

# Waterfall Stabling Yard and Platform Extension More Trains, More Services

Statement of Heritage Impact



# Waterfall Stabling Yard and Platform Extension More Trains, More Services

Statement of Heritage Impact

Client: Transport for New South Wales

ABN: 18 804 239 602

Prepared by

**AECOM Australia Pty Ltd**

Level 21, 420 George Street, Sydney NSW 2000, PO Box Q410, QVB Post Office NSW 1230, Australia  
T +61 2 8934 0000 F +61 2 8934 0001 www.aecom.com  
ABN 20 093 846 925

7-August-2019

Job No.: 60600277

AECOM in Australia and New Zealand is certified to the latest version of ISO9001, ISO14001, AS/NZS4801 and OHSAS18001.

© AECOM Australia Pty Ltd (AECOM). All rights reserved.

AECOM has prepared this document for the sole use of the Client and for a specific purpose, each as expressly stated in the document. No other party should rely on this document without the prior written consent of AECOM. AECOM undertakes no duty, nor accepts any responsibility, to any third party who may rely upon or use this document. This document has been prepared based on the Client's description of its requirements and AECOM's experience, having regard to assumptions that AECOM can reasonably be expected to make in accordance with sound professional principles. AECOM may also have relied upon information provided by the Client and other third parties to prepare this document, some of which may not have been verified. Subject to the above conditions, this document may be transmitted, reproduced or disseminated only in its entirety.

## Quality Information

Document Waterfall Stabling Yard and Platform Extension, More Trains, More Services –  
Statement of Heritage Impact





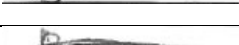
Ref 60600277

Date 7 August 2019

Prepared by Dr Darran Jordan

Reviewed by Chris Lewczak and Bonnie Cavanough

### Revision History

Revision	Revision Date	Details	Authorised Name/Position	Signature
A	14 June 2019	Draft	Chris Lewczak Senior Heritage Specialist	
B	14 June 2019	Draft	Bonnie Cavanough Environmental Scientist	
C	29 July 2019	Draft	Bonnie Cavanough Environmental Scientist	
D	6 August 2019	Draft	Bonnie Cavanough Environmental Scientist	
E	7 August 2019	Final Draft	Bonnie Cavanough Environmental Scientist	

## Table of Contents

Executive Summary		i
1.0	Introduction	1
	1.1 Project Background	1
	1.2 Project area	1
	1.3 Project Methodology	1
	1.4 Proposed works	1
	1.5 Report Limitations	1
2.0	Statutory Context	1
	2.1 Commonwealth Legislation	1
	2.1.1 Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)	1
	2.2 State Legislation	1
	2.2.1 Environmental Planning and Assessment Act 1979 (NSW)	1
	2.2.2 State Environmental Planning Policy (Infrastructure) 2007 (NSW)	2
	2.2.3 Heritage Act 1977 (NSW)	3
	2.3 Local Government	3
	2.3.1 Sutherland Shire Local Environmental Plan (LEP) 2015	3
	2.4 Summary of Heritage Register Searches	4
3.0	Historical Context	2
	3.1 Early European Settlement	2
	3.2 The Illawarra Line	3
	3.2.1 Stations at Waterfall	4
	3.3 Development of Current Waterfall Railway Station	6
	3.3.1 Station Alterations	6
	3.4 Summary of Development	10
4.0	Physical Evidence	12
	4.1 Site Inspection	12
	4.1.1 Waterfall Railway Turntable	13
	4.1.2 Water tank and water column	15
	4.1.3 Platform station building	17
	4.1.4 Row of 3 workers' cottages including Community College	22
	4.1.5 Pair of semi-detached Houses	24
	4.1.6 Royal National Park and Garawarra State Conservation Area	26
5.0	Significance Assessment	27
	5.1 Introduction	27
	5.2 Waterfall Railway Station Group	28
	5.3 Waterfall Railway Turntable, Watering Facilities and Movable Items	34
	5.4 Watertank	34
	5.5 Row of 3 workers' cottages including Community College	35
	5.6 Pair of semi-detached houses	38
	5.7 Royal National Park and Garawarra State Conservation Area	39
	5.8 Heathcote National Park	41
	5.9 Discussion	42
	5.10 Historical Archaeological Potential	42
6.0	Impact assessment	43
	6.1 Proposed Impacts	43
	6.1.1 Direct Impacts	43
	6.1.2 Indirect Impacts	44
	6.1.3 Materials and Finishes	45
	6.1.4 Summary of Heritage Impacts	45
	6.2 Impacts to Heritage Significance	46
7.0	Statement of Heritage Impact	48
	7.1 Introduction	48
	7.2 Process Questions	48
	7.2.1 Major Additions	48

7.3	Statement of Heritage Impact	49
8.0	Recommendations	51
8.1	Recommendation 1 – Platform Extension Works	51
8.2	Recommendation 2 – Documentation and Consultation	51
8.3	Recommendation 3 – Heritage Interpretation	51
8.4	Recommendation 4 – Item Protection	51
9.0	References	52
	Appendix A – Plans	53
	Appendix B – Laydown Areas	55

### List of Tables

Table 1	Summary of listed heritage items within and adjacent to the Project area	1
Table 2	Waterfall Railway Station Timeline	10
Table 3	Physical Elements of Waterfall Railway Station	12
Table 4	Significance assessment criteria	27
Table 5	Waterfall Railway Station Group significance assessment (Australian Government, 2007)	28
Table 6	Significance assessment – Waterfall Railway Turntable, Watering Facilities and Movable Items (NSW Office of Environment & Heritage, 2019)	34
Table 7	Significance assessment – Watertank (NSW Office of Environment & Heritage, 2019)	35
Table 8	Row of 3 workers’ cottages including Community College (NSW Office of Environment & Heritage, 2019)	36
Table 9	Pair of semi-detached houses (NSW Office of Environment & Heritage, 2019)	38
Table 10	Significance assessment – Royal National Park and Garawarra State Conservation Area (Australian Heritage Database, 2019)	39
Table 11	Significance assessment – Heathcote National Park (NSW Office of Environment & Heritage, 2019)	41
Table 12	Assessment of impacts to heritage significance of the Waterfall Railway Station Group	46
Table 13	Summary of the nature of impacts	49

### List of Figures

Figure 1	Northern extent of Project area in relation to listed heritage items	1
Figure 2	Southern extent of Project area in relation to listed heritage items	2
Figure 3	RailCorp Section 170 Heritage and Conservation Register curtilage listing for Waterfall Turntable, Watering Facilities and Moveable Items (NSW Office of Environment & Heritage, 2019)	3
Figure 4	Excerpt from Original Maps of the Hundred in the County of Cumberland 1835 (State Library of New South Wales, call number M Z/MAXX 811.1/1835/1), approximate location of Waterfall Railway Station indicated by star	2
Figure 5	Excerpt from Parish of Heathcote Map c.1845 with close up section of ‘Bottle Forest’ (now Heathcote) (Historical Land Records Viewer, NSW Land Registry Services, 2019). ‘New line’ refers to the road. Approximate location of Waterfall Railway Station indicated by star	3
Figure 6	Excerpt from Map of the Illawarra and South Coast Railway Line Showing all Surveyed and Crown Lands in its Vicinity c.1884 (National Library of Australia, MAP RM 904), approximate location of Waterfall Railway Station indicated by star	4
Figure 7	Parish of Heathcote c.1906-1975, Diagram E (Historical Land Records Viewer, NSW Land Registry Services, 2019)	5

## Executive Summary

Transport for NSW (TfNSW) is the government agency responsible for the delivery of major transport infrastructure projects in New South Wales (NSW) and is the proponent for the More Trains, More Services (MTMS) project (the 'Proposal'). The Proposal is a NSW Government initiative to improve the transport customer experience by delivering greater capacity, reducing complexity and connecting the train network across the Greater Sydney area. This will be undertaken through the enhancement of existing infrastructure and by building capacity within the existing heavy rail network – the most significant component of Greater Sydney's public transport system – creating turn up and go services for customers, increasing the reliability and frequency of rail transport.

This Statement of Heritage Impact (SoHI) assessment has been prepared in support of a Review of Environmental Factors (REF), which has been prepared to assess the environmental impacts associated with the construction and operation activities proposed to be undertaken at Waterfall Railway Station. This has been undertaken under the provisions of Division 5.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

Waterfall Railway Station is immediately adjacent to the curtilage of the State significant Royal National Park and Garawarra State Conservation Area which is on the National Heritage List (#105893). Waterfall Railway Station Group has local significance and is listed on the non-statutory archived Register of National Estate (RNE) (item #101153). The turntable, watering facilities and moveable items are part of the RailCorp Section 170 Heritage and Conservation Register listing under State Heritage Inventory database SHI #4801139. Waterfall Railway Station is not a listed item of environmental heritage on Schedule 5 of the Sutherland Shire Local Environmental Plan (LEP) 2015. However, three items associated with the station are listed, two within its bounds, being the Waterfall Railway turntable (#A4003) and Row of 3 workers' cottages including Community Cottage (#A4004). Approximately 200 m north of the station is the listed item Watertank (#A4005), which is also associated with the station and specified as an element of the Waterfall Railway Station Group listing. Immediately adjacent on the southern side of the station curtilage is item (#4001) Pair of semi-detached houses.

The key features of the Proposal are summarised as follows:

- Partial demolition and extension of the northern end of the existing island platform at Waterfall Station by approximately 40 metres to facilitate new 10-car intercity trains stopping for operational and emergency reasons
- a new suburban train stabling yard to the west of the existing main line accommodating ten 8-car trains
- a new staff amenities building on the western side of the rail corridor to facilitate staff access and cleaning of trains within the new stabling yard
- an elevated staff footbridge to provide access for staff between the staff amenities building and the platform
- reconfiguration of existing track to the west and north of the station, including changes in the location and operation of freight and passenger loops
- construction of a new approximately 850 metres long freight refuge loop on the western side of the existing main line
- upgrade of the existing vehicle access off the southbound carriageway of the Princes Highway to allow for refuse collection and operational access
- ancillary works, including new and relocated services, lighting, CCTV, retaining walls, and landscaping.

Heritage register searches identified that Waterfall Railway Station is immediately adjacent to the curtilage of the State significant Royal National Park and Garawarra State Conservation Area (#105893) which is listed on the National Heritage List. Heathcote National Park is located approximately 65 m to the west at its closest point to the Project area. Heathcote National Park was listed as local heritage item A098 on the Sutherland Shire LEP 2006, but has since been removed and

is not listed on the currently active Sutherland Shire LEP 2015. It is listed as a registered place for natural values on the non-statutory archived RNE (item #1530).

Waterfall Railway Station Group has local significance and is listed on the RNE (item #101153). The turntable, watering facilities and moveable items are part of the RailCorp Section 170 Heritage and Conservation Register listing under State Heritage Inventory database item SHI #4801139. Waterfall Railway Station is not a listed item of environmental heritage on Schedule 5 of the Sutherland Shire LEP 2015. However, three items associated with the station are listed, two within its bounds, being the Waterfall Railway turntable (#A4003) and Row of 3 workers' cottages including Community Cottage (#A4004). Approximately 200 m north of the station is listed item Watertank (#A4005), which is also associated with the station and specified as an element of the Waterfall Railway Station Group listing. Immediately adjacent to the southern side of the station curtilage is item Pair of semi-detached houses (#4001). Register searches were extended 200 metres from the curtilage of Waterfall Railway Station to establish if there were surrounding registered items or conservation areas that may be affected by the Proposal; no further relevant listings were identified.

Although not overtly stated in the existing heritage listings, it was noted during the inspection that the sidings and yards contribute to the heritage value of Waterfall Railway Station. The relevance of the extant heritage items (the turntable, water tank and water column) is enhanced by how they relate to each other and to the wider rail network. The visual landscape around them and the physical rails, yards and sidings that connect them are part of the historical landscape of steam engine use at Waterfall. Evidence of the historical relevance of Waterfall Railway Station can also be evidenced by plaques and interpretation boards currently being displayed at the station.

Direct impacts have predominantly been avoided, with the exception of the current platform, rail sidings and yards. Although these areas are not specified as contributory in the existing listings, they form part of the wider landscape connecting elements like the turntable, water tank and water spout, giving context to the narrative of steam engine use at Waterfall. One repercussion of the proposed works is that due to the reconfiguration of tracks, steam trains travelling in the down direction will no longer be able to use the heritage tank to fill up. Steam trains travelling in the up direction will still be able to use the tank. It is proposed that a water hydrant will be placed on the opposite side of the tracks to the existing water tank to service steam trains travelling in the down direction. Although not a physical impact, this limitation will reduce the use of the existing water tank and impact on its connection to the wider rail network and landscape. A reduction of use of the existing water tank is a heritage impact in that it alters the current use of this feature. The proposed works will cause a permanent alteration to the visual aesthetic at Waterfall Railway Station.

The following recommendations were made:

### **Recommendation 1 – Platform Extension Works**

Where practicable the following elements should be considered for incorporation into the detailed design phase of the project in relation to the proposed platform extension:

- Consideration should be given to the relationship between the heritage items in the current landscape and how the proposed works will alter views to and from the water tank, column and turntable
- if possible the new brickwork should match the original in terms of brick colour, mortar composition and brick orientation (bricks to be laid in the Flemish bond – alternating between header and stretcher alignment)
- every effort should be made to retain and/or reuse all existing fabric from the current platform
- if possible new services, outlets, wall units and brackets (etc.) should be located in areas already modified and/or consolidated within the extended section (i.e. – avoiding impacts to the original platform as much as possible).

### **Recommendation 2 – Documentation and Consultation**

The turntable, column and water tank are listed on the Sutherland Shire LEP 2015. Sutherland Shire Council should be informed of any works that may impact upon it and given 21 days to respond. Following completion of works, the S170 listing description and historical context should be updated to document the new works and elements within the precinct. This should be undertaken by the Sydney

Trains Heritage team. Consideration should be given to undertaking a photographic recording of the station in relationship with the views to and from the water tank, column and turntable. Any photographs that are taken should be provided to the Sydney Trains Heritage team to assist in updating the S170 listing.

### **Recommendation 3 – Heritage Interpretation**

The existing heritage interpretation signage should be retained. Contractors should be made aware of the plaques and interpretation boards displayed on the eastern wall of the platform building, and ensure they are not accidentally impacted during works.



**Recommendation 4 – Item Protection**

A heritage induction should be provided to all on-site staff and contractors involved in the Proposal. The induction should clearly describe the heritage significance of the site, including individual items and heritage fabric. Other management measures should be considered to ensure the watertank, column and turntable are protected during the works from accidental impacts. Measures may include such controls as protective fencing, item specific awareness, the heritage induction and vehicle/equipment movement plans maintaining a buffer around these items during works. The Construction Environmental Management Plan (CEMP) should include stop work procedures in accordance with Transport for NSW's (TfNSW's) *Unexpected Heritage Finds Guideline* (Transport for NSW, 2015) to manage activities in the unlikely event that intact archaeological relics or deposits are encountered.

## 1.0 Introduction

### 1.1 Project Background

TfNSW is the government agency responsible for the delivery of major transport infrastructure projects in NSW and is the proponent for the 'Proposal'. The Proposal is a NSW Government initiative to improve the transport customer experience by delivering greater capacity, reducing complexity and connecting the train network across the Greater Sydney area. This will be undertaken through the enhancement of existing infrastructure and by building capacity within the existing heavy rail network – the most significant component of Greater Sydney's public transport system – creating turn up and go services for customers, increasing the reliability and frequency of rail transport.

This SoHI assessment has been prepared in support of a REF, which has been prepared to assess the environmental impacts associated with the construction and operation activities proposed to be undertaken at Waterfall Railway Station. This has been undertaken under the provisions of Part 5, Division 5.1 of the EP&A Act.

### 1.2 Project area

The Project area for this assessment is centred on Waterfall Railway Station, where the proposed construction and modification works are to occur. Waterfall Railway Station is located in the suburb of Waterfall, approximately 38 km to the south of the Sydney Central Business District (CBD) in southern Sydney. It is close to both the Royal National Park and the Heathcote National Park. The Project area is shown in relation to the adjacent listed heritage items on Figure 1, Figure 2 and Figure 3.

### 1.3 Project Methodology

This heritage assessment has been undertaken in accordance with the NSW Heritage Division documents *Assessing Heritage Significance* (NSW Heritage Office, 2001) and *Statements of Heritage Impact* (NSW Heritage Office, 2002) and includes:

- Desktop searches of relevant heritage registers
- review of Proposal drawings and concept design reports
- review of the following key documents:
  - heritage register listings for the station
  - historic plans for the station held by the Sydney Trains Plans Room
  - previous reports and other relevant documentation provided by TfNSW
  - background research into the historical development of the station using the historic plans, historical photographs, newspapers and other primary and secondary historical sources as relevant and referenced in the report
- site inspection undertaken on 12 April 2019 by AECOM principal archaeologist and heritage specialist Dr Darran Jordan, assessing the existing station (both internal and external) along with the existing character of the Project area and surrounding land uses.

This document has also been prepared with reference to the Sydney Trains guidelines *Environmental Management System Technical Specifications Statement of Heritage Impact* (Sydney Trains, 2014) and the *System Procedure for Heritage Impact Assessment* (Sydney Trains, 2014). Also utilised in this assessment were the documents *Conservation Guide: Railway Station Platforms* (Office of Rail Heritage, 2013) and the *Heritage Platforms Conservation Management Strategy* (Australian Museum Consulting, 2015).



Figure 1 Northern extent of Project area in relation to listed heritage items



Figure 2 Southern extent of Project area in relation to listed heritage items



Figure 3 RailCorp Section 170 Heritage and Conservation Register curtilage listing for Waterfall Turntable, Watering Facilities and Moveable Items (NSW Office of Environment & Heritage, 2019)

## 1.4 Proposed works

The key features of the Proposal are summarised as follows:

- Partial demolition and extension of the northern end of the existing island platform at Waterfall Station by approximately 40 metres to facilitate new 10-car intercity trains stopping for operational and emergency reasons
- a new suburban train stabling yard to the west of the existing main line accommodating ten 8-car trains
- a new staff amenities building on the western side of the rail corridor to facilitate staff access and cleaning of trains within the new stabling yard
- an elevated staff footbridge to provide access for staff between the staff amenities building and the platform
- reconfiguration of existing track to the west and north of the station, including changes in the location and operation of freight and passenger loops
- construction of a new approximately 850 metres long freight refuge loop on the western side of the existing main line
- upgrade of the existing vehicle access off the southbound carriageway of the Princes Highway to allow for refuse collection and operational access
- ancillary works, including new and relocated services, lighting, CCTV, retaining walls, and landscaping.

As a result of the reconfiguration of tracks under the proposed works, steam trains travelling in the down direction will no longer be able to use the heritage tank to fill up. Steam trains travelling in the up direction will still be able to use the tank. It is proposed that a water hydrant will be placed on the opposite side of the tracks to the existing water tank to service steam trains travelling in the down direction. Although not a physical impact, this limitation will reduce the use of the existing water tank and impact on its connection to the wider rail network and landscape.

## 1.5 Report Limitations

The purpose of this report is to identify and assess historic heritage and archaeological potential which might be impacted by the Proposal. Predictions have been made within this report about the probability of subsurface archaeological materials occurring within the site, based on surface indications and environmental contexts. However, it is possible that materials may occur in areas without surface indications and in any environmental context. These would be addressed in accordance with TfNSW's *Unexpected Heritage Finds Guideline* (Transport for NSW, 2015). This report is based on concept design for the Proposal. It is noted that during detailed design, details of the Proposal may change or be refined. Further heritage assessment would be required to assess any potential additional impacts to the heritage value of Waterfall Railway Station and adjacent listed heritage items, if relevant, during detailed design.

A summary of the statutory requirements regarding historical heritage is provided in Section 2.0. The summary is provided based on AECOM's experience with the heritage system in Australia and does not purport to be legal advice. It should be noted that legislation, regulations and guidelines change over time and users of the report should satisfy themselves that the statutory requirements have not changed since the report was written.

## 2.0 Statutory Context

A number of planning and legislative documents govern how heritage is managed in NSW and Australia. The following section provides an overview of the requirements under each as they apply to the Proposal.

### 2.1 Commonwealth Legislation

#### 2.1.1 Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)

The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) defines 'environment' as both natural and cultural environments and therefore includes Aboriginal and non-Aboriginal historic cultural heritage items. Under the EPBC Act, protected heritage items are listed on the National Heritage List (NHL) (items of significance to the nation) or the Commonwealth Heritage List (CHL) (items belonging to the Commonwealth or its agencies). These two lists replaced the Register of the National Estate (RNE). The RNE has been suspended and is no longer a statutory list; however, it remains as an archive.

Under Part 9 of the EPBC Act, any action that is likely to have a significant impact on a matter of National Environmental Significance (NES) (known as a controlled action under the EPBC Act), may only progress with approval of the Commonwealth Minister for the Department of the Environment and Energy (DotEE). An action is defined as a project, development, undertaking, activity (or series of activities), or alteration. An action would also require approval if:

- It is undertaken on Commonwealth land and would have or is likely to have a significant impact on the environment on Commonwealth land; and/or
- it is undertaken by the Commonwealth and would have or is likely to have a significant impact.

Waterfall Railway Station Group has been identified on the RNE (as item #101153); however, it has not been identified on the CHL or NHL.

The Project area is immediately adjacent to the Royal National Park and Garawarra State Conservation Area, listed on the NHL for its natural heritage significance (item # 105893). The listing does recognise Indigenous heritage sites present within the listing area. As the Project is located immediately adjacent to the NHL item, an impact assessment under the Commonwealth *Significant Impact Guidelines 1.1* is required to be undertaken.

#### 2.1.2 Impact assessment

The *Significant Impact Guidelines 1.1* from the Department of Environment provides an explanation on the severity of impacts relating to National Environmental Significance, stating that if works are likely to have a significant impact on the National Heritage values of a National Heritage place it must be assessed to determine if there is a real chance or possibility that it will cause:

- one or more of the National Heritage values to be lost; or
- one or more of the National Heritage values to be degraded or damaged; or
- one or more of the National Heritage values to be notably altered, modified, obscured or diminished.

## 2.2 State Legislation

### 2.2.1 Environmental Planning and Assessment Act 1979 (NSW)

The NSW EP&A Act allows for the preparation of planning instruments to direct development within NSW. This includes LEPs, which are administered by local government, and principally determine land use and the process for development applications. LEPs usually include clauses requiring that heritage be considered during development applications and a schedule of identified heritage items be provided. The EP&A Act also allows for the gazettal of State Environmental Planning Policies (SEPPs).

### **2.2.2 State Environmental Planning Policy (Infrastructure) 2007 (NSW)**

SEPPs are environmental planning instruments which address planning issues within the State. SEPPs often make the Planning Minister the consent authority for the types of development they relate to. The State Environmental Planning Policy (Infrastructure) 2007 (ISEPP 2007) is of relevance to this Proposal.

Clause 14 of ISEPP 2007 applies to infrastructure developments carried out by, or on behalf of, a public authority if the development is likely to impact a local heritage item or heritage conservation area (other than a heritage item that is also a State heritage item). Under ISEPP 2007, if an impact is identified as not minor and inconsequential a public authority, or person/s acting on behalf of a public authority, must not carry out a development to which this clause applies, unless an assessment of the proposed impact has been prepared and forwarded to the local government of the area for comment. Comments received within 21 days must be taken into consideration.



### 2.2.3 Heritage Act 1977 (NSW)

The *Heritage Act 1977* (as amended) was enacted to conserve the environmental heritage of NSW. Under Section 32, places, buildings, works, relics, moveable objects or precincts of heritage significance are protected by means of either Interim Heritage Orders (IHO) or by listing on the NSW State Heritage Register (SHR). Items that are assessed as having State heritage significance can be listed on the SHR by the Minister on the recommendation of the NSW Heritage Council.

Archaeological relics (any relics that are buried) are protected by the provisions of Section 139. Under this section it is illegal to disturb or excavate any land knowing or suspecting that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed. In such cases an excavation permit under Section 140 is required. Note that no formal listing is required for archaeological relics; they are automatically protected if they are of local significance or higher.

Proposals to alter, damage, move or destroy places, buildings, works, relics, moveable objects or precincts protected by an IHO or listed on the SHR require an approval under Section 60. Demolition of whole buildings will not normally be approved except under certain conditions (Section 63). Some of the sites listed on the SHR or on LEPs may either be 'relics' or have relics associated with them. Section 60 approval is only required for relics within the curtilage of SHR listed items. In such cases, a Section 60 approval would be required for any disturbance to relics associated with a listed item.

Under Section 170 of the *Heritage Act 1977*, NSW Government agencies are required to maintain a register of heritage assets. The Register places obligations on the agencies, but not on non-government proponents, beyond their responsibility to assess the impact on surrounding heritage items.

## 2.3 Local Government

Waterfall Railway Station is located within Sutherland Shire LGA. Section 2.3.1 outlines the relevance of the Sutherland Shire LEP 2015 to the Proposal.

### 2.3.1 Sutherland Shire Local Environmental Plan (LEP) 2015

Part 5, Section 5.10 of the Sutherland Shire LEP 2015 deals with heritage conservation within the area covered by the LEP. All heritage items listed on the LEP are included in Schedule 5. The Sutherland Shire LEP 2015 states:

(1) *The objectives of this clause are as follows:*

- a. *to conserve the environmental heritage of Sutherland Shire,*
- b. *to conserve the heritage significance of heritage items and heritage conservation areas, including associated fabric, settings and views,*
- c. *to conserve archaeological sites,*
- d. *to conserve Aboriginal objects and Aboriginal places of heritage significance.*

(2) *Development consent is required for any of the following:*

- a. *demolishing or moving any of the following or altering the exterior of any of the following (including, in the case of a building, making changes to its detail, fabric, finish or appearance):*
  - i. *a heritage item,*
  - ii. *an Aboriginal object,*
  - iii. *a building, work, relic or tree within a heritage conservation area,*
- b. *altering a heritage item that is a building by making structural changes to its interior or by making changes to anything inside the item that is specified in Schedule 5 in relation to the item,*
- c. *disturbing or excavating an archaeological site while knowing, or having reasonable cause to suspect, that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed,*

- d. *disturbing or excavating an Aboriginal place of heritage significance,*
- e. *erecting a building on land:*
  - i. *on which a heritage item is located or that is within a heritage conservation area, or*
  - ii. *on which an Aboriginal object is located or that is within an Aboriginal place of heritage significance,*
- f. *subdividing land:*
  - i. *on which a heritage item is located or that is within a heritage conservation area, or*
  - ii. *on which an Aboriginal object is located or that is within an Aboriginal place of heritage significance.*

Waterfall Railway Station itself is not a listed item of environmental heritage on Schedule 5 of the Sutherland Shire LEP 2015. However, three items within the curtilage of the station are listed, including the Waterfall Railway turntable (#A4003), Row of 3 workers' cottages including Community Cottage (#A4004) and the Watertank (#A4005). This project does not require consent from Sutherland Shire Council.

## **2.4 Summary of Heritage Register Searches**

Heritage register searches were undertaken on 10 April 2019. Table 2-1 summarises the results of the heritage register searches. Waterfall Railway Station is immediately adjacent to the curtilage of the State significant Royal National Park and Garawarra State Conservation Area (#105893) which is listed on the National Heritage List. Heathcote National Park is located approximately 65 m to the west at its closest point to the Project area. Heathcote National Park was listed as local heritage item A098 on the Sutherland Shire LEP 2006 but has since been removed and is not listed on the currently active Sutherland Shire LEP 2015. It is listed as a registered place for natural values on the non-statutory archived Register of National Estate (RNE) (item #1530).

Waterfall Railway Station Group has local significance and is listed on the non-statutory RNE (item #101153). The Waterfall Turntable, Watering Facilities and Movable Items comprise the RailCorp Section 170 Heritage and Conservation Register listing under State Heritage Inventory database item SHI #4801139. Waterfall Railway Station is not a listed item of environmental heritage on Schedule 5 of the Sutherland Shire LEP 2015. However, three items associated with the station are listed, two within its bounds, being the Waterfall Railway turntable (#A4003) and Row of 3 workers' cottages including Community Cottage (#A4004). Approximately 200 m north of the station is listed item Watertank (#A4005), which is also associated with the station and specified as an element of the Waterfall Railway Station Group listing. The Watertank is partially located within the curtilage of the Project area. Immediately adjacent to the southern side of the station curtilage is item Pair of semi-detached houses (#4001). Register searches were extended 100 metres from the curtilage of Waterfall Railway Station to establish if there were surrounding registered items or conservation areas that may be affected by the Proposal; no further relevant listings were identified.

Table 2-1 Summary of listed heritage items within and adjacent to the Project area

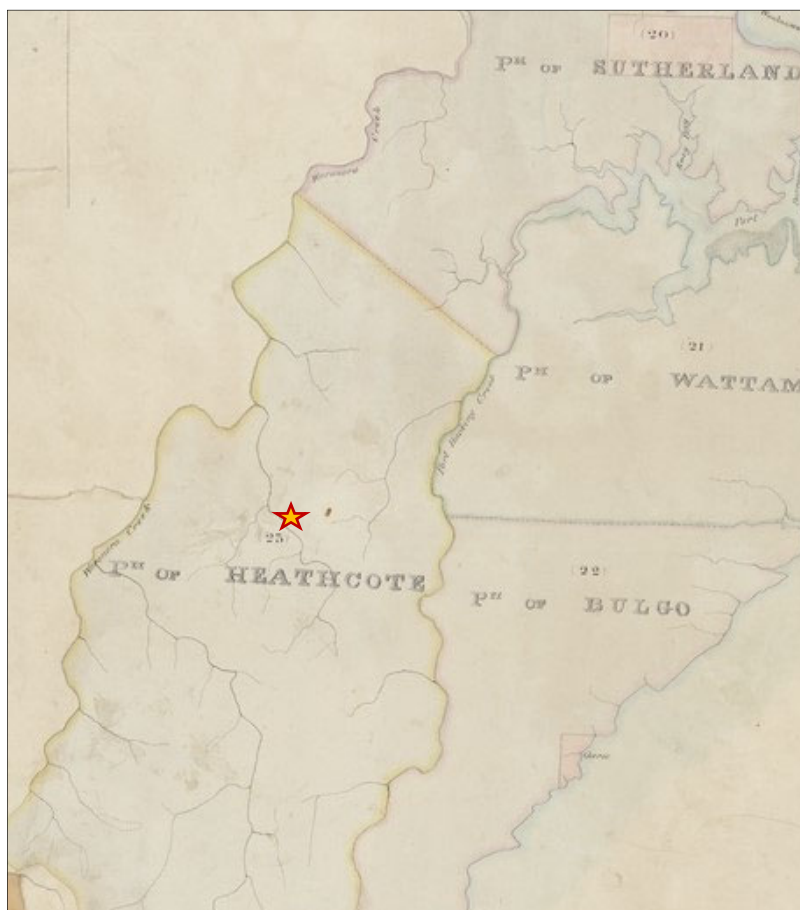
Heritage list	Items within the Project site	Level of significance	Items adjacent to the Project area	Level of significance	Distance to Project area (metres)
World Heritage List	Nil	n/a	Nil	n/a	n/a
National Heritage List	Nil	n/a	Royal National Park and Garawarra State Conservation Area (#105893)	State	0
Commonwealth Heritage List	Nil	n/a	Nil	n/a	n/a
Register of the National Estate (non-statutory)	Waterfall Railway Station Group (#101153)	Local	Royal National Park and Garawarra State Conservation Area (#105893) Heathcote National Park (#1530)	State Local	0 65
State Heritage Register	Nil	n/a	Nil	n/a	n/a
RailCorp s.170 Register	Waterfall Turntable, Watering Facilities & Movable Items (SRA#139); (SHI#4801139)	Local	Nil	n/a	n/a
Sutherland Shire LEP 2015	Waterfall Railway turntable (#A4003) Row of 3 railway workers' cottages including Community College (#A4004) Watertank (#A4005)	Local Local Local	Pair of semi-detached houses (#4001)	Local	10

## 3.0 Historical Context

In order to appreciate the heritage significance of an item, it is important to understand the historical context in which it was constructed and the subsequent factors that have influenced its development. The following sections outline the development of Waterfall Railway Station.

### 3.1 Early European Settlement

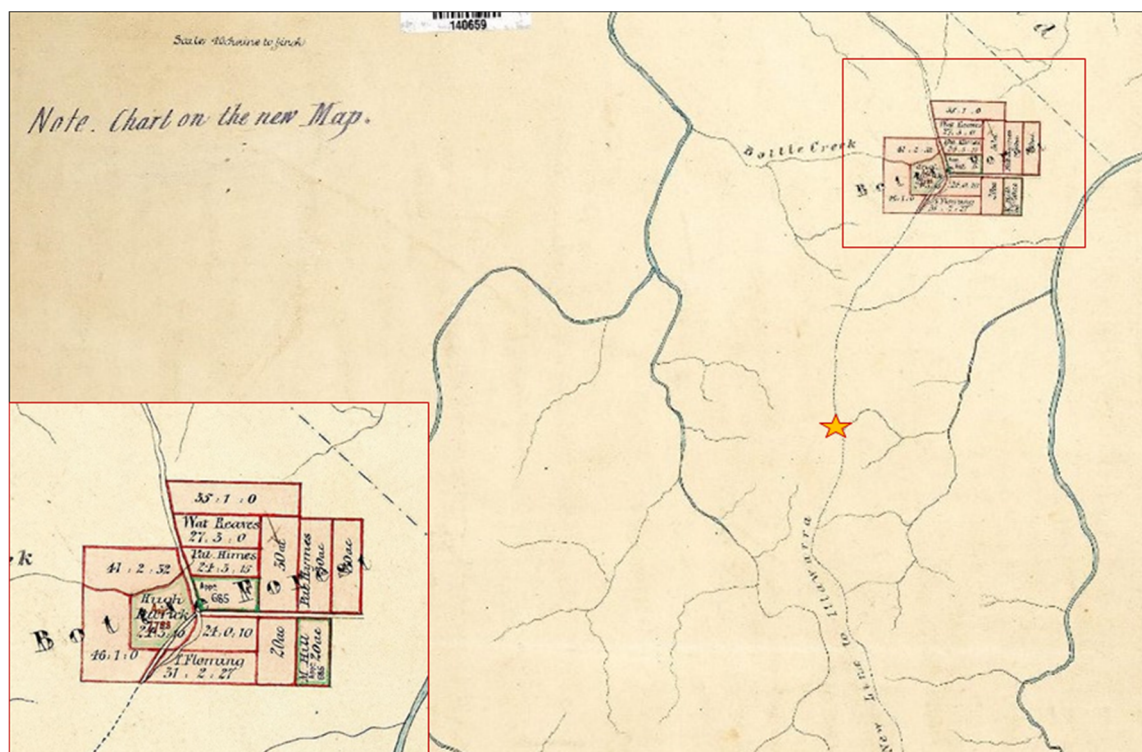
European colonisation in the region of present-day Waterfall occurred relatively slowly. By 1831, “the country between Sydney and Illawarra was [still] very imperfectly known” as the mountainous terrain and thick forest bordering the coast had prevented in-depth exploration and settlement of the area (Jervis, 1942:362). In his correspondence to the Colonial Secretary on 30 August 1831, Surveyor-General, Major Mitchell, put forth a proposal for a line of road between the two regions. The new route, running parallel to the coast instead of via Appin, it was estimated would reduce the commute from Sydney to the Illawarra by 48 km (Jervis, 1942). Following these plans, Mitchell published his 1835 ‘Original Maps of the Hundreds in the County of Cumberland’, and the region of present-day Waterfall was designated under the Parish of Heathcote (Figure 4). This area was largely Crown land, explaining the lack of government notices of settlement prior to this (Sutherland Shire Council, 2018).



**Figure 4** Excerpt from Original Maps of the Hundred in the County of Cumberland 1835 (State Library of New South Wales, call number M Z/MAXX 811.1/1835/1), approximate location of Waterfall Railway Station indicated by star

Surveys and clearing of timber for the new road commenced in 1843, after which “there was some inquiry for land along the new line” (Jervis, 1942). Land was granted at ‘Bottle Forest’ (present-day Heathcote), as shown in early Parish Maps (Figure 5); however, few other settlements were established, and Bottle Forest was abandoned soon after as the work for the new road met with

complications. It was stated that: “without a proper road, the settlers could not earn a living” (Jervis, 1942:368-9).



**Figure 5** Excerpt from Parish of Heathcote Map c.1845 with close up section of ‘Bottle Forest’ (now Heathcote) (Historical Land Records Viewer, NSW Land Registry Services, 2019). ‘New line’ refers to the road. Approximate location of Waterfall Railway Station indicated by star

### 3.2 The Illawarra Line

By the early 1870s, the Illawarra region had developed into a centre for production, for agricultural and horticultural produce as well as mines and coke ovens. Despite continual efforts to improve the road, the route to Sydney remained difficult to traverse and “practically all freight was handled by sea on account of the unsatisfactory roads” (Singleton, 1984:5). In 1874 private enterprises undertook surveys for possible railways to allow for more efficient and safer transport; however, the difficult terrain and high costs prevented further work (Singleton, 1984:5).

Following public pressure, John Whitton, Engineer in Chief for NSW Railways, was instructed to take on the project and find a suitable route for the ‘Illawarra Line’ between Sydney and Kiama (Singleton, 1984). His selected route closely followed the line of road mapped out earlier by Major Mitchell (Figure 6).

The construction contract was signed in September 1882 and by 1884 a double line was completed to Hurstville. Finally in March 1886, a single line was extended to ‘Waterfall’, named after the nearby waterfalls in the area (Australian Government, 2019). According to research by the Sutherland Shire Council, “there is no credible evidence that the locality around present day Waterfall had any name up until the time when the Illawarra Railway line was extended into unallocated Crown land in that area in 1884” (Sutherland Shire Council, 2018:44).



**Figure 6** Excerpt from Map of the Illawarra and South Coast Railway Line Showing all Surveyed and Crown Lands in its Vicinity c.1884 (National Library of Australia, MAP RM 904), approximate location of Waterfall Railway Station indicated by star

### 3.2.1 Stations at Waterfall

On 9 March 1886, Waterfall Railway Station (originally Waterfalls Station) opened for use, situated approximately 600 m south of its present location, with a single platform on its western side (NSW Office of Environment & Heritage, 2019; Singleton, 1984). At this time, the station was the terminus for the Illawarra line, and its high elevation and proximity to water sources made it a useful location for watering the steam-powered trains. Line construction continued, and in 1888, the line was opened from Sydney right through to North Kiama (Singleton, 1984).

By the end of 1890, the line between Hurstville and Waterfall was duplicated, requiring the movement of Waterfall Railway Station further north and the construction of a double platform (Singleton, 1984). A goods siding and storage yard were installed, followed by the installation of a locomotive turntable and railway residences in 1897, and an engine shed in 1899 (NSW Office of Environment & Heritage, 2019). These features ensured Waterfall Railway Station's importance as a location for loading freight trains with goods and relieving traffic along the narrow railway line. A Night Officer's cottage and two pairs of Enginemen's/Guard's residences were also built at this time (Singleton, 1984).

A third and final Waterfall Railway Station was constructed in 1905 and consisted of an island platform and a marshalling yard, adjacent to the 1897 turntable. In addition to this, two semi-detached brick residences were built just south of the station, located at 7-10 McKell Avenue, to provide further housing for railway workers (NSW Office of Environment & Heritage, 2019).

By 1906, the 'Village of Waterfall' was still largely unoccupied, consisting "of only about a score of houses, occupied by mainly Government employees on the railways..." (Evening News (Sydney:1869-1931), 1906). A number of subdivisions subsequently resulted in a small settlement, following reclamation of National Parkland on the western side of the railway (Figure 7). It was not until after 1976 that the area was designated a 'town' (Government Gazette of the State of New South Wales (Sydney NSW:1901-2001), 1976).

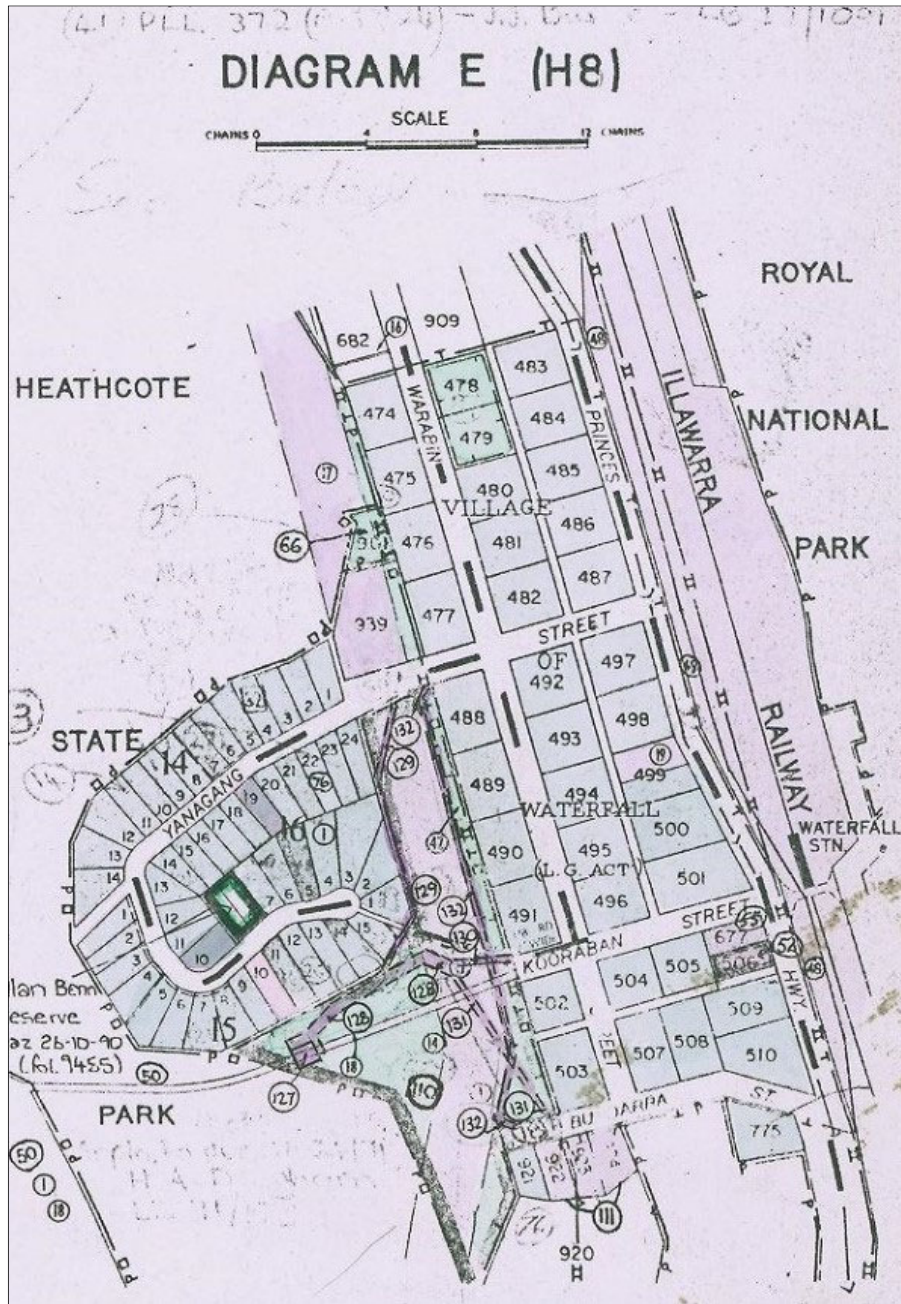


Figure 7 Parish of Heathcote c.1906-1975, Diagram E (Historical Land Records Viewer, NSW Land Registry Services, 2019)

### 3.3 Development of Current Waterfall Railway Station

From 4 May 1905, Waterfall Railway Station remained in its present location, consisting of an island platform and marshalling yard (see Plate 1) with sidings (see Plate 2) and a water tank with water column (Plate 3). From this time onwards it was also used as a staging point for freight trains, the marshalling yard designed for Up trains. The sidings of the marshalling yard are still extant on site, located adjacent to the Princes Highway.



**Plate 1** Waterfall Railway Station 3rd Platform Building c.1910 (NSW Office of Environment & Heritage, 2019)

#### 3.3.1 Station Alterations

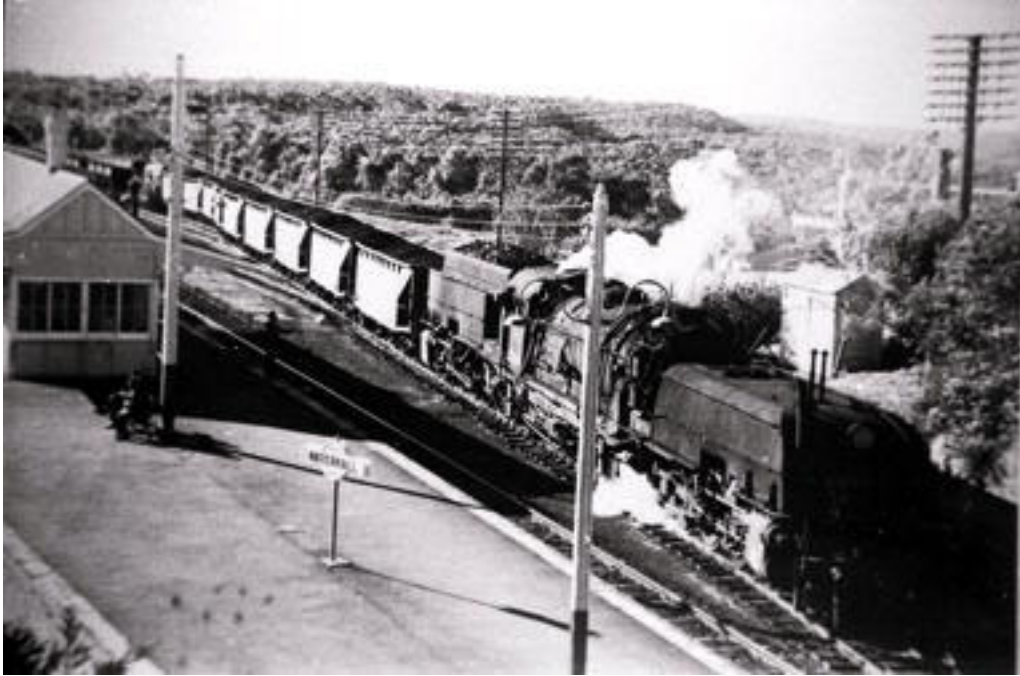
Alterations occurred as the line underwent duplication to the south of Waterfall. The group of structures had expanded by 1914 to include four goods sidings, two turntables, coal stages and an engine and goods shed. The sidings were expanded in 1919 and a goods passenger lift was installed in 1921, providing access between the platform and overbridge. Waterfall's engine and crew allocation were transferred to Thirroul in 1917 when marshalling yards and a large locomotive depot were established there, leading to the closure of Waterfall as a locomotive depot. In the 1960s a carport was added to the Night Officer's residence.

The line was electrified in 1980, with changes made to the yard and rail layout at that time (see Plate 4, Plate 5 and Plate 6). Between 1990 and 2001 (approximately) the railway residences were leased to the Department of Housing and subleased to the Sutherland Shire Housing Cooperative. In 1999 a steel and concrete platform building with access from the overbridge by modern concrete steps replaced the prior timber platform building at Waterfall Railway Station.

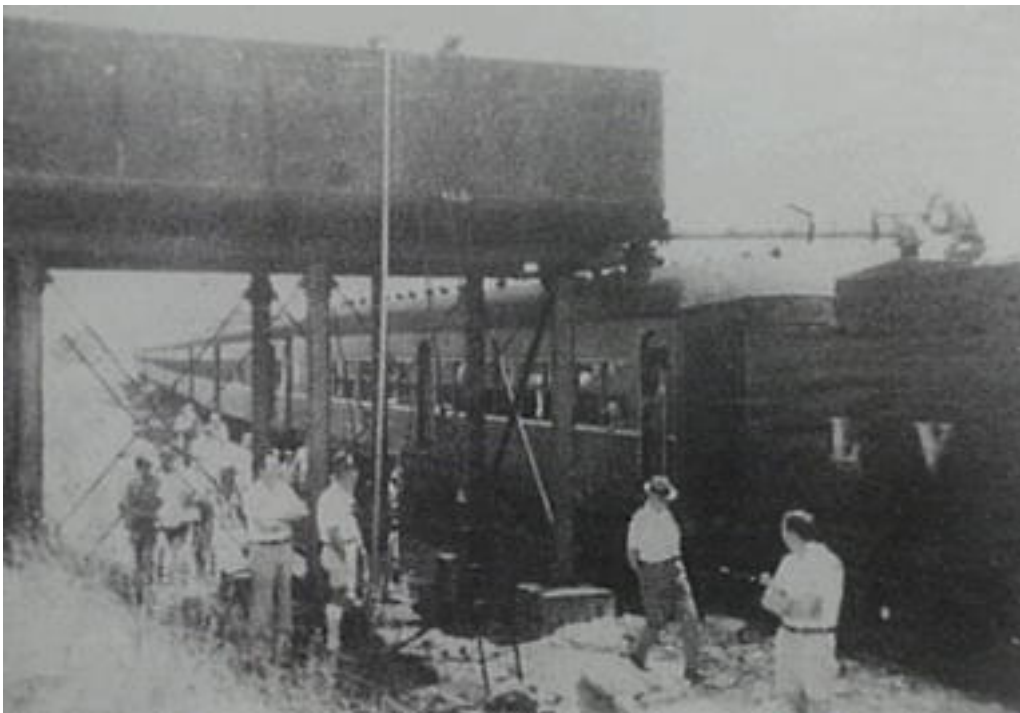
Various minor alterations occurred post-2000, including service fittings, the removal of sleepers from the perimeter wall of the turntable, the addition of a metal container in proximity to the turntable and skillion additions at the rear and/or sides of the residences. In 2011 the turntable was refurbished, including overgrowth removal and cleaning followed by adding an anti-corrosive coating and high-durability paint. This also included a new layer of roadbase being laid on the turntable pit, reconstruction of the original timber deck with new hardwood and the replacement of an intrusive modern steel-pipe handrail with a traditional timber hardwood rail. In 2015 a pair of indicator boards were returned from Waterfall Railway Station to Caringbah Railway Station. The five railway



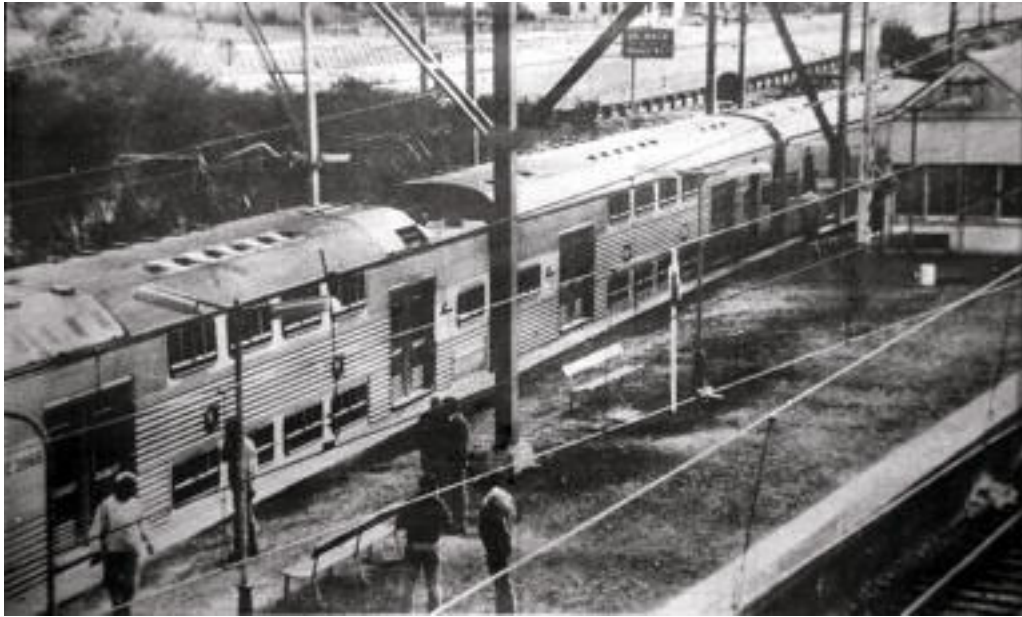
residences were removed in 2016, including the Night Officer's cottage and the Enginemen's/Guard's residences (2 pairs).



**Plate 2** Steam train at Waterfall Railway Station between 1940 and 1945 (Source: Sutherland Shire Library)



**Plate 3** Water tank at Waterfall Railway Station Marshalling yards, circa 1960s (Source: Sutherland Shire Library)



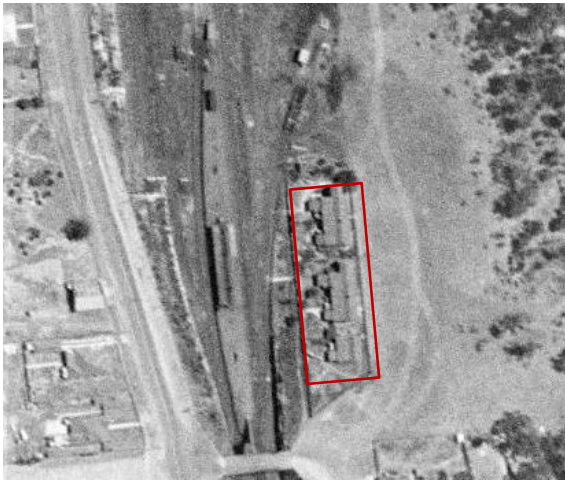
**Plate 4** First electric train at Waterfall Railway Station, 1980 (Source: Sutherland Shire Library)



**Plate 5** Waterfall station looking towards Sydney, 7 February 1981, photographed by John L. Buckland (Source: National Library of Australia)



Plate 6 Waterfall Railway Station with coupled train, 7 February 1981, photographed by John L. Buckland (Source: National Library of Australia)



**Plate 7 Waterfall Railway Station Historic Aerials. Clockwise from top left: 1943, 2005, 2015 and 2016. Demolition of the Row of 3 Workers' Cottages including Community College, shown between 2015 and 2016 (red outline)**



**Plate 8 Waterfall Railway Station 2017 Aerial. New buildings shown on the site of the former Row of 3 workers' Cottages including Community College (red)**

### 3.4 Summary of Development

The history of Waterfall Railway Station is summarised in the table below.

**Table 3-1 Waterfall Railway Station Timeline**

Date	Activity
1886	On 9 March 1886, Waterfalls Station (later renamed Waterfall Railway Station) opens for use, consisting of a single platform.
1888	The line is opened from Sydney through to North Kiama.
1890	The line between Hurstville and Waterfall is duplicated. A new Waterfall Railway Station is constructed approximately 600 m north of the original location, consisting of a double platform with goods siding and storage yard.
1897	A locomotive turntable and railway residences are installed at Waterfall. The Night Officer's cottage and the Enginemen's/Guard's residences are built.
1899	An engine shed is installed at Waterfall.
1905	A third version of Waterfall Railway Station is constructed adjacent to the locomotive turntable, consisting of an island platform and marshalling yard. Two semi-detached brick residences are built just south of the station, to provide further housing for railway workers.

Date	Activity
1914	Four goods sidings, two turntables, coal stages and an engine and goods shed are added at Waterfall.
1917	Waterfall's engine and crew allocation are transferred to Thirroul when marshalling yards and a large locomotive depot are established there.
1919	The rail sidings at Waterfall are expanded.
1921	A goods passenger lift is installed at Waterfall.
1960s	A carport is added to the Night Officer's residence.
1980	The line is electrified and changes are made to the yard and rail layout.
1990	The railway residences are leased to the Department of Housing and subleased to the Sutherland Shire Housing Cooperative.
1995	A steel and concrete platform building is constructed with access from the overbridge by modern concrete steps to replace the prior timber platform building.
2001	Leasing of the railway residences to the Department of Housing ends. After this time minor alterations are undertaken at the station including service fittings, the removal of sleepers from the perimeter wall of the locomotive turntable, the addition of a metal container in proximity to the locomotive turntable and skillion additions at the rear and/or sides of the residences.
2011	The locomotive turntable is refurbished, including the removal of vegetation overgrowth and cleaning followed by the addition of an anti-corrosive coating and high-durability paint, a new layer of roadbase on the turntable pit, reconstruction of the original timber deck with new hardwood and the addition of a traditional timber hardwood rail.
2015	A pair of indicator boards are returned from Waterfall Railway Station to Caringbah Railway Station.
2016	The five timber railway residences are removed, including the Night Officer's cottage and the Enginemens'/Guard's residences (2 pairs).

## 4.0 Physical Evidence

This section provides a physical description of the Waterfall Railway Station Group to provide an understanding of the physical elements that contribute to the station's heritage significance. These are summarised and described in Table 4-1. These have been compiled with reference to the historic background and the available historic plans (included in Appendix A).

**Table 4-1 Physical Elements of Waterfall Railway Station**

Item	Description
Station Building	The station had a timber platform building, but this was removed in 1995 and replaced with a steel and concrete platform building with associated canopy. (There is some discrepancy regarding the date as the NSW State Heritage Register listing for the Waterfall Turntable, Watering Facilities & Movable Items states this occurred in 1999, but photographs of the building replacement held at the current Station Master's office at Waterfall Railway Station are dated 1995)
Residences	The residences at Waterfall Railway Station are described in various documentation as consisting of a row of three workers' cottages including Community College, the Night Officer's cottage and the Enginemen's/Guard's residences (2 pairs). These residences were removed from the site in 2016. Some physical remnants and/or archaeological deposits associated with them may still be extant.
Locomotive Turntable	The locomotive turntable was manufactured by William Sellers & Co. Philadelphia No. 1327 and is comparable with other similar turntables at Bomaderry, Kiama and Wollongong. The turntable is a single circular track on timber sleepers surrounding a cast iron turntable mechanism. On the west side of the turntable the area is retained with a wall of timber sleepers. On the east side, there are no sleepers as they were removed post-2001, but an earth embankment remains extant.
Water Tank and associated Water Column	The water tank is a cast iron tank with rounded corners. It is open at the top and elevated on a cast iron stand. The water column is located immediately to the south of the water tank. It consists of a curved metal pipe with a concrete base, elevated on a timber decked stand supported by four square concrete corner posts. There are timber steps with timber railings on the southern side leading up to the deck. The deck also has timber railings.
Moveable Items	Two platform trolleys and one pair of indicator boards were noted as present at the station in 2009. The pair of indicator boards may no longer be present as a pair was returned from Waterfall Railway Station to Caringbah Railway Station in 2015. No other moveable items were identified.

### 4.1 Site Inspection

A visual inspection of the Project area was undertaken on 12 April 2019 by AECOM archaeologist Dr Darran Jordan. The purpose of the inspection was to identify the potential for direct or indirect impacts to historic heritage items. The inspection verified that the background listing information was correct in that the original platform building and the five residences that were located adjacent to Waterfall Railway Station had been demolished. Extant features and items including the turntable, water tank, water spout and pair of semi-detached houses were all found to be intact. Photos taken during the site inspection show the current condition of the items that had been identified in the background research (Plates 19 to 48).

### 4.1.1 Waterfall Railway Turntable



Plate 8 Waterfall Railway Turntable, view northeast



Plate 9 Waterfall Railway Turntable, view north



Plate 10 Waterfall Railway Turntable, view south



**Plate 11** Close up of Waterfall Railway Turntable, view east



**Plate 12** Close up of Waterfall Railway Turntable, view east



**Plate 13** Waterfall Railway Turntable, view east



**Plate 14** Waterfall Railway Turntable with Railway Station in background, view southwest



#### 4.1.2 Water tank and water column



Plate 15 Water tank viewed from Waterfall Railway Station platform, view north, Water tank is outlined in red



Plate 16 Water tank, view east



**Plate 17** Water tank with associated water column, view northeast



**Plate 18** Water column, view east

### 4.1.3 Platform station building



Plate 19 Waterfall platform station building, view northwest



Plate 20 Waterfall Railway Station ramp connecting from the overbridge (left) to the platform, view west



Plate 21 Waterfall Railway Station building from the eastern side of the platform, view north



Plate 22 Waterfall Railway Station awning, view north



**Plate 23** Waterfall Railway Station overbridge and southern end of platform, view southwest



**Plate 24** Waterfall Railway Station overbridge and southern end of platform. View northwest



Plate 25 Waterfall Railway Station overbridge, view northwest



Plate 26 Waterfall Railway Station, looking south from the northern end of the platform



Plate 27 Waterfall Railway tracks from the Station platform, view west



Plate 28 Waterfall Railway Station railway tracks from the northern end of the platform, view northwest

**4.1.4 Row of 3 workers' cottages including Community College**



**Plate 29** Site of the former 'Row of 3 workers' cottages including Community College', view southwest



**Plate 30** Site of the former 'Row of 3 workers' cottages including Community College', view northwest





Plate 31 Curtilage of the former 'Row of 3 workers' cottages including Community College', indicated red, view southeast



Plate 32 Curtilage of the former 'Row of 3 workers' cottages including Community College'. View southeast from the platform

#### 4.1.5 Pair of semi-detached Houses



Plate 33 Semi-detached houses at lots 7 McKell Ave (left) and 8 McKell Ave (right), view northeast



Plate 34 Semi-detached property at 8 McKell Avenue, view northeast



**Plate 35** Semi-detached houses at lots 9 McKell Ave (left) and 10 McKell Ave (right), view southeast



**Plate 36** Semi-detached property at 10 McKell Avenue, view northeast

#### 4.1.6 Royal National Park and Garawarra State Conservation Area



**Plate 37** Royal National Park and Garawarra Conservation Area as viewed from the platform of Waterfall Railway Station, view northeast

Although not overtly stated in the existing heritage listings, it was noted during the inspection that the sidings and yards contribute to the heritage value of Waterfall Railway Station. The relevance of the extant heritage items (the turntable, water tank and water column) is enhanced by how they relate to each other and to the wider rail network. The visual landscape around them and the physical rails, yards and sidings that connect them are part of the historical landscape of steam engine use at Waterfall. Evidence of the historical relevance of Waterfall Railway Station can also be evidenced by plaques and interpretation boards currently displayed at the station.

## 5.0 Significance Assessment

### 5.1 Introduction

In order to understand how a development would impact on a heritage item, it is essential to understand why an item is significant. An assessment of significance is undertaken to explain why a particular item is important and to enable the appropriate site management and curtilage to be determined. Cultural significance is defined in *The Australia ICOMOS Charter for Places of Cultural Significance 2013* (ICOMOS (Australia), 2013) as meaning "aesthetic, historic, scientific, social or spiritual value for past, present or future generations" (Article 1.2). Cultural significance may be derived from a place's fabric, association with a person or event, or for its research potential. The significance of a place is not fixed for all time, and what is of significance to us now may change as similar items are located, more historical research is undertaken, and community tastes change.

The process of linking this assessment with an item's historical context has been developed through the NSW Heritage Management System and is outlined in the guideline *Assessing Heritage Significance* (NSW Heritage Office, 2001), part of the NSW Heritage Manual (Heritage Branch, Department of Planning). The *Assessing Heritage Significance* guidelines establish seven evaluation criteria (which reflect four categories of significance and whether a place is rare or representative) under which a place can be evaluated in the context of State or local historical themes. Similarly, a heritage item can be significant at a local level (i.e. to the people living in the vicinity of the site), at a State level (i.e. to all people living within NSW) or be significant to the country as a whole and be of National or Commonwealth significance.

In accordance with the guideline *Assessing Heritage Significance*, an item would be considered to be of State significance if it meets two or more criteria at a State level, or of local heritage significance if it meets one or more of the criteria outlined in Table 5-1. The Heritage Council require the summation of the significance assessment into a succinct paragraph, known as a Statement of Significance. The Statement of Significance is the foundation for future management and impact assessment. The following sections quote from existing significance assessments and statements of significance from the existing listings for these items.

**Table 5-1 Significance assessment criteria**

Criterion	Inclusions/Exclusions
<b>Criterion (a)</b> – <i>an item is important in the course, or pattern, of NSW's cultural or natural history (or the cultural or natural history of the local area).</i>	The site must show evidence of significant human activity or maintains or shows the continuity of historical process or activity. An item is excluded if it has been so altered that it can no longer provide evidence of association.
<b>Criterion (b)</b> – <i>an item has strong or special association with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history (or the cultural or natural history of the local to area).</i>	The site must show evidence of significant human occupation. An item is excluded if it has been so altered that it can no longer provide evidence of association.
<b>Criterion (c)</b> – <i>an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area).</i>	An item can be excluded on the grounds that it has lost its design or technical integrity or its landmark qualities have been more than temporarily degraded.
<b>Criterion (d)</b> – <i>an item has strong or special association with a particular community or cultural group in NSW (or the local area) for social, cultural or spiritual reasons.</i>	This criterion does not cover importance for reasons of amenity or retention in preference to proposed alternative.

Criterion	Inclusions/Exclusions
<b>Criterion (e)</b> – an item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the cultural or natural history of the local area). Significance under this criterion must have the potential to yield new or further substantial information.	Under the guideline, an item can be excluded if the information would be irrelevant or only contains information available in other sources.
<b>Criterion (f)</b> – an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history (or the cultural or natural history of the local area).	An item is excluded if it is not rare or if it is numerous, but under threat. The item must demonstrate a process, custom or other human activity that is in danger of being lost, is the only example of its type or demonstrates designs or techniques of interest.
<b>Criterion (g)</b> – an item is important in demonstrating the principal characteristics of a class of NSW's (or local area's): <ul style="list-style-type: none"> <li>cultural or natural places cultural or natural environments.</li> </ul>	An item is excluded under this criterion if it is a poor example or has lost the range of characteristics of a type.

## 5.2 Waterfall Railway Station Group

The Waterfall Railway Station Group does not have an existing significance assessment on file. The assessment in the following table summarises the significance criteria in relation to this item. As was noted in Table 2-1 the only listing for the Waterfall Railway Station Group is on the non-statutory RNE. In addition to the station itself however, this RNE listing also contains the Waterfall Railway Turntable and Watering Facilities (water tank and column) which are listed on the RailCorp s.170 Register and the Sutherland Shire LEP 2015. It is therefore useful to include details of the non-statutory RNE listing here, as it considers the relationship of these various elements to each other, a factor that has been considered as part of this assessment.

Table 5-2 Waterfall Railway Station Group significance assessment (Australian Government, 2019)

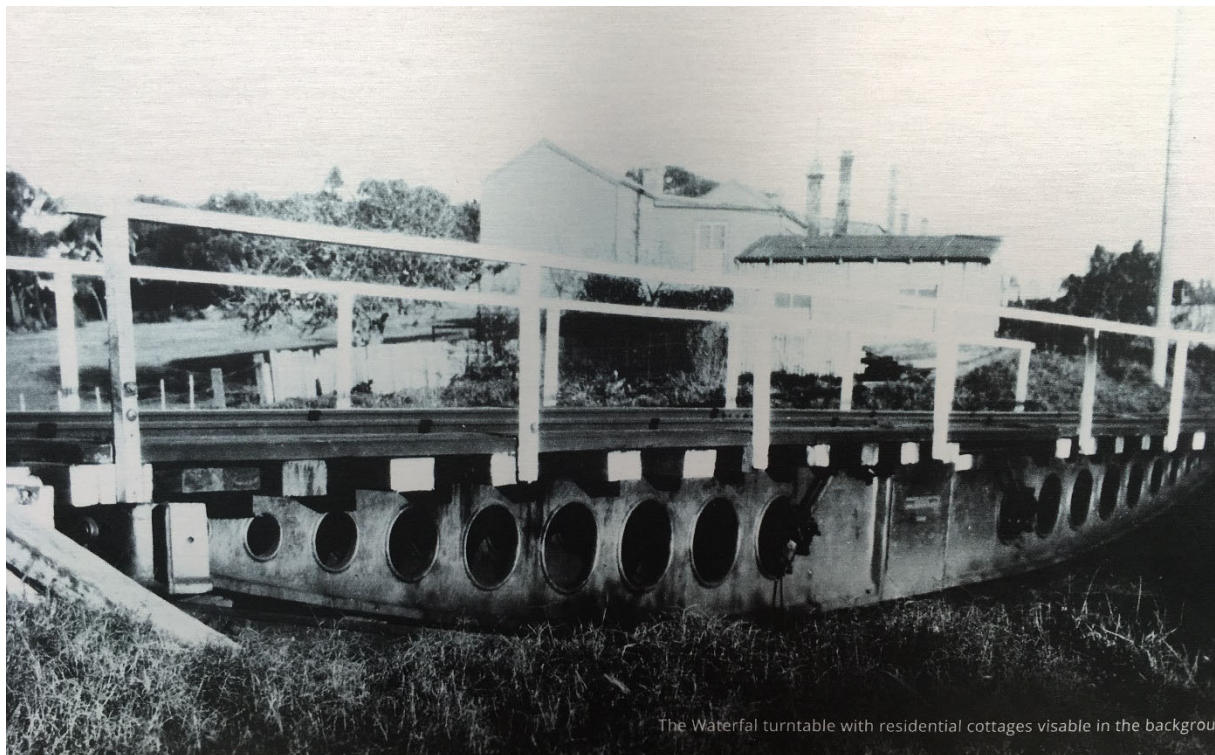
Significance Criteria	Application of Criteria (Existing Assessment)
<b>Historical significance SHR criteria (a)</b>	The Waterfall Railway Station Group has historical significance as evidence of steam train technology at a major locomotive depot developing since the station opened in 1886 through to contemporary travel still being undertaken there at the time of this assessment.
<b>Historical association significance SHR criteria (b)</b>	The item does not meet this criterion.
<b>Aesthetic significance SHR criteria (c)</b>	The turntable, water tank and water column are of technical significance as technologically illustrative of the functioning of steam trains. The water tank is of aesthetic significance as a landmark visible from the Princes Highway and Waterfall Railway Station. The 1905 timber island station building had aesthetic value as a large timber island station building with projecting roof at one end and an awning each side supported on timber rafters and simple brackets, but this structure was removed and replaced in 1995. The current structure is a green coloured steel and concrete platform building with associated canopy, connecting via concrete ramp with canopy to the street (the ramp having replaced the previous access by timber stairs). Like the original platform building, the current one is linear containing facilities such as the ticket office, station master's office and toilets. The ticket office faces the entrance ramp.
<b>Social significance</b>	The place has the potential to contribute to the local community's sense of

<b>Significance Criteria</b>	<b>Application of Criteria (Existing Assessment)</b>
<b>SHR criteria (d)</b>	place and can provide a connection to the local community's past.
<b>Technical/Research significance SHR criteria (e)</b>	The item does not meet this criterion.
<b>Rarity SHR criteria (f)</b>	The Waterfall turntable is locally rare, being one of three turntables now extant on the Illawarra line (Bomaderry, Waterfall and Kiama), as well as the water tank and water spout of which there are few in the metropolitan railway network.
<b>Representativeness SHR criteria (g)</b>	The 1908 turntable and 1905 water tank and water column are representative structures from the steam technology period of railway operation.
<b>Integrity/Intactness</b>	The turntable is relatively intact (although the retaining wall on the eastern side is missing), while the water spout and water tank are intact. The platform building was removed and replaced in 1995 and the residences were removed in 2016.

The existing Statement of Significance for this item states:

“Waterfall is an unusual group of structures in that it retains elements from the steam era - such as the turntable, tank and spout and has retained a timber standard island passenger station building. As a group it has high significance and the individual items all have significance. It is particularly important because of its location within the metropolitan area where very little remains of steam facilities or staff accommodation” (Australian Government, 2019).

This Statement of Significance is undated but was produced prior to 2007 when the RNE was closed. Since then the platform building and residences have both been removed, impacting on the heritage significance of this listing.



The Waterfal turntable with residential cottages visable in the backgrou

**Plate 38** Undated historical image of the Waterfall Railway turntable (Source: Waterfall Railway Station interpretation sign)



**Plate 39** Waterfall Railway turntable in operation circa 1970 (Source: Wollongong City Library)



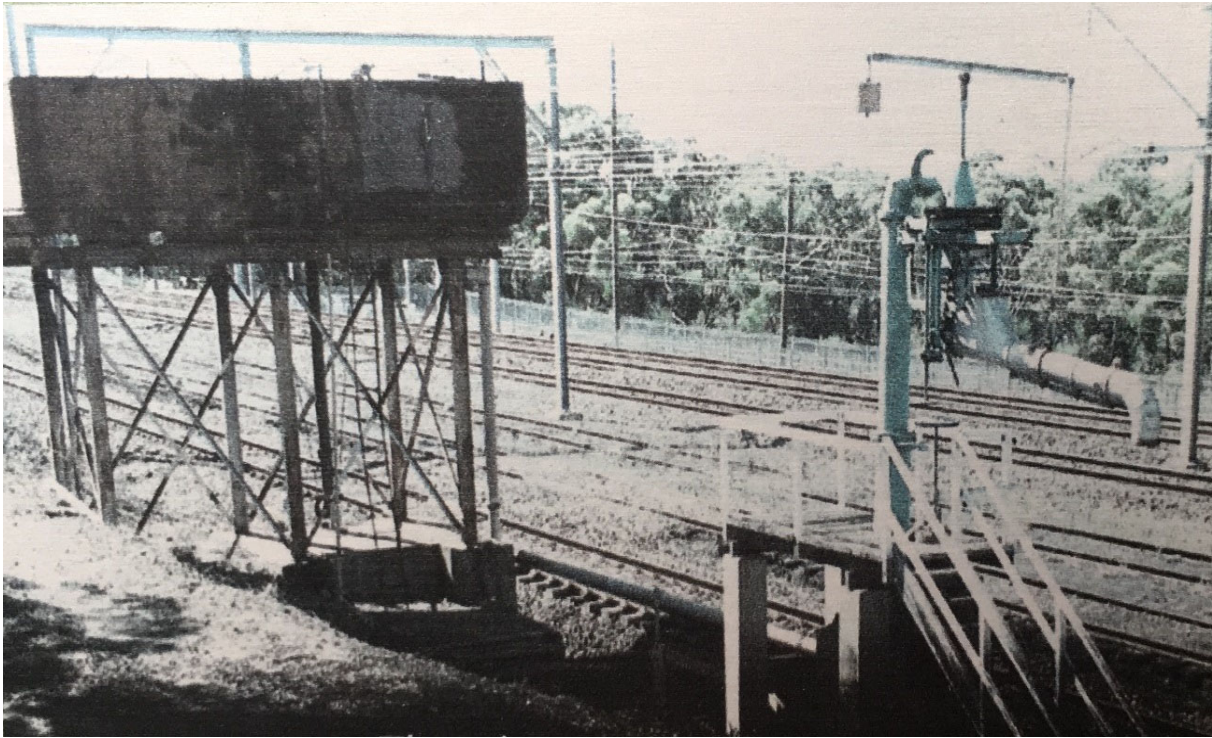


Plate 40 Undated image of Water tank and column (Source: Waterfall Railway Station interpretation sign)



Plate 41 Steam train fills up from the water tank circa 1970 (Source: Wollongong City Library)



Plate 42 Undated Waterfall Railway Station from the Overbridge (Source: Waterfall Railway Station – Station Masters Office Display, 2019)



**Plate 43** 1995 replacement of the Waterfall Railway Station platform building (Source: Waterfall Railway Station – Station Masters Office Display, 2019)



**Plate 44** 1995 replacement of the Waterfall Railway Station platform building (Source: Waterfall Railway Station – Station Masters Office Display, 2019)

### 5.3 Waterfall Railway Turntable, Watering Facilities and Movable Items

The listing for Waterfall Railway Turntable, Watering Facilities and Movable Items, has been assessed against the SHR criteria in the RailCorp Section 170 Register.

**Table 5-3 Significance assessment – Waterfall Railway Turntable, Watering Facilities and Movable Items** (NSW Office of Environment & Heritage, 2019)

Significance Criteria	Application of Criteria (Existing Assessment)
<b>Historical significance SHR criteria (a)</b>	The 1908 turntable and 1905 water tank and water column are of historical significance as evidence of steam train technology at a major locomotive depot.
<b>Historical association significance SHR criteria (b)</b>	The item does not meet this criterion.
<b>Aesthetic significance SHR criteria (c)</b>	The turntable, water tank and water column are of technical significance as technology illustrative of the functioning of steam trains. The water tank is of aesthetic significance as a landmark visible from the Princes Highway and Waterfall Railway Station.
<b>Social significance SHR criteria (d)</b>	The place has the potential to contribute to the local community's sense of place and can provide a connection to the local community's past.
<b>Technical/Research significance SHR criteria (e)</b>	The item does not meet this criterion.
<b>Rarity SHR criteria (f)</b>	The Waterfall turntable is locally rare, being one of three turntables now extant on the Illawarra line (Bomaderry, Waterfall and Kiama), as well as the water tank and water column of which there are few in the metropolitan railway network.
<b>Representativeness SHR criteria (g)</b>	The 1908 turntable and 1905 water tank and water column are representative structures from the steam technology period of railway operation.
<b>Integrity/Intactness</b>	The turntable retaining wall on the eastern side is missing, however the turntable is still relatively intact. The water tank and water column are intact.

The existing Statement of Significance for this item states:

*“The 1908 turntable and 1905 water tank and water column are of historical significance as rare extant evidence of steam train technology at a major locomotive depot and are of technical significance as technology illustrative of the functioning of steam trains. The water tank is of aesthetic significance as a landmark visible from the Princes Highway and Waterfall Railway Station. The turntable is locally rare, being one of three turntables now extant on the Illawarra line (with Bomaderry and Kiama). The water tank and water column are rare examples in the metropolitan network”* (NSW Office of Environment & Heritage, 2019).

This Statement of Significance was last updated 15 May 2017.

### 5.4 Watertank

The Sutherland Shire LEP 2015 listing does not contain an assessment against the criteria, or a Statement of Significance for the listed item Watertank. The assessment in the following table summarises the significance criteria in relation to this item.

Table 5-4 Significance assessment – Watertank (NSW Office of Environment &amp; Heritage, 2019)

Significance Criteria	Application of Criteria (Existing Assessment)
<b>Historical significance SHR criteria (a)</b>	The 1905 water tank and associated water column are of historical significance as evidence of steam train technology at a major locomotive depot.
<b>Historical association significance SHR criteria (b)</b>	The item does not meet this criterion.
<b>Aesthetic significance SHR criteria (c)</b>	The water tank and associated water column are of technical significance as technology illustrative of the functioning of steam trains. The water tank is of aesthetic significance as a landmark visible from the Princes Highway and Waterfall Railway Station.
<b>Social significance SHR criteria (d)</b>	The place has the potential to contribute to the local community's sense of place and can provide a connection to the local community's past.
<b>Technical/Research significance SHR criteria (e)</b>	The item does not meet this criterion.
<b>Rarity SHR criteria (f)</b>	The water tank and associated water column are rare as there are few of them in the metropolitan railway network. These are rare examples of items that were used in the operation on the steam era and have survived because there is still a continuing need for facilities to serve steam specials. There are few remains of steam facilities still extant in the metropolitan area.
<b>Representativeness SHR criteria (g)</b>	The 1905 water tank and associated water column are representative structures from the steam technology period of railway operation. They provide contextual evidence as to how steam technology functioned on the early rail network.
<b>Integrity/Intactness</b>	The water tank and water column are intact.

There is no existing Statement of Significance for this item, but relevant sections from the Waterfall Railway Turntable, Watering Facilities and Movable Items listing states:

*“The 1905 water tank and water column are of historical significance as rare extant evidence of steam train technology at a major locomotive depot and are of technical significance as technology illustrative of the functioning of steam trains. The water tank is of aesthetic significance as a landmark visible from the Princes Highway and Waterfall Railway Station. The water tank and water column are rare examples in the metropolitan network”* (NSW Office of Environment & Heritage, 2019).

This Statement of Significance was last updated 15 May 2017.

## 5.5 Row of 3 workers' cottages including Community College

The Sutherland Shire LEP 2015 listing for this item does not contain an assessment against the criteria, or a Statement of Significance. The assessment in the following table summarises the significance criteria in relation to this item.

Table 5-5 Row of 3 workers' cottages including Community College (NSW Office of Environment &amp; Heritage, 2019)

Significance Criteria	Application of Criteria (Existing Assessment)
<b>Historical significance SHR criteria (a)</b>	Five 1897 built timber railway residences were removed in 2016. There had been three buildings containing five residences - two pairs of semi-detached residences at the north end and one cottage (freestanding) at the southern end. The 1897 Waterfall railway residences and yard were significant as they dated from the period when Waterfall was a railway town servicing steam locomotives. They provided evidence of the early development of the Bottle Forest Crown Lands and of an early subdivision of the Waterfall Township, spurred by the extension of the Illawarra railway.
<b>Historical association significance SHR criteria (b)</b>	The 1897 Waterfall railway residences were of historical significance as evidence of early 20th century railway operational requirements to accommodate railway staff. They included a rare group of residences constructed for a Night Officer, enginemen and guards, at what was then a major depot for servicing steam locomotives.
<b>Aesthetic significance SHR criteria (c)</b>	The residences were of aesthetic significance as a group of vernacular weatherboard residences, following the tradition of standard simply-styled railway residences, the only concession to their period of construction being the use of face brickwork for foundation walls and chimneys. Each of the buildings would have had a gable roof running across the structure and a front verandah supported on timber posts, with timber cladding and a solid brick base.
<b>Social significance SHR criteria (d)</b>	The place has the potential to contribute to the local community's sense of place and can provide a connection to the local community's past.
<b>Technical/Research significance SHR criteria (e)</b>	The item does not meet this criterion.
<b>Rarity SHR criteria (f)</b>	The residences were unique as they were not constructed according to a standard railway design, as was the usual practice.
<b>Representativeness SHR criteria (g)</b>	They were representative of residential structures from the steam technology period of railway operation.
<b>Integrity/Intactness</b>	The five 1897 built timber railway residences were removed in 2016. This item has been destroyed, although there may be the potential for foundations and/or associated deposits to still be extant.

No Statement of Significance for this item is included with the listing information. As this group of residences was demolished in 2016, no Statement of Significance has been produced for inclusion here.

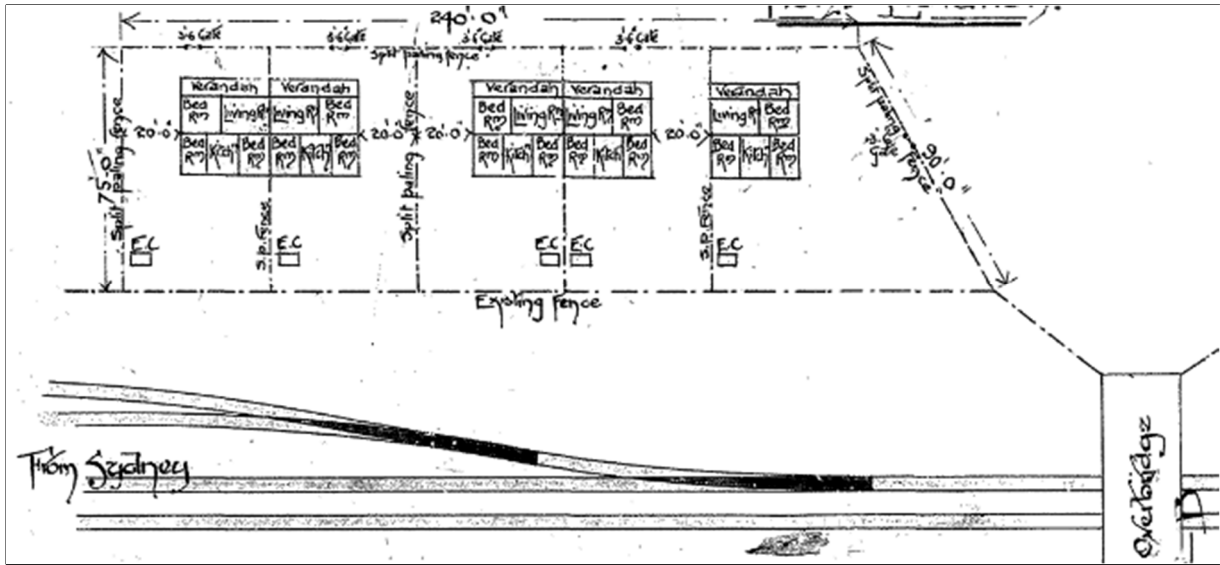


Plate 45 Excerpt from plans for residences at Waterfall Station 1896 (Source: Wollongong City Library)

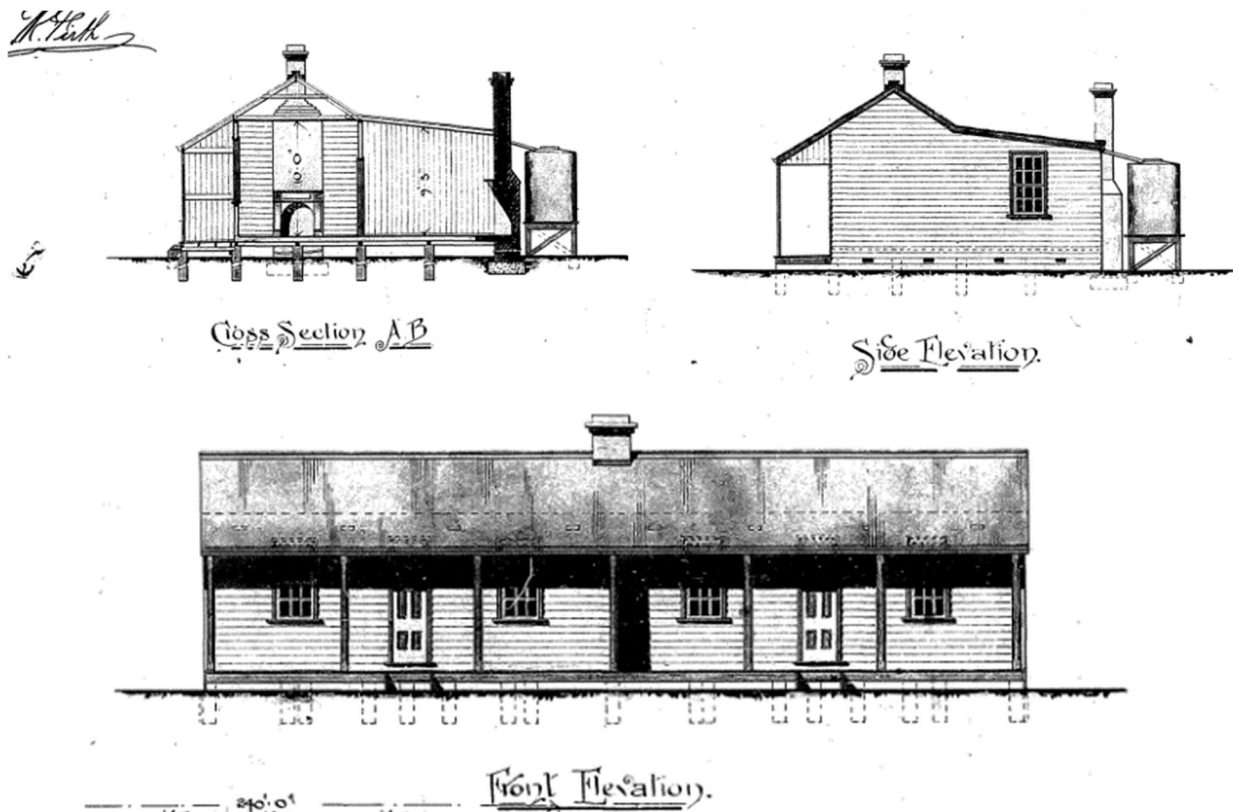


Plate 46 Excerpt from plans for residences at Waterfall Station 1896 (Source: Wollongong City Library)



Plate 47 Undated historical image of Waterfall Railway Station with the five residences outlined in red (Source: Waterfall Railway Station interpretation sign)

## 5.6 Pair of semi-detached houses

This item has been assessed against the SHR criteria in the table below.

Table 5-6 Pair of semi-detached houses (NSW Office of Environment & Heritage, 2019)

Significance Criteria	Application of Criteria (Existing Assessment)
<b>Historical significance SHR criteria (a)</b>	This item provides evidence of the early development of the Bottle Forest Crown Lands. It also provides evidence of an early subdivision of the Waterfall Township, spurred by the extension of the Illawarra railway. The buildings are a rare example of a pair of semi-detached dwellings constructed in the early twentieth century, an unusual typology in the Sutherland Shire.
<b>Historical association significance SHR criteria (b)</b>	The item does not meet this criterion.
<b>Aesthetic significance SHR criteria (c)</b>	The buildings are a good example of the Federation style in the Sutherland Shire area.
<b>Social significance SHR criteria (d)</b>	The item does not meet this criterion.
<b>Technical/Research significance SHR criteria (e)</b>	The item does not meet this criterion.
<b>Rarity SHR criteria (f)</b>	The item does not meet this criterion.
<b>Representativeness SHR criteria (g)</b>	The item does not meet this criterion.
<b>Integrity/Intactness</b>	The buildings are substantially intact.



The existing Statement of Significance reads as follows:

*“Evidence the early development of the Bottle Forest Crown Lands. Evidences an early subdivision of the Waterfall Township, spurred by the extension of the Illawarra railway. The building is a rare example of a pair of semi-detached dwellings constructed in the early twentieth century, an unusual typology in the Sutherland Shire. The building is a good example of the Federation style in the Sutherland Shire” (NSW Office of Environment & Heritage, 2019).*

This Statement of Significance was last updated 3 May 2013.

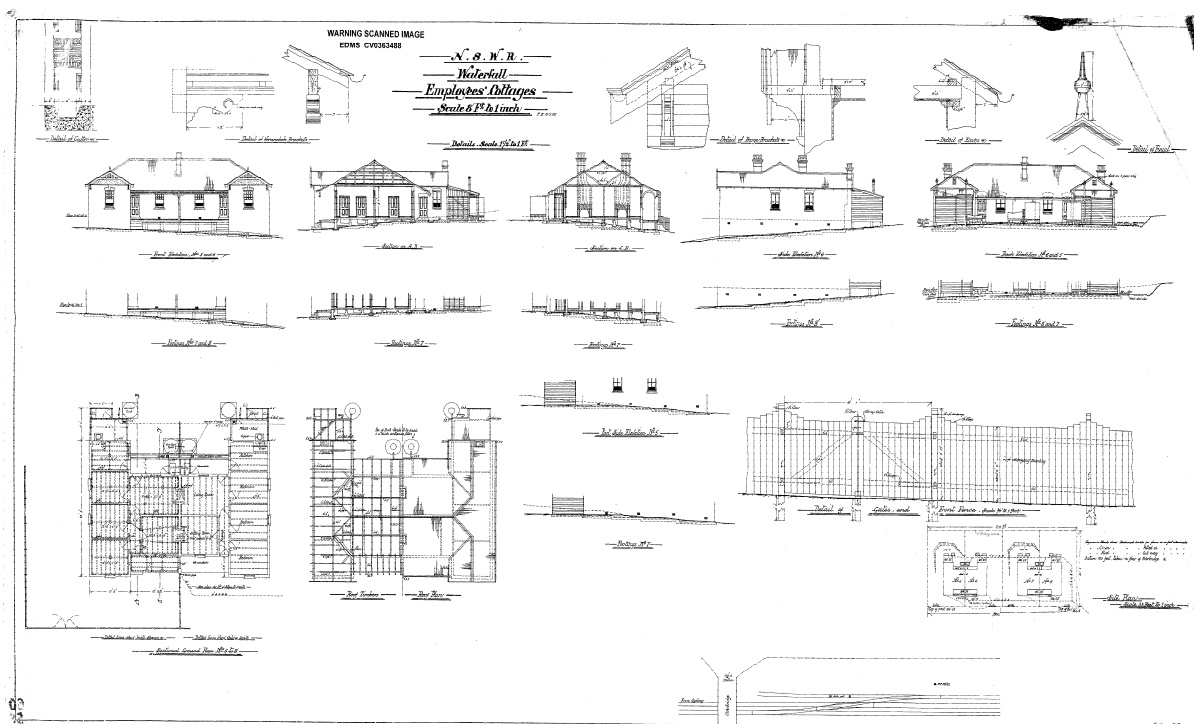


Plate 48 Undated historical image of the semi-detached houses (Source: Wollongong City Library)

## 5.7 Royal National Park and Garawarra State Conservation Area

The Royal National Park and Garawarra State Conservation Area has been assessed against SHR Criterion in the National Heritage List. The application of criteria from the listing is quoted in the table below.

Table 5-7 Significance assessment – Royal National Park and Garawarra State Conservation Area (Australian Heritage Database, 2019)

Significance Criteria	Application of Criteria (Existing Assessment)
Historical significance SHR criteria (a)	Royal National Park and Garawarra State Conservation Area constitute a major centre of plant species richness, having one of the richest concentrations of plant species in temperate Australia with more than 1000 species. The place is important for its richness in a wide array of species including heaths ( <i>Epacridaceae</i> ), peas and wattles ( <i>Mimosaceae</i> and <i>Fabaceae</i> ), orchids ( <i>Orchidaceae</i> ), grevilleas and banksias ( <i>Proteaceae</i> ) and members of the eucalypt family ( <i>Myrtaceae</i> ). The place is also extremely important as a centre of temperate animal species richness for a range of groups including perching birds

Significance Criteria	Application of Criteria (Existing Assessment)
	<i>(Passeriformes)</i> , especially honeyeaters ( <i>Meliphagidae</i> ), tree-frogs ( <i>Hylidae</i> ), reptiles ( <i>Reptilia</i> ) and butterflies ( <i>Lepidoptera</i> ). The place can be regarded as exemplifying the biodiversity of the Hawkesbury Sandstone environment. Royal National Park was the first National Park to be established in Australia in 1879 and this event is seen as the beginning of the Australian conservation movement. The permanent reservation of a large natural area for the purposes of public recreation marked the start of the development of Australia's National Park system of protected areas (Australian Heritage Database, 2019).
<b>Historical association significance SHR criteria (b)</b>	The listing does not assess the item under this criterion.
<b>Aesthetic significance SHR criteria (c)</b>	The listing does not assess the item under this criterion.
<b>Social significance SHR criteria (d)</b>	The listing does not assess the item under this criterion.
<b>Technical/Research significance SHR criteria (e)</b>	The listing does not assess the item under this criterion.
<b>Rarity SHR criteria (f)</b>	The listing does not assess the item under this criterion.
<b>Representativeness SHR criteria (g)</b>	The listing does not assess the item under this criterion.
<b>Integrity/Intactness</b>	Both reserves are managed as a unit by NSW National Parks and Wildlife for both nature conservation and recreational use. The natural values in some sections of Royal NP have been degraded through overuse, particularly in the wetter parts such as the rainforest areas and along the coast. Management practices are in place to rehabilitate the most seriously affected areas. Fire is a serious problem for Royal NP and has had a significant impact on vegetation structure and composition and some animal populations in recent years. Major bushfires, in which 50 percent or more of the park was burnt, occurred in the 1968/69, 1988/89, 1993/94 and 2001/2002 fire seasons. The most severe event occurred in January 1994 and affected 95.7 percent of the park. Garawarra SCA has had fewer fires than Royal NP. This could be attributed to the moist vegetation communities, the terrain and lower visitation. A major fire occurred within the park in the 1993/94 fire season and affected 52 percent of the reserve. Pest animal species within Royal NP include cats, dogs, pigs, fallow deer ( <i>Dama dama</i> ) and Javan rusa deer ( <i>Cervus timorensis</i> ). The deer are survivors of animals introduced to the park in the early 20th century and have had a considerable impact on vegetation structure, regeneration of native species and soil stability. Deer control measures have been implemented with the ultimate aim of eradicating deer from the park in a humane manner (Australian Heritage Database, 2019).

The existing Statement of Significance for this item states:

*“Royal National Park (Royal NP) and Garawarra State Conservation Area (Garawarra SCA) constitute a major centre of temperate plant species richness, having one of the richest concentrations of plant species in temperate Australia with more than 1000 species. The place is also extremely rich in perching birds, reptiles and butterflies and can be regarded as exemplifying the biodiverse Hawkesbury Sandstone environment.*

*“Royal NP was the second National Park to be established in the world after Yellowstone and the first in Australia. Its declaration in 1879 marked the beginning of the development of Australia’s National Park system of protected areas. Establishment of the park as a recreation area for the then residents of Sydney also marks a time when public attitudes towards the Australian natural environment were becoming more appreciative. With greater access to and use of natural areas for recreation, the public’s concern for the natural environment grew and this, in part, influenced the evolution of a broader conservation movement. The establishment of Royal NP is considered to be the beginning of the Australian conservation movement”* (Australian Heritage Database, 2019).

This Statement of Significance was last updated 15 December 2006.

## 5.8 Heathcote National Park

Heathcote National Park has been assessed against SHR Criterion in the existing listing. The application of criteria from the listing is quoted in the table below.

**Table 5-8 Significance assessment – Heathcote National Park** (NSW Office of Environment & Heritage, 2019)

Significance Criteria	Application of Criteria (Existing Assessment)
<b>Historical significance SHR criteria (a)</b>	The listing does not assess the item under this criterion.
<b>Historical association significance SHR criteria (b)</b>	The listing does not assess the item under this criterion.
<b>Aesthetic significance SHR criteria (c)</b>	Representative. The park is situated in rugged sandstone country, between the Woronora River in the west and the Illawarra Railway to the east. The Hawkesbury sandstone geology exhibits many interesting cliff and rock formations. These have evolved from deposition some 200 million years ago, with subsequent uplifting and stream erosion beginning about 94 million years ago. The park conserves a wide variety of habitats. Ridge top open forests with Angophoras, Grey Gum, Red Bloodwood and Gnarled Banksia. Sheltered valley side scrubland with Sydney Peppermint and Blackbutt in the bottom of the valley. Open Heathlands as well. Wide variety of characteristic wildflowers including Gynea Lilies, Grass trees, Banksias, Hakeas and Grevilleas. Small native mammals may occasionally be seen, though most are nocturnal. Reptiles and many species of birds.
<b>Social significance SHR criteria (d)</b>	The listing does not assess the item under this criterion.
<b>Technical/Research significance SHR criteria (e)</b>	Representative.
<b>Rarity SHR criteria (f)</b>	The listing does not assess the item under this criterion.
<b>Representativeness SHR criteria (g)</b>	The listing does not assess the item under this criterion.
<b>Integrity/Intactness</b>	The listing does not assess the item under this criterion.

The existing Statement of Significance for this item states:

*“National Park conserving rugged Hawkesbury sandstone topography, and a wide variety of habitats along freshwater creeks, for mammals, reptiles and birdlife. Forms part of the large natural landscape separating the Sydney and Illawarra urban areas. State significance”* (NSW Office of Environment & Heritage, 2019).

This Statement of Significance was last updated 26 February 2010.

## **5.9 Discussion**

The identified listings located in proximity to the proposed area of works are predominantly related to Waterfall Railway Station. While the original station platform building and the five residences located in proximity to the station have all been demolished, extant features in intact condition include the water tank, the water column, the turntable and the pair of semi-detached houses. These items should be avoided from further impacts.

The proposed works will not directly or indirectly impact the existing heritage significance for the Royal National Park and Garawarra State Conservation Area of natural values, or on the values of the adjacent non-statutory RNE listed Heathcote National Park.

## **5.10 Historical Archaeological Potential**

The Project area would be located within the current rail corridor. The area has been subjected to high levels of impacts from the construction, use and ongoing development of the railway line, including modifications to the platform and rail alignments. The extension of the station platform would occur over an area that has not had any other rail infrastructure present, with the exception of the current tracks.

The new staff amenities building would be located on the western side of the rail corridor, to the north west of the station. This assessment has not identified any previous structures constituting archaeological potential in this section of the corridor.

Based on the understanding of the historical development of the railway station and corridor and site inspection, there is likely to be no historical archaeological remains associated with any former railway infrastructure or earlier structures built on the site.

## 6.0 Impact assessment

### 6.1 Proposed Impacts

#### 6.1.1 Direct Impacts

Discussion of the proposed works in relation to direct impacts is discussed in relation to each of the identified heritage items in the table below.

Listed Item	Proposed Impact
Royal National Park and Garawarra State Conservation Area (#105893)	No direct impacts have been identified in relation to this item.
Heathcote National Park (#1530)	No direct impacts have been identified in relation to this item.
Waterfall Railway Station Group (#101153)	This item's listing is on the non-statutory RNE. It was confirmed during the inspection that one of the key aspects of this listing (the 1905 platform building) has already been removed and replaced, and the overall aesthetic has already been altered by replacing entry stairs with a ramp and removing the listed row of cottages that were visible from the platform to the immediate east of the station. The remaining aspects specified as contributing to this listing's significance (the turntable, water tank and water column) will not be subject to any direct impacts, but the landscape connecting all these features will be altered.
Waterfall Turntable, Watering Facilities & Movable Items (SRA#139); (SHI#4801139)	No direct impacts are proposed to the turntable and watering facilities. The watering facilities are 160 m north of the extended platform and new facilities. The turntable is on the opposite side of the tracks from the proposed works. One repercussion of the proposed works is that due to the reconfiguration of tracks, steam trains travelling in the down direction will no longer be able to use the heritage tank to fill up. Steam trains travelling in the up direction will still be able to use the tank. It is proposed that a water hydrant will be placed on the opposite side of the tracks to the existing water tank to service steam trains travelling in the down direction. Although not a physical impact, this limitation will reduce the use of the existing water tank and impact on its connection to the wider rail network and landscape. A reduction of use of the existing water tank is a heritage impact in that it alters the current use of this feature. Access to the water tank will also be blocked for periods of the construction but an alternate water source will be provided during this time.
Waterfall Railway turntable (#A4003)	No direct impacts are proposed to the turntable which is on the opposite side of the tracks from the proposed works.
Row of 3 railway workers' cottages including Community College (#A4004)	It was confirmed during the inspection that this item has been destroyed, as the cottages were removed in 2016. An impact assessment is not appropriate for a previously destroyed item.
Pair of semi-detached houses (#4001)	No direct impacts have been identified in relation to this item.
Watertank (#A4005)	No direct impacts have been identified in relation to this item, but as noted above access for its use will be limited to steam trains travelling in the up direction, altering its current use.

As previously noted, the sidings and yards contribute to the heritage value of Waterfall Railway Station as a visual landscape and physical connections relating to steam engine use at Waterfall. The proposed works will alter the existing fabric and visual aesthetic of the sidings and yards on the western side of the station. They will also limit steam train use of the water tank to those travelling in

the up direction only. Although the impact to steam train use will be mitigated by installing a water hydrant on the opposite side of the tracks to the existing water tank to service steam trains travelling in the down direction (a refilling option already adopted elsewhere in the rail network to address water access for Heritage Trains), the reduction in use of the water tank is an impact on its heritage significance as it affects how the item is contextualised within the wider rail network.

No direct impacts are proposed to the current platform building, which houses plaques and interpretation boards displayed on its eastern wall.

### 6.1.2 Indirect Impacts

Discussion of the proposed works in relation to indirect impacts is discussed in relation to each of the identified heritage items in the table below.

Listed Item	Proposed Impact
Royal National Park and Garawarra State Conservation Area (#105893)	It is likely the elevated footbridge may be visible if close by, but it is highly unlikely to present a visible impact to the park itself. A separate impact assessment under <i>Significant Impact Guidelines 1.1</i> is presented below in Section 7.4.
Heathcote National Park (#1530)	No direct impacts have been identified in relation to this item.
Waterfall Railway Station Group (#101153)	This item's listing is only on the non-statutory RNE but it does include the Waterfall Railway Turntable and Watering Facilities (water tank and column), which are listed on the RailCorp s.170 Register and the Sutherland Shire LEP 2015. Those items are discussed separately below, but it should be noted in relation to their relationship to each other that the proposed works will permanently alter the existing visual aesthetic at Waterfall Railway Station.
Waterfall Turntable, Watering Facilities & Movable Items (SRA#139); (SHI#4801139)	The proposed works will have a permanent visual impact in the area adjacent to the turntable and watering facilities. The extended platform and new facilities will not obscure views to the items but will present increased viewing capacity for the general public. The extended platform and new facilities will be 40 m closer to the watering facilities (still 160 m further north) and provide additional vantages to view the turntable across the tracks to the east. There is a risk for accidental impacts to these items during works due to works being undertaken in the vicinity, but these can be avoided through control measures.
Waterfall Railway turntable (#A4003)	The proposed works will have a permanent visual impact in the area adjacent to the turntable. The extended platform will provide additional vantages to view the turntable across the tracks to the east. There is a risk for accidental impacts during works being undertaken in the vicinity, but these can be avoided through control measures.
Row of 3 railway workers' cottages including Community College (#A4004)	It was confirmed during the inspection that this item has been destroyed, as the cottages were removed in 2016. An impact assessment is not appropriate for a previously destroyed item.
Pair of semi-detached houses (#4001)	No indirect impacts have been identified in relation to this item.
Watertank (#A4005)	The proposed works will have a permanent visual impact as the extended platform and new facilities will be 40 m closer to the watertank (still 160 m further north). There is a risk for accidental impacts during works undertaken in the vicinity, but these can be avoided through control measures.

The visual impacts to the sidings and yards on the western side of the station as well as other visual and indirect impacts can potentially be mitigated by ensuring a heritage sympathetic design is considered during detailed design for the Proposal.

Other indirect impacts could accidentally be caused by vibration and accidental damage during construction works, however these potential impacts can be managed through the application of appropriate control measures such as ensuring safe work offset distances are maintained between vibration intensive machinery and heritage structures.

### **6.1.3 Materials and Finishes**

At this stage detailed design has not been undertaken for the proposed works and so an assessment of options for materials and finishes is not possible at this time.

### **6.1.4 Summary of Heritage Impacts**

Direct impacts have predominantly been avoided, with the exception of the current platform, rail sidings and yards, which are only listed as part of the non-statutory RNE item Waterfall Railway Station Group (#101153). Although these areas are not specified as contributory in the existing listings, they form part of the wider landscape connecting elements like the turntable, water tank and water spout, giving context to the narrative of steam engine use at Waterfall. The proposed works will cause a permanent alteration to the visual aesthetic at Waterfall Railway Station and reduce the ongoing use of the water tank by Heritage Trains.

## 6.2 Impacts to Heritage Significance

Potential impacts to the heritage significance of Waterfall Railway Station as a result of the Proposal are summarised in Table 6-1. As this listing includes the turntable, water tank and water column as contributory elements of the listing they have not been assessed separately.

**Table 6-1 Assessment of impacts to heritage significance of the Waterfall Railway Station Group**

<b>Criterion</b>	<b>Significance</b>	<b>Action</b>
<b>Historical significance SHR criteria (a)</b>	The Waterfall Railway Station Group has historical significance as evidence of steam train technology at a major locomotive depot developing since the station opened in 1886 through to contemporary travel still being undertaken there at the time of this assessment.	The various elements (including the turntable, water tank and water spout) require visual and physical connection in the contemporary landscape to maintain the overall connection to the binding narrative of steam train use at Waterfall. The water tank will be retained in use but its accessibility will be impacted.
<b>Historical association significance SHR criteria (b)</b>	The item does not meet this criterion.	Not relevant.
<b>Aesthetic significance SHR criteria (c)</b>	The turntable, water tank and water column are of technical significance as technologically illustrative of the functioning of steam trains. The water tank is of aesthetic significance as a landmark visible from the Princes Highway and Waterfall Railway Station. The 1905 timber island station building had aesthetic value as a large timber island station building with projecting roof at one end and an awning each side supported on timber rafters and simple brackets, but this structure was removed and replaced in 1995. The current structure is a green coloured steel and concrete platform building with associated canopy, connecting via concrete ramp with canopy to the street (the ramp having replaced the previous access by timber stairs). Like the original platform building, the current one is linear containing facilities such as the ticket office, station master's office and toilets. The ticket office faces the entrance ramp.	The turntable, water tank and water column are being avoided from direct impacts. The proposed works provide an opportunity to increase public access and visibility for these elements of the historical landscape.  The proposed works would alter the visual aesthetic between all three items as the visual connection between these items would be interpreted. New views to each of these items would also be created, however, the construction of the overbridge would create a new visual block.



Criterion	Significance	Action
<b>Social significance SHR criteria (d)</b>	The place has the potential to contribute to the local community's sense of place and can provide a connection to the local community's past.	Avoidance of impacts to the turntable, water tank and water column mean that they key physical elements for community attachment will be kept intact. The detailed design should consider public attachment to the station.
<b>Technical/ Research significance SHR criteria (e)</b>	The item does not meet this criterion.	Not relevant.
<b>Rarity SHR criteria (f)</b>	The Waterfall turntable is locally rare, being one of three turntables now extant on the Illawarra line (Bomaderry, Waterfall and Kiama), as well as the water tank and water spout of which there are few in the metropolitan railway network.	The turntable, water tank and water column are being avoided from direct impacts. The proposed works provide an opportunity to increase public access and visibility for these elements of the historical landscape.
<b>Representativeness SHR criteria (g)</b>	The 1908 turntable and 1905 water tank and water column are representative structures from the steam technology period of railway operation.	The turntable, water tank and water spout require visual and physical connection in the contemporary landscape to maintain the overall connection to the binding narrative of steam train use at Waterfall. This connection is impacted by the proposed works, predominantly by limiting access to the water tank.

## 7.0 Statement of Heritage Impact

### 7.1 Introduction

The objective of a Statement of Heritage Impact is to evaluate and explain how the proposed development, rehabilitation or land use change would affect the heritage value of the site and/or place. A Statement of Heritage Impact should also address how the heritage value of the site/place can be conserved or maintained, or preferably enhanced by the Proposal.

This report has been prepared in accordance with the NSW Heritage Office & Department of Urban Affairs and Planning *NSW Heritage Manual* (1996) and NSW Heritage Office *Statements of Heritage Impact* (NSW Heritage Office, 2002). The guidelines pose a series of questions as prompts to aid in the consideration of impacts based on the type of Proposal. The Proposal involves major additions to the station. The guideline suggests the following questions be used to direct discussion in relation to major additions:

#### Major Additions

- How is the impact of the addition on the heritage significance of the item to be minimised?
- Can the additional area be located within an existing structure? If not, why not?
- Will the additions visually dominate the heritage item?
- Is the addition sited on any known, or potentially significant archaeological deposits? If so, have alternative positions for the additions been considered?
- Are the additions sympathetic to the heritage item? In what way (e.g. form, proportions, design).

In addition, the proposed works have been identified as having an impact on the assessed aesthetic and representative significance of the station. The guidelines do not provide questions that are of relevance to the proposed works. The following question has been developed to specifically address the potential impacts:

- How is the impact of the proposed works on the heritage significance of the item to be minimised?

### 7.2 Process Questions

#### 7.2.1 Major Additions

**How is the impact of the addition on the heritage significance of the item to be minimised? Are the additions sympathetic to the heritage item? In what way?**

The impacts will be minimised through design, with an opportunity to increase public access and views to the contributory items of the turntable, water tank and water column. These three items will be avoided from direct impacts.

**Can the additional area be located within an existing structure? If not, why not?**

No, the additional structures consist of new facilities, a new point of access via an overbridge and an extension to the existing platform.

**Will the additions visually dominate the heritage item? Are the additions sympathetic to the heritage item? In what way (e.g. form, proportions, design)?**

Detailed design has not yet been undertaken. The design of the new facilities and overbridge have the potential to visually dominate the station and surrounding area. An opportunity still exists during the detailed design for the additions to be designed in such a way as to avoid visually dominating the heritage item. This can include retaining visual connections between the turntable, water tank and water column.

**Is the addition sited on any known, or potentially significant archaeological deposits? If so, have alternative positions for the additions been considered?**

No known or potential archaeological deposits have been identified in the area of proposed works.

**How is the impact of the proposed works on the heritage significance of the item to be minimised?**

Impacts have been minimised by avoiding and retaining the turntable, water tank and water column. Although access to it has been reduced the water tank will be retained in use by Heritage Trains approaching travelling in the up direction. Further opportunities to minimise visual impacts and increase the connectivity of the elements present at this location may be found during detailed design.

### 7.3 Statement of Heritage Impact

From the assessment against the NSW Heritage Division guidelines (NSW Heritage Office, 2002), the potential impacts to the Waterfall Railway Station Group have been assessed. These are graded to determine their impact against the significance of the site and are detailed in Table 7-1.

**Table 7-1 Summary of the nature of impacts**

Impact Type	Impact
Major negative impacts (substantially affects fabric or values of State significance)	N/A
Moderate negative impacts (irreversible loss of fabric or values of local significance; minor impacts on State significance)	N/A
Minor negative impacts (reversible loss of local significance fabric or where mitigation retrieves some value of significance; loss of fabric not of significance but which supports or buffers local significance values)	Visual impacts at Waterfall Railway Station will be caused by the introduction of new elements (the Proposal). Fabric impacts will occur to the platform, sidings and yards. The water tank's usage will be reduced due to access restrictions.
Negligible or no impacts (does not affect heritage values either negatively or positively)	N/A
Minor positive impacts (enhances access to, understanding or conservation of fabric or values of local significance)	N/A
Major positive impacts (enhances access to, understanding or conservation of fabric or values of state significance)	There is an opportunity to increase public access and views to the turntable, water tank and water column.

### 7.4 Impact Assessment to National Heritage Listed site

An impact assessment is required to be undertaken as part of this Project as per the explanation presented in *Significant Impact Guidelines 1.1* from the Department of Environment as the Project will occur immediately adjacent to the boundary of the Royal National Park and Garawarra State Conservation Area. Specifically, any action that is likely to have a significant impact on the National

Heritage values of a National Heritage place must be assessed to determine if there is a real chance or possibility that it will cause:

- one or more of the National Heritage values to be lost; or
- one or more of the National Heritage values to be degraded or damaged; or
- one or more of the National Heritage values to be notably altered, modified, obscured or diminished.

As a result the adjacent Royal National Park and Garawarra State Conservation Area must be assessed to demonstrate there is no possibility of impact to the National Heritage values or significance elements associated with the NHL listing (Department of the Environment, 2013).

Significant elements associated with the NHL listing include more than 1,000 species of temperate plants located within the National Park. Included in the NHL listing are Indigenous heritage sites that are known to exist within the park boundary, including rock art, shell middens, burials, engravings and stone tool sites. No natural or cultural heritage sites would be impacted by the proposed works, as the Project area is located outside of the NHL listed area.

The NHL listing of the Royal National Park and Garawarra State Conservation Area is contained within the listing boundary itself, with no views or vistas identified looking into, or out from, the National Park from its western boundary over the railway line. The Project would include the construction of an elevated footbridge. It has been assessed that the footbridge may be visible if close by within the National Park, however, it would not have any impact to any recognised views and vistas from the western side of the park.

Considering the proposed works will not have a direct or indirect impact to the identified National Heritage values, significance or significant elements associated with the NHL listing of the Royal National Park and Garawarra State Conservation Area, the overall impact would be *Minor*. As such, no referral to the Commonwealth Department of Energy and Environment is required. The overall impact is provided in Table 7-2.

**Table 7-2: Impact severity summary**

Impact metric	Impact	Severity
Intensity	Extension of the station platform; Modifications to the stabling yard; Staff amenities; Elevated footbridge; Track reconfiguration; Vehicle access; and Ancillary works including lighting and CCTV	Minor
Scale	Indirect impact from construction of the elevated footbridge	Minor
Duration	Permanent visibility of the elevated footbridge only	Moderate
Timing/frequency	One off construction schedule	Minor

## 8.0 Recommendations

The following mitigation measures are recommended to minimise impacts.

### 8.1 Recommendation 1 – Platform Extension Works

Where practicable the following elements should be considered for incorporation into the detailed design phase of the project in relation to the proposed platform extension:

- Consideration should be given to the relationship between the heritage items in the current landscape and how the proposed works will alter views to and from the water tank, column and turntable
- if possible the new brickwork should match the original in terms of brick colour, mortar composition and brick orientation (bricks to be laid in the Flemish bond – alternating between header and stretcher alignment)
- every effort should be made to retain and/or reuse all existing fabric from the current platform
- if possible new services, outlets, wall units and brackets (etc.) should be located in areas already modified and/or consolidated within the extended section (i.e. – avoiding impacts to the original platform as much as possible).

### 8.2 Recommendation 2 – Documentation and Consultation

The turntable, column and water tank are listed on the Sutherland Shire LEP 2015. Sutherland Shire Council should be informed of any works that may impact upon it and given 21 days to respond. Following completion of works, the S170 listing description and historical context should be updated to document the new works and elements within the precinct. This should be undertaken by the Sydney Trains Heritage team. Consideration should be given to undertaking a photographic recording of the station in relationship with the views to and from the water tank, column and turntable. Any photographs that are taken should be provided to the Sydney Trains Heritage team to assist in updating the S170 listing.

### 8.3 Recommendation 3 – Heritage Interpretation

The existing heritage interpretation signage should be retained. Contractors should be made aware of the plaques and interpretation boards displayed on the eastern wall of the platform building, and ensure they are not accidentally impacted during works.

### 8.4 Recommendation 4 – Item Protection

A heritage induction should be provided to all on-site staff and contractors involved in the Proposal. The induction should clearly describe the heritage significance of the site, including individual items and heritage fabric. Other management measures should be considered to ensure the water tank, column and turntable are protected during the works from accidental impacts. Measures may include such controls as protective fencing, item specific awareness the heritage induction and vehicle/equipment movement plans maintaining a buffer around these items during works. The Construction Environmental Management Plan (CEMP) should include stop work procedures in accordance with Transport for NSW's (TfNSW's) *Unexpected Heritage Finds Guideline* (Transport for NSW, 2015) to manage activities in the unlikely event that intact archaeological relics or deposits are encountered.

## 9.0 References

- AECOM (2017). Visual Impact Assessment – Victoria Street Station Upgrade. Sydney, Australian Government. (2019). Australian Heritage Database. Retrieved from [http://www.environment.gov.au/cgi-bin/ahdb/search.pl?mode=search\\_form](http://www.environment.gov.au/cgi-bin/ahdb/search.pl?mode=search_form)
- Australian Museum Consulting. (2015). *Heritage Platforms Conservation Management Strategy*. Department of Sustainability Environment Water Population and Communities. (2013). *Actions on, or impacting upon, Commonwealth land, and actions by Commonwealth agencies*. Canberra, ACT: Australian Government.
- Department of the Environment. (2013). *Matters of National Environmental Significance, Significant Impact Guidelines 1.1*. Canberra, ACT: Australian Government.
- Evening News (Sydney:1869-1931). (1906, July 2). Our Overcrowded Asylums. Selecting a Site for Consumptive Home. Premier and Experts Visit Coastal Tablelands.
- Government Gazette of the State of New South Wales (Sydney NSW:1901-2001). (1976, March 19). Geographical Names Act, 1966.
- ICOMOS (Australia). (2013). *The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance*. Burwood, Victoria, Victoria: Australia ICOMOS. Retrieved from <http://australia.icomos.org/wp-content/uploads/The-Burra-Charter-2013-Adopted-31.10.2013.pdf>
- Jervis, J. (1942). Illawarra: A Century of History, 1788-1888. *Royal Australian Historical Society Journal and Proceedings*, 28(6), 354–374. Retrieved from <https://nla.gov.au/nla.obj-602827165/view?sectionId=nla.obj-602827100&searchTerm=Bottle+Forest+Heathcote+Parish&partId=nla.obj-602827117#page/n97/mode/1up/search/Bottle+Forest+Heathcote+Parish>
- NSW Heritage Office. (1999). Victoria Street Railway Station Group.
- NSW Heritage Office. (2001). *Assessing Heritage Significance*. Parramatta. Retrieved from <http://www.heritage.nsw.gov.au/docs/assessingheritagesignificance.pdf>
- NSW Heritage Office. (2002). *Statements of Heritage Impact*. Parramatta: Heritage Office.
- NSW Heritage Office, & NSW Department of Urban Affairs and Planning. (1996). *NSW Heritage Manual*. Parramatta: Heritage Office & Department of Urban Affairs & Planning.
- NSW Office of Environment & Heritage. (2019). NSW State Heritage Register.
- Office of Rail Heritage. (2013). *Conservation Guide: Railway Station Platforms*.
- Singleton, C. C. (1984). *Railway History in Illawarra , New South Wales (4th ed.)*. Wollongong, NSW: Illawarra Historical Society Publications.
- Sutherland Shire Council. (2018). *Origin of Place Names (A-K)*. Retrieved from <https://www.sutherlandshire.nsw.gov.au/Council/About-the-Shire/Shire-Suburb-Origins>
- Sydney Trains. (2014). *Sydney Trains Environmental Management System Technical Specification Statement of Heritage Impact*.
- Transport for NSW. (2015). *Unexpected Heritage Finds Guideline*. Sydney, Australia: Transport for NSW.

## Appendix A – Plans





## Appendix B – Laydown Areas

