAR methodology

Dear Tony Williams,

Thank you for registering as a stakeholder for the Sydney Metro City & Southwest project.

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Response to assessment methodology



**DARUG LAND
OBSERVATIONS PTY LTD
ABN 27 602 765 453**

26th September 2017

Transport for New South Wales
C/- Dr Sandra Wallace
Artefact Heritage
Building B, Level 4, 35 Saunders Street
PYRMONT NSW 2009

Dear Sandra,

**RE: SYDNEY METRO CITY AND SOUTHWEST – SYDENHAM TO
BANKSTOWN**

Project Information and Aboriginal Cultural Heritage Assessment Report

Darug Land Observations Pty Ltd has reviewed the project information and the methodology for the Aboriginal Cultural Heritage Assessment Report, and supports the methodology for the proposed Sydenham to Bankstown upgrade, involving the conversion of the 13 kilometre Bankstown Line to metro standards and the upgrade of existing stations between Sydenham and Bankstown.

Furthermore, Darug Land Observations Pty Ltd would be involved in the monitoring of the topsoil removal and/or all other form of works to be carried out on the site.

Yours sincerely,

Jamie Workman
Darug Land Observations Pty Ltd

Uncle Gordon Workman
Darug Elder

AFG Minutes

Minutes

Aboriginal Focus Group Wednesday 11th October 2017

Date:	Wednesday 11 th October 2017
Time:	9:30am – 12:00pm
Venue:	Transport for NSW (TfNSW) offices - Level 43, 680 George Street, Room 43.20
Chair:	Fil Cerone

Attendees:

Celestine Everingham	CE	DACHA
Pollowan Phillip Khan	PPK	Kamilaroi – Yankuntjatara Working Group (KYWG)
Geeta Khan	GK	Kamilaroi – Yankuntjatara Working Group (KYWG)
Paul Cummins	PC	Woronora Plateau Gundangarra Elders Council
Tony Williams	TW	Aboriginal Archaeology Service INC (AAS)
Brad Maybury	BM	Gandangara Local Aboriginal Land Council
Theresa Malone	TM	Gandangara Local Aboriginal Land Council
Dion McDermott	DMD	Gandangara Local Aboriginal Land Council
Selina Timothy	ST	Metropolitan Local Aboriginal Land Council
Anthony Johnson	AJ	Murri Bidgee Mullangari Aboriginal Corporation (ABMAC)
Sandra Wallace	SW	Artefact
Josh Symons	JS	Artefact
Fil Cerone	FC	TfNSW, Director Sustainability Environment & Planning City & South West Metro
Stuart Hodgson	SH	TfNSW, Director, Program Sustainability Environment & Planning Sydney Metro
Carolyn Riley	CR	TfNSW, Associate Director Planning Approvals
Ron Turner	RT	TfNSW, Heritage Manager
Nathan Ross	NR	TfNSW, Aboriginal Affairs Advisor
Matthew Marrinan	MM	TfNSW, Manager Environment
Michelle Clarke	MC	TfNSW, Professional Services Officer, Sustainability Environment and Planning

Agenda Items

- Acknowledgment of Country, NR
1. Agenda FC
 2. Introductions, FC
 3. Project Overview, FC
 4. Indigenous Participation Activities, NR
 5. Overview of Draft ACHAR, JS/SW
 6. Feedback from the Focus Group, All
 7. Next Steps, FC/SW
 8. Any other Matters, All
 9. Close Meeting, FC

Item	Notes / Actions	Responsible
1	Fil Cerone opened meeting.	FC
2	Nathan Ross gave Acknowledgement of Country address.	NR
3	Introductions	ALL
4	Nathan Ross provided an update on TfNSW industry participation in Aboriginal employment and workforce skills development, that seeks to create a collaborative business model, increasing Aboriginal employment and addressing skills shortages through the Sydney Metro skills development program.	NR
5	Josh Symons gave an overview of the draft Aboriginal Cultural Heritage Assessment Report.	JS
6	<p>Feedback from the Focus Group and actions:</p> <ul style="list-style-type: none"> • Presentation and copies of minutes to be sent out to all attendees. • Artefact to distribute the draft Aboriginal Cultural Heritage Assessment Report for Sydenham to Bankstown to all attendees (at least 4 attendees have requested hard copies) for their review and comments within 28 days. Artefact to also follow up with all attendees during the review period. • TfNSW to give all attendees an indication of when the Heritage Interpretation Strategy for Sydenham to Bankstown will be distributed to them for their review and comment (likely to be early 2018). • Anthony from Murri Bidgee Mullangari Aboriginal Corporation noted that reburial of artefacts is the best option for long-term care and management of retrieved artefacts, as it is the most respectful to Traditional Owners. Tony Williams noted that he would really like to see education outcomes from the excavation and investigation process. This could include videos of the excavation process and findings for distribution to schools. Phil Khan raised the idea of a keeping place for retrieved artefacts, or an interpretative display for housing some, or all, of the retrieved assemblage. • TfNSW to consider innovative collection, display and recording methods for Aboriginal archaeological finds. 	<p>MC JS</p> <p>RT</p> <p>TfNSW</p>

Example ACHAR review letter



**Transport
for NSW**

1st November 2017

To Whom it may concern,

Metropolitan Local Aboriginal Land Council

Email [REDACTED]

Dear Sir or Madam,

Re: Sydney Metro City & Southwest Sydenham to Bankstown

Thank you for registering an interest in Sydney Metro City & Southwest (the project). Transport for NSW is seeking approval to construct and operate the Sydenham to Bankstown upgrade component of the project. The project involves upgrading 10 existing stations west of Sydenham (Marrickville to Bankstown inclusive), and a 13 kilometre long section of the Sydney Trains T3 Bankstown Line, which extends to the west of Bankstown Station, to improve accessibility for customers and meet the standards required for metro operations. The project would enable Sydney Metro to operate beyond Sydenham, to Bankstown.

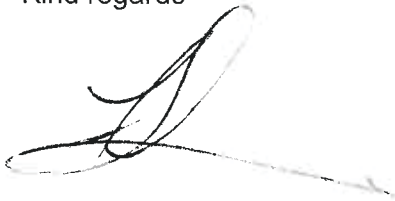
Transport for NSW engaged Artefact Heritage to prepare an Aboriginal archaeological assessment as part of the Environmental Impact Statement for the project. An Aboriginal Cultural Heritage Assessment Report (ACHAR) is also being prepared based on the findings and recommendations of the archaeological assessment and consultation with registered Aboriginal parties. It is intended that the ACHAR will be included as part of the Response to Submissions and Preferred Infrastructure Report for the project.

The draft ACHAR is enclosed for your review. Please provide comment on the document, including any information on cultural significance by 28th November 2017. Contact details for responses are provided on the following page.

If you have any queries please don't hesitate to contact Sandra Wallace from Artefact Heritage directly during the consultation period.

Sandra Wallace
Artefact Heritage
Level 4, Building B
35 Saunders St
Pymont, 2009
or email sandra.wallace@artefact.net.au

Kind regards

A handwritten signature in black ink, appearing to be 'Fil Cerone', written in a cursive style.

Mr Fil Cerone
Director Sustainability Environment & Planning
City and South West Metro

ACHAR follow up letters

Julia McLachlan

From: Julia McLachlan
Sent: Wednesday, November 8, 2017 10:42 AM
To: [REDACTED]
Subject: Sydenham to Bankstown ACHAR

Hi Christopher,

I just want to confirm that you, Peter and David have received the ACHAR for the Transport for New South Wales Sydenham to Bankstown Project. I tried calling however had no luck getting through.

Kind regards,


Julia McLachlan
Heritage Consultant

ARTEFACT

[REDACTED] ont NSW 2009

Web: www.artefact.net.au

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Julia McLachlan

From: Julia McLachlan
Sent: Thursday, November 9, 2017 10:20 AM
To: [REDACTED]
Subject:

Hi Darlene,

I just want to confirm that you received the ACHAR for the Transport for New South Wales Sydenham to Bankstown Project. I tried calling yesterday however had no luck getting through.

Kind regards,

Julia McLachlan
Heritage Consultant


ARTEFACT

Telephone: 61 2 9518 8411 **Mobile:** 0433 984 389

Address: Level 4, Building B, 35 Saunders Street, Pyrmont NSW 2009

Web: www.artefact.net.au

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Julia McLachlan

From: Julia McLachlan
Sent: Thursday, November 9, 2017 10:11 AM
To: 'Ryan Johnson'
Subject: Sydenham to Bankstown ACHAR

Hi Ryan,

I just want to confirm that you received the ACHAR for the Transport for New South Wales Sydenham to Bankstown Project. I tried calling yesterday however had no luck getting through.

Kind regards,

Julia McLachlan
Heritage Consultant


ARTEFACT

Telephone: 61 2 9518 8411 **Mobile:** 0433 984 389

Address: Level 4, Building B, 35 Saunders Street, Pyrmont NSW 2009

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Julia McLachlan

From: Ryan Johnson [REDACTED]
Sent: Friday, November 10, 2017 4:38 AM
To: Julia McLachlan
Subject: Re: Sydenham to Bankstown ACHAR

Hi Julie

I checked my emails with your name can't find the ACHAR can you please email it to me. My new number is [REDACTED]

Thanks
Ryan

Sent from my iPhone

On 9 Nov 2017, at 10:11 am, Julia McLachlan <Julia.McLachlan@artefact.net.au> wrote:

Hi Ryan,

I just want to confirm that you received the ACHAR for the Transport for New South Wales Sydenham to Bankstown Project. I tried calling yesterday however had no luck getting through.

Kind regards,

Julia McLachlan
Heritage Consultant

ARTEFACT

Telephone: 61 2 9518 8411 **Mobile:** 0433 984 389

Address: Level 4, Building B, 35 Saunders Street, Pyrmont NSW 2009

Web: www.artefact.net.au

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<image001.gif> *We acknowledge the Traditional Custodians of Country in which we live and work, and pay our respects to them, their culture and their Elders past, present and future*

ACHAR comments



Murra Bidgee Mullangari

Aboriginal Corporation Cultural Heritage
ICN: 8112

Date: 13/11/2017

Attention: Sandra Wallace

Artefact Heritage
Level 4, Building B
35 Saunders Street,
Pyrmont NSW 2009

Dear Sandra,

Re: Draft ACHAR Sydney Metro City & Southwest Sydenham to Bankstown

I have read the Draft ACHAR for the above project and endorse the recommendations made by Artefact Heritage.

If you require further details please feel free to contact me either by mobile or email. I look forward to hearing from you.

Kind regards

Darleen Carroll – Johnson | Administration – Site Officer

M: [REDACTED]

Ryan Carroll - Johnson | Site Officer

M: [REDACTED]

Murra Bidgee Mullangari

[REDACTED]



Department
of Industry



Murra Bidgee Mullangari Aboriginal Corporation support their community in financial hardship with Energy Assistance packages. We are a NSW Government approved EAPA voucher distributor

[REDACTED]



artefact

Artefact Heritage

ABN 73 144 973 526
Level 4, Building B
35 Saunders Street
Pyrmont NSW 2009
Australia

+61 2 9518 8411
office@artefact.net.au
www.artefact.net.au

SYDENHAM TO BANKSTOWN

SUBMISSIONS AND PREFERRED INFRASTRUCTURE REPORT

> Appendix J – Aboriginal cultural heritage assessment report

SYDENHAM TO BANKSTOWN
SUBMISSIONS AND PREFERRED INFRASTRUCTURE REPORT
> Volume 3 - Appendices