HEALTH INFRASTRUCTURE

Review of Environmental Factors

Moree Hospital Redevelopment

Prepared by GeoLINK (ABN 79 896 839 729)

Version Number 3

Declaration

This Review of Environmental Factors (REF) has been prepared for NSW Health Infrastructure (HI) and assesses the potential environmental impacts which could arise from the redevelopment (demolition works and construction of an Acute Services Building) at Moree Hospital, 58 Victoria Terrace, Moree (Lot 11 DP1113157) (Activity).

This REF has been prepared in accordance with the relevant provisions of the *Environmental Planning and Assessment Act 1979* (EP&A Act), the *Environmental Planning and Assessment Regulation 2021* (EP&A Regulation) and *State Environmental Planning Policy (Transport and Infrastructure) 2021* (TI SEPP).

This REF provides a true and fair review of the Activity in relation to its likely impact on the environment and the information it contains is neither false nor misleading. It addresses to the fullest extent possible all the factors listed in Section 3 of the *Guidelines for Division 5.1 Assessments* (DPE June 2022), the *Environmental Planning and Assessment Regulation 2021* and the *Commonwealth Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act)*.

Based upon the information presented in this REF, it is concluded that, subject to adopting the recommended mitigation measures, it is unlikely there would be any significant environmental impacts associated with the Activity. Consequently, an *Environmental Impact Statement* (EIS) is not required.

Declaration	
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Declaration in relation to the updated 20 August 2024 version

This Review of Environmental Factors (REF) was prepared by GeoLINK Consulting Pty Ltd (ABN: 79 896 839 729) and has been subsequently updated by NSW Health Infrastructure (HI) (ABN: 45 100 538 161) to reflect updated policy and timeline references in respect of the redevelopment (demolition works and construction of an Acute Services Building) at Moree Hospital, 58 Victoria Terrace, Moree (Lot 11 DP1113157) (**Activity**).

The updates to this REF are consistent with the relevant provisions of the *Environmental Planning and Assessment Act 1979* (EP&A Act), the *Environmental Planning and Assessment Regulation 2021* (EP&A Regulation) and *State Environmental Planning Policy (Transport and Infrastructure) 2021* (TI SEPP).

The resulting REF provides a true and fair review of the Activity in relation to its likely impact on the environment and the information it contains is neither false nor misleading. It addresses to the fullest extent possible all the factors listed in Section 3 of the *Guidelines for Division 5.1 Assessments* (DPE June 2022), the EP&A Regulation and the *Commonwealth Environmental Protection and Biodiversity Conservation Act 1999 (*EPBC Act*)*.

Based upon this updated REF, it is concluded that, subject to adopting the recommended mitigation measures, it is unlikely there would be any significant environmental impacts associated with the Activity. Consequently, an *Environmental Impact Statement* (EIS) is not required in respect of the activity.

Declaration	
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A1	Flood Structural Advice	Northrop	8 December 2023

Abbreviations

Abbreviation	Description
AEC	Area of Environmental Concern
AHD	Australian Height Datum
AHIP	Aboriginal Heritage Impact Permit
AHIMS	Aboriginal Heritage Information Management System BC Regulation
AMG	Australian Map Grid
BC Act 2016	*Biodiversity Conservation Act 2016*
BC Act 2017	*Biodiversity Conservation Act 2017*
BC Regulation	Biodiversity Conservation Regulation 2017
BAM	Biodiversity Assessment Method
CA	Certifying Authority
CE	Chief Executive
CM Act	*Coastal Management Act 2016*
CMP	Construction Management Plan
CWC	Connecting with Country
CRA	Conservation Risk Assessment
DPC	Department of Premier and Cabinet
DPE	Department of Planning and Environment
EIS	Environmental Impact Statement
EMP	Environmental Management Plan
EES	Environment, Energy and Science
EPA	Environment Protection Authority
EP&A Act	*Environmental Planning and Assessment Act 1979*
EP&A Regulation	Environmental Planning and Assessment Regulation 2021
EPBC Act (Cwth)	*Environment Protection and Biodiversity Conservation Act 1999*
EPI	Environmental Planning Instrument
EPL	Environment Protection License
FM Act	*Fisheries Management Act 1994*
Ha	Hectares
HHIMS	Historic Heritage Information Management System
HI	Health Infrastructure
LEP	Local Environmental Plan
LGA	Local Government Area
MPS	Multipurpose Service
MNES	Matters of National Environmental Significance

Abbreviation	Description
NorBE	Neutral or Beneficial Effect on Water Quality Assessment Guideline (2022)
NPW Act	*National Parks and Wildlife Act 1974*
NPW Regulation	National Parks and Wildlife Regulation 2009
NPWS	National Parks and Wildlife Service (part of EES)
NT Act (Cth)	*Commonwealth Native Title Act 1993*
OEH	(Former) Office of Environment and Heritage
PCMP	Preliminary Construction Management Plan
Planning Systems SEPP	State Environmental Planning Policy (Planning Systems) 2021
POEO Act	*Protection of the Environment Operations Act 1997*
Proponent	NSW Health Infrastructure
REF	Review of Environmental Factors
RF Act	*Rural Fires Act 1997*
RFS	Rural Fire Service
Resilience and Hazards SEPP	State Environmental Planning Policy (Resilience and Hazards) 2021
SEPP	State Environmental Planning Policy
SIS	Species Impact Statement
TI SEPP	State Environmental Planning Policy (Transport and Infrastructure) 2021
WM Act	*Water Management Act 2000*

Executive Summary

This Review of Environmental Factors (REF) has been prepared by GeoLINK on behalf of NSW Health Infrastructure (HI) for the determination of the proposed development activity under Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

The Proposal

Health Infrastructure (HI) proposes to carry out redevelopment works generally relating to construction of a new Acute Services Building (ASB) inclusive of earthworks, site preparation, tree removal and car parking at Moree Hospital (MH) located at 58 Victoria Terrace, Moree, NSW. The ASB will consist of a new two-storey building located on the southeastern portion of the site.

The works that are the subject of this REF include demolition of some existing buildings and structures, construction of the ASB with associated covered walkways to connect with existing buildings (B1 and B4), ancillary works including a new (additional) substation and back-up generator and upgraded parking facilities. Several trees will also be removed to enable construction of the new ASB and vehicular access, with the surrounding areas to be landscaped as part of the development.

Need for the Proposal

The NSW Government has committed funding to reconfigure assets to meet contemporary standards in models of care and facility design at the Moree, Gunnedah, and Glen Innes Hospitals to improve sustainability and efficiency across the health service. The three small hospitals, which fall within the Hunter New England Local Health District (HNELHD), had individual funding confirmed in the 2020/ 21 State budget as separate projects.

Moree District Hospital is a C2 District level facility that delivers a range of clinical services including emergency medicine, acute care, surgery, maternity, and outpatient care. With the existing infrastructure developed progressively over the past century, the proposal aims to modernize the hospital. The current site has been developed in an ad hoc nature over many decades with sporadic investment, which has resulted in very poor functional and clinical relationships within the current hospital.

A new ASB facility, located on the existing site, is required to support the delivery of contemporary models of care and quality services for the future healthcare needs of the catchment population of the Moree District.

Proposal Objectives

The primary objective of the Activity is to deliver the construction of a new Acute Service Building (ASB) to provide a contemporary health care facility that is culturally appropriate, welcoming, and inclusive to service the community of Moree now and into the future.

Secondary objectives for the Activity of the site include:

- Minimising impacts on ongoing operations of the Hospital.
- Minimising visual, noise and vibration impacts on adjoining properties.
- Minimising risk from hazardous materials (HAZMAT).
- Minimising traffic impacts.
- Minimising soil impacts.
- Maintaining adequate services.

Options Considered

Several options for upgrading the existing Moree Hospital were investigated. Analysis of options has been undertaken to determine the best future direction for Moree Hospital.

The following options were analysed:

- Option 1 – Base Case: Urgent Repairs.
- Option 2 – Hybrid New Build/ Refurbishment Limited Demolition.
- Option 3 – Hybrid New Build/ Refurbishment with Full Demolition.
- Option 4 – Greenfield New Build and Full Demolition of Existing Site.

Option 3 was initially selected as the preferred option and was documented in the endorsed site masterplan that was prepared by Nettleton Tribe Architects.

The endorsed site masterplan was reviewed by Besix Watpac and STH Architects for site suitability and from a value engineering perspective. During this process, the project team explored variations to the endorsed masterplan and graded the site plans against the following design criteria;

- Functionality.
- Context and Connectivity.
- Resilience.
- People and Amenity (Emotional).
- Constructability.

Several options were explored in this process with key considerations being:

- Affordability.
- Staging.
- Decanting.
- Site restraints and opportunities.
- Existing building adaptive reuse.
- Future expansion within the site.

The preferred option, which is assessed as part of this Review of Environmental Factors, was to create a compact new build over two floors that allowed minimal impact to current hospital functions.

Site Details

The site is located within the existing Moree Hospital grounds at 58 Victoria Terrace, Moree, NSW. The land is described in real property terms as Lot 11 DP 1113157. The site is located within the Moree Plains Local Government Area (LGA), within the New England North-West Region of NSW. The site is located centrally in the town of Moree, on the south of the Mehi River. Recreational areas adjacent to the river adjoin the site to the north and east, residential areas adjoin the site to the south and the Whiddon Moree (previously Fairview Retirement Village) occupies the site to the west.

Planning Approval Pathway

Section 4.1 of the Environmental Planning and Assessment (EP&A) Act states that if an environmental planning instrument (EPI) provides that development may be carried out without the need for development consent, a person may carry the development out, in accordance with the EPI, on land to which the provision applies. However, the environmental assessment of the development is required under Part 5 of the Act.

State Environmental Planning Policy (Transport and Infrastructure) 2021 (TI SEPP) aims to facilitate the effective delivery of infrastructure across the State. Division 10 of the TI SEPP outlines the approval pathways for health services facility development.

The site is located within the Moree Plains Shire LGA. The site is zoned R1 General Residential under the Moree Plains Local Environmental Plan (LEP) 2011.

Moree Hospital is defined as a health service facility under the standard Local Environmental Plan (LEP) instrument:

*A **health services facility** means a building or place used to provide medical or other services relating to the maintenance or improvement of the health, or the restoration to health, of persons or the prevention of disease in or treatment of injury to persons, and includes any of the following:*

a. *a medical centre,*
b. *community health service facilities,*
c. *health consulting rooms,*
d. *patient transport facilities, including helipads and ambulance facilities,*
e. *hospital.*

The uses can then be further defined as follows:

*A **hospital** means a building or place used for the purpose of providing professional health care services (such as preventative or convalescent care, diagnosis, medical or surgical treatment, psychiatric care or care for people with disabilities, or counselling services provided by health care professionals) to people admitted as in-patients (whether or not out-patients are also cared for or treated there), and includes ancillary facilities for (or that consist of) any of the following:*

- *day surgery, day procedures or health consulting rooms,*
- *accommodation for nurses or other health care workers,*
- *accommodation for persons receiving health care or for their visitors,*
- *shops, kiosks, restaurants, or cafes or take away food and drink premises,*
- *patient transport facilities, including helipads, ambulance facilities and car parking,*
- *educational purposes or any other health-related use,*
- *research purposes (whether carried out by hospital staff or health care workers or for commercial purposes),*
- *chapels,*
- *hospices,*
- *mortuaries.*

Section 2.61(1) of TI SEPP enables the erection or alteration of, or addition to, a building that is a health services facility, and demolition of buildings carried out for the purposes of a health services facility, to be carried out by or on behalf of a public authority, without consent, on any land provided the development is carried out within the boundaries of an existing health services facility. The proposed demolition and construction of ASB within the grounds of Moree Hospital can therefore be undertaken without development consent.

The project, however, becomes an ‘Activity’ for the purposes of Part 5 of EP&A Act and is subject to an environmental assessment (Review of Environmental Factors). The development is considered an ‘Activity’ in accordance with Section 5.1 of the EP&A Act because the development involves demolition and construction of a new building within the boundaries of a health services facility carried out by HI (public authority).

Consultation and Engagement

The Activity triggers statutory consultation requirements pursuant to Sections 2.12, 2.45 and 2.62 of the TI SEPP, requiring notification to Council and adjoining occupiers of land. Written notice was provided to Council and the occupiers of adjoining land on 17 November 2023. A meeting was also held between Council and the HI project team

to discuss the project and obtain Council's position on flood impacts and floor levels of the proposed Activity. No public submissions were received during the consultation period.

Notification of the Activity to the NSW State Emergency Service (SES) is required under Section 2.13 of TI SEPP, with written notice provided to SES on the 17 November 2023. A response form NSW SES was received on the 8 December 2023.

Additionally, the project/ design team has consulted with staff, the Local Health Committee, Moree Plains Shire Council, stakeholders' groups and the community throughout the master planning and subsequent design stages dating from April 2022 to November 2023. Consultation summaries have been recorded to capture the details and feedback from the workshops and meetings and online surveys.

The Moree Hospital Redevelopment project team also consulted with the local Aboriginal community and hospital staff to seek their input on creating a culturally safe and welcoming design to meet the objective of the Government Architect of NSW Designing with Country framework. This engagement has been undertaken throughout the project lifecycle and is ongoing via the Aboriginal Design Working Group, Art Working Group, and community consultations.

Environmental Impacts

This REF provides an assessment of the proposed redevelopment of Moree Hospital, including demolition and construction works associated with delivery of the ASB, as well as operational impacts of the new building. It considers, to the fullest extent possible, all matters affecting or likely to affect the environment by reason of the proposed development as is required under the EP&A Act. The REF also sets out the commitments made by HI to manage and minimise potential impacts arising from the development. The REF finds an Environmental Impact Statement (EIS) is not required and this REF is an adequate level of impact assessment.

The redevelopment will generally result in environmental impacts that are either negligible or low. The most notable potential environmental impacts relate to flooding and heritage. There will also be some short-term noise impacts and potential contamination impacts. Additionally, there will be some visual amenity impacts throughout the demolition and construction works. In this case potential impacts will be mitigated and minimized.

The Activity is consistent with the planned redevelopment of the Moree Hospital. The Activity will be perceived positively by the local community and result in a long-term positive impact on health service delivery within the Moree community.

Justification and Conclusion

Based on the identification of potential issues, and an assessment of the nature and extent of the impacts of the activity, it is determined that:

- The extent and nature of potential impacts will not have significant adverse effects on the locality, community, and the environment.
- Potential impacts can be appropriately mitigated or managed to ensure that there is minimal effect on the locality and community.
- From an analysis of the environmental impacts associated with the proposed development activity, it has been determined that preparation of an EIS is not required.
- The proposed development will not have any effect on matters of national significance and approval of the Activity under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* is not required.
- There are no separate approvals or authorisations required in relation to the proposed development activity prior to determination under Part 5 of the EP&A Act or under any other Acts.

Additionally, the Moree Hospital Redevelopment project will ultimately benefit patients, carers, staff and other stakeholders and the wider Moree community, delivering improved and higher quality health care.

It is recommended that HI approve the proposed Activity in accordance with Part 5 of the EP&A Act and subject to adoption and implementation of matters outlined in **Section 6**.

1. Introduction

NSW Health Infrastructure (HI) propose to carry out redevelopment works including demolition of some existing buildings and structures and construction of a new two-storey Acute Services Building (ASB) with associated infrastructure, landscaping and upgraded parking facilities (the proposal) at the Moree Hospital at 58 Victoria Terrace, Moree (the site) as part of their delivery of infrastructure solutions and services to support the healthcare needs of the NSW communities.

This Review of Environmental Factors (REF) has been prepared by GeoLINK on behalf of HI to determine the environmental impacts of the proposed hospital redevelopment at Moree Hospital. For the purposes of these works, HI is the proponent and the determining authority under Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

The purpose of this REF is to describe the proposal, to document the likely impacts of the proposal on the environment and to detail protective measures to be implemented to mitigate impacts.

The description of the proposed works and associated environmental impacts have been undertaken in the context of the *Guidelines for Division 5.1 Assessments* (DPE June 2022), the *Environmental Planning and Assessment Regulation 2021*, and the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The assessment contained within the REF has been prepared having regard to:

- whether the proposed Activity is likely to have a significant impact on the environment and therefore the necessity for an EIS to be prepared and approval to be sought from the Minister for Planning under Part 5 of the EP&A Act; and
- the potential for the proposal to significantly impact *Matters of National Environmental Significance* (MNES) on Commonwealth land and the need to make a referral to the Australian Government Department of Climate Change, Energy, the Environment and Water for a decision by the Commonwealth Minister for the Environment on whether assessment and approval is required under the EPBC Act.

The REF helps to fulfil the requirements of Section 5.5 of the EP&A Act, which requires that HI examine, and fully consider possible, all matters affecting, or likely to affect, the environment by reason of the proposed Activity.

1.1 Proposal Need and Alternatives

Health Infrastructure (HI), in partnership with Hunter New England Health District, identified the requirement to upgrade Moree Hospital to provide enhanced healthcare facilities to service the Moree community.

Moree District Hospital is a C2 District level facility that delivers a range of clinical services including emergency medicine, acute care, surgery, maternity, and outpatient care. The current site has been developed in an ad hoc nature over many decades with sporadic investment, which has resulted in very poor functional and clinical relationships within the current hospital.

Detailed assessments across the Moree Hospital campus were carried out, to determine whether the existing buildings could be sufficiently improved via renovation to provide the required level of health service. The hospital site consists of a number of buildings which have been developed over time, the oldest of which date back to the beginning of the 20th century. These buildings range in size and scale, age, and condition. It was resolved that it would be necessary to demolish several existing ageing buildings within the site as they are outdated. The proposed development aims to deliver a new Acute Services Building (ASB) to allow for the relocation of acute services from existing Building 1, as well as upgrading of associated infrastructure, landscaping and carparking within the site. The existing hospital building will be fully refurbished to current standards and accommodate all the community health and outpatient services as well as administration.

The existing buildings are predominantly located on the western side of the site, with an open lawn space on the eastern site which contains a disused helipad. This eastern area, which sits south of the carparking, was identified as the logical area to build a new ASB to allow for continued operation of the hospital for the duration of the works.

An existing plan showing the existing hospital buildings is provided at **Figure 1**.

Detailed discussion on the options investigated for the upgrade of Moree Hospital is provided in **Section 3.2** of this REF.

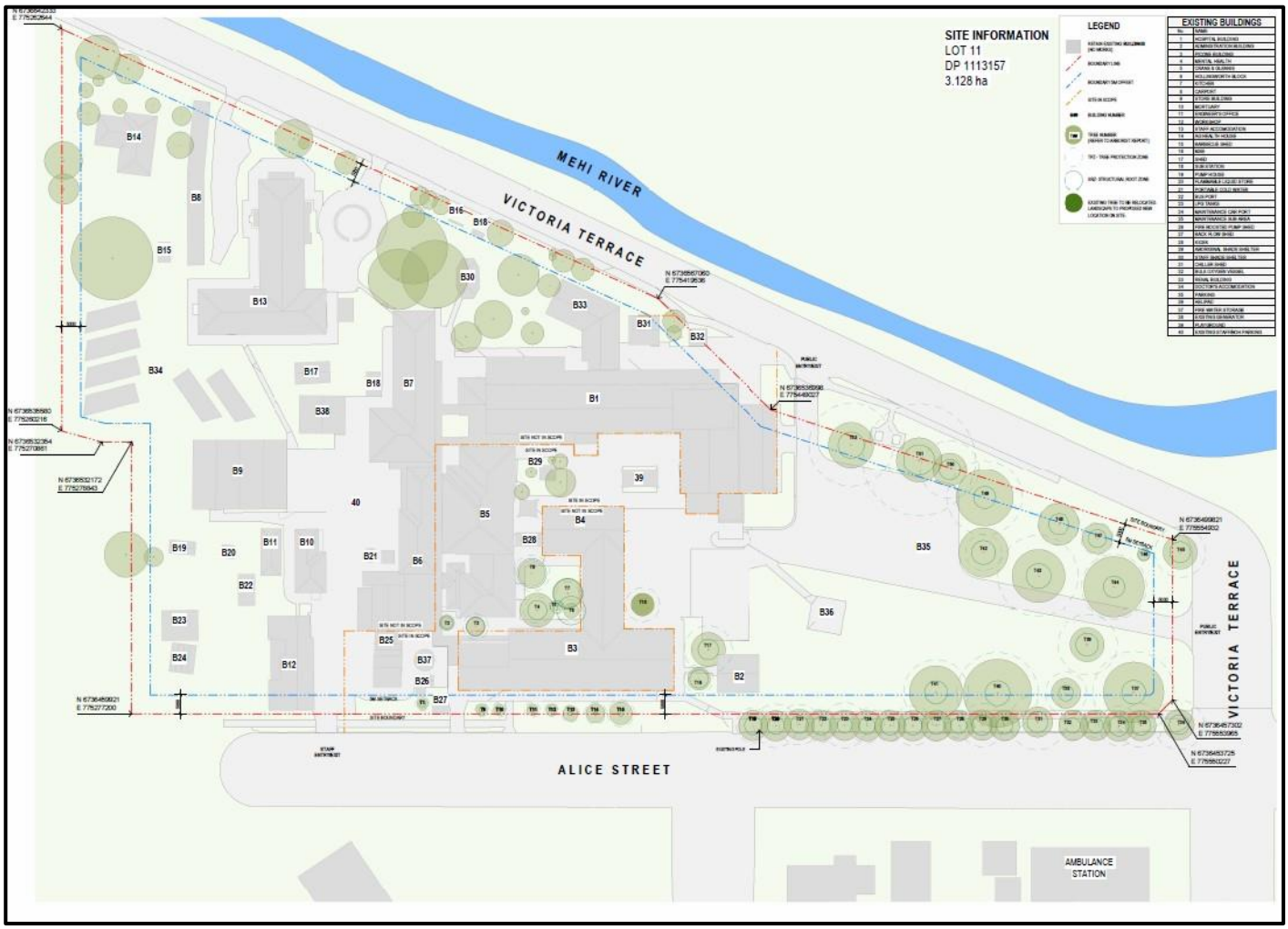


Figure 1 Existing Site Plan showing existing hospital buildings (refer **Appendix A** for larger scaled plan)

2. Site Analysis and Description

2.1 The Site and Locality

The site is the existing Moree Hospital (MH) located at 58 Victoria Terrace, Moree, NSW. The site is described in real property terms as Lot 11 DP 1113157. The site is owned by Health Administration Corporation.

Moree is a regional town located in the north-west region of NSW and is a major agricultural centre. The town was gazetted in 1862 and became a formal municipality in 1890. The Weraerai and Kamilaroi peoples were the original inhabitants of the area. The town is divided into North and South Moree by the Mehi River. The site is located just to the south of the Mehi River and is approximately 3.1244 hectares in area. A Locality Plan is provided at **Illustration 2.1** and a Site Plan is provided at **Illustration 2.2**. An aerial image of the Moree District Hospital is shown in **Figure 2**.

The existing site topography is relatively flat. There is a central crest through the site extending from east to west which peaks in the centre at approximately RL 209.13 m AHD. From this peak, levels fall to both Victoria Terrace to the north and east at RL 208.68 m AHD. Levels also fall from the peak towards Alice Street to the south to RL 208.65 m AHD.

The site is zoned R1 General Residential under the Moree Plains Local Environmental Plan (LEP) 2011. The LEP has identified the site as a 'place of Aboriginal Cultural Significance'. There are no State or locally listed heritage items within the site, however the Moree District Hospital is listed on the NSW Health Section 170 heritage and conservation register and the Glennie and Crane building ('Building 5') is referred to in the listing for the hospital and is assessed as having local heritage significance being one of the original hospital buildings.

There does not appear to be any ecological constraints at the site, with vegetation at the site characterised as planted landscaped gardens, street trees and ornamental plantings. The LEP does not identify the site as having any other environmental constraints, such as being bushfire prone land or flood liable land. However, the site is subject to flood inundation in the mapped probable maximum flood (PMF) event.

Figure 2 Aerial image of the site taken during a flood event in October 2022.

2.1.1 Existing Development

The site is occupied by 33 hospital buildings of various sizes and ages which generally occupy the central and western portion of the site. A labelled plan of the existing buildings on site is provided in **Figure 1** and as shown in **Appendix A**. The eastern part of the site consists of an on-grade carpark to the north and an undeveloped landscaped area with a decommissioned helipad to the south.

The hospital has two frontages, Alice Street and Victoria Terrace. Vehicle access to the hospital is via the two driveways accessible from Victoria Terrace (from the east and north), with on-site carparking available in the northeast portion of the site. Alternative parking is available along Alice Street (formalised perpendicular parking) to the south of the hospital. Other restricted parking areas occur on the site.

The first Moree Hospital building was opened in 1889. Significant additions to the hospital complex included the Glennie and Crane Wards (Building 5) in 1913, the Jones Ward in the 1920's and the McMaster Ward in 1942. Of these early 20th century buildings, only the Glennie and Crane building remains. Most buildings on site date from 1950s onwards, and while dated, are in good condition for their age and will continue to have a useful life for 10 to 20 years. Building 1, which currently houses acute services for the hospital is past its viable use for acute service but will be refurbished as part of the redevelopment works to allow for expansion of community services on the site.

2.1.2 Vegetation/ Existing Ecology

Vegetation on site is highly disturbed with a number of open space areas and a total of 80 scattered planted trees comprising 20 native and 60 exotic species of various sizes, ages, and conditions. Along Alice Street there is an avenue of Council Street trees (Jacarandas) that provides a high level of visual amenity.

Vegetation on site is not representative of any plant community types (PCTs) outlined in the BioNet Vegetation Classification system. One hollow-bearing tree occurs on site. Feeding and refuge habitat for Koala (*Phascolarctos cinereus*) occurs at the site. River Red Gum (*Eucalyptus camaldulensis*) is a regionally recognised Koala food tree species for the Western Slopes and Plains Koala Management Area (DECC, 2008).

No NSW *Biodiversity Conservation Act 2016* (BC Act) or *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) listed threatened flora were recorded on site. No BC Act or EPBC Act listed threatened ecological communities (TECs) occur on site. Five threatened fauna species (Koala - *Phascolarctos cinereus*, Grey-headed Flying-fox - *Pteropus poliocephalus*, Corben's Long-eared Bat - *Nyctophilus corbeni*, Yellow-bellied Sheathtailbat - *Saccolaimus flaviventris* and Large-eared Pied Bat - *Chalinolobus dwyeri*) are considered to potentially occur within the site and study area.

The Mehi River which flows adjacent to the site (approximately 40 m to the north) is identified as containing Key Fish Habitat on the DPI Fisheries spatial data tool.

2.1.3 Existing Services

The site is currently serviced by all essential services/ utilities. The following existing services infrastructure and connections are available to the site:

- **Electrical Infrastructure:** the existing hospital is a Low Voltage (LV) customer, whereby Essential Energy has ownership of the electrical substation currently supplying power to the site and requires easements over substations and HV cabling. Currently the site is being served by 1-off substation and 1-off standby diesel generator. The site is supplied from an Essential Energy Pole Kiosk Substation located adjacent to Victoria Terrace. Consumer mains run below ground from the Kiosk substation to the adjacent LHD main switchboard. The site external main switchboard is located adjacent to the kiosk substation and supplies the site main distribution board within the switchboard building. A standby generator is located under the canopy of the main switchboard building.
- **Communications:** the hospital currently has one Campus Distributors (CD) for the data backbone cabling reticulation, which is in Building 4. It's noted that the current CD is not compliant with the ICT Cabling Standards.
- **Water Supply:** the existing main hospital is surrounded by authority watermains in Victoria Terrace and Alice Street. Potable water is supplied to the hospital from the watermain in Alice Street. An 80 mm authority cold water meter and backflow prevention device is located adjacent to Alice Street. Other hospital potable water infrastructure on site includes water softener, buffer tank, dual booster pumps and a manifold arrangement to supply the various parts/ buildings around the hospital precinct.

- **Sewer connection:** the existing hospital gravity drains via 2 x 150 mm sewer connection points, to the authorities main in Alice Street. It appears the site has been broken up into two catchments.
- **Gas:** the existing main hospital precinct is supplied from 3 x 7.5kL Liquified Petroleum Gas (LPG) tanks.

2.1.4 Access and Parking Facilities

Primary vehicle access for the public is provided from Victoria Terrace to the main carparking area for the hospital.

The site has three main vehicular crossover points;

- an existing site entry point from Victoria Terrace (east of the site) to the main carpark area;
- an existing site exit point to Victoria Terrace (to the north) from the main carpark area; and
- a combined staff and back of house entry/ exit point from Alice Street.

There are five carparking areas within the hospital grounds, with a total provision of 83 car spaces.

2.1.5 Site Considerations and Constraints

Section 10.7 Planning Certificate No. 15561 dated 9 November 2022 identifies that the site is located within the R1 General Residential zone under the Moree Plains Local Environmental Plan 2011 and is provided at **Appendix B**.

Table 1: Section 10.7 Planning Certificate

Affectation	Yes	No
Critical habitat		✓
Conservation area		✓
Item of Environmental Heritage		✓
Area of Aboriginal Significance	✓	
Affected by coastal hazards		✓
Proclaimed to be in a mine subsidence district		✓
Affected by a road widening or road realignment		✓
Affected by a planning agreement		✓
Affected by a policy that restricts development of land due to the likelihood of landslip		✓
Affected by bushfire, tidal inundation, subsidence, acid sulfate or any other risk		✓
Affected by any acquisition of land provision		✓
Biodiversity certified land or subject to any biobanking agreement or property vegetation plan		✓
Significantly contaminated		✓
Subject to flood related development controls	✓	

2.2 Surrounding Development

Running along the northern boundary of the hospital is Victoria Terrace. On the opposite side of Victoria Terrace is the Mehi River. To the north of the Mehi River, there are parklands and the main commercial centre of the town.

To the south of the hospital, there is residential development, including standard residential lots, and multi-dwelling housing including the Moreena Units, which is adjacent to the small recreational area, Victory Park, at the intersection of Alice Street and Auburn Street. The Moree Ambulance Station is also located south of the hospital at the intersection of Alice Street and Balo Street.

To the east is the Moree Visitor Information Centre and additional parklands and recreational areas (Lyle Houlahan Park and Jellicoe Park). To the west is the Whiddon Moree aged care facility.

0 2 km

Locality Plan - Illustration 2.1

Information shown is for illustrative purposes only
Drawn by: AEA Checked by: AB Reviewed by: JRH
Source of base data: OpenStreet Map
Date: 20/12/2023

193100 193400 193700

6736000 6735800 6735600

Lot 11
DP 1113157

Mehi River

Balo Street

Edward Street

Jasmine Place

Violet Place

Lavender Place

Orchid Drive

Gardenia Place

Oleander Place

Victoria Terrace

Alice Street

Auburn Street

Balo Street

Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

LEGEND

- The site
- Cadastre
- Watercourse

0 40 Metres

GeoLINK environment | engineering | planning | design

Review of Environmental Factors - MHR Comprehensive Scope
4185-1021

Site Plan - Illustration 2.2

Information shown is for illustrative purposes only
Drawn by: AEA Checked by: AB Reviewed by: JRH
Source of base data: ESRI World Imagery
Date: 27/11/2023

3. Proposed Activity

3.1 Proposal Overview

The proposal includes the following key elements:

- Demolition of hospital buildings (Building 2 and 5) and other existing hospital structures including the decommissioned helipad (B36) as shown in demolition plan in **Figure 3.**
- Removal of seventeen (17) trees refer to **Figure 3** below.
- Construction of a new two-storey Acute Services Building (ASB) with a new main hospital entry, ambulance drop off area, loading zone, new courtyard and landscaping works as shown in **Figure 4**.
- Ancillary works, including new (additional) substation and back-up generator; relocation of services; signage; tree removal and carparking reconfiguration/ driveway works.

Architectural drawings of the Moree Hospital Redevelopment are provided at **Appendix A**, Landscape Plans are provided at **Appendix C** and Signage Plans are provided at **Appendix D.**

Figure 3: Demolition Plan

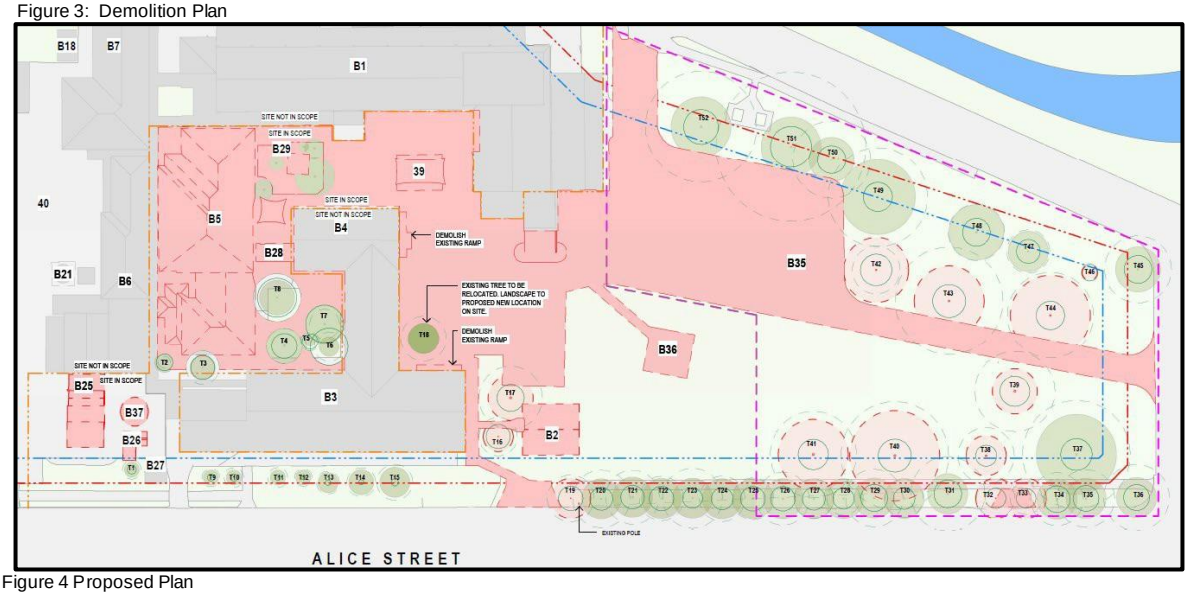
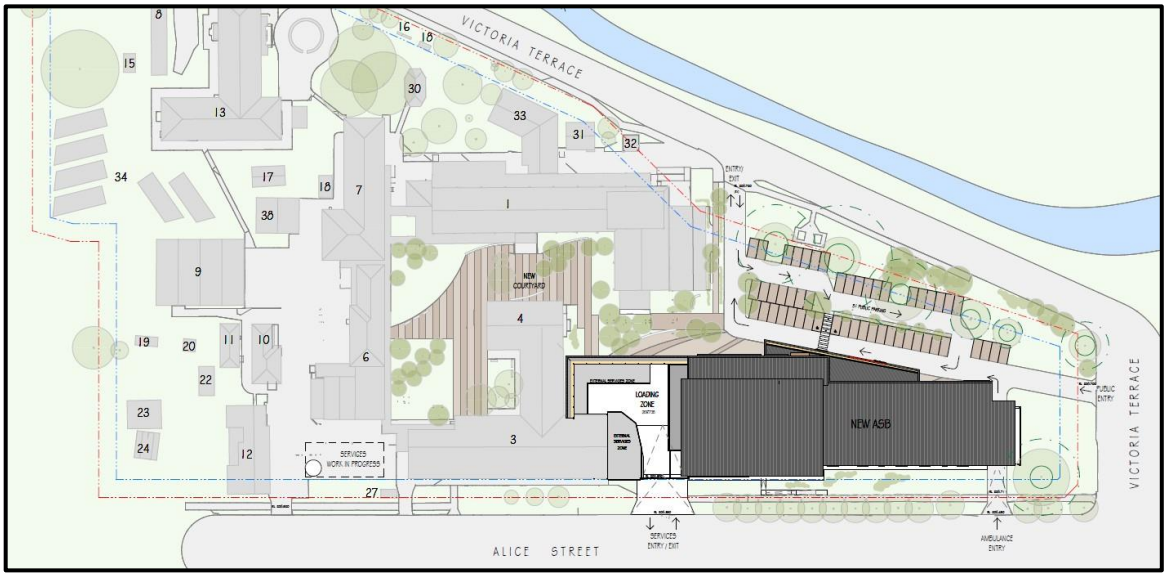


Figure 4 Proposed Plan



Landscaping works include, but are not limited to:

- A new pedestrian link to the Mehi River.
- Upgraded parking with new finishes and planting, including new permeable paved parking above existing grades.
- New drop off area to the new Acute Services Building (ASB).
- New tree and understory planting to the street front near the intersection of Alice Street and Victoria Terrace.
- A new breakout seating area.
- Relocated playground in a native garden setting.
- Centralised courtyard with gardens, sheltered seating and gathering spaces.

3.1.1 Design Approach

Placemaking and Design

The Moree Hospital Redevelopment Built Form and Urban Design Report has been prepared by the Project Architect and lead consultant Silver Thomas Hanley (STH), attached in **Appendix E**. STH is working along with contractors BESIX Watpac and their consultant team to deliver the Moree Hospital Redevelopment project.

The project has adopted several significant design principles which enhance the overall design and cover; Urban Context and Site Character, Architectural Design, Clinical Efficiencies, Safety and Delivery of Improved Health Services, Environmental Sustainability, Designing for the Workforce, Security in Design, Standardisation and Flexibility of the Design, Accessible Design and Technological Efficiencies. These design principles formed overarching outcomes that the design team worked towards in the master planning and schematic design stages.

The design for the Moree Hospital Redevelopment was further developed regarding the seven objectives outlined in the *GANSW Better Placed* policy document for integrated design outcomes in the built environment. Specific design outcomes of the MHR and how they related to the Better Places framework and objectives are detailed below.

Objective 1: Better Fit: Contextual, Local and of its Place

The design for the Moree Hospital is informed first and foremost by the proximity to the Mehi River, the rich history of the town known for its artesian hot springs and farming lands which is part of the Australian cotton industry.

- The Mehi River is connected to the Boobera Lagoon, 130 km north of Moree is said to be the resting place of the Rainbow Serpent from Aboriginal folklore.
- The Weraerai and Kamilaroi peoples are the earliest known inhabitants of the area with The Kamilaroi being the second largest nation on the eastern coast of Australia, with Wiradjuri being the largest.
- The town's name is said to come from an Aboriginal word for "rising sun," "long spring," or "water hole".
- The campus is typical of a rural hospital with the buildings spread over the site with no master planning of the site, creating convoluted routes and wayfinding on site, with many secluded outdoor areas that create a disconnected landscape response and potential safety and security issues to both property and people.

In response, the current design integrates leading design principles of health planning and landscape architecture which provide a unique connection to the Country and place making principles that celebrate the location of the hospital on the Mehi River benefiting the entire community to recreate, socialise and heal. The connection with place is celebrated throughout the design with open connections from the main Acute Services Building along with metaphorical connections in the central courtyard where views to the river are obscured by existing buildings. This meaningful design resonates with local context and history of place through urban form making, architectural articulation, curation of interior settings and integration with local ecologies.

Objective 2: Better Performance: Sustainable, Adaptable and Durable

The project has been designed to achieve sustainability and whole-of-life design by using the available land to build the new ASB on-site of the existing Hospital, which is in harmony within a residential area and uses the current urban infrastructure. This allows the existing hospital to continue serving the community during the construction phase.

Building 1, which houses the current acute services for the hospital, is outdated for acute services but will allow for community services expansion on the site with refurbishment.

The new layout of the car parking has been designed with the consideration of the existing trees on the site, and as many of the trees as possible have been retained. This requires permeable paving under some trees to allow for the continued health of the trees. The new parking layout also allows for new planting of trees to replace trees that had to be removed.

The proposed structural grid and floor-to-floor dimension are at the foundation of future-proofing and ability to change, allowing a variety of clinical services to be accommodated or expanded within the building. The design principles are applied to the ESD deliverables, including consideration of materials used and construction techniques that are low VOC, low energy (in production and recurrent cost), and recyclable.

It was important to retain the existing trees to the council verge to create screening to the new building as the building is adjacent to Alice Street, which shares residential housing, as shown in **Figure 5.** The orientation of the building is due north, which allows for morning sun in IPU lounge and deck areas, with the deck also facing north for afternoon sun. The roof form creates shading to north facing in-patient unit (IPU), and canopies to ground floor create outdoor waiting areas and shading to the Front of House (FOH) and Emergency Department (ED) waiting rooms.

Figure 5 Render of southern façade along Alice Street and existing street trees

Australian-made products have been used to reduce the carbon footprint, and landscaping has been designed in response to the local environment. The HNELHD initiative is to include solar panels, and the goal is to achieve carbon neutrality by 2030. Environmental Energy Strategy Considerations including environmental targets, sustainable frameworks and strategies are further addressed in **Section 6.2.14** of this report.

The proposal's operational waste measures will also be consistent with the Hunter New England Local Health District (HNELHD) Waste Management Plan. The District Waste Management Plan describes the principles, procedures and management of waste generated by HNELHD and has developed this plan to ensure wastes are reduced, reused, and recycled wherever possible.

Objective 3: Better for Community: Inclusive, Connected and Diverse

The collaborative consultation with the Aboriginal Design Working Group (ADWG) and the Moree Arts in Health Working Group (AHWG) played a crucial role in developing the design.

The meaningful insights received about the local culture informed thinking on design outcomes and how art and architecture could respond to the rich culture of the local community.

The consultation has influenced planning and design outcomes, including:

- An Aboriginal patient experience officer located in the FOH/ ED.
- The Lizzie Doolan room has direct access to the external courtyard, which extends the room with an outdoor setting, shading, and native landscaping.

- Retention of the men's gazebo for the local community groups.
- External seating near the FOH, Kiosk, and ED, as well as planting, has been incorporated in the FOH waiting area to bring the outdoors inside.
- Palliative care is located next to the family lounge and external balcony overlooking the Mehi River. Pets are welcome inside the building and can visit patients using the fire stairs connected to the balcony.
- Landscaping considerations include using native plants, providing shade, not using scented plants (due to respiratory concerns), and avoiding plants that attract insects.
- Display of the body casts from the maternity unit in the FOH.
- Integrating art within the building has been an important consideration including elements such as screening and applied wall finishes.

Objective 4: Better for People: Safe, Comfortable and Liveable

The design has been influenced by the 'Better for People' principles, and several factors have influenced the design response. One of the key principles of the design is 'design for human experience', and user experience review was fundamental in the design process.

The ASB is situated on the southern side of the Mehi River, and the design utilizes the existing terrain to place the new building with minimal excavation, matching the ground level of the existing Building 1. Ramps and cover walkways have been carefully introduced with equitable access and pause points to create connection and accessibility for everyone.

The hospital's design is comprehensible, creating intuitive wayfinding cues by considering planning arrangements at campus, building, and departmental levels. The planning also allows for the personalisation of space to meet an individual's needs to attenuate noise, control daylight penetration, adjust comfort levels, and configure layouts to meet specific cultural and privacy requirements. The cognitive response is addressed by working on an emotional level, as hospitals are places where the full range of human emotions can be observed and experienced.

Introducing an external balcony over the ambulance bay creates an 'Aussie Veranda', a meeting place and a place of respite from the sun. The space is accessed from the patient lounge in the inpatient unit and allows family members to bring family pets to visit those in palliative care within the hospital. The 'Aussie Veranda' is also utilised for the front-of-house and emergency department drop-off area, noting that large family groups who attend the hospital can wait outside in the shade and still be visibly connected to these departments. This area also has a coffee shop to activate the space further and assist in passive wayfinding to the main entry area.

Figure 6 Render of northern façade showing 'Aussie veranda' and Front of House and Emergency Department drop off area

Objective 5: Better Working: Functional Efficient and Fit for Purpose

The design of the new hospital has taken into account the needs of the workforce, particularly in the Moree community, where most of the staff live. The aim of the planning is to create a sense of community and a better working environment for the rural workforce.

The hospital design is tailored to meet the clinical needs of the hospital which has limited staffing. The facility is designed to be physically secure in one or more areas, with a focus on separating ambulatory and 24-hour services.

Materials used in the hospital design are chosen for their durability to withstand intentional damage and easy replaceability by local tradespeople.

The building design focuses on creating adjacencies within the facility to reduce travel and provide better sight lines within departments, resulting in a more efficient workplace. A functional and efficient building is essential to the efficiency of hospital operations. This is achieved by reducing travel distances, creating compact floor plates, and locating vertical circulation centrally.

The design also includes functional adjacencies that are practical and purposeful. Plant strategies have been developed to minimize reticulation runs and riser locations, resulting in optimized usable areas. The adopted structural grid allows for maximum flexibility and efficiency, while the floor plates have been shaped by a balance of area requirements and optimized daylight access through the building perimeter.

Support spaces have been located centrally, allowing for a variety of spaces to be accommodated, either enclosed or open, with outlook and access to daylight when possible.

Objective 6: Better Value: Creating and adding Value

The proposed design of the new Acute Services Building addresses the principle of Better Value by incorporating modularity in form and flexibility in planning.

Standardisation is a key aspect of the design, which promotes patient safety, reduces construction costs, and improves efficiency.

The design allows for flexibility and adaptability in the use of spaces, supporting changing models of care over time. Colocation of services allows for changing service demands to be managed within the overall infrastructure, further improving efficiency. In addition, the design addresses the site-specific constraints by reducing the footprint of the building, retaining open spaces, existing parking, and trees where possible. The ASB will be developed over two floors, adjacent to the existing Building 1, which is currently the ASB.

The height of the building was further considered by introducing a single skillion roof approach with the lowest side of the roof towards the Alice Street elevation. The design promotes the community offering by providing access to open spaces and walkways, making the campus part of the precinct network. It also promotes health and wellbeing by providing access to green outlook, solar access and daylight. The design also aims to attract and retain staff by providing efficient and functional layouts, complemented by a variety of dedicated staff and education areas with access to outlook and daylight.

Objective 7: Better Look and Feel: Engaging, Attractive and Inviting

Drawing inspiration from the rural vernacular found in the area, the proposed design incorporates contrasting materiality and colour to create a coherent visual language that blends seamlessly with the local architecture. The design approach responds to community needs by creating a public building that invokes civic pride and becomes a true community building that breaks down stereotypical responses on what a hospital should be.

To combat the harsh sun and reduce casual vandalism, the proposed design features robust material choices. The use of readily available locally sourced materials with short lead times assists with supply chain issues, lead times, environmental reduction in carbon footprint, and replacement strategies.

By combining the right materials and colour choices, the proposed design creates a building that connects with the landscape and urban setting it is in and is familiar to the community as relatable to materials of their own homes.

The purpose of the proposed design is to create a building that connects with the community and promotes recovery. The refinement of strong lines and layering creates a coherent visual language that blends seamlessly with the local vernacular while emphasizing the building's purpose as a welcoming and functional healthcare facility.

The roof overhangs scaled to the mass of the building echoes this vernacular architectural response and softens the building edges. The sun-shading screen on the northern facade of the building serves a dual purpose. Firstly, it acts as a building identifier, drawing the eyes of passersby to the front door, cafe, and external courtyards. Secondly, the screen has the potential to integrate art into its design, enhancing the visual appeal of the building. The sun-shading screen is a functional and aesthetic addition to the building's architecture.

Crime Prevention Through Environmental Design (CPTED)

The development has also adopted the principles of CPTED. Throughout the detailed design process the built form was designed to reduce awkward way-finding and blind corners to help promote community safety and security on site. The design has included landscaped pathways, seating and open communal areas between the existing hospital buildings and street access to improve visual connections to and from the hospital campus, resulting in a 'many eyes' community security response.

The new ASB has a combined 'front door' for both the main entry and emergency department via an airlock. This will reduce public entry points within the hospital, allowing for better connectivity and wayfinding. The entry will be clearly visible from the main entry to the site and parking areas and will also include a covered drop off point.

The overall site layout and design of the ASB has been developed to create a safe environment for all users through; access control, territorial reinforcement, space/ activity management and surveillance. Specific design features of the redevelopment in relation to CPTED are further discussed in **Section 6.2.15** of this report.

Connecting with Country/ Engagement

Connecting to Country has played an important part in informing the design for redeveloping Moree Hospital, drawing on local stories and culture of the indigenous Aboriginal communities. The Weraerai and Gamilaroi (Kamilaroi) are the earliest known inhabitants of the area and land where the Moree Hospital is located. The town's name is said to come from an Aboriginal word for 'rising sun', 'long spring' or 'water hole.' This is most likely in reference to the Mehi River or the towns artesian hot springs, local to the area.

At the commencement of the MHR project an Aboriginal Health Impact Statement (AHIS) for the project was prepared (refer to **Appendix F**). It shared insights gained from the initial 'Connecting with Country' forums held in response to the original masterplan and proposed a pathway for continuing consultation with an Aboriginal Design Working Group (ADWG) to provide forums for review and recommendation throughout the project duration to ensure the proposed development of the Moree Hospital could best meet the needs of local Aboriginal people.

Consultation occurred throughout the project in accordance with the Government Architect New South Wales's *Connecting with Country Draft Framework*. The working group consisted of representatives from the Moree Local Aboriginal Land Council, Pius X Aboriginal Corporation, Moree Local Aboriginal Education Consultative, along with the Local Health District and Health Infrastructure staff. A Moree Arts in Health Working Group (AHWG) has also been consulted through the project development. Details of the consultation meetings is provided in **Section 5.2** of this REF.

Some planning and design outcomes from the consultation with ADWG and AHWG were discussed earlier in this section under *Objective 3: Better for Community: Inclusive, Connected and Diverse,* and are relisted below:

- An Aboriginal patient experience officer located in the FOH/ ED.
- Lizzie Doolan has direct access to the external courtyard, which extends the room with an outdoor setting, shading, and native landscaping.
- Retention of the men's gazebo for the local community groups.
- External seating near the FOH, Kiosk, and ED, as well as planting, has been incorporated in the FOH waiting area to bring the outdoors inside.
- Palliative care is located next to the family lounge and external balcony overlooking the Mehi River. Pets are welcome inside the building and can visit patients using the fire stairs connected to the balcony.
- Landscaping considerations include using native plants, providing shade, not using scented plants (due to respiratory concerns), and avoiding plants that attract insects.
- Display the body casts from the maternity unit in the FOH.

- Integrating art within the building has been an important consideration including elements such as screening and applied wall finishes.

The landscape design and material choices further integrate learnings and information gained through Connecting with Country consultation. This is expressed through the use of a predominantly native planting character throughout the hospital as well as influences of the Mehi Riverbanks forms, patterns and colours being integrated into the proposal through colours of flooring, planting, forms, and the creation of creek beds in the internal courtyard. These details increase awareness of place and connection with Country. Overall, the new outdoor environments created through this works will provide a positive environmental outcome for the site and community of Moree through tree planting, creation of functional and accessible environments and the celebration of Country.

Sustainability and Climate Resilience

The MHR team includes sustainable design consultants E-Lab Consulting who prepared a Sustainable Development Plan (refer to **Appendix G**) which provides an overview of proposed sustainability targets for the project and the sustainability initiatives to be included. Ecologically Sustainable Development (ESD) is a driving consideration in the development of the MHR, with ESD initiatives to be incorporated in both design and operation. Sustainability principles have been outlined earlier in the Placemaking and Design Section under *Objective 2: Better Performance: Sustainable, Adaptable and Durable.*

As part of the design, the development must comply with HI's Design Guidance No. 58 Environmentally Sustainable Development (DGN58) to ensure the improved environmental and sustainability performance of the project.

The two main guidelines from DGN58 are:

- A minimum 45 points to be achieved by the design in accordance with HI's ESD Evaluation Tool.
- A minimum 10% improvement in energy efficiency compared to baseline of National Construction Code (NCC) Section J compliance applicable to the development.

The Sustainable Development report identified projected site-specific climate risks, which include:

- Extreme rainfall (increase in rainfall variability):
  - Increased erosion and siltation due to storms/ flooding.
  - Extreme storm events with high winds causing damage to buildings and injury to people.

- Increase in average temperature:
  - Damaged or compromised reliability and durability of building components and materials.
  - Decreased outdoor comfort for staff, patients, and visitors, and possible health and safety concerns when they engage in activities outdoors.
  - Increased reliance on air conditioning, requiring high energy consumption and maintenance requirements.

- Higher frequency of extreme temperatures:
  - Increase in electricity demand, resulting in possible brown or black outs.
  - Decrease in indoor thermal comfort.

- Precipitation and drought (increase in the number of dry days):
  - Decrease in water supply and potential water restrictions imposed by the local council.
  - Lower water availability and increased demand for landscaping.

- Bushfire
  - Severe fire-weather climate is projected to increase in the new and far future, especially in spring/ summer.

Climate resilience design has been considered for solutions to climatic risks throughout the project development. Impacts of potential flooding has been of particular concern for the development of the site and new ASB, which has been discussed in detail in **Section 6.2.5** of this report. Furthermore, sustainability and climate resilience is assessed in greater detail in **Section 6.2.14** of this report.

3.1.2 Proposed Activity

The Moree Hospital redevelopment works include decommissioning and demolition of redundant existing facilities. Some building/ structures on site will be demolished to accommodate the new development. The structures to be demolished are shown in **Figure 3** and includes:

- B2 - Administration Building.
- B5 – Glennie and Crane Building.
- B25 - Maintenance Sub Area.
- B26 - Fire Boosted Pump Shed.
- B28 – Kiosk.
- B29 – Aboriginal Shade Shelter.
- B36 – Helipad.
- B37 – Fire Water Storage.
- B39 – Playground.

Building 1 currently houses the existing Acute Services for the hospital, however, the building requires modernization for acute services. The proposal is for construction of a new Acute Services Building (ASB), a two-storey building located in the south-east portion of the hospital site. Building 1 will eventually be refurbished to allow for expanded community services within the hospital site.

The ground level of the new ASB will consist of the following departments:

- New hospital main entry and Front of House.
- Lizzie Doolan Room.
- Emergency Department with Ambulance Bay.
- Medical Imaging Services.
- Mortuary.
- Back of House services.

The second level of the building will accommodate:

- Birthing unit.
- Inpatient unit.
- Post-operative department.
- Central sterilising services department.

A new covered walkway will connect the ASB to existing Buildings 1 and 4 (Mental health). This link way will also form part of the landscape response to create a courtyard area at the heart of the campus, to be used as the outdoor heart of the site as a place for patients, staff, and visitors.

Other parts of the redevelopment include modifications to existing carparking, a new substation, landscaping and new loading dock and services yard area.

The removal of Building 5 allows the creation of a large courtyard between Building 1 and Building 4, opening the campus site to provide clear site lines to the existing buildings on site, achieving more intuitive way finding.

Built Form

The ASB is a two-storey structure that sits adjacent to existing Building 1 (the current ASB) which is three floors including plant level. By consolidating the health services over two stories (the original plan had been one storey), this allowed a reduced footprint for the new ASB to help retain more open space to be integrated into the overall design, to allow for adequate areas for courtyards, tree planting, and parking.

Inclusion of overhangs introduce elements of vernacular architecture from within the surrounding and broader area which provides a familiar architectural character and provides a relatable built form for welcoming the community.

The length of the building runs adjacent to Alice Street, so the height of the building has been considered in the context of the neighbouring residential housing opposite with adoption of a single skillion roof solution with the lowest side of the roof falling towards the Alice Street elevation.

The new ASB will have a combined 'front door' for the main hospital entry and emergency department via an airlock to reduce the number of public entry points in the hospital. The new entry will include a covered drop off point, and it will be clearly visible from the main entry point of the site and from the parking areas.

Roadworks and Parking

The hospital site currently has five carparking areas. The proposed redevelopment includes upgrading and reconfiguration of car parking facilities on site as the carparking currently located east of Building 4 will be relocated to the western portion of the site, to expand on the existing carparking area accessed from Victoria Terrace.

The proposal includes two new vehicle entries points into the site from Alice Street:

- Ambulance and patient transfer vehicles will enter the hospital site via a new entry from Alice Street and stop at the ambulance bay provided at the eastern end of the ASB before exiting the site onto a realigned existing Victoria Terrace (East) exit.
- Back of House (BOH) site access will be from a new entry point on Alice Street (at the western end) while maintaining an existing entry point to the current staff parking area at the west of the site.

The expansions of the existing site parking along Victoria Terrace is proposed to accommodate visitors and staff who frequent the site. The new extended parking area will provide 51 parking spaces (which equates to the number of parking spaces lost to accommodate the development). The new carparking layout has been designed to allow for retention of as many existing trees on site as possible. Existing staff parking to the west of the site is being retained.

Tree Removal and Landscaping

The Activity will require removal of 17 native and non-endemic/ exotic trees.

Four native trees endemic to the North Western Slopes Botanical Region (Harden, 2002) requiring removal include:

- Two Carbeen (*Corymbia tessellaris*).
- One of each River Red Gum (*Eucalyptus camaldulensis*) and Bottlebrush (*Callistemon spp*).

Native non-endemic trees requiring removal include:

- Two Lemon Scented Gum (*Corymbia citriodora*).

11 exotic/ ornamental trees requiring removal include:

- Four Chinese Elm (*Ulmus parvifolia*).
- Three Jacaranda (*Jacaranda mimosifolia*).
- Two Cocos Palm (*Syagrus romanzoffiana*).
- One of each *Photinia serratifolia* and *Viburnum spp*.

There is a theoretic loss of canopy coverage of 1,300 m^2. Opportunities for planting of larger species is explored to maximise benefits to improve canopy coverage across the site.

No PCTs would be directly impacted. Given the existing modified state of the study area, biodiversity impacts associated with this vegetation removal are not significant. No hollow-bearing trees require removal.

The proposed building and reconfigured carparking layout have considered existing trees on the site and has allowed for as many of the trees to be retained where possible. The proposal will require permeable paving under some trees to allow for the continued health of the trees. The new parking layout will also allow for new planting of trees to replace the trees that required removal.

Utilities

The site is currently serviced by all essential services/ utilities. A Utilities Report has been prepared by JHA Services which identifies any required augmentation/ adjustments to essential services in relation to the demolition of Building 5 and construction of new ASB (refer to **Appendix H**).

Mechanical Services

Construction of the new ASB will require the following Mechanical Services works to be undertaken:

- External Cooling and Heating plant (CEP) – Foundation/ structural support for this plant to be constructed adjacent to Building 3 and 6.
- Demolition of maintenance shed existing fire tank and pumps.
- New structural for the CEP and associated pumps systems (to be provided with enclosure).
- Trenching for pipework and cable reticulation from the location of the CEP to ASB.

Electrical and Communication Services

Currently the site is being served by 1-off substation and 1-off standby diesel generator.

A dedicated 100kVA substation is proposed for the ASB, fed through aerial cables by Essential Energy's HV cables along Victoria Road as well as a dedicated 350-400kVA generator. The new generator is a more cost- effective solution than connecting the existing generator and means the works will not create an interruption to the existing hospitals operation.

No augmentation is proposed to the existing substation that will continue to serve the repurposed Building 1. Also, no augmentation is proposed to the existing Essential Energy Pole along Alice Street (no. 120800191).

- New power and communication supply to the proposed ASB.
- New power supply to Building 4 that is currently fed from Building 5.
- Re-routing of fibre optic cables currently reticulating through Building 5.

Hydraulic and Fire Services

- New authority sewer drainage connection point to convey the discharges from the proposed ASB.
- New authority cold water connection point to supply the potable water needs to the proposed ASB.
- Capping off cold and hot water supply and existing combine fire hydrant/ hose reel supply from Building 5.
- Capping off and removal of sewer drainage connections from Building 5.
- Inground services diversion along proposed service yard of ASB.

Works relating to demolition of Building 5 include decommissioning the power and communications connections (which are internal private connections with no implication on authority connections, and thus do not involve augmentation to authority infrastructure) as well as rerouting the power connection to Building 4 (which is also an internal private connection with no implication on authority connection).

3.2 Proposal Need, Options and Alternatives

3.2.1 Strategic Justification

The Moree Hospital Redevelopment is part of an ongoing program of major health capital projects by Health Infrastructure and the NSW Government to improve health care throughout New South Wales.

In 2019, the NSW Government announced an election commitment to redevelop Moree Hospital as one of the 29 hospital and health facility redevelopments to commence by 2023. Funding for the Moree Hospital Redevelopment was confirmed in the 2020 State Government budget. The announcement aligns with Hunter New England Local Health District's (HNELHD) Asset Strategic Plan which identifies Moree Hospital as one of the top five priorities for the district.

Moree District Hospital is a C2 District level facility that delivers a range of clinical services including emergency medicine, acute care, surgery, maternity, and outpatient care. With the existing infrastructure developed progressively over the past century, some infrastructure is well past its useful life while some elements still present as prospective re-purposing. The current site has developed in an ad hoc nature over many decades with sporadic investment. This has resulted in very poor functional and clinical relationships within the current hospital.

A new health facility, located on the existing site, is required to support the delivery of contemporary models of care and quality services for the future healthcare needs of the catchment population. This would support the ongoing co-location of health services, with Whiddon Moree (previously Fairview Retirement Village). Whiddon operates 96 aged care beds including a secure dementia wing.

3.2.2 Alternatives and Options

Initially 4 broader options for upgrading the existing Moree Hospital were investigated. Analysis of options has been undertaken to determine the best future direction for Moree Hospital. The following options were considered:

- Option 1 – Base Case: Urgent Repairs.
- Option 2 – Hybrid New Build/ Refurbishment Limited Demolition.
- Option 3 – Hybrid New Build/ Refurbishment with Full Demolition.
- Option 4 – Greenfield New Build and Full Demolition of Existing Site.

Option 3 was initially selected as the preferred option and was documented in the endorsed site masterplan that was prepared by Nettleton Tribe Architects.

The endorsed site masterplan was reviewed by Besix Watpac and STH Architects for site suitability and from a value engineering perspective. During this process, the project team explored variations to the endorsed masterplan and graded the site plans against the following design criteria.

- Functionality.
- Context and Connectivity.
- Resilience.
- People and Amenity (Emotional).
- Constructability.

A number of options were explored in this process with key considerations being:

- Affordability.
- Staging.
- Decanting.
- Site restraints and opportunities.
- Existing building adaptive reuse.
- Future expansion within the site.

The preferred option, which is assessed as part of this Review of Environmental Factors, was to create a compact new build over two floors that allowed minimal impact to current hospital functions.

Further Options Analysis and Value Engineering

An options analysis of the endorsed masterplan was undertaken by STH and Besix Watpac and presented to HI and the HNELHD. The aim of the options analysis was to evaluate the suitability of the masterplan design and other potential masterplan options to ensure the project budget is used in the best way possible to deliver the healthcare services to the Moree community.

The proposed options included:

Option 1 - Endorsed Schematic Design Plan as proposed by Nettleton Tribe. Besix Watpac reviewed this option with alternative staging considerations to align with budget.

Option 2 - New single storey Acute Services Building (ASB) and the refurbishment of community health services.

Option 3 - A new double storey Acute Services Building (ASB) and the light refurbishment of community health services.

Option 4 - A new double storey Acute Services Building (ASB) and the refurbishment of community health services with the proposed retention of the current CSSD and Perioperative departments.

An overview of the Options Analysis/ Value Engineering of the proposal is provided within **Table 2** below.

Option 3 was the preferred option after reviewing various criteria. This design was further explored in three variations.

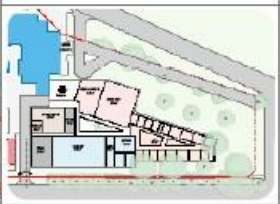
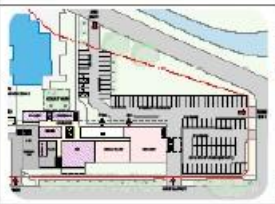
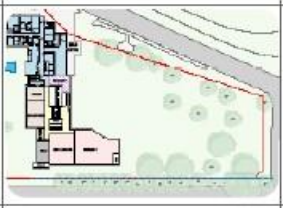
Option 3A - A new double storey Acute Services Building (ASB), a proposed shell area for pathology and the refurbishment of community health services. This involved the western end of Ground floor (generally Back of House [BOH]) being left as an open undercroft in lieu of Cold Shell.

Option 3B - A new double storey Acute Services Building (ASB), a proposed shell area for pathology and the refurbishment of Community Health Services. This option included cold shell for BOH and Kitchen (in lieu of undercroft in 3A) and introduced a Mortuary. This involved fitted out BOH areas as from 3B.

Option 3C - A new double storey Acute Services Building (ASB), a proposed shell area for pathology, and refurbishment of Building 3 and 4 for Community Health Services.

Option 3C was the endorsed option by the HNELHD.

Table 2: Options Analysis/ Value Engineering

LEGEND 1 - VERY POOR 2 - POOR 3 - AVERAGE 4 - GOOD	OPTION 1	OPTION 2	OPTION 3	OPTION 4
				
CRITERIA				
FUNCTIONALITY				
DEPARTMENT RELATIONSHIPS + CRITICAL PRIORITIES	3	4	4	3
FLEXIBLE FOR FUTURE SERVICES	3	4	4	2
OPERATIONAL EFFICIENCY	1	4	3	1
CONTEXT & CONNECTIVITY				
ARRANGEMENT & RELATIONSHIP	2	4	4	3
WAYFINDING	2	3	4	2
RESILIENCE				
PASSIVE DESIGN	3	3	3	3
ENERGY	2	3	3	2
PEOPLE & AMENITY (EMOTIONAL)				
SAFETY & SECURITY	2	3	3	2
ACCESS TO VIEWS / NATURE	4	3	4	3
ACCESS TO EXTERNAL SPACE	3	3	2	2
INTEGRITY & PRIVACY	2	2	4	2
CONSTRUCTIBILITY				
STAGING	1	4	4	1
COST	1	2	4	3
NEW BUILD / REFURBISHMENT	2	3	4	3
	31	45	47	32

Source Moree Hospital Redevelopment Schematic Desing Report 11 August 2023

3.3 Construction Activities

The works are long term (Months).

Table 3: Project Timeframes and Construction Activities

Construction Activity	Description
Commencement Date	Work is currently expected to commence in Q4 2024.
Work Duration/ Methodology	The works are expected to take two years.
Work Hours and Duration/ Construction	Monday to Friday 7.00 am to 6.00 pm. Saturday 8.00 am to 1.00 pm. Sunday and Public Holidays No Work.
Workforce/ Employment	Number of construction workers: approximately 50
Ancillary Facilities	A temporary site compound and material stockpile area would be established within the Activity area. The appointed contractor will be required to undertake an initial site-specific safety check prior to site establishment. Site containment fencing will be erected to restrict public access to the works zone. The temporary fencing will be secured from any unauthorised access via padlock. The Construction Management Plan prepared by BESIX Watpac (see **Appendix I**) details site amenities for BESIX Watpac and subcontractor personnel to include office, lunch, bathroom and change facilities to be provided and located at the eastern end of the site on the boundary of Victoria Terrace. Access to the site will be controlled through installation of perimeter fencing with lockable gates. Way finding signage will be erected to direct workers to the site and site office which will be appropriately and clearly signed.
Plant Equipment	The main plant likely to be used for the works would include, but are not limited to: • Excavator (20t). • Excavator Hammer (10t). • Loader – Front End/ Telehandler. • Tipper Truck. • Genset. • Grinder/ Impact Wrench. • Dozer (D6). • Roller (Padfoot). • Backhoe/ Trencher. • Concrete Truck. • Concrete Pump. • Truck (10t). • EWP. • Franna. • Mobile Crane. • Hand Tools (Powered). • Welding Equipment. • 12.5 m Heavy Rigid Vehicle. • 18.1 m truck and dogs. • Demolition pliers. • Demolition excavator. • Bulldozer.
Earthworks	The bulk earthworks will generally consist of minor cut and fill operations to establish working platform levels consistent and reflective of the design of the proposed hospital redevelopment. Minor excavation will be required to remove the footings of the existing hospital building. Any clean excess spoil (soil) will be used within landscaping treatments throughout the site or removed from the site and disposed of appropriately.
Source and Quantity of Materials	Any required materials will be sourced locally from licensed quarries and operators. All materials will be certified uncontaminated and environmentally safe.

Construction Activity	Description
Traffic Management and Access	The Activity will require access to the site and development area from Alice Street. During the demolition period, some sections of the existing footpath and public parking located along those streets will be temporarily unavailable. Temporary construction staff parking will be available within the 'construction zone' and also within the public road reserve of Alice Street. Due to the proximity of the works to live traffic and pedestrian movements, a traffic control and access plan will be required to ensure the safety of the public.

3.4 Operational Activities

Use

The new Acute Services Building will include the following departments (which will be transferred from the existing Building 1):

Ground floor: main entry, Emergency Department (ED), medical imaging, pathology, mortuary (body hold), Aboriginal community room, multi-faith room, stores, kitchen and loading facilities.

First Floor: inpatient unit, birthing suites, operating and procedures theatres and central sterilising unit.

Operation Hours

The new ASB will maintain the same operations hours of existing Building 1. The Emergency Department will be accessible 24 hours a day, seven days per week. The inpatient unit will have nurses in attendance 24 hours per day.

Pathology, Medical Imaging, Birthing Suites, and the Operating Theatre will generally operate during normal business hours Monday to Friday, they will be required on occasions to support Emergency Cases.

Community Health Services which operated from existing buildings on campus (not included in the project scope) will continue to operate during normal business hours.

Staff/ Patients

The proposal will not result in a significant change to hospital capacity, other than improved efficiency, and there is no projected increase in staffing numbers.

Traffic and Parking

The projected use of the new facility will not increase parking needs other than the addition of a second ambulance drop-off area. The establishment of the construction zone does however require the relocation of existing parking at the front of Building 4 and realignment of the carpark entry, ambulance entry and loading area entry.

The displaced carpark will be replaced with an equal number of spaces adjacent to the current visitor carpark along Victoria Terrace. This will be done as the first element of works so that public access to the hospital during construction is not disrupted. The Transport Impact Assessment prepared by ptc and dated 26 October 2023 considered the supply of parking available at the site currently and calculated existing and future demand for parking generated by staff and visitors. The new provision for parking matches the existing quantum of site parking which is considered to be acceptable given the activity will not significantly intensify the use. There will be no adverse impacts or increased traffic congestion and the parking and service vehicle design and arrangement is compliant with the Australian Standards.

4. Statutory Framework

4.1 Planning Approval Pathway

Section 4.1 of the EP&A Act states that if an EPI provides that development may be carried out without the need for development consent, a person may carry the development out, in accordance with the EPI, on land to which the provision applies. However, the environmental assessment of the development is required under Part 5 of the Act.

State Environmental Planning Policy (Transport and Infrastructure) 2021 (TI SEPP) aims to facilitate the effective delivery of infrastructure across the State. Division 10 of the TI SEPP outlines the approval requirements for health service facilities. Moree Hospital is defined as a health service facility under the standard Local Environmental Plan.

*A **health services facility** means a building or place used to provide medical or other services relating to the maintenance or improvement of the health, or the restoration to health, of persons or the prevention of disease in or treatment of injury to persons, and includes any of the following:*

(a) a medical centre,

(b) community health service facilities,

(c) health consulting rooms,

(d) patient transport facilities, including helipads and ambulance facilities,

(e) hospital.

The site is zoned R1 General Residential under the Moree Plains Local Environmental Plan 2011 (LEP). The R1 zone is a prescribed zone under Division 10 of the TI SEPP. Section 2.61(1) of the TI SEPP permits the following works without consent on any land, if it is carried out by or on behalf of a public authority and the development is carried out within the boundaries of an existing health services facility:

(a) the erection or alteration of, or addition to, a building that is a health services facility,

(b) development for the purposes of restoring or replacing accommodation or administration facilities,

(c) demolition of buildings carried out for the purposes of a health services facility,

(d) development for the purposes of patient transport facilities, including helipads and ambulance facilities,

(e) development for the purposes of car parks to service patients or staff of, or visitors to, the health services facility (or to service staff of, or visitors to, other premises within the boundaries of the facility).

The Activity involves activities identified in (a), (c) and (e) above; the erection of a building that is a health services facility, demolition of buildings carried out for the purposes of a health services facility and development of car parks to service patients or staff of, or visitors to, the health services facility. The works are within the boundaries of the Moree Hospital and are being carried out by and on behalf of Health Infrastructure and NSW Health. Section 2.61(2) of the TI SEPP does not preclude the activity as the proposed development does not involve erection of any building that exceeds 15 m in height and is not located closer than 5 m from any property boundary.

The proposal for the Moree Hospital Development also includes a new (additional) electrical substation. Provisions of Division 5 of TI SEPP relating to approval requirements for electricity transmission or distribution network will apply. Under Section 2.44(1) and (2)(e) development for the purpose of an electricity transmission or distribution network, including establishment of a new substation, may be carried out by or on behalf of an electricity supply authority or public authority without consent on any land.

Therefore, the proposal is considered an ‘Activity’ for the purposes of Part 5 of the EP&A Act and is subject to an environmental assessment (REF). The proposal is considered an ‘Activity’ in accordance with Section 5.1 of the EP&A Act because the development involves the carrying out of work and demolition of a building. The development is also

not any act, matter, or thing for which development consent under Part 4 is required, is not prohibited under an environmental panning instrument, and is not exempt development.

TI SEPP consultation is discussed within **Section 5** of this REF.

Table 4: Description of Proposed Activities

Division and Section within TI SEPP	Description of Works
Section 2.44(1)	Development for the purpose of an electricity transmission carried out by or on behalf of a public authority.
Section 2.44(2)(e)	Development for establishment of a new substation.
Section 2.61(1)(a)	Erection or alteration of, or addition to a building that is a health services facility.
Section 2.61(1)(c)	Demolition of buildings carried out for the purposes of a health services facility.
Section 2.61(1)(c)	Development for the purposes of car parks to service patients or staff, or visitors to, the health services facility.

4.2 Environmental Protection and Biodiversity Conservation Act 1999

The provisions of the EPBC Act do not affect the proposal as it is not development that takes place on or affects Commonwealth land or waters. Further, it is not development carried out by a Commonwealth agency or development on Commonwealth land, nor does the proposed development affect any matters of national significance. An assessment against the EPBC Act checklist is provided at **Table 5**.

Table 5: EPBC Checklist

Consideration	Yes/ No
Will the Activity have, or likely to have, a significant impact on a declared World Heritage Property?	No
Will the Activity have, or likely to have, a significant impact on a National Heritage place?	No
Will the Activity have, or likely to have, a significant impact on a declared Ramsar wetland?	No
Will the Activity have, or likely to have, a significant impact on Commonwealth listed threatened species or endangered community?	No
Will the Activity have, or likely to have, a significant impact on listed migratory species?	No
Will the Activity involve any nuclear actions?	No
Will the Activity have, or likely to have, a significant impact on Commonwealth marine areas?	No
Will the Activity have any significant impact on Commonwealth land?	No
Would the Activity affect a water resource, with respect to a coal seam gas development or large coal mining development?	No

4.3 Environmental Planning and Assessment Act 1979

Duty to Consider Environmental Impact

Part 5 of the EP&A Act applies to activities that are permissible without consent and are generally carried out by a public authority. Activities under Part 5 of the EP&A Act are assessed and determined by a public authority, referred to as the determining authority. Health Infrastructure is a public authority and is the proponent and determining authority for the proposed works.

For the purpose of satisfying the objects of the EP&A Act relating to the protection and enhancement of the environment, a determining authority, in its consideration of an activity shall, notwithstanding any other provisions of the Act or the provisions of any other Act or of any instrument made under the EP&A Act or any other Act, examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of that activity (refer to Subsection 1 of **Section 5.5** of the EP&A Act).

Section 171 of the EP&A Regulation defines the factors which must be considered when assessing the likely impact of an activity on the environment under Part 5 of the EP&A Act. **Section 6** of this REF specifically responds to the factors for consideration for the Activity.

Table 6 below demonstrates the effect of the proposed development activity on the matters listed for consideration in Subsection 3 of Section 5.5 of the EP&A Act.

Table 6: Matters for Consideration under Subsection 3, Section 5.5 of the EP&A Act

Matter for Consideration	Impacts of Activity
Subsection 3: Without limiting Subsection 1, a determining authority shall consider the effect of any activity on any wilderness area (within the meaning of the *Wilderness Act 1987*) in the locality in which the activity is intended to be carried on.	The land is not a wilderness area.
Note: If a biobanking statement has been issued in respect of a development under Part 7A of the *Threatened Species Conservation Act 1995*, the determining authority is not required to consider the impact of the activity on biodiversity values.	

4.4 Environmental Planning and Assessment Regulation 2021

Section 171(1) of the Environmental Planning and Assessment Regulation (2021) notes that when considering the likely impact of an activity on the environment, the determining authority must take into account the environmental factors specified in the guidelines that apply to the Activity.

The *Guidelines for Division 5.1 Assessments* (DPE June 2022) provides a list of environmental factors that must be taken into account for an environmental assessment of the Activity under Part 5 of the EP&A Act. These factors are considered at **Section 6** of this REF.

In addition, Section 171A of the Environmental Planning and Assessment Regulation (2021) requires the consideration of the impact an activity in a defined catchment. This is considered further below under **Section 4.5** of this REF.

4.5 Other NSW Legislation

The following table lists any additional legislation that is required to be considered if it is applicable to the proposed Activity.

Table 7: Other Possible Legislative Requirements

Legislation	Comment	Relevant? Yes/ No
State Legislation		
Rural Fires Act 1997	*Is the site identified on the Bushfire Prone Land Map?* No.	No
Biodiversity Conservation Act 2016	*Does the site contain any critical habitat, threatened species or ecological population or community?* Part 7 of the *Biodiversity Conservation Act 2016* (BC Act) sets out the requirements for biodiversity assessment and approvals under the EP&A Act. For the purposes of Part 5 of the EP&A Act, an activity is to be regarded as likely to significantly affect the environment if it is expected to significantly affect threatened species. The proposed Activity occurs on a developed, suburban site and will not affect important vegetation or habitat. It will not have a significant impact upon any threatened species, ecological communities, or populations such that a viable local population will be placed at risk of extinction. An EPBC Act Protected Matters Report has been obtained and is discussed in **Section 6**.	No Refer to **Section 6.2.9**
Water Management Act 2000	*Are the works within 40 metres of a watercourse?* The Mehi River is located approximately 40 m from the most northern extent of the proposed Activity.	No

Legislation	Comment	Relevant? Yes/ No
Contaminated Land Management Act 1997	*Is the site listed on the register of contaminated sites?* A search of the NSW Environmental Protection Authority (EPA) contaminated land data base was undertaken for the Moree area. The closest site is located approximately 175 m east of the Activity site, the Ampol Service Station at 54 Alice Street. The site would not have an impact on the Activity. A copy of the search is attached as **Appendix J**. However, soil disturbance and demolition works may encounter contaminated or hazardous material. A Detailed Site Investigation (DSI) for the Activity area identified sporadic occurrences of bonded Asbestos Containing Materials (ACM) were encountered in and on soil. The DSI recommended contamination related risks for the site were generally low, however, data gaps exist due to access constraints. Due to the detection of ACM in the fill soil and on the surface of the site, an Asbestos Management Plan (AMP) will be required for the proposed development works under the Work Health Safety Regulation 2017 (NSW). Preparation and implementation of an interim AMP for asbestos in soil is required until remediation (if required) occurs. The handling of asbestos containing material will be by an accredited contractor in accordance with EPA requirements. A Remediation Action Plan was recommended to further assess the extent of ACM and other data gaps identified in the DSI, and to provide contingencies for remediating the site. The RAP has identified the need for investigation to further characterise the soil and groundwater conditions to facilitate a more comprehensive and complete assessment of the risks driving the potential for remediation. A report is to be prepared confirming if remediation is required or not and whether a Remediation Works Plan (RWP) is to be prepared to provide specific detail of the remedial works involved. Implementation of an unexpected finds procedure is a mitigation measure of this REF. It should be noted that if remediation is required, it would likely be classified as Category 1 Remediation under Clause 4.8 of State Environmental Planning Policy (Resilience and Hazards) 2021 as the works would be undertaken in an area that is identified as a 'place of Aboriginal cultural significance' under Clause 5.10 of Moree Local Environmental Plan 2011. Therefore, such remediation would require development consent from Moree Plains Shire Council requiring the preparation of a development application and associated Statement of Environmental Effects.	No

Legislation	Comment	Relevant? Yes/ No
Heritage Act 1977	*Any impacts on Local or State or National heritage?* A Statement of Heritage Impact has been prepared by OzArK Environment & Heritage (OzArk) for the Moree Hospital redevelopment (refer to **Appendix K**). As part of that report, searches of all heritage databases were carried out. There are no local, state, or national heritage items identified within the subject site, however, the Moree District Hospital is within an area identified as a 'Place of Aboriginal Cultural Significance' as per the Moree Plains LEP 2011. The 'Moree District Hospital' is also a listed item on the NSW Health Section 170 heritage and conservation register, but no formal heritage assessment or inventory of the site has been completed. One of the buildings proposed to be demolished, Building 5 (the Glennie and Crane building) is referred to in the Section 170 listing for the hospital, and has been assessed as having local heritage significance. The original 1917 single storey brick building was in 'fair' condition in the SOHI. While the SOHI determined the building appears to be in good condition, the master planning process identified the building as having a number of issues including termites and disintegrating brickwork, with ongoing maintenance costs, and has been recommended for demolition. The SOHI has determined the proposed Activity will have a negative impact on the heritage values within the study area as a result of the proposed demolition of the Glennie and Crane building. The remaining buildings and structures to be removed have been assessed as having little heritage value and a low contributory value to the Glennie and Crane building. As retention of the Glennie and Crane building has been deemed unfeasible, then mitigation measures and interpretation strategy presented in the SOHI should be undertaken. Although the risk of the project affecting archaeological deposits at the study area have been identified as low, the *Unanticipated Finds Protocol* should be followed if potential significant heritage items are encountered during construction. As the Activity will impact a heritage item (Moree District Hospital) on the NSW Health Section 170 Register, the Heritage Council must be notified of the proposed demolition and works at least 14 days in advance.	Yes
Roads Act 1993	*Any works to a public road, or pumping of water onto a public road, or involve the connection of a road to a classified road?* Section 138 of the *NSW Roads Act* requires that all activities undertaken within Council's road reserve be approved by Council prior to the activities being undertaken. Health Infrastructure will need to obtain a Section 138 Approval for works within the road reserve/ connection of any new driveways.	Yes
Local Government Act 1993	*Any water or sewer supply head works that require contribution payment, per Section 64 of the Act?* Various activities (e.g. water, sewer, stormwater connections, amongst other things) generally require the approval of Council under Section 68 of the *Local Government Act 1993*. However, pursuant to Section 69 (Crown exemption from approval to do things incidental to erection or demolition of building) of *the Local Government Act 1993*, Section 68 does not require the Crown, or a person prescribed by the regulations to obtain the approval of Council to do anything that is incidental to the erection or demolition of a building.	No
Other Acts as required	*Any other acts as required to be addressed?*	No
Section 171A of the Environmental Planning and Assessment Regulation 2021	*Are there any impacts to catchments, as defined for consideration under Section 171A of the EP&A Regulation?* If any relevant assessments provided in response, note where. The site is not within any of the catchments described in Chapter 6 of State environmental Planning Policy (Biodiversity and Conservation) 2021.	No
State Legislation Planning Policies		

Legislation	Comment	Relevant? Yes/ No
State Environmental Planning Policy (Planning Systems) 2021	Section 2.6 of State Environmental Planning Policy (Planning Systems) 2021 (Planning Systems SEPP) states that development is declared to be SSD for the purposes of the EP&A Act if: • The development is not permissible without development consent under Part 4 of the EP&A Act. • The development is specified in Schedule 1 or 2. Clause 14 of Schedule 1 of the Planning System SEPP states that: Development that has a capital investment value of more than $30 million for any of the following purposes: (a) hospitals, (b) medical centres, (c) health, medical or related research facilities (which may also be associated with the facilities or research activities of a NSW local health district board, a university, or an independent medical research institute). The Moree Hospital Redevelopment project has an estimated capital investment value over $30 million. However, as documented in **Section 4.1** of this REF the Activity meets the requirements of Section 2.61 of the TISEPP and therefore can be assessed as development permitted without consent. The proposal must be assessed under Part 5 of the *EPA Act 1979* and not as State Significant Development under Part 4 of the *EPA Act 1979*. The land is not owned by an Aboriginal Land council. There are no concurrent consent authorities to this development.	No
State Environmental Planning Policy (Biodiversity and Conservation) 2021	**Chapter 2 - Vegetation in non-rural areas** This SEPP applies (as applicable) to clearing vegetation in non-rural areas of the State, including environmental zones, not associated with a Development Application. Section 2.7 outlines clearing that does not require authority under this Policy, including: (1) A permit or approval to clear vegetation is not required under this Chapter if it is clearing of a kind that is authorised under the *Local Land Services Act 2013* (Clearing authorised under other legislation) section 60O or under Part 5B (Private native forestry). On this basis and Clause 60O of the *Local Land Services Act 2013* (LLS Act) and given the proposal is a Part 5 Activity, any vegetation clearing is authorised by way of compliance with that part of the EP&A Act and authority under the Vegetation SEPP is not required. **Chapter 4 - Koala habitat protection 2021** Chapter 4 of the BC SEPP aims to encourage the conservation and management of areas of natural vegetation that provide habitat for Koalas to support a permanent free-living population over their present range and reverse the current trend of Koala population decline. It applies when councils assess development applications within all local government areas (LGAs) listed under Schedule 2, which includes Moree Plains. Although this SEPP does not technically apply to the Part 5 Approval Pathway under the EP&A Act, in order to fulfill the requirements of Part 5, Koala habitat and associated protections have been considered in the context of assessing the potential environmental impacts of the proposed Activity to the fullest extent possible. The proposed Activity will occur within managed land in an urban area. A Koala feed tree has been identified on site. A Biodiversity Assessment Report has been prepared to assess the impact of tree removal associated with the Activity (refer **Appendix L**).	Yes

Legislation	Comment	Relevant? Yes/ No
State Environmental Planning Policy (Sustainable Buildings) 2022	Chapter 3 of this SEPP applies to non-residential development that involves erection of a new building with capital investment value over $5 million or alterations, enlargement, or extension of an existing building if the development has a capital investment value of $10 million or more. As such, Chapter 3 applies to the Moree Hospital Redevelopment. However, this SEPP does not apply to development under Part 5 of the EP&A Act. Notwithstanding, the provisions of the SEPP should be considered as part of the environmental impact assessment for the project. A Sustainable Development Plan is provided at **Appendix G** which includes an assessment of the environmentally sustainable development measures incorporated into the development design, as per Chapter 3 of the SEPP.	
State Environmental Planning Policy (Resilience and Hazards) 2021	**Chapter 4 Remediation of land** The objective of Chapter 4 of the Resilience and Hazards SEPP is to provide for a State-wide planning approach to the remediation of contaminated land. It aims to promote the remediation of contaminated land for the purpose of reducing the risk of harm to human health or any other aspect of the environment. Chapter 4 applies to rezoning and development applications for development requiring consent. A number of contamination investigations have been undertaken for the site culminating in a Remediation Action Plan (RAP) for localised contamination found at the site (refer to **Appendix M**). Details of the investigations and RAP are discussed further in **Section 6.2.13** of this report. The land would be remediated (as Category 1 remediation works, requiring consent) prior to commencing earthworks to ensure it is suitable for the future hospital use. A Hazmat Building Materials Survey (HBMS) was previously undertaken for Moree Hospital which identified hazardous materials in structures on the site, including Asbestos Containing Materials (ACM) (refer to **Appendix M**). The report provides measures to address the handling and removal of any hazardous materials. The findings of the report and potential impacts associated with hazardous materials and contamination are discussed further in **Section 6.2.13**.	Yes
State Environmental Planning Policy (Transport and Infrastructure) 2021	The relevant planning approval matters pursuant to TI SEPP have been discussed in **Section 4.1**. The proposed Activity is defined as 'development permitted without consent' under Section 2.44 and Section 2.61 of TI SEPP and therefore requires assessment under Part 5 of the EP&A Act. Sections 2.10 – 2.15, 2.45 and 2.62 of TI SEPP set out requirements for consultation with councils, other public authorities, and occupiers of adjoining land. These requirements are addressed in **Section 5** of this REF.	Yes
State Environmental Planning Policy (Industry and Employment) 2021	Chapter 3 Advertising and Signage provisions apply. Any new signage installed as part of the Activity will need to comply with Section 3.1(1)(a) of the SEPP, whereby it: • is compatible with the desired amenity and visual character of an area, and • provides effective communication in suitable locations, and • is of high-quality design and finish. The signage that forms part of the Activity is detailed in the signage plans provided in **Appendix D.**	Yes
State Environmental Planning Policy (Precincts – Regional) 2021	The Moree Hospital is approximately 830 m north-west of the Moree Activation Precinct. There are no provisions of the SEPP that apply to the hospital site.	No
Moree Plains Local Environmental Plan 2011		

Legislation	Comment	Relevant? Yes/ No
Zone	The majority of the site is zoned R1 General Residential. A small sliver of land along the north-eastern property boundary is zoned RE1 Public Recreation, largely due to the zoning mapping and property boundaries misaligning slightly. The objectives of the R1 zone are: • To provide for the housing needs of the community. • To provide for a variety of housing types and densities. • To enable other land uses that provide facilities or services to meet the day to day needs of residents. The Activity represents the provision of ongoing health services (health infrastructure) for the community and is therefore consistent with the R1 zone objectives presented above. Health Services Facilities are permitted with consent in the R1 General Residential Zone. Regardless, the proposed Activity is permitted as development without consent under the provisions of the TI SEPP.	Yes
Height of Buildings	Not specified	No
Floor Space Ratio	Not specified	No
Heritage conservation	No	No
Flood Planning	Yes. The site would be inundated in the modelled Probable Maximum Flood. Assessment of flood hazard is provided in **Section 6.2.5**.	Yes
Coastal Planning	No	No
Places of Aboriginal cultural significance	Yes. The site is mapped as having Aboriginal Cultural Significance. Assessment of Aboriginal heritage is provided in **Section 6.2.7**.	Yes

5. Consultation

5.1 Statutory Consultation

Consultation requirements are established through Part 2.2 Division 1 (Sections 2.10-2.15), Section 2.45 and Section 2.62 of the TI SEPP. The need for consultation for the proposed development is addressed in **Table 8**.

Section 2.62 *Notification of carrying out certain development without consent* of the TI SEPP requires written notice of the intention to carry out development to council and the occupiers of adjoining land. This section applies to the redevelopment of Moree Hospital as it is development carried out by or on behalf of a public authority under Section 2.61(1) of the TI SEPP. The Activity also triggers notification to Council and adjoining occupiers of land pursuant to Section 2.45 *Notification of certain electricity substation development that may be carried out without consent* of TI SEPP, as the Activity includes the provision of a new electricity substation.

The Activity also triggers notification to the NSW State Emergency Service, pursuant to Section 2.13 *Consultation with State Emergency Service – development with impacts on flood liable land* of TI SEPP, as the site is susceptible to flooding by the probable maximum flood event.

The REF scope of works was notified for 21 calendar days to the stakeholders outlined in **Table 9**.

Table 8: Stakeholders Required to be Notified

Stakeholder	Relevant Section
Moree Plains Shire Council	section 2.12 Consultation with councils – development with impacts on flood liable land; section 2.45 Notification of certain electricity substation development that may be carried out without consent; and section 2.62 Notification of carrying out of certain development without consent of TI SEPP.
NSW State Emergency Service	Section 2.13 Consultation with State Emergency Services – development with impacts on flood liable land of TI SEPP.
Adjoining and Adjacent properties	Section 2.45 and 2.62 of TI SEPP.

Notification to Moree Plains Shire Council and NSW State Emergency Services commenced on 17 November 2023 and concluded on 8 December 2023. Notification to adjoining and adjacent properties commenced on 18 November and concluded on 9 December 2023. Copies of the notification letters, as well as responses received, are provided at **Appendix N**.

Zero submissions were received from the public on the proposed hospital redevelopment.

No submission was received from Council; however, a meeting was held to discuss the proposed Activity and also specifically flood impacts and floor levels. A copy of the minutes of this meeting area attached as **Appendix O.** During the meeting, Council advised that:

- The south side of Moree, where the hospital is located, does not flood and that they were in complete support of the current design.
- Council concurred that the current design did not present any increase in risks, while lifting the building would present increased operational problems.
- As the hospital redevelopment is a high priority for the community, Council offered to issue a letter of support for the current design if it would assist.
- In relation to evacuation planning, Council would be willing to engage alongside the SES.

The NSW SES responded to HI's notification through written correspondence dated 8 December 2023. An overview of the comments received from the SES are outlined and responded to in the table below.

Table 9: Issues Raised and Responses

Issue raised	Date received	Response	Reference
Moree Plains Shire Council			
No response was received. However, minutes of the meeting with Council area attached as **Appendix O**.	The meeting was held on the 16 November 2023.	Council's full support of the proposal is noted.	N/A
NSW State Emergency Service The NSW SES provides the following advice:	08 December 2023		
Consider the impact of flooding on the infrastructure up to and including the PMF, including people using the facility.		HI have undertaken a comprehensive flood risk assessment on the proposal which provides sufficient justification for the proposed floor levels of the hospital. Although the first floor will be inundated in extreme flood events (up to the PMF), mitigation measures such as facility evacuation under a comprehensive evacuation plan and structural design that will withstand extreme flood velocity will be adopted for the proposal.	**Appendix V and Section 6.2.5.**
Pursue, if relevant, site design and stormwater management that minimises any risk to the community.		Northrop Consulting Engineers Pty Ltd has prepared a Stormwater Design Report for the works which included a drainage and stormwater assessment and management plan for the proposed development. In consultation with Council, it was determined due to the proximity of the site to the Mehi River, an On-site Stormwater Detention Facilities are not recommended for this development. Local overland flow paths have been provided across the site with the proposed carpark having overland flow paths to the north and east towards Vitoria Terrace. The proposed loading dock area and ambulance bay have overland flow paths directed towards Alice Street.	**Appendix U and Section 6.2.5.**
Ensure workers and people using the facility during and after the upgrades are aware of the flood risk, for example by using signage. In addition, the level of flood awareness of visiting medical, nursing, and allied health staff to the Moree Hospital facility is likely to be lower than within the resident Moree community.		This requirement would be addressed by adopting a comprehensive flood awareness program for new and visiting staff as part of the hospital induction process along with appropriate signage and advice on evacuation if an extreme flood event is likely.	**Appendix V and Section 6.2.5.**
Develop an appropriate business emergency plan to assist in being prepared for, responding to and recovering from flooding. The NSW SES has a template which can assist in this process: http://www.sesemergencyplan.com.au/. NSW SES would recommend including evacuation planning for the site as access and egress routes become closed due to floodwater. Planning and design of the site should include the evacuation capability of all occupied land within the Moree Hospital facility.		A draft Flood Evacuation Plan (FEP) (refer **Appendix D** of the Flood Risk Assessment) has been prepared for the project and outlines how evacuation from the site during events more than the 1% AEP design storm event would occur. It is anticipated the draft FEP will be further developed in consultation with Health Infrastructure, Hunter New England Health LHD, MPSC and the SES and finalised prior to occupation of the new ASB building. The draft version of the FEP conveys the expected strategy to manage the residual risk to life observed on the site during significant or extreme flood events. It is recommended the draft FEP be provided to the SES for comment. HI will be seeking advice from the SES and Council regarding whether the proposed evacuation strategy is consistent with, and will not impact on, the existing regional emergency management measures in place for the township of Moree.	**Appendix V and Section 6.2.5.**
Particular attention should be paid to NSW Government legislation Standard Instrument, Principal Local Environment Plan Part 5 Miscellaneous Provisions (2006 EPI 155a). Part 5.22		This legislation and matters for consideration have been comprehensively addressed throughout this REF.	**Appendix V and Section 6.2.5.**

Issue raised	Date received	Response	Reference
Special Flood Considerations which include hospitals3: Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that the development: a) will not affect the safe occupation and efficient evacuation of people in the event of a flood, and b) incorporates appropriate measures to manage risk to life in the event of a flood, and c) will not adversely affect the environment in the event of a flood.			
Adjoining and Adjacent Properties			
No responses were received	N/A	N/A	N/A

5.2 Non-statutory consultation/ Community and Stakeholder Engagement

A series of consultation activities occurred throughout 2022 and 2023 regarding the proposed redevelopment of the Moree Hospital. These activities are listed in **Table 10**below.

Table 10: Other Consultation (non-statutory)

Date	Activity
January – March 2022	Staff project user groups
February 2022	Connecting with Country – Session 1
March 2022	Briefing for local Member of Parliament
April 2022	Master Plan Consultation – staff, community (pop-ups), Local Health committee, Auxiliary, Moree Plains Shire Council
May 2022	Staff drop-in session
May 2022	Connecting with Country – Session 2
May 2022	Local doctors briefing
June-August 2022	Staff project user groups
June 2022	Briefing for local Member of Parliament
July 2022	Briefing for local Member of Parliament
July-August 2022	Concept design consultation: • Staff. • Local Health Committee. • Auxiliary. • Moree Plains Shire Council. • Local doctors.
July-September 2022	Design survey open for feedback
August 2022	• Staff drop-in session. • Briefing for local Member of Parliament.
September-October 2022	Staff project user groups
September 2022	• Aboriginal Design Working Group Meeting 1. • Briefing for local Member for Parliament.

October 2022	• Community Connect Day Event. • Aboriginal Design Working Group Meeting 2.
November 2022	• Moree Hospital Aboriginal Staff Collaborative workshop. • Aboriginal Design Working Group Meeting 3. • Workshop with members of the Just Reinvest Youth Advisory Group. • Briefing for local Member of Parliament.
July 2023	• Staff Briefings. • Updates for Local Health Committee, Moree Plains Shire Council.
August 2023	• Staff project user groups. • Aboriginal Design Working Group meeting. • Arts Working Group meetings. • Community drop-in session held at the Moree Library. • Meeting with Moree Plains Shire Council.
September–October 2023	• Staff Project User Groups
November 2023	• Meeting with Moree Plains Shire Council. • Staff project user groups. • Aboriginal Design Working Group meeting. • Arts Working Group meeting.

Consultation summary reports from the various stages are also provided in **Appendix O.** Minutes of the Aboriginal Design Working Group meetings held in September, October and November 2022 are provided at **Appendix O**.

Flooding Consultation

The project Flood Consultants undertook ongoing consultation with Moree Plans Shire Council and the NSW State Emergency Services to ensure that flood risk and development requirements were clearly identified, assessed, and documented in the Flood Risk Assessment (refer **Appendix V**). Representatives from HI also met with Moree Shire Council to ensure it was comfortable with the proposal with regard to flooding. Council responded that the south side of Moree, where the hospital is located, does not flood and that they were in complete support of the current design. Council also concurred that the current design did not present any increase in risks, while lifting the building would present increased operational problems. A copy of the minutes of this meeting is contained in **Appendix O**

Connecting with Country Consultation

The Moree Hospital Redevelopment team has consulted with local Aboriginal community and hospital staff to seek their input on creating a culturally safe and welcoming design (and meet objectives of the Government Architect of NSW Designing with Country Framework). Engagement has been undertaken throughout the project lifecycle and this is ongoing via the Aboriginal Design Working Group, Arts Working Group, and community consultations.

Table 11: Connecting with Country Engagement Sessions

Date	Activity
Tuesday 22 February 2022	Introductory workshop held with local Elders, community members and representatives from Aboriginal health organisations at the Dhiiyaan Centre. This workshop aimed to introduce the project and project team, learn about Country and how this could influence the design.
Wednesday 18 May 2022	Design workshop and BBQ held at Moree Hospital (Lizzie Doolan Room) with staff, Elders and community members with feedback sought on the master plan.
Wednesday 27 July 2022	Cultural assessment of the site completed with staff from Aboriginal Health in attendance.
Tuesday 30 August 2022	First meeting of the Aboriginal Design Working Group, a collaboration of staff, organisations and individuals working with the project team to provide recommendations on incorporating Aboriginal culture into the design. This first meeting introduced the project and sought feedback on the master plan and concept design.
Wednesday 31 August 2022	Project team visited the Terri Hie Hie reserve which is managed by the Moree Local Aboriginal Land Council.

Wednesday 5 October 2022	Project team held information display at the Community Connect event in Moree and engaged with community members, followed by the second meeting of the Aboriginal Design Working Group focusing on the locations of the Lizzie Doolan Room and Aboriginal Health services.
Thursday 6 October 2022	Project team members joined with Uncle Lloyd Munro Senior on a Walk on Country visiting multiple sites within Moree including Stanley Village (Top Camp), Middle Camp (near the current hospital), South Moree including Pius X (Bottom Camp) and Mehi Crescent.
Wednesday 30 November 2022	Third meeting of the Aboriginal Design Working Group, focusing on landscaping elements, outdoor areas, and design considerations for birthing design and sorry business.
Thursday 4 May 2023	Fourth meeting of the Aboriginal Design Working Group focusing on arts and cultural initiatives.
Thursday 3 August 2023	Fifth meeting of the Aboriginal Design Working Group, introduction to the new architect update on the design and discussion on location of Lizzie Doolan Room in the new design, and first meeting of the Arts Working Group.
Thursday 21 September	Sixth meeting focusing on interior design, landscaping, and arts.
Thursday 23 November	Final Meeting focusing again on interior design, landscaping, and arts.

6. Environmental Impact Assessment

6.1 Environmental Planning and Assessment Regulation 2021 – Assessment Considerations

Section 171(1) of the *Environmental Planning and Assessment Regulation* (2021) notes that when considering the likely impact of an activity on the environment, the determining authority must take into account the environmental factors specified in the environmental factors guidelines that apply to the Activity.

The *Guidelines for Division 5.1 Assessments (June 2022)* apply to the Activity. The relevant assessment considerations under Section 3 of these Guidelines are provided below:

Table 12: Summary of Environmental Factors Reviewed in Relation to the Activity

Relevant Consideration		Response/ Assessment		
(a)	Any environmental impact on a community?	The proposed Activity involves redevelopment of an existing hospital with all works occurring within the grounds of the hospital site. The Activity will not have significant environmental impacts on the community. There is likely to be an increase in vehicles and noise during construction works, however this will be temporary in duration. Such impacts can be appropriately minimised by the imposition of mitigation measures. Hazardous materials will be handled and removed in accordance with EPA protocols to prevent impacts on hospital staff, patients, or the general public. The new building integrates with the existing built form on site and will provide improved health services and enhanced facilities for the community. On balance the proposal would be of benefit to the community.	-ve Nil +ve	 ✓
(b)	Any transformation of a locality?	The Activity will result in changes to the visual appearance of the hospital site. The new ASB is being constructed in the south-east portion of the site adjacent to Alice Street. The line of existing trees along the Alice Street frontage is being retained and will help screen the building from the residential housing to the south. The site will continue to be used and identifiable as Moree Hospital, maintaining its identity by establishing a legible language between the existing services and new assets. The visual appearance is to be improved by the Activity in the long-term. Any negative visual impacts during construction will be minor and temporary and can be managed to minimise external impacts.	-ve Nil +ve	 ✓
(c)	Any environmental impact on the ecosystems of the locality?	Environmental impacts associated with the Activity are generally minor and of temporary duration. Tree removal is required (17 trees are to be removed) however there is no important vegetation or habitat onsite and significant trees are to be retained. A full assessment of environmental impacts, including water quality and ecology, is contained in **Section 6.2.5** and **6.2.9**. Any environmental impacts will be minimal and will be subject to appropriate mitigation measures.	-ve Nil +ve	 ✓
(d)	Any reduction of the aesthetic, recreational, scientific, or other environmental quality or value of a locality?	The new ASB is to be constructed on an existing open lawn area which currently offers an informal recreational space. This under-utilised open space area will be lost; however, the design incorporates carefully considered courtyards and landscape design that better integrates with the existing buildings, and will better serve the patients, staff, and visitors with outdoor meeting spaces. The line of street trees along the verge of Alice Street provides a pleasant vista along the street frontage which is to be maintained.	-ve Nil +ve	 ✓
(e)	Any effect on locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific, or social significance or other special value for present or future generations?	Yes. The Activity includes demolition of the Glennie and Crane Building which is identified as having local significance in the Section 170 Heritage Register listing. The SOHI (refer to **Appendix K**) determined demolition of this building will have a negative impact on the heritage values within the hospital site. Options were explored for retention of the building; however, the existing condition of the building (suffering from termites and disintegrating brickwork) meant it was unfeasible for reuse or refurbishment. As retention and re-use is not viable, a plan for a potential heritage interpretation strategy which records and conserves the heritage values of the building in the new development is to be incorporated to help mitigate some of the negative heritage impact of the project.	-ve Nil +ve	✓

Relevant Consideration		Response/ Assessment		
		Demolition of Building 5 makes possible the creation of a courtyard between Buildings 1 and 4 which opens the site to provide safer and clearer site lines between the existing buildings as well as providing a social heart for the hospital campus, a place for respite for patients, staff, and visitors. This will have long term positive impacts for the development. The Moree District Hospital site is identified as a 'Place of Aboriginal cultural significance' under the Moree Plains LEP 2011. Based on the Aboriginal Due Diligence Assessment Report (refer to **Appendix P**), no Aboriginal objects or intact archaeological deposits will be harmed by the project. The report concluded as the project would not have a significant impact under the Aboriginal due diligence heritage process, an AHIP application is not necessary. Although risk of the project affecting archaeological deposits in the works area has been assessed as low, an *Unanticipated Finds Protocol* should be followed if potential significant heritage items are encountered during construction. Standard mitigation measures are provided as a precautionary measure (refer to **Section X**).		
(f)	Any impact on the habitat of protected animals, within the meaning of the *Biodiversity Conservation Act 2016*?	The Activity site is within the maintained grounds of an existing hospital complex and is not identified as important vegetation or habitat (refer to **Section 6.2.9**).	-ve Nil +ve	 ✓
(g)	Any endangering of any species of animal, plant, or other form of life, whether living on land, in water or in the air?	As above. The site is unlikely to include habitat utilised by any threatened species.	-ve Nil +ve	 ✓
(h)	Any long-term effects on the environment?	Overall, the Activity should have a long-term positive effect on the local environment by offering the local community an improved and enhanced health care service and facility to better serve the population of Moree into the future. Any negative impacts associated with the Activity will be temporary and managed through the imposition of mitigation measures (e.g. noise, visual, air quality). These matters are discussed in further detail in **Section 6.**	-ve Nil +ve	 ✓
(i)	Any degradation of the quality of the environment?	No. Environmental degradation as a result of the removal of trees has been considered so the new parking layout allows for new planting of trees to replace trees that have to be removed. Erosion control measures will be implemented on site to minimise soil erosion.	-ve Nil +ve	 ✓
(j)	Any risk to the safety of the environment?	A flood risk report has been prepared for the site which is discussed in Section 6.2.5 of this report. It provides details regarding the potential threat to the site and operation of the hospital in the event of a PMF and how the design of the facility and the redevelopment project has taken into consideration design solutions to mitigate and minimise flood risk. Likewise, mitigation measures will be implemented to minimise any potential impact or risk from contamination.	-ve Nil +ve	✓
(k)	Any reduction in the range of beneficial uses of the environment?	No. The Activity will enable the site to continue to be utilised as a hospital. The project has been planned to enable the works to proceed without significant disruption to the continuing operation of the hospital during construction.	-ve Nil +ve	 ✓
(l)	Any pollution of the environment?	No. Appropriate mitigation measures will be incorporated to minimise any potential pollution of the environment (e.g. erosion control, contamination). Some potential risks to the environment exist in times of extreme floods. There would be potential for goods and materials (including medicines) in the hospital to become dislodged and be washed away in an extreme flood event. This could lead to environmental and health impacts. These impacts would be mitigated by the adoption of the Flood Evacuation Plan (FEP). As part of the FEP one of the first stages would be to secure all goods and material (including medicines) to the first floor and to ensure all items that can't be relocated are secured.	-ve Nil +ve	 ✓

Relevant Consideration	Response/ Assessment		
(m) Any environmental problems associated with the disposal of waste?	No. Safeguards will be implemented during construction works to minimise potential waste impacts during construction (**Section 6.2.12**). Any hazardous materials will be disposed of at a licenced facility and in accordance with EPA protocol.	-ve	
		Nil	✓
		+ve	
(n) Any increased demands on resources (natural or otherwise) that are, or are likely to become, in short supply?	No. Materials salvaged as part of demolition works will be sorted and identified for recycling. Impacts associated with the consumption of natural resources through the use of machinery would be minimal (refer to **Section 6.2.14**).	-ve	
		Nil	✓
		+ve	
(o) Any cumulative environmental effects with other existing or likely future activities?	No. Refer to **Section 6.2.16.**	-ve	
		Nil	✓
		+ve	
(p) Any impact on coastal processes and coastal hazards, including those under projected climate change conditions?	No. The site is not in the Coastal Zone as identified in the *Coastal Management Act 2016*.	-ve	
		Nil	✓
		+ve	
(q) Applicable local strategic planning statement, regional strategic plan or district strategic plan made under Division 3.1 of the Act?	The NSW Government has committed major expenditure towards the upgrade of numerous hospitals throughout NSW and the delivery of high quality, improved services for the State. The proposed Activity involves the redevelopment of the existing hospital and is part of this Government program. Moree is identified as a Strategic Centre in the 'New England North West Regional Plan 2041'. The project is consistent with directions in the Plan relating to health care. The proposed Activity is consistent with the Moree Plains Local Strategic Planning Statement 2020, which encourages the growth of a health precinct around Moree Hospital. This supports the strategic decision by HI to keep the hospital in its current location, rather than moving to a greenfield site.	-ve	
		Nil	
		+ve	✓
(r) Any other relevant environmental factors?	No	-ve	
		Nil	✓
		+ve	

6.2 Identification of Issues

6.2.1 Traffic, Access and Parking

Questions to Consider	Yes	No
Will the works affect traffic or access on any local or regional roads?	✓	
Will the works disrupt access to private properties?		✓
Are there likely to be any difficulties associated with site access?		✓
Are the works located in an area that may be highly sensitive to movement of vehicles or machinery to and from the work site (i.e. schools, quiet streets)?	✓	
Will full or partial road closures be required?		✓
Will the proposal result in a change to onsite car parking?	✓	
Is there onsite parking for construction workers?		✓

Existing Environment

The hospital site is bound by Victoria Terrace to the east and north and Alice Street to the south. The site has three main vehicular crossover points;

- An existing site entry point on the eastern boundary of Victoria Terrace to the main public/ visitor carpark area.
- An existing site exit point on the northern boundary of Victoria Terrace from the main public/ visitor carpark area.
- A combined staff and back of house entry point from Alice Street.

A Transport Impact Assessment (TIA) has been prepared by PTC Consultants for the proposed Activity (refer **Appendix Q**). The report identified existing on-site hospital carparking areas are shown in **Figure 7** below.

Figure 7 Locations of Existing Onsite Hospital Car Parks

Existing carparking within the car park areas is provided in **Table15** below.

Table 15: Breakdown of Existing Parking Supply by Carpark

Car Park	Formal Spaces
Car Park 1	19
Car Park 2	12
Car Park 3	39
Car Park 4	2
Car Park 5	11
TOTAL	83

Impact Assessment

The TIA prefaced the report noting that the Activity does not result in any increase in the services offered at Moree Hospital as a result of the new facilities being proposed. The Activity focusses predominantly on updating and refurbishing Moree Hospital to create a more functional and up to date hospital and upon completion of the new Acute Services Building (ASB), existing services that are contained within the existing buildings on site will relocate to the new building. Therefore, the parking needs for the site are not changing.

The proposal includes updating and reconfiguration of some existing carparking areas. The first element of works will be the establishment of the construction zone, which will require relocation of the existing parking at the front of Building 4 (CP2) and realignment of carpark entry, ambulance entry and loading entry from Alice Street. The proposed new carpark located along the north-east corner of the site (refer to **Figure 8** and **Figure 9** below) will accommodate the spaces from displaced carpark CP2 and reconfigured carpark CP3. The new carpark will match the combined number of car spaces from CP2 and CP3 (51 car spaces). This sequence of works will ensure public access to the hospital during construction is not disrupted.

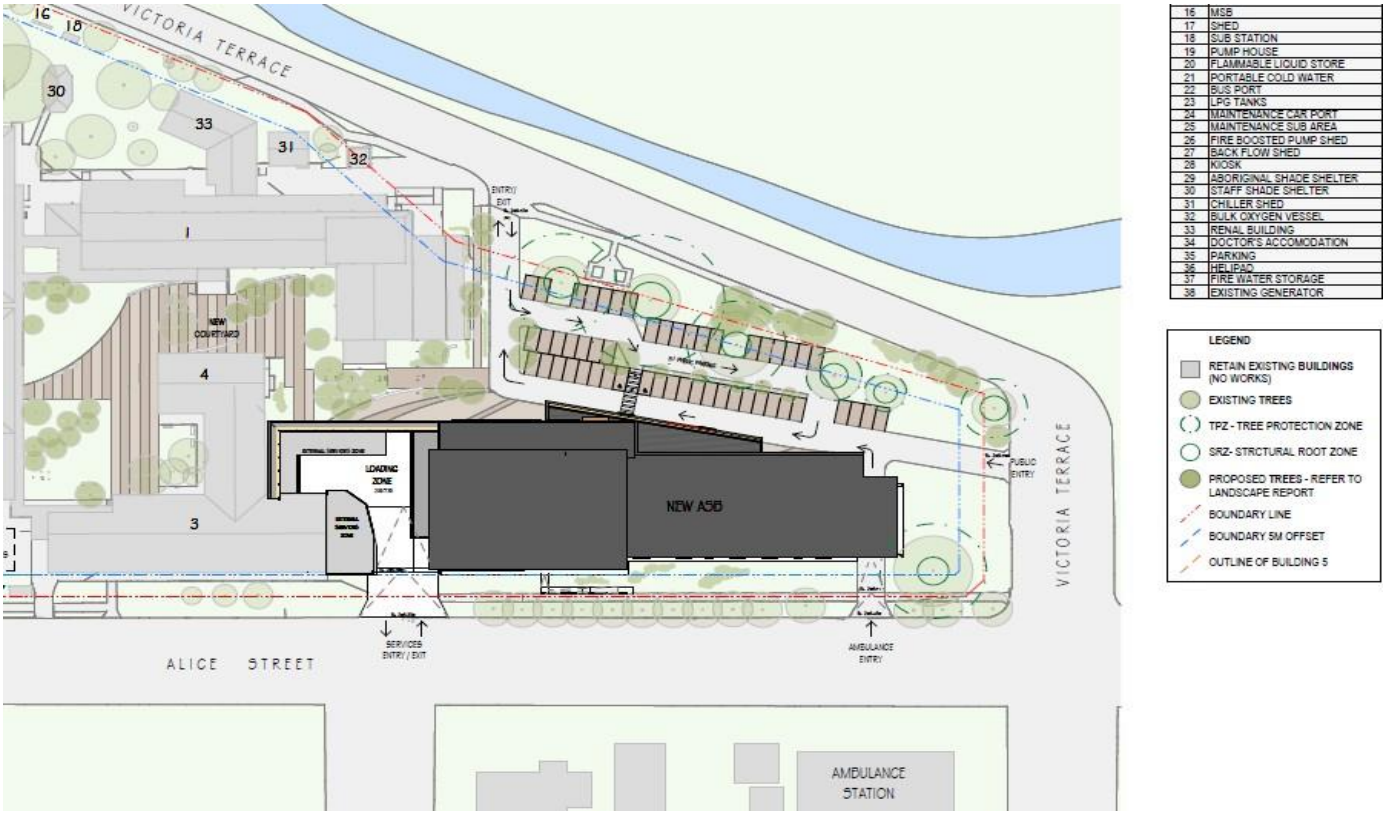


Figure 8 Proposed development with new vehicle access points and reconfigured carpark area

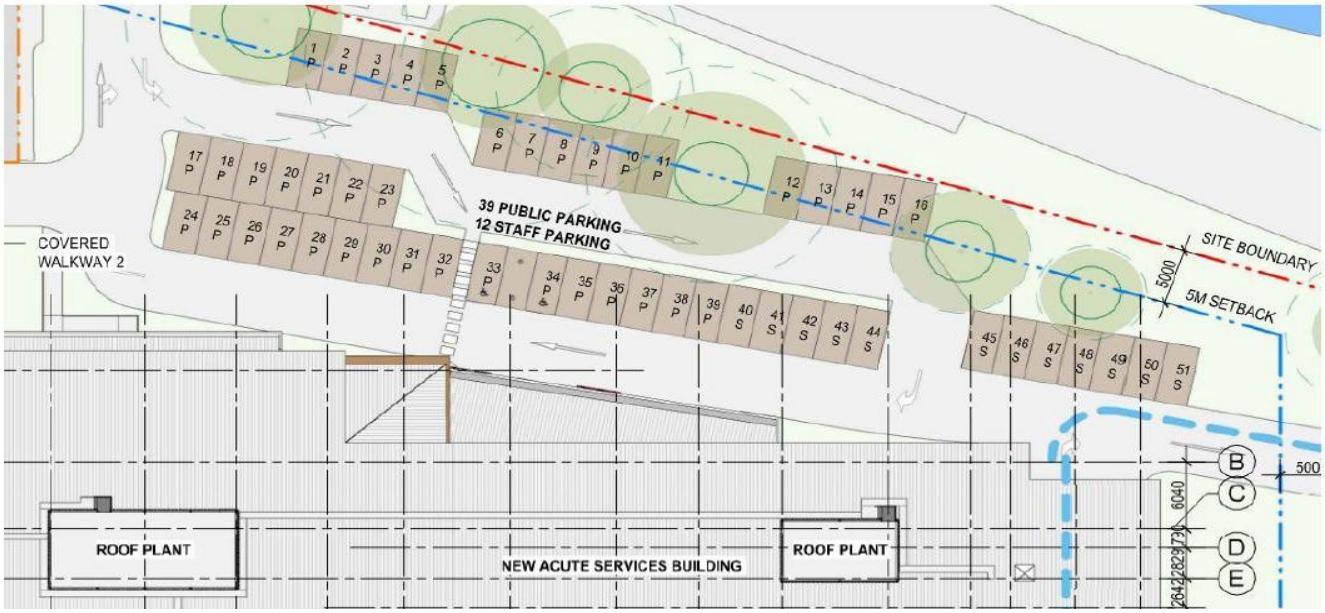


Figure 9 Proposed reconfigured carparking area

Ambulance access to the new ASB is provided by a one-way entry from Alice Street to a dedicated, undercover drop-off bay to accommodate two ambulances at the eastern end of the building. The existing eastern driveway from Victoria Terrace will provide path of egress for ambulances, shown in **Figure 9** above. Access to the new loading dock and building services area is provided at the western end of the building, via new vehicle entry point from Alice Street, which provides direct access to the Back of House facilities at the hospital.

Traffic surveys and modelling were undertaken for the site to confirm the network has no existing congestion issues. The development site traffic is expected to behave in a similar fashion with similar volumes based on the assumption that no major new infrastructure or staffing increases are proposed. Therefore, no significant negative impacts are expected to occur to the surrounding network.

The TIA identifies that the site has limited access to public transport, and as a result many staff and patients use private vehicles to access the site. Surrounding pedestrian and dedicated cycling facilities are limited, however the nature of the local roads and lower traffic volumes does enable some short distance active travel.

Parking occupancy surveys of the existing site determined, generally, the existing car parking provided on site is adequate for various staff users, as well as patient and visitor demand. The exception to this is during peak demand period (10-11 am) when there is a shortfall of 52 carparks during this period. PTC conclude however, that given the proposal does not result in a notable increase in staffing numbers, the existing on-site parking provisions are considered sufficient for the proposal. PTC also noted there is additional parking capacity off-site for staff or long-stay visitors available through on-street parking along Alice Street without any adverse effects on the surrounding area, which reduces the need for any more onsite parking.

Based on the assumptions detailed above, the existing site provides adequate parking supply for the expected traffic generation, furthermore, the surrounding road network operates with a good Level of Service, with ample spare capacity to handle the temporary increase in traffic during construction of the Activity.

All access and egress points across the site, for the various anticipated vehicle types, are suitable based on swept path assessments. All on-site parking spaces are to be compliant with Class 3 parking dimensions from AS2890.1.

A Traffic Management Plan will be developed as part of the CEMP. A complete set of mitigation measures relating to Traffic and Access required for the Activity is located at **Appendix R.**

6.2.2 Noise and Vibration

Questions to Consider	Yes	No
Are there residential properties or other sensitive land uses or areas that may be affected by noise from the proposal during construction (i.e. schools, nursing homes, residential areas, or native fauna populations)?	✓	
Will any receivers be affected by noise for greater than three weeks?	✓	
Are there sensitive land uses or areas that may be affected by noise from the proposal during operation?		✓
Will the works be undertaken outside of standard working hours? That is: • Monday - Friday: 7 am to 6 pm. • Saturday: 8 am to 1 pm. • Sunday and public holidays: No work.		✓
Will the works result in vibration being experienced by any surrounding properties or infrastructure?	✓	
Are there any impacts to the operation of helipads on the activity site?		✓

A Construction and Operational Noise and Vibration Assessment has been prepared by Muller Acoustic Consulting for the Moree Hospital Redevelopment (refer to **Appendix S**).

6.2.2.1 Identification of Sensitive Receivers

The noise environment surrounding the proposal site is typical of a suburban environment, with dominant noise sources including local and highway traffic noise, and environmental noise (bird calls).

A review of aerial photography identifies that the study area comprises predominantly residential properties from the south-east to the west of the proposal site, active recreation areas from the north-west to the north-east of the proposal site, and commercial receivers from the east to south-east of the proposal site. The nearest residential receiver is located on Alice Street, approximately 30 m from the Activity site. The closest non-residential receivers are the Moree District Ambulance Station, approximately 70 m south-east of the Activity site, and the Moree Visitor Information Centre, approximately 120 m to the east of the Activity area.

The level of affectation for each receiver is influenced by the activity that is being undertaken and the distance and exposure of each receiver to the activity site. It is noted that the area of affectation is the distance from the proposal where receivers may experience noise levels above the relevant noise management levels (NMLs). Nearby sensitive receivers are shown in **Figure 10** below.

Figure 10 Sensitive Receivers Map

6.2.2.2 Construction Hours

Table 15 below presents the recommended standard hours for construction works. Construction activities are anticipated to be undertaken primarily during standard construction hours.

Table 15: Proposed Construction Hours

Recommended Standard Hours of Construction	
Monday to Friday	7 am to 6 pm
Saturdays	8 am to 1 pm
Sundays or Public Holidays	No construction

Minor hospital works may be undertaken during out of hours work period, however these works would be internal and would not generate significant noise emissions.

6.2.2.3 Construction Noise Management Levels (NMLs)

Construction NMLs for residential receivers have been established from minimum assumed RBLs outlined in Section 2.3 of the Noise Policy for Industry (NPI, 2017). The NMLs for standard and out of hours work periods are summarised in **Table 16** for residential receivers.

Table 16: Construction NMLs – Residential Receivers

Location	Assessment Period	RBL, DBA	NML dB LAeq (15 min)	Highly noise affected NML dB LAeq (15 min)
All residential receivers	Day (standard hours)	35	45 (RBL+10dBA)	75
	Day/ Evening (OOH Period 1)	30	35 (RBL+5dBA)	75
	Night (OOH Period 2)	30	35 (RBL+5dBA)	75

The NMLs for standard and out of hours work periods are summarised in **Table 17** for non-residential receivers.

Table 17: Construction NMLs – Non-Residential Receivers

Location	Assessment Period	Where NML Applies	NML dB LAeq (15 min)
Educational Institute	When in use	Internal noise level	65
Active Recreation	When in use	External noise level	65
Commercial Receiver	When in use	External noise level	70

6.2.2.4 Noise Assessment Methodology

A computer model was developed to quantify project noise emissions to neighbouring receivers using DGMR (iNoise, Version 2024) noise modelling software. iNoise is an intuitive and quality assured software for industrial noise calculations in the environment. 3D noise modelling is considered to be industry best practice for assessing emissions from projects.

The model incorporated a three-dimensional digital terrain map giving all relevant topographic information used in the modelling process. Additionally, the model uses relevant noise source data, ground type, attenuation from barrier or buildings and atmospheric information to predict noise levels as the nearest possible affected receivers. Where relevant, modifying factors in accordance with Fact Sheet C of the NPI have been applied to calculations.

The model calculation method used to predict noise levels was in accordance with ISO 9613-1 ‘Acoustics - Attenuation of sound during propagation outdoors. Part 1: Calculation of the absorption of sound by the atmosphere’ and ISO 9613-2 ‘Acoustics - Attenuation of sound during propagation outdoors. Part 2: General method of calculation’ including corrections for meteorological conditions using CONCAWE[1].

6.2.2.5 Proposed Construction Scenarios

Construction activities considered to have the greatest potential for noise impact on nearby receivers were determined in consultation with the NSW Public Works Advisory (PWA). The construction scenarios included in this assessment are described in **Table 18**.

The precise locations and types of equipment used for construction are not known in detail at this stage of the proposal. Hence, the construction fleet for each activity was modelled across the potential extent of each work area, with all plant and equipment operating simultaneously and at maximum capacity for the duration of the assessment period. It is noted that typical construction plant and equipment are unlikely to operate simultaneously but may be used sequentially across each part of the construction area. On that basis, this assessment provides a broad assessment of the likely worst-case impacts from the construction works.

Table 18: Proposed Construction Scenarios

Scenarios	Description
Demolition of existing structures	• Demotion of existing structures. • Breaking up of rubble including existing footings.
Bulk Earthworks	• Excavation and relocation of fill across the site. • Removal of excess fill using truck and dog type arrangements.
Site Preparation and footings	• Construction of footings/ foundations. • Installation of services.
Construction of buildings	• Erection of structures. • Building facades. • Internal fit out. • Landscaping.

6.2.2.6 Construction Noise Levels

Construction noise levels have been predicted for sensitive receiver locations for each of the construction scenarios described in **Table 18** above. A summary of the predicted LAeq (15 min) noise emissions is presented for the most affected receiver location for each receiver type in **Table 19** below. Predicted levels exceeding the Noise Management Levels (NMLs) are displayed in **BOLD** text.

Table 19: Summary of Noise Assessment Results – Most Affected Receivers

Receiver Type	Period	NML (dB LAeq)	Highest Predicted dB LAeq Per Scenario[1]			
			Demolition	Earthworks	Site Prep	Construction
Residential	Standard	45	**68**	**63**	**65**	**64**
Educational Institution	When in use	65[2]	48	43	43	42
Active Recreation	When in use	65	64	59	60	59
Commercial[3]	When in use	70	66	61	62	62

Note 1: Exceedance of relevant NMLs highlighted and shown in BOLD.
Note 2: External noise criteria derived using 20dBA façade attenuation for a closed facade as per Table 4.2 of ENMM.
Note 3: Includes accommodation services during the day period.

The results of the assessment demonstrate that LAeq (15 min) noise emissions would be above the relevant NMLs for several residential receivers for all construction scenarios during standard construction hours. The highest LAeq(15 min) noise levels are predicted at up to 68dB at 74 and 76 Alice Street during demolition of existing structures. Construction noise levels are predicted to remain below the highly affected NML of 75dB LAeq(15 min) at all receivers.

Further analysis was undertaken to determine the potentially affected distance from the project site, and the number of residential receivers within the affected area for each of the construction scenarios. The results of the analysis are provided in **Table 20**.

Table 20: Affected Distances – Construction Activities

Receiver Type	Construction Scenario	NML dB LAeq (15 mins)	Affected Distance (m)	Number of Receivers Affected
Residential	S1 – Demolition	45	~560	~200
	S2 – Earthworks		~315	~45

S3 – Site Preparation	~420	~55
S4 – General construction	~330	~50

The results of the assessment demonstrate that during demolition works, residential receivers located within approximately 560 m of the project site may experience noise levels above the relevant NML for standard construction hours, with up to 200 residential receivers potentially affected. During earthworks, up to 45 residential receivers within approximately 315 m of the project site are predicted to experience noise levels above the standard hours NML, while up to 55 receivers within 420 m and 50 receivers within 330 m of the project site are predicted to experience noise levels above the standard hours NML during site preparation works and general construction works respectively.

6.2.2.7 Construction Noise Mitigation Measures

Noise modelling identifies that relevant NMLs for the project may be exceeded during each of the proposed construction activities. The ICNG and Australian Standard AS 2436-2010 “Guide to Noise Control on Construction, Maintenance and Demolition Sites” outline noise management and mitigation initiatives to minimise the impact and improve the acoustic amenity of receivers potentially affected by construction projects.

Recommendations provided in the ICNG and AS2436 include combinations of operational strategies, source noise control strategies, noise barrier controls, and community consultation. Adopting strategies contained in this standard may result in the following noise attenuation:

- up to 10dBA where space requirements place limitations on the attenuation options available; and
- up to 20dBA in situations where noise source mitigation measures (silencers, mufflers, etc) can be combined with noise barriers and other management techniques.

A table of mitigation measures to be implemented for the proposal is provided in **Appendix R**.

6.2.2.8 Construction Vibration Impact Assessment

The items of plant with the greatest potential for vibration during construction include hydraulic hammers during the demolition of existing structures, or vibratory rollers during earthworks. Peak levels of vibration from rolling typically occurs as the roller stops to change direction and a resonance is created as the roller (and vibrator) is stationary.

Table 21 provides the minimum working distances for the use of various vibration intensive sources to nearby receivers to meet cosmetic damage and human response criteria. It is important to note that the minimum working distances are indicative and will vary depending on the item of plant and local geotechnical conditions.

Table 21: Minimum Working Distances or Vibratory Plant (m)

Plant Item	Rating/ Description	Minimum working distance		
		Cosmetic damage	Sensitive items	Human response
Vibratory Roller	< 50 kN (Typically 1-2 tonnes)	5 m	10 m	15 m – 20 m
	< 100 kN (Typically 2-4 tonnes)	6 m	12 m	20 m
	< 200 kN (Typically 4-6 tonnes)	12 m	24 m	40 m
	< 300 kN (Typically 7-13 tonnes)	15 m	30 m	100 m
	> 300 kN (Typically 13-18 tonnes)	20 m	40 m	100 m
	> 300 kN (> 18 tonnes)	25 m	50 m	100 m
Small Hydraulic Hammer	(300 kg – 5 to 12t excavator)	2 m	4 m	7 m
Medium Hydaulic Hammer	(900 kg – 12 to 18t excavator)	7 m	14 m	23 m
Large Hydraulic Hammer	(1600 kg – 18 to 34t excavator)	22 m	44 m	73 m

A review of aerial photography identifies that the nearest residential receivers are located approximately 30 m from the project site, while the nearest non-residential receiver is located approximately 70 m from the project site. A review of the State Heritage Inventory identifies that the closest heritage item is the Kirby Park Bandstand approximately 300 m to the north-east of the Activity area.

Based on the minimum working distances provided in **Table 21**, it is anticipated that vibration levels would remain below the cosmetic damage criteria for all residential and non-residential receivers. Where a vibratory roller in excess of seven tonnes or a large hydraulic hammer is utilised, vibration levels are likely to exceed the human response criteria at nearby residential receiver locations. Once the final vibratory plant has been selected, a review of minimum offset distances should be conducted.

Vibration levels are not predicted to exceed the cosmetic damage criteria for any non-residential receivers or heritage items in the vicinity of the proposal site.

6.2.2.9 Noise and Vibration Impacts to Existing Hospital Buildings

Analysis of noise and vibration impact on internal hospital buildings indicate that due to the close proximity of works to the existing hospital buildings, the construction noise levels would potentially exceed the internal design sound level for the existing hospital buildings during each of the construction activities. Where construction works may impact on sensitive spaces, including operating theatres and hospital wards, consultation should be undertaken with the administrators of the hospital to schedule construction works around critical activities.

A review of offset distances identifies that the proposed construction works would occur within very close proximity (< 5 m) of the existing hospital buildings to be retained. Where vibration intensive plant, such as vibratory rollers and hydraulic hammers are used, vibration levels may exceed the cosmetic damage criteria for sensitive items. Once the final vibratory plant has been selected a review of minimum offset distances should be conducted. Where the works are to be undertaken close to sensitive processes, different construction method with lower source vibration levels should be used where feasible and reasonable.

6.2.2.10 Assessment of Operational Noise Impacts

Noise generated by the project will typically be associated with the following sources:

- vehicle movements within the new/ upgraded carpark; and
- mechanical plant operation.

It is understood that the Out Plant would include the following acoustically significant items of plant:

- chiller units; and
- pump room.

The Project Intrusiveness Noise Levels (PINL) for the project are presented in **Table 22** and have been determined based on the RBL +5dBA and only apply to residential receivers.

Table 22: Minimum Working Distances or Vibratory Plant (m)

Receiver Type	Period	Measured RBL dB LA_{90}	Adopted RBL dB LA_{90}	PINL dB $LA_{eq\ (15min)}$
All Residential	Day	44	35	40
	Evening	42	30	35
	Night	36	30	35

Note 1: Day – the period from 7 am to 6 pm Monday to Saturday or 8am to 6pm Sundays and public holidays; Evenings – the period from 6 pm to 10 pm; Night – the remaining periods.

The results of the operational noise predictions indicate that noise emissions from vehicles in the upgraded car park, and mechanical plant would satisfy the PINTLs at all receiver locations. It is noted that the assessment has included indicative mechanical plant as per the preliminary mechanical services plan.

It is recommended that a review of mechanical plant should be undertaken as part of the detailed design stage of the project, including predication of noise emissions and identification of feasible and reasonable mitigation measures to ameliorate potential noise impacts. It is also recommended that prior to the completion of the detailed design operation noise assessment, to inform the final selection of plant and identification of mitigation measures, a detailed background noise assessment should be undertaken to quantify existing noise levels in the surrounding catchments, to establish area specific criteria for the project.

Operational noise levels associated with vehicle movement in the upgraded hospital carparks and mechanical plant are predicted to achieve the relevant NPI criteria. It is recommended that the mechanical plant be reviewed following development of a detailed mechanical services plan. Furthermore, a detailed background noise assessment should be completed to inform the detail design operational noise assessment.

Analysis of potential sleep disturbance impacts from transient events such as car door slams within the hospital carpark and loading activities within the external loading bay, demonstrates that LA_{max} noise levels as the nearest residential receivers are predicted to remain below the maximum noise trigger level. Hence sleep disturbance impacts are unlikely to occur.

A review of carparking and access arrangement identified that the number of on-street and on-campus car spaces would remain materially the same as the existing car spaces. Hence, its anticipated that there would be no material changed to road traffic noise levels from the proposed development.

A review of potential external noise intrusion, undertaken in accordance with the SEPP (Transport and Infrastructure) identified that traffic volumes on the nearby Gwydir Highway are below the threshold for assessment. Hence noise levels are expected to comply with the internal design sound levels.

A complete set of mitigation measures relating to Noise and Vibration impacts from construction and operation for the Activity is located at **Appendix R.**

6.2.3 Air Quality and Energy

Questions to Consider	Yes	No
Could the works result in dust generation?	✓	
Could the works generate odours (during construction or operation)?		✓
Will the works involve the use of fuel-driven heavy machinery or equipment?	✓	
Are the works located in an area or adjacent to land uses (e.g. schools, nursing homes) that may be highly sensitive to dust, odours, or emissions?	✓	

Existing Environment

The Activity area is within the Moree Hospital site, which is located within a residential area of Moree township. The site fronts local roads and adjoins an area of residential development to the south and recreational areas to the east and north.

The local air quality is generally good. Potential airborne particles within the locality would be restricted to vehicle emissions.

Hazardous building materials have been identified within existing buildings on site which can pose a potential air contamination source during demolition.

Impact Assessment

During demolition and construction works the Activity may temporarily result in air quality impacts to construction workers

and adjacent sensitive receivers through:

- exhaust emissions from machinery and associated transportation;
- dust generated from excavation works; and
- material blown from the site during high winds.

The dust generated throughout the demolition and construction would be minimal and limited to the immediate vicinity of the work area, however it may contain hazardous materials such as friable asbestos and therefore it is likely that air monitoring will be required for the duration of the works. The mobilisation of dust poses risks to workers and public safety.

Although generation of odours is not anticipated, any odours associated with demolition for the site will be assessed and minimised. All plant and machinery involved with the Activity will be regularly serviced and checked for exhaust emissions and catalytic converters are to be utilised.

Given the temporary duration of the works and nature of the Activity, the level of potential impact is not considered significant and can be managed or minimised through implementation of safeguards and management measures.

The Activity would contribute to greenhouse gas emissions to a minor extent via the emissions from construction equipment and traffic, as well as the consumption of materials requiring carbon emissions and the removal of vegetation that may otherwise act as a carbon sink. Given the scale of the works however, the influence on greenhouse gas emissions would be negligible. However, it is appropriate to implement measures that can reduce or minimise such effects.

A comprehensive set of mitigation measures is provided at **Appendix R.**

6.2.4 Soils and Geology

Questions to Consider	Yes	No
Will the works require land disturbance?	✓	
Are the works within a landslip area?		✓
Are the works within an area of high erosion potential?		✓
Could the works disturb any natural cliff features, rock outcrops or rock shelves?		✓
Will the works result in permanent changes to surface slope or topography?		✓
Are there acid sulfate soils within or immediately adjacent to the boundaries of the work area? And could the works result in the disturbance of acid sulfate soils?		✓
Are the works within an area affected by salinity?		✓
Is there potential for the works to encounter any contaminated material?	✓	

Existing Environment

The Activity site is generally level with a slight slope down to the north to the Mehi River. It is located within the grounds of the Moree Hospital and is occupied by several buildings largely constructed on-grade, paved carparks, internal driveways and open concrete or paved areas, with surrounding grassy areas and pockets of landscaping and garden beds. Parts of the site have been previously levelled to accommodate existing development.

The Geotechnical Investigations for the proposed Moree Hospital Redevelopment have been undertaken by JKGeotechnics with the purpose of obtaining geotechnical information on the subsurface conditions, to be used as a basis for providing comments and recommendations on the geotechnical aspects of the proposal.

JK Geotechnics have undertaken an Additional Geotechnical Investigation of the site, subsequent to a previous Geotechnical investigation (refer to **Appendix T**). The boreholes and test pits from these geotechnical investigations indicate a generalised profile comprising topsoil (or locally a variable thickness of fill) overlying alluvial clays with alluvial sands intermittently encountered at moderate or greater depth. Bedrock was not encountered within the depth of the investigations. Groundwater seepage was encountered in places at moderate depth in the alluvial sands.

The site area does not traverse any mapped acid sulfate soil risk areas.

Impact Assessment

Geotechnical Considerations and Constraints

The Additional Geotechnical Investigation Report (refer to **Appendix T**) indicates that the alluvial clay encountered at the site is colloquially referred to as black cotton soil, and geologically as black vertosol (soils containing a high content of expansive clay minerals [primarily montmorillonite]). These alluvial clays are extremely reactive soils with changes in moisture content and are susceptible to softening when wet, can also become 'sticky' when wet, and will form wide open cracks when dry.

The report notes that the clay subgrade is expected to heave under proof rolling, therefore making compaction of fill and pavement materials above difficult. Therefore, the construction of the access roads, car park areas and other earthworks associated with the building construction should be undertaken using a contractor who is experienced in working with these materials, and the use of bridging layers over the heaving subgrade may be required in some areas.

The reactive nature of the alluvial clays will also have implications for footing and floor slab design; our assessment of the alluvial clays indicates that their design would need to be based on a Class E-D site classification, in accordance with AS2870-2011.

The Geotechnical Investigation Report makes various recommendations on the following items which will need to be considered throughout the design process:

- Site preparation (dilapidation surveys, demolition and excavation, seepage, and temporary batters).
- Earthworks (site drainage, subgrade preparation, engineered fill and trench backfill).
- Retention and permanent batter slopes (retention design parametersm retaining walls supporting engineered fill and permanent batter slopes).
- Footing design.
- Existing building damage.
- Earthquake design classification.
- Floor Slabs.
- Pavement Design and Construction.
- Soil Aggressivity.
- Site Stability.

The recommendations presented in the report include specific issues to be addressed during the construction phase, such as special treatment of soft spots that may be required because of their discovery during proof-rolling. Long term successful performance of floor slabs and pavements will depend on satisfactory completion of earthworks. Critical factors associated with earthworks will include quality assurance for routine compaction density testing as well as subgrade preparation, selection of fill materials, control of moisture content and drainage. Satisfactory control and assessment of these items may require judgment from an experience engineer.

The recommended footing option most suitable for the ASB is a floor slab suspended between pile footings which would limit settlements and prevent reactive surface movements impacting the ASB. The piles would need to be de-bonded/permanently sleeved to 3.4 m depth. It's recommended the pile design comprise a design and construct package within the contract with only suitable experienced and insured piling contractors invited to tender. Due to the variability of the foundation materials and the thickness and lateral extent of the sand layers in the alluvial profile, the design and construct package could include a requirement for further geotechnical investigation to assist in optimising the piling contractors design, particularly in the areas of the highest column loads requiring several piles and a pile cap.

A preliminary sediment and soil erosion control plan has been prepared for the Activity site and is attached as part of the civil engineering package (refer **Appendix U**). Measures proposed include the creation of temporary sediment basins and site stockpiles, installation of sediment filter and fencing, drainage swales and treatment of site access.

6.2.4 Coastal risks

Questions to Consider	Yes	No
Are the works affected by any coastal risk/ hazard provisions?		✓
Is any coastal engineering advice required, proportionate to the proposed Activity?		✓

6.2.5 Hydrology, Flooding and Water Quality

Questions to Consider	Yes	No
Are the works located near a natural watercourse?	✓	
Are the works within a Sydney Drinking Water Catchment?		✓
Are the works located within a floodplain?	✓	
Is the development activity located above Probable Maximum Flood Levels?		✓
Will the works intercept groundwater?		✓
Will a licence under the *Water Act 1912* or the *Water Management Act 2000* be required?		✓
Has stormwater management been adequately addressed?	✓	

Flooding

Preamble

A Flood Risk Report has been prepared by Northrop (refer to **Appendix V**). The Flood Risk Report provides an assessment of the flood risk to the Moree Hospital Redevelopment project and:

- Identifies and evaluates flood risk factors that may affect the project and the site surrounds and the proposed development for the full range of events (i.e. up to and including the probable maximum flood (PMF) event.
- Assesses the impacts of the development, including any changes to flood behaviour and risk, impacts of flooding on the development and its future community and on existing community for the full range of events.
- Provides recommendations for mitigation measures to minimise flood risk.
- Demonstrates that the development is consistent with NSW Policy in relation to flood impacted development.

Proposed Floor Levels

The proposed Acute Services Building has a Ground Floor (GF) Finished Floor Level (FFL) sited at 209.735 m AHO which is consistent with the existing hospital FFL. The intent was to maintain connectivity between the existing and proposed facilities. The First Floor FFL is sited 4.5 m above the ground floor level with an FFL of 214.235 m AHO. The adopted floor levels are generally consistent with Council's requirement for placement of the minimum FFL to be at or above the 1% AEP + a 500 mm freeboard.

Flood Behaviour

The subject site is susceptible to riverine flooding from the Mehi and Gwydir Rivers. The Mehi River is located approximately 40 m to the north of the site. The Mehi River flows in a westerly direction, bisecting the township of Moree during frequent and in-frequent events. During major and extreme flood events, the Mehi River is observed to link with the Gwydir River, across Moree Plains, creating an extensive 3-9 km wide floodplain. Inundation across the site is expected to occur as the adjacent Mehi River breaks its banks and floodwater continues across the site in a south-westerly direction.

Flood Depth and Elevation

Northrop obtained a Flood Certificate from Moree Plains Shire Council, which indicates that the site is not affected by flooding in the 1% AEP design storm event (100-year event). This is shown on a flood depth image provided by Council (provided in **Figure 11** below).

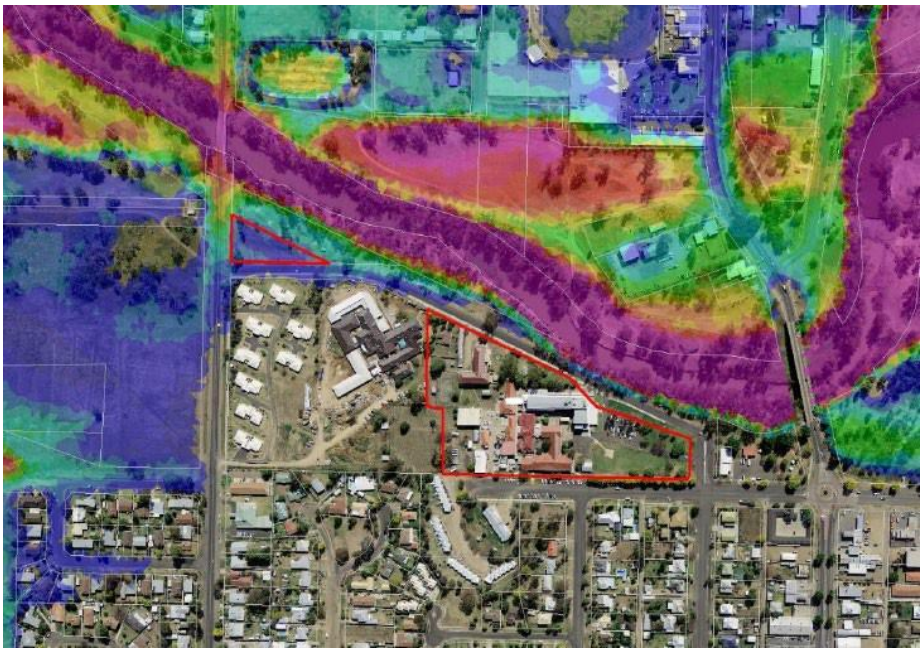


Figure 11 Flood Depth Image

Flooding across the site is expected to occur during events in excess of a 1% AEP with depths up to approximately 0.5 m during a 0.5% AEP (200-year event) and 2.0 m during a Probable Maximum Flood (PMF) event.

Flood Hazard

Flood hazard conditions are based on the latest Australian Rainfall and Runoff (2019) guidelines with a summary of hydraulic behaviour and accessibility during categories ranging from H1 to H6. The Northrop Flood Risk Assessment (refer **Appendix V**) states that flood hazard conditions during the 0.5% AEP are expected to remain relatively low with up to H2 hazard conditions expected across the site during this event. This means that the site is expected to remain trafficable for large vehicles, but non-trafficable for small vehicles during this event. It is possible small vehicles may become buoyant during this event presenting a risk to life and property. Pedestrians, including children and elderly, are expected to be able to walk across the site (although this is not recommended).

External to the site, evacuation from the facility is expected to become difficult, but not impossible during the 0.5% AEP. Nearby roads such as Auburn and Balo Streets are likely compromised during the peak of the 0.5% AEP however, evacuation may still be possible by continuing east along Alice Street and then south up Warialda Street. A draft flood evacuation strategy has been developed (refer **Appendix V**) to ensure the hospital is evacuated prior to this event taking place.

H5 flood hazard conditions are expected across the subject site during the peak of the PMF. Similar conditions are observed across a large portion of Moree with H5 hazard conditions extending to Adelaide Street, approximately 600 m south of the subject site. Flood conditions are expected to be unsafe for vehicles and people with all building types vulnerable to structural damage during the PMF. Evacuation from the site during the peak of this event will be extremely difficult and likely only possible by aircraft.

Flood Velocity

The Northrop Flood Risk Assessment details the flood velocity at the site and vicinity during the 1% AEP, 0.5% AEP and PMF design storm events. Peak velocities, observed in the eastern portion of the site, are generally less than 2.0 m/s during the 0.5% AEP while, velocities elsewhere across the site are expected to be generally less than 0.8 m/s. During the PMF, velocities of up to 2.0 m/s are expected across full extent of the site.

A summary of flood behaviour for the site is identified in **Table 23** below.

Table 23: Summary of Flood Behaviour

Flood Probability (Return Interval)	Flood Depth (m)	Flood Elevation (m AHD)	Flood Velocity (m/s)	Flood Hazard (ARR 2019)
1% AEP	0.0	209.10*	Not Flooded	Not Flooded
0.5% AEP	0.5	209.30	2.0	H2
PMF	2.0	210.51	2.0	H5

Source: Northrop 2023

Flood Duration and Warning

The Flood Risk Assessment (refer **Appendix V**) states that Council's Flood Study suggests a critical duration of 48 hours is expected at the site for all return intervals considered. This means that a long duration of immersion at the site is expected (possibly 12 - 48 hours or more), especially during an extreme flood event (i.e. the PMF). As such isolation of the site during a PMF is likely to occur for a prolonged period of time with estimates indicating a duration in excess of 24 hours. Further to the above, the NSW Service Level Specification for Flood Forecasting and Warning Services (BoM, 2020) suggests a minimum warning time of 12 and 24 hours is expected to be available prior to the peak of a Minor or Major flood event respectively.

Flood Planning Requirements

Moree Plains Shire Council (MPSC)

Northrop and Health Infrastructure (HI) undertook consultation with Council regarding flood risk and requirements. Advice from MPSC throughout the consultation has been consistent with the proposed development Finished Floor Level (FFL) to be sited at a minimum of the 1% AEP + 500 mm or 500 mm above adjacent terrain levels. The proposed Activity complies with this requirement.

The Flood Risk Report that was prepared to support the proposal considered a number of studies and reports including Council's Flood Study and the Department of Planning and Environment's Flood Risk Management Manual 2023. The Manual supports The Flood Prone Land Policy and guides Local and State Government in managing flood risk through the flood risk management framework. The proposal has been designed to consider flood risk, manage and mitigate impacts in accordance with this famework. The guide emphasises a need for merit-based land use planning decisions that consider flooding, to limit increases in risk in occupying the floodplain as the community grows and to enable infrastructure design and operation to consider flooding and its role in community flood response and recovery

Northrop notes in its Flood Risk Assessment (refer **Appendix V**) that many requirements are often much easier to adopt for new hospitals, with significant design and cost implications associated with raising the FPL to the PMF for existing facilities. The latest Flood Risk Management Guideline (FB01) recognises this challenge for existing facilities and provides additional recommendations with respect to development and operational controls:

- Floor levels of emergency medicine areas and patient wards to be sited above an extreme flood level (such as the PMF). This may mean these facilities do not need to be evacuated if services can be maintained.
- The location and protection of backup utility services should be investigated so they can be operational, accessible, and available during floods.
- Resupply of essential goods, equipment and materials during floods should be investigated so the facility can continue to operate.

- Adequate room for storage of waste products away from floodwaters should be considered to avoid contamination.
- Design of the site to maximise accessibility of emergency and staff entries into the hospital during floods. This may affect the location and design of the entrance.
- Likelihood of some staff having their homes affected by flooding and their need to look after family members.

The design of the facility has given due consideration to these provisions and the proposed activity is in general compliant with these requirements. Please refer to **Table 4** of the Flood Risk Assessment in **Appendix V** for an assessment of the Activity's response to each of the abovementioned criteria.

Mitigation Options

An assessment of the identified options for the Activity is outlined in **Section 3.2.2**. A more detailed assessment of the options is provided in the Flood Risk Assessment in **Appendix V**. The options identified by Northrop are:

- Option 1 - Relocate the Facility.
- Option 2 - Raise Finished Floor Levels above the PMF.
- Option 3 - Maintain proposed levels but protect the facility up to the PMF.
- Option 4 - Close and Evacuate the Facility prior to major extreme flood events.
- Option 5 - Protect the Facility to the PMF and Close and Evacuate the Facility prior to major/ extreme flood events.

Adopted Flood Risk Management Measures

The preferred option is to maintain a similar level of flood protection to the proposed facility when compared to the existing facility. This strategy is consistent with Council's recommendation for placement of the minimum FFL at or above the 1% AEP + 500 mm, or 500 mm above existing terrain levels as previously discussed.

It is noted that the NSW Flood Prone Land Policy presents the following objectives with respect to development of flood prone land:

- Using a merit-based approach in preparing and implementing flood risk management (FRM) plans to address riverine and local overland flooding.
- Reducing the impact of flooding and flood liability on existing developed areas identified in FRM plans through flood mitigation works and measures including ongoing emergency management (EM) measures, the raising of houses where appropriate and by development controls.
- Adopting a merit-based approach for all development decisions in the floodplain, taking into account social, economic and ecological factors, as well as flooding considerations.
- Limiting the potential for flood losses in all areas proposed for development or redevelopment by the application of ecologically sensitive planning and development controls.

A merit-based approach has been sought for the proposed development in accordance with the objectives set out by the NSW Flood Prone Land Policy. The existing and proposed facility is considered a Critical Facility in accordance with the NSW Flood Risk Management Manual (NSW OPE, 2023). These facilities are expected to perform key functions for the community during a flood emergency. Section 3.6 of the Flood Risk Management Guideline (FB01) (NSW OPE, 2023) highlights that where the role of a Critical Facility cannot be fulfilled it is important for Emergency Management Planning Authority to identify:

- Alternative arrangements for providing the services to the local community during flood events.
- Arrangements for evacuating the facilities, if required.
- Efficient arrangements for return to operation after a flood to support recovery and return to business as usual.

As noted in the Flood Risk Assessment prepared by Northrop, the PMF is based on the worst-case scenario, assuming the most extreme weather conditions and the highest possible rainfall that could happen in that region. Council's Flood Study (WRM, 2017) suggests the PMF for the region is equivalent to approximately the 1 in 55,000-year event (i.e. 0.0018% AEP) highlighting the low likelihood of the event.

Flood Planning Levels (FPL) in NSW are more realistic estimates of potential flood levels that could occur in a particular area. They are based on historical flood data, hydrological modelling, and other factors such as land use and climate change projections. FPLs are used to guide land-use planning, emergency management, and evacuation plans in flood-prone areas. FPLs are typically lower than PMF and represent the expected range of flood events that could occur in a particular region over time.

The steps needed by way of design and location to enable the infrastructure to withstand flood have been weighed against the need for the infrastructure to serve the community effectively in normal circumstances when there is no flooding. The Defined Flood Event (DFE) for the purposes of the proposed development is based on the 1% AEP which is generally consistent with the recommendations presented in Moree Plains Shire Council Development Control Plan (DCP). The proposed minimum Finished Floor Level for the new ASB building is sited above the minimum required levels presented in Council's DCP, with a freeboard of approximately 630 mm.

The risk assessment presented herein identifies a risk that critical mains and back up services, required to maintain operation of the facility, have the potential to be cut during events more than the 1% AEP design storm event. As such, evacuation from the site during this event is recommended with a draft Flood Emergency Plan (FEP) presented herein to enhance site flood preparedness, response, and recovery. To facilitate this, a draft operational Flood Emergency Plan (FEP) has been prepared for the proposed development and is included in the Flood Risk Assessment as **Appendix D**. This is discussed in further detail below and in the Flood Risk Assessment.

It is anticipated the FEP will be further reviewed in consultation with Hunter New England Health and the State Emergency Service prior to occupation of the proposed Acute Services Building.

Flood Evacuation

The FEP (Appendix D of the Flood Risk Assessment) highlights an alternative arrangement namely evacuation from the site during events more than the 1% AEP design storm event. It is anticipated the draft FEP will be further developed in consultation with Health Infrastructure, Hunter New England Health, MPSC and the SES and finalised prior to occupation of the new ASB building. The draft version of the FEP conveys the expected strategy to manage the residual risk to life observed on the site during significant or extreme flood events.

It is recommended the draft FEP be provided to the SES for comment. We will be seeking advice from the SES regarding whether the proposed evacuation strategy is consistent with, and will not impact on, the existing regional emergency management measures in place for the township of Moree.

Flood Awareness

Correspondence by the SES advises that NSW Health should ensure workers and people using the facility during and after the upgrades are aware of the flood risk, for example by using signage. In addition, the level of flood awareness of visiting medical, nursing, and allied health staff to the Moree Hospital facility is likely to be lower than within the resident Moree community. This would be addressed by adopting a comprehensive flood awareness program for new and visiting staff as part of the hospital induction process along with appropriate signage and advice on evacuation if an extreme flood event is likely.

Structural Design to Withstand Anticipated Flood Velocities

Northrop have assessed the impacts of the PMF Flood on the primary structure using the procedure in the Australian Building Codes Board 'Construction of Buildings in Flood Hazard Areas' document and the 'Reducing Vulnerability of Buildings to Flood Damage' document prepared for the Hawkesbury Nepean Floodplain Management Steering Committee. Northrop's preliminary assessments indicates that the hydrodynamic and debris impact loads can be catered for in the design loading envelope. This includes perimeter columns and walls. A copy of the advice is attached as **Appendix A1**.

Environmental Impacts

In extreme flood events there would be the potential for additional environmental impacts to and surrounding the hospital. These impacts would be:

- Pollution from loose debris and items within the hospital grounds, chemicals, medicines, fuel, etc.
- Impacts to the structural integrity of the new building and associated works.
- Damage to carparking, landscaping and ancillary infrastructure.
- Damage from vehicles and other items floating away.
- Sediment and erosion from scouring from the site.

An assessment of these impacts is provided in the **Table 24** below.

Table 24: Environmental Impact of Flooding in Extreme Flood Events.

Impact	Environmental Assessment
Pollution	There would be potential for goods and materials (including medicines) in the hospital to become dislodged and be washed away in an extreme flood event. This could lead to environmental and health impacts. These impacts would be mitigated by the adoption of the Flood Evacuation Plan (FEP). As part of the FEP one of the first stages would be to secure all goods and material (including medicines) to the first floor and to ensure all items that can't be relocated are secured.
Damage to structural Integrity of the building	As outlined in the Flood Risk Assessment the structure would need to be designed to withstand flood velocities up to the PMF event. Northrop have advised that the building is capable of being designed as such.
Damage to infrastructure	Critical infrastructure has been designed to be at or above the General Flood Planning Level. There would be some damage to landscaping and carparking etc however this type of infrastructure is relatively easy to replace.
Damage from vehicles and other items floating away	All vehicles and movable items would be relocated to areas above the PMF as part of the FEP and all items that are not movable would be secured on site.
Sediment and erosion from scouring from the site	Given the infrastructure and hard stand areas on the site is not considered that this would create a significant environmental impact especially given the sediment that would already have been mobilised in an extreme flood event.

As identified above there would be some impacts on the development, the surrounding environment, and the community from a major flood (PMF). It is considered however that, subject to the implementation of the identified mitigation measures, the environmental impacts from a PMF would not be significant.

Climate Change Impacts to Flooding

As noted in the flood risk assessment prepared by Northrop (refer **Appendix V**) climate change conditions were not directly considered in Council's Flood Study (WRM, 2017) however, the 0.5% AEP (commonly referred to as the 200-year flood event) can be considered herein as a proxy for increased rainfall intensities due to climate change as an alternative. This means that the 0.5% AEP may be considered the 1% AEP (commonly referred to as the 100- year flood event) under future climate conditions. Impacts due to Sea Level Rise (SLR) are not expected to affect the findings of Council's Flood Study (WRM, 2017) as the site is located well above sea level.

Groundwater

The current and previous Geotechnical investigations (refer to **Appendix T**) extended boreholes to a maximum depth of 10.45 m and only one borehole encountered seepage in a band of sand within the alluvial clays at 5.6 m depth. The expected maximum excavation depth is expected to be in the order of 1.0 m to accommodate the subfloor area below the suspended ground floor slab. Based on this information it's not expected to encounter groundwater in the excavation and so no specific requirements for measures such as dewatering are expected to be required. Localised seepage may be encountered in some pile drill holes which can be satisfactorily managed by techniques appropriate to the piling system adopted (temporary liners in bored piles to prevent collapse, use of CFA piling techniques to support the drill hole or installation of screw piles).

Stormwater Quality and Quantity (Operational)

Northrop Consulting Engineers Pty Ltd has prepared a Stormwater Design Report for the works which included a drainage and stormwater assessment and management plan for the proposed development (refer **Appendix U**). The report proposes a stormwater management strategy to utilise a pit and pipe system as well as maintaining overland flow paths. The minor drainage system is to comprise of below ground pit and pipe network and would be designed to control nuisance flooding and enable effective stormwater management of the site. The major drainage system is to be designed to control and convey flows from the critical 1% AEP event (1:100 year event). This would incorporate suitably designed overland flow paths and drainage to direct flows away from the buildings towards Victoria Terrace and Alice Street.

In consultation with Council, it was determined due to the proximity of the site to the Mehi River, an On-site Stormwater Detention Facilities are not recommended for this development.

Water quality measures were also considered and detailed in the report. The approach taken to stormwater quality is to provide pit inserts within the carpark pits as well as a proprietary stormwater treatment device (Jellyfish) to be utilised to treat stormwater runoff prior to disposal to the north-east corner of the development. Surface Inlet Pits within the proposed carpark development are to be fitted with Ocean Guard Pit inserts (or equivalent) which sit beneath the stormwater pit grates and collects gross pollutants and larger sediments prior to treatment by other devices.

Local overland flow paths have been provided across the site with the proposed carpark having overland flow paths to the north and east towards Vitoria Terrace. The proposed loading dock area and ambulance bay have overland flow paths directed towards Alice Street.

Water Quality (Construction)

An Erosion and Sediment Control Plan will be prepared in accordance with Council's requirements and the NSW Department of Housing Manual, "Managing Urban Stormwater Soil & Construction" 2004 (Blue Book). The Plan will be in place prior to any earthworks commencing on site. The objectives of the erosion and sediment control for the Activity will be to ensure:

- adequate erosion and sediment control measures are applied prior to the commencement of construction and are maintained throughout construction; and
- construction site runoff is appropriately treated in accordance with Moree Plains Shire Council's requirements prior to discharge.

The sediment and erosion control measures may include:

- A temporary site security/ safety fence is to be constructed around the site, the site office area, and the proposed sediment basin.

- Sediment fencing provided downstream of disturbed areas, including any topsoil stockpiles.
- Dust control measures including covering stockpiles, installing fence hessian and watering exposed areas.
- Placement of hay bales or mesh and gravel inlet filters around and along proposed catch drains and around stormwater inlets pits.
- The construction of a temporary sediment basin as noted above.
- Stabilised site access at the construction vehicle entry/ exits.

Any stockpiled material, including topsoil, shall be located as far away as possible from any associated natural watercourses or temporary overland flow paths. Sediment fences shall be installed to the downstream side of stockpiles and any embankment formation. All stockpiles and embankment formations shall be stabilised by hydroseeding or hydro mulching on formation.

6.2.6 Visual Amenity

Questions to Consider	Yes	No
Are the works visible from residential properties or other land uses that may be sensitive to visual impacts?	✓	
Will the works be visible from the public domain?	✓	
Are the works located in areas of high scenic value?		✓
Will the works involve night work requiring lighting?		✓

The Moree Hospital setting comprises of various built forms and infrastructure which are generally consistent with a regional district hospital. As the hospital site has been developed over many decades the site consists of an array of buildings that vary in age, condition, size, and scale. The built form largely occupies the western portion of the hospital site generally comprising of one or two-storey brick buildings, with an open lawn space, carpark area and decommissioned helipad occupying the eastern portion of the site. Residential properties along Alice Street have direct views to the redevelopment site.

Figure 12 Moree District Hospital site looking north towards the hospital and Mehi River beyond

The redevelopment of Moree Hospital will result in a visual change in its local setting which will be experienced from within the hospital grounds and the adjoining streets (Alice Street and Victoria Terrace). Initially the works will involve establishment of the construction site and the presence of construction fencing, works personnel, plant, and equipment, which will have a short term negative visual impact. Some of the structures to be demolished will be visible

from the public domain, however most buildings and structures to be demolished are centrally located within the site, which will limit the visual impact of demolition on views from the surrounding area.

The proposed Acute Services Building adjoins the Alice Street frontage and will be highly visible from the surrounding streets and residential properties, resulting in a permanent visual change because of the construction of the new modern two-storey building. The architectural form of the new building has been considered in the context the surrounding residential development with a single skillion roof adopted to minimise the impact of the height of the building with the lowest side of the roof falling along the Alice Street (southern) elevation.

The new ASB will have a combined 'front door' for main hospital entry and emergency department which will reduce the number of public entry points and will be clearly visible from the main entry to the site and parking areas.

Of the 17 trees to be removed, six of these have been identified as having moderate significance and two with high significance. There will be some visual impact because of tree removal. However, compensatory planting will occur as part of the Activity, with opportunities for improved canopy coverage across the site.

Landscaping

Taylor Brammer Landscape Architects Pty Ltd have prepared the Landscape Design for the hospital redevelopment which was largely informed by initial consultation through the concept design phase. The information shared by the local community revealed selected planting and a connection to the Mehi River were significant. Design principles include reconnecting to the river, providing a welcoming environment for all community, and creative a restorative landscape. This has been integrated into the landscape design by the use of predominantly native planting character as well as influences of Mehi Riverbank forms, patterns, and colours.

The proposal includes eastern gardens which focus on creating a functional entry, waiting and drop off setting in the existing landscape for the new ASB. The western gardens will provide most of the landscape and amenity for the staff, patients, and community broadly, with this central space providing a range of amenity environments for users and the community. This includes a new nature-based play area as well as seating and table areas for families under shade trees. Many existing trees are to be retained and protected and will be supplemented with an extensive new tree planting strategy of native planting. Overall, the creation of these landscaped spaces will provide a positive environmental outcome for the site and the community of Moree through extensive tree planting, creation of functional and accessible environments and the celebration of Country.

Wayfinding Design

Wayfinding and Signage Design has been prepared by Minale Tattersfield (refer to **Appendix D**) and incorporates all information to be provided for the self-navigational approach to and circulation within the site capturing all user groups and traffic modes, day, and night. New signage will be planned, designed, and implemented in accordance with best practice and evidence-based design.

The Wayfinding package includes:

- Signage – designed with the rural and architectural context in mind and appropriate in scale, with ease of navigation and legibility of text for day and night.
- Signage kit of parts, look and feel – the design elements are non-institutional in appearance, provide visual interest and promote a welcoming, warm, and therapeutic atmosphere.
- Incorporation of indigenous art with way finding – Indigenous references form part of a separate arts strategy. Welcome to Country content other than artwork can also be incorporated with English text.
- Compliance with relevant legislation, guidelines and standards relating to the service delivery of the hospital.

Examples of exterior signs, such as Site entry identification and Site wide circulation signage are provided in the signage strategy.

Interior signage would include level directories, directional signs, reception identification and directories, room identification, identification of amenities, department identifications and bedroom identifications.

6.2.7 Aboriginal Heritage

Questions to Consider	Yes	No
Will the Activity disturb the ground surface or any culturally modified trees?	✓	
Are there any known items of Aboriginal heritage located in the works area or in the vicinity of the works area (e.g. previous studies or reports from related projects)?		✓
Are there any other sources of information that indicate Aboriginal objects are likely to be present in the area (e.g. previous studies or reports from related projects)?		✓
Will the works occur in the location of one or more of these landscape features and is on land not previously disturbed? • Within 200 m of waters. • Located within a sand dune system. • Located on a ridge top, ridge line or headland. • Located within 200 m below or above a cliff face. • Within 20 m of, or in a cave, rock shelter or a cave mouth.	✓	
If Aboriginal objects or landscape features are present, can impacts be avoided?	✓	
If the above steps indicate that there remains a risk of harm or disturbance, has a desktop assessment and visual inspection been undertaken?	✓	
Is the activity likely to affect wild resources or access to these resources, which are used or valued by the Aboriginal community?		✓
Is the Activity likely to affect the cultural value or significance of the site?		✓

An Aboriginal Due Diligence Assessment Report has been prepared by OzArk Environment and Heritage to accompany this REF (refer to **Appendix P**).

The study area for the assessment is the existing Moree Hospital site. The study area is situated on a flat landform to the south of the Mehi River which is approximately 30 m north of the study area. Much of this landform has been substantially modified over the life of the hospital.

A visual inspection of the study area was undertaken on 27 July 2022 by OzArk Archaeologist, Harrison Rochford. No Aboriginal sites were recorded during the field inspection and all landforms were assessed as having low potential to contain Aboriginal objects in subsurface archaeological deposits.

The OzArk report considered the likely impact of the Moree Hospital Upgrade on heritage values, including those of specific importance to the Moree Aboriginal community. There are no identified buildings with Aboriginal cultural significance within the redevelopment area. Infrastructure and Planning for the Hunter and New England Local Health District has undertaken consultation with Aboriginal stakeholders and has formed an Aboriginal Design Working group (ADWG) for the proposal.

The assessment concluded that the project will not have a significant impact under the Aboriginal due diligence heritage process. This moves the project to the following outcome:

> *Aboriginal Heritage Impact Permit (AHIP) application not necessary. Proceed with caution. If any Aboriginal objects are found, stop work, and notify Heritage NSW (02) 9873 8500 (heritagemailbox@environment.nsw.gov.au). If human remains are found, stop work, secure the site, and notify NSW Police and Heritage NSW.*

To ensure the greatest possible protection to the area's Aboriginal cultural heritage values, the following recommendations are made:

1) The project may proceed at the Moree Hospital without further archaeological investigation provided that all land and ground disturbance activities are confined to within the study area. Should the parameters of the project extend beyond the assessed areas, then further archaeological assessment may be required.

2) This assessment has concluded that there is a low likelihood that the proposed work will adversely harm Aboriginal cultural heritage items or sites. If during works, however, Aboriginal artefacts or skeletal material are

noted, all work should cease and the procedures in the Unanticipated Finds Protocol (Appendix 2) should be followed.

3) Inductions for work crews should include a cultural heritage awareness procedure to ensure they recognise Aboriginal artefacts (see **Appendix 3** of the Aboriginal Due Diligence Assessment Report) and are aware of the legislative protection of Aboriginal objects under the *National Parks and Wildlife Act 1974* and the contents of the Unanticipated Finds Protocol.

4) The information presented here meets the requirements of the Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales. It should be retained as shelf documentation for five years as it may be used to support a defence against prosecution in the event of unanticipated harm to Aboriginal objects.

6.2.8 Non-Aboriginal Heritage

Questions to Consider	Yes	No
Are there any heritage items listed on the following registers within or in the vicinity of the work area? • NSW heritage database (includes Section 170 and local items). • Commonwealth EPBC heritage list.	✓	
Will works occur in areas that may have archaeological remains?		✓
Is the demolition of any heritage occurring?	✓	

A Statement of Heritage Impact has been prepared by OzArk Environment and Heritage to accompany this REF (refer to **Appendix K**). The study area for the assessment is the existing Moree Hospital site which includes 33 buildings and small structures and the landscaped remainder of the site. The proposed works aim to upgrade infrastructure and to significantly improve the efficiency of services within the hospital.

A search of the Heritage Council of NSW administered heritage databases and the Moree Plains LEP 2011 returned no relevant records for historic heritage items/ sites (Schedule 5) within the designated search areas. However, the Moree Plains LEP 2011 has additional provisions for places of Aboriginal cultural significance (Section 7.7 of the LEP). The lot on which the Moree District Hospital is located is identified as a place of Aboriginal Cultural Significance on the map defining such areas. No specific information describing the Aboriginal heritage significance of the Moree District Hospital accompanies the map. Impacts on Aboriginal Heritage have been discussed in **Section 6.2.7** above and assessed as part of the Aboriginal Due Diligence Assessment (refer **Appendix P**).

The 'Moree District Hospital' is a listed item on the NSW Health Section 170 heritage and conservation register, however no formal heritage assessment or inventory on the site has been completed.

Table 25: Historic Heritage: Desktop Database Search Results

Name of Database Searched	Date of Search	Type of Search	Comment
National and Commonwealth Heritage Listings	2/2/2023	Study area	No results.
State Heritage Register (SHR)	2/2/2023	Study area	No results.
Moree Plains Local Environmental Plan (LEP) 2011 – Heritage conservation	2/2/2023	Study area	No results. The closest heritage items are the Kirby Park Bandstand (250 m northeast) and the Moree CBD Conservation Area (220 m north).
Moree Plains LEP 2011 – Aboriginal Cultural Significance Map	2/2/2023	Study Area	The study area is within an area identified as a Place of Aboriginal Cultural Significance.

One of the buildings proposed to be demolished, the Glennie and Crane building (also known as Building 5) is referred to in the Section 170 listing for the hospital. The Glennie and Crane building has been assessed as having local heritage significance.

The SOHI has determined that the proposed works will have a negative impact on the heritage values that are present within the study area arising from the proposed demolition of the Glennie and Crane building. The remaining buildings and structures to be removed have been assessed as having little heritage value and a low contributory value to the Glennie and Crane building.

The SOHI made the following recommendations concerning the historic values relevant to the study area:

1. *The Project should fully explore retention of the Glennie and Crane building and suitable adaptive re-use explored in the future hospital. Removal of the unsympathetic additions to the building and covered walkways crowding the current building should be undertaken if possible.*

2. *If retention of the Glennie and Crane building is deemed to be unfeasible due to (for example) a lack of suitable adaptive re-use opportunities or unreasonable restrictions to the design of the new hospital facilities, then the mitigation measures and interpretation strategy presented in Section 3.9 should be undertaken.*

3. *Although the risk of the project affecting archaeological deposits at the study area has been assessed as low, the Unanticipated Finds Protocol (Appendix 1) should be followed if potential significant heritage items are encountered during construction.*

4. *As the project will impact a heritage item (Moree District Hospital) on the NSW Health Section 170 Register, the Heritage Council must be notified of the proposed demolition and works at least 14 days in advance. This SOHI and the determined Review of Environmental Factors (REF) for the project would be appropriate information to be supplied.*

Retention of the building has been determined to be unfeasible by the project team due to the poor structural condition of the building and the inability of the current layout to be used for clinical purposes. Alterations to suit adaptive re-use of the building for the clinical functions of the hospital were explored, but the condition of the building and numerous ad-hoc additions to the building led to the conclusion that the project would be unable to achieve alterations to the building that would meet Building Code of Australia standards. Further correspondence between Health Infrastructure and OzArk (as included in the SOHI) details the original master plan for the project, which sought to retain Building 5, and the subsequent design stages, which required the redesign of the proposal and justifies why retention of Building 5 became unviable as its current condition and location was compromised with the competing priorities of delivering the ASB project to best serve the hospital and patients.

Although the SOHI has identified that the proposal will have a detrimental impact on the on the conservation of the historical values of the local area, the suggested mitigation measures within the SOHI will mitigate some of the negative impact on heritage from the project. These mitigation measures include:

- Undertaking archival recording and developing an interpretive strategy.
- Retention of the pressed metal ceilings panels and plaques for adaptive reuse on site.
- Establishment of Interpretive signage and display on site.

Subject to these mitigation measures being adopted within the project it is not considered that the impact of the proposal on the historical values of the local area will not be significant.

6.2.9 Ecology

Questions to Consider	Yes	No
Could the works affect any *Environmental Protection and Biodiversity Conservation Act 1999 (Cth)* listed threatened species, ecological community, or migratory species?		✓
Is it likely that the Activity will have a significant impact in accordance with the *Biodiversity Conservation Act 2016* (BC Act)? In order to determine if there is a significant impact, the REF report must address the relevant requirements of Section 7.2 of the BC Act: • Section 7.2(a) – Test for significant impact in accordance with Section 7.3 of the BC Act. • Section 7.2(c) – It is carried out in a declared area of outstanding biodiversity value.		✓
Could the works affect a National Park or reserve administered by EES?		✓
Is there any important vegetation or habitat (i.e. Biodiversity and Conservation SEPP) within or adjacent to the work area?		✓
Could the works impact on any aquatic flora or habitat (i.e. seagrasses, mangroves)?		✓
Are there any noxious or environmental weeds present within the work area?		✓

Questions to Consider	Yes	No
Will clearing of native vegetation be required?	✓	

A Biodiversity Assessment Report (BAR) has been prepared by GeoLINK to accompany this Review of Environmental Factors (refer to **Appendix L**). Key findings of the assessment include:

- Vegetation on site is highly disturbed with a number of open space areas and a total of 80 trees (20 native, 60 exotic) of various ages, sizes, and conditions.
- Vegetation on site is not representative of any plant community types (PCTs) outlined in the BioNet Vegetation Classification system.
- One hollow-bearing tree is present on site.
- Feeding and refuge habitat for Koala (*Phascolarctos cinereus*) occurs at the site. River Red Gum (*Eucalyptus camaldulensis*) is a regionally recognised Koala food tree species for the Western Slopes and Plains Koala Management Area (DECC, 2008).
- The Mehi River which flows adjacent to the site (within 40 m to the north) and is identified as containing Key Fish Habitat on the DPI Fisheries spatial data tool. NSW DPI Fisheries modelling indicates that indicative distribution habitat for several threatened freshwater species listed under the NSW *Fisheries Management Act 1994* including Eel Tailed Catfish (*Tandanus tandanus*), Olive Perchlet, (*Ambassis agassizii*) and Silver Perch (*Bidyanus bidyanus*) occurs in the Mehi River flowing adjacent to the site.
- The Activity would require removal of 17 trees (comprising four native trees endemic to the Northwestern Slopes botanical region, two native non-endemic trees and 11 exotic species).
- No NSW *Biodiversity Conservation Act 2016* (BC Act) or *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) listed threatened flora were recorded on site.
- No BC Act or EPBC Act listed threatened ecological communities (TECs) occur on site.
- Five threatened fauna species (Koala - *Phascolarctos cinereus*, Grey-headed Flying-fox - *Pteropus poliocephalus*, Corben's Long-eared Bat - *Nyctophilus corbeni*, Yellow-bellied Sheathtailbat - *Saccolaimus flaviventris* and Large-eared Pied Bat - *Chalinolobus dwyeri*) are considered to potentially occur within the site and study area.

The Activity would incur the following main biodiversity impacts:

- Removal of 17 planted native and non-endemic/ exotic trees, including one Koala feed tree (River Red Gum).

The magnitude of these impacts is not sufficient to result in a significant impact to threatened species.

Review of statutory instruments relevant to the Activity was completed as follows:

- BC Act: the Activity is unlikely to significantly impact or affect any threatened species or communities.
- EPBC Act: the Activity is unlikely to significantly affect threatened species or communities or listed migratory species.

Landscape Plans for the development (provided at **Appendix C)** indicate where compensatory planting will occur and what species will be used. The Arboricultural Impact Assessment (provided at **Appendix W**) indicates a current canopy coverage of approximately 4,470 m^2 which equates to about 13% site canopy coverage and includes measures for the protection of trees to be retained. It is therefore considered that the proposal will not have a significant impact on vegetation across the site.

6.2.10 Bushfire

Questions to Consider	Yes	No
Are the works located on bushfire prone land?		✓

Questions to Consider	Yes	No
Do the works include bushfire hazard reduction work?		✓
Is the work consistent with a bush fire risk management plan within the meaning of the *Rural Fires Act 1997* (RF Act) that applies to the area or locality in which the activity is proposed to be carried out?	N/A	

6.2.11 Land Uses and Services

Questions to Consider	Yes	No
Will the works result in a loss of or permanent disruption of an existing land use?		✓
Will the works involve the installation of structures or services that may be perceived as objectionable or nuisance?		✓
Will the works impact on or be in the vicinity of other services?	✓	

The Activity involves some demolition and construction of a new Acute Services Building as part of the redevelopment of Moree Hospital. The purpose of the redevelopment is to improve and continue to provide quality health services in association with the hospital. A primary objective of the redevelopment is to enable the continuation of services during the redevelopment with minimal disruptions.

To minimise any potential disruption to hospital services (existing buildings and infrastructure), the works will be limited to demolition of the building B2, while carparking at the front of building B4 will be relocated to be adjacent to the existing main carpark.

The new building will be serviced by a new (additional) substation as well as a dedicated back-up generator. Generally, the new building will be serviced with new dedicated plant enabling it to be functionally 'stand-alone', meaning the remainder of the campus will remain as functional.

JHA Consulting Engineers have prepared a Utilities Report pertaining to Mechanical, Electrical and Hydraulic Services (refer to **Appendix H**) for the Moree Hospital Redevelopment.

Separate main access to the hospital staff and patient/ visitor car parks will be maintained and will not be affected by the Activity.

There may be minor impacts during the demolition works, however these will be temporary. The existing land use will continue, and it is not expected that the Activity will be perceived as objectionable or a nuisance.

6.2.12 Waste Generation

Questions to consider	Yes	No
Will the works result in the generation of non-hazardous waste?	✓	
Will the works result in the generation of hazardous waste?	✓	
Will the works result in the generation of wastewater requiring off-site disposal?		✓
Will the works require augmentation to existing operational waste management measures?	✓	

The development includes the demolition of existing buildings and infrastructure and the construction of buildings, which will generate waste. Materials removed as part of the demolition will be sorted and stacked for recycling or disposed of at a licenced waste facility. Works will be undertaken to ensure minimal impacts are generated from waste material produced on site by ensuring that all waste is collected and disposed of or recycled in accordance with legislative waste disposal protocols and Environment Protection Authority guidelines. No materials will be used in a manner that poses a risk to public safety.

A hazardous materials survey has identified that there are hazardous materials that occur within the site (fill soil) and existing buildings, including Asbestos Containing Materials. Any hazardous materials would be handled, managed, transported, and disposed of according to applicable regulations. Management of this hazardous waste, and development of an Asbestos Management Plan is further discussed in the following **Section 6.2.13**.

At this stage of the project development, it is only possible to provide rough estimation of the amount of waste material that will be produced. A Construction Management Plan (CMP) will be prepared by the appointed contractor and will provide a framework to reduce waste directed to landfill. The CMP will further develop the specific details, of a construction waste management plan, including volumes of waste generation. Where possible, materials would be recycled. Remaining waste and demolished materials that cannot be recycled will be transported by truck to the Moree Waste Management Facility.

A District Waste Management Plan has been developed by the HNELHD which describes measures to ensure an adequate waste management system is in place throughout the district (refer to **Appendix X**). The plan describes principles, procedures and management of waste which applies to the operation of Moree District Hospital. Compliance with this policy compliance procedure (PCP) is mandatory ensuring that wastes are reduced, reused, and recycled wherever possible.

The Plan provides an overview of waste streams usually present in health care facilities which require workers to follow specific waste management policies and procedures in relation to clinical waste at all stages from waste generation to transport. There are some categories of clinical waste (i.e. cytoxic waste, pharmaceutical waste, anatomical waste, chemical waste, and radioactive waste) that require separate treatment and must be segregated from other clinical waste and sent to a facility licenced to process such waste.

As the redevelopment will not increase the capacity of the hospital, it is considered that hospital operational waste can continue to be managed as per existing protocols and arrangements, and in compliance with the District Waste Management Plan.

6.2.13 Hazardous Materials and Contamination

Questions to consider	Yes	No
Is there potential for the works to encounter any contaminated material?	✓	
Is there potential for the works to disturb or require removal of asbestos?	✓	
Is the work site located on land that is known to be or is potentially contaminated?	✓	
Will the works require a Hazardous Materials Assessment?	✓	
Is a Remediation Action Plan (RAP) required to establish the proposed Activity?	✓	
Is the remediation work category 2 works under Resilience and Hazards SEPP?		✓

Hazardous Materials

A Hazardous Materials Building Survey (HMBS) has previously been undertaken for the Moree Hospital Redevelopment which identified both friable and non-friable asbestos in building materials, lead in paint and potential polychlorinated biphenyls (PCB) containing electrical equipment (refer to **Appendix M**). Control measures were provided as well as recommendations relating to the various hazardous materials identified. Any demolition work to be undertaken that could potentially involve hazardous materials will need to comply with the relevant Australian Standards and code of practice for handling hazardous materials.

Contamination

A Preliminary (Stage 1) Site Investigation (PSI), Detailed (Stage 2) Site Investigation (DSI) and Remediation Action Plan (RAP) have been carried out by JK Environments Pty Ltd (JKE) for the proposed Moree Hospital Redevelopment (refer to **Appendix M**). These reports were prepared in accordance with the requirements of State Environmental Planning Policy (Resilience and Hazards) 2021.

In 2022 a PSI for the proposed Moree Hospital Redevelopment was undertaken that included all land within the wider hospital boundary, covering an area approximately 31,000m^2. The purpose of the PSI was to make a preliminary assessment of site contamination. A geotechnical investigation was undertaken in conjunction with the PSI. The primary aims of the PSI were to:

- Identify any past or present contaminating activities at the site and the potential for any site contamination.
- Make a preliminary assessment of the soil and groundwater contamination conditions.

The PSI included a review of historical information and sampling from six boreholes and five test pits as nominated by HI.

Identified areas of concern (AEC) included fill material, use of pesticides, hazardous building materials, new diesel generator, old generator building and suspected underground storage tank (UST), electrical substation, HAZCHEM storage, an incinerator, and an offsite ambulance station.

Based on the findings of the PSI it was determined the site could be made suitable for the proposed development, however, the PSI noted that a DSI would be required to establish whether remediation would be necessary.

Detailed Site Investigation (DSI)

The DSI included a review of project information, a site inspection and soil sampling from 26 borehole/ test pits. This investigation was limited to the development footprint contained within the south-eastern portion of the wider Moree Hospital site, assessing an area of approximately 13,100 m^2.

The aims of the DSI were to:

- Further characterise the soil and groundwater contamination conditions in order to assess site risks in relation to contamination to establish whether remediation is required.
- Provide preliminary waste classification data for off-site disposal of soil waste which may be generated during the proposed development works.

The objectives were to:

- Assess the soil and groundwater contamination conditions via implementation of the Sampling Analysis and Quality Plan (SAQP).
- Assess the potential risks posed by contamination to the receptors identified in the CSM.
- Provide a preliminary waste classification for the in-situ soil.
- Assess whether the site is suitable or can be made suitable (via remediation) for the proposed development from a contamination viewpoint.
- Assess whether further intrusive investigation and/ or remediation is required.

The DSI identified minor occurrences of zinc and nickel concentrations in the soil above the ecological Site Assessment Criteria (SAC). Sporadic occurrences of bonded Asbestos Containing Materials (ACM) were also encountered in and on soil, although ACM concentrations were below the human health SAC.

Groundwater was not encountered during the DSI to a depth of 8 m and the potential for groundwater to pose an unacceptable risk in the context of the proposed development was assessed low.

The DSI report recommended:

- Based on the data, contamination-related risks were generally low. However, data gaps exist due to access constraints and the identification of asbestos in soils. The data gaps can be addressed under the provisions of a Remediation Acton Plan (RAP).
- Preparation and implementation of an interim Asbestos management plan (AMP) for asbestos in soil until remediation occurs, and an AMP will be required for the proposed development works.
- Preparation and implementation of a Remediation Action Plan (RAP) for the site that provides a robust framework to address the data gapes identified in the DSI, prior to proceeding with remediation, and contingencies to remediate the site should the overall dataset confirm that remediation is required.

- Validation of the site in accordance with the RAP to confirm site suitability.

Summary of Contamination

The primary contamination related risks at the site are associated with historical importation of fill (soil), and historical demolition of former buildings containing potentially hazardous building materials including asbestos. Currently the RAP is prepared to inform processes for data gaps identified in the DSI and provide options for remediation should those data gaps confirm that remediation is required.

Due to the detection of ACM in the fill soil and on the surface of the site, an AMP is required under the Work Health and Safety Regulation 2017 (NSW). An interim AMP must be prepared and implemented by the hospital so that potential human-health risks from asbestos remain low and acceptable during continued use of the hospital. The outcome of the pre-remediation investigation and any remediation/ validation must be evaluated to establish the validity of the interim AMP and the need for any revision or update to the plan post construction.

Remediation Action Plan (RAP)

Preparation of a RAP was recommended to further assess the extent of ACM and other data gaps identified in the DSI, and to provide contingencies for remediating the site. The goal of the remediation is to render the site suitable for the proposed development from a contamination perspective, with the primary aim to reduce the human health and environmental risks posed by site contamination to an acceptable level.

The objectives of the RAP are to:

- Provide a framework for further investigation of the site, to be implemented when access is available.
- Provide a methodology/ contingency plan to remediate and validate the site based on the information available at the date of the report.
- Outline site management procedures to be implemented during remediation work.
- Provide an unexpected finds protocol to be implemented during the development works.

The RAP has identified the need for investigation to further characterise the soil and groundwater conditions to facilitate a more comprehensive and complete assessment of the risks driving the potential for remediation. On completion of the pre-remediation data gap investigation a report is to be prepared in accordance with Consultants Reporting Guidelines, confirming if remediation is required or not, and whether a Remediation Works Plan (RWP) is to be prepared to provide specific details of the remedial works involved.

Options for soil remediation have been presented as required should pre-remediation investigation confirm that remediation is required. Site validation reporting would be required as specified in the RAP report to document that the procedures have been followed and to demonstrate the site is suitable for the proposed development.

It should be noted that if remediation is required, it would likely be classified as Category 1 Remediation under Clause 4.8 of State Environmental Planning Policy (Resilience and Hazards) 2021 as the works would be undertaken in an area that is identified as a ‘place of Aboriginal cultural significance’ under Clause 5.10 of Moree Local Environmental Plan 2011. Therefore, such remediation would require development consent from Moree Plains Shire Council requiring the preparation of a development application and associated Statement of Environmental Effects.

Hazardous Development

Pinnacle Risk Management prepared a risk screening in accordance with State Environmental Planning Policy (Resilience and Hazards) 2021 (R&H SEPP). This is attached as **Appendix Y**. Currently, the facility is a potentially hazardous facility as the quantity of LPG stored on the site exceeds the R&H SEPP guidelines criterion of 10 te. It is proposed to increase the number of medical gas cylinders stored at Moree Hospital. However, the proposed changes do not increase the quantity of LPG storage. The LPG tanks are suitably located away from the existing and proposed cylinder stores.

Other Dangerous Goods stored at the facility include oxygen (as liquid in a tank and gas in cylinders), Nitronox (a mixture of oxygen and nitrous oxide in cylinders) and nitrous oxide (in cylinders). The total storage quantity of Dangerous Goods is 4.72 te (this is the combined quantity from existing and proposed stores). As the quantities of dangerous goods to be stored on site do not exceed R&H SEPP preliminary screening thresholds (less than the SEPP33 criterion of 5 te) and the transport frequencies of dangerous goods for the proposed development are significantly less than the SEPP 33 criteria then these substances are not deemed to be potentially hazardous. As such, Pinnacle Risk Management have advised that a Preliminary Hazard Analysis (PHA) is not recommended for this project.

6.2.14 Sustainability and Climate Resilience

Questions to Consider	Yes	No
Does the Activity ensure the effective and efficient use of resources (natural or other)?	✓	
Does the Activity use any sustainable design measures?	✓	
Are climate resilient design measures to be incorporated in the Activity?	✓	

An Ecologically Sustainable Design (ESD) Development Plan has been prepared by E-Lab Consulting (refer **Appendix G**). The report summarises the ESD initiatives being considered for the development and advises how the hospital design is responding to sustainable planning and design requirements.

This report provides an overview of the proposed sustainability targets for the project and the sustainability initiatives to be included. Information contained within this report has been prepared in consideration of:

- Design Guidance Note No. 058 Environmentally Sustainable Development.
- Exceeding NCC 2022 Section J energy efficiency compliance by a minimum of 10%.
- 4 Star Green Star Design and As Built v1.3 equivalency.
- Health Infrastructure NSW Sustainability Initiatives.

The project will implement several sustainable design initiatives designed to mitigate the environmental impacts of the following areas:

- Resilience – including a site-specific climate change risk assessment and adaptation plan.
- Energy and Carbon – energy efficiency across the buildings and use of on-site renewable energy.
- Water Management – water efficient fixtures and fittings, collection and reuse of water and improved stormwater quality.
- Health and Wellbeing - maximising daylight and improving indoor air quality with low emissions materials.
- Materials – consideration of the whole of life impact of materials and selection to minimise harm to the environment and efficient construction methods.

The HI ESD Evaluation tool has been used during the schematic development process to assess and coordinate the targeted credits and define the overall score. The selection of the credits targeted has been based on the following:

- ESD target requirements.
- Review of site, context, and proposed design.
- Opportunities and constraints identified within the current design.
- Key ESD healthcare specific considerations (As described in **Section 5** of the ESD report).
- Project team experience in other similar health care projects.

As a part of the design, the development must comply with Health Infrastructure's Design Guidance Note No. 058 Environmentally Sustainable Development (DGN58) to ensure the improved environmental and sustainability performance of the project.

The two main guidelines from the DGN58 are:

- A minimum 45 points to be achieved by the design in accordance with HI's ESD Evaluation Tool.
- A minimum 10% improvement in energy efficiency compared to a baseline of National Construction Code (NCC) Section J compliance applicable to the development.

The ESD evaluation tool was developed by HI in conjunction with ESD consultants to adapt key initiatives included in the Green Building Council of Australia's (GBCA) Green Star rating tools. The goal of the evaluation tool is to create a benchmark for sustainable building performance, with sufficient evidence gathered to support the claim that the targeted initiatives have been achieved.

The project has been assessed against the Green Star framework, initially targeting 52 out of the required 45 for a 4-star rating. The following figure outlines the preliminary credit distribution for the development:

CATEGORY	POINTS AVAILABLE	POINTS TARGETED
Management	13	13
Indoor Environment Quality	17	7
Energy	22	5
Transport	10	0
Water	12	5
Materials	14	8
Land Use & Ecology	6	2
Emissions	5	2
Innovation	10	10
Total	**110**	**52**

It is recommended that the following steps are undertaken during the detailed design phase of the MHR:

- Review of the targeted items to determine achievability and further coordination with design teams for strategy development as design develops at the DD stage.
- Teams to carry out or finalise calculations, modelling or analysis required to support strategies and achieve targeted points.
- Coordination with project quantity surveyor to ensure any cost impact from required strategies is included within the cost plan and within the procurement requirements.
- Finalise a set of strategies to be agreed by the design team, stakeholders and the LHD, and to be confirmed by HI to include in the design moving forward.

A Building Code of Australia (BCA) and Disability Discrimination Act 1992 (DDA) Assessment of the proposed development has been conducted by BM plus G (refer to **Appendix Z**). The assessment determined that compliance can be readily achieved.

6.2.15 Community Impact/ Social Impact

Questions to Consider	Yes	No
Is the Activity likely to affect community services or infrastructure?	✓	
Does the Activity affect sites of importance to local or the broader community for their recreational or other values or access to these sites?		✓
Is the Activity likely to affect economic factors, including employment numbers or industry value?		✓
Is the Activity likely to have an impact on the safety of the community?		✓
Will the Activity affect the visual or scenic landscape?	✓	
Is the Activity likely to cause noise, pollution, visual impact, loss of privacy, glare or overshadowing to members of the community, particularly adjoining landowners?	✓	

Overall, the redevelopment of Moree Hospital will provide improved health services to the community of Moree and surrounding areas that will benefit patients, staff, hospital stakeholders and the wider community. The proposed demolition and construction works will allow for the hospital to realise its full potential and will improve the overall function of the hospital.

Some temporary minor amenity impacts resulting from demolition and construction works associated with noise, visual change (signage and fencing) and air quality may be experienced by adjoining residents, but overall, the demolition and consequent new building represents a benefit to the community. Environmental issues associated with potential contamination, erosion control, water quality, traffic, visual amenity, noise, and waste management are considered to be minor and have been addressed throughout Section 6 and found to be satisfactory. Where necessary the implementation of appropriate mitigation measures, including the requirement for a Construction Management Plan, have been proposed.

Regarding impacts on the safety of the community, an assessment of the redevelopment against Crime Prevention Through Environmental Design (CPTED) principles has been carried out. CPTED is a crime prevention strategy that focuses on the planning, design and structure of cities and neighbourhoods. It aims to create the reality (or perception) that the costs of committing crime are greater than the likely benefits. This is achieved by creating environmental and social conditions that:

- Maximise risk to offenders (increasing the likelihood of detection, challenge, and apprehension).
- Maximise the effort required to commit crime (increasing the time, energy and resources required to commit crime).
- Minimise the actual and perceived benefits of crime (removing, minimising or concealing crime attractors and rewards).
- Minimise excuse making opportunities (removing conditions that encourage/ facilitate rationalisation of inappropriate behaviour).

CPTED employs four key strategies. These are territorial re-enforcement, surveillance, access control and space/ activity management. In terms of assessing the Project security and crime prevention measures, the most appropriate document is the Department of Planning's guideline titled Crime Prevention and the Assessment of Development Applications (2001). The design of the Project has taken into consideration the principles of CPTED, which are outlined in the guideline.

Table 26 below provides an assessment against the four principles of CPTED regarding the redevelopment.

Table 26: CPTED Assessment

CPTED Principles	Comment
Surveillance - The attractiveness of crime targets can be reduced by providing opportunities for effective surveillance, both natural and technical. Good surveillance means that people can see what others are doing. People feel safe in public areas when they can easily see and interact with others. Would-be offenders are often deterred from committing crime in areas with high levels of surveillance. From a design perspective, 'deterrence' can be achieved by: • Clear sightlines between public and private places. • Effective lighting of public places. • Landscaping that makes places attractive but does not provide offenders with a place to hide or entrap victims.	The design incorporates passive surveillance strategies including clear sight lines through the hospital site. This includes passive surveillance of the public car park from the hospital waiting rooms and passive surveillance from the Level 1 balcony over the eastern section of the site. Site lighting and CCTV will be provided to ensure all users feel safe in the hospital campus.
Access Control - Physical and symbolic barriers can be used to attract, channel, or restrict the movement of people. They minimise opportunities for crime and increase the effort required to commit crime. By making it clear where people are permitted to go or not go, it becomes difficult for potential offenders to reach and victimise people and their property. Illegible boundary markers and confusing spatial definition make it easy for criminals to make excuses for being in restricted areas. However, care needs to be taken to ensure that the barriers are not tall or hostile, creating the effect of a compound. Effective access control can be achieved by creating: • Landscapes and physical locations that channel and group pedestrians into target areas. • Public spaces which attract, rather than discourage people from gathering. • Restricted access to internal areas or high-risk areas (like carparks or other rarely visited areas). This is often achieved through the use of physical barriers.	General public entrance is limited to two entry points. The main Building 2 entry is from the northern car park. A shared airlock allows public access to the Front of House and Emergency Receptions. The secondary public entry is a covered walkway from Building 4. There are two entry points from the covered walkway, one entry directly into the Lizzie Doolan room and another entry into the adjoining front of house area near the multi-faith room and kiosk. Access control devices are to be coordinated onto hospital doors to ensure secure clinical and admin access. Public entry into Building 2 is limited to the Front of House rooms and the ED reception areas, this increases the likelihood of staff monitoring and security supervision.
Territorial Enforcement – Community ownership of public space sends positive signals. People often feel comfortable in, and are more likely to visit, places which feel owned and cared for. Well used places also reduce opportunities for crime and increase risk to criminals. If people feel that they have some ownership of public space, they are more likely to gather and to enjoy that space. Community ownership also increases the likelihood that people who witness crime will respond by quickly reporting it or by attempting to prevent it. Territorial reinforcement can be achieved through: • Design that encourages people to gather in public space and to feel some responsibility for its use and condition. • Design with clear transitions and boundaries between public and private space. • Clear design cues on who is to use space and what it is to be used for. Care is needed to ensure that territorial reinforcement is not achieved by making public spaces private spaces, through gates and enclosures.	The Moree Hospital Redevelopment was designed with the needs of the Moree people at its centre, aiming to provide a contemporary healthcare facility that is culturally appropriate, welcoming, and inclusive for the community. The Moree Hospital Redevelopment site plan has been designed with a northern public realm and southern services access. This delineation of public and hospital services improves security of hospital services via access points to the southern loading dock area and allows for an open public area to the north of the site. The Lizzie Doolan room is provided along the northern façade as a place of gathering for families and communities. It is currently designed as a transient space with a swing door and glass windows connecting to the north communal public area. This is designed to encourage community ownership and in doing so, improves passive ownership of the adjoining landscaped gardens. The community ownership of the space is enhanced by references to the local context, art strategies by local artisans and implementation of design principles outlined in the Connecting with Country framework which aims to create a safe and respectful environment where Indigenous people can feel valued while accessing healthcare. The territorial reinforcement means the community are more likely to enjoy the space and increase the likelihood to report or prevent crime.

CPTED Principles	Comment
Space Management - Popular public space is often attractive, well maintained and well used space. Linked to the principle of territorial reinforcement, space management ensures that space is appropriately utilised and well cared for. Space management strategies include activity coordination, site cleanliness, rapid repair of vandalism and graffiti, and the replacement of burned-out pedestrian and car park lighting and the removal or refurbishment of decayed physical elements.	Space management strategies are an important means of generating and maintaining activity, serviceability, and natural community control ensuring the space is appropriately utilised and cared for. This is also linked to the principle of territorial reinforcement. Strategies include activity coordination, site cleanliness, rapid repair of vandalism and graffiti, and the refurbishment of decayed physical elements. By designing the hospital building through thoughtful selection of building finishes, it reinforces a sense of ownership, pride and management over the hospital campus which discourages opportunities of crime. Several community workshops took place during the design phase and feedback from the community was incorporated into the design.

It is considered that the proposed design measures will significantly reduce the risk of criminal activities. The MRH provides adequate public surveillance and does not provide opportunities for concealed criminal behaviour; therefore, suitably addressing principles of crime prevention through environmental design. The security settings will continue to be developed throughout the detailed design phase of the project.

Overall, it is considered that the social and community benefits of redeveloping the Moree Hospital outweigh any potential impacts.

6.2.16 Cumulative Impact

Questions to Consider	Yes	No
Has there been any other development approved within 500 m of the site?		
Is there any transformation planned within 500 m of the site?		✓
Will there be significant impacts (for example, including but not limited to, construction traffic impacts) from other development approved or currently under construction within 500 m of the site?		
Is the Activity likely to result in further significant impacts together with other development planned, approved or under construction within 500 m of the site?		
Has a cumulative impact statement, proportionate to the activity, been included in REF documentation? If no – why not?		

The Activity is an appropriate and effective use of existing NSW Health Land. The existing Moree Hospital site has the capacity to accommodate the redevelopment and result in minimal social or environmental impact. The site is well serviced by existing utilities and infrastructure, and with some relatively minor rearrangements and augmentation, these would be adequate to service the Activity.

It is likely that the Activity could add to several common cumulative impacts, including generation of greenhouse gas emissions (e.g. through operation of vehicles and equipment) and resource consumption (e.g. construction material). However, given the scale and nature of the Activity, any impact would be minimal. Furthermore, the environmental management measures identified within this REF and the choice of methodology for completion of the project aim to minimise the extent to which the Activity contributes to cumulative adverse environmental impacts in the locality.

Searches of the Department of Planning and Environment (DPE) major project register identified several State Significant Developments within the Moree Plains Local Government Area, including the Inland Rail project and the Moree Solar Farm. However, these projects are generally located outside the Moree town area, so are well distanced from the hospital site, and are therefore unlikely to result in cumulative impacts with the Moree Hospital Redevelopment.

A search of the Northern Regional Planning Panels Development and Planning register similarly identified several projects within the Moree Council area but distanced from Moree town centre including Solar Farms and various quarries. The search identified a proposal for upgrades to the Moree Artesian Aquatic Centre at 20 Anne Street, Moree is located approximately 500 m south-east of the hospital site, and an upgrade of the Moree Police Station at 60-64 Frome Street approximately 650 north-east of the hospital site, however it is unlikely these projects will result in significant implications in regard to traffic, infrastructure services or cumulative environmental impacts.

A search of the Moree Plains Development Application Tracking identified a number of DAs that have been submitted and approved around the Moree town area. These generally consist of small-scale proposals, such as residential alterations and additions, which are unlikely to result in significant cumulative impacts with the Moree Hospital Redevelopment.

The MHR will not have a significant impact on the natural environment. No threatened species or threatened ecological communities will be significantly impacted by the proposal. The scale of the proposed works is relatively minor in its regional context.

Where applicable, the MHR construction team would coordinate activities and undertake them in a manner to help minimise any potential cumulative impact where such risk may be present. If a major development does occur concurrently with the project, the potential for any such cumulative impacts would need to be considered and managed by the construction contractor once the timing of other developments becomes known. The CEMP would include a process to review and update mitigation measures, including those in response to new works coming online or if complaints are received.

Overall, the site is well suited to the project that would deliver socio-economic benefits for the community and can be undertaken with effective management and mitigation of environmental impacts, including any potential cumulative effects. A comprehensive list of mitigation measures is provided at **Appendix R**.

7 Summary of Mitigation Measures

Mitigation measures are to be implemented for the proposal to reduce impacts on the environment. The mitigation measures are provided at **Appendix R**.

7.2 Summary of Impacts

Based on the identification of potential issues, and an assessment of the nature and extent of the impacts of the proposed development, it is determined that:

- the extent and nature of potential impacts are low and will not have significant adverse effects on the locality, community and the environment;
- potential impacts can be appropriately mitigated or managed to ensure that there is minimal effect on the locality, community; and
- given the above, it is determined that an EIS is not required for the proposed development Activity.

8 Justification and Conclusion

The proposed redevelopment of Moree Hospital at 58 Victoria Terrace, Moree is subject to assessment under Part 5 of the EP&A Act. The REF has examined and considered to the fullest extent possible all matters affecting, or likely to affect, the environment by reason of the proposed Activity.

As discussed in detail in this report, the proposal will not result in any significant or long-term impact. The potential impacts identified can be reasonably mitigated and where necessary managed through the adoption of suitable site practices and adherence to accepted industry standards.

As outlined in this REF, the proposed activity can be justified on the following grounds:

- it responds to an existing need within the community;
- it generally complies with, or is consistent with all relevant legislation, plans and policies;
- it has minimal environmental impacts; and
- adequate mitigation measures have been proposed to address these impacts.

The Activity is not likely to significantly affect threatened species, populations, ecological communities, or their habitats, and therefore it is not necessary for a Species Impact Statement and/or a BDAR to be prepared. The environmental impacts of the proposal are not likely to be significant and therefore it is not necessary for an EIS to be prepared and approval to be sought for the proposal from the Minister for Planning under Part 5 of the EP&A Act. On this basis, it is recommended that HI determine the proposed activity in accordance with Part 5 of the EP&A Act and subject to the adoption and implementation of mitigation measures identified within this report.