

## **12 Non-Aboriginal heritage – Stage 1**

# 12 Non-Aboriginal heritage – Stage 1

This chapter provides an assessment of the potential impacts on non-Aboriginal heritage items and archaeological remains as a result of Stage 1 and identifies mitigation measures to address these impacts. This chapter draws on information in Technical Paper 3 (Non-Aboriginal heritage).

## 12.1 Secretary’s Environmental Assessment Requirements

The Secretary’s Environmental Assessment Requirements relating to non-Aboriginal heritage, and where these requirements are addressed in this Environmental Impact Statement, are outlined in Table 12-1.

Table 12-1: Secretary’s Environmental Assessment Requirements – Non-Aboriginal Heritage Stage 1

Reference	Secretary’s Environmental Assessment Requirements	Where addressed
7. Non-Aboriginal heritage		
7.1	Potential direct and/or indirect impacts (including cumulative impacts) to the heritage significance of:	Sections 12.5 to 12.15
	a. environmental heritage, as defined under the Heritage Act 1977; and	
	b. items listed on National and World Heritage lists; and	Section 12.5.1
	c. heritage items and conservation areas identified in environmental planning instruments applicable to the project area.	Sections 12.5 to 12.15
7.2	Where impacts to State or locally significant heritage items are identified, the assessment must:	Sections 12.5 to 12.15
	a. include a significance assessment, a statement of heritage impact for all heritage items and a historical archaeological assessment;	
	b. consider any relevant conservation management plan;	Section 12.10 and 12.14
	c. consider impacts to the item of significance caused by, but not limited to, vibration, demolition, archaeological disturbance, altered historical arrangements and access, visual amenity, landscape and vistas, curtilage, subsidence and architectural noise treatment (as relevant) and whether these are temporary or permanent	Sections 12.5 to 12.15
	d. outline measures to avoid and minimise those impacts during construction in accordance with current guidelines; and	Section 12.16
	e. be undertaken by a suitably qualified heritage consultant(s) and/or historical archaeologist (note: where archaeological excavations are proposed the relevant consultant must meet the NSW Heritage	Section 1.4 of Technical Paper 3 (Non-Aboriginal heritage)

## 12.2 Legislative and policy context

### 12.2.1 World and Commonwealth

The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* provides a legislative framework for the protection and management of matters of national environmental significance. This includes heritage places of national and international importance which are protected through their inclusion on the World Heritage List, Commonwealth Heritage List or the National Heritage List.

### 12.2.2 New South Wales

The NSW *Heritage Act 1977* (Heritage Act) provides protection for items of ‘environmental heritage’ in NSW. ‘Environmental heritage’ includes places, buildings, works, relics, movable objects or precincts considered significant based on historical, scientific, cultural, social, archaeological, architectural, natural or aesthetic values. Items considered to be significant to the state are listed on the State Heritage Register.

Although the requirements for permits under the Heritage Act are not required for an approved State significant infrastructure project, the Heritage Act is relevant in that it guides assessment and defines statutory listed items. Relevant regulations are required to be used under the Secretary’s Environmental Assessment Requirements and certain sections of the Heritage Act are potentially relevant to the project, such as Section 146 (notification of a relic), and would still be applicable to approved State significant infrastructure projects.

Statutory registers provide legal protection for heritage items. The State Heritage Register, government agency Heritage and Conservation Registers established under Section 170 of the Heritage Act, and the environmental heritage schedules of Local Environmental Plans (LEPs) are statutory listings.

## 12.3 Assessment approach

### 12.3.1 Study area

For the non-Aboriginal heritage assessment of Stage 1, the study area was defined as the proposed construction sites and an additional 50 metre buffer around each construction site. The construction site includes the physical footprint of each site, any excavation or underground work associated with station construction, such as mined caverns and underground pedestrian connections as well as ancillary works, facilities and access ways to each area during construction.

The study area is used to identify heritage items and their potential impacts as a result of Stage 1 and includes heritage items that may be potentially affected by either direct impacts (such as from construction, excavation or vibration) and indirect impacts (such as items within the visual catchment).

Tunnel sections between stations and service facilities would generally be too deep to affect heritage items or archaeological deposits and (with the exception of the tunnel dive and tunnel boring machine launch shaft at the Clyde stabling and maintenance facility) are generally not included in the study area, unless identified as impacted in the noise and vibration assessment – refer to Chapter 11 (Noise and vibration – Stage 1). In those instances, the item has also been included in this heritage assessment. Similarly, in some locations, heritage items which are outside the study area but directly visible from construction sites have been included in the assessment. Potential heritage impacts caused by settlement and power supply routes have also been included within this assessment.

The study area also includes any underground work associated with station construction, such as mined caverns and underground pedestrian connections.

### 12.3.2 Identification of heritage items

Heritage register searches were carried out across April and May 2019. Heritage items within the study area of each construction site were identified through a search of relevant State and Federal statutory and non-statutory heritage registers. A list of the registers searched is provided in Section 3.2 of Technical Paper 3 (Non-Aboriginal heritage).

Items listed on these registers have been previously assessed against the NSW Heritage Office guideline Assessing Heritage Significance (NSW Heritage Office, 2001). Statements of heritage significance identified in this chapter are consistent with those included in relevant heritage inventory sheets and are based on the guideline.

Where relevant, Conservation Management Plans and other heritage management documents (such as the Parramatta Historical Archaeological Landscape Management Strategy (GML, 2000)) and guidelines have been used to provide additional information regarding heritage significance.

As part of this identification process, a preliminary assessment of potential unlisted heritage items that are located within construction sites and would be directly impacted by Stage 1 was also undertaken.

12.3.3 Significance of heritage items

Determining the significance of heritage items or a potential archaeological resource is undertaken by using a system of assessment centred on the Australia ICOMOS Burra Charter, 2013 (Burra Charter) The principles of the Burra Charter are relevant to the assessment, conservation and management of sites and relics.

If an item meets one of seven heritage criteria, and retains the integrity of its key attributes, it can be considered to have heritage significance. The significance of an item or potential archaeological site can then be assessed as being of local or State significance depending on its importance in a local or NSW State context.

The seven heritage criteria include:

- Criterion (a): Historical significance
- Criterion (b): Associative significance
- Criterion (c): Aesthetic significance
- Criterion (d): Social significance
- Criterion (e): Research potential
- Criterion (f): Rarity
- Criterion (g): Representativeness.

The heritage significance of all identified relics, items, areas and / or landscapes that are considered to be potentially directly or indirectly affected by Stage 1 are identified in Technical Paper 3 (Non-Aboriginal Heritage).

12.3.4 Assessment of heritage impact

Impacts on heritage are identified as:

- Direct impacts, resulting in the demolition or alteration of fabric of heritage significance or significant archaeological remains
- Indirect impacts, resulting in changes to the setting or curtilage of heritage items or places, historic streetscapes and landscapes, visual amenity or views
- Potential direct impact, resulting in impacts from vibration, subsidence, architectural noise treatment and demolition of adjoining structures.

Once the level of all three types of impacts are assessed, adverse and positive impacts to aspects of significance are balanced to determine an overall level of impact to the heritage significance of the listed item as a result of Stage 1. Where major impacts to heritage significance are identified, discussion is provided on whether the item would continue to meet the threshold of significance necessary for heritage listing.

The terminology and definitions used in the assessment are shown in Table 12-2.

Table 12-2: Terminology for assessing the magnitude of heritage impact

Magnitude	Definition
Major	Actions that would have a long term and substantial impact on the significance of a heritage item. Actions that would remove key historic building elements, key historic landscape features, or significant archaeological materials, thereby resulting in a change of historic character, or altering of a historical resource. These actions cannot be fully mitigated.
Moderate	Actions that would involve the modification of a heritage item, including altering the setting of a heritage item or landscape, partially removing archaeological resources, or the alteration of significant elements of fabric from historic structures. The impacts from such actions may be able to be partially mitigated.
Minor	Actions that would result in the slight alteration of heritage buildings, archaeological resources, or the setting of a historical item. The impacts arising from such actions can usually be mitigated.
Negligible	Actions that would result in very minor changes to heritage items.
Neutral	Actions that would have no heritage impact.

Stage 1 works include both permanent and temporary impacts to heritage. Permanent impacts may include the removal of features including structures, whilst temporary impacts may be the installation of acoustic sheds which would eventually be removed. Unless otherwise stated, Stage 1 impacts to heritage are assumed to be permanent.

Consultation was undertaken with the Sydney Metro Heritage Working Group and the Heritage Council of NSW to discuss the approach to the non-Aboriginal heritage assessment.

Assessment of visual impacts

Heritage items that fall within the study area have been assessed for potential visual impacts. In order to assess visual impact on heritage significance, sightlines from the heritage item to Stage 1 works have been established. Both the views towards the heritage item (whether Stage 1 would impair views of the item’s significant visual characteristics) and views away from the item (whether Stage 1 would impair views of the heritage-significant surroundings or character of the item) have been assessed.

Assessment of power supply routes

Heritage items located adjacent to power supply routes or may be impacted by the power supply route works have been identified and impacts assessed. Potential preliminary archaeological impacts have also been considered. Heritage and archaeological impacts as a result of the power supply route works are outlined in Section 12.5.3.

Assessment of settlement impacts

Ground excavation for Stage 1 has the potential to cause ground movement caused by the redistribution of the stresses within the ground or groundwater drawdown. Section 12.5.2 outlines the magnitude of settlement and potential heritage impact within the study area. This assessment has excluded heritage items which have been assessed as having a slight settlement risk.

Assessment of vibration impacts

In locations where heritage items are adjacent to demolition, construction or excavation works, an assessment of potential direct impacts through vibration has been undertaken. A conservative vibration damage screening level of 7.5 millimetres per second peak particle velocity has been adopted for heritage items potentially impacted by Stage 1. This screening level has been established with reference to the minor cosmetic damage criteria in British Standard BS 7385:2 – 1993. The vibration levels specified in this standard are designed to minimise the risk of threshold or cosmetic surface cracks, and are set well below the levels that have potential to cause damage to the main structure, except where the item is already structurally unsound. Sydney Metro would complete condition surveys of potentially affected buildings and structures near to the tunnel and excavations prior to the commencement of excavation, where appropriate. Where heritage items are found to be structurally unsound, a more conservative cosmetic damage screening level of 2.5 millimetres per second peak particle velocity would be applied.

During main tunnelling works, it is anticipated that ground-borne vibration associated with tunnel boring machine use would be much lower than the 7.5 millimetres per second peak particle velocity screening level. As such, the study area for assessment of potential impacts to heritage items does not extend to areas above the tunnel alignment that are outside the nominated study area for each construction site.

12.3.5 Limitations

The non-Aboriginal archaeological assessment provides an overview of predicted archaeological remains and their significance, as well as an assessment of potential impacts that would occur from Stage 1. This assessment does not provide detailed archaeological management or archaeological research designs for these impacts.

Only publicly accessible parts of the study area were surveyed. An assessment of settlement, vibration and power supply routes is a desktop assessment only.

12.4 Avoidance and minimisation of impacts

The design development of Stage 1 has included a focus on avoiding or minimising potential non-Aboriginal heritage impacts. This has included:

- Developing a tunnel alignment that avoids potential direct impacts to heritage items, in particular World Heritage listed Old Government House within Parramatta Park
- Selecting construction sites that avoid direct impacts to State and local heritage items where possible, including the State heritage listed Parramatta Station and Roxy Cinema (Parramatta), St Alban’s Church (Five Dock), and the White Bay Power Station and Glebe Island Silos (The Bays)
- Where a heritage item is within a construction site, impacts have been avoided or minimised. In Parramatta, this includes the local heritage listed shop on George Street and Kia Ora which would be retained and protected. In Sydney Olympic Park, the heritage structure associated with the State Abattoir located in the construction site would be retained and protected, with direct impacts limited to the gardens only.

12.5 Project-wide impacts

12.5.1 World, National and Commonwealth Heritage

No items listed on the World Heritage List, the National Heritage List or the Commonwealth Heritage List were identified within the study area. Settlement levels have also been assessed, identifying that no World, National or Commonwealth heritage listed structures above the tunnel would be impacted. As such, there would be no direct impacts to World, National or Commonwealth listed heritage items.

12.5.2 Settlement impacts

Ground excavation for Stage 1 has the potential to cause ground movement associated with the redistribution of stresses within the ground or groundwater drawdown. Table 12-3 identifies the potential heritage impact and magnitude of settlement to heritage items within or near the proposed construction sites. Overall, potential damage to heritage items from settlement is unlikely.

Table 12-3: Settlement – Potential impacts on heritage items

Item and listing	Significance	Potential impact
Parramatta metro station construction site		
Roxy Theatre SHR 00711	State	Settlement of 25 millimetres resulting in possible superficial damage which is unlikely to have structural significance
North Strathfield metro station construction site		
North Strathfield Railway Station Group Railcorp s170 4801029	Local	Settlement of 18 millimetres resulting in possible superficial damage which is unlikely to have structural significance
Five Dock Station construction site		
St Albans Anglican Church Rectory Canada Bay LEP 1227	Local	Settlement of 17 millimetres resulting in possible superficial damage which is unlikely to have structural significance
St Alban’s Anglican Church Canada Bay LEP 1226	Local	Settlement of 30 millimetres resulting in possible superficial damage which is unlikely to have structural significance
The Bays Station construction site		
Anzac Bridge RMS s170 4305018	Local	Settlement of 10 millimetres resulting in possible superficial damage which is unlikely to have structural significance
Glebe Island Silos Ports Authority of NSW s170 4560016	Local	Settlement of 20 millimetres resulting in possible superficial damage which is unlikely to have structural significance

12.5.3 Power supply routes

High voltage power supply would be required for the operation of tunnel boring machines at the Westmead metro station construction site and The Bays Station construction site, and for roadheaders at the station sites and services facility sites.

Most of the power supply routes would be constructed by trenching within the existing road reserve. Trenches are expected to be around one metre wide and 1.5 to two metres deep. It is therefore likely that any subsurface archaeological which remains to this depth below the road treatment and pavement would be impacted. Where previous disturbance has occurred as a result of landform modification, road development and installation of existing services, archaeological potential would be low.

Table 12-4 assesses the potential archaeological and heritage impacts associated with the construction of the power supply routes.

Table 12-4: Power supply routes – Potential impacts on heritage items and archaeological remains

Item and listing	Significance	Potential impact
Westmead power supply route		
Parramatta Park and Old Government House WHL Place ID 106209, SHR 00596, Parramatta LEP I00596	World – state	Potential for locally significant and State significant archaeology in undisturbed sections of the road corridor. Impacts to fabric and visual impacts are likely to be temporary and minor.  Within the buffer zone for the World Heritage listed Parramatta Park and Old Government House.
Archaeological resources	State – local	Late 18th and early 19th century archaeological resources of local to State significance including convict accommodation and workshops, early agricultural holdings, residential and commercial holdings
Parramatta power supply route		
Parramatta Park and Old Government House WHL Place ID 106209, SHR 00596, Parramatta LEP I00596	World – state	Potential for locally significant and State significant archaeology in undisturbed sections of the road corridor. Impacts to fabric and visual impacts are likely to be temporary and minor.
Archaeological resources	State – local	Late 18th and early 19th century archaeological resources of local to State significance including convict accommodation and workshops, early agricultural holdings, residential and commercial holdings
The Bays power supply route		
The Valley Heritage Conservation Area Leichhardt LEP C7	Local	Within conservation area. Impacts to fabric and visual impacts are likely to be temporary and minor.
Archaeological resources	Local	Power supply route traverse’s outlet canal for White Bay Power Station and may result in adverse direct impacts; remainder of power supply route would not impact any known non-Aboriginal archaeological resources



12.6 Westmead metro station construction site

12.6.1 Historical context and existing heritage items

The area that is now Westmead was originally part of the domain of Government House at Parramatta. This area included the Government Domain, as well as the lands beyond.

These lands were subdivided over the later parts of the 19<sup>th</sup> Century, first for farmland and then for urban development. The rate of this development was accelerated following the creation of a station on the Main Western Line at Westmead in 1883.

The study area is within the curtilage of the original Government Farm and Government Domain. This area was subdivided and constructed for residential use in 1903, with a number of these structures still present today.

The Westmead metro station construction site study area and existing heritage items are shown in Figure 12-1.

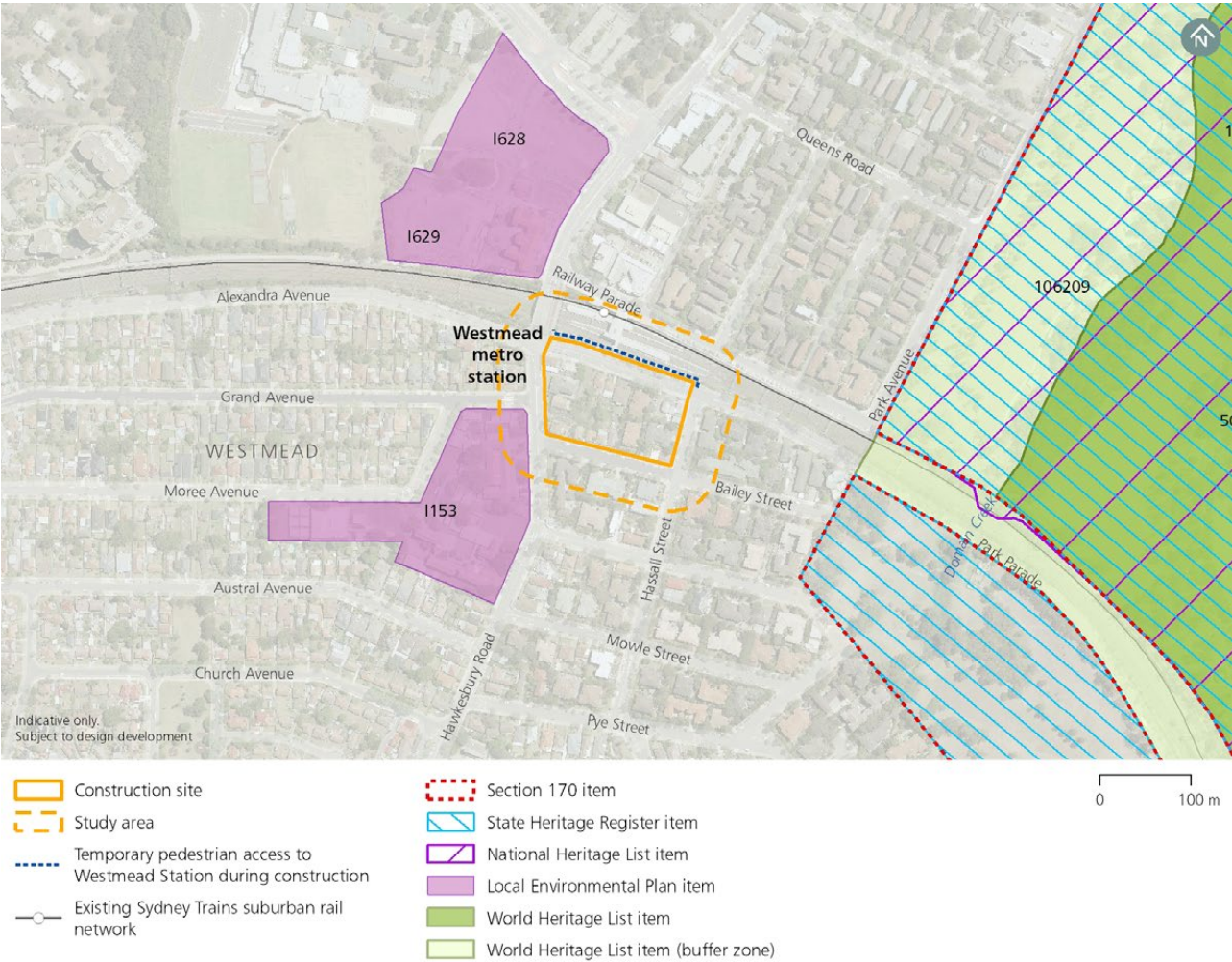


Figure 12-1: Westmead metro station construction site – Heritage items and conservation areas

12.6.2 Assessment of heritage significance and impact

Heritage items and conservation areas

There would be no direct impacts to heritage items or conservation areas. Stage 1 would potentially indirectly impact on the locally heritage listed Westmead Public School. The potential magnitude of impact to this item (using the magnitude scale from Table 12-2) is described in Table 12-5.

Table 12-5: Westmead metro station construction site – Impacts on heritage items and conservation areas

Item and listing	Significance	Potential impact	Magnitude
Westmead Public School, c1917 Holroyd LEP 2013 (I153)	Local	<b>Indirect impact – views and vistas (temporary)</b> The demolition of existing buildings on the construction site and construction activities, including intersection works and the acoustic shed (or other acoustic measures), would result in changes to the surrounding setting and context of the heritage item. Views and vistas are not considered an integral element of the item’s heritage significance.	Minor

Potential unlisted heritage items

This assessment did not identify any potential unlisted heritage items within the Westmead metro station construction site.

Archaeological remains

Significant archaeological remains are not predicted to be located at the Westmead metro station construction site.

Table 12-6 identifies the type of archaeological remains that may be present; the potential for those archaeological remains to occur within the study area, their likely heritage significance and the potential for those remains to be impacted by Stage 1.

Table 12-6: Westmead metro station construction site – Potential archaeological impacts

Phase and potential archaeological feature	Potential for occurrence	Heritage significance	Potential archaeological remains
Phase 1 (1788-1860) Government Farm and Government Domain	Nil	N/A	Significant archaeological remains are not predicted to be located at the Westmead metro station construction site. Demolition, clearing and excavation works that would result in widespread ground disturbance would not result in any impacts to significant archaeological remains.
Phase 2 (1860-1943) Railway line and subdivision	Low	Local	
Phase 3 (1943-Present) Late twentieth century development	Moderate	Unlikely to be of local significance	

12.7 Parramatta metro station construction site

12.7.1 Historic context and existing heritage items

The Parramatta CBD has grown from an early convict settlement based around the presence of arable land for farming. Fertile lands discovered at the head of the Parramatta River were a significant improvement from the sandstone soils of coastal Sydney, which were unsuitable for cultivation.

The development of the Government Farm and Government House at Parramatta prompted the development of the town of Parramatta, which was laid out from 1790. Around this time, George Street was also laid out as the key long street for the settlement, linking Government House to the original landing place on the Parramatta River.

This transformation of Parramatta from a settlement to a township took place through the 19<sup>th</sup> Century, with Parramatta growing as a centre for professional services, suppliers, education and health. This growth continued through the 20<sup>th</sup> Century, with the expansion of the surrounding area around Church Street and Macquarie Street.

The study area is located on land which was laid out by Governor Philip for the establishment of early convict timber housing, with small gardens that provided food for residents. Over time these houses were replaced, first by more substantial brick and sandstone residences and workshops, then ultimately by commercial development. In the period since, the site has undergone frequent commercial redevelopment as part of the commercial growth of the Parramatta CBD generally.



The Parramatta metro station construction site study area and existing heritage items are shown in Figure 12-2.

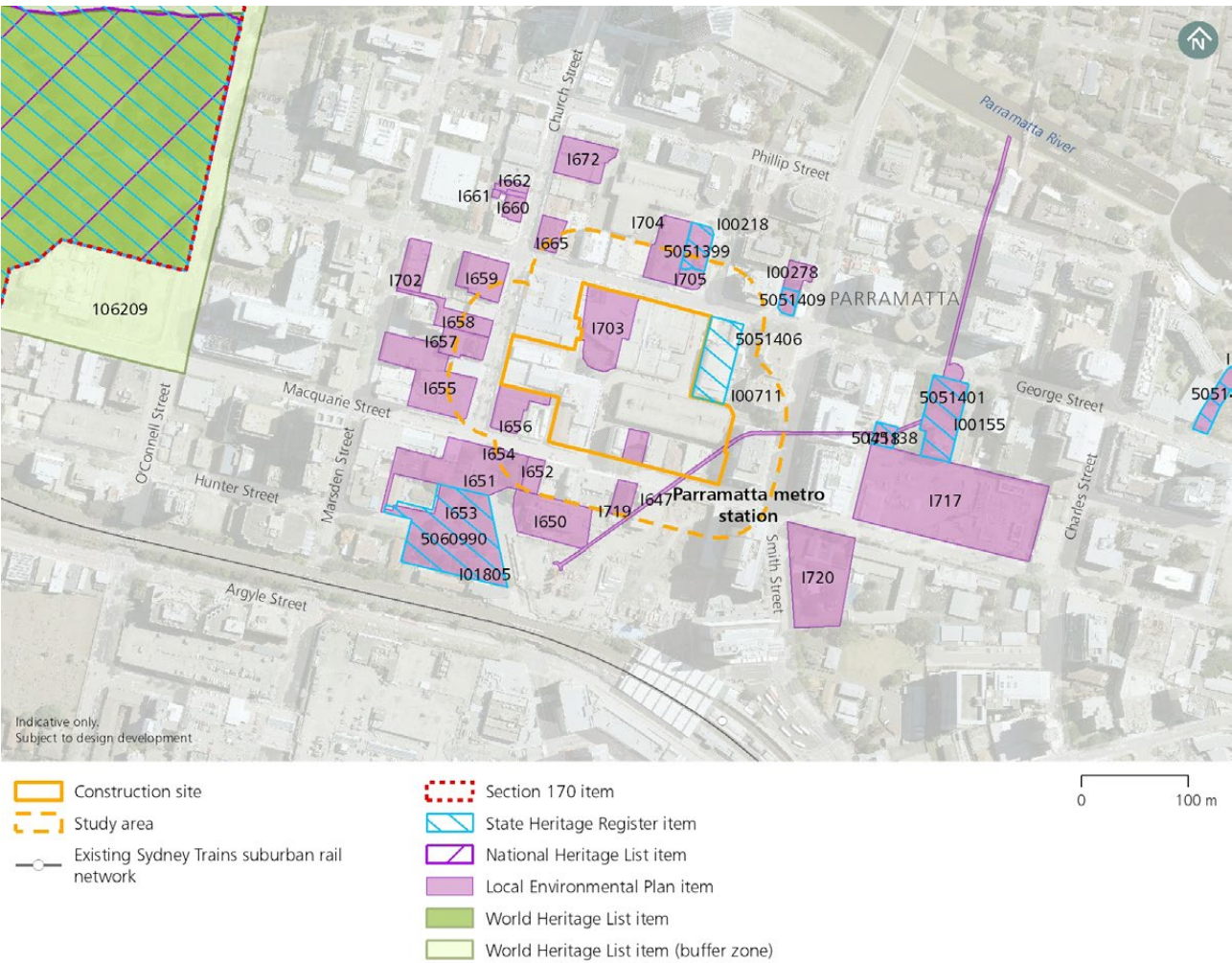


Figure 12-2: Parramatta metro station construction site – Heritage items and conservation areas

12.7.2 Assessment of heritage significance and impact

Heritage items and conservation areas

Stage 1 would potentially impact on the heritage items identified in Table 12-7.

Table 12-7: Parramatta metro station construction site – Impacts on heritage items and conservation areas

Item and listing	Significance	Potential impacts	Magnitude
Shops (and potential archaeological site) (41-59 George Street, Parramatta) Parramatta LEP 2011 (I703)	Local	<b>Direct impact – accidental damage during construction (potential)</b> The demolition of existing adjoining modern buildings (which are not considered to have heritage significance) within the heritage curtilage of the item and cut and cover excavation would not result in the item's heritage listing eligibility being reduced. It is possible that minor impact to the remaining historic building could occur due to accidental damage during construction, which could potentially result in localised physical impact, although appropriate measures would be put in place to reduce the likelihood of impact.	Minor
		<b>Potential direct impact – vibration</b> Vibration modelling indicates that this item could experience vibration levels above the cosmetic damage screening criteria. Further assessment (including a structural assessment) and vibration impact monitoring (if required) would be completed to ensure safe vibration levels for the structure are met.	Minor
		<b>Indirect impact – views and vistas (temporary)</b> The works would result in changes to the visual amenity and character of the site, as well as views and vistas around the site. The context of the item has been previously altered by modern development restricting views towards this item. Following the demolition of the modern developments, the construction site would potentially temporarily detract from views towards the heritage item from the northern side of George Street and intersection at Church Street.	Minor
Convict Drain Parramatta LEP 2011 (I647)	Local	<b>Direct impact – Partial demolition (potential)</b> It is possible that minor impact to the heritage item could occur due to accidental damage during construction, which could potentially result in localised physical impact although this would be minor in nature.	Minor
		<b>Potential direct impact – vibration</b> As the exact location, fabric condition and depth of the convict drain heritage item are unknown, vibration may exceed the cosmetic damage screening criteria. Further assessment (including a structural assessment) and vibration impact monitoring (if required) would be completed to ensure safe vibration levels for the structure are met.	Minor
Roxy Theatre SHR (00711), Parramatta LEP 2011 (I00711)	State	<b>Potential direct impact – vibration</b> Vibration modelling indicates that this item could experience vibration levels above the cosmetic damage screening criteria. Further assessment (including a structural assessment) and vibration impact monitoring (if required) would be completed to ensure safe vibration levels for the structure are met.	Minor
		<b>Indirect impact – views and vistas (temporary)</b> Demolition of nearby buildings and structures associated with Stage 1 would change the wider context of the Roxy Theatre. While the context of the item has been previously altered by modern development, the construction site would potentially temporarily detract from the landmark qualities of the theatre building.	Minor

Item and listing	Significance	Potential impacts	Magnitude
Horse Parapet Façade (and potential archaeological site) Parramatta LEP 2011 (I656)	Local	<b>Direct impact – accidental damage during construction (potential)</b> It is possible that minor impact to the heritage item could occur due to accidental damage during construction, which could potentially result in localised physical impact although this would be minor in nature and appropriate measures would be put in place to reduce the likelihood of impact.	Minor
		<b>Potential direct impact – vibration</b> The Horse Parapet Façade is not located within the construction site but is adjoined to modern buildings which are subject to demolition works. Vibration modelling indicates that this item could experience vibration levels above the cosmetic damage screening criteria. Further assessment (including a structural assessment) and vibration impact monitoring (if required) would be completed to ensure safe vibration levels for the structure are met.	Minor
		<b>Indirect impact – views and vistas (temporary)</b> Demolition of buildings immediately north and nearby to the east of the item would change the context of the historic building, however, this context has been previously altered by modern development. A construction site directly adjacent to the item would result in a minor temporary visual impact.	Minor
Murrays’ Building (and potential archaeological site) Parramatta LEP 2011 (I652)	Local	<b>Indirect impact – views and vistas (temporary)</b> Demolition of most buildings and structures within the construction footprint and construction activities near the building would temporarily impact the context and setting of the item.	Minor
Kia Ora (and potential archaeological site) Parramatta LEP 2011 (I716)	Local	<b>Direct impacts – Accidental damage during construction (potential)</b> Risk of minor localised physical impact caused by accidental damage during Stage 1 demolition and construction, although appropriate measures would be put in place to reduce the likelihood of impact.	Minor
		<b>Potential direct impact – vibration</b> Vibration modelling indicates that this item could experience vibration levels above the cosmetic damage screening criteria. Further assessment (including a structural assessment) and vibration impact monitoring (if required) would be completed to ensure safe vibration levels for the structure are met.	Minor
		<b>Indirect impact – views and vistas (temporary)</b> Stage 1 demolition and construction in the vicinity of Kia Ora would change the configuration and presentation of the site, and would potentially detract from the historic quality of the 19th century residence. The construction site would result in an additional visual impact on Kia Ora, although this would be temporary in nature.	Negligible
Dr Pringle’s Cottage Parramatta LEP 2011 (I705)	Local	<b>Indirect impact – views and vistas (temporary)</b> Demolition and construction near the building would impact its context and setting. This context has already been altered by modern development and adjacent buildings are not considered to represent a significant visual element in the surroundings of Dr Pringle’s Cottage.	Negligible

Item and listing	Significance	Potential impacts	Magnitude
Redcoat’s Mess House SHR (00218), Parramatta LEP 2011 (I00218)	State	The significant fabric of this heritage item is located more than 40 metres from the construction site and therefore there would be no direct impacts, vibration is not anticipated and there are no sightlines between the item and the Parramatta metro station construction site.	Neutral
Civic Arcade (former theatre) (and potential archaeological site) Parramatta LEP 2011 (I704)	Local	<b>Indirect impact – views and vistas (temporary)</b> Stage 1 would result in demolition and construction directly opposite the item, however the context has been previously altered by modern development and the adjacent buildings are not considered to represent a significant visual element in the surrounding setting of the item.	Negligible
Westpac Bank Parramatta LEP 2011 (I665)	Local	<b>Indirect impact – views and vistas (temporary)</b> Stage 1 would result in demolition and construction directly opposite the item, however, the context has been previously altered by modern development and the adjacent buildings are not considered to represent a significant visual element in the surrounding setting of the item.	Minor
Former Courthouse Wall and Sandstone Cellblock (and potential archaeological site) Parramatta LEP 2011 (I659)	Local	The significant fabric of this heritage item is located more than 100 metres from the construction site and therefore there would be no direct impacts, vibration is not anticipated and there are no sightlines between the item and the Parramatta metro station construction site.	Neutral
HMV (former Commonwealth Bank) (and potential archaeological site) Parramatta LEP 2011 (I658)	Local	<b>Indirect impact – views and vistas (temporary)</b> Stage 1 would result in demolition and construction directly opposite the item, however the context has been previously altered by modern development and the nearby modern buildings are not considered to represent a significant visual element in the surrounding setting of the item. The construction site would result in an additional temporary minor visual impact on the heritage item.	Negligible
Telstra House (former Post Office) (and potential archaeological site) Parramatta LEP 2011 (I657)	Local	<b>Indirect impact – views and vistas (temporary)</b> Stage 1 would result in demolition and construction directly opposite the item, however the context has been previously altered by modern development and the nearby buildings are not considered to represent a significant visual element in the surrounding setting of the item. The construction site would result in an additional temporary minor visual impact on the heritage item.	Negligible
Shop (and potential archaeological site) (197 Church Street, Parramatta) Parramatta LEP 2011 (I655)	Local	<b>Indirect impact – views and vistas (temporary)</b> Stage 1 would result in demolition and construction directly opposite the item, however the context has been previously altered by modern development and the nearby buildings are not considered to represent a significant visual element in the surrounding setting of the item. The construction site would result in an additional temporary minor visual impact on the heritage item.	Negligible



Item and listing	Significance	Potential impacts	Magnitude
<b>Bicentennial Square and adjoining buildings</b> <b>Parramatta LEP 2011 (I651)</b>	Local	<b>Indirect impact – views and vistas (temporary)</b> Stage 1 would result in demolition and construction in the vicinity of Bicentennial Square, however the nearby modern buildings within the construction site are not considered to represent a significant visual element in the surrounding setting of the item, and none of the important sightlines to surrounding heritage items would be obstructed or permanently altered by the construction site. The construction site would be visually screened by existing development.	Negligible
<b>Centennial Memorial Clock</b> <b>Parramatta LEP 2011 (I654)</b>	Local	<b>Indirect impact – views and vistas (temporary)</b> Stage 1 would result in demolition and construction directly opposite the item, however the context has been previously altered by modern development and the nearby buildings are not considered to represent a significant visual element in the surrounding setting of the item. The construction site would be visually screened by existing development.	Negligible
<b>Leigh Memorial Uniting Church</b> <b>Parramatta LEP 2011 (I719)</b>	Local	<b>Indirect impact – views and vistas (temporary)</b> Stage 1 would result in demolition and construction activities near the item, however the context has been previously altered by modern development and the nearby buildings are not considered to represent a significant visual element in the surrounding setting of the item. The construction site would be visually screened somewhat by existing development.	Negligible

Potential unlisted heritage items

Table 12-8 identifies potential unlisted heritage items, their significance and the impacts of Stage 1 on these items.

Table 12-8: Parramatta metro station construction site – Impacts on unlisted items

Item	Potential heritage significance	Potential impact	Magnitude
<b>Late 19th century commercial building</b> <b>220 Church Street, Parramatta</b>	Local	Stage 1 would require the demolition of these items resulting in the complete removal of any heritage fabric. The items would not retain their heritage significance and would no longer provide a representative example of its type.	Major
<b>Mid-20th century Inter-War Modern style commercial building</b> <b>48 Macquarie Street, Parramatta</b>			

Archaeological remains

Table 12-9 identifies the type of archaeological remains that may be present; the potential for those archaeological remains to occur within the study area, their likely heritage significance and the potential for those remains to be impacted by Stage 1.

Ground disturbance works would be widespread across the Parramatta metro station construction site and in some places deep (i.e. in the location of the station box excavation). The heritage-listed structures at 45 George Street and Kia Ora at 62 – 64 Macquarie Street would be preserved. All other existing buildings and street surfaces would be removed, and the ground surface below stripped prior to the station box excavation commencing. This ground disturbance may result in a major impact to all significant archaeological resources in the construction site.

Archaeological remains located at the Parramatta metro station construction site represent a highly significant and rare deposit of high research value and would be subject to further robust archaeological investigation prior to the commencement of works. In the event that State significant archaeology associated with early convict occupation is located at Parramatta metro station, appropriate mitigation would be developed including potential in situ conservation, publication and/or curation of artefacts.

Table 12-9: Parramatta metro station construction site – Potential archaeological impacts

Phase and potential archaeological feature	Potential for occurrence	Heritage significance	Potential archaeological remains
<b>Phase 1 (1788-1821)</b> <b>Founding of Parramatta and early convict accommodation</b>	Low and low to moderate	State	Convict huts, yards and gardens – remains include timber posts and postholes, earthen floor surfaces, informal drains, buried historical soil deposits, isolated artefact deposits (bone, glass, metal, ceramic, stone).
<b>Phase 2 (1821-1850)</b> <b>Growth of Parramatta township</b>	Low to moderate	Local to State	Early colonial residences and yards – remains include timber posts and postholes, sandstock brick or stone footings, timber boards and underfloor artefact deposits, fence and informal earthen or stone drains and kerbs, former yard surfaces, deep well and privy refuse deposits, buried historical soils, and isolated artefact deposits (bone, glass, metal, ceramic, stone).  Convict drain – remains include sandstock brick lined barrel drain or later machine-pressed brick drain repairs, infilled artefact and soil deposits.
<b>Phase 3 (1850-1900)</b> <b>Late nineteenth century commercial development</b>	Moderate	May be of local significance	Commercial buildings, rear yards and outbuildings - brick footings, timber postholes and posts, ceramic drains, fence and informal earthen or stone drains and kerbs, former yard surfaces, industrial debris and slag, deep well and privy refuse deposits, buried historical soils, and isolated artefact deposits (bone, glass, metal, ceramic, stone).

12.8 Clyde stabling and maintenance facility construction site

12.8.1 Historic context and existing heritage items

In 1793, an early 100-acre land grant was used to establish Elizabeth Farm. The estate was further extended through additional land grants and purchasing of neighbouring lots reaching over 1,100 acres by 1816. Between 1883 and 1884, much of Elizabeth Farm was subdivided and sold off to allow for greater residential development.

The planned residential development did not prove to be economically viable and the majority of the land grants were purchased by industrial companies who seized the opportunity the Duck River frontage and rail connections provided. On these properties industrial yards and warehouses were developed during the late nineteenth and early twentieth centuries. Another section of land directly northwest of the study area was developed for a racecourse and for recreational purposes. This became the Rosehill Gardens racecourse, which opened in 1885. Most of the residential development in the area was for the workers of the local industries.

In 1925, an approximate 30-acre area north of Duck Creek was resumed for the establishment of the Agricultural Society’s Granville Show and Sports Ground including stalls for horses and cattle, a trotting track and a dog show ring. A clay Sprintcar Speedway track was laid out at the Granville Showgrounds with first practices undertaken in January 1977. From this point, the Granville Showgrounds became known as the ‘Parramatta City Raceway’.



The Clyde stabling and maintenance facility construction site is divided by Duck Creek and A'Becketts Creek, which are upper tributaries of Duck River. The northern portion of the site is located within the curtilage of land which formed Elizabeth Farm and was used for agricultural purposes. Aerial imagery from 1943 indicates that parts of the northern portion of Clyde stabling and maintenance facility construction site were used for industrial purposes with the remainder of the land remaining relatively undeveloped and used for agricultural purposes or as part of the T6 Carlingford Rail Line rail corridor. South of Duck Creek the Clyde stabling and maintenance facility construction site mainly comprises the Sydney Speedway (location on NSW Government owned land).

The Clyde stabling and maintenance facility construction site study area and existing heritage items are shown in Figure 12-3.

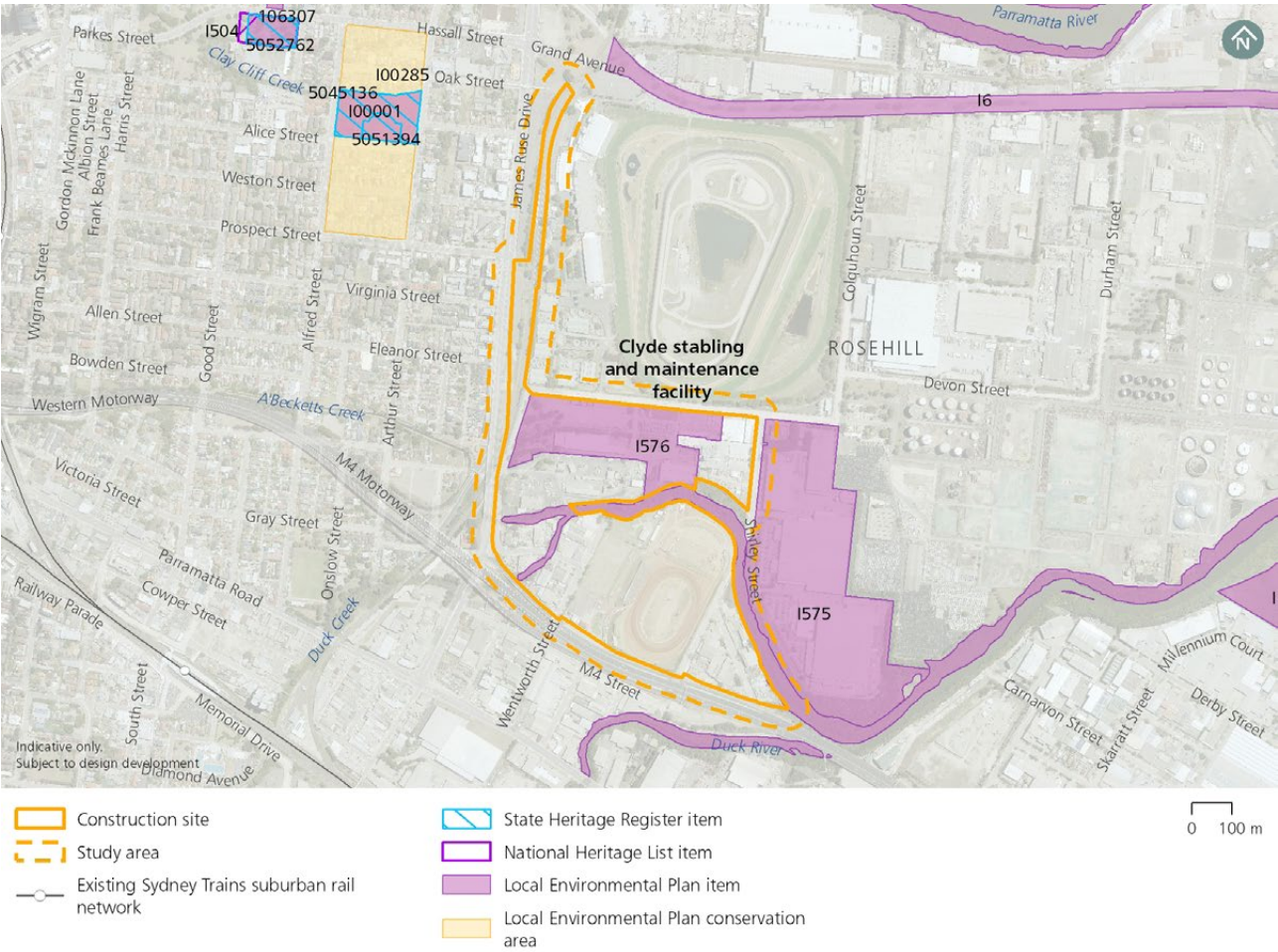


Figure 12-3: Clyde stabling and maintenance facility construction site – Heritage items and conservative areas

12.8.2 Assessment of heritage significance and impact

Heritage items and conservation areas

Stage 1 would potentially impact on the listed heritage items identified in Table 12-10.

Table 12-10: Clyde stabling and maintenance facility construction site – Impacts on heritage items and conservation areas			
Item and listing	Significance	Potential impact	Magnitude
Wetlands Parramatta LEP 2011 (I1)	Local	<b>Direct impact</b> Construction activities would require direct impact on the wetlands, resulting in permanent changes. Civil works to establish the stabling and maintenance facility landform and associated structures over A'Becketts Creek and Duck Creek would involve localised removal of around 0.7 ha of vegetation within the affected portion of the item. The wetlands heritage item covers a large area and the impact to around 0.7 ha would represent a relatively minor direct impact.	Minor
		<b>Indirect impacts – views and vistas</b> The removal of vegetation, civil works and establishment of new structures over A'Becketts Creek and Duck Creek would result in permanent visual changes to the character and aesthetic qualities of the wetland, whilst changing the wider context and setting of the ecological item.	Minor
RTA Depot Parramatta LEP 2011 (I576)	Local	<b>Direct impact – partial demolition/removal</b> Construction of Stage 1 would result in demolition of modern development/additions within the heritage curtilage of this item, in addition to all other developments/structures within the construction zone, excluding the historic multi-storey brick structure fronting Unwin Street which would be retained. It is possible that minor impact to the remaining historic building could occur due to accidental damage during construction, which could potentially result in localised physical impact although this would be minor in nature and appropriate measures would be put in place to reduce the likelihood of impact.	Minor
		<b>Potential direct impacts – vibration</b> Vibration modelling indicates that this item could experience vibration levels above the cosmetic damage screening criteria. Further assessment (including a structural assessment) and vibration impact monitoring (if required) would be completed to ensure safe vibration levels for the structure are met.	Minor
		<b>Indirect impacts – views and vistas</b> The demolition of existing modern buildings within the heritage item for Stage 1 would result in changes to the existing aesthetic quality and character of the RTA Depot, although the modern buildings are not considered to represent a significant visual component of the historic shop.	Minor

Item and listing	Significance	Potential impact	Magnitude
Capral Aluminium Parramatta LEP 2011 (1575)	Local	<b>Indirect impacts – views and vistas</b> The item is located directly adjacent to the construction site and would have direct view between the historic office building and the construction site. The introduction of structures over Duck Creek and A'Becketts Creek is not expected to cause an indirect (visual) impact above minor to the heritage item due to the extensive vegetation screening along the alignment of the creeks. Stage 1 would result in changes to the wider context and setting of the heritage item, which has historically comprised an industrial landscape.	Minor

Potential unlisted heritage items

This assessment has not identified any potential unlisted heritage items within Clyde stabling and maintenance facility construction site.

Archaeological remains

Significant archaeological remains have not been predicted to be located within the Clyde stabling and maintenance facility construction site.

Table 12-11 identifies the type of archaeological remains that may be present, the potential for those archaeological remains to occur within the study area, their likely heritage significance and the potential for those remains to be impacted by Stage 1.

Table 12-11: Clyde stabling and maintenance facility construction site – Potential archaeological impacts

Phase and potential archaeological feature	Location	Potential for occurrence	Heritage significance	Potential archaeological remains
Phase 1 (1796 – 1872) Early agricultural land grants	North and south of Duck Creek	Nil	N/A	Significant archaeological remains have not been predicted to be located within the Clyde stabling and maintenance facility construction site. As such, demolition, clearing and excavation works that would result in widespread ground disturbance would not result in any impacts to significant archaeological remains.
Phase 2 (1872 – 1925) Residential subdivision of early estates and railway construction	North and south of Duck Creek	Nil	N/A	
Phase 3 (1925 – Present) Clyde Showground and industrial development	North and south of Duck Creek	Low to moderate	Unlikely to be of local significance	
	West of Duck Creek, south of A'Becketts Creek	Nil	N/A	

12.9 Silverwater services facility construction site

12.9.1 Historic context and existing heritage items

Land within Liberty Plains, today known as Silverwater, Homebush, Rookwood and Lidcombe, was first settled in 1797. During this period land grants were allocated to settlers to establish farms and estates for agricultural purposes. In 1807 the Newington Estate covered land between the Parramatta River and Parramatta Road, the Duck River and Haslam’s Creek. Industrial and commercial pursuits within the Newington Estate were undertaken from the earliest years of the estate’s existence including the development of cottages, farmland, a slaughterhouse, and saltworks.

From 1860 onwards, the Newington Estate began to break up with portions of land being sold off to private and public interests. The twentieth century saw mainly industrial development occurring within Silverwater along with the subdivision and development of some modest homes.

The Silverwater services facility construction site is located within the curtilage of the Newington Estate on land originally cultivated in 1807 for agricultural purposes. There is no evidence that any structures were constructed within the Silverwater services facility construction site during this period. By 1880s, Silverwater was mostly subdivided and aerial imagery from 1940s shows the construction site was not developed at this time. During the mid to late twentieth century a large structure was constructed within the Silverwater services facility construction site however this structure was demolished by 2009.

12.9.2 Assessment of heritage significance and impacts

There are no heritage items located within the study area surrounding the Silverwater services facility construction site. No unlisted heritage items were identified.

Archaeological remains

Significant archaeological remains are not been predicted to be located within the Silverwater services facility construction site.

Table 12-12 identifies the type of archaeological remains that may be present; the potential for those archaeological remains to occur within the study area, their likely heritage significance and the potential for those remains to be impacted by Stage 1.

Table 12-12: Silverwater services facility construction site – Potential archaeological impacts

Phase and potential archaeological feature	Potential for occurrence	Heritage significance	Potential archaeological remains
Phase 1 (1807 – 1909) Newington Estate	Nil	N/A	Significant archaeological remains are not been predicted to be located within the Silverwater services facility construction site. As such, demolition, clearing and excavation works that would likely result in widespread ground disturbance would not result in any impacts to significant archaeological remains.
Phase 2 (1909 – 1950) Incomplete suburban subdivision	Nil	N/A	
Phase 3 (1950 – present) Commercial and industrial development	High	None	

12.10 Sydney Olympic Park metro station construction site

12.10.1 Historic context and existing heritage items

The Sydney Olympic Park metro station construction site study area is located in an area initially granted in 1794, and within an estate where a homestead and racing track was constructed in the 1820s. Through the 19<sup>th</sup> Century, the property was rented by various tenants and the land was described as empty and cleared. Some residential subdivision occurred in the 1880s, but growth in the area was slow.

In the early 20<sup>th</sup> Century the Public Works Department moved the State Abattoir from Glebe to Homebush (then known as the Home Bush Estate) and much of the land was acquired by the NSW Government. The construction of the State Abattoir included substantial public infrastructure construction at the site including earthworks, buildings, railways and service roads. The State Abattoir was established in 1907, became one the largest slaughterhouses in the Commonwealth, and operated at the site until its closure in 1988.

From 1911, the State Brick Works was also located in Homebush to the north of the construction site. In World War II the State Brick Works was taken over as a munitions store. After the war it resumed brick making until its closure in 1988.

As industrial development in Sydney expanded in the mid-20<sup>th</sup> century, Homebush was also used as a dumping location for toxic waste with a number of landfills located there.

The area was rehabilitated and redeveloped for sports and recreational use for the 2000 Sydney Olympic and Paralympic Games.

The Sydney Olympic Park metro station construction site study area and existing heritage items are shown in Figure 12-4.



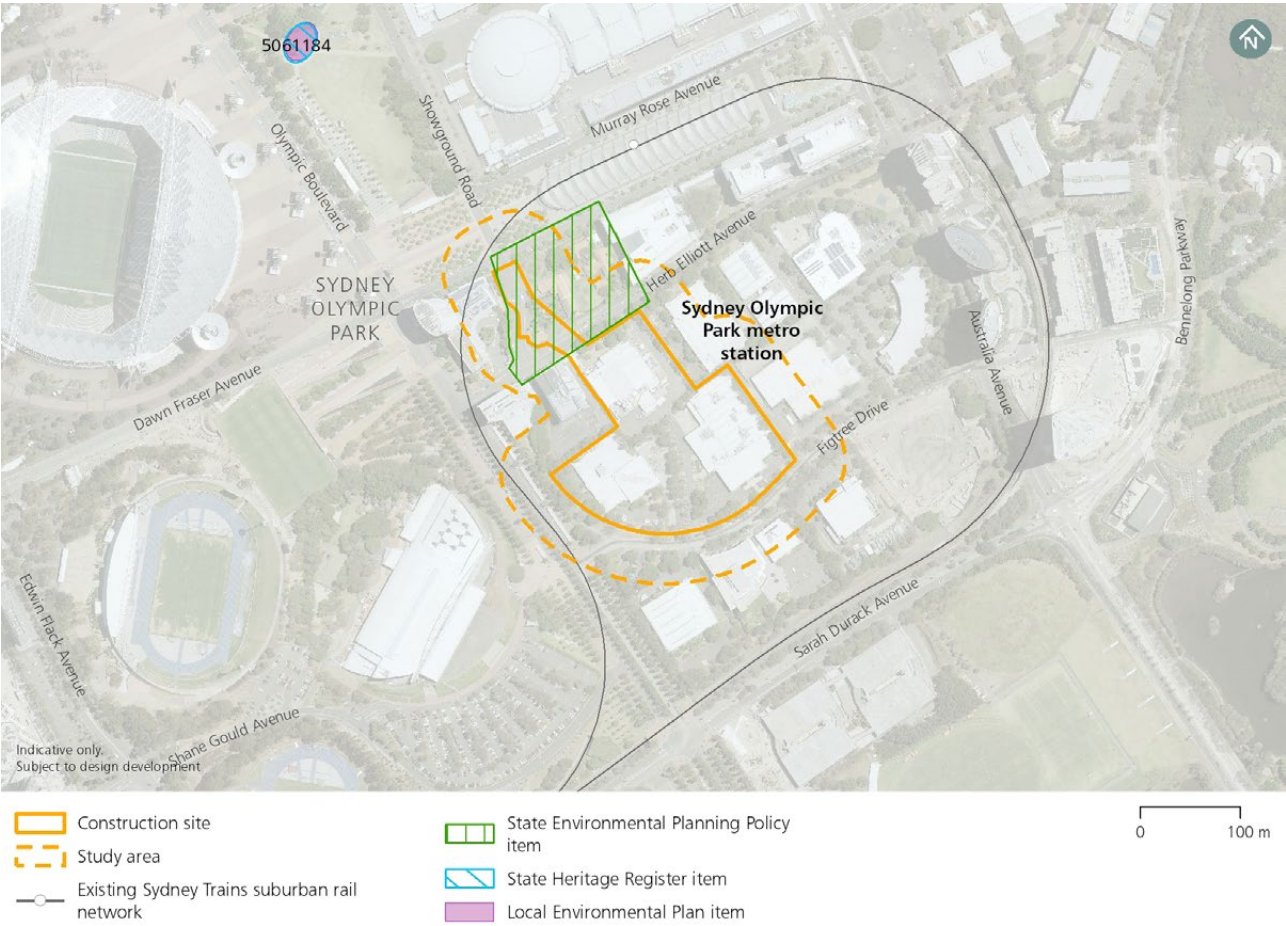


Figure 12-4: Sydney Olympic Park metro station construction site – heritage items and conservation areas

12.10.2 Assessment of heritage significance and impact

Heritage items and conservation areas

Stage 1 would potentially impact on one listed heritage item (the State Abattoirs) within the study area, which is identified at Table 12-13. Sydney Metro is investigating feasible options to avoid direct impacts to this heritage item.

Table 12-13: Sydney Olympic Park metro station construction site – Impacts on heritage items and conservation areas

Item and listing	Significance	Potential impact	Magnitude
State Abattoirs SEPP (State Significant Precincts) (Item 141)	State <sup>1</sup>	<b>Direct impact – partial demolition</b> Stage 1 would encroach on the heritage curtilage of the item. Trees and vegetation within the Sydney Olympic Park metro station construction site would be removed, including existing planting and landscaping identified as being of ‘high/medium’ significance. This would have a permanent physical impact, although reinstatement of sympathetic landscaping that is in keeping with the provisions of the Conservation Management Plan would assist in mitigating this impact. Sydney Metro is currently investigating alternate construction options to cut and cover in the vicinity of Herb Elliot Avenue which would potentially avoid or minimise impacts to elements of the heritage item.	Moderate
		<b>Potential direct impact – vibration</b> Vibration modelling indicates that the Gatehouse and the Administration Block building (to the east of the construction site) could experience vibration levels above the cosmetic damage screening criteria. Further assessment (including a structural assessment) and vibration impact monitoring (if required) would be completed to ensure safe vibration levels for the structure are met.	Minor
		<b>Indirect impact – views and vistas</b> The removal of trees, landscape elements and garden would result in changes to the aesthetic quality and character of the historic complex although reinstatement of sympathetic landscaping that is in keeping with the provisions of the Conservation Management Plan would assist in mitigating this impact. Stage 1 would also involve demolition on the southern side of Herb Elliott Avenue, which would result in visual changes to the surrounding context and setting of the former State Abattoirs, although these modern buildings are not considered to represent a significant visual component of the historic agricultural complex. The context of the heritage item has also previously been altered by the Sydney Olympic Park redevelopment and existing commercial development. The acoustic sheds (or other acoustic measures) would be visible from the former State Abattoirs, including the principal multi-storey historic buildings and gardens, but would only be temporary in nature.	Moderate

Note 1: The State Abattoirs are listed as State significant on the State Environmental Planning Policy (SEPP) and the Sydney Regional Environmental Plan (SREP), however, the item is not listed on the State Heritage Register

Abattoir Heritage Precinct Conservation Management Plan

The Abattoir Heritage Precinct is subject to the Abattoir Heritage Precinct, Sydney Olympic Park: Conservation Management Plan (Graham Brooks and Associates, 2003). An assessment of impact in response to the relevant recommendations of the Conservation Management Plan is included in Table 12-14.



Table 12-14: Assessment against Abattoir Heritage Precinct, Sydney Olympic Park Conservation Management Plan recommendations

Recommendation	Assessment of impacts
Assess the impact of any near-by large-scale development upon the heritage significance of the site.	<p>Stage 1 involves demolition of existing development and construction within the State Abattoirs heritage curtilage, which would change the existing visual context and setting of the site. The setting is graded as being of ‘low/neutral’ significance in the Conservation Management Plan, and is not considered to contribute to the significance of the item.</p> <p>The acoustic sheds (or other acoustic measures) at the site would also have a visual impact on the setting on a temporary basis. However, modern development adjacent to the construction site already exceeds the height of the proposed acoustic sheds (or other acoustic measures).</p>
Any proposed new large-scale development in the vicinity should not overshadow the open spaces in the Abattoir Heritage Precinct.	<p>The acoustic sheds (or other acoustic measures) would exceed the height of existing development in the construction site. This would result in a temporary impact, given that the acoustic sheds (or other acoustic measures) would temporarily change the nature and quality of open spaces within the heritage precinct during construction.</p> <p>The acoustic shed (or other acoustic measures) located directly opposite the State Abattoirs on the southern side of Herb Elliot Avenue would potentially visually dominate the State Abattoirs, although this indirect impact would be temporary in nature.</p>
Significant building and landscape fabric, both internally and externally should be retained and conserved, in accordance with the levels of significance identified in Part 7 Summary of Elements	<p>Stage 1 has been developed to retain the former gatehouse structure, which is identified as an element of Exceptional significance in the Conservation Management Plan. However, Stage 1 would also result in the removal of significant landscaping elements adjacent to the gatehouse and former carriage loop, including the removal of mature tree planting, garden beds, kerbing and other associated public domain elements. This removal would result in a permanent adverse heritage impact. This impact could be lessened with the reinstatement of the gardens with appropriate similar species and plantings in keeping with the provisions of the Conservation Management Plan.</p>
Where landscape elements require replacement due to growth or senescence, replant with species to match existing, in the existing layout, or one determined by further research.	<p>This would be considered during design development for the station as part of a future stage of Sydney Metro West.</p>
Make decisions requiring change to the Abattoir Heritage Precinct with a clear understanding of the implications on its heritage values and seek to minimise negative heritage impacts.	<p>Stage 1 has considered the heritage values of different elements of, and views towards, the Abattoir Heritage Precinct, with the aim of minimising heritage impacts.</p> <p>This has included the protection of the former gatehouse structure, which would maintain the overall integrity and heritage value of the historic precinct. Removal of trees and landscaping would be a negative heritage impact, although this impact could be lessened with the reinstatement of the gardens with appropriate similar species and plantings in keeping with the provisions of the Conservation Management Plan.</p>
Undertake formal archival recording of the Abattoir Heritage Precinct prior to undertaking works, including conservation works, to significant elements. Keep ongoing records of changes.	<p>Archival recording would be undertaken in accordance with the mitigation measures identified in this assessment (further discussed in Section 12.16).</p>

Potential unlisted heritage items

This assessment did not identify any potential unlisted heritage items within the Sydney Olympic Park metro station construction site.

Archaeological remains

Significant archaeological remains are not predicted to be located at the Sydney Olympic Park metro station construction site.

Table 12-15 identifies the type of archaeological remains that may be present, the potential for those archaeological remains to occur within the study area, their likely heritage significance and the potential for those remains to be impacted by Stage 1.

Table 12-15: Sydney Olympic Park metro station construction site – Potential archaeological impacts

Phase and potential archaeological feature	Potential for occurrence	Heritage significance	Potential archaeological remains
Phase 1 (1810-1907) Wentworth’s Homebush Estate	Nil	N/A	Significant archaeological remains are not predicted to be located at the Sydney Olympic Park metro station construction site. Demolition, clearing and excavation works that would result in widespread ground disturbance would not result in any impacts to significant archaeological remains.
Phase 2 (1907-1988) State Abattoir	Low	Unlikely to be of local significance	
Phase 3 (1988-Present) Sydney Olympic Park	Nil	N/A	

12.11 North Strathfield metro station construction site

12.11.1 Historic context and existing heritage items

The North Strathfield metro station construction site study area previously formed land grants to free settlers, known as Liberty Plains. This area was initially used for agricultural purposes but was abandoned as it was not suited for arable farming. Due to this, development in the area progressed at a slow pace.

The construction of the Main North Line through the study area by 1887 resulted in the consolidation of settlement and development patterns in the area, although a station was not initially constructed at North Strathfield. Industrial development to the west and south of the study area, including the Arnott’s biscuit factory, was established in the early 20<sup>th</sup> Century.

This industrial development spurred residential growth in North Strathfield and led to the construction of North Strathfield Station. North Strathfield Station was opened on 15 June 1918, and rapidly accelerated subdivision and development of the surrounding area. By 1943, North Strathfield had developed into an expansive suburban area comprising small residential allotments. Land to the west of the rail line continued to be used for industrial purposes with several rail sidings present.

The North Strathfield metro station construction site study area and existing heritage items are shown in Figure 12-5.



Figure 12-5: North Strathfield metro station construction site – Heritage items and conservation areas

12.11.2 Assessment of heritage significance and impact  
Heritage items and conservation areas

Stage 1 would potentially impact on two listed heritage items, which are identified in Table 12-16.

Table 12-16: North Strathfield metro station construction site – Impacts on heritage items and conservation areas

Item and listing	Significance	Potential impact	Magnitude
Street Trees (adjacent to North Strathfield Railway Station) Canada Bay LEP 2013 (I397)	Local	<b>Indirect impact – views and vistas (temporary)</b> The southern construction site including temporary site parking, site office and amenities, would not substantially alter the existing visual amenity of the locality.	Negligible
North Strathfield Railway Station Group Railcorp s170 (4801029)	Local	<b>Direct impact – partial demolition</b> Stage 1 would involve direct impacts including changes to a portion of the gardens at the eastern entry to the station precinct off Queen Street. The pedestrian overbridge and stairs would not be impacted and are identified as being components of 'Little' significance within the North Strathfield Railway Station Group. The entry gardens are identified as significant for their aesthetic qualities and impacts are considered adverse. In the overall context of the North Strathfield Railway Station Group, the impacts would be relatively localised.	Minor
		<b>Indirect impact – views and vista</b> Stage 1 would include construction activities within and adjacent to the North Strathfield Railway Station Group heritage item. Cut and cover excavations to a depth of around 18 metres would result in impacts to the visual amenity of the heritage item.	Minor

Potential unlisted heritage items

This assessment did not identify any potential unlisted heritage items within the North Strathfield metro station construction site.

Archaeological remains

Significant archaeological remains are not predicted to be located at the North Strathfield metro station construction site. Demolition, clearing and excavation works that would result in widespread ground disturbance would not result in any impacts to significant archaeological remains.

12.12 Burwood North Station construction site

12.12.1 Historic context and existing heritage items

The Burwood North Station construction site study area was initially used for the Longbottom Government Stockade and Farm from the 1790s. This was a halfway point for road gangs on trips between Sydney and Parramatta, and was located around the area of the grandstand in Concord Oval. The stockade and farm employed varying numbers of convicts over this period.

In the 19<sup>th</sup> Century the stockade was no longer required and fell into disrepair. An informal village formed and was formalised in 1843. Development surrounding the site was slowly subdivided, and Concord Oval was created in 1866. Residential development was replaced with commercial development and car parking along Parramatta Road.

The Burwood North Station northern construction site is located within the original curtilage of the Longbottom Government Farm. The Burwood North Station southern construction site is located in a 250-acre land grant made to Thomas Rowley in 1799. By 1828, shops had established on the corner of Burwood and Parramatta Roads. By 1943, the building form structures at the site were generally as they exist today, subject to the replacement of some dwellings by commercial and car parking uses.

The Burwood North Station construction site study area and existing heritage items are shown in Figure 12-6.



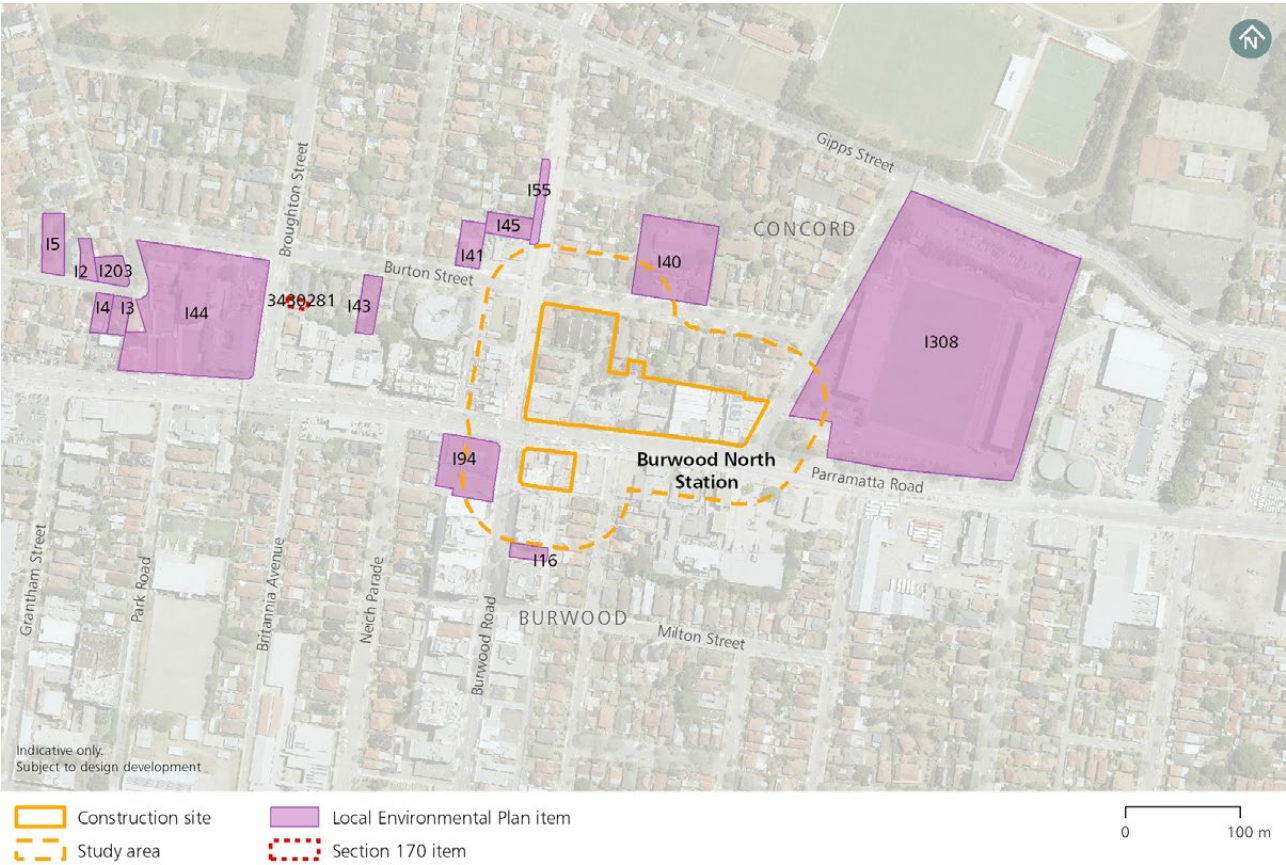


Figure 12-6: Burwood North Station construction site – Heritage items and conservation areas

12.12.2 Assessment of heritage significance and impact

Heritage items and conservation areas

Stage 1 would potentially impact on the listed heritage items identified in Table 12-17.

Table 12-17: Burwood North Station construction site – Impacts on heritage items and conservation areas

Item and listing	Significance	Potential impact	Magnitude
St Luke’s Park gateway/ entrance (gates and trees only) Canada Bay LEP 2013 (I308)	Local	<b>Indirect Impact – views and vistas (temporary)</b> Demolition of existing development, construction activities and establishment of an acoustic shed (or other acoustic measures) at the Burwood North Station northern construction site would potentially detract from the landmark qualities of the plantings within and adjacent to the entrance of the park, however these impacts would be temporary in nature, and views towards the item would not be affected.	Negligible
St Luke’s Anglican Church and grounds Canada Bay LEP 2013 (I40)	Local	<b>Indirect Impact – views and vistas (temporary)</b> Demolition of existing development, construction activities and establishment of an acoustic shed (or other acoustic measures) near the item would potentially detract from the setting and context of the item, however these impacts would be temporary in nature, sightlines towards the construction site would be obstructed, and views towards the item would not be affected.	Negligible
Bath Arms Hotel Burwood LEP (I94)	Local	<b>Indirect Impact – views and vistas (temporary)</b> Stage 1 would involve indirect impacts, changing views looking out from the hotel and would potentially detract from its landmark qualities. However, construction activities would be temporary in nature, and views towards the heritage item would not be affected.	Minor

Potential unlisted items

Table 12-18 identifies potential unlisted heritage items, their significance and the impacts of Stage 1 on these items.

Table 12-18: Burwood North Station construction site – Impacts on unlisted items

Item	Potential significance	Potential impacts	Magnitude
Pine Inn 19 Parramatta Road, Concord	Local	Stage 1 would require the demolition of these items resulting in the complete removal of any heritage fabric. The items would not retain their heritage significance and would no longer provide representative examples of their type.	Major
19th century Victorian era building 338-340 Parramatta Road, Burwood			

Archaeological remains

Significant archaeological remains have not been predicted to be located within the Burwood North Station construction site.

Table 12-19 identifies the type of archaeological remains that may be present, the potential for those archaeological remains to occur within the study area, their likely heritage significance and the potential for those remains to be impacted by Stage 1.



Table 12-19: Burwood North Station construction site – Potential archaeological impacts

Phase and potential archaeological feature	Potential for occurrence	Heritage significance	Potential archaeological remains
Phase 1 (1792-1819) Longbottom Stockade and early land grants	Nil	N/A	Significant archaeological remains have not been predicted to be located within the Burwood North Station construction site. As such, demolition, clearing and excavation works that would result in widespread ground disturbance would not result in any impacts to significant archaeological remains.
Phase 2 (1819-1850) Longbottom Village and Riley Estate	Nil	N/A	
Phase 3 (1950-Present) Late 19 <sup>th</sup> c. residential development	Moderate	Unlikely to be of local significance	

12.13 Five Dock Station construction site

12.13.1 Historic context and existing heritage items

Five Dock originally formed part of the ‘Eastern section of the District of Concord’, an area comprising foreshores within the Drummoyne Municipality. In 1806 Five Dock was subdivided which resulted in the creation of Five Dock Farm.

The Great North Road was created in 1828, which ran from Parramatta Road towards Abbotsford. Large allotments were created along this alignment, which resulted in Five Dock growing rapidly as a residential area. In the 20<sup>th</sup> Century, this area became an industrial hub in the Inner West.

The Five Dock Station western construction site has historically been used for residential and commercial purposes. Historical aerial imagery from 1943 shows a World War II anti-aircraft trench along the southern portion of the site. In the period since 1943, the scale of commercial and higher density mixed uses has increased, and a car park has been constructed at the site.

The Five Dock Station eastern construction site was subdivided during the 1880s, within what was known as ‘Waterview Estate’ and residential houses were constructed.

The Five Dock Station construction site study areas and existing heritage items are shown in Figure 12-7.



Figure 12-7: Five Dock Station construction site – Heritage items and conservation areas

12.13.2 Assessment of heritage significance and impact

Heritage items and conservation areas

Stage 1 would potentially impact on the listed heritage items identified in Table 12-20.

Table 12-20: Five Dock Station construction site – Impacts on heritage items and conservation areas

Item and listing	Significance	Potential impact	Magnitude
St Alban's Anglican Church Hall and Shops Canada Bay LEP 2013 (I228)	Local	<b>Indirect impact – views and vistas</b> Stage 1 demolition and construction would change the wider context of the church precinct, including a direct sightline between the church hall and western construction site. However, the existing buildings within the construction site are not considered to represent a significant visual element in the surrounding setting of the heritage item.	Minor
St Alban's Anglican Church Rectory Canada Bay LEP 2013 (I227)	Local	<b>Indirect impact – views and vistas</b> Buildings in the Five Dock Station western construction site would be demolished as part of Stage 1. This would change the wider context of the church precinct, however there are limited sightlines between the western construction site and the Rectory. Existing buildings within the construction site are not considered to represent a significant visual element in the surrounding setting of the heritage item.	Minor



Item and listing	Significance	Potential impact	Magnitude
St Alban's Anglican Church Canada Bay LEP 2013 (I226)	Local	<b>Potential direct impact – vibration</b> Vibration modelling indicates that during demolition works this item could experience vibration levels above the cosmetic damage screening criteria. Further assessment (including a structural assessment) and vibration impact monitoring (if required) would be completed to ensure safe vibration levels for the structure are met.	Minor
		<b>Indirect impact – views and vistas</b> Stage 1 demolition and construction would change the wider context of the church precinct, including a direct sightline between the church and construction site. However, the existing buildings within the construction site are not considered to represent a significant visual element in the surrounding setting of the heritage item.	Moderate
Police Station Canada Bay LEP 2013 (I211) NSW Police Service s170 (4180246)	Local	The significant fabric of this heritage item is located more than 50 metres from the construction site and therefore there would be no direct impacts, vibration is not anticipated and there are no sightlines between the item and the Five Dock metro station construction site.	Neutral

Potential unlisted items

This assessment did not identify any potential unlisted heritage items within Five Dock Station construction site.

Archaeological remains

Significant archaeological remains have not been predicted to be located at the Five Dock Station construction site.

Table 12-21 identifies the type of archaeological remains that may be present, the potential for those archaeological remains to occur within the study area, their likely heritage significance and the potential for those remains to be impacted by Stage 1.

Table 12-21: Five Dock Station construction site – Potential archaeological impacts

Phase and potential archaeological feature	Potential for occurrence	Heritage significance	Potential archaeological remains
Phase 1 (1794-1837) Early grants and John Harris' Five Dock Farm	Nil	N/A	Significant archaeological remains have not been predicted to be located at the Five Dock Station construction site. Demolition, clearing and excavation works that would result in widespread ground disturbance would not result in any impacts to significant archaeological remains.
Phase 2 (1837-1910) Villa subdivision of Five Dock	Nil	N/A	

12.14 The Bays Station construction site

12.14.1 Historic context and existing heritage items

The Bays Station construction site study area forms part of White Bay, a key area of land with significant water frontage and close proximity to the Sydney CBD enabling reliable water transportation for people and merchandise. Subdivision in the 19<sup>th</sup> Century led to the establishment of a number of industries in the White Bay area. A causeway near White Bay was proposed in 1861 to connect to Glebe Island.

From 1854, White Bay was the site of a prominent timber and joinery works site in Sydney, which principally supplied the emerging boat and ship building industries in Balmain. This timber/manufacturing use continued up until 1923, when the Sydney Harbour Trust purchased White Bay to establish a shipyard. Other industrial uses in Balmain included an Australian Gas Light Company works near the corner of Robert Street and Mansfield Street (which operated between 1841 and 1909), and the Lever Brothers (subsequently Unilever) soap factory on Booth Street (which operated between 1900 and 1988).

White Bay Power Station comprised a key power plant to support the Sydney transport network, including the underground city circle rail tunnels and the tramway network. The Power Station operated between 1917 and 1983 and remains a prominent visual landmark in Balmain.

In 1966, a ten year plan was drawn up for the development of White Bay for shipping containerisation, which included container berths. Container berths were constructed in 1969. However, the wharves lacked back-up space for truck movements and were ultimately superseded by facilities at Botany Bay.

The study area is located within the curtilage of the original land grant made to William Balmain in 1800, and is located in an area occupied largely by the original White Bay water body prior to reclamation in the 1890s. The White Bay Power Station is also located in the study area.

The Bays Station construction site study area and existing heritage items are shown in Figure 12-8.

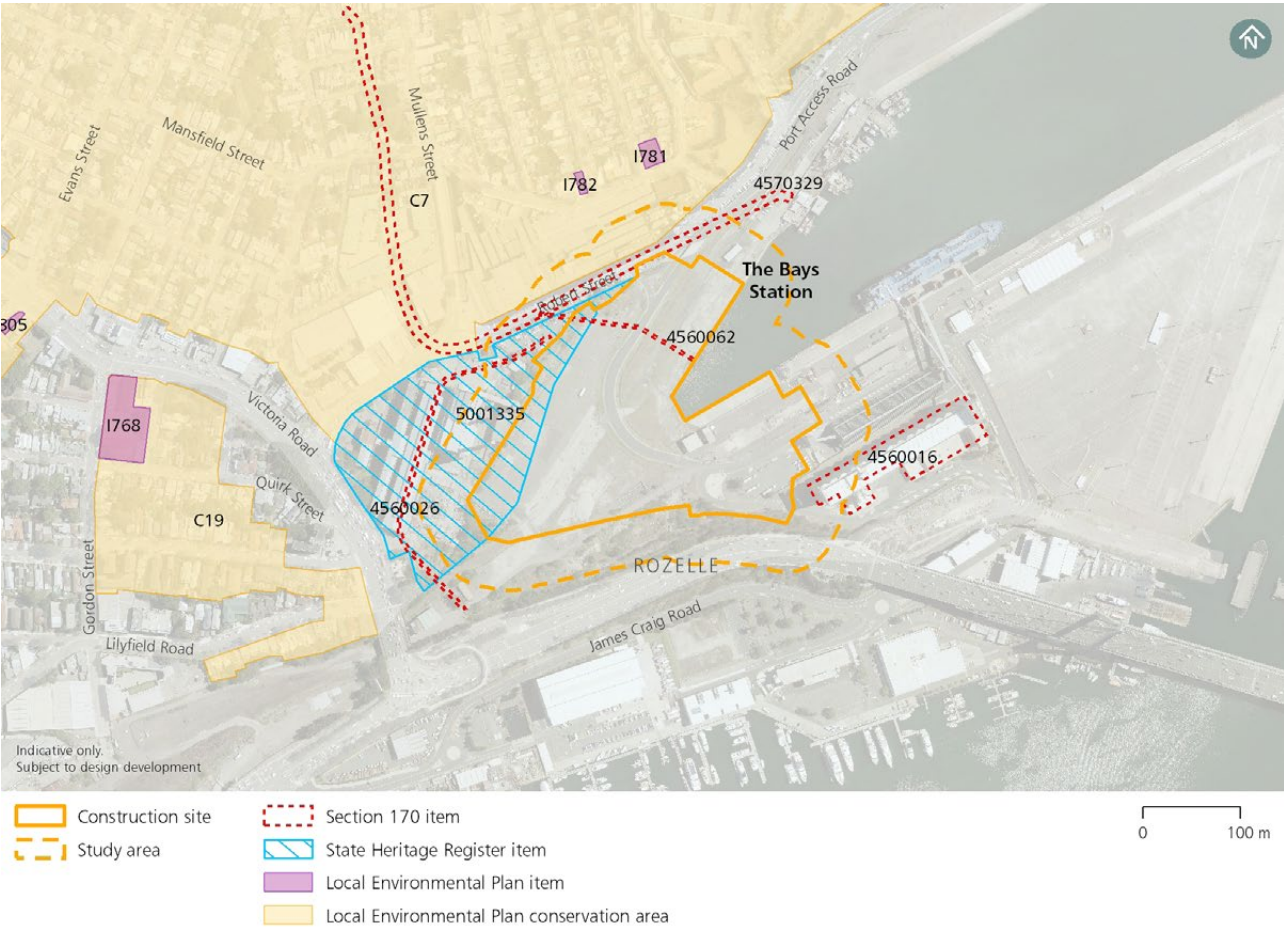


Figure 12-8: The Bays Station construction site – Heritage items and conservation areas

12.14.2 Assessment of heritage significance and impact

Heritage items and conservation areas

Stage 1 would potentially impact on the listed heritage items and heritage conservation area identified in Table 12-22.

Table 12-22: The Bays Station construction site – Impacts on heritage items and conservation areas

Item and listing	Significance	Potential impact	Magnitude
<b>White Bay Power Station</b> <b>SHR (01015)</b> <b>Urban Development Corporation s170 (4500460)</b> <b>SREP No. 26 – City West Part 3 No. 11</b>	State	<b>Direct impact – partial demolition</b> Stage 1 would encroach on about 0.7 ha of the curtilage of the White Bay Power Station, involving demolition of all structures, ground works and excavations in this zone.  No significant buildings or structures in the curtilage are located in the construction site, which largely comprises vacant land and is not considered to be of exceptional or high significance. The land is designated to be retained or adapted suitably, resulting in a moderate impact.	Moderate
		<b>Potential direct impact – vibration</b> Modelling indicates that this item could experience vibration levels above the cosmetic damage screening criteria. Further assessment (including a structural assessment) and vibration impact monitoring (if required) would be completed to ensure safe vibration levels for the structure are met.	Minor
		<b>Indirect impact – views and vistas</b> Stage 1 would result in visual changes within the heritage item and changes to the arrangement and configuration of the land surrounding the significant industrial structures, which have identified spatial significance for their contribution to the scale and industrial quality of the item and its built components. Although the orientation of the station has been planned to retain heritage significant view lines to and from the power station.	Moderate
<b>The Valley Heritage Conservation Area</b> <b>Leichhardt LEP 2013 (C7)</b>	Local	<b>Indirect impact – views and vistas (temporary)</b> Stage 1 would result in visual changes in the vicinity of the conservation area, and would change the wider setting of the conservation area. While the conservation area maintains several view lines and view corridors towards The Bays, views towards the conservation area from the surrounding streetscape would be maintained and the aesthetic significance of the item would not be diminished.	Minor
<b>White Bay Power Station (outlet) Canal</b> <b>Ports Authority of NSW s170 (4560026)</b>	Local	Most significant fabric of this heritage item is located more than 50 to 100 metres from the construction site and therefore there would be no direct impacts, vibration is not anticipated. The White Bay Power Station (Outlet) Canal is located primarily below ground and has a limited visual curtilage and there are no sightlines between the item and The Bays Station construction site.	Neutral
		<b>Direct impact – accidental damage during construction (potential)</b> The inlet canal is located entirely underground and excavation work has the potential to directly impact the heritage item. Following the confirmation of the relative depth of the heritage item, in addition to further excavation detail, the direct impact on the item may be reduced to neutral or increased to moderate.	Minor

Item and listing	Significance	Potential impact	Magnitude
<b>White Bay Power Station (inlet) canal</b> <b>Ports Authority of NSW s170 (4560062)</b>	Local	<b>Potential direct impact - vibration</b> Vibration modelling indicates that during construction and excavation works this item could experience vibration levels above the cosmetic damage screening criteria. Further assessment (including a structural assessment) and vibration impact monitoring (if required) would be completed to ensure safe vibration levels are met.	Minor
<b>Beattie Street Stormwater Channel No. 15</b> <b>Sydney Water s170 (4570329)</b>	Local	The item is located a sufficient distance from The Bays Station construction site such that therefore there would be no direct impacts, vibration is not anticipated and there are no sightlines between the item and the construction site.	Neutral
<b>Glebe Island Silos</b> <b>Ports Authority of NSW s170 (4560016)</b> <b>SREP No. 26 – City West Part 3 No. 1</b>	Local	<b>Indirect impact – views and vistas (temporary)</b> Demolition of structures within The Bays Station construction site would result in visual changes in the immediate vicinity of the Glebe Island Silos which maintains several view lines towards The Bays and change the wider setting of the heritage item. The acoustic sheds (or other acoustic measures) would be discernible from the Glebe Island Silos, although this additional visual impact would be temporary in nature.	Minor

White Bay Power Station Conservation Management Plan

The White Bay Power Station is subject to the White Bay Power Station: Conservation Management Plan (Design 5 Architects, 2011). A response to the key recommendations of the Conservation Management Plan has been detailed at Table 12-23.

Table 12-23: Assessment against White Bay Power Station: Conservation Management Plan

No.	Conservation Management Plan recommendation	Assessment of impacts
1.1.1	White Bay Power Station retains considerable cultural significance and must be retained and conserved. In order to ensure its long term maintenance and survival it must be adapted for an appropriate new use or uses. Such uses must retain and respect the significant elements and attributes of the place.	Stage 1 does not involve the demolition of structures considered significant.
1.1.6	White Bay Power Station must retain a use or uses, which allow reasonable public access to, and interpretation of, those significance spaces, elements and machinery that represent the component parts of the power generation process. Such access should not place significant fabric or qualities of these areas at risk of alteration, damage or removal.	Stage 1 does not involve the demolition of any structures considered significant. Stage 1 works are not expected to significantly reduce areas of public access further than presently accessible, or require the need for interpretation.
1.1.7	The aesthetic (including the sensory aspects of visual, aural and tactile) qualities of the internal and external spaces and elements of exceptional and high significance must be retained and respected, viz. the visual and special qualities of the Turbine Hall.	No significant buildings or structures in the heritage curtilage are located within the construction site, which mainly comprises vacant land. The Bays Station construction site is located within a portion of the SHR curtilage of the White Bay Power Station and construction activities would involve the demolition of non-significant structures, ground works and excavations



No.	Conservation Management Plan recommendation	Assessment of impacts
1.2.1	Any development being proposed in the vicinity of the White Bay Power Station must carefully consider its bulk, scale and placement in order to respect the visibility and prominence of the power station as a harbourside landmark.	Stage 1 would result in demolition of development, site establishment and the excavation for the station within a portion of the White Bay Power Station SHR heritage curtilage. This would result in temporary visual changes within the heritage item and changes to the arrangement and configuration of the land surrounding the significant industrial structures. These external spaces have identified spatial significance for their contribution to the scale and industrial quality of the item and its built components, and excavation and redevelopment of this land would result in an adverse visual impact. The acoustic sheds (or other acoustic measures) within the construction site would be around 15 metres in height, although additional visual impact associated within this aspect of Stage 1 would be temporary.
1.2.2	Those views from major axial approaches such as Anzac Bridge, Glebe Point Road, Johnston Street Annandale, City West Link, Victoria Road (from north west), Mullens Street and Robert Street must be maintained as substantially unobstructed views. Any new structures in the vicinity of the White Bay Power Station must not substantially mask the visibility of the power station or threaten its landmark qualities as the major focal element in these views.	The proposed acoustic shed (or other acoustic measures), at 15 metres in height, would not exceed the height of the existing structure and the visual impact associated within this aspect of Stage 1 would be temporary.
1.2.3	General and changing views towards White Bay Power Station from the harbour, major parks and public areas of the southern edge of Balmain and Rozelle, Glebe Point, Pyrmont Point, Observatory Hill and Darling Harbour, as well from the Harbour Bridge, Anzac Bridge, City West Link road, The Crescent and Victoria Road, should be retained substantially unobstructed by other large elements, existing or future. Such elements should be sited, so as to be seen as part of its industrial context, framing the power station and strengthening its maritime related industrial character.	The proposed acoustic shed (or other acoustic measures), at 15 metres in height, would not exceed the height of the existing structure and the visual impact associated within this aspect of Stage 1 would be temporary.
1.2.5	Lower level structures between the Anzac Bridge (western approaches) and the White Bay lower Station could be constructed as long as they do not substantially obscure the major view of the east front of the power station. The full height of the glass curtain wall to the 1958 boiler house should be visible from the western approaches to the Bridge.	Stage 1 would result in demolition of development, site establishment and the excavation for the station within a portion of the White Bay Power Station SHR heritage curtilage. This would result in visual changes within the heritage item and changes to the arrangement and configuration of the land surrounding the significant industrial structures. These external spaces have identified spatial significance for their contribution to the scale and industrial quality of the item and its built components, and excavation and redevelopment of this land would result in an adverse visual impact. The acoustic sheds (or other acoustic measures) within the construction site would be around 15 metres in height, although additional visual impact associated within this aspect of Stage 1 would be temporary.

Potential unlisted heritage items

Table 12-24 identifies potential unlisted heritage items, their significance and the impacts of Stage 1 on these items.

Table 12-24: The Bays Station construction site – Impacts on unlisted items

Item	Potential heritage significance	Potential impact	Magnitude
Former warehouse shed – Glebe Island	Local	Stage 1 would require the demolition of this item resulting in the complete removal of any heritage fabric. The item would not retain its heritage significance and would no longer provide a representative example of its type.	Major

Archaeological remains

Table 12-25 identifies the type of archaeological remains that may be present, the potential for those archaeological remains to occur within the study area, their likely heritage significance and the potential for those remains to be impacted by Stage 1.

Impacts to significant archaeological resources are likely to occur during demolition and excavation work for The Bays Station. Further robust archaeological investigation would be undertaken prior to the commencement of works to identify the extent of these impacts. If significant archaeology is encountered, consideration would be given to inclusion in the Heritage Interpretation Plan for future stages.

Table 12-25: The Bays Station construction site – Potential archaeological impacts

Phase and potential archaeological feature	Potential for occurrence	Heritage significance	Potential archaeological remains
Phase 1 (1800-1851) William Balmain Estate	Nil to low	Local	Historic soil deposits and discarded artefacts – Archaeological remains associated with this would include stratigraphically-controlled and sealed soil deposits, ex-situ artefactual material from this period which may have washed into the site or been discarded.
Phase 2 (1851-1912) Rozelle Subdivision and Waterfront Industries	Low to moderate	Local	Outbuildings and structures of the original White Bay Hotel – Archaeological remains associated with these former buildings could include brick and stone footings, timber boards and intact underfloor deposits, ceramic pipes, brick or stone lined drains, isolated ceramic, glass, bone, or metal deposits, lined cesspits or wells containing occupation or discarded artefactual (glass, ceramic, bone) material and soil deposits. Reclamation fills – Archaeological remains relating to reclamation fills could include discrete stratigraphic historic soil deposits, artefactual (glass, ceramic, bone, timber, brick) materials and infill rubble, and timber retaining or infill structures such as piers, posts, beams or walls.
Phase 3 (1912-1984) White Bay Power Station and Port Facilities	Moderate to high	Local	Rail Infrastructure and former industrial structures – Archaeological remains could include evidence of turntables, stabling facilities and roundhouses, loading equipment, rail beams, ballast and timber or concrete sleepers, rail switches, levers and points, concrete, steel and brick building footings, tile and brick rubble, discarded industrial equipment, artefactual refuse deposits (metal, glass, ceramic).

### 12.15 Cumulative impacts

Potential cumulative impacts were considered for assessment based on the likely interactions of Stage 1 with other projects and plans that met the adopted screening criteria. The approach to assessment and the other projects considered are described further in Appendix G (Cumulative impacts assessment methodology).

There is potential for cumulative impacts to occur at the following Stage 1 construction sites:

- Parramatta metro station
- Sydney Olympic Park metro station
- North Strathfield metro station
- The Bays Station.

#### Parramatta metro station

The Parramatta and North Parramatta commercial areas are undergoing significant development, with the construction of new high rise buildings significantly altering the urban character of the city. In addition to this, Parramatta Light Rail (Stage 1) provides significant new infrastructure throughout the Parramatta and North Parramatta commercial areas.

The Sydney Metro West Stage 1 works are expected to result in moderate cumulative impacts to the heritage setting of items which would also be impacted by both the Parramatta Light Rail (Stage 1) project. These items include Kia Ora (Parramatta LEP Item No. I716) and Horse Parapet Façade and potential archaeological site (Parramatta LEP Item No. I656). The removal of tall modern structures from the Parramatta metro station construction site may temporarily improve sightlines for the low-lying heritage-listed structures during the construction period, therefore having a positive cumulative heritage impact in this regard.

Archaeological remains related to early convict huts in Parramatta are a rare resource of significant research value. Sydney Metro West Stage 1 works have the potential to directly impact several predicted convict huts, further reducing the diminishing archaeological resource which is unique to Parramatta. Early nineteenth century archaeological remains, which are of research value for understanding the commercial development of Parramatta and the early colony, may also be impacted by Stage 1.

#### Sydney Olympic Park metro station

The Sydney Olympic Park metro station construction site is directly adjacent to a number of developments, including the proposed route of the planned Parramatta Light Rail (Stage 2) project. As the Parramatta Light Rail (Stage 2) is expected to have relatively minor impacts to the State Abattoirs, cumulative impacts to the items in regard to Stage 1 would be minor. Cumulative impacts to setting and amenity of the surrounding area would also be minor as the current urban context comprises a combination of commercial buildings, retail development and high density residential apartment buildings which do not have associated heritage values. Cumulative heritage impacts to archaeological resources are not expected.

#### North Strathfield metro station

North Strathfield Station has recently undergone upgrades which have been assessed as having potential direct impacts to heritage station. The North Strathfield metro station construction site would have only a minor impact on the curtilage of the s170 listed North Strathfield Railway Station and would not impact significant fabric, therefore any cumulative heritage impact in relation to upgrade works at the station would be minor.

#### The Bays Station

The Bays is undergoing significant development, with a number of projects within the vicinity of The Bays Station construction site which are expected to result in potential heritage impact to the White Bay Power Station curtilage. This includes The Bays road relocation works, WestConnex M4-M5 Link – Rozelle Interchange, Sydney Metro City & Southwest (Chatswood to Sydenham), Glebe Island concrete batching plant and aggregate handling project, Western Harbour Tunnel and Warringah Freeway Upgrade, Glebe Island Multi-User Facility, and The Bays Precinct Urban Transformation project. In addition, The Bays road relocation works involving the relocation of the existing Ports Access Road would impact State significant heritage. As Stage 1 would also impact the curtilage of the White Bay Power Station, cumulative impacts to the curtilage would be moderate, although Stage 1 does not propose to impact significant fabric.

The Bays road relocation works and Stage 1 could both have a potential minor impact to the curtilage of White Bay Power Station (Inlet) Canal, a locally significant heritage item. As Stage 1 would impact the curtilage of the White Bay Power Station (Inlet) Canal, cumulative impact to the curtilage would be minor, although Stage 1 does not propose to impact significant fabric. However, little information is available regarding the precise depth of the heritage item. Following the confirmation of the relative depth of the heritage item, in addition to further excavation detail for the proposal and Stage 1, the direct impact on the item may be reduced to neutral or increased to moderate.

It is expected significant archaeology is located within the Stage 1 construction site. The M4-M5 link and Western Harbour Tunnel are also expected to impact non-Aboriginal archaeology, so cumulative impacts as a result of the Stage 1 project area are expected. Depending on the nature of archaeological remains located within The Bays Station construction site, cumulative impacts on archaeological resources would be moderate.

Given that other projects such as the WestConnex M4-M5 link and Western Harbour Tunnel are proposing to utilise the area around the White Bay Power Station for ancillary and construction sites there would be some cumulative visual impacts, although as these uses align with the current industrial character of the locality cumulative impacts would be minor to moderate.

### 12.16 Management and mitigation measures

#### 12.16.1 Approach to management and mitigation

Stage 1 Non-Aboriginal heritage impacts would be managed in accordance with the Construction Environmental Management Framework. Of relevance, the Construction Environmental Management Framework includes heritage management objectives to minimise impacts on items or places of heritage value, avoid accidental impacts on heritage items, and maximise workers’ awareness of Aboriginal and non-Aboriginal heritage.

The Construction Environmental Management Framework also requires the preparation and implementation of a Heritage Management Plan, including as a minimum:

- Procedures for undertaking any recordings of heritage items prior to works commencing
- Procedures for unexpected heritage finds
- Heritage monitoring requirements.

More details of the Construction Environmental Management Framework are provided in Chapter 27 (Synthesis of the Environmental Impact Statement).

12.16.2 Mitigation measures

The mitigation measures that would be implemented to address potential non-Aboriginal heritage impacts are described in Table 12-26.

Table 12-26: Mitigation measures – Non-Aboriginal heritage Stage 1

Reference	Impact/issue	Mitigation measure	Application location(s) <sup>1</sup>
NAH1	Archival recording	Archival recording and reporting of the following heritage items would be carried out in accordance with the NSW Heritage Office’s How to Prepare Archival Records of Heritage Items (1998), and Photographic Recording of Heritage Items Using Film or Digital Capture (2006): <ul style="list-style-type: none"><li>Shops (and potential archaeological site (Parramatta LEP Item No. I703)</li><li>Kia Ora (and potential archaeological site) (Parramatta LEP Item No. I716)</li><li>RTA Depot (Parramatta LEP Item No. I576)</li><li>State Abattoirs (SEPP Listing No. A)</li><li>White Bay Power Station (SHR Listing No. 01015)</li></ul>	PMS, CSMF, SOPMS, TBS
NAH2	Demolition	A method for the demolition of existing buildings and/or structures at specified construction sites would be developed to minimise direct and indirect impacts to adjacent and / or adjoining heritage items.	PMS, CSMF, SOPMS, TBS
NAH3	Salvage	Prior to commencement of demolition of heritage elements at White Bay Power Station within The Bays construction site, significant heritage fabric would be identified for salvage and reuse opportunities for salvaged fabric considered.	TBS
NAH4	Visual impacts	The policies of the White Bay Power Station Conservation Management Plan would be considered in regard to visual impacts of the Stage 1 works, particularly the acoustic shed (or other acoustic measures) and any temporary structures. Significant view lines would be retained during Stage 1 works.	TBS
NAH5	Heritage interpretation	Where heritage items, including significant archaeology are impacted by Stage 1 works, consideration would be given to their inclusion in the Heritage Interpretation Plan for future stages.	All
NAH6	Archaeology	An archaeological research design(s) would be prepared and implemented identifying archaeological testing or monitoring requirements, which would be carried out in accordance with Heritage Council guidelines, and where appropriate supervised by a suitably qualified Excavation Director with experience in managing State significant archaeology.	All
NAH7	Archaeology	An Archaeological Excavation Report would be prepared by the Excavation Director and be provided to the NSW Heritage Division within two years of the completion of archaeological excavations specified in the archaeological research design(s).	All

Reference	Impact/issue	Mitigation measure	Application location(s) <sup>1</sup>
NAH8	Archaeology	In the event that State significant archaeology associated with early convict occupation is located at Parramatta metro station: <ul style="list-style-type: none"><li>In situ conservation would be considered. If in situ conservation is not feasible and reasonable, a strategy to mitigate impacts would be prepared in consultation with the NSW Heritage Council (or delegate)</li><li>An Archaeological Method Statement would be prepared in consultation with the NSW Heritage Council (or delegate) for management of the archaeological remains, whether for conservation or archaeological investigation and recording</li><li>An accessible publication would be prepared within two years of archaeological excavations to document the archaeological investigations</li><li>Sydney Metro would provide for the meaningful curation, display and public access of any artefacts collected. This may involve partnerships with museums, local heritage centres and/or universities.</li></ul>	PMS
NAH9	Direct heritage impacts	The impacted gardens within the State Abattoirs would be reinstated with sympathetic landscaping that is in keeping with the provisions of the Conservation Management plan	SOPMS

*Note 1: WMS: Westmead metro station; PMS: Parramatta metro station; CSMF: Clyde stabling and maintenance facility; SSF: Silverwater services facility; SOPMS: Sydney Olympic Park metro station; NSMS: North Strathfield metro station; BNS: Burwood North Station; FDS: Five Dock Station; TBS: The Bays Station; Metro rail tunnels: Metro rail tunnels not related to other sites (eg tunnel boring machine works); PSR: Power supply routes.*

12.6.3 Interactions between mitigation measures

Mitigation measures in other chapters that are relevant to the management of non-Aboriginal heritage impacts include:

- Chapter 11 (Noise and vibration – Stage 1), specifically measures which addresses the management of potential vibration impacts to heritage structures during construction
- Chapter 13 (Aboriginal heritage – Stage 1), specifically measures which address the coordination of non-Aboriginal heritage investigations and Aboriginal archaeological investigations during construction and the management of potential Aboriginal and non-Aboriginal archaeological resources
- Chapter 15 (Landscape character and visual amenity – Stage 1), specifically measures which address the management of potential visual impacts to heritage items during construction
- Chapter 18 (Groundwater and ground movement – Stage 1), specifically measures which address the management of ground settlement
- Chapter 20 (Contamination – Stage 1), specifically measures which address the management of contamination during non-Aboriginal archaeological investigations.

Together, these measures would minimise the potential non-Aboriginal heritage impacts of Stage 1.

There are no mitigation measures identified in the assessment of other environmental aspects that are likely to affect the assessment of non-Aboriginal heritage.



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