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ENVIRONMENTAL IMPACT STATEMENT

Shoalhaven Hospital Redevelopment

(SSD 35999468)

(Conrad Gargett)

Submitted to
NSW Department of Planning and Environment
on behalf of

Health Infrastructure

September 2022

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Environmental Impact Statement Declaration & Certification

This Environmental Impact Statement (EIS) has been prepared for Health Infrastructure (HI) and assesses the potential economic, environmental and social impacts which could arise from the development of the Shoalhaven Hospital Redevelopment at Scenic Drive, Nowra (SSD 35999468).

HI is the applicant for this DA. Its address is 1 Reserve Road, St Leonards NSW 2065.
HI's ABN is 89 600 377 397.

This EIS has been prepared in accordance with sections 190, 191 and 192 of the *Environmental Planning and Assessment Regulation 2021* (EP&A Regulation). It contains all available information that is relevant to the environmental assessment of the development to which the statement relates. The information contained in the statement is neither false nor misleading and provides a true and fair review of the activity / development in relation to its likely impact on the environment.

This EIS addresses the proposed development's SEARs as issued by the Department of Planning and Environment (DPE) on 23 February 2022. It further identifies and addresses the relevant statutory requirements for the project, including any relevant matters for consideration in environmental planning instruments.

This EIS has been prepared having regard to the DPE's *State Significant Development Guidelines - Preparing an Environmental Impact Statement*. Accordingly, it contains a summary of the project as a whole, having regard to the economic, environmental and social impacts of the project and the principles of ecologically sustainable development and provides a consolidated description of the project. It also contains an accurate summary of the findings of any community engagement and of the detailed technical assessment of the impacts of the project as a whole.

Version	**Date**
Version 1 – Client / HI 90% Review	17 June 2022
Version 2 – Client / HI / Test of Adequacy – Final draft review	4 August 2022
Version 3 - Final - Lodgement	8 September 2022

_planning Pty Ltd operates under a quality management system. This report has been prepared and reviewed in accordance with that system. If the report is not signed below, it is a preliminary draft.

This report has been prepared and reviewed by:

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Date: 8 September 2022

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1.0 Executive Summary

This Environmental Impact Statement (EIS) has been prepared by _planning Pty Ltd on behalf of Health Infrastructure (HI) and is submitted to the NSW Department of Planning and Environment (DPE) in support of the State Significant Development DA for the construction and operation of the Shoalhaven Hospital Redevelopment at Scenic Drive, Nowra. The redevelopment is focussed on the new Acute Services Building, proposed to be located to the south of the existing hospital within areas presently predominantly occupied by the Shoalhaven Community Pre-School and part of the former Nowra Park. See **Figures 1**-**4** showing the location and relationship of the subject development to that of the existing hospital development, the pre-school, and former Nowra Park.

As the development exceeds the $30 million threshold as set under section 14(a) of Schedule 1 of *State Environmental Planning Policy (Planning Systems) 2021* (Planning Systems SEPP) it is therefore classed as State Significant Development (SSD). The DA is also a Crown DA under the *Environmental Planning & Assessment Act 1979*.

This EIS addresses the Secretary's Environmental Assessment Requirements (SEARs) as issued by DPE on 23 February 2022. In accordance with those SEARs, this EIS assesses the potential economic, environmental and social impacts which could arise from the development and sets out the undertakings made by HI to mitigate and manage any potential impacts arising from the development. Implementation of these mitigation measures will ensure any potential risks are ameliorated. The SEARs and the SEARs compliance table are each found at **Appendix A** and **B**, respectively.

The Shoalhaven Hospital Redevelopment was announced following the completion of the Shoalhaven Hospital Clinical Services Plan (CSP) in November 2020 as prepared by the Illawarra Shoalhaven Local Health District (ISLHD). The CSP identified that redevelopment was necessary to grow and adjust services to meet changing health needs within the region. The redevelopment is required to continue to provide first-class health services within the ISLHD, cater for population growth and changed demographic circumstances, expand and diversify clinical functions within the hospital, and as a consequence also provide for economic stimulus for the region.

The overall Vision for the redevelopment project is for:

- The redeveloped Shoalhaven Hospital to be the health hub for the region, providing for the majority of emergency, critical care, acute, subacute and non-admitted services locally, and reducing the need to transfer patients to Wollongong and Sydney.
- The redeveloped Shoalhaven Hospital to operate at a greater complexity level and be able to serve the majority of the region's health needs locally.
- Shoalhaven Hospital to continue to be linked with Wollongong and the new Shellharbour Hospital as part of a District-wide network.
- Fewer people to need to be transferred to Wollongong Hospital or to Sydney for services such as cardiology, neurology/stroke and complex surgeries.

The overall Project Objectives are to:

- Provide the infrastructure to meet the growing health care needs of the population in the Shoalhaven LGA and surrounds.
- Provide equitable access to services for the residents of the Shoalhaven LGA and surrounds by increasing the self-sufficiency of the hospital.
- Support contemporary models of care, in particular, non-admitted and day only episodes of care and virtual modalities.
- Provide maximum possible digital hospital scope to enable ISLHD to capitalise on current and future opportunities.

- Improve efficiency to staff and patient flows by providing a zonal approach to clinical services with improved functional adjacencies.
- Design and build a facility that maximises ongoing resource efficiency and enables ISLHD to reduce its carbon footprint.
- Provide culturally-appropriate facilities to meet the needs of the First Nations people.

The Project Zonal Master Plan for the Shoalhaven Hospital Redevelopment was prepared in response to the above Vision and Project Objectives and in consideration of the site constraints to accommodate the delivery of clinical services. It makes use of available land with a focus on adjacency to existing hospital infrastructure. This enables continuity of clinical service delivery with ongoing infrastructure projects on the site, which are able to reference proposed functional capacities and clinical adjacencies. The long term masterplan concentrates clinical development at the centre of the site, which (ultimately) enables the creation of open green space at both the north and south ends of the site, which references the adjacent bushland and parks in the area, as well as reinforcing links back into the surrounding urban fabric.

The Project Zonal Master Plan in facilitating the current redevelopment is shown below in **Figure 1**.

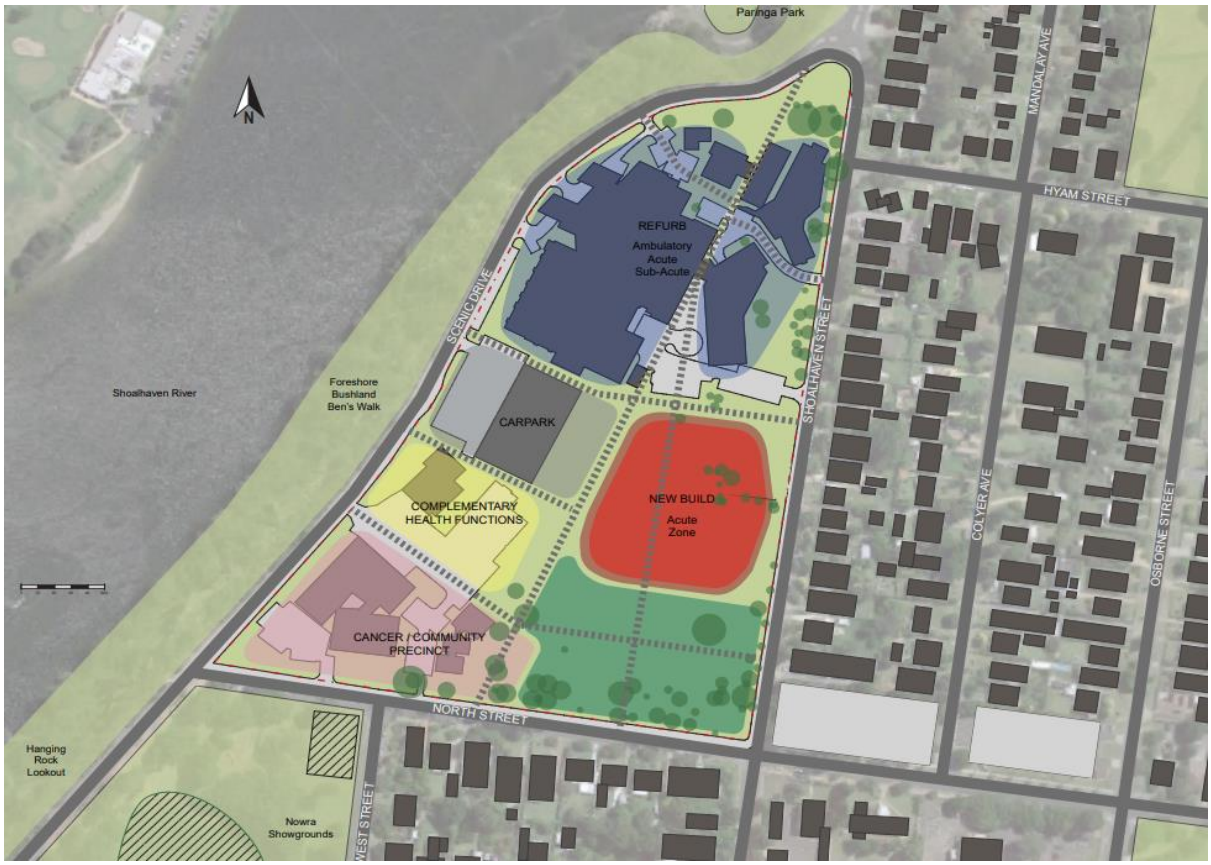


Figure 1 – The final Project Zonal Master Plan (Conrad Gargett)

This spatial arrangement:

- Allows the redevelopment to proceed with a precinct-based approach.
- Enables acute services to be located at the centre of the campus with superior access and adjacencies and which supports future staged growth.
- Supports refurbishment and growth within existing areas and departments of the hospital.
- Provides access enhancements and addresses from various road frontages.

The redevelopment subject of this DA seeks to deliver significantly enhanced acute services, as well as a new campus main entry and drop-off area. This will provide for a transformation of the current Shoalhaven Hospital campus.

The proposed Acute Services Building / redevelopment will be located south of the existing hospital cluster of buildings and will expand the hospital campus. This is in the same manner as the more recent development of the GP Super Clinic (Grand Pacific Health Centre) and the Shoalhaven Cancer Care Centre south of the hospital along the Scenic Drive frontage to the precinct.

To facilitate the redevelopment the Health Administration Corporation (HAC) acquired both the former Nowra Park site and Shoalhaven Community Pre-School land sites by separate compulsory acquisition processes for the purposes of the *Health Administration Act 1982* to extend the Shoalhaven Hospital campus and to facilitate the subject redevelopment. The sites were previously Crown Land and Crown Reserves. The acquisitions were gazetted on 11 November 2021 (former Nowra Park) and 26 August 2022 (Shoalhaven Community Pre-School site).

Notwithstanding, and given the recent gazettal regarding the Shoalhaven Community Pre-School site, HI has employed the provisions of sections 23(2) and 23(3)(a) of the *Environmental Planning and Assessment Regulation 2021* (EP&A Regulation 2021) to formally notify the current landowner of the Shoalhaven Community Pre-School site of the lodgement of this DA.

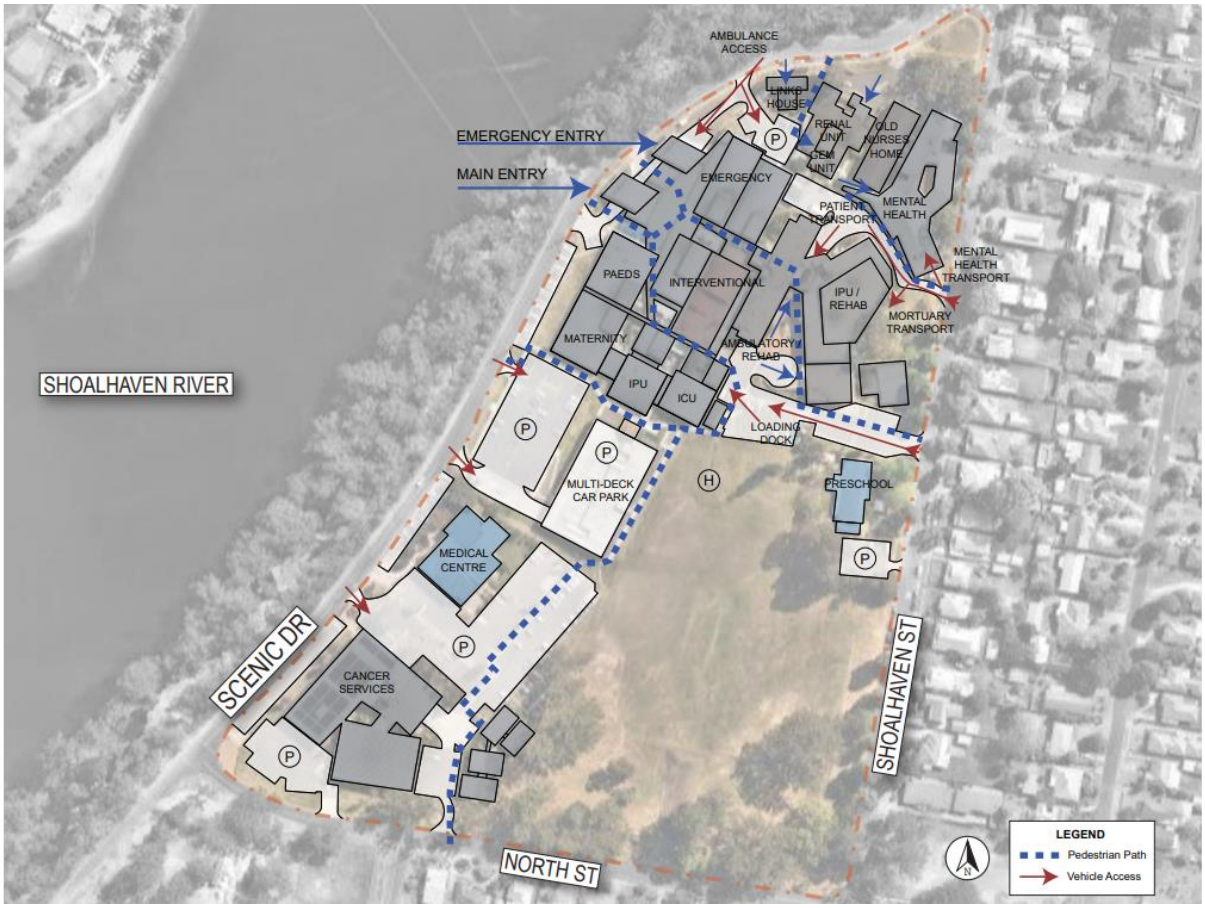


Figure 2 – Existing Site Plan (Conrad Gargett)

The proposed Shoalhaven Hospital Redevelopment under this SSD relates primarily to the development of a new hospital building and its ancillary works. The scope includes a new 7-level building of approximately 28,500m^2 GFA, with rooftop plant and helipad, generally accommodating the following:

Level 00	Back of House (BOH), Loading Dock, Kitchen, Pharmacy, Staff amenities, Mortuary, and plant.
Level 01	Front of House (FOH), Emergency Department (ED), Medical Imaging, and Cafe
Level 02	Operating Suites & Endoscopy, Central Sterile Supply Department (CSSD), and linkway to existing Block B
Level 03	Cardiac In-patient Unit (IPU), Catheterisation Laboratory, Intensive Care Unit (ICU), and plant
Level 04	Geriatric IPU and Mental Health
Level 05	Surgical IPU
Level 06	Medical IPU
Level 07	Rooftop plant
Level 08	Helipad

This generally results in an increase in beds and treatment spaces at the hospital from 245 to 490 to the year 2031 across a range of departments; eight new operating theatres; and two new endoscopy theatres. The current 214 beds will increase to 392 beds to 2031.

The works include a new ambulance entry from Shoalhaven Street, new public and servicing accessway off North Street, and separate loading dock entry and mortuary parking off Shoalhaven Street.

A detailed description of the proposed development is set out in Section 4.0 of this EIS, with additional commentary on the design and environmental aspects of the development.

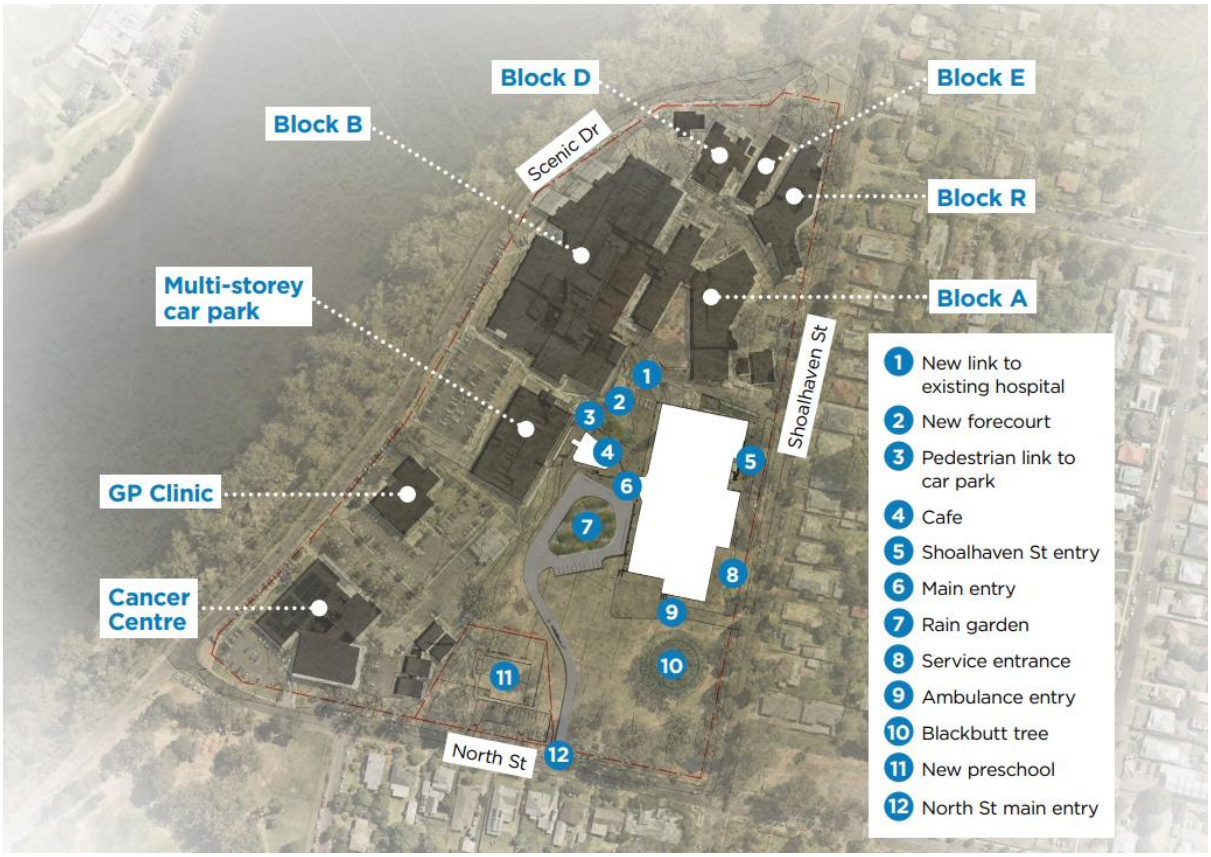


Figure 3 – Existing Site Plan with proposed development footprint (Conrad Gargett)

Figures 5 to **7** provide artist's impressions of the proposed appearance of the building when viewed from the north-west within the hospital site, the north-east looking south along Shoalhaven Street, and from the south looking north from North Street, respectively.

Figure 4 – Proposed Site Plan (Conrad Gargett)

Figure 5 – Artist's Impression – Acute Services Building viewed from the north-west (Conrad Gargett)

Figure 6 – Artist's Impression – Acute Services Building viewed from the north-east (Conrad Gargett)

Figure 7 – Artist's Impression – Acute Services Building viewed from the south (Conrad Gargett)

Other concurrent or related campus-wide works (outside of this SSD scope) facilitating the ongoing and efficient operation of the hospital include:

- Relocation of the Shoalhaven Community Pre-School from its existing site to a new location at the southern end of the former Nowra Park addressing North Street. This DA was approved by Shoalhaven City Council on 28 July 2022 - see DA21/2575. As the pre-school will need to be operational prior to the commencement of works in relation to the Shoalhaven Hospital Redevelopment, a separate approval process was necessitated. The pre-school relocation cannot form part of the proposed SSD application.
- A temporary helipad, presently proposed on West Street Oval south of the hospital, subject of a DA to be lodged with Council later in 2022.

As is common for any number of HI / hospital projects, in order to maintain a suitably operational hospital campus, a number of campus-related works will be required outside of this SSD. This includes later refurbishment works across the existing parts of the hospital in Block A, Block B, Mental Health (Block R), and in the Renal Dialysis Unit (Block D) once the new building has been completed. The scope involves refurbishment and additions and alterations of some 6,500m^2 GFA. The

refurbishment scope and repurposing of existing vacated space will deliver acute, sub-acute and ambulatory care services across various departments.

Of relevance to this proposed SSD is the existing zoning of the land subject to the development. The development site is subject to three different land use zones under Shoalhaven LEP 2014. The new Acute Services Building and its ancillary works will be partly located within the SP2 Health Services Facility zone (the existing hospital), sit over the whole of the SP2 – Educational Establishment zone (the existing Shoalhaven Community Pre-School), and over part of the RE1 – Public Recreation zone, (the former Nowra Park / Lot 104 in DP 1165533).

As noted, in early November 2021 HAC became the landowner of the RE1 – Public Recreation zone, and in August 2022 became the owner of the SP2 – Educational Establishment zone. This signifies the intent to realise this project within this available space. This is also consistent with strategic planning objectives for this precinct, as is discussed in more detail in Section 3.0 of this EIS.

Based on the above, and to clarify the zoning of the land, HI will be relying upon a rezoning of the relevant land to SP2 – Health Services Facility. This process will be carried out concurrently via an amending State Environmental Planning Policy (SEPP) through DPE. The operation of section 4.38(3) of the *Environmental Planning and Assessment Act 1979* (EP&A Act) which states development consent may be granted despite the development being partly prohibited by an environmental planning instrument will not need to be employed in this instance. Concurrent rezoning and DA processes are available under section 4.38(5) and Division 3.5 of the EP&A Act.

The development site, including the existing hospital, pre-school, and former Nowra Park sites are all subject to a 11m building height control under clause 4.3(2A) of Shoalhaven LEP which states (despite the unmapped nature of the sites), that *if the Height of Buildings Map does not show a maximum height for any land, the height of a building on the land is not to exceed 11 metres*.

The rezoning of the development site to SP2 – Health Services Facility will enable the application of clause 5.12(1) of the Shoalhaven LEP 2014 to remove prohibition or restriction of the development within the SP2 – Health Services Facility zone. This removes application of the 11m building height control and removes the need for the preparation of a clause 4.6 exemption to development standards justification. Notwithstanding, the development's height, bulk and scale, and other related impacts will be assessed by this EIS with reference to the various relevant NSW Land and Environment Court Planning Principles.

The development otherwise satisfies and supports all relevant strategic planning objectives and aims as they relate to provision of health services, the Shoalhaven LGA, and the Illawarra generally.

In relation to the likely environmental impacts of the development, those related to construction noise and vibration are likely to require specific management and mitigation, noting however that these impacts will be temporary and discontinuous. Construction traffic and parking will also need appropriate management to mitigate impacts upon localised areas and intersections. The operational development's impacts are generally lesser, but nonetheless require ongoing management. This is likely to be focussed on traffic and parking in particular, noting a Green Travel Plan and other public transport initiatives are likely to contribute to some modal shift away from private car use. Notwithstanding, the various environmental impacts arising would not prevent the redevelopment, whether considered singularly or collectively.

From a social impacts perspective, the operation of the redevelopment is likely to generate myriad long-term positive benefits that outweigh the few minor and short-term negative or adverse impacts likely to arise, mainly at construction. The positive impacts are generally focussed on the new and wide-ranging improvements to health and clinical services able to be provided. The socially-related consequences of not proceeding with the redevelopment can only be identified as negative. The economic stimulus provided by the development during both construction and operation is founded on additional jobs growth and the multipliers that arise for the local and regional communities. The

planned growth of the health hub / medical precinct in particular relates directly to redevelopment opportunities at the Shoalhaven Hospital campus.

During the preliminary phases of this project, and ongoing towards the finalisation of this EIS, the following parties were consulted regarding the project.

- Local Community and the hospital community, including its user groups
- Aboriginal community, including Registered Aboriginal Parties via the ACHAR process
- NSW Government Architect and State Design Review Panel
- Shoalhaven City Council
- Transport for NSW (TfNSW)
- Shoalhaven Water
- Endeavour Energy
- Jemena

Broad and general support was provided. Further engagement remains around individual detailed aspects of the development. These however are reasonably commonplace and routine discussions that remain as part of the planning and detailed design process.

In light of the above, and the evident benefits of the proposed development, we recommend that consent be granted to this DA.

2.0 Introduction

2.1 Project Details

This EIS has been prepared by _planning Pty Ltd for HI and assesses the potential environmental, economic, and social impacts which could arise from the development of the Shoalhaven Hospital Redevelopment at Scenic Drive, Nowra (SSD 35999468).

The Shoalhaven Hospital campus and site of the proposed development is located within a number of lots and Deposited Plans (DPs) as set out below. The site is owned by the NSW Health Administration Corporation (HAC).

- Lot 373 in DP 755952 (main / original hospital site)
- Lot 1 in DP 1043088 (at-grade and multi-deck car park off Scenic Drive)
- Lot 1031 in DP 1208730 (GP Super Clinic - Grand Pacific Health Centre)
- Lot 1032 in DP 1208730 (Cancer Care Centre and part multi-deck car park)
- Lot 102 in DP 1165533 (frontage to Scenic Drive)
- Lot 104 in DP 1165533 (former Nowra Park)
- Lot 7034 in DP 1031852 (existing Shoalhaven Community Pre-School)

HI is the applicant for this DA. Accordingly, this DA is a Crown DA under the EP&A Act. HI's address is 1 Reserve Road, St Leonards NSW 2065, whilst its ABN is 89 600 377 397.

As the development exceeds the $30 million threshold as set under section 14(a) of Schedule 1 of Planning Systems SEPP it is therefore classed as SSD.

It is estimated that the development will generate some 548 construction jobs and deliver 680 full time equivalent (FTE) staff upon full operation by 2031 under the ISLHD Workforce Plan as set out in the Genus Advisory QS report included at **Appendix C**.

2.2 Shoalhaven Hospital

Shoalhaven District Memorial Hospital (referred to as Shoalhaven Hospital throughout this EIS) is located in Nowra and is the main acute care hospital for the Shoalhaven region, providing emergency care, medical, surgical and orthopaedic services within the ISLHD. The hospital was opened in May 1951 and provides a comprehensive range of health services to the Shoalhaven population, networked with higher level services at Wollongong Hospital.

The hospital presently provides a total of 214 beds and a further 31 treatment spaces in specialities and health services including:

- Acute medical, Stroke, Cardiology
- Surgical In-Patient Unit
- Surgical and Endoscopy Day Unit
- Intensive Care
- Maternity
- Paediatrics and neo natal special care
- Rehabilitation
- Mental Health
- Renal Dialysis
- Emergency Department

The original and main hospital buildings are generally clustered to the north of the campus as seen in **Figures 2** and **3** and in the aerial photographs at **Figures 8** and **9** over.

This includes the main hospital building addressing Scenic Drive (Block B – built in 2004) and the original 1951 building addressing Shoalhaven Street (Block A and its 1996 extension). Newer buildings include Mental Health (2014) to the north-east extent of the campus, and the Cancer Care

Centre (2013) and GP Super Clinic (2015) each of which sit south of the original hospital along Scenic Drive. A new multi-deck car park was completed in 2020 and accommodates 230 spaces over three to four split levels. This sits adjacent to a large at-grade car park with a further 76 spaces with access off Scenic Drive. The development of the Cancer Care Centre and GP Super Clinic has involved a progressive transition and expansion to the south of the original campus which has included previous acquisition of the south-western parts of the then Nowra Park by HAC. See photos below.

Block A Extension viewed from Shoalhaven Street

Old Nurses Accommodation and part of Mental Health

Main Entrance for the hospital to Block B at Scenic Drive

Car parking viewed from Scenic Drive

Cancer Care Centre at Scenic Drive

GP Super Clinic on Scenic Drive

Hospital entrance from Shoalhaven Street

Multi-deck car park viewed from Shoalhaven Street

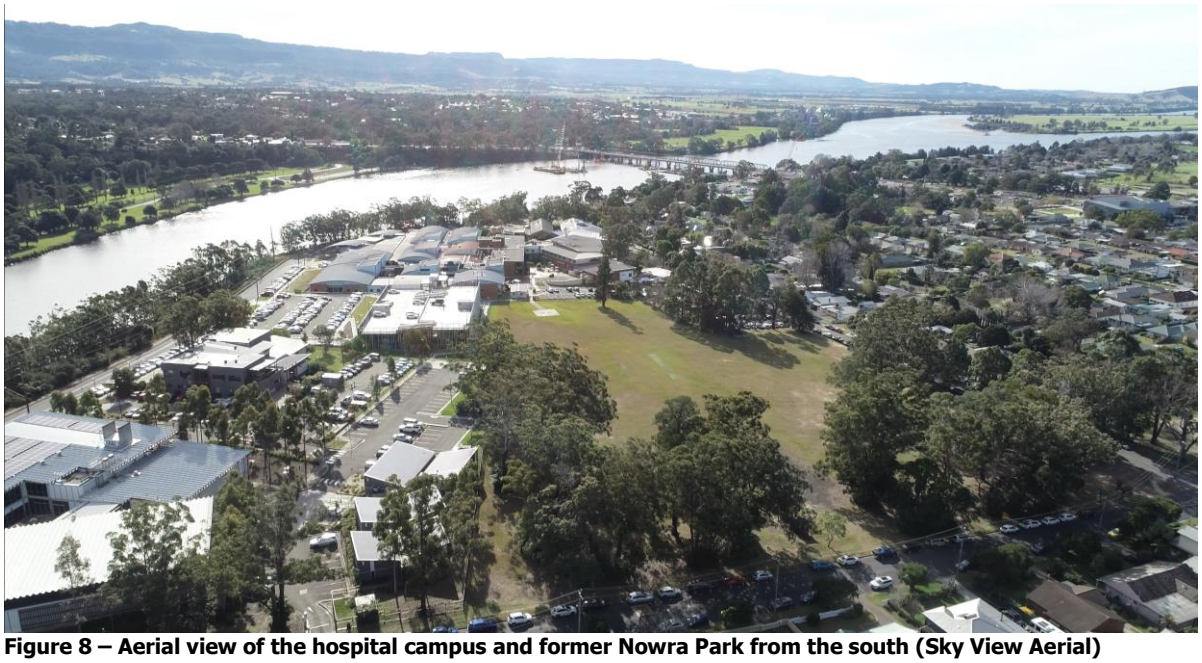


Figure 8 – Aerial view of the hospital campus and former Nowra Park from the south (Sky View Aerial)

The hospital is located at Scenic Drive, Nowra some 160km to the south of Sydney. Within Nowra, the hospital is located north-west of the main business district / town centre and sits in an elevated position adjacent to and overlooking the Shoalhaven River.

Shoalhaven Hospital is located within the ISLHD, which is one of 18 Local Health Districts and Speciality Health Networks in NSW. The ISLHD is responsible for providing community health and hospital care for people living in the Wollongong, Shellharbour, Kiama, and Shoalhaven LGAs.

Shoalhaven District Memorial Hospital is the main acute care hospital for the Shoalhaven region, providing emergency care, medical, surgical and orthopaedic services.

The hospital has an Intensive Care Unit focusing on high dependency and coronary patients, Children's Ward and Maternity Unit as well as a purpose-built regional Cancer Care Centre and sub-acute Mental Health Unit.

The hospital is networked with other hospitals in the ISLHD and is affiliated with the University of Wollongong, supporting the training of Nursing, Medical and Allied Health staff.

Figure 9 over provides an aerial view of the existing hospital campus, former Nowra Park, and site context and surrounding development.

2.3 Existing Development and Site Conditions

The hospital campus is generally bounded by Scenic Drive to the north and west along with vegetated escarpments and parkland overlooking the Shoalhaven River below. Shoalhaven Street sits to the campus' east whilst North Street forms the proposed expanded hospital campus boundary to the south.

The existing buildings generally vary in scale from one storey to two storeys across the campus with the single and two-storey elements mainly addressing Scenic Drive and some three storey elements of buildings addressing Shoalhaven Street due to the topography of the site. The multi-deck car park is a three to four split level structure.

The current helipad sits within the northern extremity of the former Nowra Park - see **Figure 9**.

Figure 9 – Aerial view of the hospital campus, existing pre-school site, and former Nowra Park (Sky View Aerial)

2.3.1 Existing campus-wide or related works

Other concurrent or related campus-wide works (outside of this SSD scope) facilitating the ongoing and efficient operation of the hospital include:

- Relocation of the Shoalhaven Community Pre-School from its existing site to a new location at the southern end of the former Nowra Park addressing North Street. This DA was approved by Shoalhaven City Council on 28 July 2022 - see DA21/2575. As the pre-school will need to be operational prior to the commencement of works in relation to the Shoalhaven Hospital

Redevelopment, a separate approval process was necessitated. The pre-school relocation cannot form part of the proposed SSD application.

- A temporary helipad, presently proposed on West Street Oval south of the hospital, subject of a DA to be lodged with Council later in 2022.

The plan at **Figure 10** shows the location of the existing and relocated pre-school whilst **Figure 11** shows the location of both the existing helipad at the hospital (in red) and the proposed temporary helipad at West Street Oval (in yellow).

As is common for any number of HI / hospital projects, in order to maintain a suitably operational hospital campus, a number of campus-related works will be required outside of this SSD. This includes later refurbishment works across the existing parts of the hospital in Block A, Block B, Mental Health (Block R), and in the Renal Dialysis Unit (Block D) once the new building has been completed. The scope involves refurbishment and additions and alterations of some 6,500m^2 GFA. The refurbishment scope and repurposing of existing vacated space will deliver acute, sub-acute and ambulatory care services across various departments.

The following also sets out a range of key physical or other relevant attributes or characteristics of the hospital campus.

2.3.2 Topography

The topography of the Shoalhaven Hospital campus general slopes from west to east and from south to north. The hospital site and former Nowra Park are generally flat in a north-south direction with a gentle slope south to the north along the Shoalhaven Street alignment from RL19 to RL16, however from Scenic Drive to Shoalhaven Street there is a more pronounced drop from west to east of some 10 or more metres. **Figure 12** shows various spot heights at and around the hospital campus. **Figure 13** shows the development site and its general west to east slope from the multi-deck carpark across the former Nowra Park to Shoalhaven Street.

The topography is such that Scenic Drive and the hospital sit high above, and in part overlook, the Shoalhaven River by some 30m – see **Figure 14**.

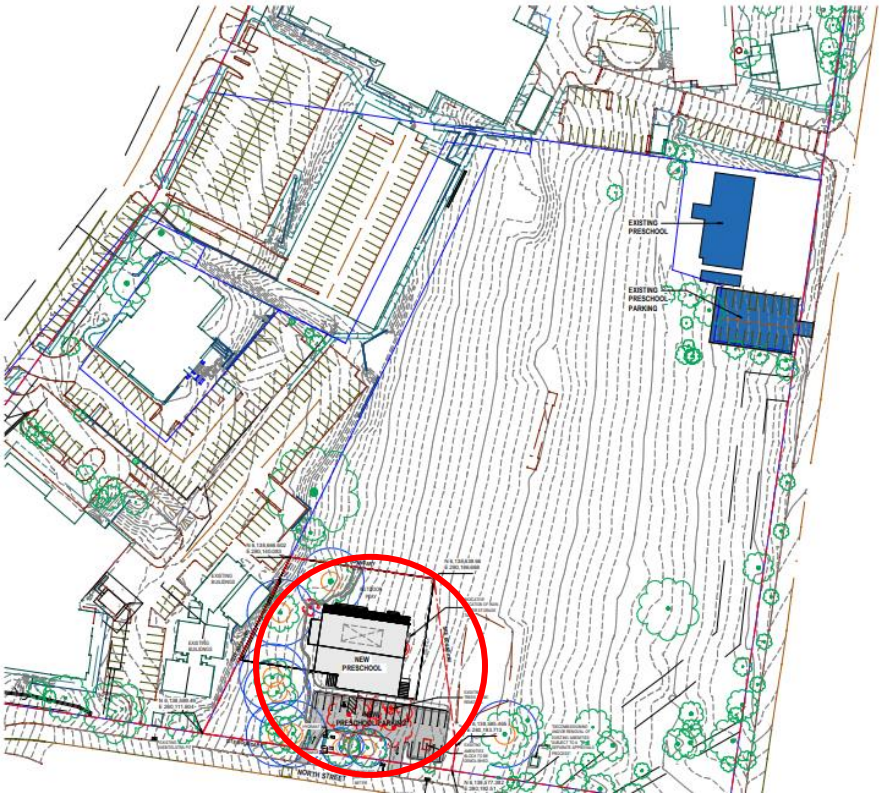


Figure 10 – Existing pre-school in blue and relocated pre-school circled (Conrad Gargett)

Figure 11 – Location of proposed temporary helipad at West Street Oval relative to the hospital (SixMaps)

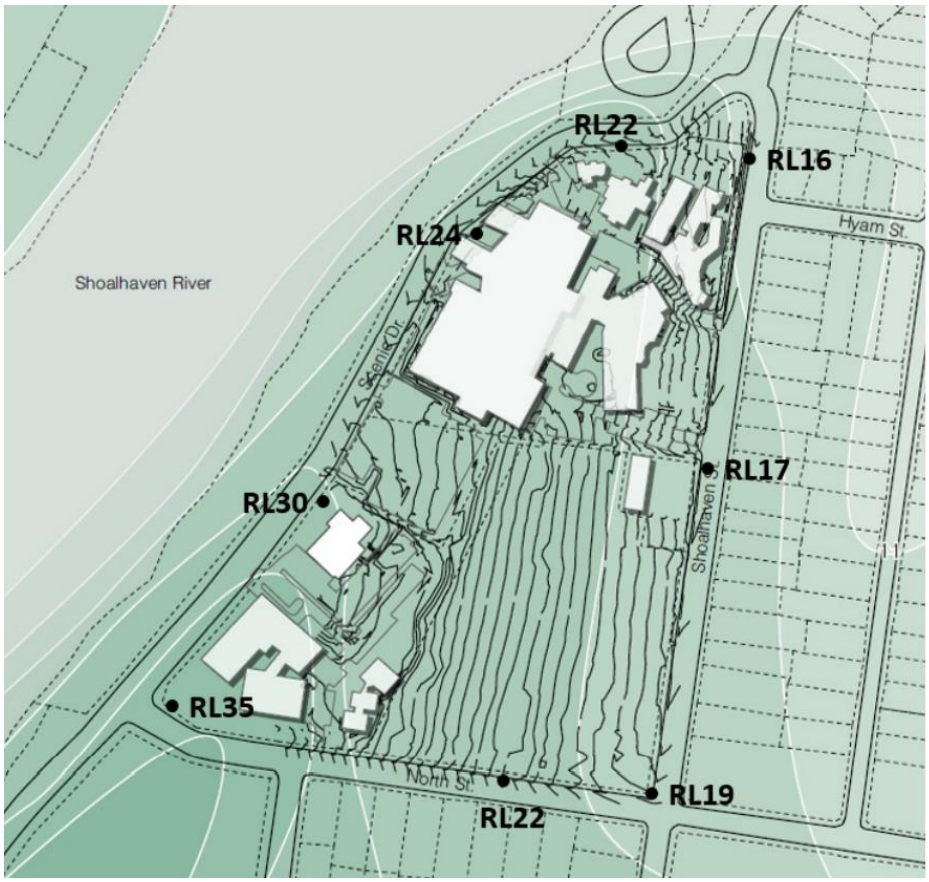


Figure 12 – Existing topography (Conrad Gargett)

Figure 13 – Development site from the south

Figure 14 - Aerial view of the hospital campus and escarpment above the Shoalhaven River (Sky View Aerial)

A survey is included at **Appendix D**.

2.3.3 Geology

Based on the Ulladulla 1:250,000 Geological Series Sheet, the site is underlain by Permian-aged Nowra Sandstone of the Shoalhaven Group comprising siltstone or sandstone. Formations identified in close proximity to the site include Quaternary aged alluvium gravel, swamp deposits or sand dunes.

The Geotechnical Interpretive Report undertaken by Cardno (see **Appendix E**) encountered a generalised profile comprising relatively shallow asphalt fill and other fill and topsoils overlying residual sandy clay which transitioned to clayey gravelly sand and sandstone bedrock.

Groundwater was not encountered during Cardno's investigations, noting however that groundwater levels are likely to fluctuate with variations in climatic and site conditions. Seepage may also occur along the soil/rock interface during and after periods of wet weather.

With reference to the eSpade mapping portal the site is not located in an area where there is potential for soil and groundwater salinity to occur.

The site does not contain Acid Sulfate Soils based on the eSpade mapping portal and Cardno's investigations. Council's Planning Certificates conservatively do not rule out the possibility for Acid Sulfate Soils at the site given it is within the broader coastal zone. Mapping under the Shoalhaven LEP 2014 indicates the site is likely to contain Class 5 soils (being the lowest risk category). Broadly, no Acid Sulfate Soils Management Plan would be warranted given the site is subject to the lowest risk Class 5 soils, and despite being within 500m of Class 1 soils to the west, these are located at the Shoalhaven River level at least some 10-12m below the ground level of the development. The earthworks proposed are unlikely to be deeper than RL 16.55 and are therefore significantly above the key threshold level of RL 5.

See the Planning Certificates for the relevant land parcels at **Appendix F**.

2.3.4 Contamination

Cardno has undertaken a Preliminary Site Investigation (PSI), an Environmental Site Assessment (ESA) and Data Gap Investigation (DGI) in relation to the development site in the context of the wider hospital campus and consistent with the requirements of the former SEPP 55 – Remediation of Land (now Chapter 4 of *State Environmental Planning Policy (Resilience and Hazards) 2021).*

The information reviewed by Cardno for the PSI, ESA, and DGI indicated that the site has historically been used as open space, with the Shoalhaven Community Pre-School in place for some decades. Some structures have previously been located in Nowra Park but were demolished some time ago.

The results of the Cardno investigation (which includes field observations and analytical results) reveals the following:

- Indicators of contamination, such as odour, sheen and staining, were not observed on visible ground surfaces or in any excavated materials.
- Asbestos containing materials (ACM) was not observed in locations where bores were progressed and within soil sampled collected.
- ACM in the form of bonded fibre cement fragments and asbestos piping was not observed in excavated material on site, however, it was observed at three locations within the nearby proposed pre-school site – noting this is subject to a separate DA and remediation process and does not form part of the development site or this DA.
- Observations of anthropogenic waste were visible in trace quantities of brick, ceramic and concrete. Glass and plastic were also observed on ground surfaces and in shallow fill profiles.
- Water seepage was encountered in a handful of bore holes or test pits during the intrusive assessment and ranged in approximate depth from 0.7m 0.9m below ground level. The depth that seepage was encountered was at the top of the residual sandy clay layer indicating that the site may have a perched groundwater table above this residual layer, particularly during times of high rainfall. Seepage was not accompanied by any odour, sheen or staining of soils that might indicate contamination. Also note that in the week preceding the field works some 34mm of rain was recorded at Nowra RAN Air Station which included 31mm on March 19 2022 (two days before field works).
- With respect to human health indicators, all analytical results for samples collected as part of the DGI were below the laboratory limits of reporting, or the applicable Residential A human health criteria.
- From an ecological perspective, analytical results were screened against applicable ecological screening criteria with exceedances for copper, nickel and zinc derived from topsoil/fill

material in three locations, however these results were generally considered to be anomalies able to be excluded due to soil conditions.

Most relevantly, based on the findings of this investigation and the other previous investigations by Cardno, the site is considered suitable for the intended land use as a hospital, with the exception of the area centred on borehole BH01 between sampling locations BH01E1, BH01S1, BH01W1 and BH01N1. This small unsuitable area can be made suitable following management of the identified contamination through the implementation of a Remediation Action Plan for the removal of an anticipated 2-4m^3 volume of material, along with other management and mitigation measures. The location of BH01 between sampling locations BH01E1, BH01S1, BH01W1 and BH01N1 is on the existing hospital site as shown in **Figure 15**.

A Remediation Action Plan (RAP) was also prepared by Cardno which indicates the works will be Category 2 Remediation Works and that consent will not be required.

The results of the DGI, and approach under the RAP, are further discussed in Section 7.0 of this EIS. See the PSI, ESA, DGI and RAP at **Appendix G**.

2.3.5 Drainage / Flooding

The site is not identified as being subject to Flood Planning controls under the Shoalhaven LEP 2014 – see **Figure 16**. This is amplified by the elevation of the site some 30m above the Shoalhaven River at its maximum.

Based on Bonacci's review of Council's flood modelling for the existing and 2050 and 2100 predicted maximum flood levels, the hospital and the development site is unaffected with road access to and from the hospital maintained – see **Figure 17**.

Further discussion on flood impacts is set out in Section 7.0 of this EIS. The Bonacci Stormwater and Flooding Assessment is found at **Appendix H**.

The existing site drainage transfers from the upstream western part of the hospital site to the north-east and east and discharges via a headwall at the western boundary of the proposed development area of the Acute Services Building. This travels via overland flow following the site as it falls across the proposed development area towards Shoalhaven Street.

The existing stormwater drainage in Shoalhaven Street consists of a pit and pipe system, with pipe size at 450mm diameter. There are existing hospital stormwater connections to the Council stormwater system in Shoalhaven Street.

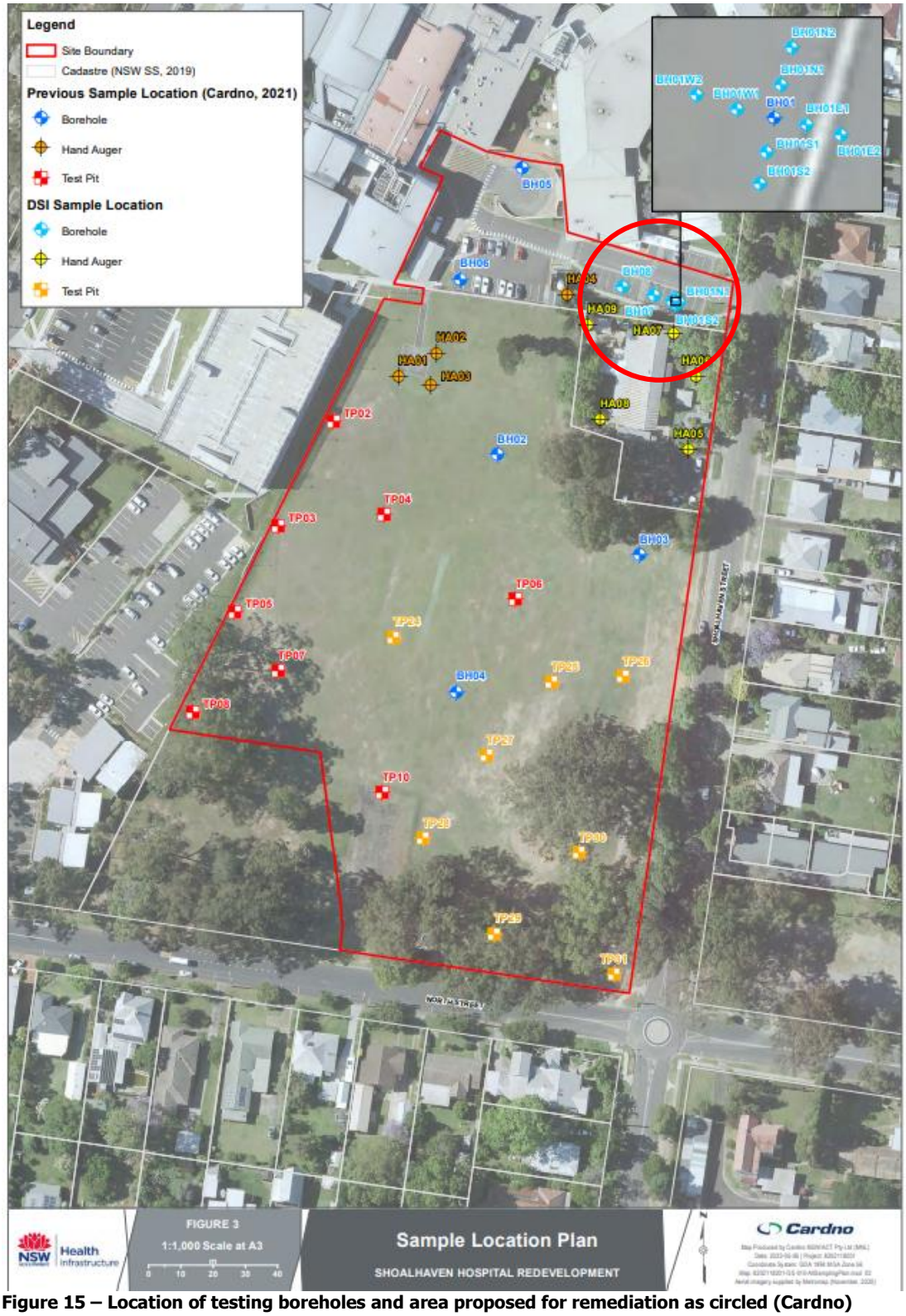


Figure 15 – Location of testing boreholes and area proposed for remediation as circled (Cardno)

Figure 16 – Flood planning controls map – Shoalhaven LEP 2014

Figure 17 – Flood mapping (Shoalhaven City Council)

2.3.6 Biodiversity / Arboricultural Matters

A review of the NSW Government Biodiversity Values Map and Threshold Tool portal shows the site to be unaffected by any mapped biodiversity – see **Figure 18** further over. The site (and its general environs) are also excluded from the LEP's Terrestrial Biodiversity Map. Notwithstanding, a Biodiversity Development Assessment Report (BDAR) has been prepared in relation to the development.

The BDAR, prepared by Eco Logical (see **Appendix I**) advises as follows with respect to the flora and fauna at the site.

Biodiversity - Flora
The proposed development footprint contains planted native and exotic vegetation shrubs and groundcovers along with weeds. No remnant native vegetation is present within this area and no plant community types (PCTs) could be assigned to the vegetation proposed to be removed.

The scattered canopy contains a variety of native and exotic trees planted for landscaping purposes including *Eucalyptus saligna* (Sydney Blue Gum), *Pinus radiata* (Radiata Pine), *Platanus orientalis* (Sycamore) and *Harpephyllum caffrun* (Kaffir Plum). *Lophostemon confertus* (Brush Box) is a regularly planted street tree. The mid-layer contains a variety of planted native and exotic species, mainly within and around the existing pre-school grounds and hospital grounds. In areas that lack regular maintenance, a range of native and weed species have become established. Species include *Cinnamomum camphora* (Camphor Laurel), *Acer palmatum* (Japanese Maple), *Jacaranda mimosifolia* (Jacaranda), *Callistemon spp.*(Bottlebrush), *Glochidion ferdinandi* (Cheese Tree), *Syzygium australe* (Brush Cherry), *Fraxinus griffithii* (Evergreen Ash), *Pittosporum undulatum* (Sweet Pittosporum) and *Polygala myrtifolia* (Myrtle-leaf Milkwort). Most of the groundcover comprises exotic grasses maintained as a lawn or parkland.

The south-eastern corner of the development site contains planted native and exotic trees and at least one remnant *Eucalyptus pilularis* (Blackbutt) – being the signficant canopy tree at the site identified by Moore Trees as 'Tree 50'. This tree is considered likely to be a degraded example of PCT 1206 Spotted Gum – Blackbutt shrubby open forest on coastal foothills in the southern Sydney Basin Bioregion. Other eucalypts in this area are planted and not representative of PCT 1206. All of the vegetation potentially associated with PCT 1206 will be retained by the proposed development.

Biodiversity - Fauna
There are limited fauna habitat values present due to the highly modified and disturbed nature of the development site.

Trees and other vegetation provide small amounts of generic foraging habitat (e.g. invertebrates and nectar) for some bird and bat species that tolerate disturbed, urban environments. Exotic grassland areas may also provide some foraging habitats for common species such as *Gymnorhina tibicen* (Australian Magpie) and *Grallina cyanoleuca* (Magpie Lark).

There are no tree hollows in, or near, any trees to be removed. There are six hollow-bearing trees in the south-eastern corner of the development site, all of which will be retained. These hollow-bearing trees occur in a highly modified parkland, in close proximity to roads and the children's playground. These disturbances reduce the habitat value of the tree hollows for fauna, but some common urban species may use the hollows for breeding or sheltering.

The existing pre-school and one demountable hospital building will be removed for the proposal, but are unlikely to provide habitat for fauna such as roost sites for microchiropteran bats. Both buildings are regularly used and are in good condition. No obvious entrance points for microchiropteran bats were observed by Eco Logical. It was concluded that the buildings are unlikely to provide habitat for fauna.

There are no areas of rocks, caves, water sources, coarse woody debris or dense understorey vegetation on the site, apart from small, landscaped patches.

Habitat connectivity is absent apart from stepping-stone type connectivity for highly mobile species (birds and bats). A few common native bird species were recorded in or flying over the development site, including Australian Magpie, Magpie Lark, *Manorina melanocephala* (Noisy Miner), *Trichoglossus moluccanus* (Rainbow Lorikeet), *Ocyphaps lophotes* (Crested Pigeon), *Anthochaera carunculata* (Red Wattlebird), *Cacatua galerita* (Sulphur crested Cockatoo) and *Coracina novaehollandiae* (Black-faced Cuckoo-shrike). The exotic *Acridotheres tristis* (Common Myna) was also recorded in the development site.

Based on the above, the BDAR was prepared under the streamlined assessment module for planted native vegetation in accordance with Appendix D of the Biodiversity Assessment Method (BAM) 2020.

The BDAR broadly concluded as follows with respect to the site and proposed development:

- Species credits are not required to offset the proposed impacts as the vegetation is predominantly planted native and exotic species. Planted native vegetation will be reinstated as part of proposed landscaping.
- The planted native vegetation in the development footprint may provide occasional, marginal foraging resources for mobile, wide ranging bird and bat species, including some species listed as threatened under the *Biodiversity Conservation Act 2016* and Commonwealth EPBC Act. No breeding habitat or other potentially important habitat would be affected by the development.
- No threatened species were recorded within the development site.
- The biodiversity impacts are considered to be minor and no requirement for offsets for impacts to planted vegetation or the associated marginal foraging habitat for threatened fauna is required.
- Following consideration of the administrative guidelines for determining significance under the EPBC Act, it is concluded that the proposal is highly unlikely to have a significant impact on Matters of National Environmental Significance (MNES) or Commonwealth land.

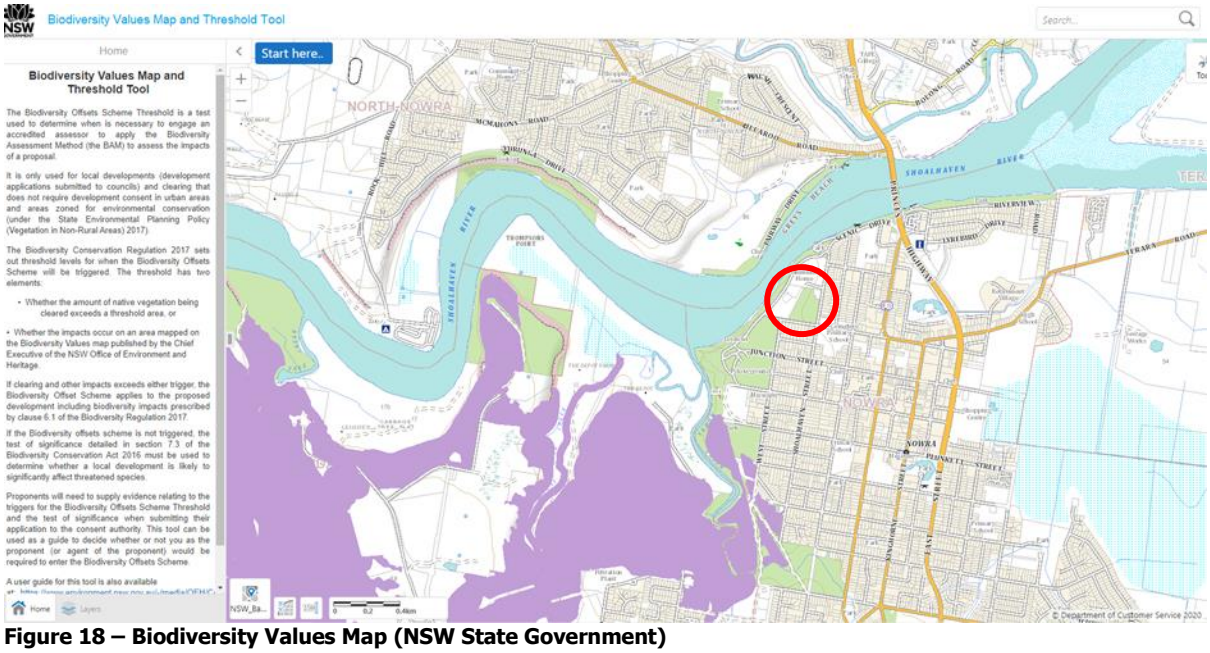


Figure 18 – Biodiversity Values Map (NSW State Government)

Arboricultural matters

An Arboricultural Development Impact and Tree Protection Report has also been prepared by Moore Trees in relation to tree removal, retention, and protection within the development site – see **Appendix J**.

With respect to the development site's existing trees Moore Trees has considered 74 trees and evaluated their significance and retention value. This is mapped by Moore Trees at Plan 1 at Appendix 1 of the report. This figure is also replicated over at **Figure 19**.

Of the 74 trees on the site, some 14 sit within the footprint of the proposed Acute Services Building, with another 12 trees subject to impacts related to the works, including the new Ambulance access at Shoalhaven Street, the Water Main Relocation works, and other general civil engineering works including new footpaths along North and Shoalhaven Streets.

A summary of the significance of trees at the site is set out below based on information from Moore Trees.

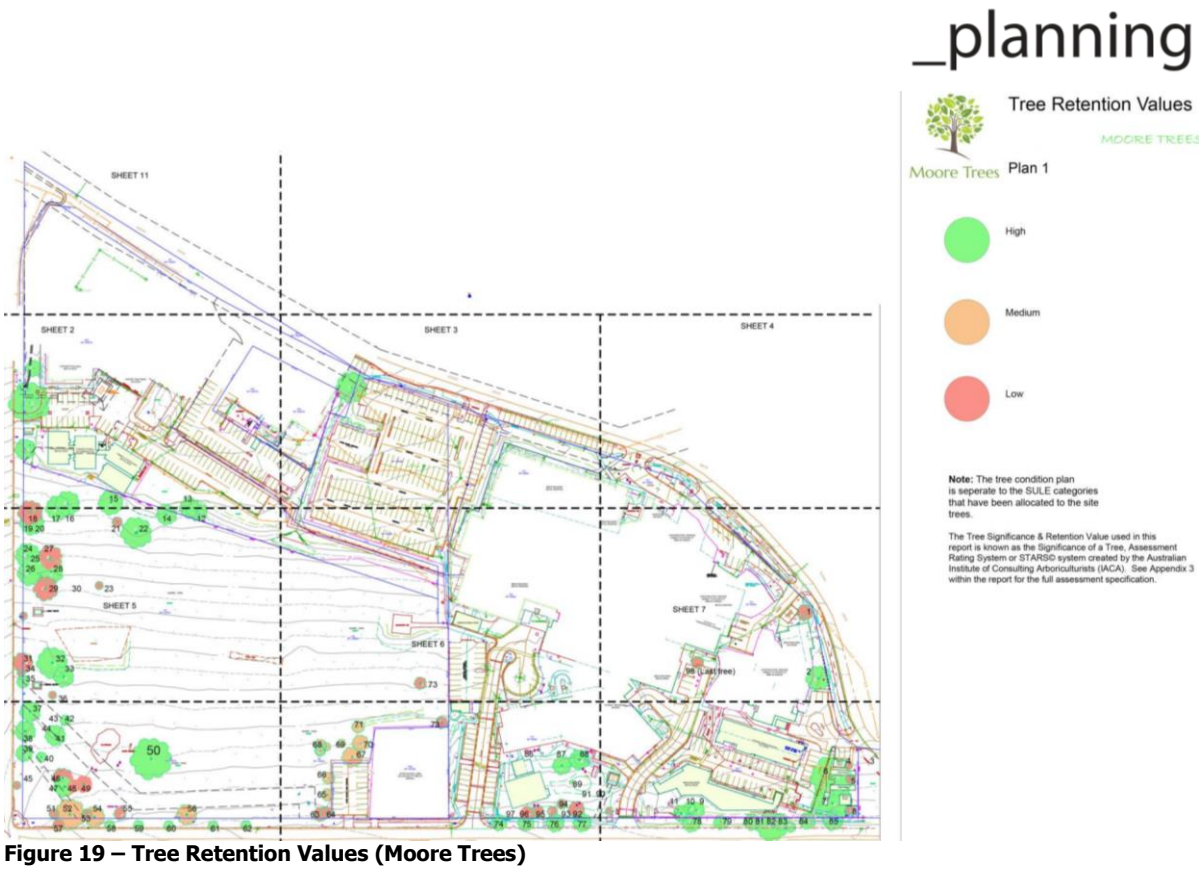


Figure 19 – Tree Retention Values (Moore Trees)

Paragraph 3.14 of the Moore Trees report sets out the significance of trees, as reproduced below. Trees proposed for removal are included in bolded red text.

Significance (Scale)	**1 (High)**	**2 (Medium)**	**3 (Low)**
Tree No.	12, 13, 14 30, 32, 33, 35, 36, 37, 38, 39 40, 41, 42, 43, 44, 47 50, 52, 54, 57, 58, 59 60, **61**, **62** 74, 75, 76, 77, 78, 79 80, 81, 82, 83, 84, 85, 86, 87, 88, **89** 101	**56** **65**, **66**, **67**, **68**, **69** **70**, **71** **98**, **99**, **100**	31, 34 45, 46, 48, 49 51, 53, 55 **63**, **64** **72**, **73** **90**, **91**, **92**, **93**, **94**, **95**, **96**, **97**

Tree 50 is a large mature Blackbutt (*Eucalyptus pilularis*) and has a very large broad canopy that is almost twenty (20) metres radius – see **Figure 20**. This tree would be considered to be the most significant individual tree on site based on Moore Trees assessment and based on its size and branching development could be as old as 300 years.

Note, Trees 61 and 62 are located within the Shoalhaven Street road reserve and are Council trees.

Figure 20 – Tree 50 – Highly Significant 25m high Blackbutt (*Eucalyptus pilularis*) (Moore Trees)

2.3.7 Bushfire

The western fringes of the existing hospital site are subject to bushfire affectation – see **Figure 21** over. This shows the Scenic Drive frontage to be subject to Vegetation Buffer and Vegetation Category 2 impacts.

The new Acute Services Building and the relevant land parcels are clear of bushfire affectation and are not on bushfire prone land. Notwithstanding, a Bushfire Protection Assessment has been carried out by Eco Logical and this is attached at **Appendix K**.

It further finds that while the Acute Services Building itself is not located on land mapped as bush fire prone by Shoalhaven City Council's Bush Fire Prone Land (BFPL) map, the western side of the hospital campus is partially mapped within the 100 m buffer of Category 1 forest vegetation located on the western side of Scenic Drive adjoining the Shoalhaven River. This vegetation consists of a narrow band of dry sclerophyll forest and Eastern Riverine Forest along the cliff line to the west of the subject land on the opposite side of Scenic Drive on the bank of the Shoalhaven River.

The vegetation is classified as 'low hazard' vegetation using the provisions in Section A1.11.1 of Planning for Bushfire Protection 2019 as it does not provide a potential fire run towards the study site of more than 50 m.

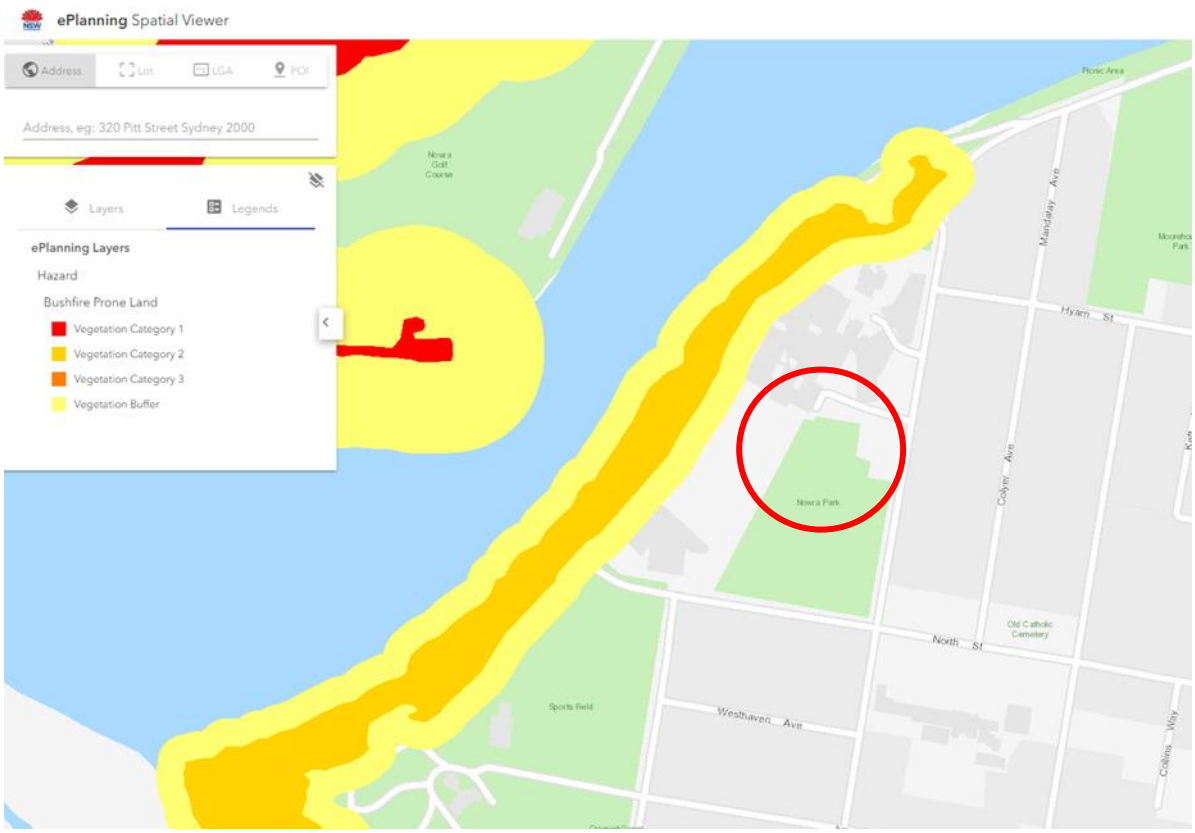


Figure 21 – Bushfire Prone Land map – ePlanning Spatial Viewer

2.3.8 Heritage / Aboriginal Cultural Heritage

The following sets out the Non-Aboriginal and Aboriginal cutural heritage context at the site.

Non-Aboriginal Heritage

The existing hospital, pre-school and former park sites are not identified by Shoalhaven LEP 2014 as heritage items or as being located within a heritage conservation area – see **Figure 22** over.
The closest items listed under Schedule 5 of the LEP include:

406	Ben's Walk including Suspension Bridge and Aboriginal Art Sites, West and Worrigee Streets.
405	Nowra showground and sportsground complex including Federation brick pavilion, Victorian masonry gate, toilet, former Victorian Masonry Entrance Gate, Hanging Rock Lookout, Inter-war Castellated Sandstone Memorial Gateway and Sculpture, "Monaghan's"—Victorian Memorial Cast Iron Fountain, West Street.
378	St Michael's Roman Catholic Church including two storey Victorian presbytery and grounds, 20 North Street.
C5	Nowra CBD Fringe West Heritage Conservation Area

Based on the Statement of Heritage Impact by Eco Logical, the hospital is however identified on the NSW Department of Health Section 170 Register under the Heritage Act 1977. The listing rests on the fact that the hospital demonstrates the following national and NSW historic themes:

National	3. Economy-Developing local, regional and national economies
NSW	Health-Activities associated with preparing and providing medical assistance and/or promoting or maintaining the well-being of humans

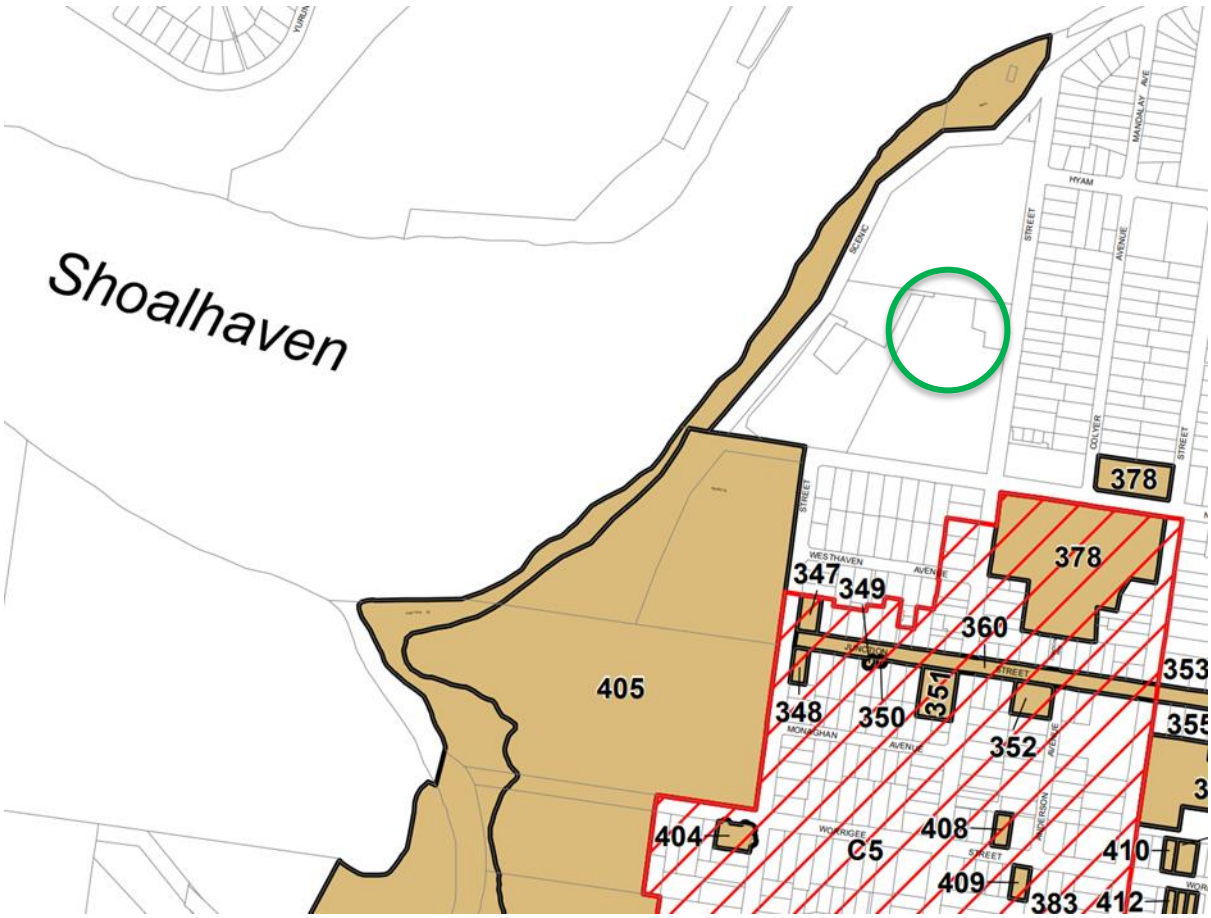


Figure 22 – Heritage Map (extract Map 13E) – Shoalhaven LEP 2014 (with the site location circled green)

Eco Logical advises the inclusion of the hospital site is not related to a particular building or structure, nor is it associated with a particular historic phase in the development or evolution of the hospital site. Rather that the hospital exists as a functional community service. The proposed redevelopment of the facility will add to the overall complexity of the site's built environment and contribute to its ongoing evolution.

The Statement of Heritage Impact prepared by Eco Logical is found at **Appendix L**. This identifies, consistent with the Shoalhaven LEP 2014, that Shoalhaven Hospital is not a listed item on any statutory or non-statutory heritage register and does not sit within or adjacent to any conservation area.

Aboriginal heritage

Eco Logical has also separately completed an Aboriginal Cultural Heritage Assessment Report (ACHAR) in which it has identified and described the cultural heritage values and significance across the study area in accordance with the *Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW*.

To be able to assess the environmental context and identify potential Aboriginal objects or places located within the study area, an archaeological survey was undertaken by Eco Logical's Archaeologists. A representative of the Nowra Local Aboriginal Land Council (LALC) was in attendance and provided cultural information and recommendations for the proposal. The archaeological survey was undertaken in accordance with the *Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW*.

It was found that:

- No Aboriginal sites are located within the study area.
- All sections of the study area have been subjected to moderate to high levels of ground

disturbance.
- All sections of the study area were found to have a low archaeological potential.
- No direct impacts from the project on Aboriginal cultural heritage have been identified.

An AHIMS search carried out by Eco Logical in June 2021 found that some 108 recorded Aboriginal sites exist in and around Nowra within an 8km radius for the hospital site, however no Aboriginal sites have previously been recorded within the subject site. This is consistent with Eco Logical's more recent findings under this ACHAR.

See the ACHAR prepared by Eco Logical at **Appendix M**. Further assessment and discussion is also found at Sections 6.0 and 7.0 of this EIS with respect to Aboriginal cultural heritage and design responses with respect to Designing for Country.

2.3.9 Access and transport

The hospital is presently accessed by 13 pedestrian and vehicular entry points given the spread of services across the campus. These are shown on **Figure 23** and described below.

Access	Road Frontage	Pedestrian	Vehicular
	Shoalhaven Street (3 access points)		
1	Mental Health	✓	✓
	Mortuary transport		✓
	Patient Transport	✓	✓
2	Ambulatory Rehab		
	Loading Dock		✓
3	Shoalhaven Community Pre-School and parking	✓	✓
	Scenic Drive (8 access points)		
1	Cancer Care Centre and parking	✓	✓
	GP Super Clinic (Grand Pacific Health Centre) and parking	✓	✓
2 and 3	At-grade and multi-deck public and staff car parks		✓
4	Main Hospital Entry	✓	
5	Emergency Entry	✓	
6	Ambulance Access to Emeregency		✓
7	Links House and parking	✓	✓
8	Renal Unit and parking	✓	✓
	North Street (2 access points)		
1	Cancer Care Centre and beyond through to wider hospital campus	✓	
2	Cancer Care Centre parking		✓

Access to the hospital campus is generally from the east via either of North Street or Hyam Street via Bridge Road.

The existing hospital campus has a total parking capacity of 693 car parking spaces within the site plus five (5) ambulance spaces. 19 spaces are provided at the existing pre-school site. The multi-deck car park provides 230 spaces of these 693 spaces.

Off-site, Scenic Drive provides for a further 70 spaces along the campus frontage with a 2-hour restriction. There are also two parallel parking bays, providing capacity for approximately 10 cars. The opposite side of Scenic Drive is signposted as a no parking zone. Shoalhaven Street and North Street have unrestricted on-street parking on both sides of the road.

Within 400 metres of the site, there is a total on-street parking capacity of 379 spaces. Of these, 30% are generally occupied, resulting in 265 available on-street parking spaces.

With respect to cyclist access to the hospital Scenic Drive is an existing shared path route, however there is no signage or marking to communicate this. The site frontage along North Street is proposed to be a shared path route. Other proposed on-road routes exist within the local network including Colyer Road, Bridge Road, Princes Highway and the remaining eastern section of North Street.

Off-road shared paths generated by the Nowra Bridge Project will improve cyclist facilities along the Princes Highway and the new bridge.

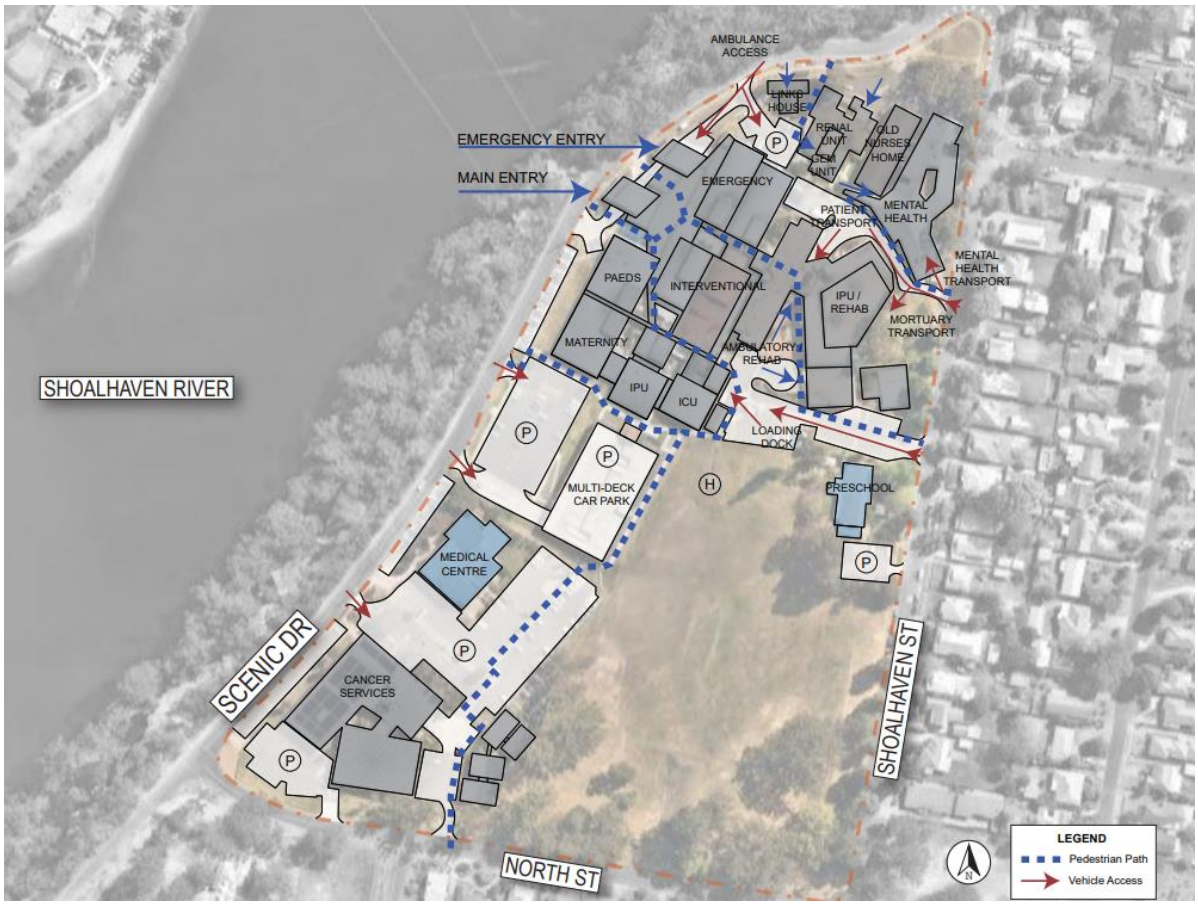


Figure 23 – Hospital campus access points (Conrad Gargett)

In terms of public transport access to the hospital, there are several options available in the vicinity of the hospital in the form of buses and rail. The hospital has two bus stops, located on Scenic Drive and Shoalhaven Street, providing connections to rail services and the surrounding suburbs and regions.

There are four bus operators providing limited timetabled or pre-booked services to the site:

- Shoalbus with services 6 days per week (Mon-Sat).
- Nowra Coaches with services 6 days per week (Mon-Sat).
- Stuart's Coaches with most services 6 days per week (Mon-Sat) and one service including Sundays.
- Kennedy's Bus & Coach with services 6 days per week (Mon-Sat) and other supplementary services other weekdays.

The only train station within the vicinity of the hospital is Bomaderry train station. This station connects to the Intercity Trains South Coast Line and connects Bomaderry and Kiama with Wollongong and Sydney. These services occur every 1-2 hours on weekdays and approximately every 2 hours on weekends and public holidays. Passengers are required to transfer at Kiama for services to Sydney.

The site is approximately 3km (by road) from the station, or a 35-minute walk. Various bus routes also connect the hospital to the station.

TTW's Transport and Accessibility Impact Assessment is included at **Appendix N**.

2.3.10 Utilities and Services

The hospital is presently serviced by electricity, gas, water and sewer, fire services, and telecommunications services.

Electricity

The existing hospital buildings in the north of hospital including Buildings A, B, C, D, E, H, J, R, S, and the multi-deck carpark are supplied from the local Endeavour Energy network. The site main switch board is supplied via underground cables from two of 1000kVA Endeavour Energy (utility owned, operated, and maintained) substations located adjacent to Building A. These are Endeavour Energy Substation 20975-1 and Endeavour Energy Substation 20975-2.

The substations are supplied via a network of in-ground cables reticulated from the Shoalhaven Street. The Endeavour Energy substation and in-ground cables reticulation paths are subject to an easement in favour of Endeavour Energy.

Existing Cancer Care Centre buildings (Buildings P and Q) are fed from a dedicated electrical switch room located within basement level of Cancer Care Centre's main building (Building P) via a dedicated line to Endeavour Energy Substation 29648.

The existing GP Super Clinic (Grand Pacific Health Centre) building, located to the north of the Cancer Care Centre on Scenic Drive, is supplied with an independent supply from an Endeavour Energy substation (Substation number – 33588) located adjacent to the building and currently privately operated as an independent building to existing hospital premises.

Gas

The hospital is connected to a 50mm diameter authority Natural Gas Supply located in Shoalhaven Street. The main is a 50mm diameter Nylon pipe with a pressure of 210kPa. There are a series of three independent gas meters and regulator sets through the site feeding individual building groups.

Current gas consumption and peak flow rates have been determined through gas billing data provided by the ISLHD. The average winter daily usage is noted at 37,800 mJ/day and the average summer daily usage is 21,900 mJ/ day. The gas main currently running through Nowra Park to service Building B is to be relocated outside of this SSD process by Jemena.

Water and sewer

The hospital is fed from an existing Shoalhaven Water 100 mm diameter connection to the authority's 375 DICL water main in Shoalhaven Street located at approximately RL AHD 18.5m. The supply is fitted with a 100mm diameter water meter and backflow valve and a 65mm bypass complete with 65mm backflow valve. The meter number is 6040228. The ISLHD have supplied water usage data from August 2019 to the present. From this data is has been derived that an average daily water demand of 68.9kL, an average summer load of 75kL/day and average winter load of 57.3kL/day occurs.

An existing Shoalhaven Water 375DN water main currently extends through Nowra Park within an easement. Where the location impends the proposed Acute Services Building, the main is intended to be relocated to outside the site within the nature strip parallel with Shoalhaven Street. Discussion with Shoalhaven Water and Shoalhaven Council is underway with respect to a preferred option and location. **Figure 24** indicates the existing water main location. The proposed relocation of the water main outside the property boundary into the nature strip is discussed in further detail in Section 4.0 and 7.0 of this EIS.

The existing sewer network is a gravity system connecting to Shoalhaven Water's 150mm diameter sewer main in Shoalhaven Street via a boundary trap located adjacent to the existing main entry.

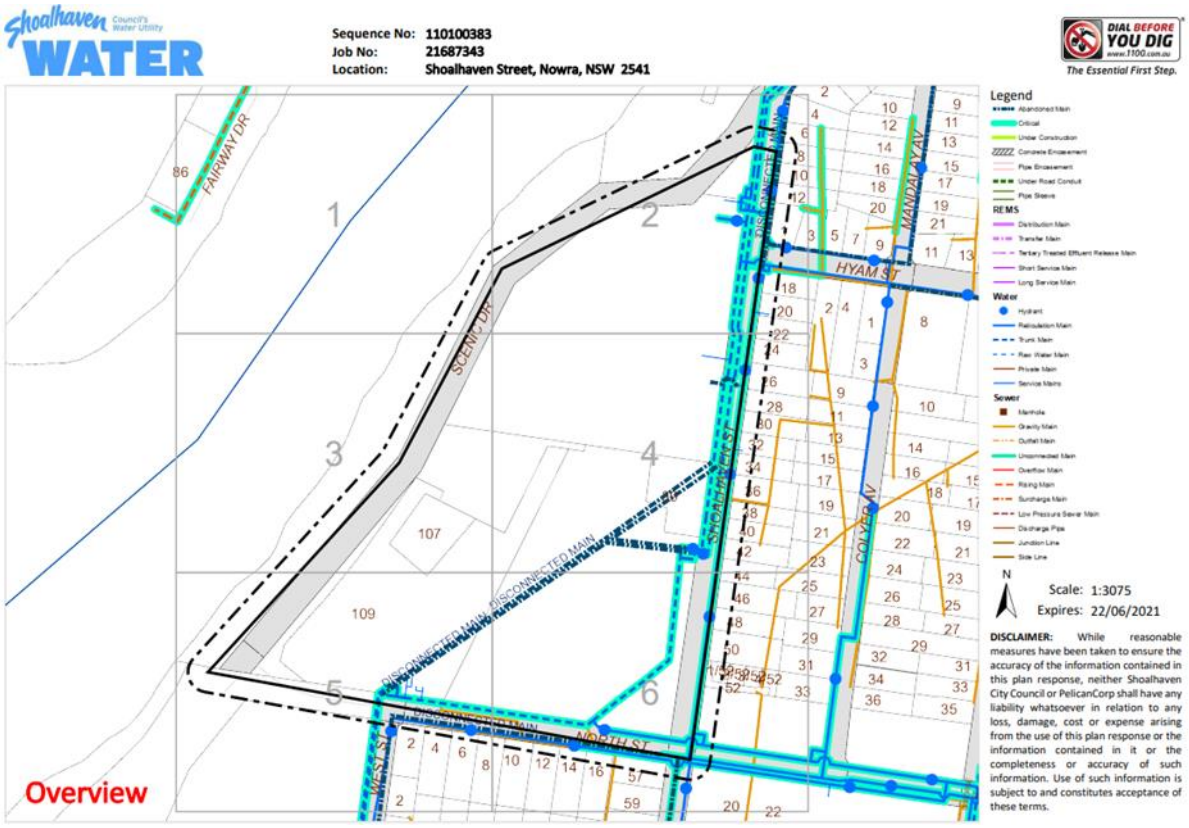


Figure 24 – Shoalhaven Water infrastructure near the site (Shoalhaven Water)

Fire Services

The existing Fire Hydrant system is fed from a 100mm diameter connection to the Shoalhaven Water's main in Shoalhaven Street via a back flow and fire brigade booster assembly. The system is nominated at 23 L/s design flow.

Telecommunications

Telecommunications services networks exist within or in proximity of the hospital. Based on Arup's interpretation of the Dial-Before-You-Dig survey information, site investigations, and as-built information an array of communications cabling is installed in underground conduits, generally reticulated under footpaths and road verges with regular access points through manholes or pits.

These services are:

- NBN Co fibre
- Optus
- AARNet
- NextGen Networks (exists on campus, however outside of project boundary)
- Telstra

The hospital itself has two separate campus distributors located within the Building A Private Automatic Branch Exchange (PABX) room and the Cancer Care Centre building with multiple lead in cables with both Telstra and NBN connections.

Mobile telephone signal performance is poor in parts of the campus and there is no existing Distributed Antenna System (DAS). The inclusion of DAS in redevelopment works will be subject to further investigation during detail design stage.

2.4 Surrounding Development

The locality around the hospital includes the escarpment and bushland (Ben's Walk) to the west of Scenic Drive as shown earlier in **Figures 9** and **14**; the existing extent of the now former Nowra Park to the south (see **Figure 25**); low-rise separate dwellings along Shoalhaven Street opposite the hospital (**Figure 26**) as well as similarly-scaled development along North Street opposite the former

Nowra Park to the south. The existing Shoalhaven Community Pre-School sits adjacent to, and south-east of the hospital on Shoalhaven Street (see **Figure 27**).

The former Nowra Park also contains a number of significant trees around its general perimeter addressing North Street and Shoalhaven Street. The former Nowra Park contains a synthetic cricket pitch, however the grade and slope of the area does not appear to provide for a formal playing surface for any range of sports.

The general context of the area is that of a civic precinct bounded by low-rise residential land uses. The mix of civic-related use includes the former Nowra Park (now in the ownership of HAC), the existing Shoalhaven Hospital campus further to the north, associated health services facilities to the west of the precinct, in particular the Shoalhaven Cancer Care Centre and GP Super Clinic (Grand Pacific Health Centre), and professional consulting rooms in converted dwelling houses. To the east along North Street is the heritage-listed St Michael's Roman Catholic Church and St Michael's Catholic Parish Primary School. The existing Shoalhaven Community Pre-School forms a further civic component of this general precinct. St Michael's Roman Catholic Church - two storey Victorian presbytery – North Street is shown in **Figure 28**. Further to south of the hospital and former Nowra Park is the heritage-listed Nowra showground and sportsground complex as shown in part in **Figure 29**.

The area to the west of Scenic Drive and overlooking the Shoalhaven River comprising Ben's Walk and the Hanging Rock Lookout is also heritage-listed and identified by Shoalhaven LEP 2014 as part of a wider a Scenic Protection Area running lineally along the escarpment and including the waterway and opposing foreshores due to the natural environmental and scenic amenity of land that is considered of a high scenic value – see **Figure 30**.

Figure 25 – Aerial view of the hospital looking west over the Shoalhaven River (Sky View Aerial)

Figure 26 – Residential dwellings opposite the site on Shoalhaven Street

Figure 27 – The existing Shoalhaven Community Pre-school

Figure 28 - St Michael's Roman Catholic Church - two storey Victorian presbytery – North Street

Figure 29 - Nowra showground and sportsground complex

Figure 30 – View of the Shoalhaven River westwards from near Ben's Walk and Hanging Rock Lookout

2.5 Summary

In summary, the proposed development site is generally a disturbed and urbanised environment which is unaffected by:

- Significant slopes or landslip risks
- Soil or groundwater salinity
- Contamination (other than a very small area within the existing hospital itself)
- Flooding
- Biodiversity values or threatened flora or fauna species
- Matters of National Environmental Signficance
- Bushfire prone land
- Heritage and Aboriginal cultural heritage
- Lack of access to utilities and services

There is however potential for:

- Acid sulfate soils (noting the lowest risk classification on the site)
- Signficant trees (including Tree 50)
- Traffic and parking impacts
- Relocation of services to cater for the development (such as the existing water main running through the former Nowra Park)
- Visual impacts upon scenic protection areas

These matters are further addressed in Section 7.0 of this EIS to determine the potential levels of impact upon these matters, and if and where relevant, suitable mitigation and/or management measures to ensure the development is constructed and operated at accepted levels of impact.

Based on a review of the Shoalhaven LEP 2014 and the ePlanning Spatial Viewer, the following information is also provided on the site's general condition:

- The land is not in a conservation area
- The land does not comprise an item of environmental heritage
- The land is not proclaimed to be in a mine subsidence district

- The land is not affected by a road widening or road realignment or reservation
- The land is not affected by any acquisition of land provision
- The land is not bushfire prone
- The land is not subject to flood related development controls
- The land is affected by Class 5 Acid Sulfate Soils classification (the lowest classification)
- The land is not subject to terrestrial biodiversity
- The land is not a Natural Resource Sensitive Area
- The land is not in a Scenic Protection Area
- The land is not subject to riparian land or watercourses

3.0 Strategic Context

3.1 Strategic Basis for the Shoalhaven Hospital Redevelopment

The strategic basis for the proposed redevelopment is directly related to the continuing improvement of the quality, and the range, of health services provided at the hospital and within the ISLHD.

The trigger for growth and change comes from the Shoalhaven Hospital CSP - November 2020 prepared by the ISLHD which identified that redevelopment of the hospital was necessary to grow and adjust services to meet changing health needs within the region. The region's population is growing and ageing, and people are living longer with chronic and complex illnesses. By 2031, the Shoalhaven catchment is forecast to grow 12%, with significantly faster population growth in the 70+ age groups. Health services in the region will need to be more self-sufficient, giving residents access to more locally available services. The CSP effectively determined that the hospital's bed base would need to grow from 214 beds to about 303 beds by 2026, and up to a potential 392 beds by 2031.

The CSP identified critical population, service, infrastructure and partnership developments required to address the current and future health needs of the Illawarra Shoalhaven to 2031. It is based on the ISLHD five focus areas:

Focus Area A: Promote, protect and maintain the health of the community
Focus Area B: Strengthen care in the community
Focus Area C: Address the cultural and health needs of Aboriginal people
Focus Area D: Commit to high value care
Focus Area E: Strengthen partnerships and engagement

The delivery of the redevelopment will futureproof capacity at the hospital to cater for population growth, future demand for services, and changed clinical and health needs whilst also providing a modern fit-for-purpose health facility.

The redevelopment aligns with the Zonal Master Plan for the campus by further centralising acute services and clinical support functions within the hospital in tandem with other refurbishment works outside of the scope of this DA – as shown earlier in this EIS at **Figure 1**.

3.2 Strategic Planning Context

3.2.1 NSW State Priorities and Premier's Priorities

In June 2019, the then NSW Premier Gladys Berejiklian unveiled 14 Premier's Priorities which represent the NSW Government's commitment to making a significant difference to enhance the quality of life of the people of NSW.

These are founded on the following principles of:

- A strong economy.
- The highest quality education.
- Well-connected communities with quality local environments.
- Putting the customer at the centre of everything we do.
- Breaking the cycle of disadvantage.

The 14 priorities are:

- Bumping up education result for children.
- Increasing the number of Aboriginal young people reaching their learning potential.
- Protecting our most vulnerable children.
- Increasing permanency for children in out-of-home care.
- Reducing domestic violence reoffending.
- Reducing recidivism in the prison population.

- Reducing homelessness.
- Improving service levels in hospitals.
- Improving outpatient and community care.
- Towards zero suicides.
- Greener public spaces.
- Greening our city.
- Government made easy.
- World class public service.

The proposal will deliver health infrastructure that will achieve improvement in levels of service within the ISLHD and at Shoalhaven Hospital; improve outpatient and community care (including seeking to reduce hospitalisations); and improve mental health services to the community. Waiting times will be reduced by improving capacity, whilst greater integration of services and greater efficiencies will result by incorporating state of the art facilities and equipment.

With respect to a strong economy, the proposal will create job opportunities in local and regional manufacturing, construction and construction management during the project's construction phase of works, and job opportunities in health and administration at the project's completion.

The proposal will create jobs and apprenticeships for the construction sector through government infrastructure and will facilitate the growth and support of a skilled health-related workforce in the region.

It will generate up to 546 jobs over the construction phase and will facilitate the growth and support of a skilled health related workforce in the region. The proposal is estimated to deliver 680 full time equivalent (FTE) staff upon operation up to 2031. Many of the new jobs created will be able to be sourced and filled by personnel within the local and regional catchments and from within the ISLHD. The total incremental and additional workforce increase by 2031 is based on the project scope, operational need (tied to the CSP), and the demographic change driving the types and nature of health services to be provided.

The economic and social multiplier effects of added Government investment in Shoalhaven Hospital are likely to be palpable within the adjacent and nearby communities, including the evolution of the Nowra health hub and health precinct.

3.2.2 State Infrastructure Strategy 2022 – 2042 Staying Ahead

One of the key objectives of the NSW State Infrastructure Strategy is Service growing communities and has also previously included Investing in our health system, as well as upgrading hospitals and other social infrastructure in regional hubs in the 2018 version of the strategy. Given the recent announcement of the Shoalhaven Hospital Redevelopment and its listing as a key project in the State Infrastructure Strategy, this project is amongst those at the forefront of these objectives.

The proposal will deliver on the strategic objective for NSW Health to plan and deliver world-class health infrastructure that supports a 21st century health system and improved health outcomes for the people of NSW and the Illawarra and Shoalhaven.

The drivers for change arising from the CSP directly relate to the targeted outcomes of the State Infrastructure Strategy.

3.2.3 Future Transport Strategy 2056

The Future Transport Strategy 2056 is an update of the 2012 Long Term Transport Master Plan for NSW. It is a 40-year strategy, supported by plans for regional NSW and for Greater Sydney.

The Future Transport Strategy 2056 provides a framework for delivery of integrated and modern transport systems. The plan acknowledges the vital role transport plays in the land use, tourism, and economic development of towns and cities. It includes issue-specific and place-based supporting plans that shift the focus away from individual modes of transport, toward integrated solutions. The

Future Transport Strategy 2056 is the first plan to unpack how we can harness rapid advancements in technology and innovation to transform the customer experience and boost economic performance across NSW.

The Strategy provides a range of six State-wide outcomes to guide investment, policy and reform and service provision. The "six State-wide transport outcomes" identified by the Future Transport Strategy 2056 are extracted below:

- Customer focused.
- Successful places.
- A strong economy.
- Safety and performance.
- Accessible services.
- Sustainability.

A key outcome for the Future Transport Strategy 2056 is to "support successful places" with a transport network across the State that better connects regional cities and centres and will increase access to regional jobs, services and education. The proposal will be better connected to transport and will support this outcome.

The Illawarra – Shoalhaven Regional Transport Plan supports the strategy, and was developed in conjunction with DPE's Illawarra - Shoalhaven Regional Plan 2041. The transport vision for the Illawarra-Shoalhaven will be achieved through the implementation of 20 key objectives and their supporting initiatives.

The objectives are categorised under the following six broad themes, and supporting initiatives will be staged over multiple time periods and in order of importance.

- **Connected** – A transport network that facilitates seamless, multi-modal connectivity between where people live, work and play.
- **Safe** – A transport network that delivers a safer future for the Illawarra-Shoalhaven.
- **Liveable** – A transport network that supports vibrant places while enabling the successful movement of people to access jobs, services and social opportunities regardless of age, ability and income.
- **Adaptive and Sustainable** – A transport network that both contributes to, and supports, a seamless transition to a low emissions future.
- **Productive** – A transport network that supports the efficient, safe and sustainable movement of freight through the principle of "moving more with less".
- **Resilient** – A transport network that is resilient to major disruptions associated with natural disasters, climate change and planned and unplanned events.

Key goals of relevance include:

- Increased population within a 30-minute public transport trip of a regionally significant centre – Metro Wollongong, Shellharbour City Centre, Kiama, Nowra-Bomaderry, Milton-Ulladulla; and
- Local connectivity between villages, towns, and the regionally-significant centres of Metro Wollongong, Shellharbour City Centre, Kiama, Nowra City Centre, and Milton-Ulladulla;

TfNSW is currently delivering the Albion Park Rail Bypass, Berry to Bomaderry upgrade and the Nowra Bridge Project to ensure this key north-south spine continues to facilitate safe and reliable connectivity for the region.

Improvements on the road network within Nowra City Centre are planned to support improved safety and reliability outcomes, accommodate future travel demand associated with nearby residential growth and increased regional demand, and assess the need for future transport corridor preservation.

Illawarra-Shoalhaven and the vision of Future Transport 2056 recommends investments in the transport sector to:

- Provide for improved connectivity between the Illawarra-Shoalhaven and south-western Sydney, and between Sydney, the Central Coast and Newcastle;
- Support population growth and changing demographics in the Central Coast and Illawarra Shoalhaven, as the total population of these areas grow to over one million people;
- Support self-sustaining local employment in traditional and emerging industries (health, education) through an integrated, connected public transport network; and
- Support import/export industries with connections between international gateways and the National Land Transport Network and recognise the increasing importance of Port Kembla.

Illawarra-Shoalhaven Region Initiatives include the delivery (within 0–5 years) of the Nowra Bridge Project and the Transport Connected Bus (TCB) Program – Nowra-Bomaderry.

These initiatives and actions variously directly and indirectly assist in promoting improved transport outcomes for Nowra and the health precinct and in supporting Green Travel Plan options.

Further, TfNSW's Movement and Place Framework is a cross-government framework for planning and managing roads and streets across NSW. The framework delivers on NSW policy and strategy directions to create successful streets and roads by balancing the movement of people and goods with the amenity and quality of places. It also focuses on providing improved transport networks for the community, including safer and healthier travel options such as walking and cycling.

The Framework aims to produce roads and transport networks which best serve community needs and the people and places within. Transport networks that have been designed in this way attract users, and can encourage travel by walking, cycling, public transport and rideshare for all ages and abilities.

Some of the issues and opportunities raised by the Framework of relevance to this project include:

- Mode Shift.
- Land Use Integration.
- Infrastructure, Services and Technology.
- Processes.

The transport strategy for the proposed hospital redevelopment focuses on safe and healthy travel options in accordance with the TfNSW Movement and Place Framework.

See also discussion in the TTW Transport Report at **Appendix N**.

3.2.4 Better Placed: An integrated design policy for the built environment of NSW

Better Placed - an integrated design policy for the built environment of NSW (Better Placed) was published by Government Architect NSW in August 2017 and is described as follows:

> *Better Placed is a policy for our collective aspirations, needs and expectations in designing NSW. It is about enhancing all aspects of our urban environments, to create better places, spaces and buildings, and thereby better cities, towns and suburbs. To achieve this, good design needs to be at the centre of all development processes from the project definition to concept design and through to construction and maintenance.*

Better Placed identifies seven Design Objectives for NSW including, better fit, better performance, better for community, better for people, better working, better value & better look and feel.

The design process for the proposal has so far been extensive and through the involvement of a range of stakeholders the Design Objectives identified in Better Placed are able to be achieved by the proposal. The redevelopment makes a further significant contribution to the hospital campus and will contribute to the creation of a more welcoming and equitable environment where the design focuses on the safety, comfort and requirements of people, as encouraged by the Better Placed Design Objectives.

Conrad Gargett has provided detailed commentary around these seven Design Objectives in its Architectural Design Statement – see **Appendix O**. These are replicated below for ease of reference.

Better fit: contextual, local and of its place
The new hospital has been located in the landscape following a thorough review of site conditions and its urban context.

The main built form sits along Shoalhaven Street at the low point of the site to maximise service entries under the building while providing good connectivity to the existing hospital at the upper levels. The building provides a defined urban edge to the street, reflecting the mixed use character of the area and frees-up the centre and south of the site as open space for public and staff to move through.

The main entry road enters from North Street, providing direct connectivity to the town centre. The open parkland space is maintained at the south end of the site and pedestrian access continues uninterrupted northwards into the heart of the hospital.

Consultation with local Indigenous groups have resulted in the design of a series of outdoor rooms in the landscape. Physical and visual connections to the surrounding country are highlighted. Secondary access points are provided for the convenience of the public and patients visiting the large site.

The pre-school has been relocated on the site adjacent to the main entry, maintaining community ties to the site. The building will incorporate face brickwork at its base to provide a strong urban presence in the Nowra community and referencing the traditional architecture of the area. The upper levels will incorporate lightweight cladding and reference rural materials including corrugated steel and zinc-alume finish.

Better performance: sustainable, adaptable and durable
The Shoalhaven Hospital design will meet an equivalency of a 5-star Green Star rating. It has been recognised by the client that lowering the impact on the environment can improve the health and wellbeing of the users.

The building has been oriented north – south to maximise views and daylight while avoiding the low east and western sun. Sun screens are provided to minimise heat load and glare. Good connections to the surrounding landscape and the central public stair with an external outlook encourages people to move through the building and the site to promote health and wellbeing.

Sustainable products are to be used throughout the building. The building will have full electrification, PV solar panels, rainwater harvesting to supply cooling towers and efficient lighting and sanitary fixtures. Waste streams are to be expanded to maximise recycling opportunities. Landscaping utilises endemic native species that require minimal irrigation. A rain garden to assist with the stormwater management is incorporated into the main entry forecourt to also provide a connection with the natural environment for visitors.

Better for community: inclusive, connected and diverse
The redeveloped Shoalhaven Hospital will be a focal point for the local community. Located close to the main street of Nowra and adjacent to the culturally important Shoalhaven River and Nowra Showgrounds the precinct is an integral part of the town.

The community pre-school will remain on the site, relocated adjacent to the entry road. The existing public parkland at the south end of the site is maintained with upgraded landscaping and a new children's playground.

Landscaping continues northwards into the heart of the hospital precinct. This north-south pedestrian axis is at a consistent level providing an accessible spine through this steep site. This promotes community access through the site and also through the surrounding locality. Consultation with local Indigenous groups has ensured dedicated spaces are appropriately located with easy access from key areas.

Better for people: safe, comfortable and liveable
The hospital will provide clear, accessible paths for the public to move through the site. Intuitive wayfinding at key points will direct people while the main circulation stair and link bridge overlooks the central entry courtyard and café for orientation. The café is a feature of the entry courtyard with outlooks south to the park and north into a central hospital courtyard with good sun access.

There is the opportunity for further retail points at the Shoalhaven Street and Scenic Drive entries to service all visitors. Consistent public lobbies and waiting areas are adjacent unit entries with clear lines of site to reception points. Public amenities are located consistently in each public lobby.

Better working: functional, efficient and fit for purpose
The new hospital has been designed to comply with the Australasian Health Facility Guidelines to ensure consistency of standards across health facilities. Extensive user consultation has taken place to ensure the designed spaces respond to best, most efficient work practices. Patient care and staff areas have good access to daylight and views with a consistent distribution of amenities and lounges. Short term expansion areas have been identified and allowed for in the design.
The long term expansion of the hospital will move north to consolidate infrastructure and links between the variety of services on the site.

Better value: creating and adding value
The hospital development will provide a greatly expanded clinical service for the Shoalhaven region. Local residents will not need to travel to Wollongong or Sydney to access services currently not available. The development of the site will also improve the existing park recreation facilities with upgraded landscaping and new playground equipment. The new expanded pre-school also provides a new facility for the community. The facility will create efficiencies for the workforce and for the local community.

The design of the new facility is based on a regular column grid and standardised façade elements for maximum construction and cost efficiencies. Locating the new acute building on the existing hospital site has also maximised efficiencies by consolidating infrastructure and services.

Better look and feel: engaging, inviting and attractive
The redevelopment will provide an improved amenity to the people of Shoalhaven. The upgraded parkland provides a welcoming, natural entry. The entry road curves around the edge of the parkland while accessible pedestrian footpaths move through the landscape.

The landscaped open space continues seamlessly into the entry forecourt and continues under the building into a central hospital courtyard. A curved, 2-storey public café sits slightly elevated in the centre of this entry space with outlooks in two directions and generous areas of public seating. The public stair overlooks the entry through a full height, sculptural glazed wall. A secondary entry at Shoalhaven Street is marked by a recessed façade and glass awning. A curved and stepped ceiling with recessed lighting draws people up the stairway to the main entry.

A large mural will look onto this space, following community requests to reference the welcome mural at David Berry Hospital.

3.2.5 Healthy Urban Development Checklist
The 2010 Healthy Urban Development (HUD) Checklist was prepared by NSW Health to help build the capacity of NSW Health to provide valuable feedback to local councils, and other relevant organisations, on health issues in relation to urban development plans and proposals.

The intended use of the Guideline is to facilitate strengthened partnerships and collaboration between NSW Health and urban planners and developers as part of NSW Health's initiatives to promote healthy communities in NSW.

The HUD is structured into ten chapters, each one focused on a characteristic that is important for healthy urban development. Each characteristic has up to five key considerations, formulated as questions. The checklist is principally about helping to answer the questions:

- What are the health effects of the urban development policy, plan or proposal? and

- How can it be improved to provide better health outcomes?

The types of plans and proposals that this checklist is intended for include:
- Master Plans (may also be called concept plans);
- Town Centre Plans; and
- Development applications for projects like large housing developments, shopping centres, and community and health care facilities.

Key themes under the checklist are:
- Healthy Food
- Physical Activity
- Housing
- Transport and Physical Connectivity
- Quality Employment
- Community Safety and Security
- Public Open Space
- Social Infrastructure
- Social Cohesion and Social Connectivity
- Environment and Health

In relation to this DA, the following are relevant considerations and comments:
- Existing levels of active transport will be maintained and further encouraged. This will be reinforced through travel demand measures arising from the approved redevelopment.
- Existing levels of public transport use and connectivity will be maintained and enhanced.
- The design satisfies and enhances a sense of community safety and security.
- The location of the development does not significantly diminish the availability of open space (noting the acquisition of the former Nowra Park for the ongoing expansion of the hospital and health services) to the wider community, and whilst it relates to a hospital development, passive open space areas within the campus will be increased and improved. This includes new access through the campus and retention of part of the former park as accessible open / recreation space.
- The development's design and location reinforces a strong sense of local identity and a sense of place, but also creates a new visual identity built upon the principles of design excellence.
- The development will maintain existing high levels of social interaction and connection among people of all ages.
- Provides for an environmentally responsible response to water, energy, and non-renewable resources use.

With regard to the above, the proposal is consistent with the relevant provision of the HUD checklist.

3.2.6 Draft Greener Places Design Guide (GANSW)

The Draft Greener Places Design Guide sets out four principles to help deliver green infrastructure in NSW. These are:
- Integration - combine green infrastructure with urban development and grey infrastructure
- Connectivity - create an interconnected network of open space
- Multifunctionality - deliver multiple ecosystem services simultaneously
- Participation - involve stakeholders in development and implementation

These are supported by three key strategies of:
- Open space for recreation
- Urban tree canopy
- Connecting bushland and waterways

Of these, each is in part relevant to the redevelopment.

The following sets out a response to the principles of each as provided by Site Image in its Landscape Report (see **Appendix P**), and in relation to these strategies. These are replicated here for ease of reference.

Integration - combine green infrastructure with urban development and grey infrastructure
Tree planting and site planning of new buildings to maintain significant existing trees has been highly considered areas of canopy cover to the open space portion of the site which provide linkages at a broader scale towards the river and showgrounds. Complementary tree canopy around the proposal building and streetscapes will further reinforce these connections.

Exploration of Water Sensitive Urban Design (WSUD) initiatives have been employed, and even showcased by the inclusion of a central infiltration bed at the drop off area with pathways and seating allowing engagement and education.

Connectivity - create an interconnected network of open space
New and existing open spaces shall be connected by much needed and more legible pathway networks. A large existing open space, which shall be upgraded and enhanced will be connected with carefully considered path network; representing new and existing desire lines. A new ceremonial space shall sit adjacent to a new pedestrian share way, this will allow for easy access from the building and drop off area. Future connections though the broader site will utilise the forecourt and open space path network for greater pedestrian connectivity.

Multifunctionality - deliver multiple ecosystem services simultaneously
The landscape performs a variety of ecosystem services including the treatment and management of water on site, and climate regulating though minimising hardstand and increasing tree canopy cover. Greater biodiversity in planting will allow for pollination and habitat creation. Culturally spaces have been provided to support the passing of knowledge and in particular the significance of key natural features on and around the site- the Blackbutt tree, Shoalhaven river and local mountains.

Participation - involve stakeholders in development and implementation
Participation as a principle seeks to involve the knowledge and needs of diverse parties in relation to planning. Ongoing engagement across indigenous groups and user groups has informed key design drivers and principles explained in this document. The look and feel of the landscape is to represent the community and include opportunities for ongoing participation and evolution through time.

Clinical courtyards are being developed with local user groups. The wealth of knowledge offered within this setting ensure the design and features are relevant for the community and supported by the day to day end users. See also discussion on the Design Jam process in Section 6 of this EIS.

Open Space for Recreation
The open space provides including the Ceremony Space and Playground provides opportunities for recreation alongside the functioning hospital. These spaces allow for formal and informal gatherings of a variety of sizes, day and year round use of the space. Outdoor clinical spaces enable users the chance to connect with nature undertaking physical therapy outside and allow for respite

Urban Tree Canopy
The landscape design proposes canopy cover across the extent of the ground plane resulting in a net increase in canopy cover this is to be supported by an understory of locally native species complementing local ecologies of the area.

Connecting Bushland and Waters
The additional tree canopy will complement existing tree canopy in the area. The additional of new planting will ensure diversity in the age of trees on site ensuring secession in tree stock for ongoing tree canopy into the future.

Within the site, a WSUD approach will ensure that water coming though the site will be appropriately captured treated and reused.

Overall, Site Image has identified the key benefits of adopting the Greener Places and Better Places frameworks as a basis for this design to include:

- Locally harmonious landscape character

- Consideration of existing features within the site
- Communication of the cultural and environmental stories of the area

3.2.7 Illawarra Shoalhaven Regional Plan 2041

The Illawarra Shoalhaven Regional Plan 2041 sets the strategic framework for the region, aiming to protect and enhance the region's assets and plan for a sustainable future.

It is a 20-year land use plan and applies to the local government areas of Wollongong, Shellharbour, Kiama and Shoalhaven. It informs councils' land use planning, informs the work of infrastructure agencies to plan for growth and change, and informs the private sector and the wider community of the NSW Government's approach to creating a connected, sustainable, innovative and vibrant Illawarra Shoalhaven.

The Regional Plan sets out 30 Objectives grouped under the key aims of:

- A productive and innovative region
- A sustainable and resilient region
- A region that values its people and places
- A smart and connected region

Of the 30 Objectives, the following related most directly to the proposed development and Nowra.

- Objective 2: Grow the region's Regional Cities
- Objective 4: Activate regionally significant employment precincts to support new and innovative economic enterprises
- Objective 12: Build resilient places and communities
- Objective 16: Support the development of a circular economy
- Objective 21: Respond to the changing needs of local neighbourhoods

The Regional Plan supports a number of regionally significant centres, and in particular seeks to establish a vision and strategic roadmap to activate Nowra City Centre, which includes the existing health and medical services hub at the hospital. Accordingly, the hospital redevelopment is foreshadowed by the Regional Plan as a significant component of the overall investment in Nowra under Strategy 2.1 to Activate Nowra City Centre with strategic planning that *understands the Shoalhaven District Memorial Hospital's opportunities for expansion or complementary surrounding land uses*.

Figure 31 shows the strategic context, vision, strategy and actions to activate the Nowra City Centre.

This is further detailed in the Shoalhaven City Council Local Strategic Planning Statement – as discussed below.

Of note, in late March 2022, the Greater Cities Commission (formerly the Greater Sydney Commission) announced the bringing together the cities of the Lower Hunter and Greater Newcastle, Central Coast, Greater Sydney and Illawarra-Shoalhaven to create a globally competitive city region.

The Illawarra-Shoalhaven City will now form part of the new 'megaregion' under the strategic planning control of the Greater Cities Commission. The key statements made in relation to the new 'megaregion' in the Commission's media release include:

- "This will mean more people in the six cities working within 30 minutes of where they live, increased access to homes that families can afford and more equal access to higher education and training opportunities."
- "The move will deliver economic and lifestyle benefits to millions of people, supporting growth with fit-for-life infrastructure and allowing more people to enjoy our enviable waterways and natural environment."
- "The Commission would focus on bringing stakeholders together to collaborate on future planning for a new city region that benefits local communities."

- "Each of the six cities will build on its own signature strengths and character. We'll keep what's working well today in each city and supercharge this with the combined power that comes with being part of the larger world-class city region."

At this stage the pre-existing strategic planning documents retain their currency.

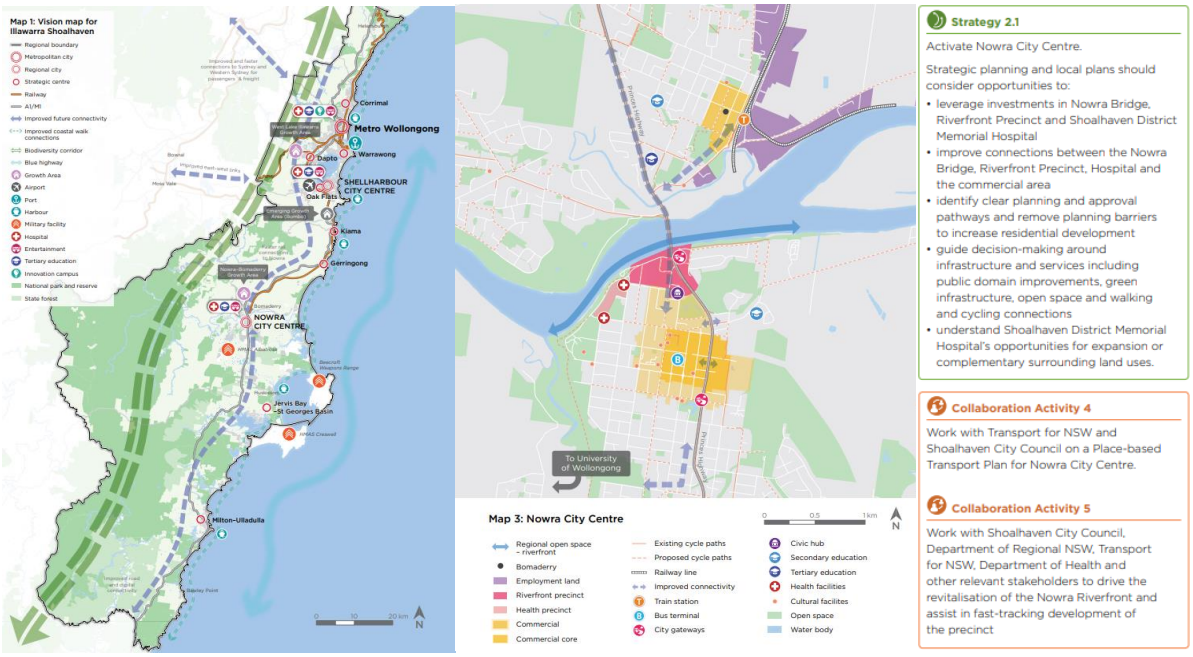


Figure 31 – Illawarra Shoalhaven Vision and Nowra City Centre strategy and collaboration actions (DPE)

3.2.8 Local Strategic Planning Statement - Shoalhaven 2040

Council has recently prepared a new Local Strategic Planning Statement (LSPS). Shoalhaven 2040 – Our Strategic Land-use Planning Statement (Shoalhaven 2040) identifies the land-use planning and related work Council needs to do to meet the communities' needs over the next 20 years. It supports the objectives and strategies as set out in the Regional Plan.

The hospital and the proposed development is a significant contributor to a number of Council's strategic planning aims. This includes Planning Priority 3 – Providing jobs close to home where *support of the already designated health hub around the Shoalhaven District Memorial Hospital will ensure it remains a leader in health services and related medical education. There are opportunities for the hospital to expand to a teaching hospital and to grow the number of university delivered medicine and nursing programs*.

Action A3.3 of the LSPS further articulates the need for an immediate review of *planning and development controls around the Shoalhaven District Memorial Hospital and in Shoalhaven's towns and villages to allow medical specialists and support services to easily establish*.

Planning Priority 4 – Nowra City Centre articulates *plans are also in place to continue to grow and improve the Shoalhaven District Memorial Hospital and surrounding medical precinct. We will work with NSW Health to coordinate the implementation of the masterplan for this precinct*.

The corresponding Collaboration Activity CA4.3 reinforces Council will *work with the NSW Health to coordinate the implementation of the masterplan for the Shoalhaven District Memorial Hospital*.

Planning Priority 4 and the corresponding activities and actions from the LSPS are set out in **Figure 32**.

Planning Priority 4

Nowra City Centre

Nowra is a recognised regional centre, and the business, retail and services hub of Shoalhaven. It has retail and commercial offerings, civic and government services catering for the local community, and tourism functions. The City Centre and surrounding neighbourhoods are important for their commercial and economic activity, and also for their historical contribution to our region.

The renewal and revitalisation of the City Centre is a priority. There is a strong desire for the City to:

- be inclusive, connected, and support a range of community uses and businesses.
- be vibrant and alive with culture and providing interesting and active public places.
- celebrate the history of the region.

The City Centre has many opportunities, but these need to be balanced by the challenges our planning work needs to address. Nowra is divided by the Princes Highway with the original commercial heart of the centre separated from the indoor shopping mall. This makes it difficult to move around the City. The way we do business and shop is changing, increasing the impacts of competition from stronger, nearby centres in Shellharbour and Wollongong. Our planning needs to deliver flexibility to allow the City to respond to changes in demand for different retail and recreational experiences. These challenges will influence future development outcomes.

Nowra has connections to the centres of Wollongong, Sydney and Canberra. Upgrades to major roads, some of which are currently underway, will further improve its accessibility, presenting opportunities for business and economic growth within the City Centre. There is also significant government investment in the new Nowra Bridge. These improved transport networks will better connect the City, but we need to match this work within the centre road upgrades and parking infrastructure.

The Shoalhaven River is an important natural asset for Nowra, but the City does not have an active waterfront. Its proximity to the City Centre presents a fantastic opportunity to strengthen connections between the natural and built environment, and to create a vibrant riverfront entertainment and leisure precinct. We know we need to activate the riverfront and have commenced a place-based exercise to identify and facilitate development opportunities for this precinct.

Plans are also in place to continue to grow and improve the Shoalhaven District Memorial Hospital and surrounding medical precinct. We will work with NSW Health to coordinate the implementation of the masterplan for this precinct.

Council is already working on renewing and revitalising the City Centre, with existing strategies aimed at creating new opportunities for businesses, residents and visitors. With significant changes in local economies and the way we use and want to use cities, we need to revisit and review some of these strategies in collaboration with business and our communities. This will ensure we meet the aspiration to deliver a vibrant, revitalised City Centre supporting and servicing Shoalhaven.

Current Work

CW4.1 Implementing the land use recommendations of the
- a. Nowra CBD Revitalisation Strategy and Nowra CBD Masterplan.
- b. Nowra Riverfront Entertainment and Leisure Precinct Strategy.
- c. Marriott Park Masterplan.

Collaboration Activity

CA4.1 Advocate for the NSW Government to recognise the importance of Nowra and invest and participate in its development into a regional centre.

CA4.2 Work with the NSW Government to improve the crossing of the Shoalhaven River and associated opportunities to improve surrounding public spaces.

CA4.3 Work with the NSW Health to coordinate the implementation of the masterplan for the Shoalhaven District Memorial Hospital.

CA4.4 Work with landowners and businesses to identify opportunities to use vacant properties and activate street frontages.

Actions

A4.1 Review the Nowra CBD Revitalisation Strategy and Nowra CBD Masterplan, including an updated a traffic and car parking strategy. ***Short-term***

A4.2 Investigate and consider the preparation of a night-time economy strategy. ***Medium-term***

Figure 32 – Planning Priority 4 and actions - Nowra City Centre and the hospital (Shoalhaven City Council)

3.3 Key Strategic Issues

The key strategic issues related to the Shoalhaven Hospital Redevelopment project include:

- Satisfying the various Government strategies, policies and plans as set out within this section of the EIS.
- Satisfying the relevant plans that establish a regional or local land use planning context for the project.
- The hospital's surrounding context and adverse or positive impacts of the changing context upon adjacent land uses.

As set out above, the proposed development is consistent with the various objectives, aims and desired outcomes arising from a range of Government strategies, policies and plans. In summary, the Shoalhaven Hospital Redevelopment will seek to:

- Futureproof health services within the ISLHD
- Further update hospital facilities and services
- Directly and indirectly create jobs and bring jobs closer to homes
- Confirm and convert investment in health service infrastructure
- Improve hospital service levels
- Act as a business catalyst with multiplier effects to further reinforce the role the hospital plays within the LGA and Nowra City Centre, and in particular within the foreshadowed health hub / medical precinct
- Deliver on priorities and actions within the Regional Plan and LSPS whether directly in relation to the hospital or indirectly otherwise
- Deliver design excellence and high quality built form and green and landscaped outcomes, including enhancement of the site's green canopy over time
- Support biodiversity and ESD outcomes on this urbanised site and its natural environs.

As noted in Council's response to the SEARs Scoping Report for this SSD, Council's support for continued development of the Shoalhaven District Memorial Hospital and a medical precinct dates back to 2010 and Council further resolved in 2020 to *reaffirm its previous in-principle support for the establishment and staged development of a master planned medical precinct centred on the current Shoalhaven District Memorial Hospital site and adjacent land, including, where required, the further acquisition and development of Nowra Park*.

Additionally it is also noted that part of Nowra Park was rezoned in 2011 to facilitate the current Cancer Care Centre etc. and the area subsequently subdivided from the Park as part of the development of the Centre and the adjacent GP Super Clinic. This area is currently zoned SP2 Health Services Facility.

As noted from the above there is currently a general position of Council support for the expansion of the hospital in its currently location, into what was formerly Nowra Park. There are however a range of matters of detail that require closer consideration in the proposed application and then its assessment by the NSW Government.

Key strategic issues are also further discussed in Table 3 of the DA's Social Impact Assessment as found at **Appendix Q**. This considers the key themes of a range of strategic policy documents relevant to the Illawarra-Shoalhaven and Nowra and the implications of these in relation to community needs supported by the development. These include:

- Population growth and demographic change
- The role of health infrastructure in supporting improved well-being
- Demand for additional health services in the ISLHD and Illawarra-Shoalhaven Region
- Specific needs of rural and Aboriginal communities.

The development will reinforce the opportunities within the adjacent areas of the hospital for investment in new businesses and supporting health services and its progressive conversion to complementary land uses and revitalisation of the Nowra City Centre as envisaged by the Regional Plan and the LSPS.

There are no significant physical, natural or cultural impediments to the redevelopment as planned, including risks or hazards, but as noted by Council, the detailed planning and assessment of impacts under this SSD DA are matters that need relevant consideration.

There are no other feasible options or alternatives to the redevelopment project at the hospital other than to pursue the proposal in the form generally proposed, subject to the findings of this EIS and the consultant reports. To do-nothing is not a reasonable or feasible option given the strategic basis for the project in the first instance as established by the Shoalhaven Hospital CSP 2020 and business case for the project. The built form options are set out in Section 4.0 of this EIS.

4.0 Project Description

4.1 Project Overview

The Shoalhaven Hospital Redevelopment scope includes:

- The new Acute Services Building, being predominantly a 7-storey building, with rooftop plant and helipad.
- New landscaping within the expanded hospital site, including retention of all trees outside of the scope of works including the significant large canopy tree (Tree 50) within the former Nowra Park and the planting of 65 new canopy trees.
- Demolition of the existing Shoalhaven Community Pre-School (Main Building and Storage Shed); and part minor demolition of a small portion of Block B to facilitate the new linkway from the Acute Services Building to Block B. Demolition of the existing male and female toilet blocks within the former Nowra Park are excluded being part of the DA consent for the relocation of the pre-school. Two existing demountable buildings to the north of the development site are also to be removed.
- Removal of 26 trees from the existing hospital, Shoalhaven Community Pre-School sites and part of the former Nowra Park along its Shoalhaven Street frontage.
- New hospital access road from North Street into the expanded hospital site providing for a new front-of-house main entry drop-off, emergency drop-off, short-term parking, and lay-by for fire engine.
- New ambulance access and apron off Shoalhaven Street and new seven (7) ambulance parking bays.
- New loading dock access from Shoalhaven Street.
- New drop-off porte-cochere area off Shoalhaven Street.
- New public footpaths along the North Street and Shoalhaven Street frontages of the site and minor roadworks to the existing site access off Shoalhaven Street.
- New café addressing the new front-of-house entry.
- Civil engineering works including bulk earthworks, roadworks as set out above, and new on-site drainage and stormwater management works, including OSD tank.
- Relocation of the hospital's existing bulk oxygen storage compound.
- New, relocated and augmented utilities and services connections and removal of redundant services within the development site. This includes the proposed relocation of the existing Shoalhaven Water water main running from the south towards the development site.

Remediation works do not form part of the proposed scope of works as the works are classed as Category 2 Remediation Works which do not require development consent. The scope of works is relatively minor, requiring some 2-4m^3 of material to be removed from the existing hardstand area of the hospital off Shoalhaven Street. Notwithstanding, the PSI, ESA, DGI and RAP prepared by Cardno are included for information. As noted, Cardno is of the view that the whole of the development site, subject to this minor remediation will be suitable for the proposed hospital use.

Similarly, no subdivision is proposed under this DA. The DA for the relocated pre-school has secured consent for the subdivision of its lot from the balance of the former Nowra Park land. Lot consolidation conversely is proposed at a future juncture to rationalise the existing array of lots comprising the existing hospital, existing pre-school site, and the former Nowra Park. Section 1.5 of the EP&A Act sets out what constitutes 'development'. Subdivision of land is 'development' for the purposes of the Act, however 'lot consolidation is not subdivision of land' or 'development' with reference to section 6.2(3)(e)(i) of the EP&A Act, which states that subdivision of land does not include the procuring of the registration in the office of the Registrar-General of a plan of consolidation. Accordingly, the likely future lot consolidation also does not form part of the proposed scope of work under this DA, or any future DA.

The proposed development generally results in an increase in beds and treatment spaces from the current 245 to 490 by 2031 across a range of departments, and includes eight new operating theatres, and two new endoscopy theatres. The proposed Acute Services Building will have a gross floor area of approximately 28,500m^2. The development site is shown in **Figure 33** over.

Departments or services to be provided in the new Acute Services Building include:

- Front of house, including retail / cafe
- Emergency Department (ED)
- Medical Imaging
- Mental Health
- Operating Suites
- Central Sterile Supply Department (CSSD)
- Endoscopy
- Pharmacy
- Mortuary
- Cardiac In-Patient Unit (IPU)
- Catheterisation Laboratory
- Intensive Care Unit (ICU)
- Geriatric IPU
- Medical IPU
- Surgical IPU
- Kitchen, Back of house and loading dock
- Helipad

See further below for a detailed description of the individual components of the demolition, civil engineering, landscaping, new Acute Services Building, and other works. **Figures 34** to **37** provide artist's impressions of the proposed final development along with an 'exploded' axonometric representation of the Acute Services Building's location, built form and features.

4.2 Need for the development

The need for the development is directly related to the continuing improvement of the quality, and the range, of health services provided at Shoalhaven Hospital and within the ISLHD. As discussed in the preceding section of this EIS, the key drivers for the development including meeting the future health care needs of the Illawarra Shoalhaven, significant population growth and demographic change, changing population health issues, and socio-economic risk factors.

The delivery of the Shoalhaven Hospital Redevelopment will futureproof capacity at the hospital to cater for population growth, future demand for services, and changed clinical and health needs whilst also providing a modern fit-for-purpose health facility.

Self-evidently, to do nothing or to only plan for the short-term are not feasible courses of action at this time.

Objective and Design Principles

Building on the Shoalhaven Hospital Master Plan, the redevelopment presents a great opportunity to improve and expand the clinical and non-clinical services on the hospital campus. The redevelopment provides significantly enhanced acute services, as well as a new campus main entry and drop-off facilities in a transformation of the current Shoalhaven Hospital campus. Note, other access points will remain assisting to disperse access to the site.

The Design Principles for the redevelopment are derived from the aspirations set out in the Master Plan, and developed in response to the detailed site analysis as part of master planning and further developed as part of the Concept and Schematic Design phases.

The Master Plan developed a framework to establish the appropriate use of land and accommodation in terms of functional suitability, ability to support the delivery of services, future infrastructure and identifying underlying constraints and site-specific issues.

Figure 33 – Proposed development (Conrad Gargett)

The Shoalhaven Hospital site has several distinguishing features that act as design drivers for the project. These include the large open area of the former Nowra Park, the two-storey change in level across the site, and its expansive views. The urban structure of the site was also considered by Conrad Gargett in context of the Nowra town centre.

The key strategy for the site was to provide for a robust core for future development and an expanded hospital. This was focussed on a north-south axis through the former Nowra Park site into the existing hospital following the RL 22.0 contour which provides easy and direct mid-block north-south access through the precinct. Secondary linkages from the hospital core are established via the east-west corridors that fall across the site.

Key site constraints and considerations in the development of the design from master planning, through Concept and Schematic Designs included:

- Addressing the existing topography, including the significant cross-fall from west to east.
- Ability to reuse the existing hospital site and the location of a new building, and issues of staging and decanting.
- Identification of which existing buildings and infrastructure would be appropriate for refurbishment in consideration of budget, site and connection constraints.
- Potential additional traffic impacts on North Street and Shoalhaven Street.
- Expansion opportunities into the then (already reduced) Nowra Park like earlier developments along Scenic Drive to the west.
- Height of new development in consideration of the local context and residential developments.
- Protection of the significant canopy tree located south of proposed development zone.

Key drivers for the Master Plan and design evolution were:

- Site permeability.
- Activation of the site, including improved cross-site and north to south access.
- Sight lines and vistas – high views to the west and expansive views east.
- Opportunities to consolidate and improve clinical adjacencies.
- Opportunities to maximise open spaces and connectivity to green space.
- Formulation of new entry, arrival and gathering spaces.

Figure 34 – Exploded axonometric of the proposed Acute Services Building (Conrad Gargett)

Figure 35 – Artist's Impression – Acute Services Building viewed from the north-west (Conrad Gargett)

Figure 36 - Artist's Impression – Acute Services Building viewed from the north-east (Conrad Gargett)

Figure 37 - Artist's Impression – Acute Services Building viewed from the south (Conrad Gargett)

4.3 Options / alternatives and evolution of the design

A Zonal Master Plan report was completed in 2017, based on the then ISLHD's Clinical Service Plan (CSP) to 2027. A further Site Selection report was completed in 2019. These were both reviewed during the development of the Master Plan options.

The 2017 Zonal Master Plan Report presented four options with all options locating a new clinical service building in the centre of the site with connections back to the existing buildings with a degree of refurbishment and expansion. Several of the options retain Emergency and Interventional services in their existing location with minimal expansion. This would not be possible with the current projected growth and the need for a new acute services building. The preferred option located the main entry adjacent to a new Ambulatory Care Centre on Scenic Drive on the current at-grade carpark. This posed a challenge in locating the proposed increased scope for Ambulatory Care due to the constraints of the site. The preferred option also suggested allowing for a future Emergency Department on Shoalhaven Street which supports the current master planning development. **Figure 38** presents these four options.

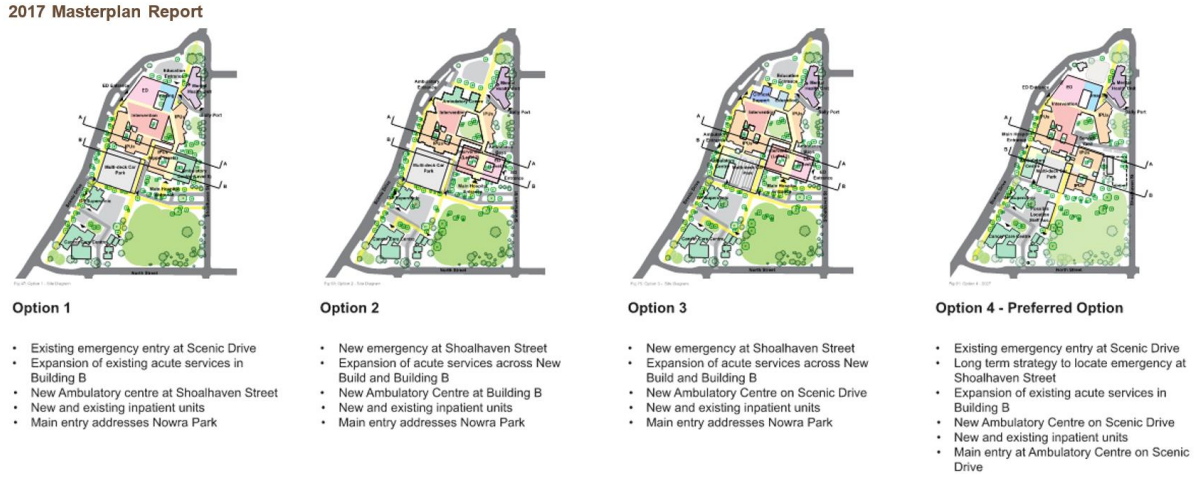


Figure 38 – 2017 Masterplan Report options (Conrad Gargett)

The 2019 Site Selection Report presented three options reflecting the increased scope from the updated CSP projections to 2031 – see **Figure 39**. All three options are based on the premise that the full scope would be a new build with the existing hospital either demolished or re-purposed. The two preferred options located the new hospital at the south and centre of the site to mitigate staging risks and keep the existing facilities operational.

Figure 39 – 2019 Site Selection Report options (Conrad Gargett)

Site 2 was further developed as the preferred option culminating in the 2021 Master Plan Report's preferred zonal master plan as shown in **Figure 40**.

Figure 40 – 2021 Master Plan preferred zonal master plan (Conrad Gargett)

Since the Master Plan, the evolution of the design has been one of seeking to develop a 'hospital in the landscape'.

In designing the proposed Acute Services Building within the new build acute zone, Conrad Gargett conceptualised the form of the building in two parts – that of a connection to earth and a connection to sky – see **Figure 41**.

> *The twisting of the upper levels creates space for a covered public breezeway and forecourt beneath. The intent is that landscape and public space are allowed to continue to define the atmosphere of the ground plane, while the built form provides important covered public spaces and access routes. Continuity of planting species and paving materials from park to hospital public spaces as well as an emphasis on organic forms within both the landscape design and the public interfaces of the building further this blurring of boundary between landscape and hospital.*

Along Shoalhaven Street, the main clinical floors present a materially robust base. This solid podium represents a connection to the earth and the urban structure of the Nowra streetscape. The upper floors turn 90 degrees to face the northern sun and dramatic views to Cambewarra and Saddleback Mountains. The upper floors of the building are elevated over a landscaped entry breezeway and represent a connection to the sky.

> *Connection to Earth*
>
> *Nowra is located on a geomorphological edge, at the interface of the southern Sydney Sandstone Basin and the Shoalhaven Group of "Gerringong Volcanics" and coal seams. The proposed brickwork around the base of the building at Levels 0 to Level 3, comprises two interacting fields*

of colour marked by "striations" of recycled brick. The brickwork makes a patterned reference to the geomorphology and the steep rocky banks of the Shoalhaven River adjacent to the site. The composition marks entry defines corners and turns built form into landscape.

To provide covered access, colonnades occur at the Main Entry and Shoalhaven Street. The inner walls of the colonnades are clad in porcelain sheet. Porcelain is a robust graffiti resistant material which can be readily cleaned. The screen wall to the Ambulance Bay and the ground level walls on the north elevation are rammed earth, another rich reference to context.

Connection to Sky

In reference to the hospital's regional location, the upper floors take a multivalent cue, referencing both the corrugated iron of a rural shed and simultaneously a simplified translation of the northern horizon line of Cullunghutti. The corrugations of the cladding change in orientation and texture. The lowest floors of the upper levels are vertically oriented and figuratively express the horizon, the "meeting" with the sky. The horizontal orientation of the uppermost section of the elevation literally reflects and "connects to the sky".

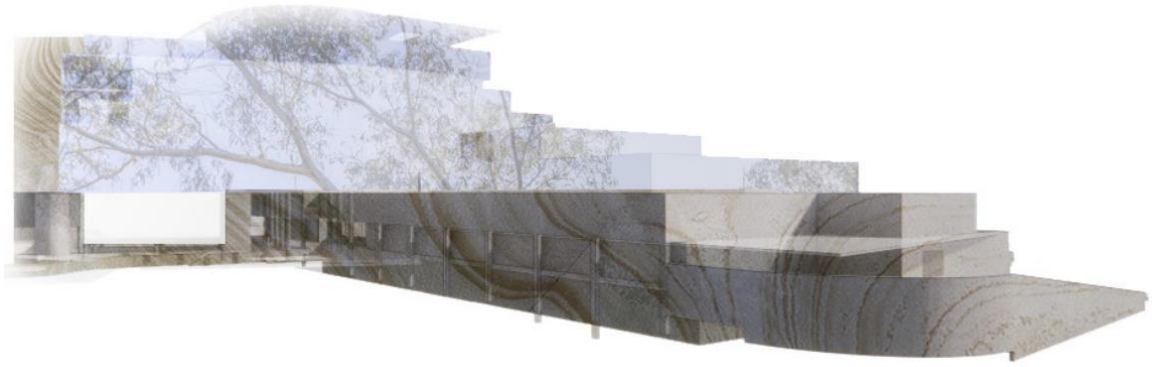


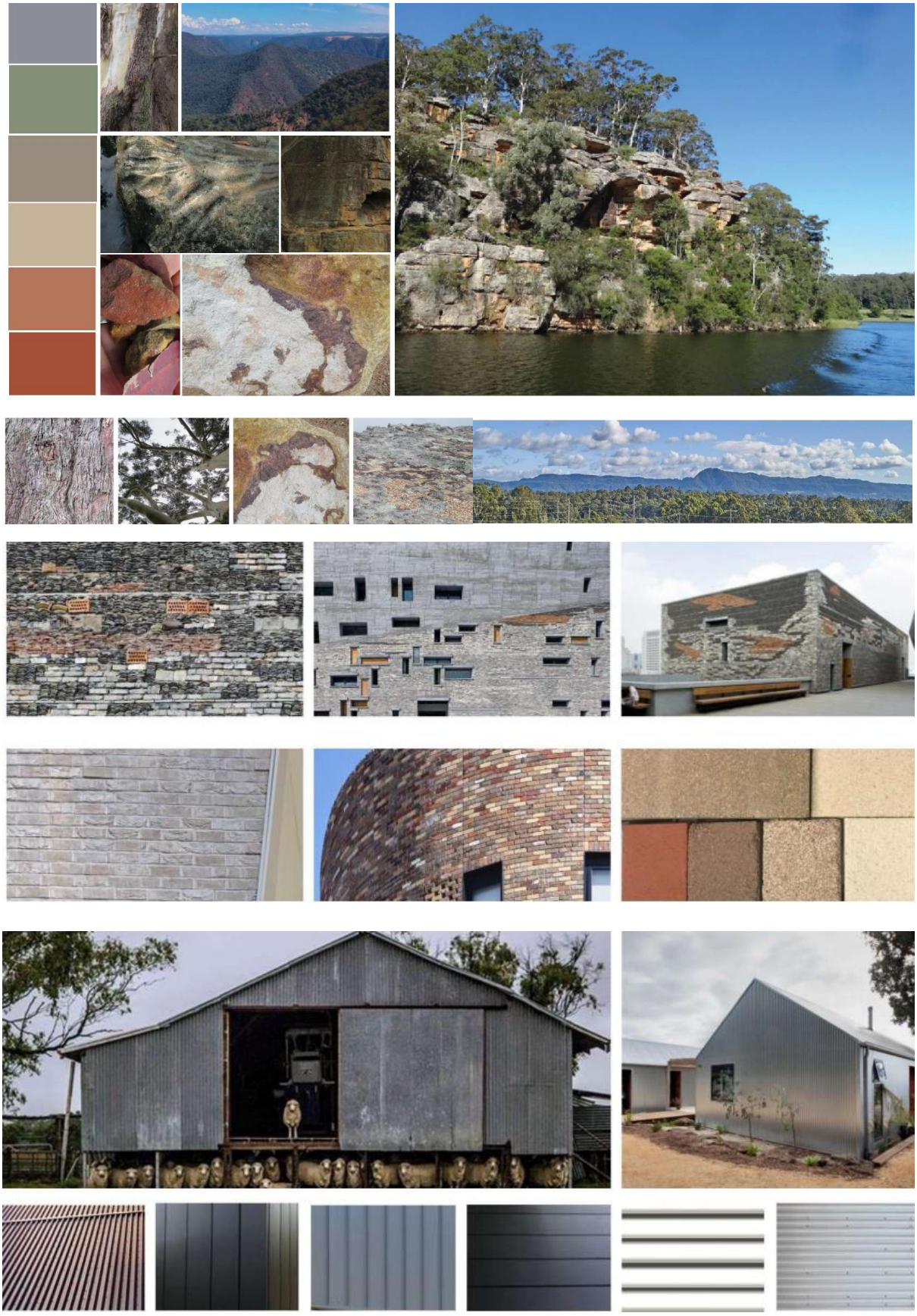
Figure 41 – Concept Drawing "Connection to earth, connection to sky" (Conrad Gargett)

Based on Conrad Gargett's design statement, *the building massing has been developed to integrate a sense of the park within the new hospital. The proposed north-south access through the site provides an accessible public path into the centre, connected to the existing hospital courtyard spaces and gathering spaces around the site. It is proposed to create a sense of transparency at the two-storey high main entrance of the new building, connecting through to the existing courtyard of the original hospital entrance*.

The site has a 1:10 fall from the west to the east. To minimise the cut into the site, the two large critical care floors have been located towards the eastern side of the site adjacent to Shoalhaven Street.

The upper floors of the new hospital house the inpatient units. These floors have been oriented with a northerly aspect to both permit views to the distant mountains and enable effective horizontal sun control. There are also distant views to the south-west over the river from the upper floors.
The orientation of the linear upper floors to the north reduces the impact of the building height on Shoalhaven Street to a narrow profile. The lower four floors addressing Shoalhaven Street are articulated with recesses and landscaped spaces. The building also steps down in height to the south with a reduced scale fronting the parkland.

The images on the following page from Conrad Gargett present the inspiration behind the concepts of Connecting to Earth and Connecting to Sky in informing the proposed building's textures of stone, wood and site, as well as a colour palette inspired by location. This incorporates the brick facade as an interweaving of new and recycled elements and employs a tapestry of metals would interact with the changing sky through texture, light, and shade.



4.4 Architectural Design

Architectural plans for the proposed Acute Services Building and associated works have been prepared by Conrad Gargett – see **Appendix O**. A selection of plans and elevations are included below to articulate the development's relationship to the existing hospital development and its environs.

The table over sets out the proposed usage by floor within the Acute Services Building as well as other relevant information.

The overall maximum height of the building is to RL 63.650 (or a maximum building height of 46.37m).

The floor to floor heights are generally 4.2 metres other than Level 02 where the floor to floor height is 4.5 metres to cater for the operating theatres, Level 03 with other key treatment spaces (4.5m), and at the ground level (4.5m) to provide for the entry foyer spaces.

Floor / Level	Function / Use	Floor to Floor Height (Floor RL)	Floor to Floor Height (m)
Level 00	Back of House (BOH), Loading Dock, Kitchen, Pharmacy, Staff amenities, Mortuary, and plant.	17.28 at lowest point 18.00 floor level	4.5m
Level 01	Front of House (FOH), Emergency Department (ED), Medical Imaging, and Cafe	22.50	4.2m
Level 02	Operating Suites & Endoscopy, Central Sterile Supply Department (CSSD), and linkway to existing Block B	26.70	4.5m
Level 03	Cardiac In-patient Unit (IPU), Catheterisation Laboratory, Intensive Care Unit (ICU), and plant	31.20	4.5m
Level 04	Geriatric IPU and Mental Health	35.70	4.2m
Level 05	Surgical IPU	39.90	4.2m
Level 06	Medical IPU	44.10	4.2m
Level 07	Rooftop plant Top of plant	48.30 53.58	5.28m
Level 08	Helipad Top of Helipad lobby Top of Building	56.90 62.45 63.65	N/A

Figures 42 and **43** show the general arrangement plans for Levels 1 and 4, respectively highlighting the design principles employed in the conceptualisation of the "Connection to earth, connection to sky" and the 90 degree twist of the building form and reduction and stepping of the floorplate at the building elevates. **Figure 44** shows the Level 2 linkway connection to existing Block B. Elevations are shown at **Figures 45** to **48**.

Figure 42 – Level 01 General Arrangement (Conrad Gargett)

Figure 43 – Level 04 General Arrangement (Conrad Gargett)

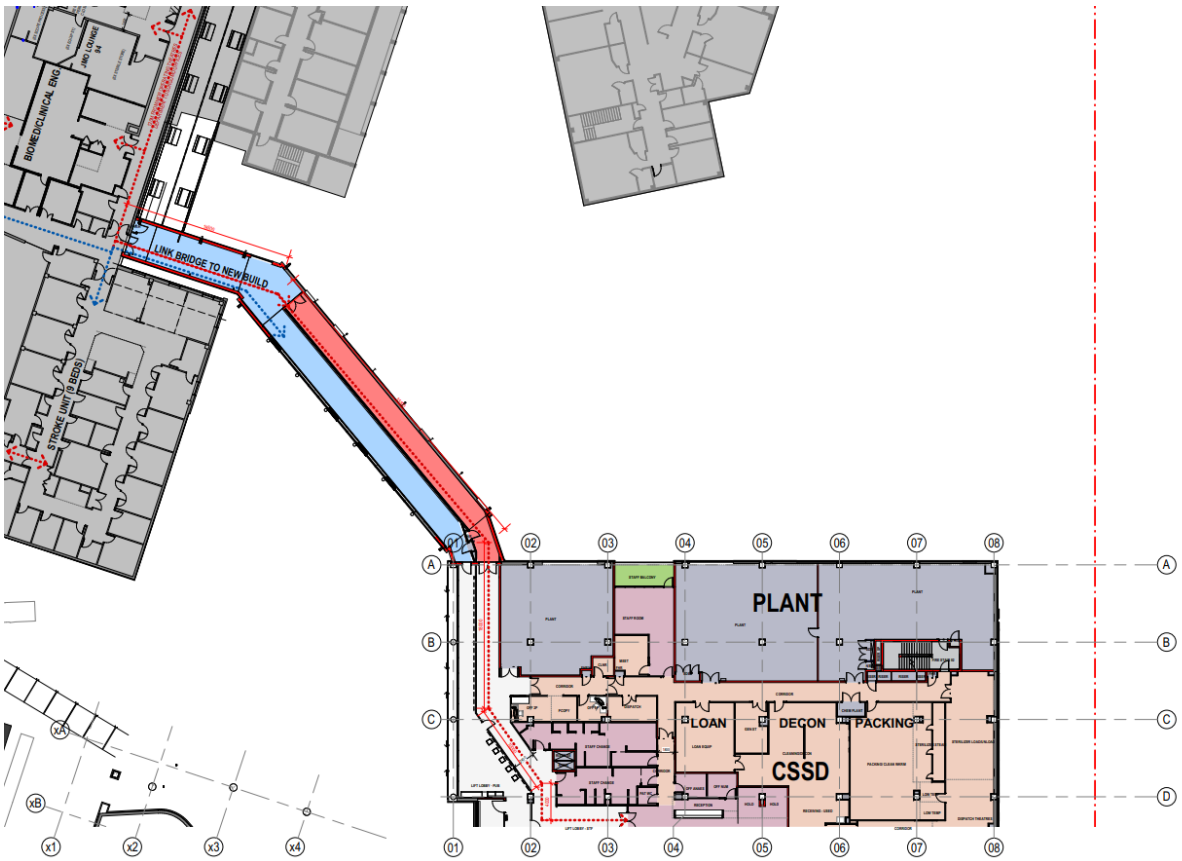


Figure 44 – Level 02 excerpt showing proposed linkway to existing Block B (Conrad Gargett)

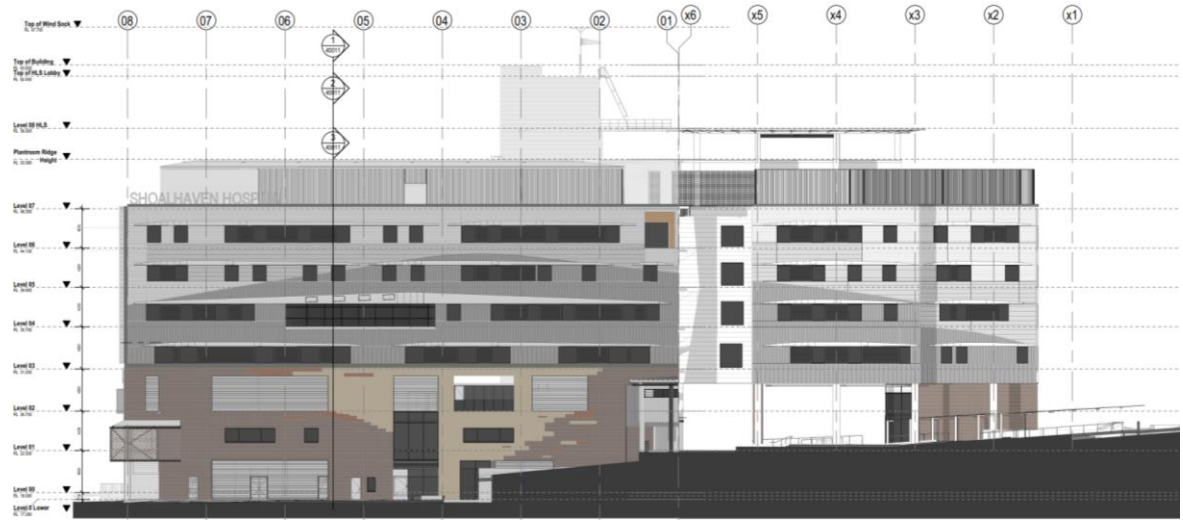


Figure 45 – North Elevation (Conrad Gargett)

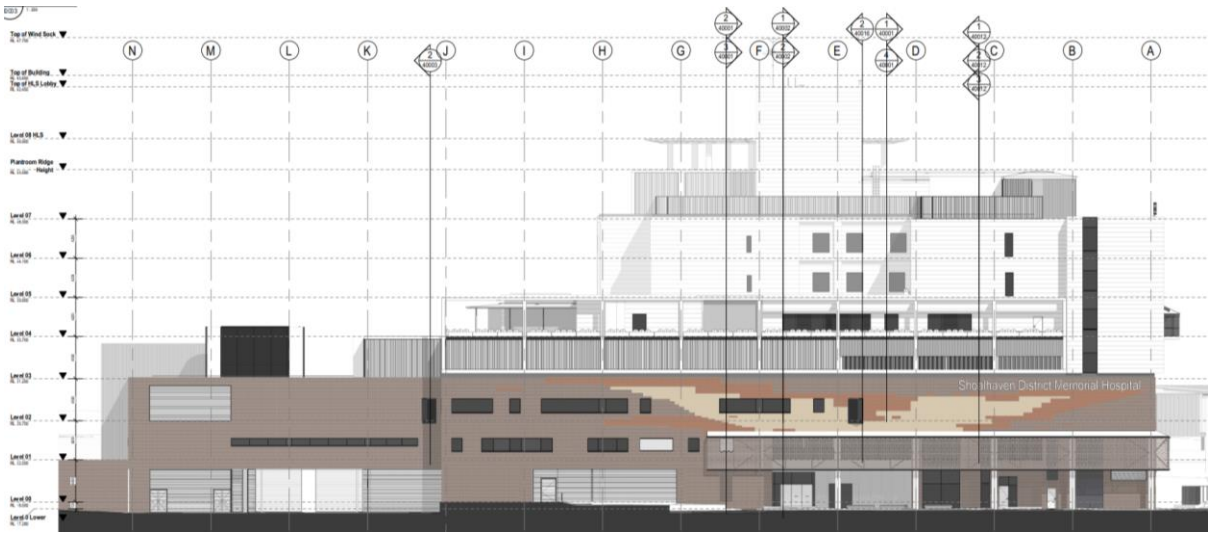


Figure 46 – East Elevation (Conrad Gargett)

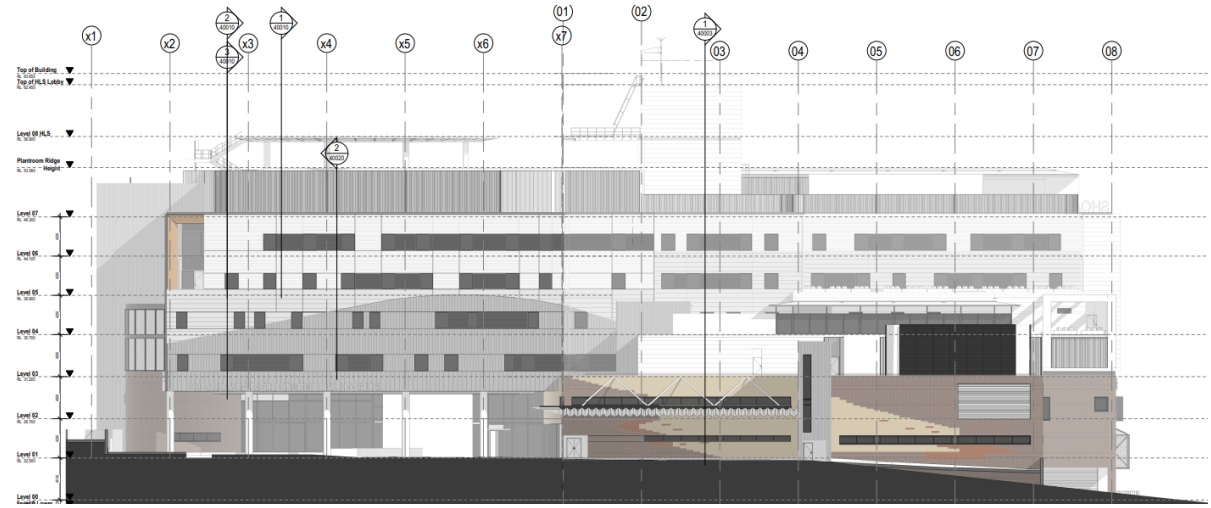


Figure 47 – South Elevation (Conrad Gargett)

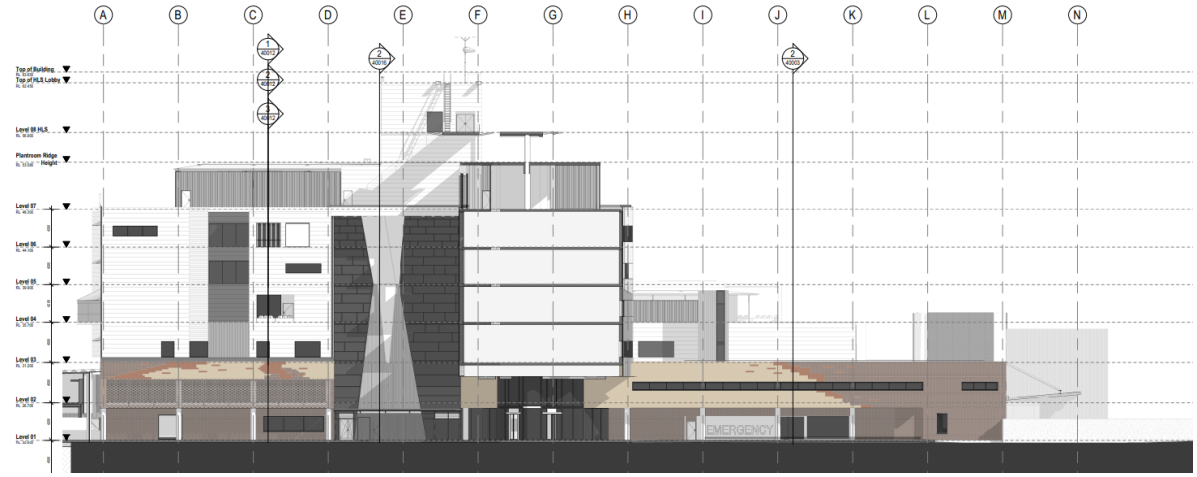


Figure 48 – West Elevation (Conrad Gargett)

4.4.1 Façade, Materials and Finishes

The number of façade types has been kept minimal to ensure clarity in design and appearance.

The building will incorporate face brickwork at its base to provide a strong urban presence in the Nowra community and referencing the traditional architecture of the area. The upper levels will incorporate lightweight cladding and reference rural materials including corrugated steel and zinc-alume finish.

The façade treatment on the upper levels incorporates a variety of textures and colours based on the regional bush aesthetic. The use of corrugated steel profiles of different depths and directions produces a softer outcome which responds to the surrounding nature. The sun-shading has an organic, linear form which appears to organically grow out of the façade.

The façade pattern has random shapes and materials to produce a collage of regional patterns of varying depths. A curved line is introduced in some facades to reference the line of mountains on the horizon. The colour palette varies from dark greys across to pale greys and natural zinc-alume and randomly becomes lighter towards the upper floors.

The brick podium form is colonnaded to reduce the appearance of bulk and mass. Contrasting materials and varying depths behind the colonnade assist with this. Random patterns of different coloured brickwork lightens the bulk of the form. The patterns reflect the variety of rock types in the local landscape.

See the detailed elevations and façade system drawings in the Architectural drawing set. The façade sample board is replicated below in **Figure 49**. **Figures 50** and **51** each provide an indicative architectural render of how the proposed materials and finishes and colours will appear on the Acute Services Building.

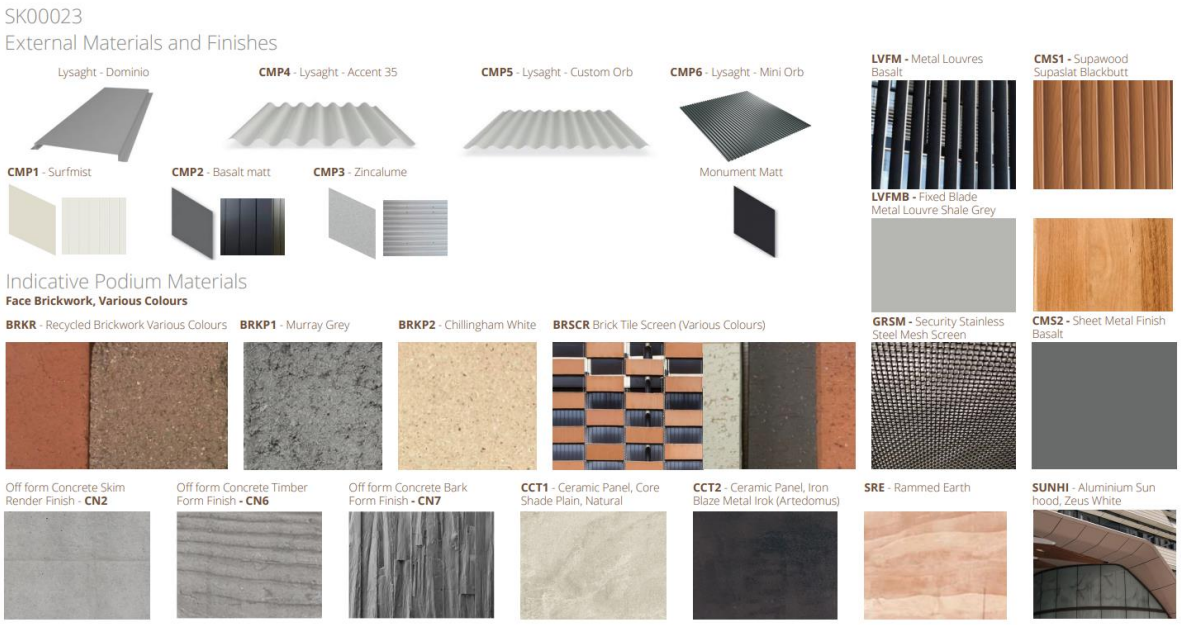


Figure 49 – Materials and finishes (Conrad Gargett)

Figure 50 – Indicative Architectural Render looking south along Shoalhaven Street (Conrad Gargett)

Figure 51 – Indicative Architectural Render at the Shoalhaven Street ground level and facade (Conrad Gargett)

4.5 Landscape Design

The proposed landscape design for the redevelopment involves new landscaped spaces around and in the Acute Services Building. This includes the following areas:

- The Forecourt (entry forecourt off North Street)
- Central Drop-Off and Raingarden area
- Ceremony Space (south of the Forecourt and Central Drop-Off area)
- Open Space (within the remainder of the former Nowra Park including using the significant old Blackbutt as a focal point and feature of the space)
- Play Area (within the abovementioned Open Space towards the corner of Shoalhaven and North Streets)
- Shoalhaven Street Drop-Off area
- Level 3 ICU and Staff Courtyard
- Level 4 Mental Health Courtyards
- Level 4 Geriatric and Staff Courtyards
- Level 6 Aboriginal Family Health Breakout Space

The spaces are shown in detail in both the Site Image landscape plans and Landscape Report (each found at **Appendix P**). The overall external landscape plan is shown over in **Figure 52**.

A key tenet of the design has been to retain as many existing trees as possible (including the significant old Blackbutt to the south of the Acute Services Building) and maximise canopy retention. Where this is not possible, replacement planting (of 65 new canopy trees) offsets this on-site and further improves and enhances amenity and experience at the hospital. This is supported by improved water management within the landscape; pedestrian access, wayfinding and circulation; and planting responsive to functionality of spaces and attendant microclimates, particularly in exposed and shaded areas. The vision is to create a biophilic-related healing environment and experience.

Accordingly, the landscape vision for the project is to provide external spaces and a landscape setting which complement for the use of staff, clients and their visitors. The landscape serving a variety of functions; an outlook for the building, clinical spaces for the use of clients and staff which play a function healing and treatment and peripheral areas that open to the broader community and health precinct.

At the forefront of the landscape design are the following principles

- Connection to Country incorporation of indigenous knowledge and stories; reinforcing a hospital in the landscape.
- Community Facing well-functioning, welcoming and equitable spaces.
- Care for Country care for the natural environment and systems though ESD initiatives.
- Meeting health and clinical needs of the users, staff and community.

The landscape design has been developed as a co-design process with local first nations community members. Through design jams and ongoing input, a number of key themes and objectives have been established:

- The importance of the Shoalhaven River as a meeting place and food source
- The existing Blackbutt tree has informed the design to create it as a focal point for the broader open space. The tree is symbolic of a meeting place and wisdom.
- Views to Cullunghutti and the surrounding landscape
- Providing access to the outdoors and Country through well designed external spaces which provide users opportunities to connect to views across the landscape, see the sky and take in the elements within the care and confines of the Acute Services Building
- Ceremonial space which provides welcoming area catering for cultural and social occasions
- The landscape design should aid creating a more welcoming and less institutionalized feel, encouraging engagement with the hospital and its services.
- Use of locally indigenous and bush tucker medicinal planting with educational signage.

The planting palette involves 65 new canopy trees, other smaller trees, shrubs, grasses and groundcovers. The planting strategy is to use predominately native species with an emphasis on locally endemic communities. Species which have local food, medicinal, and cultural significance are to be included throughout. Planting shall generally involve non-toxic, low-allergenic species without sharp foliage or forms. Trees within the mental health courtyard are to be grafted species to avoid ligature risk. Detailed planting design is to consider CPTED principles – avoiding tall planting adjacent circulation pathways which may be a used as a hiding place and prevent surveillance across landscaped areas.

Figure 52 – Landscape Plan (Site Image)

New and replacement canopy trees include:

- *Casuarina cunnighamiana* - River She-Oak
- *Banksia integrifolia* - Coast Banksia
- *Eucalyptus robusta* - Swamp Mahogany
- *Eucalyptus saligna* - Sydney Blue Gum
- *Eucalyptus sideroxylon* 'Pink' - Pink Flowered Iron Bark
- *Callistemon viminalis* - Bottlebrush
- *Melaleuca stypheloides* - Prickly Paperbark
- *Tristaniopsis laurina* ' Luscious' - Water Gum
- *Melaleuca linariifolia* - Snow in Summer
- *Brachychiton populneus* - Kurrajong Tree

- *Brachychiton acerifolius* - Illawarra flame tree

Of particular relevance to the project is the raingarden central to the drop off area of the new Main Entrance within which an infiltration basin is proposed as a water-sensitive design feature. The system is designed as a landscape feature, this directs water from hardstand into vegetated infiltration beds. Macrophyte planting within the basin will assist allowing for biofiltration of water and improvement of water quality complemented by feature boulders and hardscape elements – see **Figure 53** below.

See the Site Image Landscape Report and drawings attached at **Appendix P**.

Figure 53 – Section through the proposed Central Drop-Off Raingarden (Site Image)

4.6 Signage and Wayfinding

The proposed Acute Services Building will introduce a new main entry for the hospital campus and provide it with a new space character and identity.

To assist in general wayfinding and location of the building this DA seeks approval of the proposed new building identification signage at three locations (top of the building looking north; at the main building entrance facing south; and at the Shoalhaven Street frontage of the building). These three locations and signs are shown in **Figures 54** to **56**. The following provides a summary of the signage characteristics.

Sign	Location	Size (Area)	Materials / Colours / Lighting	Proposed text
1	Top of Building facing north	2.0m H x 27.7m L (55.4m^2)	Rendered concrete / White / lit from the slab up	Shoalhaven Hospital
2	Main entrance facing south	1.0m H x 26.0m L (26m^2)	PC Aluminium / White / external directional lighting	Shoalhaven District Memorial Hospital
3	Shoalhaven Street façade facing east	1.0m H x 19.4m L (19.4m^2)	PC Aluminium / White / external directional lighting	Shoalhaven District Memorial Hospital

As these new signs exceed the relevant sizing / area thresholds or criteria for Exempt Development under Chapter 2 of *State Environmental Planning Policy (Transport and Infrastructure) 2021*, they will need development consent and assessment under the relevant provisions of Chapter 3 Advertising and Signage of *State Environmental Planning Policy (Industry and Employment) 2021.* This assessment is set out in Section 7.0 of this EIS.

Location: Sign to Top of Building

Material: Rendered concrete

Colour: White

Lighting: Up from slab

Figure 54 – Proposed building identification signage – Top of Building (north elevation) (Conrad Gargett)

Location: Main Entrance

Material: PC Aluminium

Colour: White

Lighting: External Directional Lighting

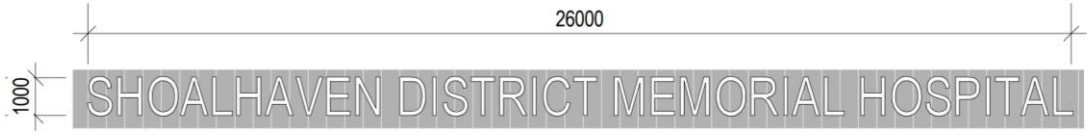


Figure 55 – Proposed building identification signage – Main Entrance (south elevation) (Conrad Gargett)

Location: Shoalhaven Street

Material: PC Aluminium

Colour: White

Lighting: External Directional Lighting

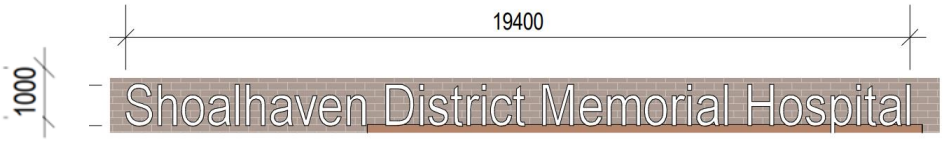


Figure 56 – Proposed building identification signage – Shoalhaven Street (east elevation) (Conrad Gargett)

At the human scale, a selection of identification and wayfinding signs are proposed to be located across the development site. These range from precinct entry signage at vehicular entry points to smaller pedestrian mapping and directional signage across the site area, indicating wayfinding information leading to the Acute Services Building and surrounding areas. These are not provided as part of this DA and are not proposed to form part of the scope of works for which consent is sought. These can likely be implemented later via an alternative planning approval pathway.

4.7 Tree removal

There are some 74 trees located within the development site. Of these, 26 trees are proposed to be removed, chiefly as they sit within the footprint of the proposed Acute Services Building (14 trees). The balance is to be retained, protected and incorporated in the site-wide landscaping. The trees proposed for retention, protection and removal are shown on the Tree Protection Plan prepared by Moore Trees at **Figures 57 and 58**. Refer also to the Moore Trees report at **Appendix J**.

As shown below in bold red text, the only three (3) trees of high significance and proposed for removal. The majority of trees to be removed are of medium (11 trees) and low significance (12 trees).

Significance (Scale)	**1 (High)**	**2 (Medium)**	**3 (Low)**
Tree No.	12, 13, 14 30, 32, 33, 35, 36, 37, 38, 39 40, 41, 42, 43, 44, 47 50, 52, 54, 57, 58, 59 60, **61**, **62** 74, 75, 76, 77, 78, 79 80, 81, 82, 83, 84, 85, 86, 87, 88, **89** 101	**56** **65**, **66**, **67**, **68**, **69** **70**, **71** **98**, **99**, **100**	31, 34 45, 46, 48, 49 51, 53, 55 **63**, **64** **72**, **73** **90**, **91**, **92**, **93**, **94**, **95**, **96**, **97**

Note, Trees 61 and 62 are located within the Shoalhaven Street road reserve and are Council trees.

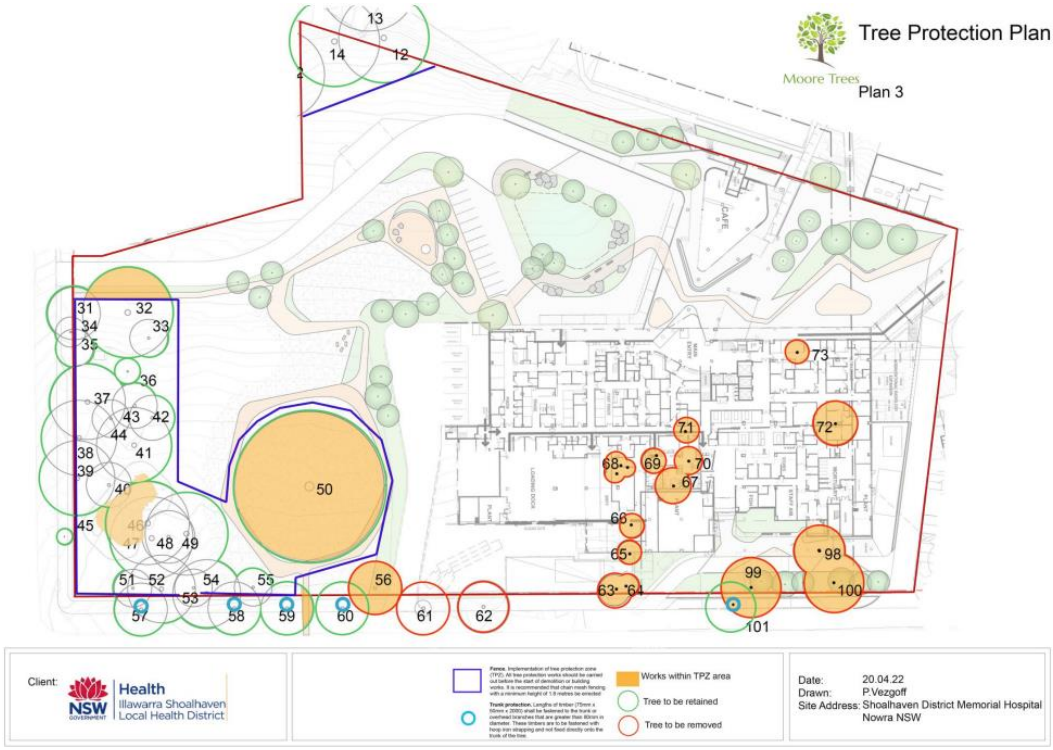


Figure 57 – Tree removal and tree protection plan 1 (Moore Trees)

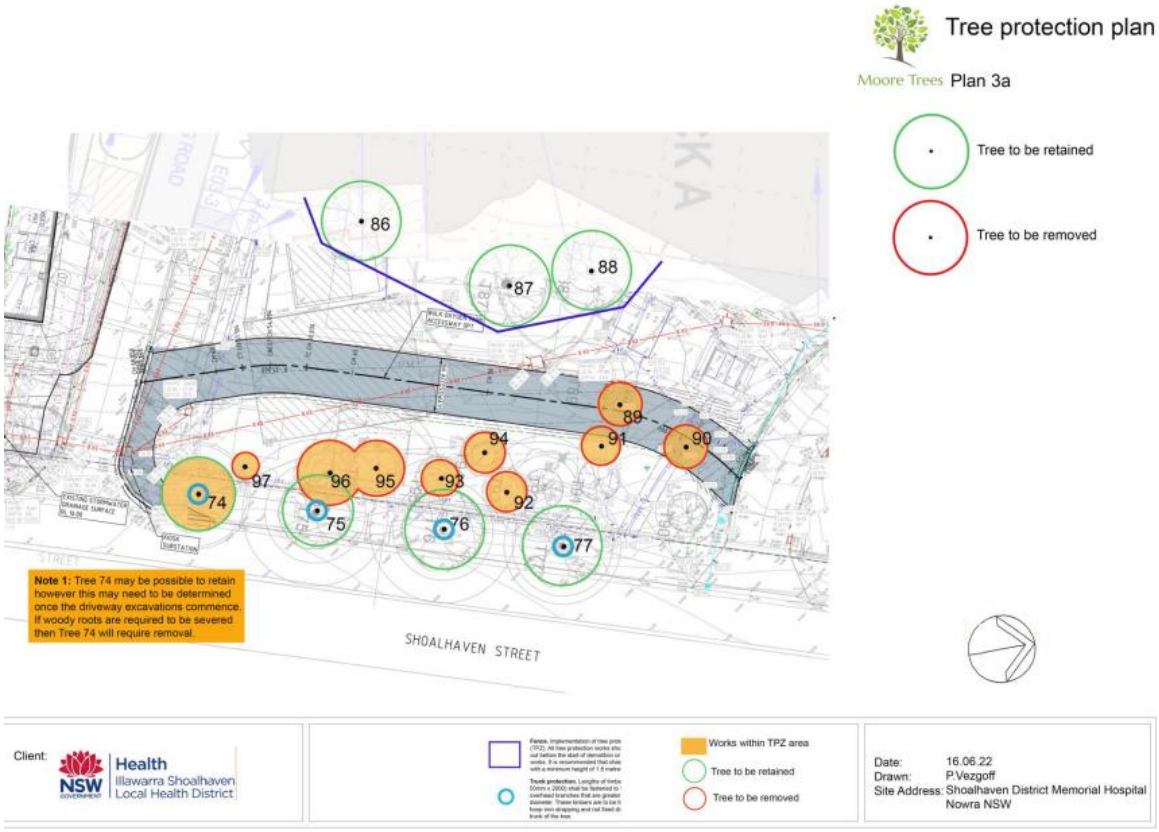


Figure 58 – Tree removal and tree protection plan 2 (Moore Trees)

4.8 Demolition works

The scope of demolition works under this DA is as follows:

- Demolition of the existing Shoalhaven Community Pre-School (Main Building and Storage Shed) and removal of its hardstand car parking area.
- Demolition of existing helipad within part of the former Nowra Park.
- Demolition of existing bulk oxygen enclosure within the existing hospital campus (and its relocation)
- Demolition of existing at-grade and hardstand carparks off Shoalhaven Street within the existing hospital campus.
- Removal of two demountable buildings within the existing hospital campus to the north of the proposed Acute Services Building and another to the north of the existing helipad.
- Part demolition of minor peripheral portions of Block B to facilitate the new linkway from the Acute Services Building to Block B.

Figure 59 shows the proposed demolition plan.

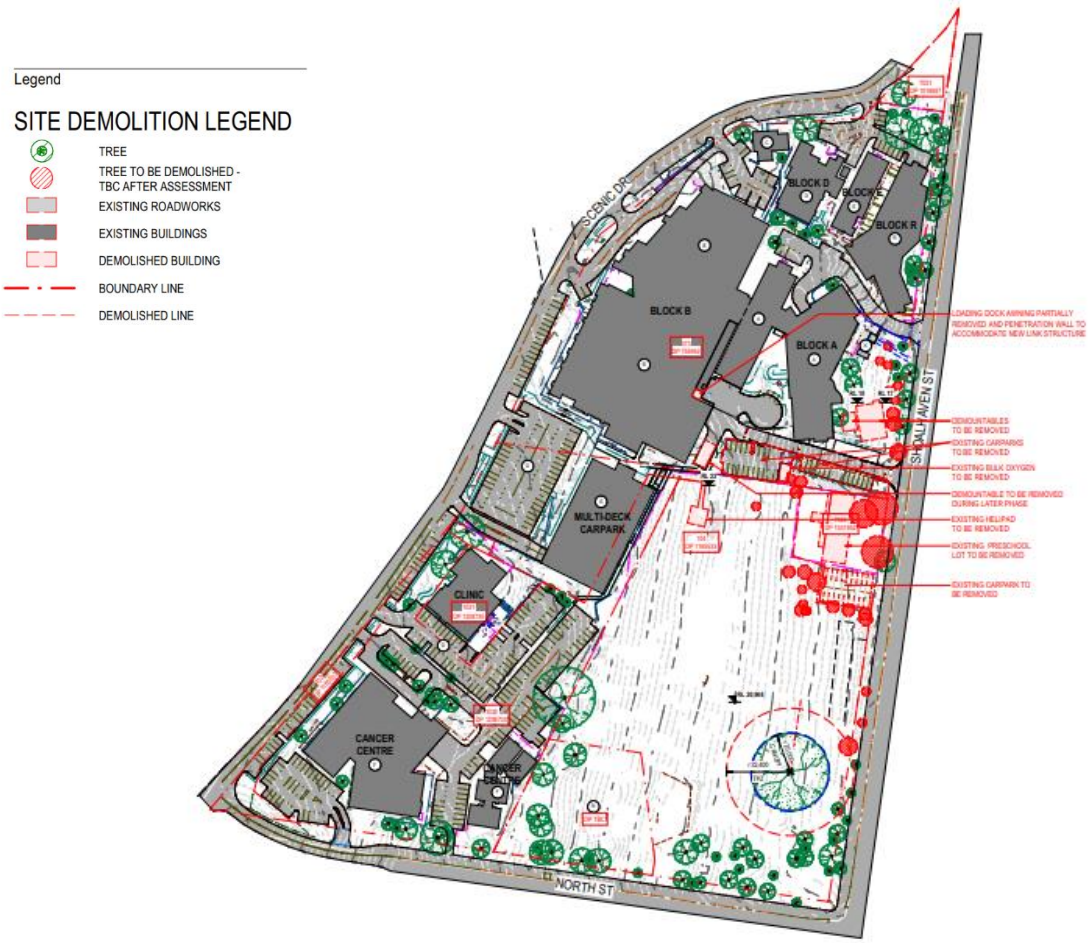


Figure 59 – Demolition Plan

4.9 HAZMAT and Remediation works

4.9.1 HAZMAT

To address the above demolition scope, JBS&G undertook a Hazardous Building Materials Survey - see **Appendix R**. This found the following hazardous materials within the areas of proposed demolition based on both a visual identification and laboratory testing.

Asbestos Containing Materials (ACM)
Asbestos containing materials were identified within the following locations:

- Shoalhaven Community Pre-School Storage Shed
    - North, east and south aspect, eaves – fibre cement sheeting.
    - Eastern half, north, east and south external wall cladding – fibre cement sheeting.
    - Toilet window – mastic sealant.

  All asbestos discovered was non-friable in condition.

Lead in paint
Lead containing paint was identified on external, and some internal, locations within both of the Shoalhaven Community Pre-School's Storage Shed and the Main Building. The condition of the paint was fair to good in those locations.

Lead in accumulated dust
Settled dust containing lead was observed in a poor condition within the ceiling cavity of the Main Building of the Shoalhaven Community Pre-School.

Polychlorinated Biphenyls (PCBs)
Fluorescent light fittings potentially housing PCB containing capacitors were not identified within any location of buildings to be demolished. Within the Shoalhaven Community Pre-School the age and appearance of the light fittings were such that they are not suspected to contain PCB containing capacitors.

Synthetic Mineral Fibre (SMF)
Assumed SMF insulation batts were identified throughout the ceiling cavity of the Main Building within the Shoalhaven Community Pre-School.

SMF materials have been identified in various forms within the Block B Level 2 corridor that would be disturbed as part of the proposed link bridge works.

Recommendations for removal and demolition
Works recommended to address these findings include:

Asbestos
Non-friable ACM has been identified in various forms throughout the site. Prior to the commencement of demolition works, it is recommended that the following work is undertaken:

- A Class A or B licensed asbestos removalist shall be engaged to remove all asbestos containing materials as identified in the Hazardous Materials Register (Appendix A). Removal and disposal of non-friable asbestos materials shall be undertaken in accordance with the Work Health and Safety Act (2011), Work Health and Safety Regulation (2017) and SWNSW 2019a.
- While not mandatory during the removal of non-friable ACM, it is considered best practice and recommended that asbestos air monitoring is undertaken during any non-friable asbestos removal works.
- Following removal works, a clearance inspection shall be completed by a competent person or licensed asbestos assessor to ensure that the asbestos materials identified at the site have been removed to a satisfactory standard. Following the completion of the clearance inspection, a clearance certificate shall be issued by the competent person or LAA to confirm that the ACM has been successfully removed and that the site is suitable for planned demolition works to commence.

Lead containing dust
Elevated levels of lead in dust above the adopted site criteria were identified at the site. A suitably

experienced hazardous materials removal contractor should be engaged to remove the lead containing dust in accordance with the AS4361.2-2017 prior to the commencement of any demolition or refurbishment works.

Lead-based paint
The lead based paints, as identified in JBS&G Hazardous Materials Register (Appendix A), ranged in condition from good to fair and should be managed in accordance with the AS4361.2-2017. Where peeling or deteriorated they should be removed under controlled conditions by an experienced contractor prior to demolition.

Stable lead based paints adhered to building fabric can be disposed as general solid waste in accordance with NSW EPA 2014 provided care is taken to minimise any potential for paint flakes to be dispersed onto ground surfaces and building and demolition waste is not proposed to be recycled.

Synthetic Mineral Fibre (SMF)
The synthetic mineral fibres encountered during the inspection by JBS&G were generally contained and deemed to be low risk. These SMF materials can be removed with the building and demolition waste with care taken not to generate fibres. Appropriate PPE is recommended including the use of P2 respirator as minimum and appropriate removal methodology as outlined in [NOHSC: 1004(1990)] and [NOHSC: 2006(1990)].

Inaccessible Areas
Areas inaccessible during the hazardous material assessment should be inspected by a suitably qualified competent person prior to any works commencing. Suspected ACM should be sampled by a suitably qualified competent person prior to any works commencing.

Unexpected Finds
Any materials deemed to be consistent with those detailed in the Hazardous Materials Register that have not been previously identified should be assumed to have the same content and be treated accordingly.

All demolition works are to be undertaken in accordance with a site Unexpected Find Protocol, whereby, in the event that an unexpected hazardous material is encountered during demolition works, works should cease and an assessment of the material completed by an appropriately qualified and experienced hazardous materials surveyor and/or Licensed Asbestos Assessor.

Should any additional suspected hazardous materials be observed during or prior to demolition works, works should cease until a suitably qualified occupational hygienist can assess the suspected hazardous material and provide appropriate recommendations for management and/or removal.

4.9.2 Remediation
Cardno has undertaken a PSI, an ESA and DGI in relation to the development site in the context of the wider hospital campus and consistent with the requirements of the former SEPP 55 – Remediation of Land (now Chapter 4 of *State Environmental Planning Policy (Resilience and Hazards) 2021).*

The information reviewed by Cardno for the PSI, ESA and DGI indicated that the site has historically been used as open space, with the Shoalhaven Community Pre-School in place for some decades. Some structures have previously been located in Nowra Park but were demolished some time ago.

The results of the Cardno investigation (which includes field observations and analytical results) reveals the following:

- Indicators of contamination, such as odour, sheen and staining, were not observed on visible ground surfaces or in any excavated materials.
- Asbestos containing materials (ACM) was not observed in locations where bores were progressed and within soil sampled collected.

- ACM in the form of bonded fibre cement fragments and asbestos piping was not observed in excavated material on site, however, it was observed at three locations within the nearby proposed pre-school site – noting this is subject to a separate DA and remediation process and does not form part of the development site or this DA.
- Observations of anthropogenic waste were visible in trace quantities of brick, ceramic and concrete. Glass and plastic were also observed on ground surfaces and in shallow fill profiles.
- Water seepage was encountered in a handful of bore holes or test pits during the intrusive assessment and ranged in approximate depth from 0.7m 0.9m below ground level. The depth that seepage was encountered was at the top of the residual sandy clay layer indicating that the site may have a perched groundwater table above this residual layer, particularly during times of high rainfall. Seepage was not accompanied by any odour, sheen or staining of soils that might indicate contamination. Note also that in the week preceding the field works some 34mm of rain was recorded at Nowra RAN Air Station which included 31mm on March 19 2022 (two days before field works).
- With respect to human health indicators, all analytical results for samples collected as part of the DGI were below the laboratory limits of reporting, or the applicable Residential A human health criteria.
- From an ecological perspective, analytical results were screened against applicable ecological screening criteria with exceedances for copper, nickel and zinc derived from topsoil/fill material in three locations, however these results were generally considered to be anomalies able to be excluded due to soil conditions.

Most relevantly, based on the findings of this investigation and the other previous investigations by Cardno, the site is considered suitable for the intended land use as a hospital, with the exception of the area centred on borehole BH01 between sampling locations BH01E1, BH01S1, BH01W1 and BH01N1. This small unsuitable area can be made suitable following management of the identified contamination through the implementation of a Remediation Action Plan for the removal of an anticipated 2-4m^3 volume of material, along with other management and mitigation measures. The location of BH01 between sampling locations BH01E1, BH01S1, BH01W1 and BH01N1 is on the existing hospital site as shown in **Figure 15**.

A Remediation Action Plan (RAP) was also prepared by Cardno which indicates the works will be Category 2 Remediation Works and that consent will not be required.

The results of the PSI, DGI, and approach under the RAP, are further discussed in Section 7.0 of this EIS. See the PSI, DGI and RAP at **Appendix G**.

4.10 Civil Engineering

The scope of civil engineering works entails earthworks, stormwater system upgrades, and roadworks. The scope is shown in the Bonacci Civil Engineering drawings included as part of **Appendix H**.

Stormwater system upgrades

The stormwater works proposed consist of:

- A pit and pipe system within the site area to convey minor flows (in accordance with the Major/Minor stormwater strategy approach defined in Australian Rainfall and Runoff).
- A rainwater reuse tank (volume of 210kL) is provided near the low point of the development area, with overflows from the rainwater reuse tank directed to an on-site detention (OSD) tank. Note, rainwater reuse within the hospital is not possible due to strict infection control requirements. The reuse may be utilised for elements such as the cooling tower and landscaped areas.
- A OSD tank is provided (with water quality treatment cartridges contained within the tank) in order to limit post-development flows to less than pre-development flows. Modelling has been undertaken indicating that a 300m^3 detention volume is required, this will be confirmed during detailed design as the design (including final definition of paved and landscaped catchment areas) is developed.

- Overland flow paths are provided to cater for upstream catchments to bypass the development site, and to convey major storm flows from within the development area around the proposed building.
- A raingarden is proposed between the carpark and building entry, to allow opportunity for infiltration of stormwater runoff, in accordance with WSUD principles.
- Stormwater connection to Council stormwater network is proposed to be at the existing stormwater connection (via the kerb inlet pit adjacent to the existing pre-school facility on Shoalhaven Street).

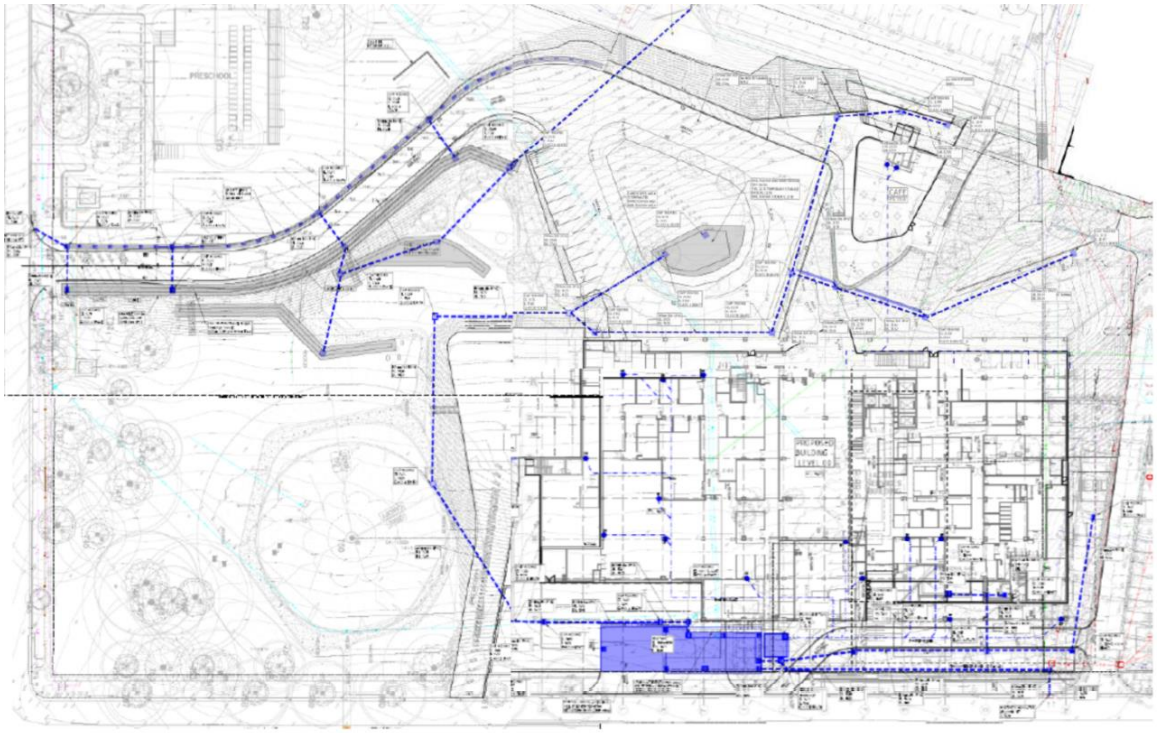


Figure 60 – Stormwater system upgrades and adjustments (Bonacci)

The combined rainwater tank and on-site detention volumes have been modelled in DRAINS with pre- and post-development scenarios incorporated. A total volume of 300m^3 is required for On-Site Detention, along with 210m^3 of rainwater tank capacity to cater for cooling tower demand of the site.

The provision of the nominated On-Site Detention volume limits peak post-development flows (which are increased from pre-development rates due to the increase in impervious area) to less than pre-development peak flows. This satisfies the requirements of Shoalhaven City Council.

Earthworks

It is not intended that the earthworks extend significantly beyond the footprint of the new proposed Acute Services Building. The concept bulk earthworks for the proposed works will result in approximately 17,734m^3 of cut volume and some 3,621m^3 of stripped topsoil, while some 3,403m^3 of fill volume is estimated as bulk earthwork quantities. An excess cut of some 14,331m^3 is anticipated to result. The deepest extent of cut is to form the Shoalhaven Street level of the Acute Services Building and to cater for the OSD tank which will be at or around RL16.55 - see **Figure 61** over.

Roadworks and paving

In summary the proposed roadworks works will include:

- New accessway into the expanded hospital site from North Street to a short-term at-grade parking and drop-off and pick-up area addressing the western façade of the Acute Services Building.
- New ambulance accessway from Shoalhaven Street and manoeuvring apron.
- New loading dock access from Shoalhaven Street.

- New porte cochere accessway from Shoalhaven Street for drop-off / pick-up purposes.
- Paved pedestrian and hard landscaped areas around the Acute Services Building.
- New footpaths along the North Street and Shoalhaven Street frontages of the site.

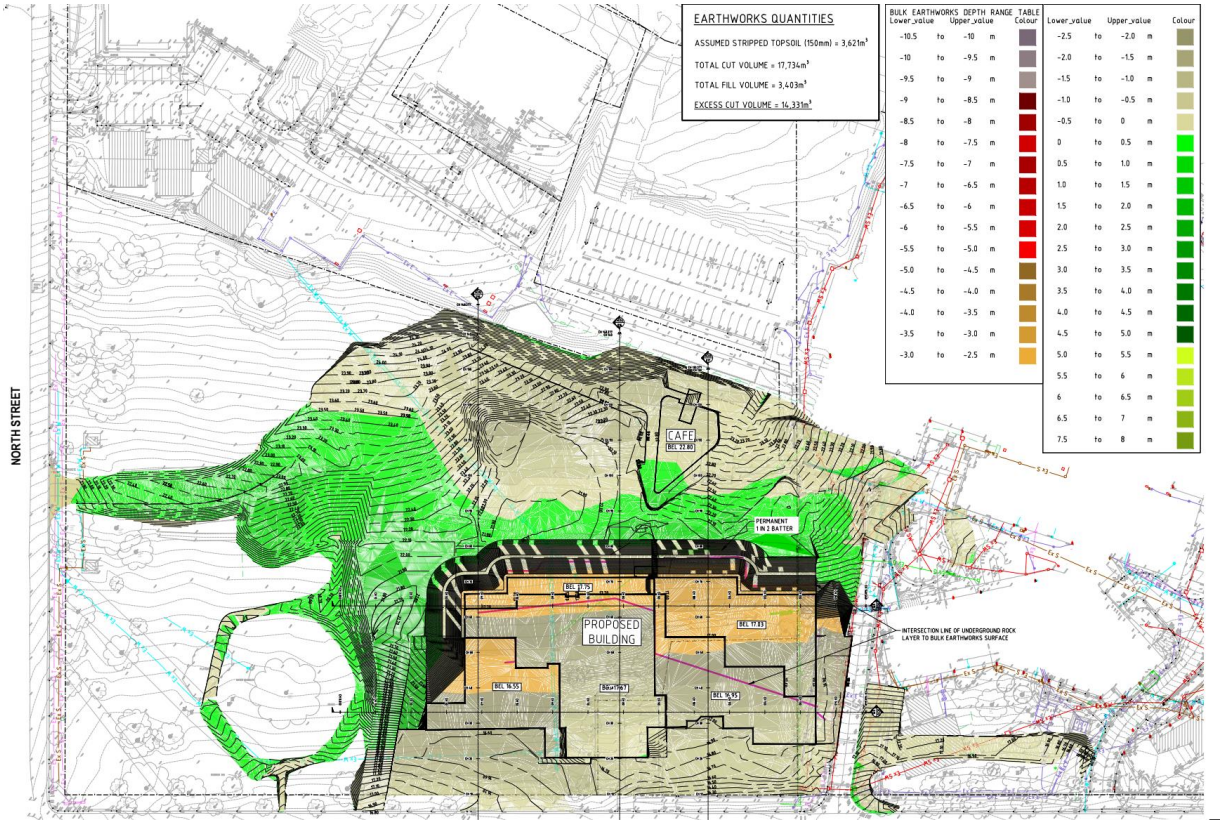


Figure 61 – Bulk earthworks cut and fill plan (Bonacci)

4.11 Utilities

The following key infrastructure works will be associated with the redevelopment. The electrical and communications scope is based on Arup's advice whist the water, sewer, fire hydrant and sprinkler, and gas infrastructure needs are based on Jacob's advice. These have been combined to provide a single Infrastructure Management Plan (see **Appendix S**).

Electricity

Based on a preliminary electricity load assessment carried out by Arup, the maximum demand of the proposed Acute Services Building will require augmentation of the local electrical utility network through the provision of a further 3,000kVA electrical capacity to the site. To cater for this demand increase, two new Endeavour Energy 1,500kVA kiosk substations are to be provided to the north of the Acute Services Building, close to the Shoalhaven Street boundary.

The new kiosk substations will require an easement for the two off-pad mount transformers. Endeavour Energy's in-ground cabling, overhead supply network and cabling infrastructure will also require augmentation around the new development in order to support the new kiosk substations. The in-ground services will also require an easement. The proposed in-ground reticulation route is as detailed in **Figure 62**.

Endeavour Energy has provided a power supply offer in the form of "Model Standing Offer for a Standard Connection Service" allowing for the augmentation of its network to supply the proposed development.

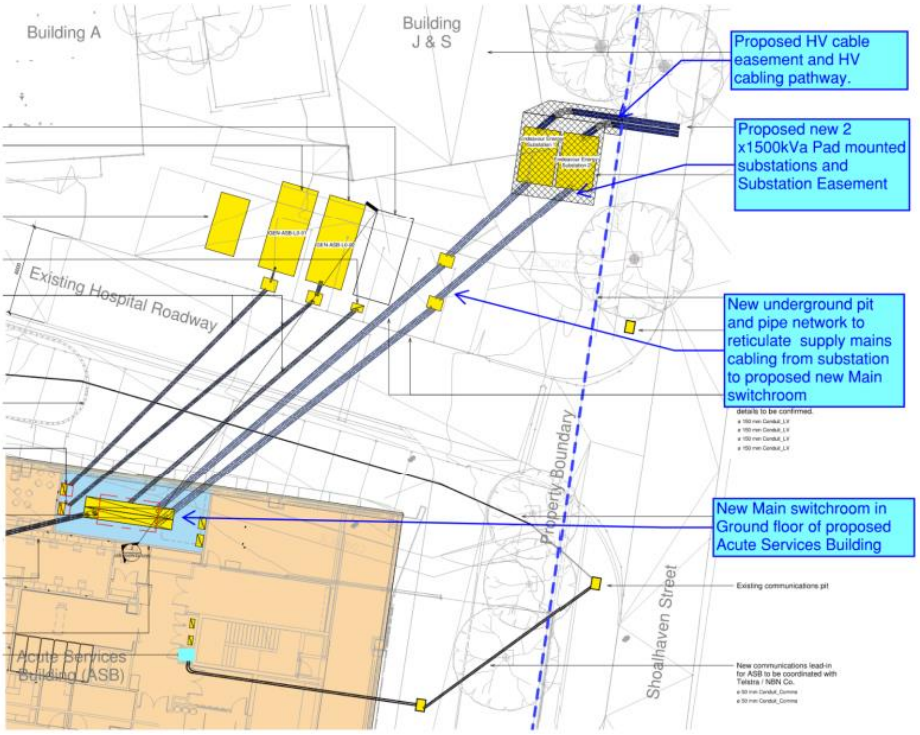


Figure 62 – Overview of electrical scope of works (Arup)

ICT (Communications)

All existing communication services across the campus will be retained but will require augmentation. It is proposed to install a new campus distributor on Level 3 of the Acute Services Building and connect to, and maintain, the existing campus distributors in Building A and the Cancer Care Centre.

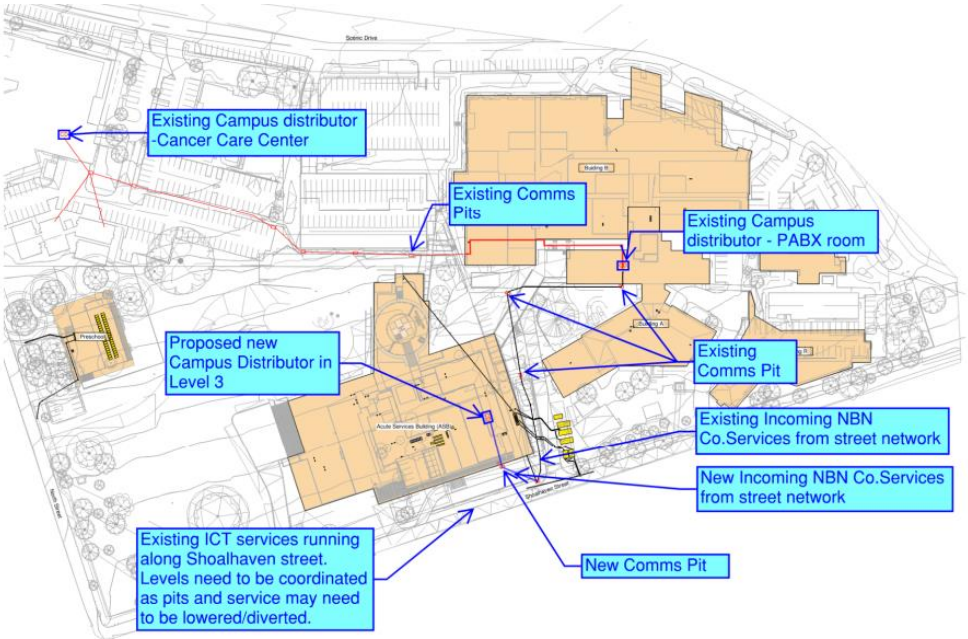


Figure 63 – Overview of ICT scope of works (Arup)

Photovoltaic (PV) System
It is proposed that a new PV system be installed on the new Acute Services Building roof. At this stage, the project team is designing and provisioning for installation of a system in the order of up to 100kWp (minimum), however this is subject to ongoing coordination with plant locations. The PV infrastructure arrangements are subject to specialist subcontractor engagement and design finalisation.

External Lighting
The external lighting strategy across the redevelopment will be provided to meet Australian Standards and the HI Engineering Services Guidelines. The external lighting strategy will provide a safe and secure environment whilst providing an elegant environment for all users of the building which is simple to maintain.

External lighting will be provided around the perimeter of the Acute Services Building and walkways across the entry plaza in accordance with AS/NZ 1158. Entrances to the building will be illuminated through coordinated internal and external lighting schemes. Lighting provisions will be coordinated with access control provisions required at building entry points. External lighting will be provided through a combination of lighting techniques using pole, wall and bollard luminaires.

Landscaped areas not occupied by people will not target a specific illuminance level. Pole mounted luminaires will be vandal and corrosion resistant, weatherproof and UV stable. The maintenance strategy and location of luminaires will be coordinated with the ISLHD Facilities Management team to ensure easy access for maintenance.

The loading dock entrance will be illuminated to meeting AS1680.2.1 "Interior and workplace lighting". Illumination levels adjacent to the external space will consider adaptation between the internal and external environments. Loading dock lighting will be provided by high level luminaires mounted up to the entry point. Efficient LED light sources will be used throughout the development.

All external and landscape lighting will be cognisant of glare through obtrusive lighting and designed to AS4282 "control of the obtrusive effect of outdoor lighting". Compliance will be achieved through a number of means, including directional luminaire selection with appropriate cut off angles and additional glare shields where required to reduce the upward light component. Lighting control measure will also be in place to optimise usage.

Cold Domestic Water
A new 100mm diameter domestic water connection will be required to service the new Acute Services Building. This will be connected to the existing Shoalhaven Water water main located in Shoalhaven Street. Refer **Figure 64**. The existing public toilets water connection in the former Nowra Park will be made redundant.

Sanitary Drainage (Sewer)
A new 150mm diameter sewer connection will be required to service the new Acute Services Building. This will be connected to the existing Shoalhaven Water sewer located in Shoalhaven Street. Refer **Figure 64**. The existing public toilets sewer connection in the former Nowra Park will be made redundant.

Fire Water
A new 250 DN Fire Water connection will be required to service the development. This service will be connected to the existing Shoalhaven Water main located in Shoalhaven Street via break tanks, Fire Brigade booster assemblies and back flow prevention devices.

Figure 64 – Overview of hydraulic and gas scope of works (Jacobs)

Rainwater drainage and reuse

As noted in the civil engineering subsection above, a 210 kL (or 210m^3) rainwater harvest tank is proposed for the new Acute Services Building. The design is based on the following:

- Roof catchment area = 6,600 m^2
- BOM Monthly average rainfall data for Nowra Boat Shed (Shoalhaven River)
- Assumed catchment efficiency = 80%
- Non potable water usage of (used for mechanical cooling tower water supply)
    - 54kl/D summer and 8.9kL/D winter assumed load (7.15kL/D Average)
- This equates to an estimated contribution of 21% of cooling tower water consumption
- The water will be treated via 100-micron cartage filters and UV disinfection
- Potable water change over valve will be installed for periods of low rainfall

Note, rainwater harvesting cannot be undertaken internally within the hospital building itself due to infection control and health quality and standards reasons. Accordingly, rainwater harvesting in this sense does not form part of HI's standard design guidelines.

Water Main and Gas Main Relocation

It is proposed to relocate an existing water main running through the former Nowra Park on the eastern edge of existing Lot 104. The main, known as 'Shoalhaven Water 375DN' currently extends through the former Nowra Park from the south-west to the north-east and is subject to an easement. Where the location of the water main impends the proposed Acute Services Building site, the main is intended to be relocated to outside the site boundary within the nature strip parallel with Shoalhaven Street. Discussion with Shoalhaven Water and Shoalhaven Council is well underway. **Figure 65** indicates the existing water main (near the number '6'). **Figure 66** shows the proposed relocation of

the water main outside the property boundary into the nature strip. The current draft detailed drawings form part of the Infrastructure Management Plan at **Appendix S**.

The disconnected main running diagonally from south-west to north-east is to be partially removed as part of civil engineering and earthworks under this SSD.

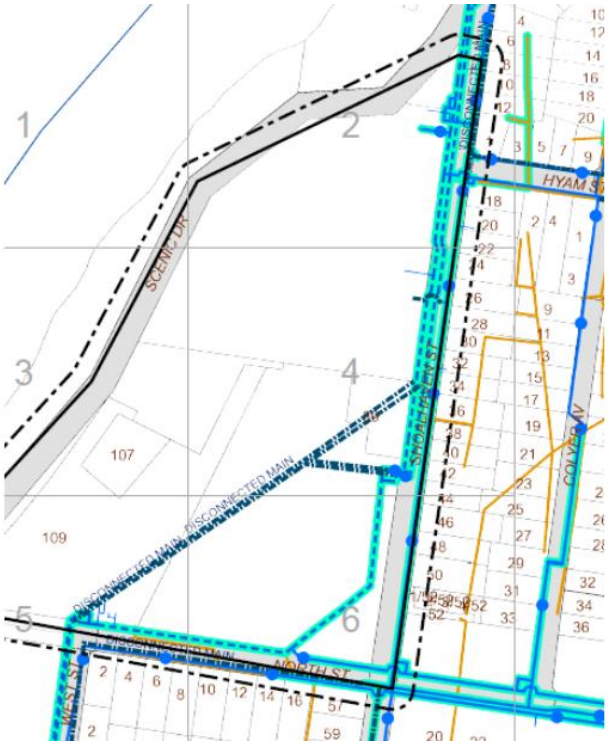


Figure 65 - Existing Shoalhaven Water Main Diagram (Shoalhaven Water / Jacobs)

Figure 66 - Proposed Shoalhaven Water Main Relocation - shown in green (Jacobs)

An existing Jemena 210kPa nylon 40DN natural gas main currently extends through Nowra Park. The natural gas main extends from Jemena gas main located in Shoalhaven Street to the regulator / meter set located within the existing hospital outside of Building B. This main impends the proposed Acute Services Building site. This main is intended to be relocated to inside the existing hospital campus extending from a new connection point to be provided by Jemena. Application to Jemena has been completed for the new connection point within Shoalhaven Street (Connection Application #000376316). Jemena have provided an offer to provide a new path valve for connection (offer No 0020029406) which has been accepted by Health Infrastructure. **Figure 67** indicates the existing gas main and the proposed relocation of the gas main to reconnect building B meter set.

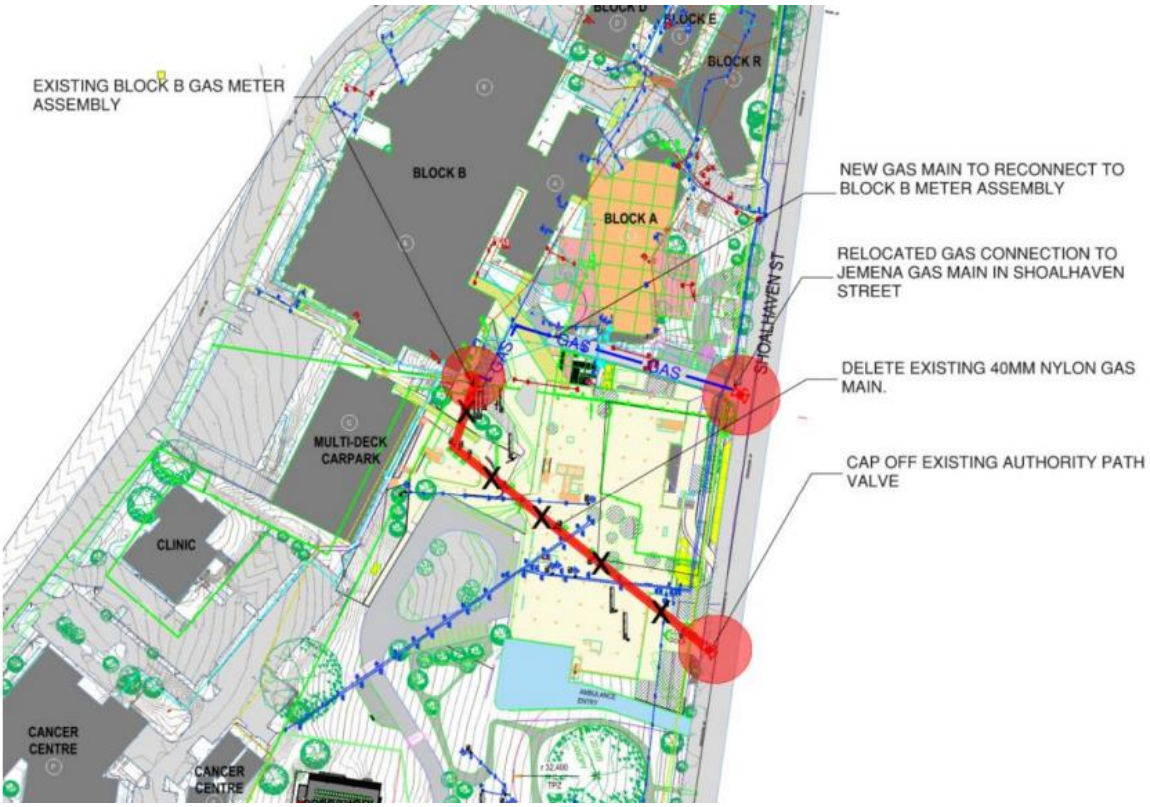


Figure 67 - Jemena Natural Gas Main Relocation (Jacobs)

4.12 Building works / Staging

The development subject of this SSD will be delivered in one stage but over a number of phases to maintain effective operation of the hospital during construction works.

Construction is expected to be undertaken between March 2023 and 2026, with the development ready to be operational in later 2026.

The works would be undertaken in eight (8) main phases, as follows:

- **Phase 1**: Demolition of pre-school and helipad (and other associated demolition works) (3-4 month duration)
- **Phase 2**: Enabling works including bulk oxygen compound relocation and water main relocation (3-4 month duration)
- **Phase 3**: Bulk earthworks (3-5 month duration)
- **Phase 4**: Structure (6-9 month duration)
- **Phase 5**: Façade (4-6 month duration)
- **Phase 6:** Internal fitout and finishes (6-9 month duration)
- **Phase 7:** External landscaping works (4-6 month duration)
- **Phase 8:** Handover and commissioning (3-4 month duration)

The durations of the phases shown above are only indicative and will be dependent upon a range of factors including weather and the appointed builder's construction methodology. Further the durations are likely to be able to be overlapped in part and should not be considered in a simple aggregated sense.

4.13 Construction jobs

The construction of the development is estimated to employ some 548 workers over the duration of the works / construction. The methodology to estimate the possible number of construction jobs is contained within the CIV report.

4.14 Operational aspects

The hospital will continue to operate 24 hours per day and 7 days per week. The redevelopment will maintain this noting other operations and functions within and related the proposed building, such as retail, café, and other non-clinical or acute services, will operate during limited hours. The café is likely to operate during normal weekly business and weekend hours (nominally 8:00am to 4:00pm 7 days per week). The hospital's stores depot will provide a service to clinical areas from 6:30am to 3:30pm weekdays. Stores will receive deliveries multiple times per day, up to 7 days per week from 6:00am to 3:30pm, with provision for some afterhours deliveries.

The redevelopment will generate some 680 additional staff by 2031 and result in an increase overnight / in-patient beds and treatment spaces to 2031.

No additional car parking is proposed under this DA as spare capacity exists within parking on, and at, the campus in dedicated hospital parking and in part on adjacent streets around the perimeter of the hospital.

A new access arrangement is proposed via North Street as part of the redevelopment. A drop-off area is proposed on the western side of the Acute Services Building.

The vehicular access, circulation, aisle width and car space dimensions comply with AS 2890.1 & 2890.6. Two-way circulation is provided inside the pick-up and drop-off and vehicular access points, thus no potential queuing on public roads will result.

4.15 Campus-wide works

Other concurrent or related campus-wide works (outside of this SSD scope) facilitating the ongoing and efficient operation of the hospital include:

- Relocation of the Shoalhaven Community Pre-School from its existing site to a new location at the southern end of the former Nowra Park addressing North Street. This DA was approved by Shoalhaven City Council on 28 July 2022 - see DA21/2575. As the pre-school will need to be operational prior to the commencement of works in relation to the Shoalhaven Hospital Redevelopment, a separate approval process was necessitated. The pre-school relocation cannot form part of the proposed SSD application.
- A temporary helipad, presently proposed on West Street Oval south of the hospital, subject of a DA to be lodged with Council later in 2022.

As is common for any number of HI / hospital projects, in order to maintain a suitably operational hospital campus, a number of campus-related works will be required outside of this SSD. This includes later refurbishment works across the existing parts of the hospital in Block A, Block B, Mental Health (Block R), and in the Renal Dialysis Unit (Block D) once the new building has been completed. The scope involves refurbishment and additions and alterations of some 6,500m^2 GFA. The refurbishment scope and repurposing of existing vacated space will deliver acute, sub-acute and ambulatory care services across various departments.

4.16 Summary table

Key Aspects	Description
Project Area	The development site sits within parts of the existing Shoalhaven Hospital campus, the former Nowra Park and the existing Shoalhaven Community Pre-School, as set out below. • Lot 373 in DP 755952 (main / original hospital site) • Lot 1 in DP 1043088 (at-grade and multi-deck car park off Scenic Drive) • Lot 1031 in DP 1208730 (GP Super Clinic / Grand Pacific Health Centre) • Lot 1032 in DP 1208730 (Cancer Care Centre and part multi-deck car park) • Lot 102 in DP 1165533 (frontage to Scenic Drive) • Lot 104 in DP 1165533 (former Nowra Park) • Lot 7034 in DP 1031852 (existing Shoalhaven Community Pre-School) The development site forms a portion of the overall proposed expanded hospital campus. No part of the development site and hospital campus is identified as having or being: • Heritage-listed or of having Aboriginal heritage value. No heritage or Aboriginal items are listed or mapped as associated with the hospital or the development site • In a Conservation Area • Bushfire prone land • Subject to soil or groundwater salinity • Contaminated (other than a very small area ($2m^3$) within the existing hospital itself). No part of the former Nowra Park or pre-school site is contaminated for the purposes of this DA • Flood affected • Subject to biodiversity values or threatened flora or fauna species • Matters of National Environmental Significance • Subject to mapped terrestrial biodiversity • In a Natural Resource Sensitive Area • In a Scenic Protection Area • Subject to riparian land or watercourses See relevant plans and maps in corresponding appendices to this EIS.
Physical layout and design	The Shoalhaven Hospital Redevelopment scope includes: • The new Acute Services Building, being predominantly a 7-storey building, with rooftop plant and helipad. • New landscaping within the expanded hospital site, including retention of all trees outside of the scope of works including the significant large canopy tree (Tree 50) within the former Nowra Park and the planting of 65 new canopy trees. • Demolition of the existing Shoalhaven Community Pre-School (Main Building and Storage Shed); and part minor demolition of a small portion of Block B to facilitate the new linkway from the Acute Services Building to Block B. Demolition of the existing male and female toilet blocks within the former Nowra Park are excluded being part of the DA consent for the relocation of the pre-school. Three existing demountable buildings to the north and west of the development site is also to be removed. • Removal of 26 trees from the existing hospital, Shoalhaven Community Pre-School sites and part of the former Nowra Park along its Shoalhaven Street frontage. This includes two Council street trees on Shoalhaven Street. • New hospital access road from North Street into the expanded hospital site providing for a new front-of-house main entry drop-off, emergency drop-off, short-term parking, and lay-by for fire engine. • New ambulance access and apron off Shoalhaven Street and new seven (7) ambulance parking bays. • New loading dock access from Shoalhaven Street. • New drop-off porte-cochere area off Shoalhaven Street. • New public footpaths along the North Street and Shoalhaven Street frontages of the site and minor roadworks to the existing site access off Shoalhaven Street.

	• New café addressing the new front-of-house entry. • Civil engineering works including bulk earthworks, roadworks as set out above, and new on-site drainage and stormwater management works, including OSD tank. • Relocation of the hospital's existing bulk oxygen storage compound. • New, relocated and augmented utilities and services connections and removal of redundant services within the development site. This includes the proposed relocation of the existing Shoalhaven Water water main running from the south towards the development site.
Uses and activities	The use involves the expansion of existing health services facility-related uses at the hospital and immediately adjoining land in the ownership of HAC (or in the process of coming under the ownership of HAC). The hospital (including the proposed development) will continue to operate 24 hours per day and 7 days per week. The redevelopment will maintain this noting other operations and functions within and related the proposed building, such as retail, café, and other non-clinical or acute services, will operate during limited hours. The café is likely to operate during normal weekly business and weekend hours (nominally 8:00am to 4:00pm 7 days per week). The hospital's stores depot will provide a service to clinical areas from 6:30am to 3:30pm weekdays. Stores will receive deliveries multiple times per day, up to 7 days per week from 6:00am to 3:30pm, with provision for some afterhours deliveries.
Timing	
Staging	The development subject of this SSD will be delivered in one stage but over a number of phases to maintain effective operation of the hospital during construction works. • Phase 1: Demolition of pre-school and helipad (and other associated demolition works) (3-4 month duration) • Phase 2: Enabling works including bulk oxygen compound relocation and water main relocation (3-4 month duration) • Phase 3: Bulk earthworks (3-5 month duration) • Phase 4: Structure (6-9 month duration) • Phase 5: Façade (4-6 month duration) • Phase 6: Internal fitout and finishes (6-9 month duration) • Phase 7: External landscaping works (4-6 month duration) • Phase 8: Handover and commissioning (3-4 month duration) The durations of the phases shown above are only indicative and will be dependent upon a range of factors including weather and the appointed builder's construction methodology. Further the durations are likely to be able to be overlapped in part and should not be considered in a simple aggregated sense.

5.0 Statutory Context

5.1 Relevant statutory requirements

The key and relevant statutory planning legislation, instruments, and development control plan applicable to the site and proposed development include:

- *Environmental Planning and Assessment Act 1979*
- *Environmental Planning and Assessment Regulation 2021*
- *Biodiversity Conservation Act 2016*
- *State Environmental Planning Policy (Biodiversity and Conservation) 2021* (Chapter 2)
- *State Environmental Planning Policy (Industry and Employment) 2021* (Chapter 3)
- *State Environmental Planning Policy (Planning Systems) 2021* (Chapter 2)
- *State Environmental Planning Policy (Resilience and Hazards) 2021* (Chapter 2)
- *State Environmental Planning Policy (Resilience and Hazards) 2021* (Chapter 3)
- *State Environmental Planning Policy (Resilience and Hazards) 2021* (Chapter 4)
- *State Environmental Planning Policy (Transport and Infrastructure) 2021* (Chapter 2)
- *Draft State Environmental Planning Policy (Remediation of Land).*
- *Draft State Environmental Planning Policy (Environment).*
- *Shoalhaven Local Environmental Plan 2014.*
- Shoalhaven Development Control Plan 2014

Further discussion on compliance and relevant assessment with each of the above is set below and in Section 7.0 as relevant. A summary of permissibility, the relevant approvals regime, pre-conditions to granting consent, and mandatory matters for consideration is set out in **Appendix T**. Detailed discussion on relevant legislation follows or is otherwise addressed in Section 7.0 of this EIS.

5.1.1 Environmental Planning and Assessment Act 1979

The objects of the Act are:

> *(a) to promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State's natural and other resources,*
> *(b) to facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment,*
> *(c) to promote the orderly and economic use and development of land,*
> *(d) to promote the delivery and maintenance of affordable housing,*
> *(e) to protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats,*
> *(f) to promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage),*
> *(g) to promote good design and amenity of the built environment,*
> *(h) to promote the proper construction and maintenance of buildings, including the protection of the health and safety of their occupants,*
> *(i) to promote the sharing of the responsibility for environmental planning and assessment between the different levels of government in the State,*
> *(j) to provide increased opportunity for community participation in environmental planning and assessment.*

The proposed development satisfies these objects (as far as relevant) as detailed in the sections of this EIS that follow.

The proposed development and the documentation and assessment under this EIS also satisfy the relevant provisions of the Act as set out elsewhere and throughout this EIS.

5.1.2 Environmental Planning and Assessment Regulation 2021

The principles of ecologically sustainable development (ESD) as set out in section 193 of EP&A Regulation 2021 are addressed in Section 7.8 of this EIS as part of the assessment of, and response to, ESD. The assessment considers and addresses:

- the precautionary principle
- inter-generational equity
- conservation of biological diversity and ecological integrity
- improved valuation, pricing and incentive mechanisms

The proposed development and the documentation and assessment under this EIS also satisfy the relevant provisions of the Regulation as set out elsewhere and throughout this EIS, including **Appendix T**.

5.1.3 Other approvals

Under section 4.41 EP&A Act, several other approvals are integrated into the SSD approval process, and consequently, are not required to be separately obtained for the proposal. None of the listed matters apply in this circumstance.

Under section 4.42 EP&A Act, several further approvals are required, but must be substantially consistent with any development consent for the proposal. In this instance only approval for works under section 138 of the *Roads Act 1993* would be applicable for the civil and utilities works within the road reservations of Shoalhaven Street and North Street, as well as the removal of trees 61 and 62 within the Shoalhaven Street road reserve. The connection of the new access road to North Street in this instance does not trigger any such requirement as North Street is not a classified road.

5.1.4 Biodiversity Conservation Act 2016

The *Biodiversity Conservation Act 2016* applies to the State with the purpose of maintaining a healthy, productive and resilient environment for the greatest well-being of the community, now and into the future, consistent with the principles of ecologically sustainable development. In particular, amongst other things, it aims to:

- conserve biodiversity at bioregional and State scales, and
- maintain the diversity and quality of ecosystems and enhance their capacity to adapt to change and provide for the needs of future generations, and
- improve, share and use knowledge, including local and traditional Aboriginal ecological knowledge, about biodiversity conservation, and
- support biodiversity conservation in the context of a changing climate, and
- assess the extinction risk of species and ecological communities, and identify key threatening processes, through an independent and rigorous scientific process, and
- regulate human interactions with wildlife by applying a risk-based approach, and
- support conservation and threat abatement action to slow the rate of biodiversity loss and conserve threatened species and ecological communities in nature.

In accordance with section 7.9(1) the *Biodiversity Conservation Act 2016*, any SSD DA must be accompanied by a biodiversity development assessment report (BDAR) unless the Planning Agency Head and the Environment Agency Head determine that the proposed development is not likely to have any significant impact on biodiversity values.

In this instance a BDAR Waiver has not been sought, and a BDAR has been prepared to address the requirements of the *Biodiversity Conservation Act 2016.* See the BDAR at **Appendix I** and assessment and discussion on related matters at Section 7.2 of this EIS.

5.1.5 State Environmental Planning Policy (Planning Systems) 2021 – Chapter 2

State Environmental Planning Policy (Planning Systems) 2021 – Chapter 2 (being the former *State Environmental Planning Policy (State and Regional Development) 2011* identifies development that is State Significant Development (SSD). Section 14(a) of Schedule 1 of the SEPP specifies *development*

that has a capital investment value of more than $30 million for any of the following purposes— (a) hospitals, to be State Significant Development.

The project qualifies as a State Significant Development (SSD) by virtue of its classification as a hospital and the CIV being substantially beyond the $30 million threshold.

Further, section 2.10 of this SEPP excludes the application of development control plans (DCPs) from SSD DAs. Notwithstanding, the relevant parts of the Shoalhaven DCP 2014 have been considered within this EIS as far as they may be relevant.

5.1.6 State Environmental Planning Policy (Transport and Infrastructure) 2021 – Chapter 2

State Environmental Planning Policy (Transport and Infrastructure) 2021 – Chapter 2 (being the former *State Environmental Planning Policy (Infrastructure) 2007*) commenced with the aim of facilitating the effective delivery of infrastructure across the State. In doing so, it provides for alternative approval pathways for a range of health services facilities projects. However, none are able to be utilised in this instance due to the scale and scope of this project / development.

In consideration of other provisions of *State Environmental Planning Policy (Transport and Infrastructure) 2021* (Transport and Infrastructure SEPP) – Chapter 2, section 2.60(1) serves to confirm the permissibility of the development within the existing and concurrently proposed SP2 – Health Services Facility zone at the site, given this is a prescribed zone under section 2.59 of the SEPP. This is also a relevant consideration in addressing the Shoalhaven LEP height control over the site as addressed further below.

As noted in Section 1.0 of this EIS, HI will be relying upon a concurrent rezoning of the relevant land not yet zoned SP2 – Health Services Facility to that zone to clarify the zoning and permissibility. This process will be carried out concurrently via an amending State Environmental Planning Policy (SEPP) through DPE. The operation of section 4.38(3) of the Environmental Planning and Assessment Act 1979 (EP&A Act) which states development consent may be granted despite the development being partly prohibited by an environmental planning instrument will not need to be employed in this instance. Concurrent rezoning and DA processes are available under section 4.38(5) and Division 3.5 of the EP&A Act.

The only other relevant provision of this SEPP is section 2.121 (and its co-related Schedule 3) in relation to traffic-generating development. The proposed development is traffic-generating development for the purposes of this SEPP as it accommodates an increase of more than 100 overnight in-patient beds (being a gain of 178 beds – from 214 (current) to 392 (in 2031) in this case). The development does not seek to increase the number of parking spaces on the campus. The relevant thresholds in this instance are 100 or more beds with site access to a road (generally), or 200 or more beds with site access to a classified road or to road that connects to classified road (if access is within 90m of the connection, measured along alignment of connecting road). The traffic generating development qualification in this instance is the 100-bed threshold.

The note to Schedule 3 clearly states the current proposal (not the new aggregated total of beds) is the determinant of how to calculate traffic-generating development requiring referral to TfNSW. We expect referral to TfNSW in any case.

> *The development specified in Column 1 may involve the erection of new premises or an enlargement or extension of existing premises. If the development involves an enlargement or extension of existing premises, the relevant size or capacity specified in the table is the additional (rather than the total) size or capacity of the premises as a result of the enlargement or extension.*

Consultation with, and notification to, Transport for NSW is seen as a relevant part of this planning process. See also engagement with TfNSW in the section of this EIS that follows.

5.1.7 State Environmental Planning Policy (Biodiversity and Conservation) 2021 – Chapter 2

This chapter of the SEPP relates to vegetation in non-rural areas. For non-rural areas outside of Metropolitan Sydney it applies to land within a range of zones, including the SP2 – Health Services Facility zone.

The aims of this Chapter are -

> *(a) to protect the biodiversity values of trees and other vegetation in non-rural areas of the State, and*
> *(b) to preserve the amenity of non-rural areas of the State through the preservation of trees and other vegetation.*

Under this chapter *vegetation means a tree or other vegetation, whether or not it is native vegetation.* To clear vegetation includes to *cut down, fell, uproot, kill, poison, ringbark, burn or otherwise destroy the vegetation, or lop or otherwise remove a substantial part of the vegetation*.

To that end, the proposed tree removal relates to this chapter, but is considered in the context of the outcomes of both the BDAR (most relevantly) and the Arboricultural Development Assessment Report.

> *2.7 Clearing that does not require permit or approval*
> *(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, section 60O or Part 5B.*

Under section 2.6(1) a person must not clear vegetation in a non-rural area of the State to which Part 3 [sic] applies without the authority conferred by a permit granted by the council under that Part. The reference to Part 3 of the former *State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017* is now Part 2.3 of this SEPP. This indicates that a DCP may declare vegetation to which that Part applies. The Shoalhaven DCP 2014 sets out a range of inclusions and exceptions for Council's approval of tree removal. Broadly, and consistent with the aims and provisions of this chapter of the SEPP approval is sought under this DA for the proposed tree removal. See further discussion and assessment of the proposed tree removal in Section 7.2 of this EIS as supported by an Arboricultural Development Impact and Tree Protection Report by Moore Trees at **Appendix J** and the BDAR at **Appendix I**.

5.1.8 State Environmental Planning Policy (Resilience and Hazards) 2021 – Chapter 2

Chapter 2 of *State Environmental Planning Policy (Resilience and Hazards) 2021* deals with coastal management and applies to land within the coastal zone.

The aim of the chapter, amongst other things, is to promote an integrated and co-ordinated approach to land use planning in the coastal zone in a manner consistent with the objects of the *Coastal Management Act 2016*, including the management objectives for each coastal management area, by managing development in the coastal zone and protecting the environmental assets of the coast, and establishing a framework for land use planning to guide decision-making in the coastal zone.

The coastal zone comprises four coastal management areas:

> *(a) the coastal wetlands and littoral rainforests area,*
> *(b) the coastal vulnerability area,*
> *(c) the coastal environment area,*
> *(d) the coastal use area.*

The Shoalhaven Hospital campus and the development site each sit wholly or partly within the following based on the applicable ePlanning Spatial Viewer mapping – see **Figures 68** to **70** below.

- the coastal environment area (whole hospital campus and development site)
- the coastal use area (whole hospital campus and part development site only)

Accordingly, sections 2.10 and 2.11 of the SEPP, respectively, set out the pre-conditions and matters for consideration for the development in relation to the coastal environment area and the coastal use

area. Further consideration is also set out in Division 5 of the SEPP. Compliance is addressed in Section 7.2 of this EIS.

Figure 68 – The hospital and development site - coastal environment area (ePlanning Spatial Viewer)

Figure 69 – The hospital and development site - coastal use area (ePlanning Spatial Viewer)

Figure 70 – The hospital and development site - coastal use area (detail) (ePlanning Spatial Viewer)

5.1.9 State Environmental Planning Policy (Resilience and Hazards) 2021 – Chapter 3

The former *State Environmental Planning Policy No.33 – Hazardous and Offensive Development* (SEPP 33) commenced in 1992 with aims, amongst other things, to ensure that in determining whether a development is a hazardous or offensive industry, any measures proposed to be employed to reduce the impact of the development are taken into account, and that in considering any application to carry out potentially hazardous or offensive development, the consent authority has sufficient information to assess whether the development is hazardous or offensive and to impose conditions to reduce or minimise any adverse impact. The SEPP has now been consolidated into *State Environmental Planning Policy (Resilience and Hazards) 2021* as Chapter 3.

Under section 3.12 of the SEPP, in determining an application to carry out development to which this Part applies, the consent authority must consider (in addition to any other matters specified in the Act or in an environmental planning instrument applying to the development)—

> *(a) current circulars or guidelines published by the Department of Planning relating to hazardous or offensive development, and*
> *(b) whether any public authority should be consulted concerning any environmental and land use safety requirements with which the development should comply, and*
> *(c) in the case of development for the purpose of a potentially hazardous industry—a preliminary hazard analysis prepared by or on behalf of the applicant, and*
> *(d) any feasible alternatives to the carrying out of the development and the reasons for choosing the development the subject of the application (including any feasible alternatives for the location of the development and the reasons for choosing the location the subject of the application), and*
> *(e) any likely future use of the land surrounding the development.*

To address section and the relevant and applicable SEPP 33 Guidelines, an initial screening assessment was carried out by Arup (see **Appendix U**). The result of the initial screening assessment

indicates that a subsequent Preliminary Hazard Analysis is required, and accordingly has been prepared to address the SEPP and its guidelines. See further assessment at Section 7.13.

5.1.10 State Environmental Planning Policy (Resilience and Hazards) 2021 – Chapter 4 and draft State Environmental Planning Policy (Remediation of Land) 2017

The former *State Environmental Planning Policy No. 55 – Remediation of Land* now resides in Chapter 4 of *State Environmental Planning Policy (Resilience and Hazards) 2021***.** It provides for a State-wide planning approach to the remediation of contaminated land. A consent authority must consider whether the land subject of a proposal is contaminated and, if the land is contaminated, be satisfied that the land is suitable in its contaminated state for the use proposed. If the land requires remediation to be made suitable for the proposed purpose, the determining authority must be further satisfied that the land will be so remediated before the land is used for that purpose.

Section 6.4(4) of the SEPP specifies land in relation to which the consent authority must consider the findings of a preliminary investigation of the land carried out in accordance with the contaminated land planning guidelines before determining a development application for change of use.

> *(4) The land concerned is:*
>
> *(a) land that is within an investigation area,*
>
> *(b) land on which development for a purpose referred to in Table 1 to the contaminated land planning guidelines is being, or is known to have been, carried out,*
>
> *(c) to the extent to which it is proposed to carry out development on it for residential, educational, recreational or child care purposes, or for the purposes of a hospital—land:*
>
> *(i) in relation to which there is no knowledge (or incomplete knowledge) as to whether development for a purpose referred to in Table 1 to the contaminated land planning guidelines has been carried out, and*
>
> *(ii) on which it would have been lawful to carry out such development during any period in respect of which there is no knowledge (or incomplete knowledge).*

The recently exhibited draft Remediation of Land SEPP (an update to the then SEPP 55) will not substantially alter the fundamental requirements of the legislation. At present a DA is required for any Category 1 remediation works, that is works which amongst other things are Designated Development (with a volumetric threshold of 30,000m^3 of contaminated earth).

Under the new exhibited, but yet to commence, draft Remediation of Land SEPP, Category 1 remediation works are at this stage proposed to be reduced to a volumetric threshold of 3,000m^3, amongst a range of other criteria.

As noted in Sections 4.9.2 and 7.1 of this EIS, the findings of Cardno concluded the site can be made suitable for the proposed development, subject to remediation to address a small area of concern in the existing hospital carpark to the north of the proposed Acute Services Building. As the remediation works are Category 2 remediation works, development consent is not required as part of this DA process.

5.1.11 State Environmental Planning Policy (Industry and Employment) 2021 – Chapter 3

Chapter 3 of *State Environmental Planning Policy (Industry and Employment) 2021* sets out the provisions of the former *State Environmental Planning Policy No 64-Advertising and Signage* seeks to ensure that signage (including advertising) is compatible with the desired character of an area, provides effective communication in suitable locations, and is of high-quality design and finish. Chapter 3 of the SEPP does not regulate the content of signage.

The proposed building identification signage triggers the need for a detailed assessment under the provisions of section 3.4 and 3.6 and Schedule 5 of the SEPP. Section 7.17 of this EIS assesses the proposed signage's compliance and satisfaction of these provisions and matters for consideration. See also the proposed signage as shown in the Conrad Gargett drawing set at **Appendix O**.

5.1.12 Draft State Environmental Planning Policy (Environment)

The NSW government has been working towards developing a new State Environmental Planning Policy for the protection and management of the natural environment (the Environment SEPP). Changes proposed include consolidating and updating the following seven former SEPPs, otherwise now repealed or further consolidated into other SEPPs in 2021:

- State Environmental Planning Policy No. 19 – Bushland in Urban Areas
- State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011
- State Environmental Planning Policy No. 50 – Canal Estate Development
- Greater Metropolitan Regional Environmental Plan No. 2 – Georges River Catchment
- Sydney Regional Environmental Plan No. 20 – Hawkesbury-Nepean River (No.2-1997)
- Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005
- Willandra Lakes Regional Environmental Plan No. 1 – World Heritage Property.

The Environment SEPP was on exhibition from 31 October 2017 until the 31 January 2018 but has so far not further progressed towards gazettal and implementation, with the process in part having been made redundant by the March 2022 consolidation of SEPPs process.

Of the drafted provisions of the Environment SEPP itself, it is intended to set out provisions under four parts being:

- Catchments
- Waterways
- Bushland
- Protected areas

Of the above-listed former instruments, none apply to the site or the development, noting SEPP 19 – Bushland in Urban Areas has since been repealed and *State Environmental Planning Policy (Biodiversity and Conservation) 2021* – Chapter 2 applies instead as set out earlier.

5.1.13 Shoalhaven Local Environmental Plan 2014

The relevant or applicable provisions of Shoalhaven LEP 2014 are generally limited to the following:

- Part 2 – Permitted or prohibited development
    - clause 2.3 - Zone objectives and land use table for SP2 – Infrastructure zone
    - clause 2.7 - Demolition requires development consent
- Part 4 – Principal development standards
    - clause 4.3(2A) – Height of buildings
    - clause 4.4 – Floor space ratio
    - clause 4.6 - Exceptions to development standards
- Part 5 – Miscellaneous provisions
    - clause 5.10 – Heritage conservation
    - clause 5.12 - Infrastructure development and use of existing buildings of the Crown
- Part 7 – Additional local provisions
    - clause 7.1 – Acid sulfate soils
    - clause 7.2 – Earthworks
    - clause 7.8 – Scenic protection
    - clause 7.9 – HMAS Albatross airspace operations
    - clause 7.11 – Essential services

These are addressed as follows in, or by, this EIS.

Part 2 - Permitted or prohibited development

As discussed previously, the hospital and the development site is (and/or proposed to be) zoned SP2 – Health Services Facility. The development is permitted with consent in the zone.

As noted in Section 1.0 of this EIS, HI will be relying upon a rezoning of the relevant land not yet zoned SP2 – Health Services Facility to be rezoned to that zone to clarify the zoning and permissibility. This process will be carried out concurrently via an amending State Environmental Planning Policy (SEPP) through DPE. The operation of section 4.38(3) of the EP&A Act which states

development consent may be granted despite the development being partly prohibited by an environmental planning instrument will not need to be employed in this instance. Concurrent rezoning and DA processes are available under section 4.38(5) and Division 3.5 of the EP&A Act.

The zone objectives are set out as follows in the LEP.

- *To provide for infrastructure and related uses.*
- *To prevent development that is not compatible with or that may detract from the provision of infrastructure.*

The proposed development clearly satisfies these zone objectives, for the reasons set out in this EIS in establishing the need for the development. No further consideration is warranted.

Under clause 2.7 the demolition works require consent, noting the alternatives available under relevant SEPPs cannot apply due to the SSD status of the development and the extent of the existing boundaries of the hospital. Accordingly, consent is sought for demolition under this application.

Part 4 – Principal development standards – height of buildings and floor space ratio
Under clause 4.3(2A) an 11m building height control applies to the hospital and development site as the LEP height of buildings map does not show a maximum height.

The 11m height control does not apply in this instance given the Crown DA status of the application and the use of clause 5.12 of the LEP. Further discussion is set out below.

No floor space ratio (FSR) controls apply to the hospital and development site.

No further consideration is warranted other than assessment of the possible impacts of the development as set out in Section 7.6. This assesses the development's height, bulk, scale and other co-related impacts.

Part 4 – Principal development standards – Exceptions to development standards
Given the contravention of the height of buildings development standard (of 11m), a clause 4.6 objection would ordinarily be required to justify that compliance with the development standard is unreasonable or unnecessary in the circumstances of the case, and that there are sufficient environmental planning grounds to justify contravening the development standard.

However, given the development is being carried out by the Crown (and a public authority, namely HI) and the development is (or is to be concurrently) permitted with consent under Chapter 2 of the Transport and Infrastructure SEPP, clause 5.12 of the LEP applies to ensure no part of the LEP restricts or prohibits, or enables the restriction or prohibition of, the carrying out of any development, by or on behalf of a public authority. See further below.

Part 5 – Miscellaneous provisions – heritage conservation
A Statement of Heritage Impact has been prepared by Eco Logical – see **Appendix L**. This identifies, consistent with Shoalhaven LEP 2014, that Shoalhaven Hospital is not a listed item on any statutory or non-statutory heritage register and does not sit within or adjacent to any conservation area. Assessment has been carried out consistent with the relevant requirements of clause 5.10.

Part 5 – Miscellaneous provisions – Infrastructure development and use of existing buildings of the Crown
As noted above, the development is subject to Crown DA provisions of the EP&A Act and is being carried out by a public authority (HI). The development is permissible (or is to be concurrently made permissible) in the SP2 – Health Services Facility zone under the LEP and can be carried out with development consent, as reinforced by sections 2.59 and 2.60 of the Transport and Infrastructure SEPP. Accordingly, given the development is permissible under Chapter 2 of that SEPP and can be carried out with development consent, the LEP does not restrict or prohibit, or enable the restriction or prohibition of, the carrying out of any development, by or on behalf of a public authority.

The restriction applying to the development that is removed in this instance is the 11m height of building control. Notwithstanding, whilst clause 4.6 of the LEP then also does not apply, an appropriate level of assessment is provided with respect to the proposed development's height, bulk, scale, siting and setting consistent with other provisions of the LEP and relevant NSW Land and Environment Court Planning Principles.

Part 7 – Additional local provisions - various

Whilst the site is mapped as being subject to Class 5 Acid Sulfate Soils (the lowest risk category), as discussed earlier, the site does not contain Acid Sulfate Soils based on the eSpade mapping portal and Cardno's investigations. Council's Planning Certificates conservatively do not rule out the possibility for Acid Sulfate Soils at the site given it is within the broader coastal zone. Generally, no Acid Sulfate Soils Management Plan would be warranted given the site is subject to the lowest risk Class 5 soils, and despite being within 500m of Class 1 soils to the west, these are located at the Shoalhaven River level some 10-12m below the ground level of the development. The earthworks proposed will not be deeper than RL 16.55 and are therefore significantly above the key threshold level set by the LEP of RL 5.

Earthworks are proposed as ancillary to the overall development and does not require consent in itself. Notwithstanding assessment will be made in consideration of removing detrimental impacts on environmental functions and processes, neighbouring uses, cultural or heritage items or features of the surrounding land as required by the LEP.

Consistent with clause 7.2(3) the assessment will address:

> *(a) the likely disruption of, or any detrimental effect on, drainage patterns and soil stability in the locality of the development,*
> *(b) the effect of the development on the likely future use or redevelopment of the land,*
> *(c) the quality of the fill or the soil to be excavated, or both,*
> *(d) the effect of the development on the existing and likely amenity of adjoining properties,*
> *(e) the source of any fill material and the destination of any excavated material,*
> *(f) the likelihood of disturbing relics,*
> *(g) the proximity to, and potential for adverse impacts on, any waterway, drinking water catchment or environmentally sensitive area,*
> *(h) any appropriate measures proposed to avoid, minimise or mitigate the impacts of the development.*

The hospital and development site sit immediately adjacent to the Ben's Walk and Hanging Rock Lookout area which is a Scenic Protection Area under clause 7.8 of the LEP (and which is also a mapped and listed heritage item under the LEP).

Assessment will be undertaken and provided in considering:

- The visual impact of the development when viewed from a public place and that the development will involve the taking of measures that will minimise any detrimental visual impact.
- The number, type and location of existing trees and shrubs that are to be retained and the extent of landscaping to be carried out on the site.
- The siting of the proposed building.

An Aviation Assessment in relation to helicopter operations has been undertaken and considers any possible impacts or conflicts with HMAS Albatross airspace operations. The Aviation Assessment is found at **Appendix CC** and assessment is provided at Section 7.15 of this EIS.

Lastly, the supply of water and electricity, and the disposal and management of sewage has been considered in relation to new or changed demand at the hospital arising from the development. These assessments are provided in the Infrastructure Management Plan at **Appendix S** as per details provided by Jacobs and Arup.

5.1.14 Commonwealth Environment Protection and Biodiversity Conservation (EPBC) Act 1999

As set out in the proposed development's BDAR (see **Appendix I**), the EPBC Act provides a legal framework and regime to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places defined in the Act as Matters of National Environmental Significance (MNES).

Under the EPBC Act, approval is required for actions that have, will have, or are likely to have a significant impact on MNES. A bilateral agreement has been made under the EPBC Act which allows NSW to assess development applications on behalf of the Australian Government, removing the need for a separate assessment and reducing duplicative processes. The Biodiversity Offsets Scheme (BOS) has been endorsed by the Commonwealth Government and enables like-for-like offsetting under the BOS to also offset Commonwealth listed threatened species and communities.

The process includes undertaking an Assessment of Significance for listed threatened species and ecological communities that represent a matter of MNES that will be impacted as a result of the proposed action. The Significant Impact Guidelines 1.1 – Matter of National Environmental Significance' (DoE 2013) provide overarching guidance on determining whether an action is likely to have a significant impact on a MNES.

One (1) MNES was assessed in accordance with the Significant Impact Guidelines 1.1:

- *Pteropus poliocephalus* (Grey-headed Flying-Fox).

The Grey-headed Flying-fox is listed as vulnerable under the EPBC Act. This species was not identified within the development site during surveys for this assessment, however vegetation within the development footprint has the potential to provide seasonal foraging habitat. No roosting habitat is present within the development site. The Grey-headed Flying-fox is known to travel long distances (up to 50 km) on feeding forays. Extensive areas of more suitable foraging habitat occur within the assessment area away from the hospital site. The removal of this potential foraging habitat at the hospital site would not lead to the long-term decrease in the size of an important population of Grey-headed Flying-fox.

Following consideration of the administrative guidelines for determining significance under the EPBC Act, it is concluded that the proposal is highly unlikely to have a significant impact on MNES or Commonwealth land. No further action is required under the EPBC Act.

5.1.15 Shoalhaven Development Control Plan 2014

As set out in section 2.10(a) of *State Environmental Planning Policy (Planning Systems) 2021*, Development Control Plans (DCPs) do not apply to SSD DAs. Notwithstanding, a review of the Shoalhaven DCP's General and Environmental Considerations and Generics Chapters has been broadly undertaken. The review reveals a strong degree of overlap with the various requirements set out by the SEARs for this development. There are no development or site-specific provisions in the DCP in relation to the hospital or the development site.

Note also, section 3.42 of the EP&A Act clarifies the purpose and role of DCPs (as **bolded** for emphasis):

> *The principal purpose of a development control plan is to* ***provide guidance*** *on the following matters to the persons proposing to carry out development to which this Part applies and to the consent authority for any such development—*
>
> *(a)* ***giving effect to the aims of any environmental planning instrument that applies to the development****,*
> *(b)* ***facilitating development that is permissible*** *under any such instrument,*
> *(c)* ***achieving the objectives of land zones*** *under any such instrument.*

The provisions of a development control plan made for that purpose ***are not statutory requirements****.*

The EP&A Act further reinforces that DCPs do not apply to SSD.

Notwithstanding, the following lists matters in the DCP that are otherwise addressed by the SEARs and/or by this EIS and is therefore not inconsistent with the role the DCP is to play in this assessment.

- Heritage conservation and Aboriginal Cultural Heritage
- Crime Prevention Through Environmental Design (CPTED)
- Site analysis, site design, and building materials
- Sustainable water management and sediment and erosion control
- Landscape design
- Tree and vegetation management
- Biodiversity impacts
- Coastal management areas
- Waste minimisation and management
- Car parking and traffic
- Acid Sulfate Soils and geotechnical matters

5.1.16 Part 3A Approvals or Staged or Concept DAs

No Part 3A Concept Plan or Staged DA / Concept DA applies to the Shoalhaven Hospital site, including the site of the subject development.

5.2 Development contributions

Shoalhaven Development Contributions Plan 2019 applies to all land within the Shoalhaven LGA. The LGA is divided into areas for the purposes of the plan. Nowra and the hospital sit within Area 1 of the plan.

Exemptions apply under the plan at section 2.5. The plan does not apply to development provided by or on behalf of State Government or the Council:

- for the purposes of community infrastructure included in this Plan or another contributions plan prepared under the EP&A Act.
- for infrastructure provided by water, sewer or energy providers.
- for Council projects that provide non-profit community facilities, such as sportsgrounds, parks, community centres, emergency services.
- that in the opinion of Council does not increase the demand for the categories of community infrastructure addressed by this Plan.

Further, the Ministerial Direction of 14 September 2007 which exempts public amenities or public services in relation to social housing providers defined in the State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004, is also exempted.

The subject development appears not to be directly exempted from Development Contributions as it is not community infrastructure included in the plan, despite being a significant social infrastructure project by the State Government. Community infrastructure is defined by the plan as *public amenities and public services but does not include water and sewerage services*. A range of community infrastructure types are elsewhere identified in the plan as Active Recreation; Car Parking; Community Facilities; Drainage; Fire Control Centre; Passive Recreation; and Roads/Traffic Management. These are generally not of the type or scale provided by the State Government.

This Crown DA would have been subject to the operation of the Department's Circular D6 – Crown Development Applications and Conditions of Consent which amongst other things established the policy on Crown DAs and development contributions and the underlying philosophy of essential community services and exemption from payment of contributions, including for health services development.

Circular D6 no longer remains in force, having been repealed by the Minister for Planning in 2020. Consideration of replacement of Circular D6 has included the work leading to the release of the final report on the Review of Infrastructure Contributions in NSW by the NSW Productivity Commission. The *Environmental Planning and Assessment (Infrastructure Contributions) Bill 2021* has also since been released.

On 28 October 2021, DPE further released the suite of documents related to the exhibition of the draft *Environmental Planning and Assessment Amendment (Infrastructure Contributions) Regulation 2021*. Clause 25J of the draft Regulation states as follows (with emphasis added in **bolded** text):

> ***25J Development and land in relation to which local infrastructure conditions and local levy conditions may be imposed***
> ***(1) A local infrastructure condition and local levy condition must not be imposed on a development consent in relation to development for the following purposes***—
> *(a) public housing within the meaning of the Housing Act 2001,*
> *(b) seniors housing carried out by or on behalf of a social housing provider,*
> *(c) affordable housing carried out by or on behalf of a social housing provider,*
> ***(d) development carried out by or on behalf of the State for the purposes of*** *schools,* ***health services facilities****, emergency services facilities or public administration buildings*

Given this emerging policy stance (to support the findings of Review of Infrastructure Contributions in NSW by the NSW Productivity Commission and the continuation of the same principles of the longstanding operation of Circular D6) it is anticipated that no contributions would continue to apply to development at Shoalhaven Hospital. It is further anticipated that the Regulation as amended would be gazetted prior to the determination of this DA to further reinforce this.

Additionally, for clarity, there are no voluntary planning agreements (VPAs) in place. Furthermore, a VPA is not considered to be necessary or appropriate in this instance given the proposal is for a public benefit in the form of enhanced public health services.

6.0 Engagement

The following sets out a summary of the scope of engagement carried out in the preparation of this EIS and in the development of the design of the Shoalhaven Hospital Redevelopment.

Key stakeholders that engagement has been carried out with is set out below. The Engagement Report prepared by HI is found at **Appendix V** and further sets out details of engagement. Engagement has been carried out consistent with the Department's 'Undertaking Engagement Guidelines for State Significant Projects' (July 2021).

The general communications and engagement objectives have been to:

- Keep stakeholders informed of the project's progress
- Deliver targeted and timely communications and engagement activities
- Engage stakeholders in discussions about design and function
- Provide the community with an opportunity to meet the project team
- Inform the public about the updated designs
- Seek feedback prior to lodgement of the SSD DA.

The communications and engagement approach for the Shoalhaven Hospital Redevelopment project has focused on early, proactive, transparent and regular communications and engagement throughout all stages of the project. This has helped to develop community and stakeholder understanding of the project, ensure opportunities for stakeholder and community input and feedback at relevant times, identify and manage issues early in the design and development process, and to help to achieve better outcomes for the project and community.

The level of public participation applied by HI for this project has been informed by the IAP2 Spectrum and is based on the level of public impact from the project and the corresponding scope for community and stakeholder input to the Shoalhaven Hospital Redevelopment. Based on the IAP2 Spectrum, the key stakeholders identified (internal and external) for engagement is shown in the table over as taken from that report.

Internal Stakeholder Engagement – Hospital Community

At the core of the planning and design process are project user groups and working groups which are established to inform the functional design brief and schematic and detailed design of the project.

Consultation on the Shoalhaven Redevelopment project commenced with the hospital and hospital-related local communities in 2020 with the development of the Clinical Services Plan, this has matured and focussed on specific details over time through the Functional Design Brief, Concept Design, Schematic Design and final Business Case phases. Consultation with this group will continue through the Detailed Design phase.

Meetings were led by the Shoalhaven Hospital Redevelopment Lead Design team and attended by hospital and ISLHD staff. When relevant they also include community representation.

Inform	Consult	Involve	Collaborate
• NSW Treasury / Finance • State Member for South Coast • State Member for Kiama • Federal Member for Gilmour • Local and metro media	• Local residents and community members • Patients • LHD staff not directly involved in project user groups • ISLHD Board • Shoalhaven Business Chamber • Shoalhaven Professional Business Association • Regional Development Australia, Far South Coast • Milton Ulladulla Business Chamber • Berry Chamber of Commerce • Sussex Inlet District Chamber of Commerce • Shoalhaven Historical Society • Callala Bay Community Association • Shoalhaven Neighbourhood Services • Vincentia Matters • Bay and Basin Community Resources • South Coast Aboriginal Medical Services • Illaroo Aboriginal Corporation • Waminda Aboriginal Women's Corporation • Ulladulla Local Aboriginal Land Council • Nowra Local Aboriginal Land Council • Cullunghutti Aboriginal Child and Family Centre • Children of the Bomaderry Aboriginal Children's Home Incorporation • Oolong Aboriginal House • Nowra Shoalhaven Hospital Auxiliary • Green Point Hospital Auxiliary • David Berry Hospital Auxiliary • Shoalhaven Women's Health Centre	• Local Council • NSW Ministry of Health • Transport for NSW • NSW Ambulance • Roads and Maritime Services • NSW Water • NSW Police • NSW Communities and Justice • NSW Office of Environment and Heritage • NSW Department of Planning, Industry and Environment	• Redevelopment Consumer Committee • Aboriginal Health Unit • Project User Groups • ISLHD Heads of Departments • ISLHD Nurse Managers • ISHLD Allied Health Managers

External Stakeholder Engagement - Local Community / General Public

The general methods of broader community engagement have involved:

- Media Release to announce the redevelopment and Master Plan.
- Establishment of the dedicated Shoalhaven Hospital Redevelopment Webpage and links to engage.
    - https://www.shoalhavenredevelopment.health.nsw.gov.au/
    - https://www.shoalhavenredevelopment.health.nsw.gov.au/faqs
- Design Jam Workshop with the Aboriginal community.
- Direct mail out to identified stakeholders to provide project updates and invitation to a briefing session or personal briefing.
- Letterbox drop to immediate neighbours to provide project updates and invitation to a briefing session or personal briefing.
- Media release regarding upcoming engagement sessions.
- Advertisement in each of the South Coast Register and the Nowra News on pop-up and information sessions.
- Information Sessions to present the updated plans and seek feedback prior to lodgement at:
    - Stockland Nowra
    - Berry x 2 locations / occasions

- Ulladulla Shopping Centre
- Vincentia Shopping Centre
- Bunnings Nowra
- David Berry Hospital

Aboriginal cultural heritage engagement

A project-specific Aboriginal Advisory Committee has been established. Consultation has involved face-to-face meetings (when permissible) with local Aboriginal groups, such as the Ancient Spirit Tree People.

A Walk on Country and Design Jam was undertaken on 1 December 2021, facilitated by the indigenous consultancy group, Yerrabingin. This included members of the local Aboriginal community Aboriginal staff of the hospital / ISLHD, the hospital's Executive, and the project team.

Through design jams and ongoing input, a number of key themes and objectives have been established:

- The importance of the Shoalhaven River as a meeting place and food source.
- The existing Blackbutt tree has informed the design to create it as a focal point for the broader open space. The tree is symbolic of a meeting place and wisdom.
- Views to Cullunghutti and the surrounding landscape.
- Providing access to the outdoors and Country through well designed external spaces which provide users opportunities to connect to views across the landscape, see the sky and take in the elements within the care and confines of the Acute Services Building.
- Ceremonial space which provides welcoming area catering for cultural and social occasions.
- The landscape design should aid creating a more welcoming and less institutionalised feel, encouraging engagement with the hospital and its services.
- Use of locally indigenous and bush tucker medicinal planting with educational signage.

Further to the face-to-face and Design Jam engagement with the Aboriginal community, there has also been further specific and detailed engagement carried out in the preparation of the development's Aboriginal Cultural Heritage Assessment Report (ACHAR). This engagement is consistent with the requirements of *Aboriginal cultural heritage consultation requirements for proponents 2010*.

This included:

<u>Stage 1 - Notification of project proposal and registration of interest</u>

- Placement of advertisement in local newspaper - An advertisement was placed in the Shoalhaven Nowra News on 16 July 2021 by Eco Logical, inviting interested Aboriginal stakeholders to register to be consulted in relation to the proposed works.
- Written request for information about Aboriginal organisations - Eco Logical on behalf of the proponent undertook a registration process for Aboriginal people with knowledge of the area and wrote to the following organisations on 24 June 2021, in order to identify Aboriginal people who may hold cultural knowledge relevant to determining the significance of Aboriginal objects:
  - Heritage NSW
  - Nowra Local Aboriginal Land Council
  - The Registrar, Aboriginal Land Rights Act 1983
  - The National Native Title Tribunal
  - Native Title Services Corporation Limited (NTS Corp Limited)
  - Shoalhaven City Council
  - South East Local Land Services.
- Letters to Aboriginal organisations - Eco Logical wrote to the Aboriginal organisations identified through the above process on 8 July 2021 inviting them to register an interest in

the project. The registration closing date was set as 30 July 2021. Due to limited responses to the original invitation, a follow up email was sent to Aboriginal organisations on 5 August 2021, extending the registration closing date to 12 August 2021.

- Respondents / registrants became the Registered Aboriginal Parties (RAPs) for the project. The Project's RAPS are identified in the assessment version of the ACHAR.

Stages 2 and 3 - Presentation of information about the proposed project and gathering information about cultural significance

- Project information and methodology - Following the registration of Aboriginal parties, Eco Logical presented the proposed project information and archaeological survey results. This information was sent to the RAPs for the project on 9 February 2022 with a closing date for review set for 9 March 2022. Responses to the draft ACHAR methodology were received as set out in the assessment version of the ACHAR.
- Archaeological Survey - An archaeological field survey was undertaken by Eco Logical Archaeologist Charlotte Bradshaw and Nowra LALC heritage officer Trudy Trindall on 17 October 2021. The full Archaeological Assessment outlining the findings and results of the archaeological survey are included in Appendix C of the ACHAR.

Stage 4 - Review of draft cultural heritage report

A copy of the draft ACHAR was provided to Aboriginal stakeholders on 29 March 2022 for a 28-day review and comment period. Commentary was received from the RAPs which was incorporated into a refined ACHAR ahead of its finalisation - see the ACHAR at **Appendix M** for additional details.

The result of that consultation process was agreement from the RAPs that the area has been heavily disturbed, and there are doubts that there is any archaeological potential.

Shoalhaven City Council

Engagement with Council has been ongoing and longstanding in relation to this project, including regular monthly meetings between Council and HI. Council's general position is one of support for the redevelopment as seen in various strategic planning documents, including the recent LSPS. Reinforcing this position is Council's resolution of 4 August 2020, which states as follows:

> *Reaffirm its previous in-principle support for the establishment and staged development of a master planned medical precinct centred on the current Shoalhaven District Memorial Hospital site and adjacent land, including, where required, the further acquisition and development of Nowra Park.*

Ahead of lodgement a planning-related meeting was held with Council officers on 26 May 2022 to discuss various matters. In general, the meeting addressed the proposed design and its various likely impacts to be addressed by the EIS and the supporting studies. This included overshadowing of the adjacent public and private realms; vegetation and tree and canopy loss; traffic and parking impacts; and the temporary helipad relocation.

This meeting was also preceded by similar civil design and infrastructure and traffic and parking briefings held on 23 May 2022 and 25 May 2022, respectively. Council has also been part of a number of Transport Working Group meetings as set out below.

TfNSW

TfNSW (with Council) have been part of two Transport Working Group (TWG) meetings. Meeting 1 was held on 18 May 2021 with Meeting 2 held on 18 May 2022.

Meeting 1 – 18 May 2021

The key discussion points related to:

- Introduction to the scope of the proposed development and its local and regional access context.

- Existing development, vehicular access points into the campus and car parking supply at the campus.
- Traffic and transport issues associated with hospitals generally, the Shoalhaven Hospital and the locality generally.
- The relationship of the development to the Nowra Bridge project.
- Anticipated SSD DA issues and matters for assessment.
- Ongoing meeting structure and meeting frequency.

Meeting 2 – 18 May 2022

The key discussion points related to:

- Update on the scope and status of the proposed development and its local and regional transport context.
- Discussion from Council and TfNSW on key aspects included in their respective SEARs responses to DPE.
- Existing parking supply and provision of the multi-deck car park, however with parking fees and resultant 'parking sprawl' into streets around the hospital.
- Better integration of the development into a sustainable, place-making outcome with a move away from car dependency with more active transport choices.
- TfNSW working on improving public transport access to the hospital and generally within and around Nowra.

A meeting was also held on 28 October 2021 with representatives from HI, TTW and those from TfNSW responsible for the '16 Cities' future service planning. The key points of discussion included advice around potential bus interchanging at Stewart Place, potential 'On Demand' bus or shuttle services in the area, and extension of servicing to earlier in the morning (e.g. 6am) and later in the evening (e.g. 7pm). Feedback included that the existing bus route loop around the hospital creates service challenges, and that a turnaround provision (e.g. at the new entry) could be beneficial. Future 'trunk' routes would likely be via the hospital as a major demand generator.

Shoalhaven Water

Four (4) meetings have been convened with Shoalhaven Water to date (from early 2022 to mid-2022). These have principally addressed the need to relocate an existing active water main and its easement in order avoid conflict with the development site and new building's footprint. The preferred option will be to relocate the active water main to avoid other existing easements as well as limit or prevent tree removal along the perimeter of Nowra Park. An existing but redundant and unrelated water main within Nowra Park was also discussed.

Shoalhaven Water was generally supportive in-principle of further consideration of relocation options for the active water main, subject to the formal application process. Shoalhaven Water's preferred option is to avoid relocation within the Shoalhaven Street road reservation. This however remains HI's preferred option, as per this SSD DA. The redundant water main is able to be left on place or removed. This is to be further determined with Shoalhaven Water as part of the earthworks scope of this application.

A meeting was also held with Bonacci, Shoalhaven City Council and Shoalhaven Water on the 23 May 2022. The meeting provided a briefing on civil design and infrastructure matters and discussed the project approach to flooding; peak stormwater flows (and how provision of on-site detention limited post-development flows to less than pre-development flows); water quality and measures being implemented to ensure that Council water quality targets were being met; and overland flow.

Jemena

A single meeting has been convened with Jemena to date (in late 2021). This addressed the proposed gas supply and servicing at the site and any necessary connection requirement of the authority. Diversion of Jemena's gas main is likely to be required. Application to Jemena has been

completed for a new connection point within Shoalhaven Street (Connection Application #000376316). Jemena have provided an offer to provide a new path valve for connection (offer no 0020029406) which has been accepted by HI.

Further telephone and emailed consultation has also occurred with Jemena's Lands Manager with respect to the location and risk associated with the Eastern Gas Pipeline. This is in response to SEAR 16 on whether the development is adjacent to, or on, land in a pipeline corridor, and whether a hazard analysis may be required.

Jemena's Land Manager advised on 19 May 2022 that Jemena's Eastern Gas Pipeline is well clear of the existing hospital footprint - over 2.5km to the west of the hospital. Given this separation, there will not be a requirement for a safety management study. This is further addressed in Section 7.10.1 of this EIS.

Endeavour Energy

Based on Arup's Electrical and ICT Utility Services Report as part of the Infrastructure Management Plan, an application for connection has been submitted to Endeavour Energy and a preliminary supply offer has been received in the form of "Model Standing Offer for a Standard Connection Service" allowing the augmentation of their network across the site to be designed.

Based on the desktop assessment by Endeavour Energy, the existing 11kV Overhead network along eastern side of Shoalhaven Street is available for proposed High Voltage (HV) connection point.

A Level 3 Accredited Service Provider is to be appointed to develop an electrical design to Endeavour Energy in the form of a Proposed Method of Supply with the most efficient solution to meet site power demand. The design will be fully compliant with Endeavour Energy's standards and the terms and conditions of the Model standing offer for a standard connection service.

Communications agencies

Preliminary enquiries are underway with NBN, Optus and Telstra in relation to their assets adjacent to the existing site and to notify of the proposed connections.

State Design Review Panel (SDRP) process

The project team has met with the State Design Review Panel on five (5) occasions in the preparation of the architectural and landscape plans for this DA / EIS. A summary of the topics discussed, and resolved through the evolution of the design, is set out below with specific details of each meeting and the design response set out in each of the Architectural Design Statement (see **Appendix O**).

SDRP Meeting No.1 – 5 May 2021

This meeting addressed:

- Master Plan
- Response to Country and landscape
- Architecture
- Design integrity

SDRP Meeting No.2 – 14 July 2021

This meeting addressed:

- Master Plan and landscape
- Connecting with Country
- Architecture
- Sustainability

SDRP Meeting No.3 – 3 November 2021

This meeting addressed:

- Connecting with Country

- Master Plan and landscape
- Architecture
- Sustainability

SDRP Meeting No.4 – 9 March 2022
This meeting addressed:

- Health Infrastructure Recurring Issues
- Connecting with Country
- Master Plan and landscape
- Architecture
- Sustainability and Climate Change

Relevantly, at this stage the GANSW indicated that a further meeting pre-lodgement would not be necessitated. GANSW will review the proposal as it moves through the planning system.

Notwithstanding, a fifth (and informal) briefing was held on 26 May 2022 where the following matters were discussed:

- Updates and refinements to the design to address previous meeting notes and any outstanding matters.
- Massing, and approach to a Hospital in the Landscape and Connection to Earth, Connection to Sky.
- Materials, finishes, and colours.
- Architectural expression of the building
- Internal amenity
- Landscape
- Community involvement in the design process

The SDRP was generally supportive of the directions taken with the design and its refinement since the initial review commenced. The progress from SRDP Meeting No.4 was noted with the GANSW indicating that a stronger contextual response and potential improvement to the hospital's internal amenity resulted.

For detailed notes and response to matters raised in the SDRP please see the Conrad Gargett Architectural Design Statement at **Appendix O**.

Summary
The following provides a summary of all external agency consultation or engagement undertaken.

SDRP

- SDRP 1 05/05/2021
- SDRP 2 14/07/2021
- SDRP 3 03/11/2021
- SDRP 4 09/03/2022
- SDRP 5 (informal meeting) 26/05/2022

TfNSW

- TWG 1 18/05/2021
- '16 Cities' future service planning 21/10/2021
- TWG 2 18/05/2022

Jemena

- Via application to relocate gas main running through Nowra Park during 2021-2022
- Eastern Gas Pipeline consultation 17-19/5/2022

Shoalhaven Water

- Meeting 1 08/03/2022
- Meeting 2 29/03/2022
- Meeting 3 03/05/2022
- Meeting 4 17/05/2022

Shoalhaven Council

- Monthly meeting with council
- Council briefing session: Civil design and infrastructure briefing 23/05/2022
- Council briefing session: Traffic and Parking briefing 25/05/2022
- Council briefing session: General design update & Town Planning briefing 26/05/2022

Engagement still to be carried out or to be continued

Further engagement is still proposed with at least the following:

- Shoalhaven City Council
- TfNSW
- Shoalhaven Water
- Endeavour Energy
- Hospital community and user groups, including the Aboriginal community

7.0 Assessment of Impacts

7.1 Contamination, HAZMAT and Geotechnical Matters

7.1.1 Site Contamination

Data Gap Investigation
As set out in Section 2.3.4 of this EIS, Cardno has undertaken a PSI, an ESA, and DGI in relation to the development site consistent with the requirements of the former SEPP 55 – Remediation of Land (now Chapter 4 of *State Environmental Planning Policy (Resilience and Hazards) 2021)* – see **Appendix G**.

The purpose of the DGI was to bring the site investigations and knowledge up to the level of a Detailed Site Investigation for the entire site and is a follow-on to the earlier ESA, which was completed to a DSI level for the then site boundary. No additional contamination was identified by Cardno as part of that assessment and previously identified contamination at BH01 in the ESA has been successfully delineated.

Based on the findings of the investigation and the previous ESA, with the exception of the area centred on BH01 between sampling locations BH01E1, BH01S1, BH01W1 and BH01N1, the site is considered suitable for the intended land use as a hospital. The unsuitable area can be made suitable following management of the identified contamination through the implementation of a Remediation Action Plan (RAP) for the removal of an anticipated 2-4m^3 volume of material, along with other management and mitigation measures.

The location of BH01 between sampling locations BH01E1, BH01S1, BH01W1 and BH01N1 is on the existing hospital site as shown in **Figure 71**.

Remediation Action Plan
A Remediation Action Plan (RAP) (included at **Appendix G**) was also prepared by Cardno which indicates the works will be Category 2 Remediation Works and that DA consent will not be required. Accordingly, the remediation works are excluded from this DA.

The purpose of the RAP is to identify and outline methodologies to appropriately manage the identified impacts in the vicinity of borehole BH01 to enable redevelopment of the site. The objective of this RAP is to set remediation objectives and document the process to remediate the site.

Under Cardno's current understanding of the site, the extent of material requiring management has been delineated to an approximately 2m x 2m area within the carpark area delineated by BH01E1, BH01S1, BH01W1 and BH01N1. Based on measurements the total volume requiring management is estimated, to be 2m^3 in-situ with for potential to bulk during removal up to approximately 4m^3.

The purpose of the proposed remediation activities is to eliminate any potential risk of exposure to impacted soils within the identified site boundary to current site users and the intended hospital land use. The remediation objectives are:

- To ensure the identified contaminated material is managed in accordance with best and most sustainable practices to reduce health risk to site users to an acceptable level; and,
- Following management, to demonstrate via validation sampling, any potential health risk to site users has been reduced to an acceptable level.

Of the remediation options available, Cardno has recommended Option 4, being excavation and off-site disposal of impacted soil. This option is considered the most suitable in reducing contamination risks to an acceptable level as well as working within site constraints (short time frames, limited usable areas for treatment, etc), being cost effective (cheapest approach) and managing potential sensitivities (low appetite for ongoing management or cost of treatment to retain soils) associated with the intended redevelopment.

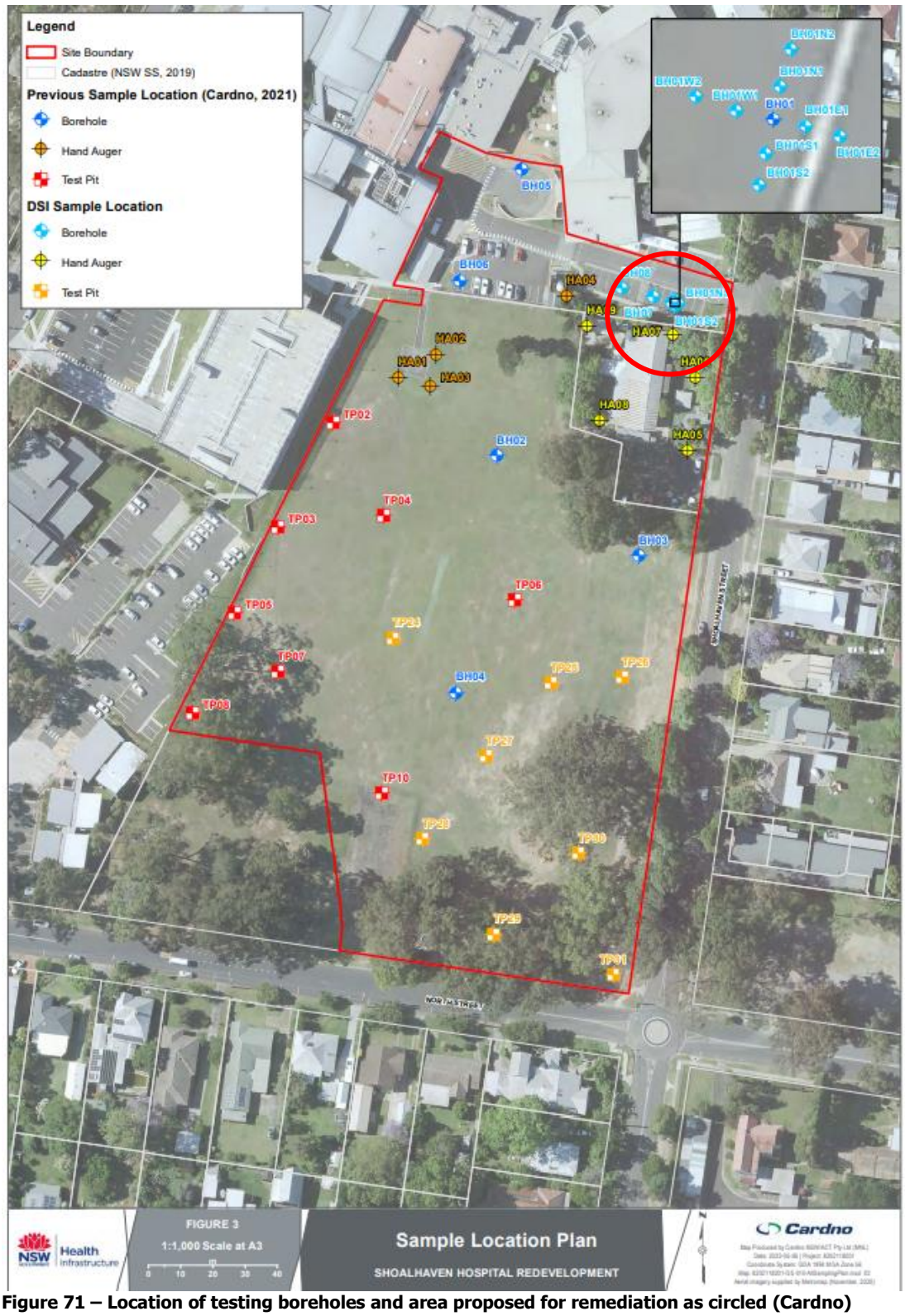


Figure 71 – Location of testing boreholes and area proposed for remediation as circled (Cardno)

The broad remediation approach involves:

1. Remediation contractor selection;
2. Impacted soil excavation and removal to an appropriately licenced premises;
3. Validation of remedial excavations and waste classification following the removal of contaminated materials;
4. Validation of imported soils (if any).

Subject to the proposed methodology and the development of a detailed Remediation Environmental and Waste Management Plan, Cardno is of the opinion that the site can be made suitable for the proposed development. This approach was determined the most appropriate to make the site suitable for workers during construction and for the future land use which includes hospital facilities and ancillary landscaped areas.

Mitigation Measures
As the remediation works do not form part of this DA, no further mitigation measures are considered necessary. Notwithstanding, an unexpected finds protocol during works would be reasonable to apply.

7.1.2 HAZMAT
As discussed in Section 4.9.1 of this EIS, the following hazardous materials were identified within the areas of proposed demolition works of the development site.

Asbestos Containing Materials (ACM)
Asbestos containing materials were identified within the following locations:

- Shoalhaven Community Pre-School Storage Shed
    - North, east and south aspect, eaves – fibre cement sheeting.
    - Eastern half, north, east and south external wall cladding – fibre cement sheeting.
    - Toilet window – mastic sealant.

  All asbestos discovered was non-friable in condition.

Lead in paint
Lead containing paint was identified on external, and some internal, locations within both of the Shoalhaven Community Pre-School's Storage Shed and the Main Building. The condition of the paint was fair to good in those locations.

Lead in accumulated dust
Settled dust containing lead was observed in a poor condition within the ceiling cavity of the Main Building of the Shoalhaven Community Pre-School.

Polychlorinated Biphenyls (PCBs)
Fluorescent light fittings potentially housing PCB containing capacitors were not identified within any location of buildings to be demolished. Within the Shoalhaven Community Pre-School the age and appearance of the light fittings were such that they are not suspected to contain PCB containing capacitors.

Synthetic Mineral Fibre (SMF)
Assumed SMF insulation batts were identified throughout the ceiling cavity of the Main Building within the Shoalhaven Community Pre-School.

SMF materials have been identified in various forms within the Block B Level 2 corridor that would be disturbed as part of the proposed link bridge works.

Mitigation Measures - Recommendations for removal and demolition
Works recommended to address these findings include:

Asbestos
Non-friable ACM has been identified in various forms throughout the site. Prior to the commencement of demolition works, it is recommended that the following work is undertaken:

- A Class A or B licensed asbestos removalist shall be engaged to remove all asbestos containing materials as identified in the Hazardous Materials Register (Appendix A). Removal and disposal of non-friable asbestos materials shall be undertaken in accordance with the

Work Health and Safety Act (2011), Work Health and Safety Regulation (2017) and SWNSW 2019a.

- While not mandatory during the removal of non-friable ACM, it is considered best practice and recommended that asbestos air monitoring is undertaken during any non-friable asbestos removal works.
- Following removal works, a clearance inspection shall be completed by a competent person or licensed asbestos assessor to ensure that the asbestos materials identified at the site have been removed to a satisfactory standard. Following the completion of the clearance inspection, a clearance certificate shall be issued by the competent person or LAA to confirm that the ACM has been successfully removed and that the site is suitable for planned demolition works to commence.

Lead containing dust

Elevated levels of lead in dust above the adopted site criteria were identified at the site. A suitably experienced hazardous materials removal contractor should be engaged to remove the lead containing dust in accordance with the AS4361.2-2017 prior to the commencement of any demolition or refurbishment works.

Lead-based paint

The lead based paints, as identified in JBS&G Hazardous Materials Register (Appendix A), ranged in condition from good to fair and should be managed in accordance with the AS4361.2-2017. Where peeling or deteriorated they should be removed under controlled conditions by an experienced contractor prior to demolition.

Stable lead based paints adhered to building fabric can be disposed as general solid waste in accordance with NSW EPA 2014 provided care is taken to minimise any potential for paint flakes to be dispersed onto ground surfaces and building and demolition waste is not proposed to be recycled.

Synthetic Mineral Fibre (SMF)

The synthetic mineral fibres encountered during the inspection by JBS&G were generally contained and deemed to be low risk. These SMF materials can be removed with the building and demolition waste with care taken not to generate fibres. Appropriate PPE is recommended including the use of P2 respirator as minimum and appropriate removal methodology as outlined in [NOHSC: 1004(1990)] and [NOHSC: 2006(1990)].

Inaccessible Areas

Areas inaccessible during the hazardous material assessment should be inspected by a suitably qualified competent person prior to any works commencing. Suspected ACM should be sampled by a suitably qualified competent person prior to any works commencing.

Unexpected Finds

Any materials deemed to be consistent with those detailed in the Hazardous Materials Register that have not been previously identified should be assumed to have the same content and be treated accordingly.

All demolition works are to be undertaken in accordance with a site Unexpected Find Protocol, whereby, in the event that an unexpected hazardous material is encountered during demolition works, works should cease and an assessment of the material completed by an appropriately qualified and experienced hazardous materials surveyor and/or Licensed Asbestos Assessor.

Should any additional suspected hazardous materials be observed during or prior to demolition works, works should cease until a suitably qualified occupational hygienist can assess the suspected hazardous material and provide appropriate recommendations for management and/or removal.

7.1.3 Geotechnical Matters

A Geotechnical Interpretive Report in relation to the proposed development was carried out by Cardno - see **Appendix E**.

With respect to likely sub-surface impacts that may arise as a result of works, the investigation provides commentary on salinity, groundwater and Acid Sulfate Soils.

The site does not contain Acid Sulfate Soils based on the eSpade mapping portal and Cardno's investigations. Council's Planning Certificates conservatively do not rule out the possibility for Acid Sulfate Soils at the site given it is within the broader coastal zone. Mapping under the Shoalhaven LEP 2014 indicates the site is likely to contain Class 5 soils (being the lowest risk category). Broadly, no Acid Sulfate Soils Management Plan would be warranted given the site is subject to the lowest risk Class 5 soils, and despite being within 500m of Class 1 soils to the west, these are located at the Shoalhaven River level at least some 10-12m below the ground level of the development. The earthworks proposed are unlikely to be deeper than RL 16.55 and are therefore significantly above the key threshold level of RL 5.

Groundwater was not encountered during Cardno's investigations, noting however that groundwater levels are likely to fluctuate with variations in climatic and site conditions. Seepage may also occur along the soil/rock interface during and after periods of wet weather.

With reference to the eSpade mapping portal the site is not located in an area where there is potential for soil and groundwater salinity to occur.

Mitigation Measures

Based on the general lack of geotechnical matters likely to affect the environment during works, no additional mitigation measures arise from a geotechnical perspective. See further below with respect sediment and erosion control during civil engineering works.

7.2 Biodiversity, Coastal Area, and Arboricultural Matters

7.2.1 Biodiversity

As noted in Section 2.3.6 of this EIS, the vegetation within the development site is predominantly planted native and exotic species which may however accommodate occasional, marginal foraging resources for mobile, wide ranging bird and bat species, including some species listed as threatened under the *Biodiversity Conservation Act 2016* and Commonwealth EPBC Act. No breeding habitat or other potentially important habitat would be affected by the development.

BDAR Assessment

As required for SSD under legislation, unless waived, a BDAR has been prepared by Eco Logical to meet the requirements of the Biodiversity Assessment Method (BAM) 2020 under the NSW *Biodiversity Conservation Act 2016* (BC Act) in relation to the Shoalhaven Hospital Redevelopment – see **Appendix I**. As the vegetation within the development footprint was identified as planted native and exotic species, the BDAR was prepared under the streamlined assessment module for planted native vegetation in accordance with Appendix D of BAM 2020. **Figure 72** provides a map of the vegetation identified within the development site.

A review of the relevant considerations required to be made with respect to flora and fauna has drawn the following responses, justification or conclusions by Eco Logical:

- The planted native vegetation that occurs within the development site does not contain a mosaic of planted and remnant native vegetation which can be reasonably assigned to a PCT known to occur in the same IBRA subregion as the proposed trees to be removed are clearly planted and not associated with any PCT.
- The planted native vegetation forms part of the landscaping for the existing hospital and pre-school sites, as well as the former Nowra Park and adjoining streets. None of the planting occurs for the purpose of environmental regeneration, rehabilitation or restoration of threatened plant species, or the like.

- The vegetation has been planted for functional, aesthetic, horticultural or plantation forestry purposes.
- No threatened flora or fauna species, listed under the Biodiversity Conservation Act or EPBC Act, were recorded during the survey period.
- No threatened flora species are likely to be present due to the highly modified nature of the site and the lack of detection of any threatened species planted for landscaping.
- Native trees within the development site may provide occasional foraging resources for wide-ranging threatened species, including *Lophoictinia isura* (Square-tailed Kite), *Glossopsitta pusilla* (Little Lorikeet), *Callocephalon fimbriatum* (Gang-gang Cockatoo), *Pteropus poliocephalus* (Grey-headed Flying-fox) and several threatened microchiropteran bats.
- A small proportion of these foraging resources, including planted *Eucalyptus saligna*, *Angophora costata*, *Corymbia maculata*, *Lophostemon confertus* and *Syzygium australe*, occur within the development footprint and would be removed.
- The foraging resources to be removed represent marginal habitat for threatened fauna species.
- No threatened fauna species are likely to breed within the development site due to the lack of suitable habitat.
- The proposal is located in areas with low or no biodiversity values, i.e. built areas, exotic grassland and vegetation planted for landscaping. Higher value habitats including all remnant native trees have been appropriately avoided. Peripheral parts of the development such as access roads and footpaths have been designed to avoid removal of native trees.
- The proposal does not affect areas, habitats or entities with high biodiversity values.
- The southern section of the development site contains a few trees with low quality hollows, which could be used for breeding by common fauna species. No hollow-bearing trees will be removed. The development site does not contain breeding habitat features such as caves, ledges or rocky overhangs.
- The objective of the proposal is to extend and upgrade the existing hospital complex, therefore minimising the number and type of facilities is not a feasible design principle. The proposal's clearing footprint makes use of areas which are currently cleared, contain buildings or planted vegetation.
- The proposal would only remove planted vegetation and has been designed to retain larger native trees wherever possible. The proposal includes landscaping which would include trees similar to those proposed for removal.

Biodiversity Impacts

Based on the above, the proposed development has been located and designed to avoid or minimise biodiversity impacts. Eco Logical has made the following statements with respect to the questions posed under BAM Section 7.2.

- The surface works have been designed to avoid prescribed biodiversity impacts wherever possible. Where this is not possible, the removal of small amounts of planted native and non-native vegetation and buildings are not considered to be potentially important habitat for any threatened species. Furthermore, similar habitat features will be retained within the development site and are abundant within the assessment area.
- The development site does not include geological features of significance or groundwater-dependent plant communities.
- The proposed development requires the removal of planted vegetation which provides, at most, minor amounts of stepping-stone type habitat connectivity through the urban landscape of the Nowra Hospital and Nowra Park. None of the affected connectivity is considered important to local biodiversity. Most of the connectivity within the development site will be retained, and proposed landscaping will reinstate much of the connectivity removed.
- The proposed development does not include the construction of structures which could regularly interact with threatened entities (e.g. wind turbines).
- The development site does not contain water bodies and would not result in prescribed impacts to hydrological processes. All runoff would be captured by the existing stormwater drainage system.

- The development site does not have prescribed impacts that require engineering solutions.

With respect to direct impact, Eco Logical concludes that the proposed development would directly affect approximately 0.3 ha of planted native and exotic vegetation which does not conform to a PCT or TEC. A map displaying the direct impacts to planted vegetation is shown in **Figure 73**. Species credits are not required to offset the proposed impacts in accordance with Appendix D.2 of BAM 2020. The proposed development would not directly affect any threatened fauna species or breeding habitat for threatened fauna species. The planted vegetation may provide occasional foraging habitat for wide ranging species such as the Grey-headed Flying-fox, Square-tailed Kite, Little Lorikeet and microchiropteran bats.

The indirect impacts of the development include:

- Minor potential for inadvertent damage to native trees immediately adjacent to the development footprint during construction.
- Minor impacts from illegal dumping by construction crews, which may affect local fauna which visit site intermittently and which may spread due wind.
- Minor potential for run off during construction phase which may affect adjacent trees.

Based on the assessment undertaken for the BDAR, Eco Logical concludes that the proposed development does not have any Serious and Irreversible Impacts (SAII), and that there are no impacts that require offsets or species credits to offset the proposed impacts. Planted native vegetation will be reinstated as part of proposed landscaping.

The BDAR has assessed prescribed biodiversity impacts, which are considered minor. Eco Logical does not recommend offsets to these residual unavoidable impacts.

The development footprint contains planted native vegetation, which may provide occasional foraging resources for mobile, wide ranging bird and bat species, including some listed as threatened under the BC Act and EPBC Act. Planted native vegetation within the development footprint represents marginal foraging habitat for these species. No breeding habitat or other important habitat would be affected. No threatened species were recorded within the development site.

In accordance with Appendix D of BAM 2020, no offsets are required for impacts to planted vegetation or the associated marginal foraging habitat for threatened fauna.

Mitigation measures relating to the displacement of resident fauna and indirect impacts on native vegetation and are provided in Section 7.3 and 7.4 or the BDAR, and as summarised below.

Mitigation measures

To address the few impacts arising, Eco Logical recommends the following mitigation measures to direct, indirect, or prescribed impacts:

- To avoid critical life cycle events such as breeding or nursing a pre-clearance survey should be carried out to ensure fauna are not present (breeding) prior to clearing.
- To ensure clearing works minimise the likelihood of injuring resident fauna, the pre-clearance survey of trees to be removed and the identification/location of active nests shall be undertaken by a suitably qualified ecologist.
- To prevent risk of injury or death of any nesting fauna within the development footprint, the pre-clearance survey shall be undertaken by a suitably qualified ecologist in order to identify any active nests in non-native vegetation.
- To protect trees to be retained on the development site from any accidental impacts, trees are to be protected with temporary fencing to delineate tree protection zones before and during works.

Figure 72 – Vegetation identified within the development site (Eco Logical)

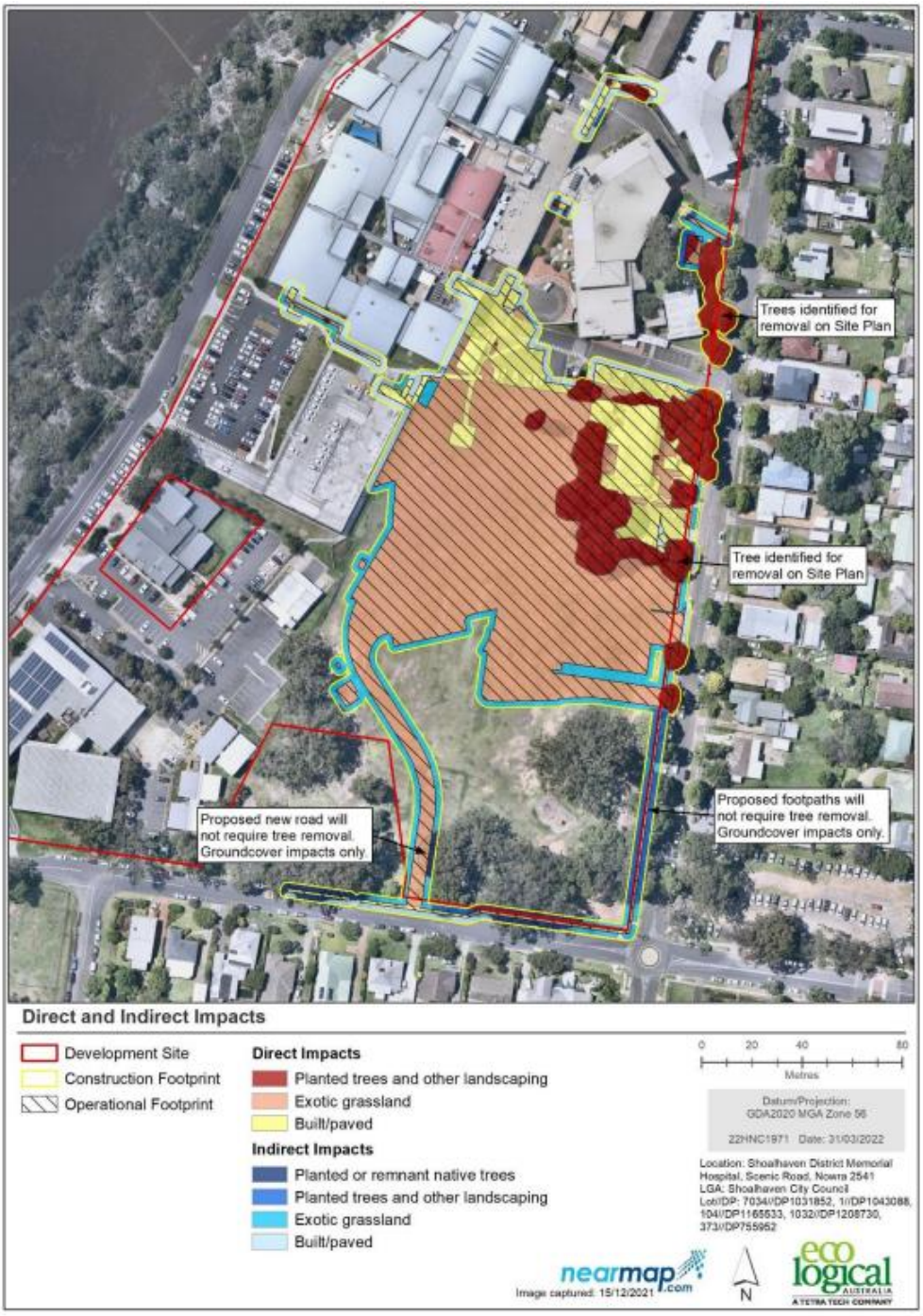


Figure 73 – Direct and Indirect Impacts of the development (Eco Logical)

Matters of National Environmental Significance

The EPBC Act provides a legal framework and regime to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places defined in the Act as Matters of National Environmental Significance (MNES).

Under the EPBC Act, approval is required for actions that have, will have, or are likely to have a significant impact on MNES. The bilateral agreement made under EPBC Act allows NSW to assess development applications on behalf of the Australian Government, removing the need for a separate assessment and reducing duplicative processes. The Biodiversity Offsets Scheme (BOS) has been

endorsed by the Commonwealth Government and enables like-for-like offsetting under the BOS to also offset Commonwealth listed threatened species and communities.

The process includes undertaking an Assessment of Significance for listed threatened species and ecological communities that represent a matter of MNES that will be impacted as a result of the proposed action. The Significant Impact Guidelines 1.1 – Matter of National Environmental Significance' (DoE 2013) provide overarching guidance on determining whether an action is likely to have a significant impact on a MNES.

One (1) MNES was assessed in accordance with the Significant Impact Guidelines 1.1:

- *Pteropus poliocephalus* (Grey-headed Flying-Fox).

The Grey-headed Flying-fox is listed as vulnerable under the EPBC Act. This species was not identified within the development site during surveys for this assessment, however vegetation within the development footprint has the potential to provide seasonal foraging habitat. No roosting habitat is present within the development site. The Grey-headed Flying-fox is known to travel long distances (up to 50 km) on feeding forays. Extensive areas of more suitable foraging habitat occur within the assessment area. The removal of this potential foraging habitat would not lead to the long-term decrease in the size of an important population of Grey-headed Flying-fox.

Following consideration of the administrative guidelines for determining significance under the EPBC Act, it is concluded that the proposal is highly unlikely to have a significant impact on MNES or Commonwealth land.

7.2.2 Coastal Environment Area and the Coastal Use Area

State Environmental Planning Policy (Resilience and Hazards) 2021 – Chapter 2 applies to the development site. The development site sits wholly or partially within each of the coastal environment area and the coastal use area. Assessment and commentary on the relevant provisions under sections 2.10, 2.11, 2.12 and 2.13 is set out below.

Provision	Response
2.10 Development on land within the coastal environment area	
(1) Development consent must not be granted to development on land that is within the coastal environment area unless the consent authority has considered whether the proposed development is likely to cause an adverse impact on the following—	
(a) the integrity and resilience of the biophysical, hydrological (surface and groundwater) and ecological environment,	Based on the lack of impact upon surface or groundwater and the ecological environment as set out above, the development will not have an adverse impact upon these matters.
(b) coastal environmental values and natural coastal processes,	The hospital site is well removed (and elevated) from the Shoalhaven River and any natural coastal process and the inherent coastal environmental values. It is unlikely an adverse impact would arise from the development of the hospital site, Pre-School site and the former Nowra Park.
(c) the water quality of the marine estate (within the meaning of the Marine Estate Management Act 2014), in particular, the cumulative impacts of the proposed development on any of the sensitive coastal lakes identified in Schedule 1,	The hospital site is remote from the mapped marine estate and would not contribute new or adverse cumulative impacts upon sensitive coastal lakes. As noted by Bonacci, the water quality outcomes arising the development will be positive compared to the existing scenario – see Section 7.5.2 below.
(d) marine vegetation, native vegetation and fauna and their habitats, undeveloped headlands and rock platforms,	The development site and proposed development has no impact upon marine vegetation, undeveloped headlands and rock platforms. Its impacts upon planted native vegetation and possible fauna habitats, and fauna are set out above. Mitigation measures apply to minimise or remove adverse

	impacts ahead of construction and during construction.
(e) existing public open space and safe access to and along the foreshore, beach, headland or rock platform for members of the public, including persons with a disability,	The development has no impact upon safe access to and along the foreshore, beach, headland or rock platform for members of the public, including persons with a disability. The former Nowra Park is no longer formally public open space having been acquired by NSW Health / HAC for the purposes of expanding the hospital. The development is also well removed from existing access to Ben's Walk.
(f) Aboriginal cultural heritage, practices and places,	No Aboriginal sites or items have been mapped at the site. Eco Logical and the Nowra LALC concluded that sections of the study area have been subjected to moderate to high levels of ground disturbance. All sections of the study area were found to have a low archaeological potential. No direct impacts from the project on Aboriginal cultural heritage have been identified.
(g) the use of the surf zone.	The site is remote from any surf zone.
(2) Development consent must not be granted to development on land to which this section applies unless the consent authority is satisfied that—	
(a) the development is designed, sited and will be managed to avoid an adverse impact referred to in subsection (1), or	Where the development may impact matters in subsection (1), the development has been designed, sited, and managed to avoid adverse impacts. This is most relevant to vegetation and biodiversity, water quality measures, and Aboriginal cultural heritage, practices and places, where consultation through the ACHAR process and more broadly the Designing for Country process has garnered positive feedback.
(b) if that impact cannot be reasonably avoided—the development is designed, sited and will be managed to minimise that impact, or	As above.
(c) if that impact cannot be minimised—the development will be managed to mitigate that impact.	As above.
(3) This section does not apply to land within the Foreshores and Waterways Area within the meaning of *Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005*.	The land is not within the Foreshores and Waterways Area within the meaning of *Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005*, being in Nowra. The provision therefore applies.
2.11 Development on land within the coastal use area	
(1) Development consent must not be granted to development on land that is within the coastal use area unless the consent authority—	
(a) has considered whether the proposed development is likely to cause an adverse impact on the following— (i) existing, safe access to and along the foreshore, beach, headland or rock platform for members of the public, including persons with a disability, (ii) overshadowing, wind funnelling and the loss of views from public places to foreshores, (iii) the visual amenity and scenic qualities of the coast, including coastal headlands, (iv) Aboriginal cultural heritage, practices and places, (v) cultural and built environment heritage, and	The development has no impact upon any safe access to and along the foreshore, beach, headland or rock platform for members of the public, including persons with a disability. Overshadowing of the reconfigured former Nowra Park will not occur during summer months. During the winter solstice, the park area is not overshadowed to any significant degree. Very minor shadowing occurs throughout the day to the immediate south of the new ambulance and loading dock accessway. Distant views to the north from the former park will be punctuated by the development. The wind environment to the south of the new Acute Services Building is unaffected by southerly winds and broadly unaffected by the other common north-westerly winds which will tend to by-pass the

	building. The building with generally deflect these winds to the east of the building. See the wind assessment section further below. The hospital is not part of a coastal environment or located on a coastal headland in the common understanding of the phrase. Notwithstanding a visual impact assessment is provided within this section to assist assessment of compliance with this provision. See the results of the assessments undertaken with respect to Aboriginal cultural heritage and cultural and built environment heritage elsewhere in this section of the EIS.
(b) is satisfied that— (i) the development is designed, sited and will be managed to avoid an adverse impact referred to in paragraph (a), or (ii) if that impact cannot be reasonably avoided—the development is designed, sited and will be managed to minimise that impact, or (iii) if that impact cannot be minimised—the development will be managed to mitigate that impact, and	The proposed development has been designed to minimise impacts of overshadowing, wind, view loss and visual impacts, as well as impacts upon Aboriginal and other built cultural heritage. See detailed assessment of visual impacts in sections that follow.
(c) has taken into account the surrounding coastal and built environment, and the bulk, scale and size of the proposed development.	The proposed development's bulk, scale and size is assessed in relation to its context in Section 7.6 of this EIS.
(2) This section does not apply to land within the Foreshores and Waterways Area within the meaning of *Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005*.	The land is not within the Foreshores and Waterways Area within the meaning of *Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005*, being in Nowra. The provision therefore applies.
2.12 Development in coastal zone generally—development not to increase risk of coastal hazards	
Development consent must not be granted to development on land within the coastal zone unless the consent authority is satisfied that the proposed development is not likely to cause increased risk of coastal hazards on that land or other land.	The proposed development is not likely to cause increased risk of coastal hazards on the development site or other land given its elevated position over the Shoalhaven River and the riverine and coastal environment, its urban and developed context in a long-established part of Nowra, and the development's design which seeks to manage natural impacts.
2.13 Development in coastal zone generally—coastal management programs to be considered	
Development consent must not be granted to development on land within the coastal zone unless the consent authority has taken into consideration the relevant provisions of any certified coastal management program that applies to the land.	No coastal management program applies to the site and its immediate environs.

7.2.3 Arboricultural matters

As set out in Section 4.7 of this EIS, there are some 74 trees located within the development site. Of these, 26 trees are proposed to be removed, chiefly as they sit within the footprint of the proposed Acute Services Building (14 trees), or otherwise within the areas subject to civil engineering works (12 trees). The balance is to be retained, protected and incorporated in the site-wide landscaping. The trees proposed for retention, protection and removal are shown on the Tree Protection Plan prepared by Moore Trees - see **Appendix J**.

Figures 74 and 75 below identify and map the impacts upon trees as a result of the development. The impacts are direct in relation to the footprint of the development or associated civil engineering

works. Indirect impacts are able to be managed through appropriate design and management, particularly in relation to maintaining Tree 50, the significant Blackbutt tree at the site.

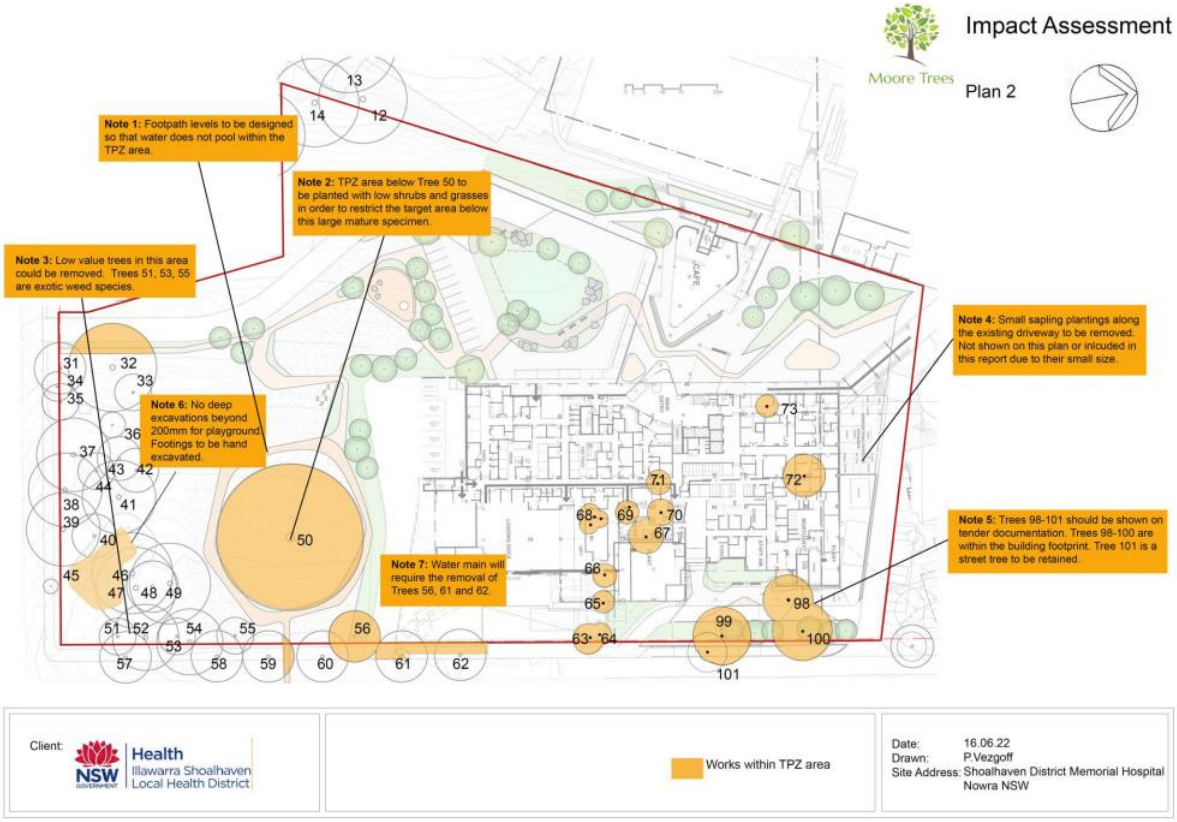


Figure 74 – Impact Assessment plan 1 (Moore Trees)

Figure 75 – Impact Assessment plan 2 (Moore Trees)

Of the trees to be removed, the following tables set out their significance and their characteristics as determined by Moore Trees.

Significance (Scale)	**1 (High)**	**2 (Medium)**	**3 (Low)**
Tree No.	12, 13, 14 30, 32, 33, 35, 36, 37, 38, 39 40, 41, 42, 43, 44, 47 50, 52, 54, 57, 58, 59 60, **61**, **62** 74, 75, 76, 77, 78, 79 80, 81, 82, 83, 84, 85, 86, 87, 88, **89** 101	**56** **65**, **66**, **67**, **68**, **69** **70**, **71** **98**, **99**, **100**	31, 34 45, 46, 48, 49 51, 53, 55 **63**, **64** **72**, **73** **90**, **91**, **92**, **93**, **94**, **95**, **96**, **97**

Tree	**Species**	**Height (m)**	**Spread (m)**	**Live Canopy %**	**Defects**	**SULE**	**Condition**	**Age**	**Comments**
61	Brushbox (Lophostemon confertus)	16	7	95	No visual defects	>40 yrs	Good	Mature	Extensive woody roots along Kerb line
62	Brushbox (Lophostemon confertus)	18	7	95	No visual defects	>40yrs	Good	Mature	Extensive woody roots along Kerb line
89	Evergreen ash (Fraxinus griffithii)	8.5	4.5	100	No visual defects	Removed for more suitable planting	Good	Mature	-
56	Brushbox (Lophostemon confertus)	13	7	95	No visual defects	>40yrs	Good	Mature	-
65	Radiata pine (Pinus radiata)	16	5.5	70	No visual defects	Dead, dying or declining	Poor	Mature	-
66	Sydney red gum (Angophora costata)	9	5.5	95	No visual defects	>40yrs	Good	Mature	-
67	Sydney blue gum (Eucalyptus saligna)	18	10	95	No visual defects	>40yrs	Good	Mature	-
68	Sydney blue gum (Eucalyptus saligna)	17	6	95	No visual defects	>40yrs	Good	Mature	Group of 9
69	Sydney blue gum (Eucalyptus saligna)	17	6	95	No visual defects	>40yrs	Good	Mature	Surrounded by saplings
70	Sydney blue gum (Eucalyptus saligna)	16	5.5	95	No visual defects	>40yrs	Good	Mature	Surrounded by saplings
71	Sydney blue gum (Eucalyptus saligna)	18	6.5	95	No visual defects	>40yrs	Good	Mature	Surrounded by saplings
98	London Plane (Platanus × acerifolia)	17	8	100	No visual defects	Removed for more suitable planting	Good	Mature	Tree located in existing pre-school
99	London Plane (Platanus × acerifolia)	17	8	100	No visual defects	Removed for more suitable planting	Good	Mature	Tree located in existing pre-school

100	London Plane (Platanus × acerifolia)	17	8	100	No visual defects	Removed for more suitable planting	Good	Mature	Tree located in existing pre-school
63	Kaffir plum (Harpephyllum caffrum)	6	5	95	No visual defects	Removed for more suitable planting	Good	Mature	Kaffir
64	Pinus patula	13	5.5	95	No visual defects	May only live for 15-40 yrs	Good	Mature	-
72	Radiata pine (Pinus radiata)	19	5.5	80	Dead wood >50mm	May only live for 5-15 yrs	Fair	Mature	-
73	Radiata pine (Pinus radiata)	18	5	80	Dead wood >50mm	May only live for 5-15 yrs	Fair	Mature	-
90	Jacaranda (Jacaranda mimosifolia)	6.5	3.5	95	No visual defects	Removed for more suitable planting	Good	Mature	Multi-stemmed specimen
91	Evergreen ash (Fraxinus griffithii)	8.5	2.3	90	No visual defects	Removed for more suitable planting	Fair	Mature	-
92	Evergreen ash (Fraxinus griffithii)	5.5	5.8	80	No visual defects	Removed for more suitable planting	Good	Mature	-
93	Japanese maple (Acer palmatum)	4.5	2.5	90	No visual defects	Removed for more suitable planting	Good	Mature	-
94	Gleditsia	5.8	2.5	95	No visual defects	Removed for more suitable planting	Good	Mature	-
95	Japanese maple (Acer palmatum)	4.5	2.5	90	No visual defects	Removed for more suitable planting	Good	Mature	-
96	Port jackson fig (Ficus rubiginosa)	10	5.5	100	No visual defects	Removed for more suitable planting	Good	Mature	Multi stemmed specimen hemi epiphyte on old stump
97	Japanese maple (Acer palmatum)	3	2.5	90	No visual defects	Removed for more suitable planting	Good	Mature	-

As noted, of the 26 trees to be removed, three (3) are nominated as being of high significance, with 11 of medium significance, and 12 of low significance. Trees 61 and 62 are Council trees being located within the Shoalhaven Street road reserve.

The report also sets out which trees are proposed to be removed and of those to be retained, the relevant tree protection measures to be employed during works – see **Figures 76 and 77** below. The retained trees are shown with green circles and specific tree protection measures in blue.

Figure 76 – Retained and protected trees 1 (Moore Trees)

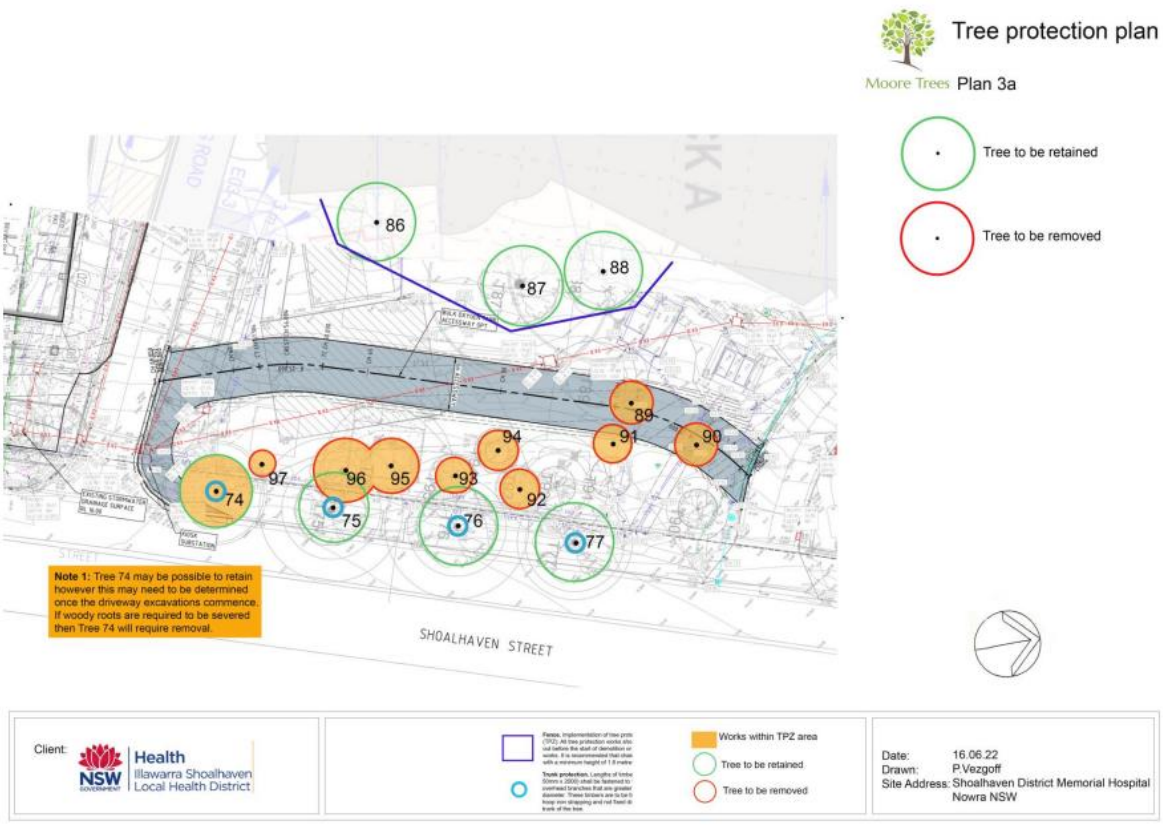


Figure 77 – Retained and protected trees 2 (Moore Trees)

Moore Trees advises that *Based on the plans provided Trees 63-73 and 98-100 are located within the building footprint and as such are required to be removed.*

Other trees impacted by TPZ incursions are Tree 32 that has a 30% incursion due to the new entry road. This tree will tolerate this disturbance however levels requiring excavation should be adjusted so as to keep any excavation as shallow as possible.

Tree 56 is located in an area where the levels will be raised for the entry ramp and as such will increase levels around the base of this tree that will only result in collar rot and long term tree death. Also impacted near this entry area is Tree 61 that shows as having driveway excavations up to the base of this tree. This will not allow this tree to be realistically retained.

Tree 59 has an incursion that will sever woody surface roots of an entry path, however the tree should tolerate this incursion as the Brush box is a hardy species.

A new water main will impact Trees 56, 61 and 62. The deep excavations through the TPZ areas of these trees will not allow these trees to remain viable, and as such they will require removal. Where the main connects to existing pipes this is very close to the canopy of Tree 50, the most significant tree on site. Care will need to be taken with machinery working below this tree (See Recommendations, Section 4.6).

The new footpath proposed along North Street will have minimal impact, however Trees 57 – 60 along Shoalhaven Street will be impacted unless levels can be raised so as not to sever roots on these trees. As shown in Plate 11 there are extensive surface roots from Trees 57-60 that, unless the existing levels can be retained, these trees may have to be considered for removal.

Trees 74-77, 86-97 are located in the proposed bulk oxygen area and will be impacted due to the proposed works that include driveway construction and trenching relating to below grade piping. Works in this area require the removal of Trees 89-97 and possibly Tree 74. Tree 74 may be possible to retain however this may need to be determined once the driveway excavations commence. If woody roots are required to be severed then Tree 74 will require removal (See Note 1 on Impact Plan 2a). It should be noted that Trees 74, 76 and 77 have been categorised as significant to the street scape. Trees 89-97 also require removal in this area, however these trees were assessed as having a low significance.

A small playground area is proposed between Trees 40 and 46. Although no detailed design has been provided generally these small playgrounds do not require deep excavations for equipment however trenches for new lighting and water fountains shall be kept outside of any TPZ area.

Trees retained are proposed to be protected during works by applying standard measures under Australian Standard AS 4970-2009. This includes determining Tree Protection Zones, Structural Root Zones, applying fencing and relevant signage and the like.

It is noted that the landscape design by Site Image proposes a significant canopy tree replacement consistent with HI and NSW Government policy of new canopy plantings.

The planting palette involves new canopy trees, other smaller trees, scrubs, grasses and groundcovers. New and replacement canopy trees include:

- *Casuarina cunnighamiana* - River She-Oak
- *Banksia integrifolia* - Coast Banksia
- *Eucalyptus robusta* - Swamp Mahogany
- *Eucalyptus saligna* - Sydney Blue Gum
- *Eucalyptus sideroxylon* 'Pink' - Pink Flowered Iron Bark
- *Callistemon viminalis* - Bottlebrush
- *Melaleuca stypheloides* - Prickly Paperbark
- *Tristaniopsis laurina* ' Luscious' - Water Gum
- *Melaleuca linariifolia* - Snow in Summer

- *Brachychiton populneus* - Kurrajong Tree
- *Brachychiton acerifolius* - Illawarra flame tree

This on its own will (over time) suitably replace and substantially augment the previous tree canopy lost and the number of trees removed. With some 26 removed trees (many being exotic species) and 65 replacement native canopy trees, this is a replacement ratio of 2.5:1. The native species removed will be replaced with the same or similar species, as well as with further locally endemic species to improve the biodiversity outcomes at the redeveloped campus.

Mitigation Measures

The mitigation measures relevant to tree protection are included at Sections 4 (Recommendations) and 5 (Tree Protection) of the Moore Trees report. Further, the current HI policy of replanting canopy trees at a rate of better than 1:1 shall also apply to the development.

7.3 Bushfire

As noted, the development site and the location of the Acute Services Building is not bushfire prone land. Notwithstanding, the development is a Special Fire Protection Purpose under the *Rural Fires Act 1997.*

Eco Logical has considered and assessed the bushfire risk associated with the development consistent with the requirements of the *Rural Fires Act 1997* and Planning for Bush Fire Protection 2019 – see **Appendix K**. This has included a bushfire hazard assessment as shown on **Figure 78**. This identifies the hospital and the development site to be subject to:

- 'Low Hazard' vegetation only in relation to bushfire risk emanating from the west of Scenic Drive. This is due to the narrow width of this vegetated corridor (less than 32m wide); reduced fuel loads due to the mix of bare cliff faces and large rock boulders with the vegetation; inability for a crown fire to develop due to this mixed terrain and narrow width of vegetated corridor; and due to the width of the Shoalhaven River and other disturbed or managed urban areas in the general vicinity.
- A steep slope directly west of Scenic Drive dropping down to the Shoalhaven River, being a downslope of greater than 0-5 degrees.
- A calculated Asset Protection Zone (APZ) of 47m for the Special Fire Protection Purpose uses at the campus, much of which is accommodated within the Scenic Drive road reservation and existing disturbed and built-up parts of the hospital campus addressing Scenic Drive.
- A calculated BAL rating of 12.5 within a band running parallel with the APZ which only very marginally intersects with the development site in the former Nowra Park, but remains remote from the Acute Services Building's footprint.
- An existing APZ of greater than 100m given the existing disturbed and managed nature of the hospital campus and surrounding areas.

The assessment has further considered compliance with Planning for Bush Fire Protection 2019 in relation to calculated or existing APZs; Landscaping; Construction Standards using the BAL rating system; Access; Water Supply; Electricity and Gas Services; and Emergency and Evacuation Planning. It further addresses specific objectives for existing Special Fire Protection Purposes, such as hospitals.

The proposed Acute Services Building has been assessed as compliant with the relevant specifications and requirements under the acceptable solutions and/or performance criteria within Planning for Bush Fire Protection 2019, as outlined in Table 11 of Eco Logical's assessment including meeting all of the specific Planning for Bush Fire Protection objectives for existing Special Fire Protection Purpose development. Table 11 of Eco Logical's assessment is replicated further over for reference.

Of relevance, given a BAL-LOW rating no specific construction standards for the Acute Services Building are warranted given the pre-existing >100m APZ in place and the insufficient bushfire risk at

the site. Whilst the linkway connection to Block B does sit within the BAL 12.5 area, this linkway is enclosed and a specific BAL has been deemed to be unnecessary for a Class 10b ancillary structure.

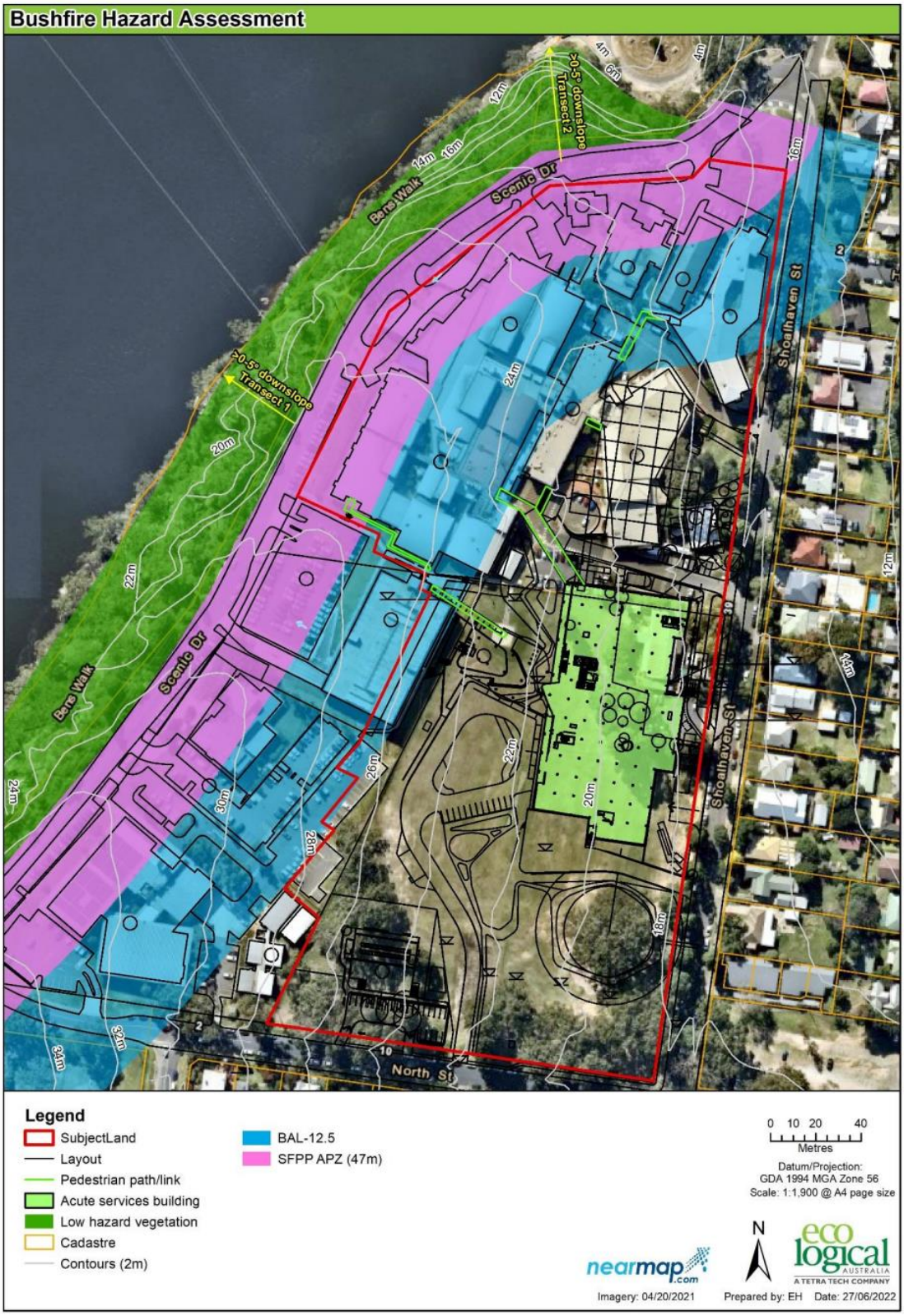


Figure 78 – Bushfire Hazard Assessment (Eco Logical)

Table 11: Development bushfire protection measures and recommendations

Bushfire Protection Measures	Recommendations	Acceptable Solution	Performance Solution	Report Section
Asset Protection Zones	APZ dimensions are detailed in Table 3 and shown in Figure 2. Identified APZ to be maintained in perpetuity to the specifications detailed in Appendix A.	☑	☐	3.1
Landscaping	Any future landscaping meets the requirements of PBP listed in Appendix A.	☑	☐	3.2
Construction standard	**BAL-LOW**	☑	☐	3.3
Access	No specific access requirements.	☑	☐	3.4
Water supply	ASB will be serviced by a boosted hydrant.	☑	☐	3.5
Electricity service	Electricity supply located underground.	☑	☐	3.6
Gas service	Gas services are to be installed and maintained in accordance with AS/NZS 1596:2014.	☑	☐	3.7
Emergency Management	Bushfire Emergency Management and Evacuation Plan to be developed or updated prior to occupation of the ASB.	☑	☐	3.8
Specific PBP objectives for existing SFPP	Proposal satisfies all objectives.	Objectives satisfied.	N/A	4

Mitigation Measures

The recommended bushfire-related measures are as set out in the table above. This generally seeks to ensure compliance with Planning for Bush Fire Protection 2019 in relation to management of the existing APZ, landscaping, water supply, gas services and the development of a building-specific Bushfire Emergency Management and Evacuation Plan to be developed or updated prior to occupation of the Acute Services Building.

7.4 Heritage

7.4.1 Aboriginal cultural heritage

A hospital campus-wide Aboriginal Cultural Heritage Assessment Report (ACHAR) has been prepared by Eco Logical (see **Appendix M**). This includes an Aboriginal archaeological assessment undertaken with background research and a site inspection.

Aboriginal archaeological potential

An AHIMS search undertaken by Eco Logical on 30 June 2021 revealed the hospital to not be an Aboriginal site and not an Aboriginal place. However, 108 Aboriginal sites in an 8km radius of the hospital were revealed by this search. Of the 108 Aboriginal sites, four (4) have a site status of 'Not a site' and one (1) site is listed as a duplicate. Therefore, the total number of AHIMS sites within the search parameters are 103. The most common site features are artefacts in both open and closed contexts (62.5% collectively), followed by art (pigment or engraved) in both open and closed contexts (7.7% collectively). Most sites are located in open contexts (64.4%).

Previous investigations conducted within the study area have unanimously identified a low potential for Aboriginal sites or objects. The landscape features and proximity to the Shoalhaven River indicate

the study area was likely utilised by Aboriginal people in the past, however past disturbances and the nature of the soil landscape has likely destroyed any archaeological evidence of this.

The archaeological survey undertaken by Eco Logical with the Nowra LALC identified that a majority of the study area has undergone significant disturbance and landform modifications associated with the development of the hospital and associated infrastructure. The now former Nowra Park has undergone moderate to high levels of disturbance, through installation of services, vegetation clearance and vehicular activity. No new Aboriginal objects were identified through the survey. One scarred mature tree was identified; however, the scars are not indicative of cultural modification. Overall, it was concluded that the study area possesses a low likelihood for intact deposits or in situ archaeology.

Consultation

As set out in Section 6 of this EIS, there has also been further specific and detailed engagement carried out in the preparation of the development's Aboriginal Cultural Heritage Assessment Report (ACHAR). This engagement is consistent with the requirements of *Aboriginal cultural heritage consultation requirements for proponents 2010*.

This included:

Stage 1 - Notification of project proposal and registration of interest

- Placement of advertisement in local newspaper - An advertisement was placed in the Shoalhaven Nowra News on 16 July 2021 by Eco Logical, inviting interested Aboriginal stakeholders to register to be consulted in relation to the proposed works.
- Written request for information about Aboriginal organisations - Eco Logical on behalf of the proponent undertook a registration process for Aboriginal people with knowledge of the area and wrote to the following organisations on 24 June 2021, in order to identify Aboriginal people who may hold cultural knowledge relevant to determining the significance of Aboriginal objects:
    - Heritage NSW
    - Nowra Local Aboriginal Land Council
    - The Registrar, Aboriginal Land Rights Act 1983
    - The National Native Title Tribunal
    - Native Title Services Corporation Limited (NTS Corp Limited)
    - Shoalhaven City Council
    - South East Local Land Services.
- Letters to Aboriginal organisations - Eco Logical wrote to the Aboriginal organisations identified through the above process on 8 July 2021 inviting them to register an interest in the project. The registration closing date was set as 30 July 2021. Due to limited responses to the original invitation, a follow up email was sent to Aboriginal organisations on 5 August 2021, extending the registration closing date to 12 August 2021.
- Respondents / registrants became the Registered Aboriginal Parties (RAPs) for the project. The Project's RAPS are identified in the assessment version of the ACHAR.

Stages 2 and 3 - Presentation of information about the proposed project and gathering information about cultural significance

- Project information and methodology - Following the registration of Aboriginal parties, Eco Logical presented the proposed project information and archaeological survey results. This information was sent to the RAPs for the project on 9 February 2022 with a closing date for review set for 9 March 2022. Responses to the draft ACHAR methodology were received as set out in the assessment version of the ACHAR.
- Archaeological Survey - An archaeological field survey was undertaken by Eco Logical Archaeologist Charlotte Bradshaw and Nowra LALC heritage officer Trudy Trindall on 17 October 2021. The full Archaeological Assessment outlining the findings and results of the

archaeological survey are included in Appendix C of the ACHAR.

Stage 4 - Review of draft cultural heritage report

A copy of the draft ACHAR was provided to Aboriginal stakeholders on 29 March 2022 for a 28-day review and comment period. Commentary was received from the RAPs which was incorporated into a refined ACHAR ahead of its finalisation - see the ACHAR at **Appendix M** for additional details.

The result of that consultation process was agreement from the RAPs that the area has been heavily disturbed, and there are doubts that there is any archaeological potential.

Description of cultural heritage values

The ACHAR found:

- No notion of social significance is linked to the development site, despite the broader study area and its surrounds possessing what once would have been important floral and faunal resources for Aboriginal people in the past. Rock shelters along the Shoalhaven were utilised for habitation, resource gathering and art sites.
- Similarly, no notion of aesthetic significance has been associated with the development site.
- No notions of significance of any particular historic person, event or phase have been linked to the development site.
- As with cultural, historic, and aesthetic significance; scientific significance can be difficult to establish. Certain criteria must therefore be addressed in order to assess the scientific significance of archaeological sites. Scientific significance contains four subsets; research potential, representativeness, rarity and educational potential. The development does not meet any of these criteria.
- The site also does not have any spiritual significance.

Overall, the ACHAR found that:

- No Aboriginal sites were identified within the study area.
- All sections of the study area have been subjected to high levels of ground disturbance.
- All sections of the study area were found to have a nil to low archaeological potential and significance.
- No direct impacts from the project on Aboriginal cultural heritage have been identified.

Interpretation of Aboriginal cultural heritage significance into the Redevelopment

The key aim of heritage interpretation would be to connect to contemporary experience of hospital staff, patients and visitors with the Aboriginal cultural values associated with the Shoalhaven/Nowra area. Heritage interpretation elements at the site may include:

- Engaging Aboriginal artists to develop designs/artworks that could be incorporated into the built form through design features such as:
    - Paving
    - Murals
    - Artwork
- Incorporating local Tharawal words and language into naming conventions within the building (room names, floor names), in consultation with RAPs.
- Any landscaping or plantings surrounding the hospital buildings could incorporate traditional Tharawal bush medicine that are native to the bioregion such as:
    - Pig Face (Tharawal name: 'Kupburril')
    - Coastal tea tree ('Ban-ban')
    - Bracken fern ('Gunggai')
    - Blueberry ash ('Tdjeunen')
    - Ivy-leaved violet ('Warrabira')
    - Kangaroo apple ('Goo-nee-gang')
- Providing interpretive information regarding the Aboriginal history of the site within common areas, developed in consultation with RAPs

The ACHAR's recommendations in full are:

Recommendation 1 – No further assessments are required

No further archaeological assessment is required for the study area. Although general measures will need to be undertaken. These general measures include:

- This assessment has been undertaken to assess the proposed impacts within the study areas shown in Figure 1 of the ACHAR. If changes are made to the proposed works further investigations will be required and an addendum ACHAR undertaken which will require further consultation with RAPs.
- It would be recommended to include a heritage induction for early demolition and construction workers before works commence.
- Unexpected Finds:
  - Aboriginal objects are protected under the NPW Act regardless if they are registered on AHIMS or not. If suspected Aboriginal objects, such as stone artefacts are located during future works, works must cease, and an archaeologist called in to assess the finds.
  - If the finds are found to be Aboriginal objects, the DPIE must be notified under section 89A of the *National Parks and Wildlife Act 1974*. Appropriate management and avoidance or approval under a section 90 AHIP should then be sought if Aboriginal objects are to be moved or harmed.
  - In the extremely unlikely event that human remains are found, works should immediately cease, and the NSW Police should be contacted. If the remains are suspected to be Aboriginal, the DPE may also be contacted at this time to assist in determining appropriate management

Recommendation 2 – Submit ACHAR to AHIMS

- In accordance with Chapter 3 of the Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW (OEH 2011) the ACHAR should be submitted for registration on the AHIMS register within three months of completion.

Mitigation Measures

Other than the above recommendations, as it is not expected that Aboriginal objects will be impacted upon by the proposed works, and no further specific mitigation measures are required.

7.4.2 Non-Aboriginal cultural heritage

A Statement of Heritage Impact has been prepared by Eco Logical – see **Appendix L**. It confirms, consistent with mapping under Shoalhaven LEP 2014, that the hospital campus is not a listed item under the LEP. A number of local heritage items and heritage conservation areas are however located near or in the general locality of the hospital as shown in **Figure 79**.

Eco Logical has considered the heritage significance of the hospital and the heritage items near the site and concluded that:

- The location of the proposed new hospital building is not within the curtilage of a heritage item.
- There are three heritage items in the vicinity of the subject site listed in Schedule 5 of the LEP.
- The Shoalhaven hospital is a listed on the Department of Health s170 register.
- The proposed new building will not encroach on the curtilage of any heritage items.
- No heritage items in the vicinity will not be directly or indirectly impacted by the proposal.
- The new building is proposed to be located on a former portion of Nowra Park that has no archaeological potential.
- There are no significant views to or from any of the heritage items in the vicinity to the study area.
- The form, siting, proportion and design has been considered to facilitate the requirements of the new hospital building and upgraded facilities.
- The continued appreciation of heritage items in the vicinity has not been compromised.
- The heritage impact of the proposal is considered negligible.

No statement of significance has been developed for the Shoalhaven District Memorial Hospital. The inclusion on the NSW Department of Health s170 Register of the hospital site is not related to a particular building or structure, nor is it associated with a particular historic phase in the development or evolution of the hospital site. Rather, the hospital exists as a functional community service.

Therefore, any proposed redevelopment that involves construction or demolition of buildings within the hospital site will not impact heritage significance. The hospital will continue to be used as a functional community service and medical facility and will continue to conform to its historical significance "associated with preparing and providing medical assistance and / or promoting or maintaining the wellbeing of humans" (State Heritage Register 2005).

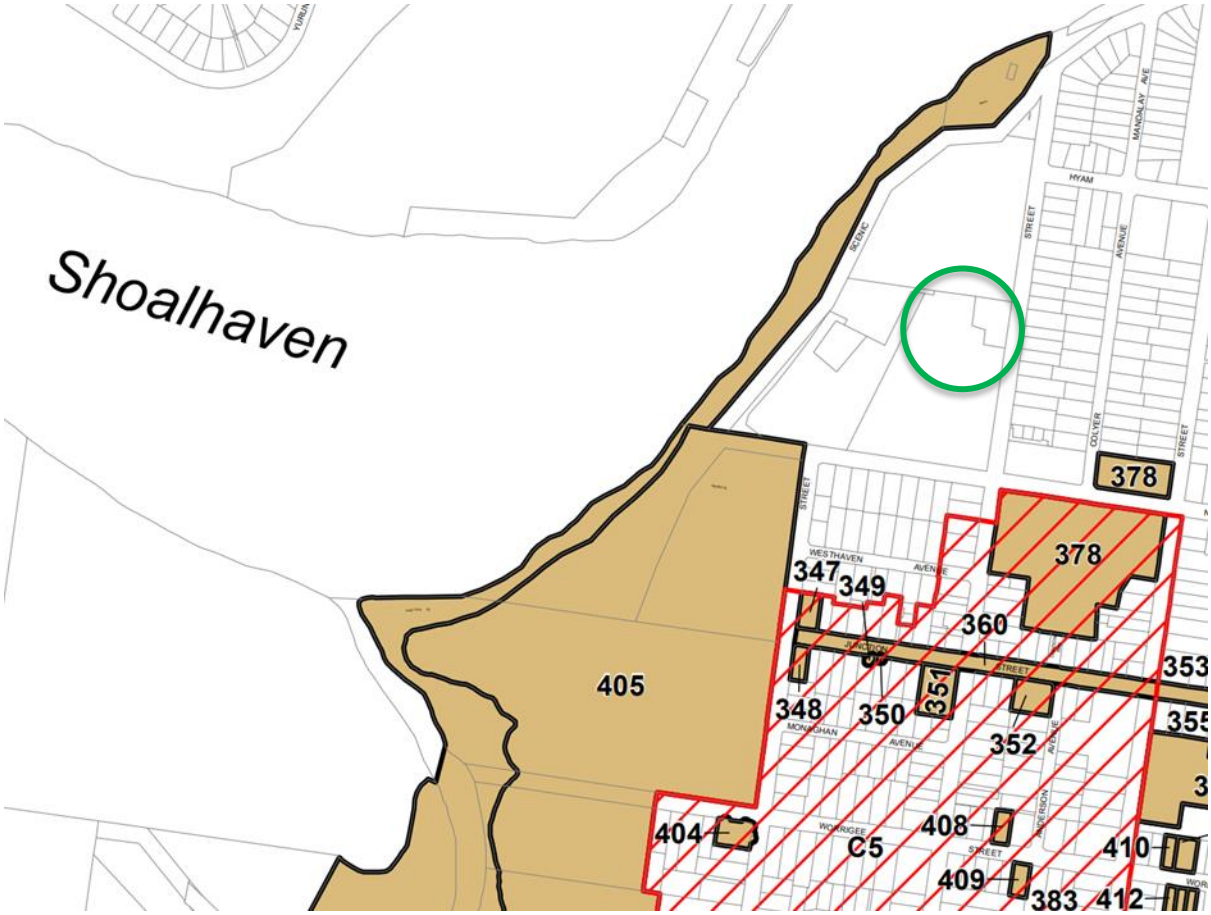


Figure 79 – Local heritage items in the vicinity of Shoalhaven Hospital campus

In consideration of the impacts of the built form upon Ben's Walk and its scenic qualities, it should be noted that the heritage listing for Ben's Walk does not relate to views or vistas as part of its significance. The listed curtilage for the Ben's Walk heritage item encompasses the bushland area and sandstone cliff along the western edge of the Scenic Drive road side. The physical walkway comprising Ben's Walk sits behind the vegetation descending towards the base of the sandstone escarpment. The scenic value of the walk is towards the Shoalhaven River which is a significant feature in the Aboriginal history of the area, and the original walkway that was constructed by Ben Walsh is below Hanging Rock at the base of the sandstone cliff.

Accordingly, the visual impacts of the development do not relate to this listing and the impacts upon the Scenic Protection Area are separately considered in this EIS.

Archaeological potential at the site has been assessed by Eco Logical to be nil on the basis of the highly disturbed and urbanised nature of the site.

Mitigation measures

Notwithstanding, the conclusions drawn by Eco Logical in the Statement of Heritage Impact, make recommendations in relation to minimising impacts upon any surrounding heritage items and in relation to unexpected archaeological finds and other items that may be of social importance in relation to the hospital, individuals or communities attached to the hospital. These items when salvaged or found could be collected, reused, returned or reinstated as part of the redevelopment.

Eco Logical recommends:

- The location of site storage, parking, compounds, stockpiles etc should not be located within the curtilage of any heritage item.
- The remaining trees, within the portion of Nowra Park to be retained, should be protected from damage during the construction phase. This includes the roots of the trees. Installation of high visibility fencing should ensure inadvertent damage to the trees is avoided.
- If changes are made to the plans prepared by Conrad Gargett, the Statement of Heritage Impact will need to be reviewed to reflect the new designs.
- A standard unexpected finds process should be adopted during works associated with the proposal as a mitigation measure as follows:
    - An 'unexpected heritage find' can be defined as any unanticipated archaeological discovery, that has not been previously assessed or is not covered by an existing approval under the *Heritage Act 1977* (Heritage Act) or *National Parks and Wildlife Act 1974* (NPW Act). These discoveries are categorised as either:
        - Aboriginal objects (archaeological remains i.e.: stone tools),
        - Historic (non-Aboriginal) heritage items (archaeological remains (i.e.: artefacts) or movable objects)
        - Human skeletal remains (reportable deaths, Aboriginal objects or relics)

The detailed unexpected finds protocol / policy is included in the Eco Logical report.

7.5 Earthworks and Water Management

7.5.1 Earthworks

A range of civil engineering works and earthworks is proposed within the development site. The concept bulk earthworks for the proposed works will result in approximately 17,734m^3 of cut volume and some 3,621m^3 of stripped topsoil, while some 3,403m^3 of fill volume is estimated as bulk earthwork quantities. An excess cut of some 14,331m^3 is anticipated to result. See the bulk earthworks plan as part of the civil engineering package at **Appendix H**. Soils leaving the site will be required to be appropriately classified prior to removal and disposal.

A soil and water management plan will be implemented during construction. The design of these measures will be in accordance with the Landcom "Blue Book". In general, where there is less than 150m^3 per year of soil loss, the building of a sediment retention basin can be considered unnecessary (see Section 6.3.2 of the "The Blue Book").

Nonetheless, the excavation of the Acute Services Building may act as a sediment basin to provide an opportunity to further improve water quality. Additionally, the following measures are provided to minimise the risk of sediments being washed into neighbourhood property and erosion of the site.

- A sediment fence/catch drain (or diversion bund) around the site
- Sandbag/Geotextile pit filters to be placed at stormwater inlet pits
- Temporary access to site with shaker pad
- An indicative stockpile area with sediment fence around it during construction. The stockpile must be located out of water flow paths (and be protected by earth banks/drains as required).

Provision of the Soil and Water management measures will ensure that the Council stormwater system and surrounding area is not affected by the proposed development during construction.

As noted, to manage the tracking of dirt onto roads, construction entries and exits with shaker grates are to be employed.

Further, in consideration of clause 7.2 of Shoalhaven LEP 2014, the works are unlikely to have any significant disruption of, or any detrimental effect on, drainage patterns and soil stability in the locality of the development given their contained nature. The quality of both fill or the soil to be excavated is to be confirmed at the corresponding times, noting the results of Cardno environmental studies indicates the area subject of the substantive earthworks is expected to be clean soil and free of contaminants. The source of fill is to be determined, however the likely destination of the excavated soil that is not reused on-site is as per the Construction and Demolition Waste Management Brief as prepared by WSP and as discussed later in this section of the EIS.

Again, given the discrete and isolated nature of the excavation, no adverse impacts upon the earth or soil conditions is expected at adjoining properties. The amenity of adjoining properties is otherwise assessed in the forthcoming section on noise and vibration impacts.

The disturbance of any relics that may be found is resolved through the recommendations of Eco Logical with respect to unexpected finds protocols for both Aboriginal and archaeological artefacts, however remote this may be.

Based on the location, scale, and proposed management measures, there is only a very low potential for adverse impacts on a waterway near the site. No drinking water catchment or environmentally sensitive area is likely to be affected. See further below in the next sub-section of this EIS.

A range of mitigation measures are applied throughout this EIS in relation to impacts tied to the scope of earthworks.

7.5.2 Water Management

Stormwater Management

As set out in Section 2.3.4 of this EIS, based on Bonacci's review of the site, the existing site drainage transfers from the upstream western part of the hospital site to the north-east and east and discharges via a headwall at the western boundary of the proposed development area of the Acute Services Building. This travels via overland flow following the site as it falls across the proposed development area towards Shoalhaven Street.

The stormwater management works proposed consist of:

- A pit and pipe system within the site area to convey minor flows (in accordance with the Major/Minor stormwater strategy approach defined in Australian Rainfall and Runoff).
- A rainwater reuse tank (volume of 210kL) is provided near the low point of the development area, with overflows from the rainwater reuse tank directed to an on-site detention (OSD) tank. Note, rainwater reuse within the hospital is not possible due to strict infection control requirements. The reuse may be utilised for elements such as the cooling tower and landscaped areas.
- A OSD tank is provided (with water quality treatment cartridges contained within the tank) in order to limit post-development flows to less than pre-development flows. Modelling has been undertaken indicating that a 300m^3 detention volume is required, this will be confirmed during detailed design as the design (including final definition of paved and landscaped catchment areas) is developed.
- Overland flow paths are provided to cater for upstream catchments to bypass the development site, and to convey major storm flows from within the development area around the proposed building.
- A raingarden is proposed between the carpark and building entry, to allow opportunity for infiltration of stormwater runoff, in accordance with Water Sensitive Urban Design principles.
- Stormwater connection to Council stormwater network is proposed to be at the existing stormwater connection (via the kerb inlet pit adjacent to the existing pre-school facility on Shoalhaven Street).

Water Quantity

To address changed drainage and run-off patterns, Bonacci has designed a combined rainwater tank and on-site detention tank, the capacity of which has been determined with DRAINS modelling to establish the pre- and post-development scenarios.

A total volume of 300m^3 is required for on-site detention, along with 210m^3 of rainwater tank capacity to cater for cooling tower demand of the site. These preliminary volumes will be refined during the detailed design stage, as more information on rainwater reuse demand and impervious/pervious areas are finalised.

The provision of the nominated on-site detention volume limits peak post-development flows (which are increased from pre-development rates due to the increase in impervious area) to less than pre-development peak flows in both the 20-year and 100-year events. This satisfies the requirements of Shoalhaven City Council.

The results of the DRAINS modelling is set out below, based on Bonacci's Peak Discharge Results table for scenarios with, and without, the on-site detention.

Storm Event	Pre-Development Flow (litres/second)	Post-Development Flow (litres/second) No OSD	Post-Development Flow (litres/second) With OSD
20 year ARI	161	296	157
100 year ARI	385	539	374

Water Quality

Water quality modelling has also been carried out using the MUSIC link model to address Shoalhaven Council's water quality targets, as set out below.

- Reduction of Mean annual Load of Gross Pollutants – 90%
- Reduction of Mean annual Load of Total Suspended Solids – 85%
- Reduction of Mean annual Load of Total Phosphorous –65%
- Reduction of Mean annual Load of Total Nitrogen – 45%

To address these targets, the proposed water quality strategy provides water quality measures specifically for the new building and associated infrastructure.

WSUD measures have been incorporated in the proposed development in accordance with best practice (including providing, where possible, opportunity for infiltration of stormwater runoff).

The water quality treatment measures for the site are provided to reduce pollutant loads. The water quality strategy for the site incorporates a rainwater tank, OceanGuard (or similar or equivalent) pit baskets and stormfilter cartridges. The Acute Services Building roof will be directed to a 210kL rainwater tank (for irrigation reuse only), with the overflow to a detention tank with a stormfilter cartridge chamber for treatment.

The treatment train operates as a complete system removing the target pollutants to the required level. The results of modelling (as set out below) have confirmed the effectiveness of the proposed treatment train which satisfies the requirements of Council's WSUD Policy.

- Gross Pollutants – 90% (greater than 5mm) target / **100%** achieved
- Total Suspended Solids – 85% target / **86.3%** achieved
- Total Phosphorous – 65% target / **65.8%** achieved
- Total Nitrogen – 45% target / **47.5%** achieved

Flooding risk, impacts and mitigation

As set out earlier in this EIS and as provided for in the Bonacci report at **Appendix H**, the hospital campus and development site are each not identified by Shoalhaven Council as being flood-affected. This includes calculations for climate change to 2050 and to 2100. In each scenario the site remains

unaffected and road access for emergencies remains open to the hospital from North Street in the south.

Bonacci has further considered current work under preparation by Cardno on behalf of Council. Cardno is currently updating the Lower Shoalhaven Flood Study. A preliminary flood map for the Probable Maximum Flood (PMF) is shown in **Figure 80**. This reinforces that the site is not affected by the PMF event, and shows that the PMF flood level in the Shoalhaven River, to the north-west of the site is approximately RL11, significantly low enough to avoid flooding impacts.

Correspondingly, as the site is unaffected, the development itself will have no impact or effect upon flood waters in the sense of changes flooding flows, water velocity or flooding pathways or extent.

Further, the design of the stormwater drainage system has considered the potential impacts of the proposed development on flooding. Increased peak flows are addressed through the provision of on-site detention within the dual purpose rainwater/detention tank. This will limit peak flows from the site post-development to those that a presently experienced pre-development or to a lesser extent for a range of storm events up to the 1% AEP event (or 1:100 year event).

Mitigation Measures

Subject to the application of Bonacci's proposed design, no further mitigation measures are likely to be necessiated with respect to water quantity and water quality matters as arising from the development compred to the existing base case scenario.

Figure 80 – Cardno's PMF Flood Mapping (via Bonacci)

7.6 Built form, environmental amenity, and CPTED

7.6.1 Height, density, built-form, bulk and scale, and setbacks

The relevant building height control applicable to the whole of the Shoalhaven Hospital site, Shoalhaven Community Pre-school site and former Nowra Park is 11m. This height control is not mapped by Shoalhaven LEP 2014, however under clause 4.3(2A) of the LEP it is stated that if the

Height of Buildings Map does not show a maximum height for any land, the height of a building on the land is not to exceed 11 metres. This seemingly applies arbitrarily across the whole of the LGA.

As noted, the concurrent rezoning of the development site to SP2 – Health Services Facility will enable the application of clause 5.12(1) of the LEP which operates to remove prohibition or restriction of the development within the SP2 – Health Services Facility zone and when carried out by the Crown. This removes application of the 11m building height control and removes the need for the preparation of a clause 4.6 exemption to development standards justification. Notwithstanding, the development's height, bulk and scale, and other related impacts will be assessed by this EIS with reference to the various relevant NSW Land and Environment Court Planning Principles. This assessment is set out in the sub-sections that follow.

Of relevance, the mapped adjacent building height controls applicable under the LEP are 11m to the east of Shoalhaven Street directly east and south-east of the proposed Acute Services Building; 12m east of Shoalhaven Street directly north-east of the proposed Acute Services Building; and 7.5m to the south of North Street.

No Floor Space Ratio (FSR) controls apply to the development site, existing hospital or the adjacent residential and mixed use areas. Note also that the adjacent land use zoning appears to promote the transition and transformation of the locality into the desired health hub / medical precinct, with a R1 – General Residential zone generally aligning with the 11m mapped height control and a B4 – Mixed Use zone applying with the 12m height control.

The proposed building height is 46.37m and so exceeds the LEP control (when applicable) by 35.37m. The height exceedance is generally predominantly related to the tower form of the building and in part the upper parts of the podium. The 11m height control sits just under the podium form where the building addresses Shoalhaven Street. The podium generally sits under this control where the building addresses the former Nowra Park at the west elevation.

In relation to setbacks from the property boundaries, the proposed Acute Services Building is greater than 100m from the North Street boundary of the site and is similarly generously setback off Scenic Drive. The predominant building setback off Shoalhaven Street is at least 9.97m, and generally over 10m, along its main built edge from Levels 1 to 3 of the proposed building. Further south in the area of the proposed loading dock this setback is increased to 19.1m – see details at page 51 of the Conrad Gargett design statement at **Appendix O**.

The ground level of the proposed building is further setback along Shoalhaven Street beyond 10m to the built edge under the colonnade which addresses the street at this point, whilst Level 4 (the last level directly addressing or fronting Shoalhaven Street) introduces a further upper level setback with balcony spaces. The balance of the building then 'twists' to the west to address a northerly aspect over the existing hospital site.

No LEP setback controls apply, and accordingly the built form, including setbacks is considered on its merits and in relation to its impacts as set out within this sub-section.

As expressed by Conrad Gargett in its design statement, the built form *sits along Shoalhaven Street at the low point of the site to maximise service entries under the building while providing good connectivity to the existing hospital at the upper levels. The building provides a defined urban edge to the street, reflecting the mixed use zoning in the street and frees up the centre and south of the site as open space for public and staff to move through. The building will incorporate face brickwork at its base to provide a strong urban presence in the Nowra community and referencing the traditional architecture of the area. The proposed building height is largely a function of the required acute services being collocated adjacent to the lift core.*

Options were explored by Conrad Gargett with larger footprints (and reduced building height) however this resulted in increased travel times for staff between departments and a larger building footprint encroaching on the open space to the south. It would also have resulted in a less open parkland amenity at the site, diminished the objective of a 'hospital in the landscape' and required a significantly greater amount of tree removal, including potentially more significant canopy trees.

Further, Conrad Gargett has provided its assessment of the bulk and scale of the proposed Acute Services Building and its justification.

> *The scale of the new acute services building has been articulated into a podium and tower form. The lower scale podium addresses the length of Shoalhaven St and steps down from 4 storeys to 2 storeys to the south of the site. The 7 storey tower form runs east west so that the bulk of the tower form addresses the existing hospital. The Shoalhaven street frontage is limited to the 25 metre edge of the tower form. This is situated at the northern end of the site, close to the existing hospital buildings to minimise the impact of the building on the streetscape.*
>
> *The predominant existing character of the area is low scale residential. However, the northern end of Shoalhaven St is zoned 'mixed use' and this area has seen the introduction of medium scale medical centres in recent years. This indicates the character of the area is in transition and a future health precinct in the immediate area adjacent to the hospital will occur to support the expanded service. The area to the south and west of the hospital is characterised by recreational spaces including the Nowra Showground, the bushland along the Shoalhaven River and the Aquatic Centre. Concentrating the hospital expansion in the north east corner of the site aligns with this scenario.*
>
> *There is an opportunity with this new development to contribute a new, prominent civic building to the city of Nowra. The precinct will become a major employer for the region and provide essential services for the public at a local level. The development will provide a strong civic presence on Shoalhaven Street with the articulated brick podium and central public entry. The North Street frontage will also contribute to the city with its newly landscaped parkland and generous entry road and forecourt leading to the main hospital entry.*

In assessing the height, bulk and scale of the development, the NSW Land and Environment Court Planning Principle in relation to height and bulk has been considered. This is set out below.

> *Planning principle: assessment of height and bulk*
>
> - *Are the impacts consistent with impacts that may be reasonably expected under the controls?*
> - *How does the proposal's height and bulk relate to the height and bulk desired under the relevant controls?*
> - *Does the area have a predominant existing character and are the planning controls likely to maintain it?*
> - *Does the proposal fit into the existing character of the area?*
> - *Is the proposal consistent with the bulk and character intended by the planning controls?*
> - *Does the proposal look appropriate in its context?*

The following provides commentary in relation to the development's relationship and response to the planning principle.

Are the impacts consistent with impacts that may be reasonably expected under the controls?	The intent of the 11m building height control that applies uniformly across all unmapped areas of the LEP's Height of Buildings maps and across the balance of the LGA is unclear and unknown. As noted, no FSR applies to the site, as well as to wider areas of the LGA.

	Ordinarily, hospital sites are not subject to building height or FSR controls in order to ensure an appropriate level of flexibility is enabled or maintained through the relevant LEP or environmental planning instrument to allow development of necessary scales and scope to cater for the social infrastructure needs within the locality. This does not remove the need to assess any attendant or likely impacts. As noted, to further safeguard or facilitate flexibility, clause 5.12 of all LEPs state-wide removes restriction or prohibition of provisions under the LEP (height included) by Crown developers (such as HI) for appropriately zoned land. Notwithstanding, the building height control objectives of the LEP are set out below and set out what may be reasonably be expected of the height control: *(a) to ensure that buildings are compatible with the height, bulk and scale of the existing and desired future character of a locality,* *(b) to minimise visual impact, disruption of views, loss of privacy and loss of solar access to existing development,* *(c) to ensure that the height of buildings on or in the vicinity of a heritage item or within a heritage conservation area respect heritage significance.* In response to these objectives, Council's desired future character of the area is broadly to further facilitate the evolution of the anticipated health hub / medical precinct. Part of the character of the locality is also to seek to maintain areas of green space, tree canopy, and high amenity, much of which is directly tied to the proposed siting and height of the building as discussed earlier. The matter of visual impact and view loss is addressed in further detail below, as is solar access to existing development (and other areas). As noted in this EIS, the building height proposed and its bulk and scale has been identified by Eco Logical in its Statement of Heritage Impact as having no direct or tangible impact upon heritage items and conservation areas in the vicinity of the site.
How does the proposal's height and bulk relate to the height and bulk desired under the relevant controls?	As noted above, the desired building height arising from the height control is one that is uniformly (and seemingly arbitrarily) applies LGA-wide and has no apparent or specific relationship to development of the hospital site. The building and its proposed height in itself is therefore relevantly related to the provision of new and expanded services to meet the growing need for healthcare within the locality and region as planned for by Council's strategic vision for the site and precinct rather than responding to a height control. The overall desired outcome within this area of Nowra is to further promote the desired health hub / medical precinct. To that end, as acknowledge by Council's 2020 resolution in relation to zoning related matters in this precinct, the planning regime applicable to the development site is likely ready for review, with the height control potentially outdated in this context. Relevantly, to rigidly apply the 11m height control whilst seeking to meet HI's and the LHD's health planning and delivery objectives, and also concurrently meet Council's strategic planning objectives, would not result in the required capacity of the development. The height and bulk of the building bears a direct relationship to the required capacity of the development, its collocational requirements for effective delivery of healthcare, and its desired vertical integration of services, and linkages to the existing buildings of the hospital.

	To reduce the height of the building would further contribute to its bulk and would in itself have greater impacts upon the remaining areas of the former Nowra Park reducing amenity, contribute to greater tree and canopy tree loss and foremost provide for a building or cluster of buildings that have a significantly reduced operational efficiency. As demonstrate further below, a reduced height would not enhance solar access to any significant degree and visual impacts and view loss would also not be substantially improved by providing for a lower but 'squatter' development. Again, as noted no FSR controls apply so no direct requirement to limit bulk or scale of the development is set out. In this regard the bulk and scale is a function solely of building height and the composition of the built form. As noted within this EIS and the Conrad Gargett design statement, the intent is to provide a defined street and urban edge to Shoalhaven Street at the lower levels of the building and at the upper levels to twist the building's orientation to face north and connect with the balance of the hospital site and improve internal amenity within the building. The built form reinforces the notion of "connection to land, connection to sky" and that of a "hospital in the landscape".
Does the area have a predominant existing character and are the planning controls likely to maintain it?	The predominant character of the precinct is one of a civic hub with a general focus on child care, schooling and health care, including converted residential dwellings into professional health consulting rooms. Recreational and passive open space supports the uses by also buffering edge impacts, whether through distance or tree canopy, or both. The balance of the area is low-rise and residential in character. The precinct is reasonably characterised as in transition to reinforce the anticipated health hub / medical precinct. The transition (as commenced with the Cancer Care Centre, GP Super Clinic and multi-deck car park developments) is one seeking to meet increased and changed demand for locally-based regional health services and facilities, clustered in a single identifiable location. The existing 11m building height control is most appropriate for open space, school and the pre-school uses, but act to limit hospital development under contemporary needs and design and operational requirements. To that end, the 11m LGA-wide height control is outdated or serves to thwart development that otherwise can satisfy the needs of the Health Services Facility (or generic SP2) zone whilst still meeting amenity, visual and view related impact considerations. The height control is uniformly applied over sites where greater flexibility would ordinarily be applicable.
Does the proposal fit into the existing character of the area?	The current proposal broadly fits the existing character noting it is an area in planned transition with this development being the catalyst to achieve the long-standing strategic planning outcomes (and desired future character) for the hospital site and its immediate environs.
Is the proposal consistent with the bulk and character intended by the planning controls?	This in part replicates the above statements made about whether an 11m height control should apply to a hospital site and the likely outdated nature of the controls when compared to Council's strategic vision. This is again in the context of noting the lack of FSR controls under the LEP, notwithstanding that bulk and scale that has the potential to arise from a tall building.
Does the proposal look appropriate in its context?	The building will be appropriately scaled and sited in its context by being placed at the lowest part of the site, to the northern extent of the development site, and of a scale that is readily accommodated by a site of this size.

Figures 81 to **84** below and over provide photomontages of the proposed building for various views and street frontages around the existing hospital.

Figure 81 – Proposed view of the Acute Services Building from North Street (Conrad Gargett)

Figure 82 – Proposed view of the Acute Services Building from Shoalhaven Street looking south (Conrad Gargett)

7.6.2 Design Quality / Design Excellence

As noted in Section 3.2.4 of this EIS, the GANSW 'Better Placed' guideline has been applied by Conrad Gargett in designing the building. Similarly, the 'Greener Places' guideline has also been applied by Site Image in devising the landscape design.

The State Design Review Panel (SDRP) process has been used in the design evolution with five meetings held. At this point, the SDRP and GANSW are each broadly satisfied with the progress made in attaining design quality and design excellence.

The Panel's level of general satisfaction has included the building's height, bulk and scale, and relationship to its context. This is generally achieved through modulation of the built form, materiality and choice of colours and canopy tree retention and new planting.

Figure 83 – Proposed view of the Acute Services Building from Shoalhaven Street looking north (Conrad Gargett)

Figure 84 – Proposed view of the Acute Services Building from Scenic Drive looking east (Conrad Gargett)

7.6.3 Environmental Amenity

Internal amenity

A high internal amenity has been planned for within the proposed Acute Services Building and is able to be achieved as set out in the Conrad Gargett design statement, as summarised below.

Good internal and external environmental amenity for the users of the building as well as daylight and views have been a focus for patients and staff in the planning and design process. Public circulation and waiting areas as proposed to have large amounts of glazing to orient the visitor to the outside world. All inpatient bedrooms are proposed to have access to daylight, many with extensive views over the region. Patient lounges and staff rooms are also prioritised to have access to daylight and views.

Figures 85 to **89** show the likely extent of views available from various levels of the new Acute Services Building in a range of directions, taking in the Shoalhaven River, and the Cambewarra and Cullunghutti mountains in the distance. Balconies are provided to patients in key areas in line with Ministry of Health policies. Mental Health, Geriatric and ICU patients are provided with generous balconies for access to natural ventilation and relief from the clinical environment. All patients have access to lounge rooms with extensive glazing and views. Emergency, Operating Theatre and ICU staff also have access to outdoor balcony space.

Level 2 East

Level 2 North

Level 2 South West

Level 2 South

Figure 85 – Likely Level 2 views in a range of directions (Conrad Gargett)

Level 3 East

Level 3 North East

Level 3 North West

Level 3 South West

Figure 86 – Likely Level 3 views in a range of directions (Conrad Gargett)

Figure 87 – Likely Level 4 views in a range of directions (Conrad Gargett)

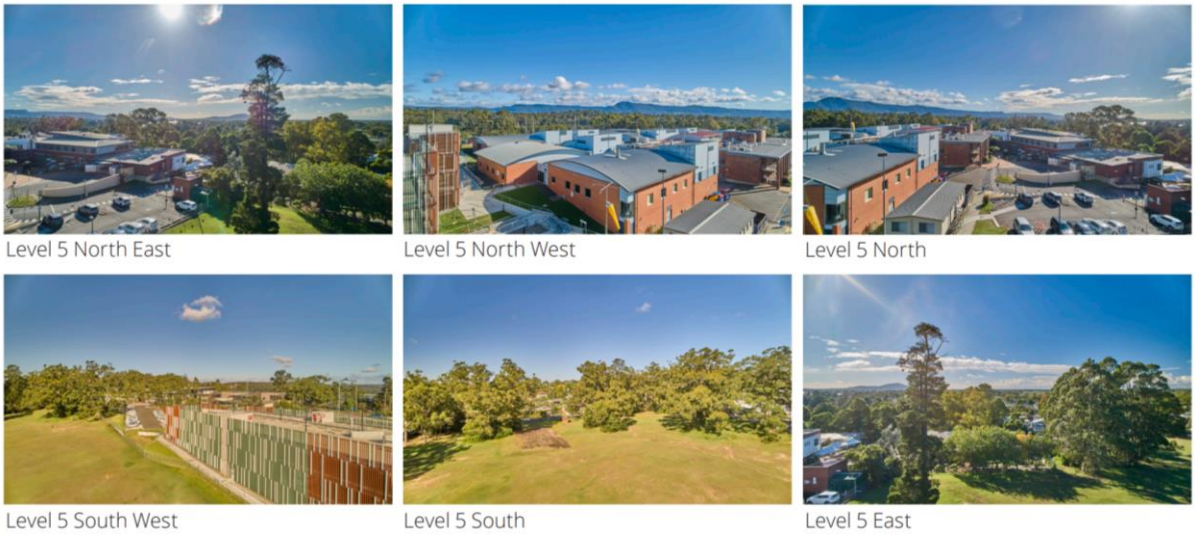


Figure 88 – Likely Level 5 views in a range of directions (Conrad Gargett)

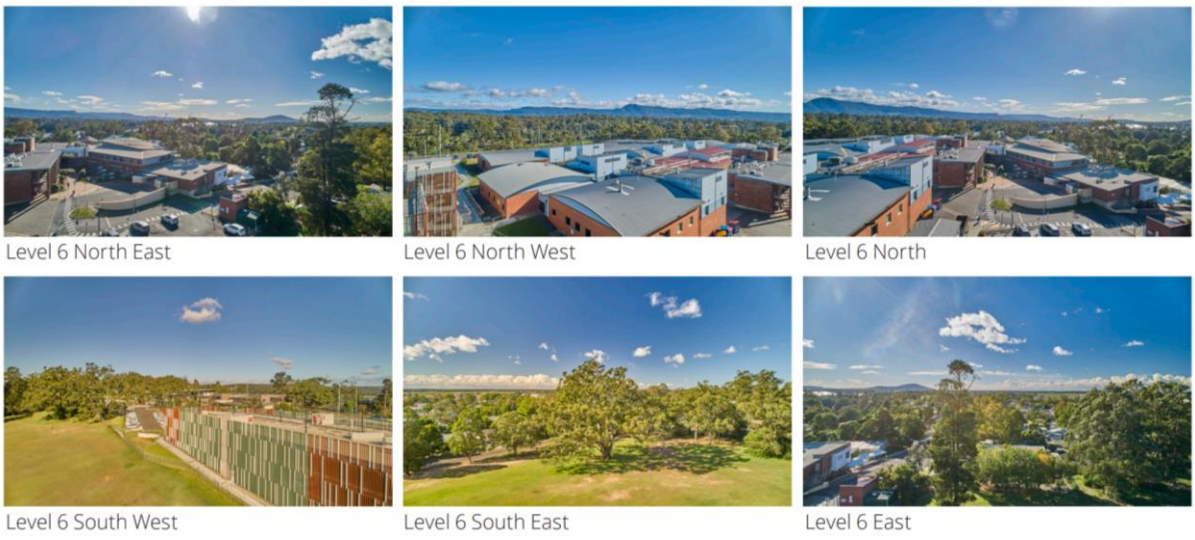


Figure 89 – Likely Level 6 views in a range of directions (Conrad Gargett)

Solar access / overshadowing

Overshadowing diagrams prepared by Conrad Gargett (as provided in **Appendix O** and set out below in **Figures 90** and **91** for mid-winter only) have demonstrated that the new shadows arising from the proposed Acute Services Building will have the following impacts to the nearest residences to the east and the former Nowra Park to the south.

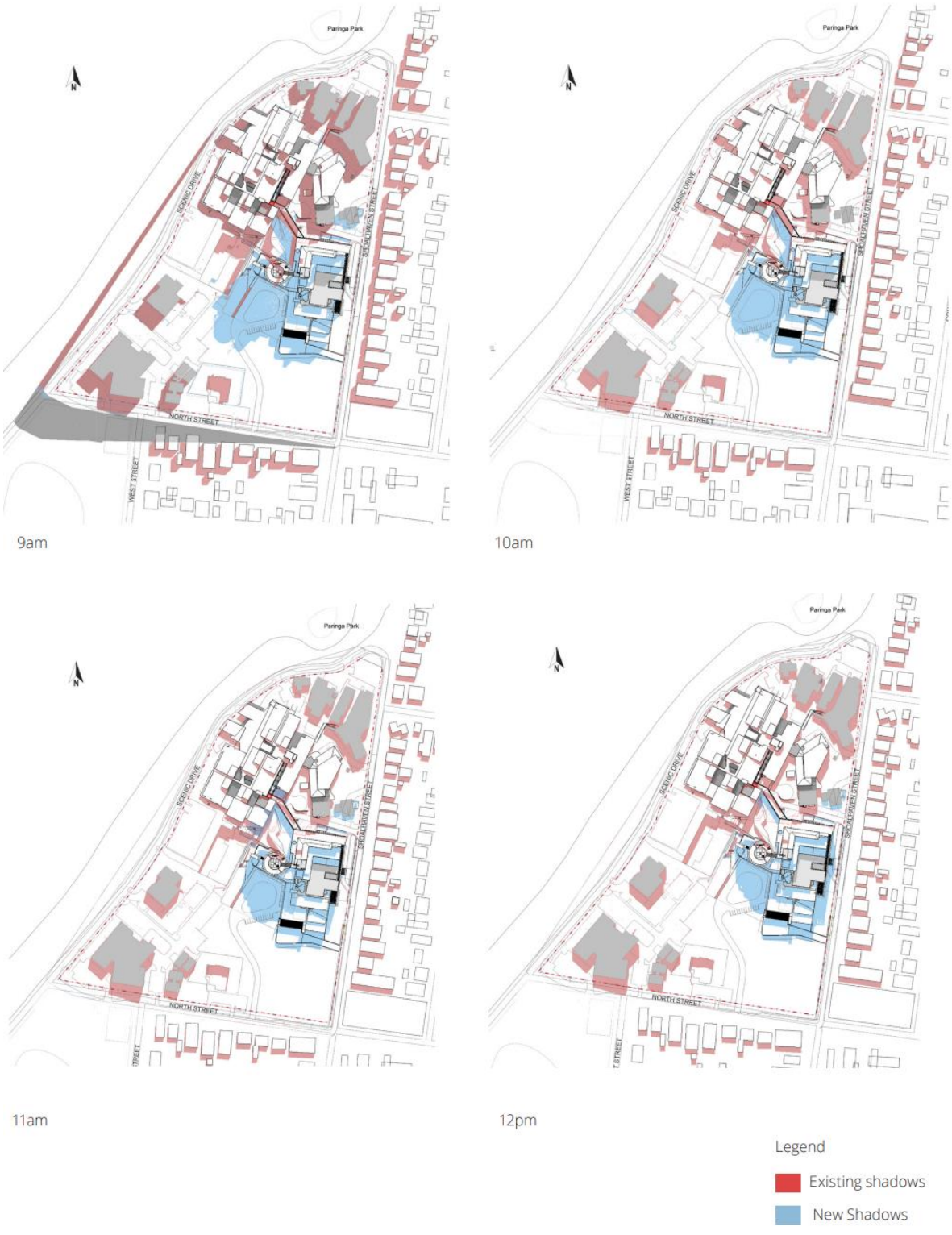


Figure 90 – Overshadowing modelling – mid-winter 9am to 12 noon (Conrad Gargett)

In mid-winter, only marginal new shadowing is likely to occur to the south within the park from 9am through to 3pm. No new shadowing will occur to residences in Shoalhaven Street between 9am and 12 noon. New shadows will only begin to reach a number of Shoalhaven Street residences' front yards and western facades by 2pm. By 3pm in mid-winter about six (6) residences will be subject to overshadowing including parts of their rear yards, three (3) properties more vividly than others. In mid-summer no new shadows will be cast upon residences to the east or to the park to the south from 9am to 3pm.

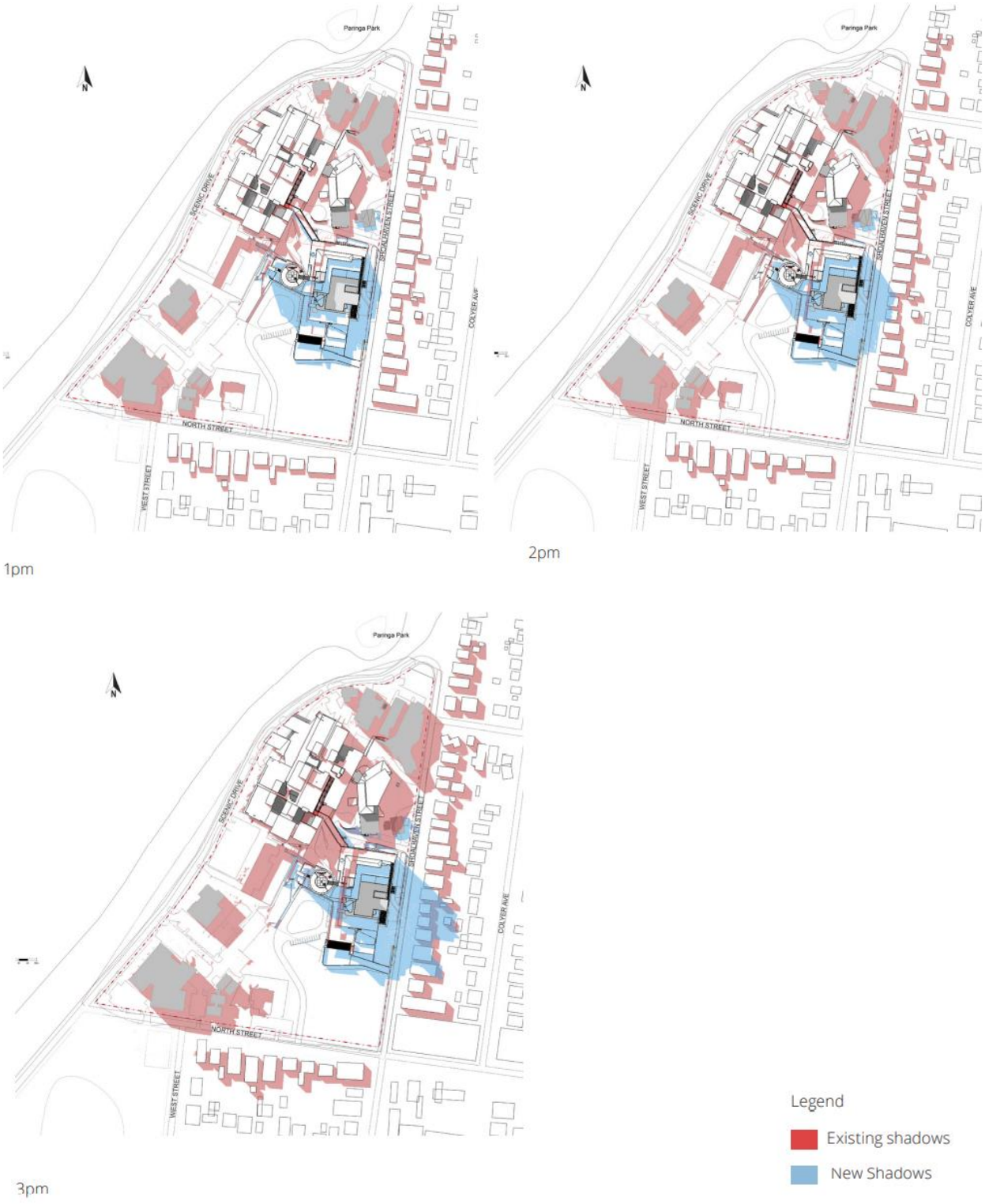


Figure 91 – Overshadowing modelling – mid-winter 1pm to 3pm (Conrad Gargett)

The proposed Acute Services Building has been designed to minimise its overshadowing impacts upon the remaining areas of the parkland as well as its residential neighbours to the east during the afternoon. In this instance the standard minimum requirement of at least 3 hours of continuous solar access into principal private living space and principal private open space has been achieved during mid-winter. During other times of the year, either side of mid-winter, increased levels of solar access arise.

Visual impacts / visual amenity

The likely visual impacts or visual amenity arising from the development is considered below with reference to the surrounding public domain, landscape, and heritage. View loss (as a 'private' impact) is separately addressed.

The visual impact of the development has been considered from the public domain outside of the hospital, effectively the visibility of the development from the street edges at the campus' perimeter.

A NSW Land and Environment Court Planning Principle has again been applied. On this occasion in relation to Impact on public domain views.

> *The first step of this stage is to identify the nature and scope of the existing views from the public domain. This identification should encompass (but is not limited to):*
>
> - *the nature and extent of any existing obstruction of the view;*
> - *relevant compositional elements of the view (such as is it static or dynamic and, if dynamic, the nature and frequency of changes to the view);*
> - *what might not be in the view - such as the absence of human structures in the outlook across a natural area (such as the view from Kanangra Walls);*
> - *is the change permanent or temporary; or*
> - *what might be the curtilages of important elements within the view.*
>
> *The second step is to identify the locations in the public domain from which the potentially interrupted view is enjoyed.*
>
> *The third step is to identify the extent of the obstruction at each relevant location.*
>
> *Unlike Tenacity (which adopts the proposition that sitting views are more difficult to protect than standing views), the impact on appreciation of a public domain view should not be subject to any eye height constraint. A public domain view is one that is for the enjoyment of the whole population, old or young and whether able-bodied or less mobile. It is not appropriate to adopt some statistically derived normative eye height for the assessment of such views (such as the conventionally adopted 1.6m eye height for the assessment of overlooking privacy impacts). Indeed, some views (such as that from Mrs Macquarie's Chair toward the Opera House and Harbour Bridge) may well be ones likely to be enjoyed frequently from a seated position.*
>
> *The fourth step is to identify the intensity of public use of those locations where that enjoyment will be obscured, in whole or in part, by the proposed private development.*
>
> *The final step to be identified is whether or not there is any document that identifies the importance of the view to be assessed.*
>
> *This will encompass specific acknowledgment of the importance of a view (for example, by international, national, state or local heritage recognition) or where the relevant planning regime promotes or specifically requires the retention or protection of public domain views.*

To assist in the assessment Conrad Gargett has provided a range of existing and proposed views from the public domain around the hospital's perimeter. These are set out in **Figures 92** to **94**. The respective steps in the assessment are set out below with reference to these figures.

The **first step** of this stage is to identify the nature and scope of the existing views from the public domain. This identification should encompass (but is not limited to):	
The nature and extent of any existing obstruction of the view;	There are no existing wide ranging views from the public domain through or past the Shoalhaven Hospital site. There are some fleeting or long distant views to the horizon to the north, however the significant views enjoyed from the former Nowra Park, Scenic Drive and North Street generally are those to the west away from the development site. Short neighbourhood views of a lower order of significance are in abundance within the locality along public roads.
Relevant compositional elements of the view (such as is it static or dynamic and, if dynamic, the nature and frequency of changes to the view);	The views are generally urban settings in the short distance views and of physical landscape features in the longer distance views.
What might not be in the view - such as the absence of human structures in the outlook across a natural area (such as the view from Kanangra Walls);	Only the longer distance views have an absence of human structures, but these are best enjoyed away from the development site, with one's back to the hospital, and removed from the urban fabric of the neighbourhood.
Is the change permanent or temporary; or	In some directions the change of the view is permanent, particularly from North Street looking north and from Shoalhaven Street looking north or south close to the hospital. Views in other directions are generally unaffected.
What might be the curtilages of important elements within the view.	Tree lined streets, sky, and a sense of space provide important elements of views of localised views.

The **second step** is to identify the locations in the public domain from which the potentially interrupted view is enjoyed.	As shown in Figures 92 to 95 some key views into and through the development site which are likely to be interrupted by the new Acute Services Building include parts of Scenic Drive looking east, North Street looking north through gaps in the vegetation and canopy, from Shoalhaven Street looking west or north-west again through gaps in the vegetation and canopy. The view from Nowra Golf Course looking east over the Shoalhaven River to Ben's Walk also has the potential to be partially interrupted by the building looking over the top of the escarpment.

The **third step** is to identify the extent of the obstruction at each relevant location.	Based on the photomontages provided by Conrad Gargett, it is the near views that are more localised that are of a lower significance or order that stand the risk of being more greatly affected than any longer views where different vantage points may be secured to retain uninterrupted views. This is because of the open nature of the development site and its environs, the enclosed nature of the former Nowra Park at its edges but once within the central areas of the space the sky and longer glimpses through the hospital open up. Note also, that with the significant grade change uphill from east to west key views towards the river and the landscape beyond are only enjoyed once at Scenic Drive and its western fringe. The views through the former Nowra Park will have a changed urban context within the park behind the existing tree lined street (in most circumstances) without necessarily affecting important or significant views to the area's hinterland.

	The same applies in reverse from the foreshores of the Shoalhaven River at the golf club looking towards Ben's Walk and the general location of the hospital. The new building will sit behind the existing views to the escarpment and will sit above the Scenic Drive alignment but below the existing tree canopy of Scenic Drive and the upper reaches of the escarpment. Figure 96 provides the long sectional view across the river demonstrating the likely extent of visibility of the buildings from the foreshore / golf course.

Figure 92 – Photomontage of indicative view of the Acute Services Building from Scenic Drive (Conrad Gargett)

Figure 93 – Photomontage of indicative view of the Acute Services Building from North Street (Conrad Gargett)

The **fourth step** is to identify the intensity of public use of those locations where that enjoyment will be obscured, in whole or in part, by the proposed private development.	The highest areas of public use are likely to be the Shoalhaven River's western foreshore at the golf club, the area at the top of the lookout facing west away from the hospital and the top of Ben's Walk, as well as Ben's Walk descending to the river level below the escarpment. To a similar but lesser degree the former Nowra Park (including its new landscaped areas and playgrounds) would enjoy renewed use due to the refresh of its facilities. Lastly, the footpaths or areas within the road reserves of Scenic Drive, North Street and Shoalhaven Street would be used by pedestrians and cyclists. The areas of highest intensity use are likely to be the least affected, if at all.
The **final step** to be identified is whether or not there is any document that identifies the importance of the view to be assessed.	The Shoalhaven LEP 2014 seeks assessment of views in the context of heritage settings as well as visual impacts of development upon Scenic Protection Areas. In this case Ben's Walk is both a heritage item and a Scenic Protection Area. As noted in the Eco

	Logical Statement of Heritage Impact, in consideration of the impacts of the built form upon Ben's Walk and its scenic qualities, it should be noted that the heritage listing for Ben's Walk does not relate to views or vistas as part of its significance. The listed curtilage for the Ben's Walk heritage item encompasses the bushland area and sandstone cliff along the western edge of the Scenic Drive road side. The physical walkway comprising Ben's Walk sits behind the vegetation descending towards the base of the sandstone escarpment. The scenic value of the walk is towards the Shoalhaven River which is a significant feature in the Aboriginal history of the area, and the original walkway that was constructed by Ben Walsh is below Hanging Rock at the base of the sandstone cliff. Accordingly, the visual impacts of the development do not relate to this listing.

Figure 94 – Photomontage of indicative view of the Acute Services Building from Shoalhaven Street (Conrad Gargett)

Figure 95 – Photomontage of indicative view of the Acute Services Building from west of the Shoalhaven River (Conrad Gargett)

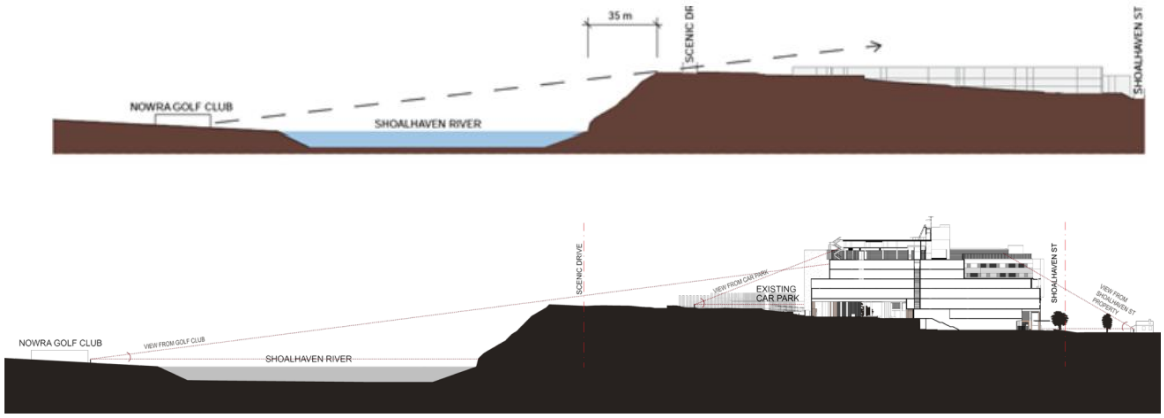


Figure 96 – Indicative long sectional views across the Shoalhaven River (Conrad Gargett)

In summary, the likely visual impacts, where they affect significant view are likely to be minor. The greatest impact will likely occur with respect to near views of existing urban contexts, largely of those to views through vegetation of tree canopies into the former open area of Nowra Park which will become built-up and further urbanised. Areas of canopy and green space will be lost to those near views. This will in part be offset by new landscaping and the new replacement planting of 65 canopy trees replacing the 26 trees lost. Over time the existing canopy will be further enhanced by these new plantings.

View loss / sharing

View loss from private development has been considered using another NSW Land and Environment Court Planning Principle. On this occasion in relation to private view loss.

> ***The first step is the assessment of views to be affected.*** *Water views are valued more highly than land views. Iconic views (eg of the Opera House, the Harbour Bridge or North Head) are valued more highly than views without icons. Whole views are valued more highly*

than partial views, eg a water view in which the interface between land and water is visible is more valuable than one in which it is obscured.

The second step is to consider from what part of the property the views are obtained. *For example the protection of views across side boundaries is more difficult than the protection of views from front and rear boundaries. In addition, whether the view is enjoyed from a standing or sitting position may also be relevant. Sitting views are more difficult to protect than standing views. The expectation to retain side views and sitting views is often unrealistic.*

The third step is to assess the extent of the impact. *This should be done for the whole of the property, not just for the view that is affected. The impact on views from living areas is more significant than from bedrooms or service areas (though views from kitchens are highly valued because people spend so much time in them). The impact may be assessed quantitatively, but in many cases this can be meaningless. For example, it is unhelpful to say that the view loss is 20% if it includes one of the sails of the Opera House. It is usually more useful to assess the view loss qualitatively as negligible, minor, moderate, severe or devastating.*

The fourth step is to assess the reasonableness of the proposal that is causing the impact. *A development that complies with all planning controls would be considered more reasonable than one that breaches them. Where an impact on views arises as a result of non-compliance with one or more planning controls, even a moderate impact may be considered unreasonable. With a complying proposal, the question should be asked whether a more skilful design could provide the applicant with the same development potential and amenity and reduce the impact on the views of neighbours. If the answer to that question is no, then the view impact of a complying development would probably be considered acceptable and the view sharing reasonable.*

In addressing the steps above, the following table has been prepared.

The **first step** is the assessment of views to be affected.	The likely residential / private views affected will be similar to the public views shown from North Street and Shoalhaven Street. The low-rise nature of development around the hospital means the views are likely to be under or through canopy trees, rather than over the canopy. These are likely to be limited to short-range and local views as glimpses into the former Nowra Park in part through existing vegetation and canopy and of the existing turfed open areas and hospital buildings and infrastructure beyond. The views are not of the Shoalhaven River, Ben's Walk or escarpments and other distant natural features.
The **second step** is to consider from what part of the property the views are obtained.	The views are generally from front yards, verandahs and potentially bedrooms facing the street, rather than principal living areas or principal private open space areas which will generally be located in the rear and rear yards of residential premises.
The **third step** is to assess the extent of the impact.	The extent of impact varies by the distance from the proposed Acute Services Building. Near views (of significance where they exist) close to the building will be more greatly affected and to the larger part will be interrupted or completely lost as the open areas of the parkland are lost to the building itself. This may also include views through to sky though canopy trees and gaps between. More distant views will more readily retain existing glimpses and vistas.
The **fourth step** is to assess the reasonableness of the proposal that is causing the impact.	The range of private view loss is reasonable in the context of the generally limited range of private views available, which where they are from principal private living spaces or open spaces are largely framed by the existing street plantings.

	Further, these spaces are relatively few in number and the views carry no significance in relative terms when compared to public views available nearby to the south-west and west of the hospital site.

Visual privacy

Visual privacy is unlikely to be significantly affected by overlooking from the building. The Acute Services Building is not like a residential apartment building and windows and balcony spaces facing Shoalhaven Street in particular will in part be screened or the uses enjoying sunlight and visual amenity to internalised spaces are not of the type where users would dwell for extended periods. This includes ends of corridors with access to daylight.

IPU rooms will generally face either north or south and avoid direct opportunities for overlooking to the east or otherwise have an oblique view to the east with the bed locations away from the window. Short term visitors will be visiting these rooms. Screening will be provided to the eastern rooms at levels 3 and 4 to minimise any visual impact to Shoalhaven Street properties.

Direct overlooking into a significant number of rear yards is considered unlikely.

Acoustic separation

The noise impacts from the operation of the development are separately considered and assessed in this section. Generally, however, the closest residential (and sensitive) neighbours will be located at least 20-30 metres from the façade of the building or its recessed balcony areas. Balcony use will be generally limited to daylight hours and likely only involve quiet activities rather than social gatherings.

Lighting impacts

The external lighting strategy across the redevelopment will be provided to meet Australian Standards and the HI Engineering Services Guidelines. The external lighting strategy will provide a safe and secure environment whilst providing an elegant environment for all users of the building which is simple to maintain.

External lighting will be provided around the perimeter of the Acute Services Building and walkways across the entry plaza in accordance with AS/NZ 1158. Entrances to the building will be illuminated through coordinated internal and external lighting schemes. Lighting provisions will be coordinated with access control provisions required at building entry points. External lighting will be provided through a combination of lighting techniques using pole, wall and bollard luminaires.

Landscaped areas not occupied by people will not target a specific illuminance level. Pole mounted luminaires will be vandal and corrosion resistant, weatherproof and UV stable. The maintenance strategy and location of luminaires will be coordinated with the ISLHD Facilities Management team to ensure easy access for maintenance.

The loading dock entrance will be illuminated to meeting AS1680.2.1 "Interior and workplace lighting". Illumination levels adjacent to the external space will consider adaptation between the internal and external environments. Loading dock lighting will be provided by high level luminaires mounted up to the entry point. Efficient LED light sources will be used throughout the development.

All external and landscape lighting will be cognisant of glare through obtrusive lighting and designed to AS4282 "control of the obtrusive effect of outdoor lighting". Compliance will be achieved through a number of means, including directional luminaire selection with appropriate cut off angles and additional glare shields where required to reduce the upward light component. Lighting control measure will also be in place to optimise usage.

7.6.4 Crime Prevention through Environmental Design

Crime Prevention through Environmental Design (CPTED) is a crime prevention strategy that focuses on the planning, design and structure of cities and neighbourhoods. It reduces opportunities for crime by using design and place management principles that reduce the likelihood of essential crime ingredients (law, offender, victim or target, opportunity) from intersecting in time and space (source: NSW Police – Safer by Design).

Based on information made available on the NSW Bureau of Crime Statistics and Research (BOCSAR) webpage, the Nowra area (Postcode 2541) and including Shoalhaven Hospital is generally identified as being subject to low levels of crime and anti-social behaviour. In summary, BOCSAR's January 2018 to December 2021 rating for different types of crime for the Nowra postcode is:

- Assault – Low to Moderate
- Homicide – Very low
- Robbery – Moderate
- Theft – High
- Malicious Damage to property – Moderate
- Disorderly Conduct – Moderate

In general, the Nowra postcode would be considered to be a Low risk area under any measure of crime, with the hospital and its environs not identified to hotspot or area of concentration of crime. The operation of the hospital as a 24 hours / 7 days per week institution that sits prominently within the locality is likely to positively contribute to this risk status within its neighbourhood. This is likely to be reinforced by the positive design and management measures to be implemented under this redevelopment. See the discussion of the area's crime profile in the CPTED Report prepared for this development at **Appendix W**.

The relevant CPTED Principles under the NSW Police Safer by Design guidelines are:

- Territorial Reinforcement
- Natural Surveillance
- Access Control
- Space Management

Territorial Reinforcement

The existing hospital and the proposed design has put a significant focus on community ownership of the public spaces to ensure they do provide positive signals, make people feel comfortable and are more likely to be visited as they feel owned and cared for.

Well frequented places also reduce opportunities for crime whilst increasing the level of risk to criminals. 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:

- Designs that encourages people to gather in a public space and to feel some responsibility for its use and condition
- Design with clear transitions and boundaries between public and restricted spaces
- Clear design cues on who is to use a space and what it is to be used for.

In this instance, Ethos Urban in its assessment advises that the clear definition of public and private territory, and the presence of ground level natural surveillance on the site will be a deterrent to potential offenders and promote territorial reinforcement. Clear delineation between publicly accessible land and the land where the proposed hospital development will be situated is considered of high importance, given the site's proximity to the adjacent area of former park which will continue to experience pedestrian flows.

Clear delineation and territorial reinforcement of the hospital from surrounding public space will promote a confidence in hospital employees to take effective guardianship of spaces and reduce incidences of crime. Defined landscaping and glazing is provided for within the designed development in its current form which clearly delineates the boundaries of the new hospital building.

In summary, Ethos Urban considers the design of the proposed development to reflect its purpose, and while potential perpetrators may seek to exploit areas with unclear spatial definition, the design of the proposed development generally benefits from achieving multiple principles of CPTED.

The site is benefited by its presentation, configuration and orientation to Shoalhaven Street and more importantly to North Street, where the former Nowra Park is located. Maintenance of the vegetation in the building frontages should occur to ensure that areas do not undermine the principles of CPTED, including access control, natural surveillance, effective lighting and technical surveillance.

Natural Surveillance

The attractiveness of crime targets can be reduced by providing opportunities for effective electronic and natural surveillance. Good surveillance means that people can see what others are doing and is an effective deterrent to criminals from committing crimes in places that are well supervised. Natural surveillance is a by-product of well-planned, well-designed, and well-used spaces. This is achieved when normal space users can see and be seen by others.

The architectural design of the proposed development has implemented natural surveillance in a considered building layout and orientation to create clear sight lines, coupled with it amenities, landscaping and security lighting. Electronic surveillance will be achieved through the use of Security Cameras, Video Recordings, and Intercoms. The strategic positioning of the security lighting and cameras is a major factor for deterring criminal behaviour and the prevention of anti-social behaviour.

The siting and layout of the new building will further promote ease of access and wayfinding reinforcing natural surveillance. Ethos Urban advises that the entry from Shoalhaven Street creates a new public interface at Shoalhaven Street which further promotes natural surveillance at the ground level from pedestrians and also from the upper level windows of the hospital building. The proposed design and proximity to Shoalhaven Street provides natural surveillance both externally to the public domain and internally within the site. Furthermore, the sense of community ownership of open spaces and public spaces encouraged by the high natural surveillance environment that is proposed will help create a sense of safety and activity, thereby reducing the opportunities for crime.

The building also includes a number of windows oriented towards the former Nowra Park on the North Street side of the building which importantly allows natural surveillance to and from this public open space.

The proposed design of the development in its current form is considered to increase the opportunities for natural surveillance, effective guardianship and community ownership that are crucial to the perceptions of safety and therefore a heightened sense of risk for potential offenders.

The proposed high quality lighting throughout all publicly accessible areas will be adequate to permit facial recognition, allow for long sight lines and reduce dark shadowing which will in turn help reduce opportunity for predatory crime. The development will also build upon its existing CCTV network. In this regard the placement of CCTV within the site should specifically focus on providing coverage to key access/egress points to the new building, and areas that have limited natural surveillance. For this reason, discrete CCTV should be considered near building entrances (including vehicle entrances) and pedestrian pathways where appropriate.

Access Control

Access control strategies restrict, channel and encourage the movement of people into and around designated areas. Whilst physical barriers increase the effort required to commit crime, they are not

considered appropriate in this instance, given the campus layout of the site. Symbolic barriers are cues that help define borders and transitions between public and private space.

Notwithstanding, the existing campus and the proposed new Acute Services Building will continue to apply electronic access control measures that will restrict, channel, and encourage people into, out of and around facilities, combined with way-finding signage and formal/informal routes, that will reduce criminal activity.

Natural access control includes the tactical use of landforms, design measures including building configuration; formal and informal pathways, landscaping, fencing and gardens. 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.

Effective access control can be achieved by creating effective:

- landscapes and physical locations that channel and group people into supervised areas
- restricted access to internal areas or high-risk areas
- mechanical access control includes the deployment of security counter-measures.

The landscape design uses a combination of hierarchical path network, key landscape features, directional landform, and visual connection throughout to guide individuals across the site in a way that passively deters from entering high-risk or secure areas. In further collaboration with architectural, signage, and lighting strategies the design actively delineates access between public and restricted access areas.

Space Management

The Shoalhaven Hospital Redevelopment's architectural design has taken into consideration and applied the need for space management, which involves the formal supervision, control, and care of the development. Popular public spaces are often attractive, well maintained and well used spaces and the proposed design wants to ensure that the space is appropriately utilised and will be well cared for.

Space management strategies applied to the proposed development and the hospital campus include activity coordination, site cleanliness, rapid repair of vandalism and graffiti, replacement of faulty security lighting and the removal or refurbishment of decayed physical elements.

There is a strong association between environmental maintenance and the fear or perceived fear of crime. General image can greatly affect the individual's desire to enter and engage with a space. Environmental maintenance and territorial reinforcement are co-dependent in achieving a safer space and are integral in achieving optimal natural surveillance. The maintenance of the built form, landscaping and lighting will assist in communicating care and the presence of effective guardianship.

The development of the new Acute Services Building provides the opportunity to increase the activity of the area during both the day and night which in turn can increase surveillance and natural community policing of the former park area and other public spaces surrounding the development. Malicious damage to property is a common occurrence in the local area, therefore the increase in activity in and around the entire hospital precinct provides the opportunity to increase the threat to offenders.

Recommended mitigation measures

In consideration of the architectural and landscape plans, to further enhance the development's already positive safety and security features and credentials, Ethos Urban has made a number of generic recommendations in relation to surveillance; lighting and technical supervision; territorial reinforcement; environmental maintenance; activity and space management; access control; and design, definition and designation. See **Appendix W**.

7.7 Transport, Traffic and Parking

A Transport and Accessibility Impact Assessment (TAIA) has been prepared by TTW in relation to the proposed development. This addresses, amongst other things, the existing transportation facilities; the existing and likely future car parking demand and supply at the campus at the year of commencement of operation of the Acute Services Building (2026); the impact of the development upon weekday peak hour activity at 2026; existing and future intersection performance at and near the hospital arising from the development; proposed servicing arrangements; and mode share and content for a Green Travel Plan for the campus. TTW has also provided a preliminary Construction Traffic Management Plan (CTMP) within the TAIA – see **Appendix N**.

7.7.1 Existing Conditions

Staff numbers

The current staff numbers at the hospital (2022) during a typical weekday morning shift is 538 staff. This is comprised of 368 clinical staff, 156 administrative staff, 5 retail staff, and 9 visiting medical officers (VMOs).

Non-staff numbers

The current number of typical weekday non-staff numbers at the hospital is 198 people. 68 are outpatients, 26 are Emergency Department presentations, 62 are visitors, and 42 are others uses (such as volunteers, students and those undertaking training). The hospital also caters for 39 fleet vehicles (and the corresponding users).

Overall, during a typical weekday operation of the hospital there are 775 on-site users at the hospital.

Journey to work data and mode share

The 2016 Census Journey to Work (JTW) data provides an insight to the current travel mode split for those working in Nowra. It is noted that the 2021 Census JTW data has not yet been published. The JTW data is defined by Statistical Area Level 2 zones and the development site is situated within the Nowra region under travel zone 6129. The mode share data contained in Table 2.5 of the TTW TAIA represents the travel habits of those working within the zone, and which mode they use to travel to work. This data can be used to represent the travel modes of the staff working at Shoalhaven Hospital. Table 2.5 is replicated below.

Table 2.5 Summary of Travel Mode Split

Note: values may not add to totals shown due to rounding

Source: ABS Census TableBuilder

Method of Travel to Work	Mode Share (%)
Train	0.3%
Bus	0.3%
Ferry	0.0%
Taxi	0.2%
Car, as driver	88.6%
Car, as passenger	5.5%
Truck	0.7%
Motorbike/scooter	0.9%
Bicycle	0.9%
Walked only	2.2%
Other Mode	0.5%
Total	100.0%

A travel survey was also undertaken in May 2022 which was distributed to staff, patients and visitors to report on the travel behaviours of hospital users. This survey provides up-to-date information that is directly applicable to the specific hospital site and its users. The statistics from this survey will reflect the current travel habits of the staff, patients and visitors and can therefore be applied to the future expected staff, patient and visitor numbers with higher accuracy than general local data (such as the JTW data). This survey provides a basis to create assumptions about the travel modes and habits of hospital users into the future.

A summary of the travel modes used by the various hospital users is contained in Table 2.6 of the TTW TAIS as also reproduced below.

Table 2.6: Summary of Mode Share Split from PTC Survey

Note: values may not add to totals shown due to rounding

Mode summary	Staff		Patients		Visitors	
	#	%	#	%	#	%
Walk	1	0.9%	1	1.9%	1	0.7%
Bicycle	1	0.9%	0	0.0%	0	0.0%
Bus	0	0.0%	0	0.0%	0	0.0%
Community Transport	0	0.0%	2	3.8%	0	0.0%
Train	0	0.0%	0	0.0%	0	0.0%
Car	103	97.2%	49	92.5%	140	99.3%
Motorbike	1	0.9%	1	1.9%	0	0.0%
Total Responses	**106**	**100%**	**53**	**100%**	**141**	**100%**

Based on detailed mode share and mid-shift and shift changeover analysis by TTW (as presented in Table 5.4 of the TTW TAIA), a current total parking demand of 706 spaces arises from staff, public visitation and other users during the mid-shift on a typical weekday, whilst at shift changeover this number rises to a parking demand for 954 spaces.

Existing parking on site supply and demand

The existing on-site hospital parking supply is 693 spaces including the following:

- 121 spaces at the Cancer Care Centre
- 66 spaces at the Grand Pacific Health Centre
- 506 spaces within the hospital site, including 230 within the multi-deck car park

The multi-storey car park has been future-proofed to allow additional 2 storeys (4 split deck levels) to be constructed, which would provide an estimated 136 additional spaces (subject to detailed design).

There are also 5 existing ambulance parking bays.

Demand for these spaces varies across the day and week. Table 2.3 of the TTW TAIA summarises existing weekday parking demand and vacancies on the campus across a range of months in mid-2021. This shows the average car parking availability is 45% for weekdays. The minimum availability is 19% and the maximum is 51%. This demonstrates that there is capacity on-site to cater for parking demand, however overflow to free-of-charge on-street parking occurs. The extent of that overflow is set out below.

Existing parking off site and demand

Scenic Drive has 90° parking provisions for 70 spaces along the site frontage with a 2-hour time restriction. There are also two parallel parking bays, providing capacity for approximately 10 cars. The opposite side of Scenic Drive is signposted as a no parking zone. Shoalhaven Street and North Street have unrestricted on-street parking on both sides of the road.

Within 400 metres of the site, there is a total on-street parking capacity of 379 spaces. Of these, 30% are generally occupied, resulting in 265 available on-street parking spaces.

Again, the demand for off street parking around the hospital varies across the day and week. A summary table has been provided by TTW in Table 2.2 of this TAIA setting out minimum, average, median, and maximum occupancy from data collected in 2019 to 2021. In summary, of the available spaces the average occupancy is 125 spaces, with the minimum usage 27 spaces (on a Sunday morning) and the maximum usage 174 spaces on a Tuesday afternoon. Generally, as a worst case scenario some 174 of the available 265 spaces are occupied and generally assumed to be hospital-related parking.

Overall parking supply and demand

Overall, there are 693 existing on-site spaces plus a further 265 off-site spaces within a 400m radius of the hospital. Some 958 spaces are generally available to hospital users at and around the site. The current parking demand of 954 typical weekday users of the hospital arriving by car (in the shift changeover scenario) is catered for both on and off the hospital site in the available 958 spaces.

Existing intersection performance

TTW has undertaken SIDRA intersection modelling to produce the existing performance of each of the studied nearby intersections. The results of the SIDRA modelling are found in Tables 2.7 and 2.8 of the TAIA. **Figure 97** shows the subject intersections.

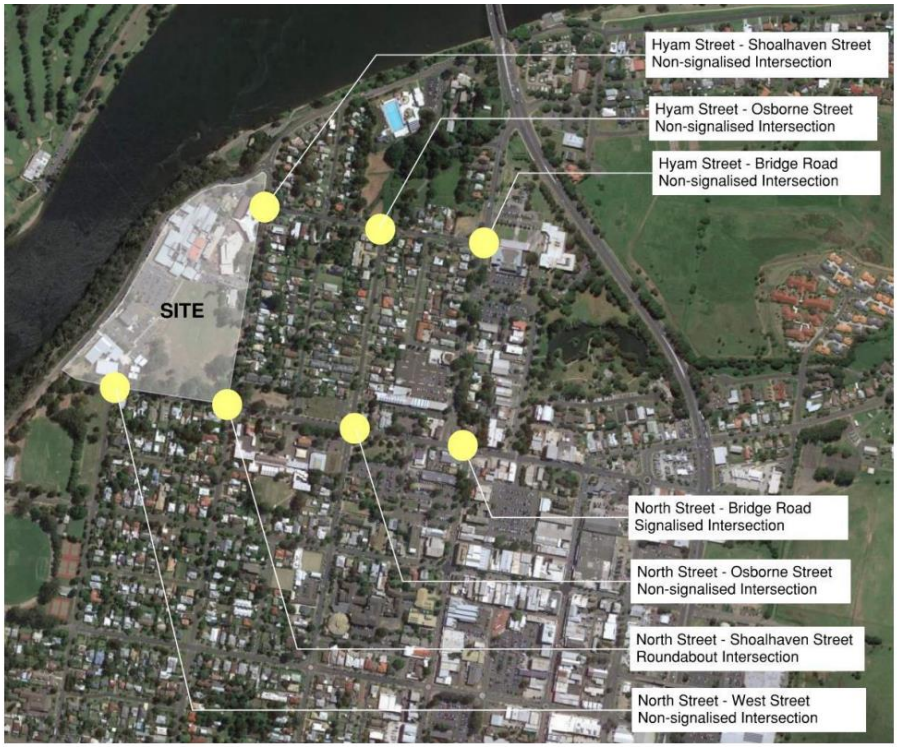


Figure 97 – Locations of assessed intersections (TTW)

Table 2.7 of the TAIA summarises the operation and performance of the existing intersections in the road network around the site. The results indicate that the intersections are performing at a favourable Level of Service (LoS) across the morning and afternoon. A LoS of A or B is achieved across all intersections and all scenarios.

It is noted that the Hyam St & Bridge Rd intersection records a LoS of E for the right turn manoeuvre from Hyam Street, but all other movements indicate a high LoS. This is due to the high vehicle volumes travelling along Bridge Road, causing delays for those turning out of Hyam Street. Pedestrian volumes are modelled for the North St & Bridge Rd & Berry St intersection which contains

signalised pedestrian crossings at each intersection leg. Table 2.8 summarises the operation and performance of this intersection for pedestrians. A high LoS of A and B is achieved across all time periods analysed.

In addition to the detailed intersection analysis, TTW also undertook observational assessments of several additional intersections within the local road network including:

- Scenic Drive & Shoalhaven Street
- Hyam Street & Colyer Avenue & Mandalay Avenue
- Hyam Street & Keft Avenue
- North Street & Colyer Avenue
- West Street & Westhaven Street
- West Street & Junction Street
- Junction Street & Shoalhaven Street

These intersections were observed on Tuesday 12th July 2022 from about 9:00 – 9:30am in the morning, and from about 4:00 – 4:30pm in the afternoon. Similar observations were made at each intersection across both peaks, showing very low vehicle activity and no evidence of queueing. It is noted that vehicle activity particularly near the North Street & Colyer Avenue intersection may have been less than typically expected, as this intersection is located opposite St Michael's Catholic Primary School and observations occurred during the school holidays. Overall, this observational assessment clearly showed low existing vehicle volumes within the network around the hospital.

Table 2.7: Existing Scenario without Development Vehicle Volumes

Data for unsignalised intersections is the manoeuvre with worst delay
Data for signalised intersections is the intersection total

Intersection	Time	Degree of Saturation	Average Delay (sec)	95% Queue Length (m)	Level of Service
Hyam St & Shoalhaven St	8:00 – 9:00am	0.085	7.7	2.2	A
	3:45 – 4:45pm	0.059	9.2	1.6	A
	3:00 – 4:00pm	*0.049*	*8.1*	*1.3*	*A*
Hyam St & Osborne St	8:00 – 9:00am	0.043	5.5	1.0	A
	3:45 – 4:45pm	0.211	6.1	5.4	A
	3:00 – 4:00pm	*0.165*	*5.7*	*4.2*	*A*
Hyam St & Bridge Rd	8:00 – 9:00am	0.278	62.3	7.8	E
	3:45 – 4:45pm	0.827	41.9	9.0	C
	3:00 – 4:00pm	*0.461*	*27.3*	*19.3*	*B*
North St & West St	8:00 – 9:00am	0.041	7.7	1.1	A
	3:45 – 4:45pm	0.057	7.7	1.4	A
	3:00 – 4:00pm	*0.043*	*8.2*	*1.1*	*A*
North St & Shoalhaven St	8:00 – 9:00am	0.066	5.9	1.7	A
	3:45 – 4:45pm	0.106	7.8	3.1	A
	3:00 – 4:00pm	*0.103*	*6.1*	*2.9*	*A*
North St & Osborne St	8:00 – 9:00am	0.238	14.4	7.4	A
	3:45 – 4:45pm	0.584	14.8	39.2	B
	3:00 – 4:00pm	*0.132*	*17.6*	*3.8*	*B*
North St & Bridge Rd & Berry St	8:00 – 9:00am	0.636	13.5	49.8	A
	3:45 – 4:45pm	0.515	12.0	26.6	A
	3:00 – 4:00pm	*0.500*	*11.7*	*26.7*	*A*

Table 2.8: Existing Scenario without Development Pedestrian Volumes

Intersection	Time	Degree of Saturation	Average Delay (sec)	Level of Service
North St & Bridge Rd & Berry St	8:00 – 9:00am	0.166	14.6	B
	3:45 – 4:45pm	0.074	9.7	A
	3:00 – 4:00pm	*0.072*	*9.7*	*A*

7.7.2 Operational Traffic Impacts

Proposed staff and user estimates

The ISLHD has provided its estimate of the growth of staff and users at the hospital on a typical weekday upon the completion and opening of the Acute Services Building in 2026. This is shown in Table 3.1 of the TAIA and compares the 2022 numbers used above with the forecast 2026 numbers. This results in a 16.6% increase in users at the site, as shown below. The current 775 users on-site increases to some 905 users in 2026.

Table 3.1: Hospital Operations During a Typical Weekday
Source: ISLHD (received 26/5/22)

Hospital User	Existing (2022)	Opening Year (2026)
Staff (clinical, admin, retail and VMOs)	538	564
Outpatients	68	113
ED presentations	26	31
Visitors	62	95
Other users (volunteers, training, students)	42	63
Fleet vehicles	39	39
Total	**775**	**905 (+16.8%)**

Further, in addition to the increased visitation and users of the hospital, the proposed development also results in the loss 39 existing parking spaces as a result of the footprint of the new Acute Services Building. These are in part offset by 11 new short-term spaces at the new drop-off and front of house area. Accordingly, a net loss of 28 spaces occurs reducing the on-site parking provision to 665 spaces.

The five (5) existing ambulance spaces are also lost but are replaced by seven (7) new ambulance bays – a net gain of 2 ambulance bays.

Mode share targets

To address parking demand on and off the site and promote improved mode share away from private car use, TTW has modelled targeted improves to alternatives to car use in line with contemporary Green Travel Plan requirements for developments across NSW, including hospitals. Further detail on this project's Green Travel Plan is set out in sub-section 7.7.3 below.

In general, several transport initiatives are to be implemented in order to reduce dependency on private vehicles and to reduce the forecast parking demands. These initiatives include:

- Improved active transport infrastructure including new footpaths, bicycle storage and end-of-trip facilities
- Improved public transport services as per TfNSW 16 Regional Cities Services Improvement Program
- Supporting work from home for eligible staff (e.g. admin staff)
- Promotion of carpooling and facilitating the pairing up of staff

The proposed mode share targets are set out in TTW's Table 5.3, as reproduced below, noting totals may not add to 100% as carpooling is assessed separately to private vehicle use.

The target is to reduce car use across staff, patients and visitors to varying degrees, however mostly through staff usage. Concurrently, a corresponding increase in staff usage of public transport, cycling and walking has been targeted. Modest increases in patient and visitor cycling and walking has also been targeted.

The tangible benefits for cycling are likely to be realised through the provision of 90 bicycle storage spaces located in the undercroft parking area of Block B of the hospital collocated with existing adjacent end of trip facilities for showering and changing.

Table 5.3: Mode Share Targets

Note: totals may not add to 100% as carpooling is assessed separately to private vehicle use

	Travel Mode	Existing Mode Share	Target for 2026	% Change from Existing
Staff	Private vehicle	98.1%	89.4%	-8.7%
	Carpool	-	13.2%	-
	Public transport	0.0%	2.0%	+2.0%
	Bicycle	0.9%	6.6%	+5.7%
	Walk	0.9%	1.9%	+1.0%
Patients	Private vehicle	94.3%	91.9%	-2.4%
	Carpool	-	3.3%	-
	Community Transport	3.8%	3.8%	0.0%
	Public transport	0.0%	0.0%	0.0%
	Bicycle	0.0%	1.4%	+1.4%
	Walk	1.9%	2.9%	+1.0%
Visitors	Private vehicle	99.3%	95.4%	-3.9%
	Carpool	-	6.6%	-
	Public transport	0.0%	0.0%	0.0%
	Bicycle	0.0%	2.9%	+2.9%
	Walk	0.7%	1.7%	+1.0%

Assessment of proposed on-site parking supply and demand

As noted, a reduction in on-site parking arises from the development. A net loss of 28 spaces occurs reducing the total supply of parking to 665 spaces.

The demand for car parking of the proposed redevelopment is calculated on the basis that the mode share targets in Table 5.3 are achieved by 2026 as the sustainable travel initiatives and Green Travel Plan is implemented following approval of this DA.

Table 5.4 from the TTW TAIA shows the parking demand for the existing year (with existing mode splits) and the year of opening (with target mode shifts achieved). The data used in these calculations including staff, patients and visitor numbers was supplied by the ISLHD and received by TTW on 26 May 2022. Table 5.4 contains an assessment of the parking demand for during a shift (mid-shift) and during shift changeover (between the morning and afternoon shift). The shift changeover period is considered the worst-case scenario where the parking demand is shown to be the highest, as some morning staff do not depart before the afternoon staff arrive.

It should be noted that the calculations in Table 5.4 assume that all on-site parking is fully utilised before vehicles begin to occupy on-street parking.

The analysis summarised in Table 5.4 indicates that with the implementation of the sustainable transport initiatives listed above and with the mode share targets achieved, the parking demand during a morning weekday shift will be 855 spaces in 2026 during a shift changeover – being 99 spaces less than the current worst case scenario.

Assuming all on-site parking is used, about 190 vehicles are expected to park within surrounding on-street parking in 2026 during the weekday afternoon shift changeover. Note that there are approximately 265 on-street parking spaces available for hospital users within 400 metres of the site,

meaning the projected 2026 demand will be able to be accommodated within these available on-street spaces.

Table 5.4: Forecast Parking Demand with Travel Mode Shift Applied

Hospital User	Existing (2022) *(existing mode splits)*	Opening Year (2026) *(mode shift achieved)*
Staff	Mid-shift: 498 Shift changeover: 746	Mid-shift: 382 Shift changeover: 577
Public demand (outpatients, emergency, visitors)	129	190
Other users (fleet, volunteers, training, and students)	79	88
Total mid-shift demand	**706**	**660**
Total shift changeover demand	**954**	**855**
On-site parking capacity	693	665
On-street parking capacity within 400m available to hospital users	265	265
On and off-street parking capacity	**958**	**930**
Cars parked on-site for mid-shift	***693***	***660***
Cars parked on-site for shift changeover	***693***	***665***
Cars parked on-street for mid-shift	***13***	***0***
Cars parked on-street for shift changeover	***261***	***190***

HI will undertake future traffic and parking studies at 18 and 36 months after the proposed redevelopment / Acute Services Building opens to determine any further actions required to address traffic and parking impacts into the future. These studies should include occupancy studies of on-site and on-street parking and travel mode surveys to be distributed to all hospital users.

Increase in traffic movements / trip generation

Based on the RMS Guide to Traffic Generating Development, TTW has assessed the likely trip generation arising from the increased users at the site.

For metropolitan hospitals and regional hospitals with lower accessibility, trip generation rates are presented as follows:

- AM Peak = 0.41 (S) + 0.62 (B)
- PM Peak = 0.59 (S) + 0.05 (B)

where S is the number of staff during the main day shift and B is the number of beds at the hospital. The proposed operational growth will therefore result in 79 additional trips in the morning peak, and 41 additional trips in the afternoon peak as demonstrated in Table 4.1 from TTW's TAIA as reproduced below.

Note, the future scenarios modelled include the opening year of 2026, and the year 2031 when staffing numbers are at their peak. Staff numbers are not expected to increase beyond this, meaning the 2031 scenario captures the expected future impact of the development until such time as any updated or new Clinical Services Plan is prepared and further workforce numbers and requirement for new beds and/or treatment spaces is understood.

Table 4.1: Trip generation estimates

Travel Period	2022	2026		2031	
		Total	Increase	Total	Increase
Number of main day shift staff	502	564	+62	868	+366
Number of beds	214	303	+89	392	+178
AM peak hour trips	339	419	**+81**	**599**	**+260**
PM peak hour trips	307	348	**+41**	**532**	**+225**

Peak period vehicle movements and Intersection performance

Table 4.2 of the TTW TAIA summarises the operation and performance of the intersections in the road network around the site for the year 2026 and accounts for the additional volumes generated by the development as set out above. A 2% compound growth rate has been applied by TTW to the existing traffic volumes as per advice from Council.

The results indicate very minor changes from the existing scenario, with similarly high LoS achieved across the intersections and various scenarios. The intersections continue to demonstrate suitable operation across the local road network.

It is noted that the Hyam Street & Bridge Road intersection shows a LoS of F for the right turn movement from Hyam Street, while all other movements at this intersection indicate suitable operation. This is due to the high vehicle volumes travelling on Bridge Road, causing delays for vehicles turning out of Hyam Street. The development-related vehicle volumes at this intersection are low, accounting for < 1.5% of total vehicle volumes in the morning and afternoon, meaning the impact of the development is negligible.

Furthermore, the right turn movement from Hyam Street recorded very low vehicle volumes of $\leqslant 11$ vehicles across all scenarios.

Pedestrian volumes are modelled for the North Street & Bridge Road & Berry Street intersection which contains signalised pedestrian crossings at each intersection leg. Table 4.3 of the TTW TAIA summarises the performance and operation of this intersection for pedestrians. The LoS is shown to be high and indicates no change from the existing condition as outlined previously in Table 2.8. Therefore, additional pedestrian trips related to the development will not impact intersection performance.

Compliance with Council's DCP, BCA and Australian Standards

TTW has also considered and addressed compliance with the relevant provisions of Council's DCP. TTW has indicated that compliance with the DCP's parking requirement is achieved. The DCP recommends 384 car parking spaces when considering the demand during a typical weekday morning shift, and 514 car parking spaces considering the demand during the shift changeover between the morning and afternoon shift.

The DCP rates are considered as a guideline, and it is noted the existing parking provision of 693 car parking spaces (and future 665 spaces) exceeds this recommendation for both the mid-shift and shift changeover scenario in 2026. The above analysis has provided a more relevant and detailed assessment of parking supply to demand.

There are no requirements for motorcycle parking specified in the DCP. Notwithstanding, motorcycle parking should be provided in car parks where possible, in locations such as corners or where structural limitations apply, where it would not be possible to provide car parking spaces.

The site provides at least 24 accessible parking spaces out of a total 693 parking current spaces, or approximately 3.5%. This provision exceeds the Building Code of Australia requirement for hospitals which requires accessible parking at a rate of 2% of the total parking provision.

It is proposed that bicycle parking be provided in accordance with the provision for Green Star Projects, which requires 7.5% of total regular occupants with associated facilities as per Table 17B. 4.3 of the Green Star Guidelines. Bicycle parking, showers and lockers are each satisfied in this regard.

Table 4.2: 2026 Scenario with Development Vehicle Volumes

Data for unsignalised intersections is the manoeuvre with worst delay
Data for signalised intersections is the intersection total

Intersection	Time	Degree of Saturation	Average Delay (sec)	95% Queue Length (m)	Level of Service
Hyam St & Shoalhaven St	8:00 – 9:00am	0.107	7.8	2.8	A
	3:45 – 4:45pm	0.064	9.4	1.7	A
	3:00 – 4:00pm	*0.054*	*8.3*	*1.4*	*A*
Hyam St & Osborne St	8:00 – 9:00am	0.051	5.8	1.2	A
	3:45 – 4:45pm	0.237	6.3	6.1	A
	3:00 – 4:00pm	*0.183*	*5.8*	*4.7*	*A*
Hyam St & Bridge Rd	8:00 – 9:00am	0.362	82.2	11.6	F
	3:45 – 4:45pm	0.989	77.9	158.2	F
	3:00 – 4:00pm	*0.544*	*32.4*	*25.3*	*C*
North St & West St	8:00 – 9:00am	0.057	7.7	1.5	A
	3:45 – 4:45pm	0.066	7.8	1.7	A
	3:00 – 4:00pm	*0.051*	*8.4*	*1.3*	*A*
North St & Shoalhaven St	8:00 – 9:00am	0.085	6.1	2.4	A
	3:45 – 4:45pm	0.125	7.9	3.7	A
	3:00 – 4:00pm	*0.121*	*6.2*	*3.5*	*A*
North St & Osborne St	8:00 – 9:00am	0.283	16.1	9.0	B
	3:45 – 4:45pm	0.666	17.8	52.1	B
	3:00 – 4:00pm	*0.150*	*19.6*	*4.4*	*B*
North St & Bridge Rd & Berry St	8:00 – 9:00am	0.686	14.1	56.3	A
	3:45 – 4:45pm	0.558	12.2	29.4	A
	3:00 – 4:00pm	*0.579*	*12.1*	*31.4*	*A*

Table 4.3: 2026 Scenario with Development Pedestrian Volumes

Intersection	Time	Degree of Saturation	Average Delay (sec)	Level of Service
North St & Bridge Rd & Berry St	8:00 – 9:00am	0.181	14.6	B
	3:45 – 4:45pm	0.081	9.7	A
	3:00 – 4:00pm	*0.079*	*9.7*	*A*

Servicing and Loading Dock activity

The proposal includes a new access from Shoalhaven Street. The new access has been designed to cater for various vehicles including Heavy Rigid Vehicles (HRV), Medium Rigid Vehicles (MRV) and Small Rigid Vehicles (SRV). Swept path analysis for this area is included in Appendix E of TTW's TAIA.

Emergency vehicles

The new ambulance bay is planned to provide capacity for seven ambulances, an increase in two parking spaces compared to the existing provision. Parking for at least one police or correctional vehicle will also be provided. The ambulance bay and manoeuvring area has been designed to cater for bariatric ambulances approximately 7.37m in length. Swept path analysis for this area is included in Appendix E of TTW's TAIA.

7.7.3 Green Travel Plan

TTW has also prepared a Green Travel Plan (GTP) in relation to the development (see Section 6 of the TAIA). The aim of the GTP is to reduce the environmental impact of travel to and from the site and to provide a clear plan of management for vehicle and pedestrian movements within and around the site. This includes encouraging alternate travel methods such as active transport, public transport and car-pooling, while reducing dependence on private vehicles. At this early point, the GTP is only preliminary requiring further detailed inputs and evaluation to ensure that outcomes and targets may be achieved.

This preliminary GTP has been prepared in knowledge of, and with reference to, the NSW Travel Plan Toolkit for Hospital Precincts. The Toolkit outlines the process of developing a Travel Plan, and this GTP aligns with this process by first assessing the existing conditions including an analysis of existing travel modes, then developing measurable travel mode targets and implementing actions and activities to fulfil these targets. Strategies for ongoing management of the GTP is also provided in accordance with the Toolkit.

The individual objectives of this GTP are:

- Reduce the environmental footprint of the development
- Promote sustainable transport usage
- Reduce parking impacts
- Improve user safety
- Improve health and wellbeing

In order to achieve the mode share targets set out above, a number of initiatives and programs have been recommended by TTW to be implemented as set out below. The following base strategies (and actions) aim to meet the objectives of the GTP:

- Strategy 1 - Enable informed users
    - Action 1 – Provide a Transport Access Guide
    - Action 2 – Induction information for new users
    - Action 3 – Periodic reminders
- Strategy 2 - Encourage active transport
    - Action 4 – Bicycle storage and end of trip facilities
    - Action 5 – Ride2Work Day and health events
- Strategy 3 - Encourage public transport
    - Action 6 – Opal top-up facilities
    - Action 7 – Increased public transport services
- Strategy 4 - Encourage carpooling
    - Action 8 – Promotion of Liftango carpooling
    - Action 9 – Priority parking
- Strategy 5 - Ongoing management
    - Action 10 – Support working from home
    - Action 11 – Regular reviews of the GTP
    - Action 12 – Transport Coordinator

Actions to encourage active transport, public transport and carpooling would help in reducing total

vehicular and parking demand and vehicle activity around the site. By ensuring users are enabled with the appropriate information and undertaking continued management of the sustainable travel strategies, the objectives of the GTP can best be achieved over time.

Each strategy's actions should be implemented to achieve a shift toward the ultimate objectives of the GTP. The staff member responsible for travel (as recommended in these initiatives) should review this checklist periodically to reflect on the site's progress and opportunities.

The TTW GTP sets out an Action List matrix for how and when the action should be undertaken and at what frequency.

Data collection, ongoing evaluation of the program, reporting of findings, and general governance will be important components of ensuring the success of the GTP.

7.7.4 Preliminary Construction Traffic Management Plan

A preliminary Construction Traffic Management Plan (CTMP) has been prepared by TTW and is attached at **Appendix N** as Section 7 of the TAIA. The CTMP has been prepared to describe the likely construction traffic measures associated with the construction project. Given a principal contractor has not been awarded the project and as details of the construction methodology will need to be confirmed in the final CTMP, at this stage of the project the plan can only be preliminary in nature.

The general aims of the CTMP are to:

- Establish the framework for construction traffic management through to a finalised and detail Construction Traffic Management Plan.
- Satisfy the various work health and safety legislation, regulations and codes of practice including those from SafeWork NSW requirements along with compliance with the Traffic Guidance Scheme (TGS) requirements and traffic control procedures to be implemented. These must be developed in accordance with TfNSW and the relevant Australian Standards.
- Minimise the impact of the construction vehicle traffic on the overall operation of the road network.
- Ensure continuous, safe and efficient movement of traffic for both the general public and construction workers.
- Install appropriate advance warning signs to inform users of the changed traffic conditions.
- Provide a description of the construction vehicles and the volume of these construction vehicles accessing the construction site.
- Provide information regarding the changed access arrangements and also a description of the proposed external routes for vehicles including the construction vehicles accessing the site.
- Establish a safe pedestrian environment in the vicinity of the site during works.

TTW's key considerations in relation to this preliminary CTMP are:

- Construction Operations
    - The majority of works will occur adjacent to Shoalhaven Street and North Street, providing good construction access to the site.
    - The large amount of undeveloped area within the site provides adequate space for vehicles to load and unload within the worksite.
    - Emergency vehicles will be able to enter from the existing emergency vehicle access point at the Shoalhaven Street and access each part of the site uninhibited. They will be able to access neighbouring properties and pass by the site without any issues.
    - Construction workers will not park on the local roads surrounding the hospital and will not park in existing on-site parking spaces except with specific authorisation. Builders tendering for the project will be required to develop and commit to alternative methods of bringing workers to the site.

  - Some provision of parking for construction workers may be available within the construction area itself due to the large area. This parking can be repositioned depending on the construction activities during any given phase. Car parking for workers is subject to the final CTMP.
  - Over the construction program a range of vehicles will visit and service the site commensurate with the scale or type of works being undertaken and the volume of workers at the site. This is likely to peak during the 'structure' and 'finishing and services' works phases.
- Construction Traffic Management
  - Vehicle movements will occur within the prescribed working hours. Delivery and removal trucks, where appropriate, will have a staggered arrival schedule and occur outside general peak hours. Avoiding peak hours allows for minimal queueing of construction vehicles on the local roadway and prevents congestion in the neighbouring areas. Any vehicles arriving after the worksite has reached maximum capacity will be expected to reschedule their delivery and depart, although it is anticipated that enough queueing space will be available.
  - Careful management of heavy construction vehicles exiting the site will ensure traffic safety. The relatively low traffic volumes on Shoalhaven Street and/or North Street means vehicles are expected to use suitable traffic gaps to exit.
  - No change to local public transport routes and services is anticipated as a result of the construction. These routes are likely to experience only minor impacts due to the presence of additional truck movements. These truck movements are not expected to cause delays on local roads, or create flow-on impacts to other streets.
  - As noted, construction traffic vehicle access is likely via Shoalhaven and/or North Streets, with the indicative arrival and departure routes identified by TTW depicted in **Figure 98** below.

Figure 98 – Indicative Construction Vehicle Routes (TTW)

- Road Safety
    - Use of nearby intersections will need to assess safety impacts of all road users.
    - It is expected that all the loading/unloading activities will occur and will be accommodated within the site compound. An on-street works zone is not likely to be required for such activities.
    - Traffic controllers will be implemented at the site entries as required to ensure safe and efficient movement of vehicles, pedestrians and the safety of workers within site.
    - All deliveries are to be made within the approved work hours. Truck movements to and from the site will be scheduled outside of network peak hours to reduce impacts to the local road network.
    - During days of high estimated vehicle movements, communication between the site, concrete batching plant and/or vehicles will be maintained to stagger the arrival of vehicles, for them to be accommodated within the worksite and to minimise traffic disruptions.
    - This will have minimal impact to the surrounding roads as activities will be managed within the site boundary with trucks entering and exiting in forward direction.
    - During hospital peak hours, pedestrian and cyclists activity is expected as patients, visitors and staff arrive and depart from the site. As discussed, construction vehicle movements will be scheduled outside peak hours to ensure pedestrian safety. Pedestrians will be prohibited from entering or passing through specific areas of the site during construction, enforced by fencing around the perimeter. Signage should be fitted to communicate to staff, patients and visitors the alternate access points and routes within the site. Any changes to external pedestrian routes should also be communicated with signage and detours clearly marked.
    - Prior to any site works taking place, notification of commencement of the works shall be distributed to the neighbourhood. Notification is to include information or comment.
    - On occasions when particularly large vehicles are required to access the site, some mounting or crossing of public kerbs and medians may be necessary. The builder shall repair any damage to this infrastructure if large vehicles are required to mount the devices. Any other road markings damaged as a result of vehicles associated with the construction shall be repaired as a responsibility of the builder.

7.7.5 Conclusion

TTW has concluded as follows with respect to the traffic and transport-related impacts of the development.

> *Sustainable transport initiatives will be provided to support the hospital campus as a whole at future demand levels in accordance with the implementation of a Green Travel Plan. Based on these transport initiatives, a total parking demand of 855 spaces is expected for the 2026 scenario during the weekday shift changeover.*
>
> *Traffic and parking demands of the Shoalhaven Hospital redevelopment are assessed in this report at the opening year scenario in 2026. Further traffic and parking assessments will be undertaken at 18 and 36 months post-opening to determine any further actions required beyond the opening year scenario.*
>
> *The proposed redevelopment is expected to generate an additional 79 vehicles during the morning peak hour and 41 vehicles in the afternoon peak hour by the year 2026. By the year 2031, the hospital is expected to generate an additional 260 trips during the morning peak and 225 trips in the afternoon peak. Both the 2026 and 2031 intersection performance results indicate minor changes from the existing scenario, showing a consistently good Level of Service. Therefore, the intersections continue to demonstrate a suitable operation with the*

additional volumes generated by the development.

Following approval of this SSD project, it is anticipated that a Construction Traffic Management Plan and Green Travel Plan would be fully developed prior to construction and operation of Shoalhaven Hospital. Preliminary versions of these documents have been provided as part of this TAIA. The final documents and other detailed design elements can be finalised as a condition of development consent.

The proposed development is deemed suitable on consideration of the traffic and transport elements of the site and its surrounds, and the transport strategy proposed for its management.

Mitigation Measures

TTW has recommended that future traffic and parking studies be undertaken at 18 and 36 months after the Acute Services Building opening in 2026 to determine any further actions required to address traffic and parking impacts into the future. Additionally, further development of the preliminary Green Travel Plan is required to ensure the outcomes of the TAIA are realised.

The preliminary Construction Traffic Management Plan (subject to any relevant conditions of consent) will also need to be refined and completed prior to the commencement of works once the principal contractor has been awarded.

7.8 Ecologically Sustainable Development (ESD)

The following sets out the ESD response of the Shoalhaven Hospital Redevelopment, addressing the principles of ESD as established by the EP&A Act and Regulation as well as the design-specific measures and targets of the development. This includes the development's response to climate change considerations and future-proofing and climate resilience measures. These matters are all covered by Steensen Varming's ESD Report at **Appendix X**.

The report demonstrates that a myriad of ESD initiatives have been incorporated within the current project design and that the development also complies to the NSW HI ESG and Design Guidance Note (DGN) 058 - Ecological Sustainable Design. The Shoalhaven Hospital Redevelopment has implemented the HI ESD Evaluation Tool to demonstrate an equivalent 5-star Green Star Design is targeted and achievable to the 'Australian Excellence' level. This is equivalent to 60-74 points out of 110 available. This will be further tested and refined as the project progresses through its detailed design and construction phases. Additionally, under DGN 058, the development is targeted to achieve a minimum 10% greenhouse gas improvement against the NCC 2019 Section J baseline.

The NSW Government has committed to achieving net zero emissions by 2050. DPE's NSW Net Zero Plan, Stage 1:2020-2030 report outlines key priorities for achieving this target. Recently, the NSW Government has committed to an interim target of 50% emission reduction from 2005 levels by 2030. Steensen Varming recommends a high performance and low carbon outcome for this redevelopment project to align with the NSW Government's stated emissions reduction targets.

7.8.1 Principles of ESD

Section 193 of the EP&A Regulation sets out the principles of ecologically sustainable development (ESD) as follows:

193 Principles of ecologically sustainable development

(1) The principles of ecologically sustainable development are the following—

- *(a) the precautionary principle,*
- *(b) inter-generational equity,*
- *(c) conservation of biological diversity and ecological integrity,*
- *(d) improved valuation, pricing and incentive mechanisms.*

*(2) The **precautionary principle** is that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.*

(3) In applying the precautionary principle, public and private decisions should be guided by—

(a) careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment, and

(b) an assessment of the risk-weighted consequences of various options.

*(4) The principle of **inter-generational equity** is that the present generation should ensure the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations.*

*(5) The principle of the **conservation of biological diversity and ecological integrity** is that the conservation of biological diversity and ecological integrity should be a fundamental consideration.*

*(6) The principle of **improved valuation, pricing and incentive mechanisms** is that environmental factors should be included in the valuation of assets and services, such as—*

(a) polluter pays, that is, those who generate pollution and waste should bear the cost of containment, avoidance or abatement, and

(b) the users of goods and services should pay prices based on the full life cycle of the costs of providing the goods and services, including the use of natural resources and assets and the ultimate disposal of waste, and

(c) established environmental goals should be pursued in the most cost effective way by establishing incentive structures, including market mechanisms, that enable those best placed to maximise benefits or minimise costs to develop their own solutions and responses to environmental problems.

Each are addressed individually below.

Precautionary principle

In response, the precautionary principle is utilised when uncertainty exists about potential environmental impacts. It provides that if there are threats of serious or irreversible environmental damage, lack of scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. The precautionary principle requires careful consideration and evaluation of potential environmental impacts in order to avoid, wherever practicable, serious or irreversible damage to the environment.

The project site has been selected to minimise the amount of open space (former Nowra Park) that will be used. The landscape strategy has been developed to enhance the environmental performance of the land, including integration of native plant species and incorporation of WSUD features to passively manage stormwater falling on the site and enhance biodiversity more broadly. As noted earlier through the BDAR, the site is not of any significance with respect to flora and fauna impacts.

Accordingly, this EIS has not identified any unknown or serious threats or irreversible damage to the environment and therefore the precautionary principle is not relevant in this case.

Inter-generational equity

Intergenerational equity is concerned with ensuring the health, diversity and productivity of the environment can be maintained or enhanced for the benefit of future generations. The proposal satisfies this by providing a means to providing new or enhanced environmental conditions on the site and minimising the impact on the environment through:

- Resource efficiency measures and selected low embodied carbon materials and using recycled materials where possible.
- Energy, water and waste reduction and conservation measures to reduce consumption of resources.
- Fully electrified site enables the development to purchase 100% renewable energy
- Landscape strategies and WSUD features to enhance biodiversity and the site's ability to passively control stormwater.
- Connection to Country – Integration of indigenous and aboriginal design considerations and features.

Above all the development facilitates the site's redevelopment for further social infrastructure and crucial health services facility uses for the next decades in a regional city where identified need exists.

Conservation of biological diversity and ecological integrity

The principle of biological diversity upholds that the conservation of biological diversity and ecological integrity should be a fundamental consideration for any development. The proposal will have no detrimental effect upon this, given the already disturbed and modified nature of the site within which the works are proposed and the existing condition of vegetation with biodiversity value. Given the retention, protection, and replanting of trees and vegetation within the development site and removal of some exotic and planted vegetation, enhanced opportunities for biological diversity and ecological integrity arise as far as they relate to this fragmented segment of modified environment. The landscape strategy considers the protection of existing ecological features, and the design will enhance the overall biodiversity and ecological performance of the site.

Improved valuation, pricing and incentive mechanisms

The principles of improved valuation and pricing of environmental resources requires consideration of all environmental resources that may be affected by a proposal, including air, water, land and living things. Mitigation measures are included in this EIS for avoiding waste and ensuring where possible reuse, recycling and managing waste occurs, as far as may be relevant to this scope of works.

Detailed sustainability strategy workshops have been completed with the client, design teams and stakeholders to assess a wide range of sustainability strategies. Life Cycle Cost (LCC) analysis has been carried out on strategies to demonstrate whole life impacts, including financial, environmental, and social. Strategies have been developed to achieve the highest sustainability and environmental performance while aiming to stick within budget and minimise high costs.

7.8.2 Design measures and ESD-related features of the development

Consistent with meeting the HI DGN 058 requirements (as set out in more detail below with respect to Green Star and Section J targets), the redevelopment has been designed, amongst other things, to reduce the operational energy of the development, seek to attain the route to zero carbon, improve health and wellbeing of the users of the redevelopment, and respond to the site's unique physical and operational environments. The relevant ESD strategies are set out in detail in the Steensen Varming report and are summarised below:

- Resource Conservation – Route to Zero Carbon
    - A key strategy is the removal of fossil fuel consumption and full electrification of the site. Through the design of a full electric building, the hospital can purchase 100% Green Power which would enable net zero Green House Gas emissions in operation.
- Resource Conservation – Energy
    - Passive design measures
        - Façade performance
        - Building form and siting
        - Building envelope performance
        - Mixed mode ventilation
        - Performance glazing

        - Glazing ratio and position
        - External shading
        - Building airtightness
        - Thermal mass
    - Active measures
        - Full electricity development
        - Energy efficient LED lighting, zoning, and controls
        - High efficient heating, ventilation and air-conditioning (HVAC)
        - Energy recovery
        - C02 monitoring
        - Metering and monitoring
        - Building management systems
    - Renewable energy
        - Solar photovoltaic array
        - Full electricity development
- Resource Conservation – Water
    - Water efficient fixtures and fittings
    - Sensors
    - Rainwater reuse – irrigation and water cooling towers only
    - Fire systems test water
    - Drip and demand-controlled irrigation
- Resource Conservation – Materials and Waste
    - Use sustainable timber
    - Steel
    - Recycled concrete
    - High recycled content or recyclability
    - Site waste management plan
- Health and Wellbeing
    - Indoor air quality
    - Daylight
    - External views
    - Glare
    - Thermal comfort
    - Building noise
- Site and Environment
    - Stormwater reduction
    - Water sensitive urban design
    - Pollution of the night sky
    - Emissions from HVAC refrigerants

7.8.3 Green Star Equivalency / 10% improvement Section J National Construction Code

The Shoalhaven Hospital Redevelopment (like all contemporary HI projects) will not be targeting official Green Star certification, rather it will follow the aims and requirements of specific credits to achieve the equivalent standards of a 5-star Green Star Design as required by the HI DGN 058 Ecological Sustainable Design. DGN 058 employs the HI ESD Evaluation Tool which uses the same scoring system as Green Star.

Green Star is a voluntary scheme administered by the national, not-for-profit organisation, Green Building Council of Australia (GBCA). The Green Star suite of tools provides an environmental sustainability rating of a building's performance. The tools are performance based and assess the environmental attributes of new and refurbished buildings in every state across Australia. The Green Star rating system is scaled to a star level from 0 to 6 stars.

HI's 5-star target is the equivalent of at least 60 points and identified as 'Australian Excellence'. The alignment of Green Star principles will be peer reviewed by a third party to ensure compliance with the targeted star rating.

Steensen Varming has provided the DGN 058 scoresheet with respect to the 5-star Green Star target in the Appendix of its report. This shows a targeted score of 67 points at this stage having applied the design features and ESD-related measures of the development as set out above. This sits comfortably within the 5-star Green Star rating.

In addition to Green Star, the National Construction Code (NCC): Building Code of Australia (BCA) 2019 Section J Energy Efficiency sets minimum energy performance requirements for all new developments, including the performance of building fabric and building sealing, glazing thermal performance, heating, air conditioning and ventilation systems, artificial lighting and power, and heating water supplies. The project will be targeting an improvement in performance of at least 10% over NCC 2019 Section J DTS requirements, as mandated by the HI ESG requirements. Thus, the project will comply with NCC 2019 Section J.

7.9 National Construction Code and Access

Blackett Maguire & Goldsmith (BM+G) has undertaken a high level assessment of the architectural documentation against the relevant provisions of the BCA 2019 Amendment No. 1, the Public Comment Draft of the BCA 2022, as well as the DDA provisions of the Premises Standard. Its aim was to identify any key BCA compliance issues that will require resolution/attention for the proposed redevelopment through to detailed design. This report is included at **Appendix Y**.

As the development relates to a new building all elements of the works in relation to access are required to comply with the relevant provisions of the National Construction Code to thereby achieve compliance with the Disability (Access to Premises – buildings) Standards 2010. BM+G concludes compliance has been achieved.

As a general conclusion, BM+G is satisfied that the project design can satisfy the requirements of the BCA 2019 Amendment No. 1, and the Public Comment Draft of the BCA 2022. Further compliance will be subject to further review as the detailed design of the building progresses and certification is undertaken. To that end no mitigation measures are considered relevant in this instance given current compliance and the ongoing review process.

7.10 Utilities and Servicing

As set out in Section 4.11, a range of works are proposed to connect and service the development with the relevant and necessary utilities, including water, sewer, gas, fire services, electricity and communications. The range of works in part require minor (or more significant in the case of the water main relocation) earthworks and trenching. The impacts of these are addressed by the project-wide sediment and erosion controls measures as would be employed at a localised level in each circumstance. Similarly, any internal works within Block B will be subject to the same considerations as made in the Hazardous Material Building Survey. The impacts accordingly as addressed are unlikely to generate any new of significant mitigation or management measures not already addressed in other reports herein.

7.10.1 Pipeline Corridor

The 797-km-long Eastern Gas Pipeline (EGP) is operated by Jemena and transports natural gas to Sydney, Canberra and Wollongong as well as regional centres such as Bairnsdale, Cooma, Nowra and Bomaderry – see **Figure 99**.

The EGP was constructed in 2000, and is an underground pipeline to a minimum depth of 750 mm and is subject to a 20m-wide easement along its length to allow for access, inspections and maintenance.

Telephone and email consultation with Jemena's Lands Manager with respect to the location and risk associated with the Eastern Gas Pipeline occurred in May 2022. This was in response to SEAR 16 on whether the development is adjacent to, or on, land in a pipeline corridor, and whether a hazard analysis may be required in relation to the EGP.

Jemena's Land Manager advised that the EGP is well clear of the existing hospital footprint – being over 2.5km to the west of the hospital. Given this separation, there will not be a requirement for a safety management study (as defined by AS2885). See **Figure 100** showing the graphic provided by the Jemena Lands Manager to show the distance between the hospital and the EGP.

As the EGP has no impact upon the hospital or the redevelopment, no mitigation measures are considered relevant or necessary.

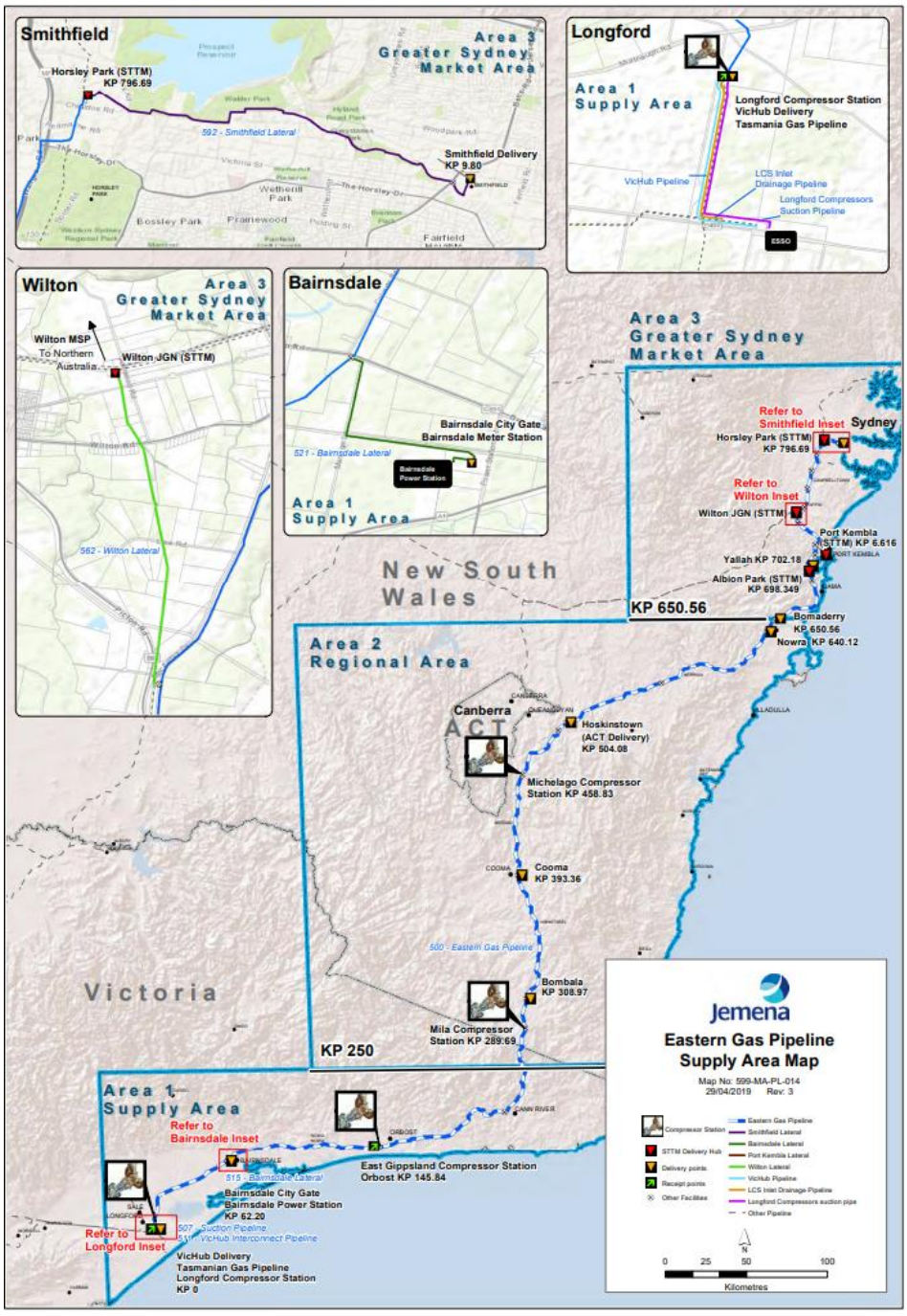


Figure 99 – Eastern Gas Pipeline (Jemena)

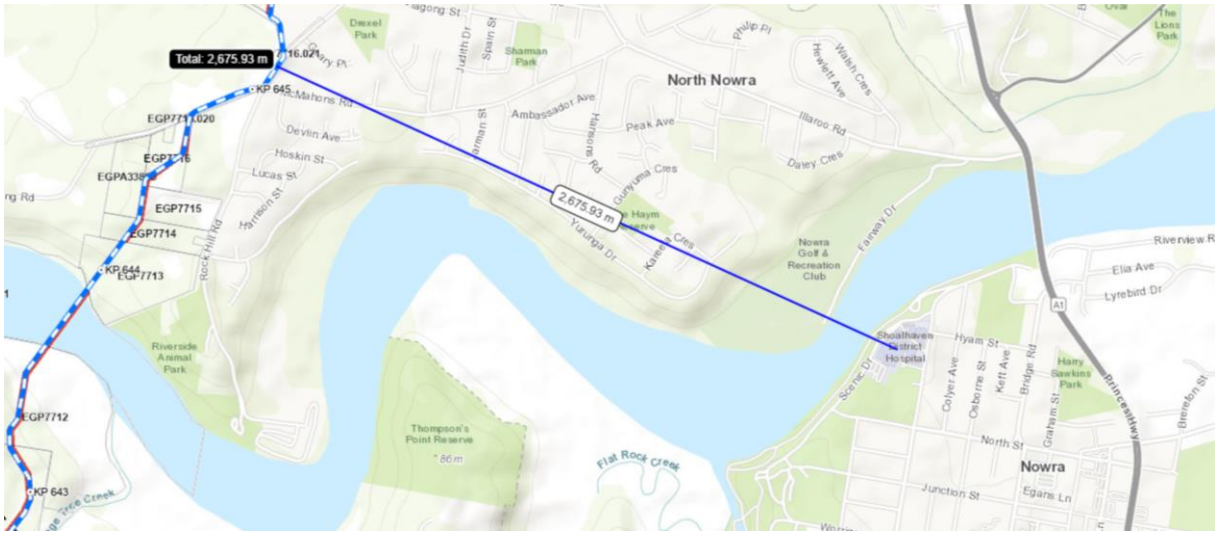


Figure 100 – Distance of Eastern Gas Pipeline to Shoalhaven Hospital (Jemena)

7.11 Construction Air and Water Quality

Construction-related air, soil and water quality management has been addressed by the Preliminary Construction Management Plan along with a range of other environment and amenity impacts (see **Appendix Z**).

The final Construction Management Plan can only be implemented once the principal contractor has been engaged and the relevant conditions of this consent in relation to environmental and construction management have been addressed through the relevant and accepted documentation.

Notwithstanding, the following commitments in relation to construction management and the environment and amenity have been established by the Preliminary Construction Management Plan:

- Works are proposed during normal HI-related hours as consistent with other SSD consents, namely:
    - Monday to Fridays - 7:00am to 6:00pm – with some flexibility for work to be completed outside of these hours to avoid disruption to the hospital's operations
    - Saturdays - 8:00am to 1:00pm
    - Sunday / Public Holidays - No Work
- Hazardous materials management and handling procedures (as otherwise further recommended by the Hazardous Building Materials Survey)
- Noise and Vibration management (as further addressed in the section that follows)
- Dust, sedimentation and erosion controls (as set out in the civil engineering drawings)
- Odour control
- Tree Protection (as otherwise set out in the arborist's report)
- Stormwater management (as set out in the civil engineering drawings)

Specific to air and water quality, the Principal Contractor will develop a strategy for dust control, and a comprehensive Soil and Water Management Plan, both of which will be included in the Environmental Management Plan. This strategy will include control measures and document how these measures are to be implemented and monitored. Odours associated with the works will be assessed and minimised. All plant and machinery involved in the project will be regularly serviced and checked for exhaust emissions.

7.12 Noise and Vibration

A Noise Impact Assessment has been prepared by Acoustic Logic consistent with relevant policies and guidelines to address the potential noise impacts arising from the construction and operation of the development, as well as vibration impacts arising from the construction phase – see **Appendix AA**. These matters are addressed in turn over.

Noise sensitive locations and land uses adjacent and external to the hospital were considered by Acoustic Logic. These are shown in **Figure 101** below and include the followings uses / areas:

- R1 – Residential detached dwellings to south of North Street, and residences and St Michaels Catholic Church and school to the east.
- R2 – Predominantly residential detached dwellings to north-east, opposite Shoalhaven Street with some health and commercial and recreational uses.
- R3 – Residential detached dwellings to west.
- AR1 – Golf course
- PR1 – Scenic Drive Picnic Area and Ben's Walk.
- PS1 – Shoalhaven Community Pre-School (future relocated site).
- CC1 – Cancer Centre overnight accommodation (part of the greater hospital site).

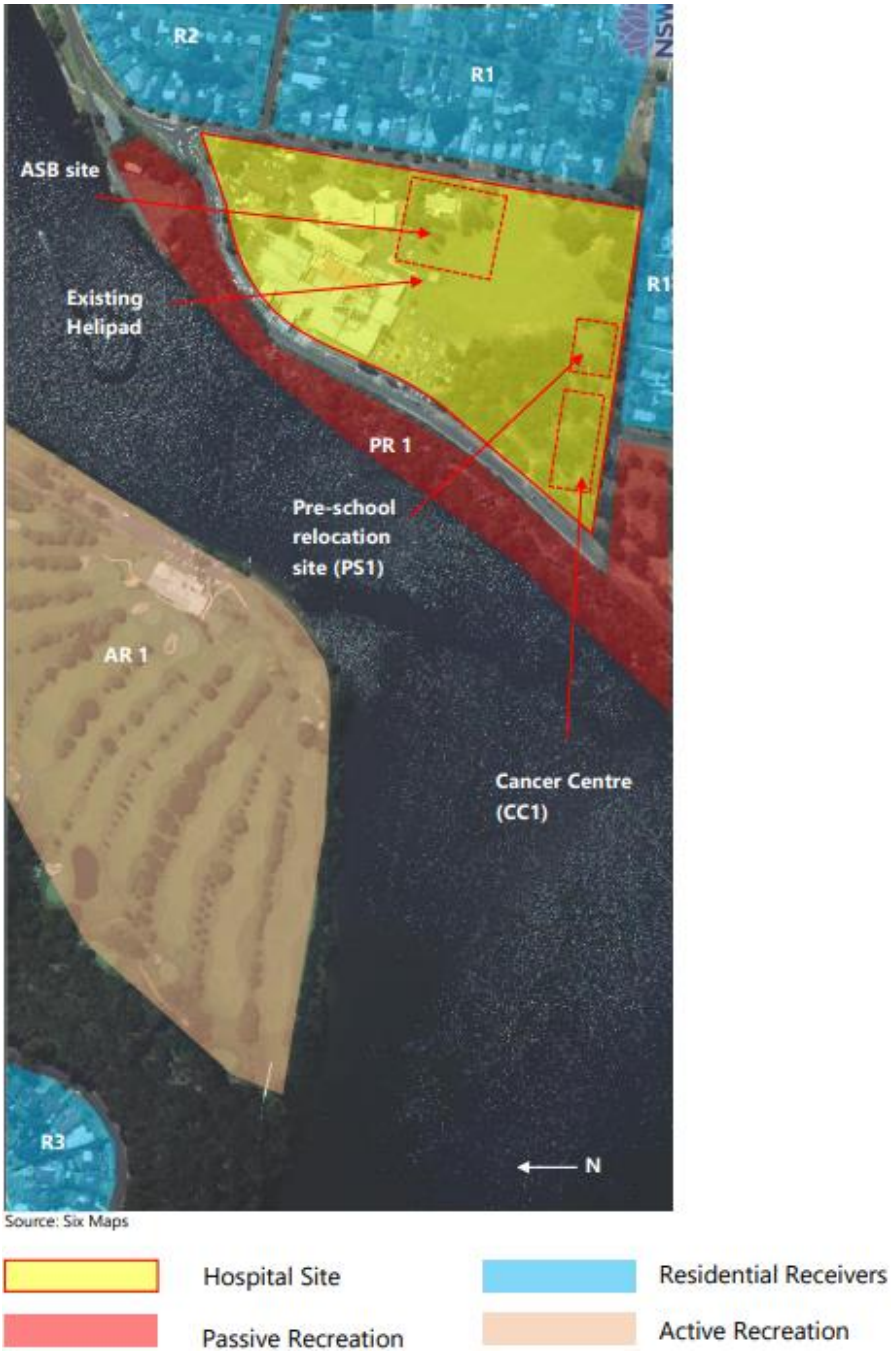


Figure 101 – Noise Assessment Locations / Sensitive Off-Campus Receivers (Acoustic Logic)

Noise monitoring was carried out by Acoustic Logic at three (3) locations to represent the existing ambient noise environment. These locations were:

- Location 1 – Bush opposite 30 Yurunga Dr, North Nowra to represent the R3 residential receivers
- Location 2 – Front yard of 19 Mandalay Ave, Nowra to represent the R2 residential receivers
- Location 3 - Front yard of 2 Westhaven Ave, Nowra to represent the R1 residential receivers

Acoustic Logic has advised that *the Logger locations 2 and 3 were selected as being available locations close enough to the nearest potentially most affected residences, but far enough away from the existing hospital not to be significantly impacted by noise emissions from the hospital. As such, ambient noise levels measured at these locations are considered more conservative than if measured closer to the hospital site. Noise emitted from the hospital was not audible at these locations during the day when the monitors were installed and removed.*

The noise logging established the NSW Environmental Protection Authority (EPA) Noise Policy for Industry 2017 (NPfI) Rating Background Noise Level (RBL) as follows (see Tables 3 to 5 of the Acoustic Logic assessment).

	Rating Background Noise Level (RBL) (dB)		
	Day (7am-6pm)	**Evening (6pm-10pm)**	**Night (10pm-7am)**
Location 1 – R1 Residential Receivers	35** (33)	33* (34)	30**(29)
Location 2 – R2 Residential Receivers	37	37* (38)	31
Location 3 – R3 Residential Receivers	35	35* (38)	31

* In accordance with NPfI guidelines where the evening rating background noise level is higher than the day level, the lower daytime level has been adopted. Measured background in parentheses.
** In accordance with NPfI guidelines where the measured evening or night RBL is less than 30 dB(A), 30 dB(A) can be adopted, and where the daytime background is less than 35 dB(A) then 35 dB(A) can be adopted. Measured background in parentheses.

7.12.1 Construction Noise

Acoustic Logic has applied the quantitative assessment methodology as set out in the Interim Construction Noise Guideline (ICNG) (DECC 2009). This relates to major construction projects of greater than three weeks duration. The alternative qualitative methodology is not appropriate in the circumstance.

A summary of the established Noise Management Levels or Highly Noise Affected Levels for sensitive uses at and around the hospital is summarised from the Acoustic Logic assessment below.

Type of occupancy / activity	**Recommended noise management level (NML), dB(A) $LA_{eq\ 15min}$**	
	Internal (AS2107)	**External (+20 dB)**
All Residences surrounding the development site	45 (standard construction hours)	65
Hospital wards	45	65
Cancer Care Overnight Stay Accommodation	45	65
Shoalhaven Community Pre-School	45	65

Period	**Assessment Location**	**RBL, dB(A)**	**NML**	**HNL, dB(A)**
Day (standard ICNG hours) • Monday to Friday 7.00 am to 6.00 pm; • Saturday 8.00 am to 1.00 pm; and • no construction work is to take place on Sundays or public holidays.	R1 Residential Receivers (Shoalhaven Street and North Street)	35	45	75
	R2 Residential Receivers (north-east of the hospital)	37	45	75
	PS1 Shoalhaven Community Pre-school	-	65 (external)	75
	CC1 Cancer Care Centre Overnight Stay Accommodation	-	65 (external)	75

The Noise Management Level (NML) is generally the above shown RBL + 10dB, whereas the Highly Noise Affected Level (HNL) is set at 75 dB(A) and is applied in the circumstances where there may be

strong community reaction to noise, respite periods may be applied to very noisy activities if the community is prepared to accept a longer period of construction in exchange for restrictions on construction times.

The noise impact assessment carried out by Acoustic Logic can only be preliminary at this stage as the construction methodology has not been established. Accordingly, a worst case scenario has been applied across the two noisiest construction stages (excavation and externalised construction excluding finishing trades) with anticipated plant and equipment related to those stages and their respective sound power levels. A cumulative noise level has been applied based on any number of these pieces of plant and equipment being used concurrently.

Based on the stages of construction and cumulative noise levels produced, the following provides a summary table of the worst-case and loudest predicted noise levels as established by Acoustic Logic relative to the NML and HNL in the table above. See Tables 16 to 19 of the Acoustic Logic assessment.

Area	Land Use	Predicted cumulative construction noise level, dB(A) $L_{10\ 15min}$		'Noise affected' NML, dB $LA_{eq\ 15min}$	'Highly noise affected' HNL level, dB $LA_{eq\ 15min}$
Excavation Stage					
R1 Residential Shoalhaven and North Streets	Residential	Excavator Working	50-64	45	75
		Truck (General)	45-59		
		Powered Hand Tool	43-57		
R2 Residential North-east of hospital		Excavator Working	44-48	45	75
		Truck (General)	39-43		
		Powered Hand Tool	37-41		
Shoalhaven Community Pre-School	Educational	Excavator Working	49-55	65 (external)	75
		Truck (General)	44-50		
		Powered Hand Tool	41-48		
Cancer Care Centre Overnight Stay Accommodation	Healthcare	Excavator Working	45-53	65 (external)	75
		Truck (General)	40-48		
		Powered Hand Tool	38-46		
Construction Stage					
R1 Residential Shoalhaven and North Streets	Residential	Concrete Pump	55-69	45	75
		Cement Mixing Truck	55-69		
		Crane (Electric)	45-53		
		Truck (General)	45-59		
		Powered Hand Tool	43-57		
R2 Residential North-east of hospital		Concrete Pump	49-53	45	75
		Cement Mixing Truck	49-53		
		Crane (Electric)	39-43		
		Truck (General)	39-43		
		Powered Hand Tool	37-41		
Shoalhaven Community Pre-School	Educational	Concrete Pump	53-59	65 (external)	75
		Cement Mixing Truck	53-59		
		Crane (Electric)	43-49		
		Truck (General)	44-50		
		Powered Hand Tool	41-48		
Cancer Care Centre Overnight Stay Accommodation	Healthcare	Concrete Pump	50-58	65 (external)	75
		Cement Mixing Truck	50-58		
		Crane (Electric)	40-48		
		Truck (General)	40-48		
		Powered Hand Tool	38-46		

As noted, the most affected residences will be to the east and south of the hospital (Receivers R1) and to a lesser degree residences to the north-east of the hospital (Receivers R2) during both excavation and construction works. Whilst there will be marginal (and in part greater noise impacts above the NML, no works trigger the HNL threshold. External areas of both the new Shoalhaven Community Pre-school location and the Overnight Stay Accommodation at the Cancer Care Centre will not likely be significantly affected by noise based on these criteria.

Acoustic Logic has concluded as follows with respect to these results / predictions.

> *With respect to the predicted noise levels from construction activities during the excavation and construction stages, we note:*
>
> - *Given the proximity of the proposed development to receivers around the site and the relatively low ambient noise levels, it is expected that the noise affected management level (NAL) will be exceeded at all nearby residential receivers (R1).*
> - *Noise levels at Shoalhaven Street residences directly adjacent the site will be highest, though are predicted to be well below the "highly noise affected" management levels.*
> - *Only minor exceedances of NAL are expected at residences in north of Hyam Street (R2).*
> - *Noise levels at R3 residences are predicted to be similar to the day-time background noise level; 10dB(A) or more below the NAL level.*
> - *External noise management levels for the pre-school and cancer centre buildings are not expected to be exceeded from construction activities.*
> - *EPA's ICNG noise management level is not a strict stop work noise limit. It is a noise level which, if exceeded, reasonable and feasible noise mitigation should be adopted.*
> - *General ameliorative measures are provided in section 10.8 which will reduce noise impacts to nearby residences.*
> - *Given that the 'Highly Noise Affected' level is not predicted to be exceeded and that levels can be reduced generally, construction noise impacts will typically be within reasonable and manageable limits.*
>
> *The analysis indicates that noise emissions from construction activities should be assessed for reasonable feasible work practices in accordance with the "Control of Construction Noise and Vibration" flow chart – as set out in Section 10.7 of the Acoustic Logic assessment.*
>
> *Given the relatively large distance separation and the construction proposed it is unlikely that vibration levels generated will exceed the vibration objectives.*
>
> *Management of noise and vibration impacts within the hospital site would also need to occur in accordance with the hospital's internal guidelines.*

7.12.2 Construction Vibration

Acoustic Logic has nominated recommended vibration limits to be adhered to with respect to the nearest vibration sensitive receivers at the and around the hospital campus, including residential properties at the hospital's perimeter and the new pre-school location and the Cancer Care Centre – see Table 14 of the Acoustic Logic assessment. Vibration will need to be suitably nominated, managed and mitigated.

As is typical consideration should be given to adjoining structures, and human comfort and amenity as part of the main works contractor's Construction Noise and Vibration Management Plan (CNVMP). Human response vibration limits should be considered with the preparation of the detailed CNVMP. Consideration should be given to existing patient wards and consultation rooms within the wider campus particularly where vibration sensitive equipment is used. At this stage, it is assumed that there is likely to be some vibration impact during the various periods of the works that needs further detailed consideration, and potentially mitigation.

7.12.3 Operational Noise

Operational noise generated by the development will be generally associated with noise from the mechanical plant, noise associated with the operation of the new accessway and carpark, traffic generation on local roads, the loading dock's noise emissions, and emergency helicopter operations.

Acoustic Logic indicates that noise sources vary in their noise generating characteristics and accordingly are assessed through different guidelines or manners, for example the requirements of

the NSW (EPA) Noise Policy for Industry (NPfI) 2017 will apply for plant and other noise emissions, whereas noise emissions from emergency helicopter movements are not required to be assessed, and are considered in relation to existing operations from the current at-grade helipad.

To assess the various amenity, noise intrusiveness, sleep arousal, and noise trigger criteria, Acoustic Logic has applied the NPfI. The results are set out in Tables 6, 7, 8 and 9 of the Acoustic Logic report.

Loading Dock

Noise emissions from the operation of the proposed hospital loading dock have been assessed by Acoustic Logic at the nearest affected residential receivers (R1) across Shoalhaven Street. Noise level impacts at all other receivers will inherently be lower due to the increased distance from the loading dock.

Noise from the use of the dock has been predicted based on the following assumptions:

- Engine noise from trucks manoeuvring within the dock as follows:
    - Heavy-rigid trucks (travelling at 5-10km/hr): 95dB(A)Leq
- Truck air brake sound power level: 113dB(A)Lmax
- One truck ingress or egress movement within the loading dock in any 15 minute period during the day and evening.
- One truck movement during the night-time period which will occur during the early morning between 6am-7am.
- Loading/unloading operations are undertaken behind a closed sliding screen.
- Sliding screen enclosing loading dock area is imperforate and constructed of minimum 4.5kg/m^2 surface density material (i.e. 0.5mm sheet metal).
- After entering the driveway, trucks are required to reverse into loading bays. This necessitates the use of air brakes in external, unscreened areas.

As the loading dock will potentially be used during the early morning hour (prior to 7am), an assessment of both average and sleep disturbance criteria has been undertaken by Acoustic Logic.

The anticipated noise impacts related to loading dock activities upon residential receivers in Shoalhaven Street (R1) during the day and evening are set out in Table 10 of the Acoustic Logic assessment, as replicated below.

Time of Day	Activity	Permitted Noise Level	Predicted Noise Level	Comment
Day (7am-6pm)	Vehicle Movement	40 dB(A)$L_{eq(15min)}$	41 dB(A)$L_{eq(15min)}$	Marginal
Evening (6pm-10pm)	Vehicle Movement	40 dB(A)$L_{eq(15min)}$	41 dB(A)$L_{eq(15min)}$	Marginal
Night (10pm-7am)	Vehicle Movement	36 dB(A)$L_{eq(15min)}$	41 dB(A)$L_{eq(15min)}$	Exceeds
	Brake Release Value	52 dB(A)$L_{max, F}$	75 dB(A)$L_{max, F}$	Detailed assessment required – see below.

The day and evening-related noise generation is a marginal exceedance of 1 dB(A)$L_{eq(15min)}$ which is a barely discernible difference between compliance and non-compliance.

The detailed assessment of sleep disturbance potential for the night-time (6am to 7am) related activities, in particular the brake release valve actions is set out here. Acoustic Logic has advised and assessed as follows:

- Typically, there is a 10dB(A) noise reduction between an external noise level and the noise level inside the residence (assuming that the windows are left open).

- This being the case, it would be expected that the noise level generated by a truck brake valve release would be 65dB(A) inside the residences if the windows are left open.
- This is representative of a worst-case scenario given that, in most instances, windows are expected to be closed during the night.
- Assuming a conservative 25dB(A) noise reduction across a closed façade, the instantaneous internal noise level is predicted to be 50dB(A) Lmax.
- EPA guidance in this regard states:
    - *Maximum internal noise levels below 50–55 dB(A) are unlikely to awaken people from sleep.*
    - *One or two noise events per night, with maximum internal noise levels of 65–70 dB(A), are not likely to affect health and wellbeing significantly.*
- The monitoring indicates Lmax noise levels of 70- 80 dB(A) are common during this period. Therefore, the predicted external noise level of 75 dB(A) is within the range of existing events. The limited number of events generated by the loading dock prior to 7am would not perceptibly increase sleep arousal due to an increase in existing noise levels.
- The peak noise event in question would typically be 50dB(A) or less internally (equal or below the quieter end of the range identified by the EPA).
- With respect to continuous noise levels from truck movements, Acoustic Logic notes the 36dB(A)Leq(15min) night period trigger level is determined by the quietest periods of monitoring period. This is typically between 2am-4am when the background level is at its lowest.
- The background noise level during the 6am-7am period (when usage of the loading dock may occur) is typically 5db(A) higher than across the 9hr night period.
- During this hour, external noise levels from continuous truck movements would be marginal with a BG+5dB(A) noise level for the nearest receivers (within 50m) and below that at all others.
- Given the limited number of events generated by the loading dock prior to 7am, this would not perceptibly increase sleep arousal due to ambient noise at the most impacted receiver.

For the reasons indicated above, operation between 6am-7am is not likely to adversely impact sleep and this noise generation should be considered reasonable.

Car Park and new accessway from North Street

With the exception of the proposed "pick up and drop off" area, car parking would be accommodated within the existing hospital site in existing locations.

For the proposed new accessway off North Street leading to the new "pick up and drop off" area noise emissions during peak usage and night-time usage have been predicted by Acoustic Logic. The following has been used to make the predictions:

- A total number of 70 vehicle movements per hour during the morning peak has been assumed as a worst-case scenario for the hospital. As a conservative assumption it is assumed that 17 vehicles will use the drop off area in 15 minutes, and one vehicle at night.
- Cars entering or exiting will be driving at 10km/h.
- Each car has a sound power level of 85dB(A) (Based on cars driving at 10km/h).
- Sound power level of a car door closing is 94 dB(A) Lmax .

The calculated noise levels at the most impacted residential receiver (across North Street) is 39 dB(A) Leq during the day and 26 dB(A) Leq at night, which are both compliant with the applicable Leq noise criteria.

The predicted maximum noise level at the closest residence from a car door closing is 47dB(A) Lmax, which is less than the maximum noise level trigger level.

Accordingly, the noise levels predicted by Acoustic Logic at all receivers will not exceed the relevant trigger levels and do not require additional treatment.

Mechanical Plant

As is typical at this stage of the development process, the selection of plant is yet to be determined. However, assumptions can be made regarding noise emissions and likely mitigation measures required relative to sensitive adjacent land uses.

Mechanical plant as part of the Acute Services Building will be generally located in the following locations:

- Level 0 – centrally addressing Shoalhaven Street
- Level 2 – at the northern and southern extremities predominantly facing north and south
- Level 3 - centrally addressing Shoalhaven Street
- Level 7 (rooftop) – predominantly facing north and west.

The main plant noise source will be a plant space located on the façade end of the building. To achieve compliance with the applicable noise criteria the sound power level of the plant (including any corrections for annoying characteristics such as tonality and intermittent operation) should not exceed approximately 82 dB(A) under peak operating conditions. When corrected for distance, the noise level will be similar to the day and evening criteria of 40dB(A). It is expected that plant will operate under a reduced load between 10pm-7am and operational noise levels will be at least 5dB(A) lower during this time.

If the cumulative sound power level of this plant compound is to exceed 82dB(A), additional treatment is required. Acoustic treatment will depend on the type of plant. For example, in-line axial fans, AHUs and the like can be treated with induct lining and/or silencers whilst larger un ducted plant (i.e. heat pumps) may require solid/absorptive acoustic screens.

Within the mechanical plant areas, these are proposed to be acoustically treated in the first instance and be screened. Supplementary measures and further detailed design will ensure noise levels are able to meet required standards (these being 52 dBA to the R1, R2 and R3 residential receivers adjacent the site as set out in Table 9 of Acoustic Logic's report). Acoustic treatments are typical and would be considered in further detail with the development of the mechanical scheme. A detailed review of mechanical plant has been recommended by Acoustic Logic to be undertaken as part of the detailed design and construction phases to ensure that cumulative noise emissions comply with the project-noise trigger levels (PNTLs) provided in Table 9 of the Noise Impact Assessment.

Traffic generation on local roads

The proposed development by the year 2031 is anticipated to increase peak hour trip generation by an additional 275 vehicles during the PM peak hour, and 281 during the AM peak hour. The increased vehicle movement generation and car parking requirements have been assessed previously and have been considered when obtaining consent for the multi-level carpark.

Access to the main hospital car park including the multi-storey car park is from Scenic Drive. The Cancer Care Centre car park has two entrances, one on Scenic Drive and the other on North Street. This Scenic Drive car park access also connects to the Grand Pacific Health Centre car park. Various smaller car parks for specialised medical services exist toward the north of Scenic Drive, including access to the staff car park.

The NSW EPA – 'Road Noise Policy" (RNP) March 2011 requires assessment against the "no-build" option. Given that the multi-level carpark (and the associated vehicle movements) have been approved, for the Acute Services Building there would be no increase when assessed against the currently approved development.

Notwithstanding, if assessed against existing traffic movements, traffic on North Street would increase as a result of the proposed development. However, given the street is already used for street parking and for other movements associated with the hospital and other uses, the increase in traffic noise is expected to be 2 dB(A) or below which represents an acceptable increase under the Road Noise Policy guideline. Acoustic Logic advises that there is unlikely be a perceptible increase in noise for the surrounding residents.

Helicopter

Helicopter noise is addressed in Section 7.15.2 of this EIS. In summary, Acoustic Logic concludes that the proposed helipad will be at least 30m above ground level and in a similar location to the existing helipad. The elevated helipad location means that there would be additional distance separation to the ground receivers and therefore, assuming similar flight paths are used, future helicopter noise levels would be reduced.

7.12.4 Conclusion and mitigation measures

To address the likely noise generation upon nearby sensitive residential receivers Acoustic Logic has recommended that all works be carried out in accordance with the EPA Interim Construction Noise Guideline and AS 2436. A construction noise management plan should be developed prior to construction commencing that includes:

- Identification of sensitive receivers potentially impacted and nominates noise and vibration management objectives for each.
- Identification of the proposed significant construction activities, plant and processes and times of site operation.
- Predictions and assessments of noise and vibration impacts and recommends appropriate controls.
- Nominated complaint handling procedures and responses, community liaison principles and site management practices to be adopted.

Methods to reduce construction noise generation, to be assessed on a case-by case basis, would include:

- Acoustic Barriers
- Treatment of Specific Equipment – silencing devices and engine shrouding
- Material Handling - installation of rubber matting over material handling areas can reduce the sound of impacts due to material being dropped by up to 20dB(A).
- Vehicles - Trucks, trailers and concrete trucks should turn off their engines during idling to reduce noise levels emitted and use a non-tonal reversing beacon
- Static Plant such as concrete pumps, generators and the like to be located away from site boundaries where practicable.
- Selection of Alternate Appliance or Process
- Establishment of Site Practices - formulation of work practices to reduce noise generation. This includes locating fixed plant.
- Management Training
- Noise Monitoring can be undertaken to determine the efficacy of measures which are been implemented, whilst the results of monitoring can be used to devise further control measures.
- Vibration Monitoring - It is not expected that vibration monitoring would be required for receivers external to site. Vibration impacts on other buildings within the Shoalhaven Hospital will be addressed through internal hospital management.

Further, in relation to operational noise, an assessment of noise emissions from mechanical plant is to be carried out prior to the granting of a Crown Certification and certification provided that the proposed plant and acoustic treatment will achieve compliance with the assessment criteria established in the Acoustic Logic assessment.

Lastly, management of noise during the general operation of the Acute Services Building and new accessways to the hospital shall be controlled as follows:

- Garbage collections should occur between the hours of 7am and 10pm.
- The loading dock shall not to be in use prior to 6am.
- Loading/unloading activities in the dock area to be undertaken by behind a closed sliding screen (loading dock entry).
- The sliding screen enclosing the loading dock area shall be imperforate and indicatively constructed of material with surface density >4.5kg/m^2 (i.e. sheet metal). The specific make-up and construction is to be determined during design phases. Alternative proposals can be considered acceptable provided noise emission goals are satisfied.

7.13 SEPP 33 - Hazardous Goods

7.13.1 Initial screening report

Arup was engaged to prepare an initial screening assessment to determine if the now former SEPP 33 applies to the proposed development based on the threshold quantities of dangerous goods proposed to be stored at Shoalhaven Hospital as a result of, and following, the proposed redevelopment.

Based on the 'Applying SEPP 33 – Hazardous and Offensive Development' guidelines to identify the storage location or quantity triggers of SEPP 33, and likely vehicular movements thresholds associated with the delivery of those goods / materials, Arup determined that a Preliminary Hazard Analysis (PHA) would be required in relation to the quantity of class 5.1 materials (oxidising substances) (18 000 L) which exceeds the threshold (5000 L). Notwithstanding, all other categories were significantly below the relevant thresholds. The assessment was based on existing data from the hospital's dangerous goods manifest and scaled up to reflect the anticipated increased bed/treatment spaces count following the redevelopment as well as detailed information in relation to the expanded and relocated bulk oxygen compound including a 15kL liquid oxygen storage tank and 3kL back-up tank, being the class 5.1 materials (oxidising substances).

With respect to the vehicular movement of transportation of dangerous goods, Arup also concluded that as the quantities to be stored are primarily less than the SEPP 33 thresholds, a high turnover of stored product would be required to exceed the transport movements associated with the corresponding storage.

7.13.2 Preliminary Hazard Analysis

Based on the results of the Initial screening report and through the development of the PHA, Arup has concluded that the quantity of liquid bulk oxygen to be stored in the compound exceeds the screening threshold and that further review was necessary of possible on- and off-site impacts or hazards.

The PHA assessed the likelihood of tank failure; the consequences of tank failure; impacts upon off-site populations and; risk of fatality.

With respect to these matters Arup found that minimal risks related to tank failure and the consequences of tank failure due to the very low likelihood of leakage and the externalised open-air nature of the proposed tank compound setting. As the tank compound is some 3.2m from the Shoalhaven Street property boundary (where a 4m setback is regulated under Australian Standards, the tanks will either need to be further setback or alternatively screened within a protective enclosure to satisfy the relevant standards with respect to off-site risk, which in turn would remove the risk of off-site fatality. No corresponding on-site risk was found by Arup. The initial screening assessment and the PHA are combined at **Appendix U**.

Mitigation measures

The recommendations of Arup include:

- To achieve the required 4m separation distance to the site boundary, either the tanks need to be moved further away or a protective enclosure be built.
- To ensure there is no risk to on-site populations, any combustible materials, including combustible vegetation (not limited to dry grass, brush, weeds, green waste, dead or dying trees, litter or other flammable vegetation that creates a fire hazard) must be avoided within 12m. This separation can be achieved using the protective enclosure.
- To ensure there are no public assembly points within 12m of the oxygen tanks, including emergency evacuation assembly points. This separation can be achieved using the protective enclosure.

7.14 Wind Impacts

A desktop study of localised wind impacts of the proposed development has been provided by Arup – see **Appendix BB**.

This Environmental Wind Assessment was carried out to determine the pedestrian level wind conditions for comfort and safety in and around the site. The proposed Acute Services Building has three (3) pedestrian entrances, with two at Level 1 at the west of the building (as well as the adjacent proposed café, passageway and forecourt) and one at ground level off Shoalhaven Street to the east. A range of balconies are also proposed as part of the Acute Services Building which are potentially affected by wind impacts. The remaining area of the former Nowra Park, proposed as open space, is also considered by the assessment.

Based on existing local wind conditions (annual and seasonal wind direction and speeds) and the proposed built form, Arup considers that the proposed development would have an impact on the wind conditions in and around the site. This is primarily due to the relative massing of the proposed Acute Services Building compared to the existing low-rise nature of development in the locality.

Winds from the north-west are relatively unimpeded upon reaching the site, passing over North Nowra, and the low-rise hospital buildings to the immediate west of the site. Arup indicates the incident flow will impinge on the narrow west façade of the west wing of the building. The narrow face minimises the amount of downwash reaching ground level (see **Figure 102**), encouraging the flow to pass around the building horizontally. The lower building height to the south offers further protection to the ground level as the flow will pass over the roof of the building. The larger massing to the north would direct more flow to the north, but the façade articulation and link bridge will provide obstacles encouraging the flow to pass around and over the building.

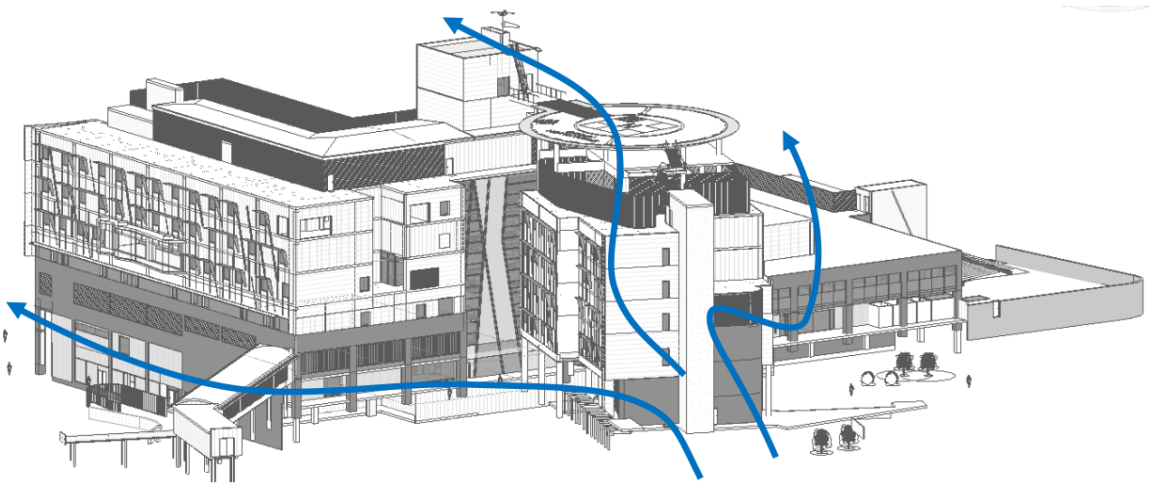


Figure 102 – Sketch of expected wind flow patterns from the north-west (Arup)

Winds from the south are relatively undisturbed on reaching the site. The vertically stepped and articulated building is an ideal massing from a wind perspective to lift the flow over and around the building rather than induce wind downwash - **Figure 103**.

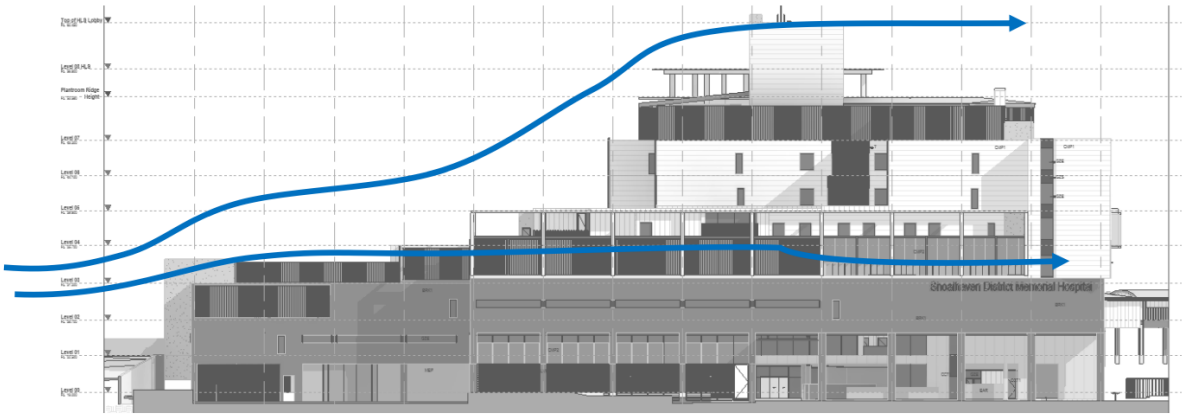


Figure 103 – Sketch of expected wind flow patterns from the south (Arup)

Qualitatively, integrating the expected directional wind conditions around the site with the wind climate, it is considered that wind conditions at the majority of locations around the site would be classified as suitable for a pedestrian standing and walking.

The main entrances are reasonably well protected from a wind perspective and the main entry door orientation is designed to reduce the impact of wind flow into the building. This level of wind condition would be considered suitable for the intended use of the space.

Generally, external wind conditions are generated by the wind passing around a building massing. However, the flow mechanism through a building passageway, or between closely spaced buildings is generated by pressure-driven flow. For all incident wind directions, there will be a pressure difference between either side of the 2-storey opening under the west wing, hence there will be flow through this space with the fastest flow at the narrowest section.

The speed of air through this space would be similar, or greater than, the incident wind speed. The exposed section of the raised outdoor-café seating area is exposed to this flow. The perimeter screening would offer limited protection to patrons in the exposed section. Outdoor seating would be more appropriate away from the narrow section – see Figure 9 of the Arup assessment.

Accordingly, Arup considers that wind conditions at the majority of locations around the site would be classified as suitable for pedestrian standing and walking in more exposed locations. Localised wind impact amelioration has been designed for the proposed outdoor café area under the west wing, noting seating in calmer wind locations has been recommended by Arup.

Further from the site in the remaining parts of the former Nowra Park to the south, and the residential areas to the east, the overall wind classification would be expected to remain similar getting windier for some directions and calmer for others.

All locations would be expected to pass the safety criterion.

To quantify the qualitative advice provided, Arup recommends numerical or physical modelling of the development would be required. However, this is not considered necessary for a development of this size, location and orientation, but if considered important is best conducted during the detailed design.

With respect to helicopter rotorwash and in consideration of the AviPro Aviation Impact Statement (see assessment below in Section 7.15), the greatest risk to pedestrians would be during strong

winds from the south when helicopters may land from the north, directing undisturbed rotorwash into the courtyard to the north of the west wing.

With the relatively low height of the approaching aircraft above ground level, the rotorwash would be expected to be noticeable. The articulated shape of the building has the potential to concentrate the rotorwash at ground level. Additional modelling would be required to quantify this effect.

There are also exposed rooftop terraces on Level 4 that lie under the preferred flight path, which would be exposed to rotorwash for the main preferred approach direction from the south-east. Arup understands that the staff and IPU terraces are to be covered with a solid roof to ameliorate the impact of rotorwash. During operations, a management plan may be required for use of these terraces during helicopter operations. Any furniture on these terraces should be fixed and the use of outward opening swing doors should be reviewed.

The development is not expected to have any significantly new or different wind impacts outside of the Shoalhaven Hospital campus.

Mitigation Measures
At this stage the only relevant mitigation measure would be the abovementioned operational management plan for the Level 4 rooftop terrace. Otherwise, no further mitigation measures are considered relevant at this stage, noting modelling if deemed relevant, would be resolved at the detailed design stage.

7.15 Aviation Matters

An Aviation Impact Statement has been prepared by AviPro with respect to the development's rooftop helipad's location, design and aviation-related impacts – see **Appendix CC**.

7.15.1 Design and operation of the helipad

The new rooftop helipad will replace the existing at-grade helipad presently located in part of the former Nowra Park adjacent to the hospital.

AviPro has advised that the proposed rooftop helipad has been designed and located to the western portion of the Acute Services Building to allow for approach and departure paths to the north-west and south-east to accord with the most common annual average prevailing winds. This alignment also facilitates approaches and departures using the river corridor where wind conditions permit.

The design of the helipad is consistent with all relevant NSW Ministry for Health guidelines and helicopter-specific guidelines applying internationally.

The approach and departure paths have been determined in consideration of a range of primary factors. These include:

- Direction of prevailing winds
- Availability of emergency landing areas
- Location of vertical structures and obstacles/hazards
- Airspace restrictions and limitations
- Avoidance of areas sensitive to noise and vibration
- Avoidance of ecologically and environmentally sensitive areas.

Importantly, there must be a minimum of two approach / departure paths that are at least 135° apart – as shown in **Figure 104** over. The location and design allows for this circumstance.

Figure 104 – Helicopter Approach and Departure Paths (AviPro)

Figure 104 illustrates the planned approach and departure paths to the helipad. This image portrays the likely fixed low-speed early part of the departure and the low-speed final approach. While, or once, a helicopter has a safe flying speed the pilot is at liberty to manoeuvre and turn to suit the prevailing wind conditions and comply with any relevant "fly neighbourly" procedures or to avoid known areas sensitive to aircraft noise and vibration. Increasing rates of climb and descent (increasing flight path steepness) can be utilised to attempt to insulate sensitive areas from noise and vibration. In reality, no two approaches or departures will ever be alike. The inherent flexibility of a helicopter allows it to accommodate various flight profile changes in response to changing circumstances and requirements.

The approach and departure paths were planned with due recognition of Shoalhaven City Council's strong preference that the river corridor be utilised for approaches and departures, where possible. There are no known areas of sensitive environmental or ecological concern in the preferred approach and departure zone, and in any case, helicopters will use similar approach and departure profiles to what they presently use at the existing helipad (slightly to the north of the proposed helipad), however only at a greater height.

The new helipad will be at a height of RL 56.9 or 56.9 metres above mean sea level. The new helipad will therefore be approximately 39 metres above ground level. This will raise the height of helicopters operating close to the hospital by an additional approximate 39 metres higher than they currently operate. The current impacts of rotorwash and noise on neighbouring development and the existing hospital and open space will accordingly be reduced.

Helicopter main rotor downwash from a single-rotor helicopter dissipates outwards at an exponential rate when projected onto a flat surface. At approximately two Main Rotor Diameters (MRD) (one AW 139 MRD = 14 metres) the wind blast from the downwash is at a bearable level under the Beaufort Wind Scale and other comparable measures of wind comfort.

It is generally accepted that at four levels below an elevated helipad, main rotor downwash has dissipated sufficiently to permit open balconies, terraces and courtyards to be built without hazardous consequences, however this is not the case for enclosed areas where downwash can recirculate and amplify.

The new helipad is more than seven levels above the ground. Therefore, the vegetation (including the significant Blackbutt tree) in the former Nowra Park will be unaffected by helicopter operations to the new helipad. The canopy of the Blackbutt Tree is especially remote from the new helipad and as

such will be well below the main rotor downwash "hazardous" zone and further unaffected relative to current helicopter operations at the hospital.

7.15.2 Helicopter Noise impacts

Acoustic impacts from helicopter flight operations to and from the proposed rooftop helipad are considered in the Acoustic Logic Noise Impact Assessment (see **Appendix AA**).

Acoustic Logic has concluded that the noise from helicopter operations to surrounding properties is likely to decrease as a result of the helipad location being relocated to the roof of the proposed Acute Services Building.

Whilst there is no mandatory requirement for addressing noise from emergency helicopter movements, AviPro has provided data to Acoustic Logic to assist in indicating the total noise event associated with emergency helicopter movements. These can be summarised as follows:

Helicopter arrival:

- 1 minute approach and land, and
- 2 minutes engine idle (then shutdown).

Helicopter departure:

- 2 minute start-up and hover, and
- 1 minute backup and departure.

Total elapsed noise event is approximately 6 minutes

The proposed helipad would be used for medical emergency flights only. Emergency medical helicopter operations differ from commercial aircraft as follows:

- They can occur at any time of day or night
- They are generally much less frequent than aircraft operations near a typical airport (the total number of movements are expected less than 10 per week)
- They are directly associated with the hospital facility and are typically used when critical care is needed.

Noise emissions from emergency aircraft operations are not assessed in the same way as commercial aircraft. Similar to ambulance operations on roadways, noise limits are not typically applied to receivers around an emergency helipad.

Australian Standard AS2021-2015 "Acoustics- Aircraft noise intrusion- Building siting and construction" provides noise acceptability for commercial aerodromes and airports. This standard indicates it should not be used to assess emergency operations. Notwithstanding, noise from helicopters using the proposed new helipad would be compared the existing noise levels.

Acoustic Logic concludes that the proposed helipad will be at least 30m above ground level and in a similar location to the existing helipad. The elevated helipad location means that there would be additional distance separation to the ground receivers and therefore, assuming similar flight paths are used, future helicopter noise levels would be reduced.

7.15.3 Airspace operations generally

AviPro advises that the proposed development is located outside the HMAS Albatross Aerodrome Control Zone and Control Areas (CTR/CTA). It is therefore not considered to be within 'prescribed airspace' as defined in the *Airports (Protection of Airspace) Regulation 1996*.

Additionally, clause 7.9 of Shoalhaven LEP 2014 includes a requirement to consider protection of the HMAS Albatross/NAS Nowra airspace. One of the objectives of the clause is to *provide for the effective and on-going operation of the HMAS Albatross Military Airfield by ensuring that such operation is not compromised by proposed development that penetrates the Limitation or Operations Surface for that airport*. Further, *the consent authority may grant development consent for the*

development if the relevant Commonwealth body advises that… the development will not penetrate the Limitation or Operations Surface.

For the purposes of this clause, *Limitation or Operations Surface means the Obstacle Limitation Surface or the Procedures for Air Navigation Services Operations Surface as shown on the Obstacle Limitation Surface Map or the Procedures for Air Navigation Services Operations Surface Map for the HMAS Albatross Military Airfield* . *Relevant Commonwealth body means the body, under Commonwealth legislation, that is responsible for development approvals for development that penetrates the Limitation or Operations Surface for the HMAS Albatross Military Airfield*.

The airspace over the hospital and helipad sites has been reviewed by AviPro for compliance with Obstacle Limitation Surfaces (OLS) and Procedures for Air Navigation Services – Aircraft Operations (PANS OPS).

Details of the OLS were obtained by AviPro through early consultation with Australian Defence Force (ADF) (Royal Australian Navy (RAN)) personnel from HMAS Albatross. From an air traffic perspective, Air Services Australia (AsA) and the ADF are interested in the impact of high buildings on the line-of-sight between air traffic control communications, navigation and surveillance (radar) systems. Occasionally, new buildings are likely interrupt the line-of-sight between radio and radar repeaters and retransmission sites and the aerodrome (HMAS Albatross).

If there is doubt that airspace issues might impede development planning (noting this often happens in Sydney CBD and Metropolitan hospital helipad developments), early consultation with airspace authorities is ordinarily recommended. In this case, no early engagement was undertaken with AsA as no airspace issues were foreseen.

AviPro has concluded that relevant authorities are almost certain to advise, in relation to the development, that site structures and cranes will not penetrate the OLS or the PANS OPS lower limit for HMAS Albatross Aerodrome.

The hospital campus and the new helipad are positioned within the confines of the HMAS Albatross Outer Horizontal Surface, however this surface does not apply below RL257.5. A building or crane would need to exceed RL257.5 to penetrate the HMAS Albatross OLS. This is well above the height of the building (RL63.45) and any likely maximum vertical extension of a crane. The OLS mapping provided by AviPro is show in **Figures 105** and **106**.

AviPro has assessed that the positioning and proposed development of a helipad and the Acute Services Building will not incur any negative air traffic or protected airspace factors or further considerations (notwithstanding approval must still be sought).

There are no constraints imposed by prescribed airspace associated with airports or airport instrument approach and standard departure profiles. As a consequence, the development of the helipad, and in particular vertical obstructions such as cranes, can be addressed from a 'safety to flight' perspective for helicopters operating near the new Acute Services Building and aircraft transiting in the vicinity.

The proposed new Acute Services Building is sufficiently distant from HMAS Albatross aerodrome such that arriving and departing aircraft will not realise any traffic confliction with helicopters operating to and from it. The AviPro report determines that if consulted CASA, AsA, the ADF, and Shoalhaven City Council would likely advise that there are no relevant impacts from this development. Based on the assessment findings, AviPro advises that no consultation will be required with any of the relevant bodies with respect to the building's height and location.

Note, the site is also outside of the HMAS Albatross Military Airfield buffer area under clause 7.10 of the Shoalhaven LEP 2014 and as described and mapped by the LEP.

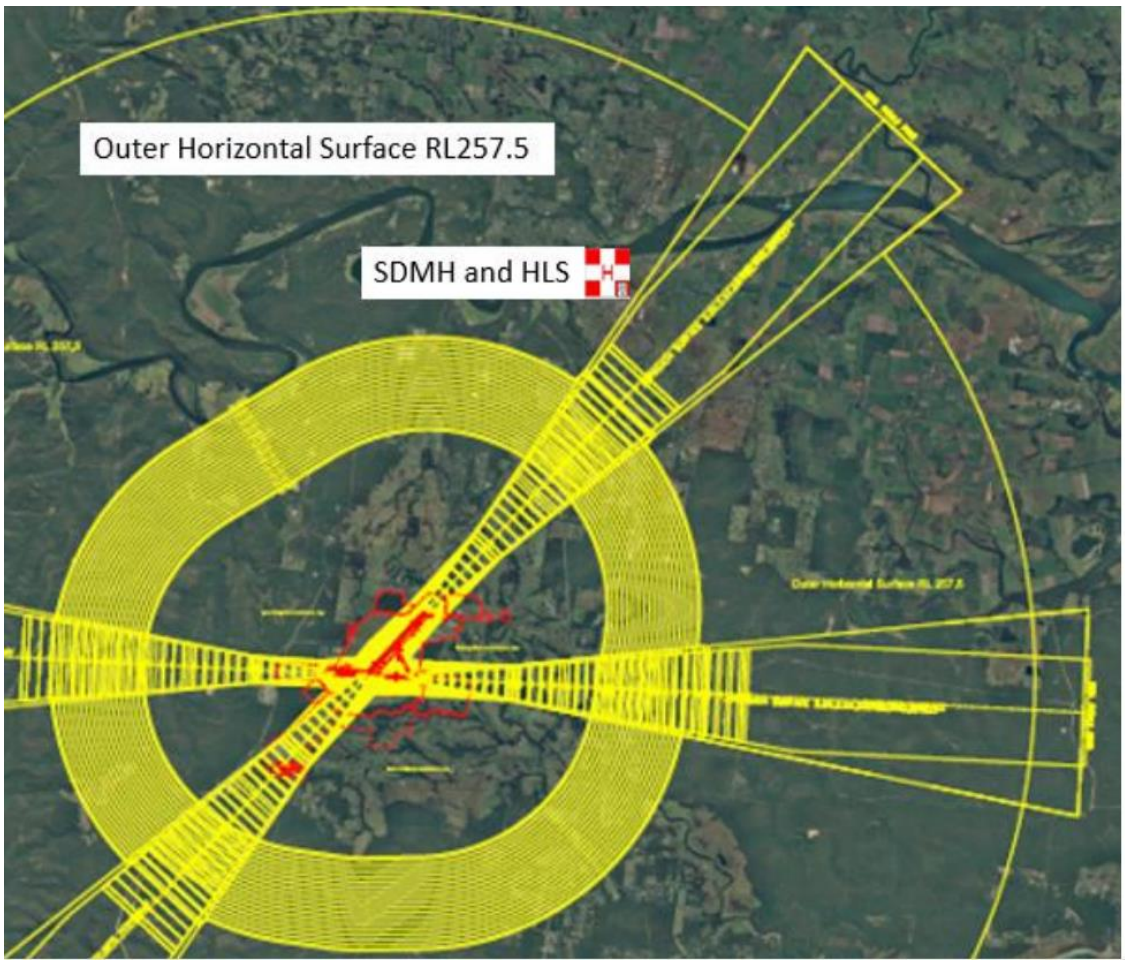


Figure 105 – Obstacle Limitation Surfaces for HMAS Albatross (AviPro)

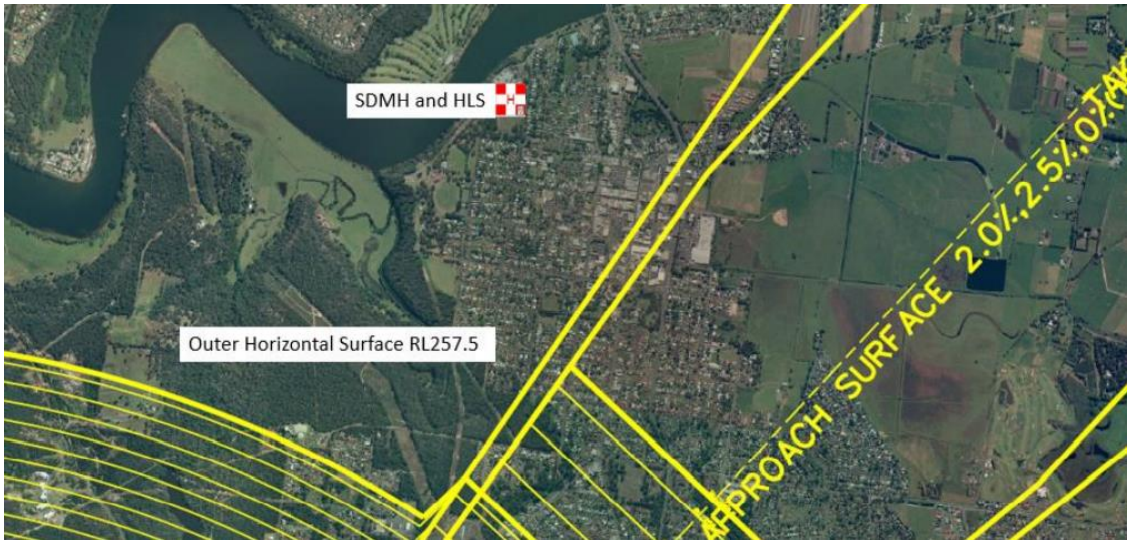


Figure 106 – Obstacle Limitation Surfaces for HMAS Albatross - detail (AviPro)

7.15.4 Summary

Overall, the proposed rooftop layout is most suitable to provide for a new helipad. The new helipad will result in a minimal amount of overflight of populated areas as is consistent with existing operations from the at-grade helipad. The redevelopment (both the Acute Services Building and the use of cranes in construction) will have no impact on the HMAS Albatross Aerodrome OLS and will also have no impact on aviation communications, navigation and surveillance infrastructure. Aviation safety will not be compromised by the redevelopment.

Based on the information provided by both AviPro and Acoustic Logic, no further mitigation measures are relevant with respect to helipad operations and noise impacts of, or upon, the redevelopment.

7.16 Waste Management

7.16.1 Construction

WSP has prepared a Construction and Demolition Waste Management Brief (see **Appendix DD**).

The objectives of the brief (consistent with Shoalhaven Council's guidelines) is to:

- Minimise waste to landfill
- Increase resource recovery opportunities
- Ensure waste systems are easy to use
- Ensure that waste collection vehicles are able to remove waste safely without obstruction
- Ensure safe practices for storage and handling of waste
- Ensure that waste areas minimise potential for pollution from runoff and litter
- Ensure health and amenity for those that use or are exposed to waste facilities
- Ensure waste management infrastructure is considered in the creation of subdivisions.

During demolition and construction typical waste streams are anticipated. Materials likely to be removed during demolition and construction include:

- Concrete
- Asphalt
- Bricks / pavers
- Tiles
- Timber (untreated)
- Metal (ferrous)
- Metal (non-ferrous)
- Glass
- Fixtures and fittings
- Plasterboard
- Floor coverings
- Garden organics (vegetation)
- Residual waste (general refuse)
- Hazardous building materials
- Excavation material
- Packaging (used pallets, pallet wrap)
- Paper/Cardboard

Waste minimisation, sorting, and recycling will be fundamental expectations to be undertaken by the principal contractor for the works. Of the above, disposal will only be expected in relation to hazardous building materials and residual waste. The balance of the waste stream has a high potential for reuse and and/or recycling. WSP anticipates up to 2,034 tonnes of construction waste is likely to be generated, of which only a small proportion cannot be reused or recycled. WSP has estimated some 95.8% of waste can be diverted away from landfill and can be directed to the nearest Resource Recovery Centre for reuse or recycling. Similarly, during demolition of some 1,665 tonnes of waste, 80.5 % can be diverted from landfill and reused and/or recycled.

Based on the Preliminary Construction Management Plan (see **Appendix Z**), the principal contractor will be required to recycle and reuse materials, where possible aligned to this WSP Waste Management Brief. The principal contractor will be required to arrange for the sorting and recycling of waste materials and packaging to ensure maximum recycling is achieved. The principal contractor will be committed to achieving compliance with the EPA guidelines. All packaging is to be removed before materials are delivered to site to minimise waste generation on site.

7.16.2 Operational

An Operational Waste Management Plan has been prepared by WSP (also at **Appendix DD**) to address the likely waste streams arising from the development and how to better manage, reuse, recycle waste to meet identified State objectives and targets, Council's sustainable waste management policies, statutory requirements, as well as further assisting the development to attain its ESD / 5-star Green Star equivalency target.

Waste likely to be generated and sorted by users of the development includes general and medical and related wastes, such as:

- General Waste
- Paper / Cardboard
- Commingled Recycling
- Food Organics
- Bulky Waste
- Extended Waste Streams, including:
    - Secure Paper
    - Electronics
    - Soft Plastics
- Clinical / Sharps
- Cytotoxic
- Pharmaceutical
- Laparoscopic
- Additional Streams, which may include:
    - Anatomical

During operation, the total conservatively estimated daily waste stream volumes for each of the hospital and the retail and café uses have been predicted by waste mapping carried out by WSP – see below.

Table 7 Common Waste Volumes

Use	Quantity	General Waste (L/week)	Paper / Cardboard (L/week)	Commingled Recyclables (L/week)	Food Organics (L/week)
Hospital	415 beds	97,940	24,070	27,390	10,790
TOTAL		**97,940**	**24,070**	**27,390**	**10,790**

Table 8 Clinical Waste Volumes

Use	Quantity	Clinical (L/week)	Cytotoxic (L/week)	Pharmaceutical (L/week)	Laparoscopic (L/week)
Hospital	415 beds	29,292	1,450	725	258
GRAND TOTAL		**29,292**	**1,450**	**725**	**258**

Table 10 Common Waste Volumes

Use	Quantity / Area	General Waste (L/week)	Paper / Cardboard (L/week)	Commingled Recyclables (L/week)	Food Organics (L/week)
Café	275 m^2	4,620	2,599	1,251	1,155
Takeaway / Kiosk	40 m^2	336	280	140	84
TOTAL		**4,956**	**2,879**	**1,391**	**1,239**

Based on a review of the volumes of waste, likely waste streams, and the waste handling requirements, WSP has confirmed that the back of house and loading dock areas of the development will likely need the following areas devoted to waste handling processes.

Table 13 Waste Storage Areas

Waste / Equipment Storage	Waste Stream	Bins/Equipment	Qty	Collection Frequency	Estimated Area Required (m^2)	Actual Area Provided (m^2)
Compactor Zone	General Waste	25m^3 compactor + bin lift	1	2 x weekly	35	73
	Paper/Cardboard	25m^3 compactor + bin lift	1	1 x fortnightly		
Common Waste Storage Room	Commingled Recyclables	240L bins	36	3 x weekly	54	65
		Bin lifter	1	NA		
	Extended recycling streams	240L-660L bins	4	As needed		
		Soft Plastics Baler	1	NA		
		Soft Plastics Bale	1	As needed		
Clinical Waste Storage	Clinical Waste	660L bins	8	7 x per week	28	50
	Cytotoxic	240L bins	4	3 x weekly		
	Pharmaceutical	240L bins	2	2 x weekly		
	Laparoscopic	60L bins	4	3 x weekly		
Interim Holding Bins	General Waste	240L bins	4	NA	14	20
	Paper/Cardboard	240-660L bins	5	NA		
Food Waste Processor Storage	Food Waste	Dehydrator	1	1 x weekly or as needed	6.5	6.5
		120L bins	4	NA		

** Area required including circulation does **not** include clear zones for vehicle access.*

Table 14 Waste Storage Areas – Existing Loading Dock Contingency

Waste / Equipment Storage	Waste Stream	Bins/Equipment	Qty	Collection Frequency	Estimated Area Required (m^2)	Actual Area Provided (m^2)
Dry Waste Storage Area	Dry (Hard) Waste	10m^3 skip bin	1	As needed	14	162 (Approx.)
Indicative Recyclables Storage Area	Commingled Recyclables	240L bins	18	As needed	19	

** Area required including circulation does **not** include clear zones for vehicle access.*

As noted by WSP in these tables, the Conrad Gargett architectural drawing set satisfies these requirements, however it is likely these matters / spaces will be further refined during the detailed design phase to optimise waste handling within the redevelopment.

7.17 Signage

As noted in Section 4.6 of this EIS, three (3) new building identification signs are proposed on the new Acute Services Building in various locations and with the properties as shown in table below.

Sign	Location	Size (Area)	Materials / Colours / Lighting	Proposed text
1	Top of Building facing north	2.0m H x 27.7m L (55.4m^2)	Rendered concrete / White / lit from the slab up	Shoalhaven Hospital
2	Main entrance facing south	1.0m H x 26.0m L (26m^2)	PC Aluminium / White / external directional lighting	Shoalhaven District Memorial Hospital
3	Shoalhaven Street façade facing east	1.0m H x 19.4m L (19.4m^2)	PC Aluminium / White / external directional lighting	Shoalhaven District Memorial Hospital

As these sizes and areas of the signs each individually exceed the relevant thresholds or criteria for Exempt Development under *State Environmental Planning Policy (Transport and Infrastructure) 2021*, they will need development consent and assessment under the relevant provisions of Chapter 3 Advertising and Signage of *State Environmental Planning Policy (Industry and Employment) 2021* (Industry and Employment SEPP). The proposed signage is shown in Section 4.6 of this EIS and in

the architectural plan set at **Appendix O**. Consent is otherwise not sought for what is at this point indicative wayfinding signage within the extended hospital campus.

Chapter 3 of the Industry and Employment SEPP only applies to signage that is not Exempt Development under any environmental planning instrument. Given each of the three signs exceed the 3.5m^2 threshold set by Schedule 1 of the SEPP, the relevant provisions of Chapter 3 of the SEPP will apply. Note, the signs are not advertising as defined by the SEPP.

Section 3.6(a) requires that the signage is consistent with the objectives of the SEPP as set out in section 3.1(1)(a), and section 3.6(b) requires that the signage satisfies the assessment criteria specified in Schedule 5.

Each are addressed in turn below.

Section 3.1(1)(a) states:

(a) to ensure that signage (including advertising):

(i) is compatible with the desired amenity and visual character of an area, and

(ii) provides effective communication in suitable locations, and

(iii) is of high quality design and finish, …

The signage is appropriately and proportionately scaled and is compatible with the desired amenity and visual character of the hospital and the area as it relates directly and solely to the operation of the proposed hospital, which is a permitted land use at the site and the anchor of the evolving Nowra medical/health precinct.

The signage will provide effective communication of the hospital's location (in tandem with other traffic and directional signage around the hospital and on major roads leading to the hospital) as well as the location of the new main front of house to this part of the hospital. The signage will complement and enhance the appreciation of the site as a hospital by being suitably located at and on, and addressing, the Acute Services Building. It will be appropriately scaled, yet suitably prominent, to provide an identity and address to the site. The finishes are proposed to be of a durable and high quality (as proposed by the project architect) consistent with the design qualities of the building itself.

Schedule 5 assessment is set out in the following table.

Provision	**Compliance / Commentary**
Schedule 5	
1 Character of the area • Is the proposal compatible with the existing or desired future character of the area or locality in which it is proposed to be located? • Is the proposal consistent with a particular theme for outdoor advertising in the area or locality?	As set out above, the proposal is compatible with the existing or desired future character of the area or locality in which it is proposed to be located, including its evolution into a more pronounced medical/health precinct. The proposal does not involve outdoor advertising and is for Shoalhaven Hospital's identification only.
2 Special areas • Does the proposal detract from the amenity or visual quality of any environmentally sensitive areas, heritage areas, natural or other conservation areas, open space areas, waterways, rural landscapes or residential areas?	The proposal is not in a special area and does not detract from the amenity or visual quality of any environmentally sensitive areas, heritage areas, natural or other conservation areas, open space areas, waterways, or rural landscapes. The areas that the signage is to be located in is not a special area and the signage is consistent with its existing or desired future character as set out above. Importantly, the signage faces away from Scenic Drive and the scenic protection area adjacent to its west.
3 Views and vistas • Does the proposal obscure or compromise important views? • Does the proposal dominate the skyline and reduce the quality of vistas?	The signage is proportionate in scale and shape and is located where it does not in itself affect views, vistas or skylines. The signage does not further affect views or vistas, including any significant views or vistas.

• Does the proposal respect the viewing rights of other advertisers?	The signage does not affect views of skylines and is not in itself a sign to affect a skyline. It does however operate to visibly identify the site from relevant roads and access points in and around Nowra and in this sense operates to guide access to a relevant land use where location and identity is an important concept. The sign does not affect (the few) advertisers in the area.
4 Streetscape, setting or landscape • Is the scale, proportion and form of the proposal appropriate for the streetscape, setting or landscape? • Does the proposal contribute to the visual interest of the streetscape, setting or landscape? • Does the proposal reduce clutter by rationalising and simplifying existing advertising? • Does the proposal screen unsightliness? • Does the proposal protrude above buildings, structures or tree canopies in the area or locality? • Does the proposal require ongoing vegetation management?	The scale, proportion and form of the proposal is appropriate for the streetscape, setting and its landscaping. The signage is appropriately proportioned in relation to the building upon which it is proposed to be located and the variable distances from which the signage is likely to be seen. The signage contributes to the street / public domain in principally distinguishing and identifying the hospital from other uses and providing an address and way finding for visitors and servicing of the site that require to attend front and back of house locations within the Acute Services Building in particular. The signage is in a standardised and contemporary design, and is of the type, colours and materials that sit compatibly with the use and context. Given the north-facing sign's elevated location above tree tops and laterally away from tree tops it is unlikely that ongoing vegetation management would be necessitated. The other signs will be generally visible without any impact upon trees. The Shoalhaven Street signage will generally act in a secondary role to the other signs and for a shorter, more immediate context. The south-facing sign will be clear of vegetated areas and aligned more directly with the planned entry road.
5 Site and building • Is the proposal compatible with the scale, proportion and other characteristics of the site or building, or both, on which the proposed signage is to be located? • Does the proposal respect important features of the site or building, or both? • Does the proposal show innovation and imagination in its relationship to the site or building, or both?	As above, the signage is compatible with the proposed development, the site, and its use. It is appropriately scaled and provides a proportionate relationship between the street, public domain and the scale of the development and size of the Shoalhaven Hospital campus.
6 Associated devices and logos with advertisements and advertising structures • Have any safety devices, platforms, lighting devices or logos been designed as an integral part of the signage or structure on which it is to be displayed?	The lettering and colouring is appropriately incorporated into the overall design of the signage. There is no advertising associated with the signage.
7 Illumination • Would illumination result in unacceptable glare? • Would illumination affect safety for pedestrians, vehicles or aircraft? • Would illumination detract from the amenity of any residence or other form of accommodation? • Can the intensity of the illumination be adjusted, if necessary? • Is the illumination subject to a curfew?	The signage is to be externally-illuminated and is of a scale that would not affect traffic, pedestrians, or aircraft. The signage would be incidental in view and would not dominate or be jarring in its context.

8 Safety • Would the proposal reduce the safety for any public road? • Would the proposal reduce the safety for pedestrians or bicyclists? • Would the proposal reduce the safety for pedestrians, particularly children, by obscuring sightlines from public areas?	The signage is located away from key vehicular sightlines within the road reserve and is within the property boundary. The signage would not reduce any aspect of public safety.

7.18 Cumulative impacts and interactions with other development

7.18.1 Staging

The development subject of this SSD will be delivered in one stage but over a number of phases to maintain effective operation of the hospital during construction works.

Construction is expected to be undertaken between March 2023 and 2026, with the development ready to be operational in later 2026.

The works would be undertaken in eight (8) main phases, as follows:

- **Phase 1**: Demolition of pre-school and helipad (and other associated demolition works) (3-4 month duration)
- **Phase 2**: Enabling works including bulk oxygen compound relocation and water main relocation (3-4 month duration)
- **Phase 3**: Bulk earthworks (3-5 month duration)
- **Phase 4**: Structure (6-9 month duration)
- **Phase 5**: Façade (4-6 month duration)
- **Phase 6:** Internal fitout and finishes (6-9 month duration)
- **Phase 7:** External landscaping works (4-6 month duration)
- **Phase 8:** Handover and commissioning (3-4 month duration)

The durations of the phases shown above are only indicative and will be dependent upon a range of factors including weather and the appointed builder's construction methodology. Further the durations are likely to be able to be overlapped in part and should not be considered in a simple aggregated sense.

7.18.2 Campus-wide works

No concurrent campus-wide works are proposed. However, as is common for any number of HI / hospital projects, in order to maintain a suitably operational hospital campus, a number of campus-related works will be required outside of this SSD. This includes later refurbishment works across the existing parts of the hospital in Block A, Block B, Mental Health (Block R), and in the Renal Dialysis Unit (Block D) once the new building has been completed. The scope involves refurbishment and additions and alterations of some 6,500m^2 GFA. The refurbishment scope and repurposing of existing vacated space will deliver acute, sub-acute and ambulatory care services across various departments.

7.18.3 External to the campus

As noted, the relocation of the Shoalhaven Community Pre-School to the southern extremity of the former Nowra Park is required to be completed and operational ahead of the commencement of works in relation to this DA. Similarly, the temporary relocation of the hospital's helipad (presently proposed for West Street Oval) will also need to occur within the same timeframe. This means neither of these DAs or works will overlap or contribute to any cumulative impacts with construction-related traffic, noise or the like.

A review of the Department's Major Project's webpage reveals no current developments near Shoalhaven Hospital. The current Nowra Bridge and Princes Highway upgrade project is underway and expected to be completed by mid-2024 according to the project's webpage. Traffic management

measures are in place to address traffic flows during these works. TTW has taken these works into consideration as part of its reporting on construction traffic matters.

A review of the Southern Regional Planning Panel register has revealed no current or recent developments within the hospital's or development site's vicinity. The Shoalhaven Council DA tracker also garnered no results for any recent DAs (lodged within the last 5 years for substantial developments) in Nowra near the hospital**.**

7.19 Environmental Risk Assessment

7.19.1 Environmental Risk Assessment matrix

The following matrix and table sets out the method for assessing an environmental risk. The assessment determines the likelihood or probability of an environmental risk occurring and the likely magnitude of the consequence. This assists in determining further action required to manage or mitigate risks, or whether certain actions or events are unacceptable and must be avoided due to their high risk or severe or catastrophic consequences.

The risks assessed relate to both the construction and operation of the Shoalhaven Hospital Redevelopment based on the specialist reports and documentation prepared for the development as set out earlier in this section of the EIS. A Mitigation Measures table related to recommendations within these documents and arising from this environmental risk assessment is found at **Appendix EE**.

Risk Matrix

Probability		**A** **Almost Certain**	**B** **Likely**	**C** **Possible**	**D** **Unlikely**	**E** **Rare**
Consequence						
1	**Severe**	**Very High**	**Very High**	**High**	**High**	**Medium**
2	**Major**	**Very High**	**High**	**High**	**Medium**	**Medium**
3	**Moderate**	**High**	**High**	**Medium**	**Medium**	**Low**
4	**Minor**	**Medium**	**Medium**	**Medium**	**Low**	**Low**
5	**Negligible**	**Low**	**Low**	**Low**	**Low**	**Low**

	Risk Control Actions
High – Very High	The risk is unacceptable. Eliminate the design feature
High	High priority for action
Medium	Responsibility to be allocated
Low	Manage by routine procedure and control

7.19.2 Existing environment and baseline conditions

The existing environment within the development site is an operational hospital, with much of the redevelopment upgrading, augmenting, and improving a range of existing functions, operations, and management procedures, as well as significantly adding new floorspace and capacity to the campus.

The site is itself is a highly modified, disturbed and urbanised site with no (or little opportunity for) heritage or cultural value, poor or low biodiversity value, and no immediate natural scenic or highly valued environmental qualities, aside from the former park's open space and unbuilt areas and the vegetated, albeit planted, nature of the development site. Whilst being near a scenic protection area, the site is removed and detached from it, with the focus of the scenic qualities away from the hospital and over and towards the Shoalhaven River and the length of Ben's Walk as it descends from the western end of North Street northwards to the river level.

The environment surrounding the hospital to its south and east is also highly urbanised and in the initial stages of a broader envisioned transformation into a burgeoning health hub / medical precinct. The areas to the south and west of the hospital include other areas of the former Nowra Park which in the past decade have also been developed for health uses and added to the hospital campus

following rezoning of the park. To that end the hospital and its clustering and extension of health uses dominates its immediate context. Residential, educational and other mixed use activities are the other dominant uses within a short distance of the hospital. Passive and active recreational uses generally sit to west and south of the campus.

7.19.3 Assessment of potential impacts

The types of impacts that may arise as a result of the development are set out below.

General

- Heritage
- Scenic protection
- Visual amenity / Visual impact / View loss

Construction

- Hazardous building materials
- Acid Sulfate Soils
- Biodiversity loss
- Tree removal / protection
- Aboriginal heritage / non-Aboriginal archaeology
- Stormwater management - sediment and erosion control
- Traffic and parking
- Amenity - air quality (dust / odours)
- Amenity – noise
- Amenity – vibration
- Aviation
- Waste generation

Operation

- Stormwater management – water quantity
- Stormwater management – water quality
- Flooding
- Bushfire
- Amenity – privacy
- Amenity – overshadowing
- Amenity - lighting
- Amenity – noise
- Amenity - wind
- Safety and security
- Traffic and parking
- ESD measures
- Hazardous goods (SEPP 33)
- Aviation
- Waste generation

General - Heritage

The Shoalhaven Hospital campus is not a heritage item and does not sit within a conservation area. The impact of the development upon nearby heritage items as been identified as negligible and of no new direct impact. The continued appreciation of heritage items in the vicinity will not be compromised. There are no significant views to or from any of the heritage items in the vicinity to the study area. The form, siting, proportion and design has been considered to facilitate the requirements of the new hospital building and upgraded facilities.

Further, in consideration of the impacts of the built form upon Ben's Walk and its scenic qualities, it should be noted that heritage listing for Ben's Walk does not relate to views or vistas as part of its

significance. The listed curtilage for the Ben's Walk heritage item encompasses the bushland area and sandstone cliff along the western edge of the Scenic Drive road side. The physical walkway comprising Ben's Walk sits behind the vegetation descending towards the base of the sandstone escarpment. The scenic value of the walk is towards the Shoalhaven River which is a significant feature in the Aboriginal history of the area, and the original walkway that was constructed by Ben Walsh is below Hanging Rock at the base of the sandstone cliff. The visual impacts of the development do not relate to this listing and the impacts upon the Scenic Protection Area.

Accordingly, the risk to heritage is rare and negligible and classed as **low**. An unexpected finds protocol will apply in the event of any archaeological finds during works.

General – Scenic protection

As above, the only area identified as a Scenic Protection Area in the vicinity of the hospital site is that comprising the escarpment west of Scenic Drive and the areas comprising Ben's Walk. In general, the development will have no direct impact upon the scenic qualities of this area as it will either be remote from and/or unable to be seen from the Scenic Protection Area.

The visual impact of the development when viewed from a public place within a scenic protection area varies greatly. The siting of the development away from Scenic Drive addressing the lowest point of the site at Shoalhaven Street assists in seeking to minimise impacts where the Acute Services Building may lie within the viewshed of the scenic protection area. This is particularly the case for viewing the Ben's Walk area from across the Shoalhaven River. The building will otherwise be behind the viewer when looking over or down to the Shoalhaven River. Along Ben's Walk the building will be unable to be seen because of the escarpment.

Further as per Council's LEP provisions the number, type and location of existing trees and shrubs that are to be retained and the extent of landscaping to be carried out on the site will further add to screening the building when viewed from the Scenic Protection Area.

The risk to the scenic protection is likely however possible and minor in its impact noting the variable nature of when the building is possible to be seen. The risk classification is **medium** in this regard.

General – Visual amenity / Visual impact / View loss

The assessed visual impacts, visual amenity impacts and public and private view loss impacts are considered to be possible and with a minor to moderate significance. There are no key views at or around the hospital likely to be impacted and the probability of view loss is rare with the consequences correspondingly negligible in the context. The risk rating is **low**.

In summary, the general impacts arising with respect to heritage, scenic protection, and visual amenity generally are likely to be **low** to **medium** in nature. These impacts and risks would not prevent the redevelopment, whether singularly or collectively.

Construction - Hazardous building materials

Given the known presence of some hazardous building materials in parts of buildings proposed to be demolished the risk is classed as 'almost certain'. With structured removal and handling processes as proposed as mitigation measures, the risk would however be described as **low**, coupled with an unexpected finds protocol for materials not yet identified.

Construction - Acid Sulfate Soils

As there is no known or mapped occurrence of Acid Sulfate Soils at the site, the risk of these being exposed during earthworks is both rare and negligible and hence **low** due to the local and elevated extent of the works well above RL5 and the Shoalhaven River level.

Construction - Biodiversity loss
As identified by Eco Logical in its BDAR, no threatened species were recorded within the development site and the biodiversity impacts are considered to be minor and no requirement for offsets for impacts to planted vegetation or the associated marginal foraging habitat for threatened fauna is required. The probability of biodiversity impacts is accordingly unlikely and of a negligible impact which would be classed as **low**. Notwithstanding, a range of mitigation measures are recommended ahead of the commencement of works to protect trees and any undiscovered fauna that may be on-site.

Construction - Tree removal / protection
Of 74 trees assessed within the development site, 26 require removal to accommodate the building and its associated works. Only three (3) of these trees is identified as having the highest significance rating. Notably, Tree 50, the largest, oldest and most significant tree on the site is to be retained and protected during works. It will be integrated into the new site landscaping as a feature. Further a canopy tree replacement ratio of 2.5:1 is proposed with 65 new trees.

All retained trees are subject to tree protection measures as recommended by Moore Trees in their report.

Based on a possible moderate impact (but moderated with a suitable tree retention, protection and replacement regime), the impact risk classification would be reasonably set at **medium** in this instance.

Construction - Aboriginal heritage / non-Aboriginal archaeology
Based on the outcomes of the ACHAR process and the Statement of Heritage Impact assessment, the likely heritage impacts to Aboriginal and non-Aboriginal archaeology is classed as rare and negligible and hance **low**. Notwithstanding, unexpected finds protocols apply in each instance during the course of the works program.

Construction - Stormwater management - sediment and erosion control
The impacts of sediment and erosion arising from the works have been reduced through the proposed implementation of standard sediment and erosion control measures around the site. The likelihood of impacts arising are possible and minor and accordingly **medium**.

Construction - Traffic and parking
It is anticipated that there will be construction traffic and parking matters requiring further resolution.

The levels of construction traffic and workers' parking will vary across the development's phases of work, and will require further management. The principal contractor is yet to be appointed and their work methodology is not yet known.

The preliminary Construction Traffic Management Plan will require revision and finalisation once the principal contractor has been appointed. This will be subject to anticipated detailed requirements arising from DPE's assessment and requested conditions of consent from Council and TfNSW. The aim of these will be to suitably mitigate impacts upon the local road network and provide suitable levels of certainty during the construction program.

The potential for impacts remains high with the possibility for some high level consequences. Accordingly, until the detailed requirements of DPE, Council and TfNSW can be refined and implemented, the risk classification would be **high**, making this a matter for priority action.

Construction - Amenity - air quality (dust / odours)
During works impacts upon the amenity of the neighbourhood will be controlled through management and mitigation of air population, whether through dust or odours. The likelihood of air pollution is

reduced to unlikely and of having a minor consequence. The risk level of this is **low**, subject to the appropriate mitigation measures being imposed.

Construction - Amenity – noise

Construction noise will be inevitable, particularly during the early phases of work involving demolition, earthworks and structural works. As the building is completed works will become internalised and screened from sensitive neighbours. As noted by the Acoustic Logic assessment, the most affected sensitive receivers will be residences to the east and south of the hospital and to a lesser degree residences to the north-east of the hospital during both earthworks and construction works. Whilst there will be marginal (and in part greater noise impacts) above the NML, no works trigger the HNL threshold. External areas of both the new Shoalhaven Community Pre-school location and the Overnight Stay Accommodation at the Cancer Care Centre will not likely be significantly affected by noise based on these criteria.

Accordingly, the construction noise impacts are 'almost certain' and of a moderate level making the risk of impact **high**. Again, this is priority action that will be most suitably addressed by a more detailed noise assessment and the development of refined Construction Noise and Vibration Management Plan.

Construction - Amenity – vibration

Some vibration is likely to occur discontinuously at various stages of the construction program. This has the potential to affect some sensitive uses, in particular, those closest to and within the hospital. Vibration consequences are accordingly likely with moderate, albeit temporary, impacts making this a **high** risk matter. The proposed Construction Noise and Vibration Management Plan prior to construction will better address specific vibration management and mitigation measures.

Construction - Aviation

No general aviation impacts are likely during construction. Any crane employed for the redevelopment will need to be erected and operated within the crane arc limits sought by the aviation consultant. The existing helipad is to be demolished with the temporary relocation presently planned for the West Street Oval. The probability of aviation impacts are rare with a minor impact only making this a **low** risk item.

Construction - Waste generation

Construction waste will be managed and reused and recycled where this is possible. This would be a **low** risk item given the overall desire to reduce waste and associated costs.

In summary, of the various construction-related impacts related to the development, only those related to traffic, parking, noise and vibration impacts are considered to be **high** risk impacts and subject to priority action as part of this DA's assessment. The matters are each likely to be subject to detailed conditions of consent requiring specific management plans. The balance of construction-related matters are all of **low** to **medium** risk in nature.

Operation - Stormwater management – water quantity

The likelihood of stormwater management impacts arising in the completed development are unlikely and would have only negligible consequences as the development has been designed to cater for the increased impervious area though implementation of on-site detention and slow release water flows with Water Sensitive Urban Design and landscape features. The post-development water flows have been designed to improve upon the existing flows in both the 1:20 year and 1:100 year storm scenarios. A **low** risk rating applies in this regard.

Operation - Stormwater management – water quality

Similarly, water quality measures incorporated into the design of the development's stormwater system will satisfy each of Council's water quality targets. It is unlikely that the finished development

will adversely impact upon water quality at the site and accordingly the consequences are likely to be minor. The risk rating is **low**.

Operation - Flooding
Based on the information provided in this EIS, it is unlikely the hospital will be affected by flooding or its access cut-off by flooding. The impact of flooding upon the development is likely to be minor as a consequence. The risk rating is **low** in this regard.

Operation – Bushfire
The development site is not bushfire prone land, however the development is classified as a Special Fire Protection Purpose. Eco Logical has assessed the likely bushfire risk upon the new Acute Services Buildings as being as being low commensurate with a BAL-LOW rating for building materials and construction standards principally due to the greater than 100m existing Asset Protection Zone (APZ) between the nearest bushfire hazard on the western fringes of Scenic Drive. Bushfire management measures are included in the Eco Logical bushfire assessment and in this instance require, amongst other things, maintenance of the APZ, landscaping to meet the requirements of Planning for Bushfire Protection 2019, planned for water supply, and the development of a Bushfire Emergency Management and Evacuation Plan prior to the occupation of the new building. The bushfire risk is possible but of a likely minor consequence resulting in a **medium** risk.

Operation - Amenity – privacy
Given the separation distances between the proposed Acute Services Building and residences to the east of the hospital site as well as the likely oblique and obscured angles of views and usage of rooms and spaces within the building it is unlikely that significant privacy impacts will arise through overlooking or the like. This is considered to be possible but of a minor consequences making this a risk rating of **medium**.

Operation - Amenity – overshadowing
Overshadowing diagrams prepared by Conrad Gargett have demonstrated that the new shadows arising from the Acute Services Building will have the following impacts to the nearest residences to the east and the former Nowra Park to the south.

In mid-summer no new shadows will be cast upon residences to the east or the park to south from 9am to 3pm. In mid-winter however, only extremely marginal increases in shadowing is likely to occur to the south within the park from 9am through to 3pm. No new shadowing will occur to residences between 9am and 12 noon. New shadows will only begin to reach a number of Shoalhaven Street residences front yards and western facades around 2pm. By 3pm in mid-winter about six (6) residences will be subject to overshadowing including parts of their rear yards, three (3) properties more vividly than others.

In this regard the overshadowing impacts are reasonably benign as they do not impact the park to any significant degree year-round; do not impact residences other than during parts of May, June and parts of July and at worst during 21 June with impacts upon private open spaces (whether front or rear yards) from 2pm onwards. Affected properties (which are few in number) will retain all existing solar access throughout the day with only the last 2-3 hours of the day impacted in one way or the other. For these properties it is likely to be considered a high level impact, albeit limited to the shortest days within winter, with all other seasons and non-winter months unaffected.

In general, the probability of shadowing impacts is likely, with the consequences minor in the context. This results in a **medium** level of risk.

Operation - Amenity - lighting
External light spill from the development is unlikely to adversely affect premises outside of the hospital as it has been designed to minimise glare and undesirable illumination levels to surrounding

sensitive receivers in accordance with Australian Standards. Further the lighting will also appropriate respond to safety and security matters arising from the CPTED assessment. The unlikely probability coupled with a minor consequence makes this a **low** risk rating.

Operation - Amenity – noise

Operational noise associated with the development is yet to be quantified. However, mechanical plant and loading dock noise mitigation is able to be designed and addressed through appropriate management and treatment measures in detailed design. At this point the profile of operational noise impacts is **medium** as the impacts are still possible but likely to be minor in the context.

Operation - Amenity - wind

The likely wind impacts upon local amenity are likely to be much the same along Shoalhaven Street and within the remaining parts of the former Nowra Park based on Arup's assessment. As discussed by Arup, further from the Acute Services Building in the remaining parts of the former Nowra Park to the south, and the residential areas to the east, the overall wind classification would be expected to remain similar getting windier for some directions and calmer for others. Arup considers that wind conditions at the majority of locations around the site would be classified as suitable for pedestrian standing and walking in more exposed locations. Localised wind impact amelioration has been designed for the proposed outdoor café area under the west wing, noting seating in calmer wind locations has been recommended by Arup.

Overall, the likely impact of changed wind patterns is considered possible however with a negligible to minor consequence. This results in a rating of **low** to **medium** risk.

Operation - Safety and security

In general, the neighbourhood at and around the hospital is a lower risk area for crime and anti-social behaviour compared to other nearby places. This may be the result of the hospital's 24 hours per day and 7 day per week operation and its dominant presence within the locality. The redevelopment offers a further opportunity to reinforce and clarify territorial reinforcement within the campus, improve surveillance, manage access to parts of the campus, and manage space in general. The development offers a significant opportunity to further reduce crime and anti-social behaviour at or around the campus. Safety and security risk is therefore possible but reduced to unlikely which may have a minor consequence. The risk rating is **low** in this context.

Operation - Traffic and parking

TTW has considered the impacts of traffic and parking upon commencement of operation of the Acute Services Building in 2026 to be acceptable through a combination of use of available on- and off-site car parking spaces, however this is subject to a range of Green Travel Plan initiatives being in place, particularly in relation to a reduction in staff-related car use and corresponding increases in public transport use, and cycling and walking to work.

Review of the operation of the Green Travel Plan and the on- and off-site balance of parking is proposed for 18 months and 36 months after the Acute Services Building commences operation.

The impacts of parking and the success of the Green Travel Plan initiatives are likely to 'almost certain' and of a major consequence making this matter a **very high** impact risk.

All other transport-related considerations, including trip generation, intersection performance, access and design-related compliance, and general compliance matters are of only a low impact.

Operation - ESD measures

The development is seeking to limit its impacts upon the environment through measures tied to design, operation, and building performance in attaining an equivalent 5-star Green Star rating and better than 10% improvement upon the NCC 2019 Section J DTS requirements. The risk rating is **low** in this regard.

Operation - Hazardous goods (SEPP 33)
The development is unlikely to generate a hazardous goods risk within its locality, the consequence of which remains minor. The risk rating in this respect is **low**. Mitigation measures are proposed to ensure this risk rating remains low, particularly through appropriate placement and or screen of the bulk oxygen compound.

Operation - Aviation
The redevelopment will have no impact upon general aviation and hospital-related helicopter traffic. The probability of an impact is rare and the consequence negligible. The development in itself does not generate an increase in helicopter movements. The effect of the development is effectively to raise the height of the helipad by some 30m from ground level to rooftop (Level 8) level and improve access to a helipad and in a secondary sense correspondingly reduce acoustic impacts of helicopter movements around the hospital. The corresponding risk rating is **low**.

Operation - Waste generation
Operational waste generated by the development, whether by type or volume is unlikely to impact upon the environment in a way that is anything other than minor. The risk rating is **low**.

In summary, the operational development's risk profile is generally **low** to **medium** across a range of considerations. The development is unlikely to generate any new significant impacts that cannot otherwise be managed. The matter generating a **very high** risk relates primarily to traffic and parking matters, including operation of a Green Travel Plan and parking on- and off-site.

7.19.4 Cumulative impacts
The likely cumulative impacts of the above impacts when considered to occur concurrently in relation to construction are likely to focus primarily upon traffic and noise and vibration management. This is not atypical of a project of this scale. There are no adjacent and concurrent developments and works (as set out in Section 7.18) which will need to be addressed or managed.

Similarly, operational traffic is able to be dispersed across and around the campus to limit impacts in any one place and generate a more efficiently-operating hospital environmental in relation to movement. Given the generally low rating of impacts at operation it is unlikely any significant aggregation of hospital activities will generate new or unforeseen impacts of a significant magnitude.

As noted, parking supply versus demand on and particularly off-campus will need to be monitored, and in this regard TTW has recommended a review process 18 months and 36 months onwards from the commencement of operation of the Acute Services Building in 2026.

7.19.5 Proposed mitigation measures and monitoring
A summary of proposed mitigation measures and any required monitoring arising from this assessment and specialist studies in support of this EIS are set out in the table at **Appendix EE**.

7.19.6 Alternative measures
There are few alternative measures relevant or available to the development given the predominance of low risk rated impacts.

In terms of avoiding risk and impacts by employing the 'do nothing' option or leaving the redevelopment to another time, or relocating it to another site in Nowra is not possible or available given the necessary and acute need to futureproof health services in this LHD and this part of Shoalhaven at this time. To delay the development would have other more serious social costs.

Development of a new or different site (where exposure to impacts may be less than at the current hospital site) is also not a feasible alternative at this time given this will act to fragment rather than enhance or consolidate services. There is a potential this would have a likely greater impact upon the

environment in the range of impacts and risks assessed above given the attendant risks in this location are broadly low.

A different design would not remove or reduce impacts given the existing low risks associated with its height, siting, design, and operational capacity. There would be no additional benefit from a reduced scope from an environmental perspective. The current scale of the development satisfies clinical need and to pare-back the scale of the development would generate new or different risks within the near future of replicating this redevelopment process.

Different technologies to limit impacts are unlikely to be found and be cost-effective in their context given the employment of a significant scope of current and accepted technologies to reduce waste, inefficiencies, pollution, and enhance ESD principles and targets.

7.20 Social Impacts

The positive social impacts of the proposed development in delivering upon the CSP are deemed to be significant. The delivery of the Shoalhaven Hospital Redevelopment will future proof capacity at the hospital to cater for population growth, future demand for services, and changed clinical and health needs whilst also providing a modern fit-for-purpose health facility. Accordingly, the health care outcomes and wider social benefits which will arise from investment in new health infrastructure are self-evident and palpable. From a physical infrastructure perspective, the new Acute Services Building will become an immediate ISLHD-community asset.

To quantify the social impacts and benefits, Ethos Urban has prepared a Social Impact Assessment (SIA) consistent with the Social Impact Assessment Guideline for State Significant Projects (NSW DPIE 2021) (see **Appendix Q**).

The SIA considered the potential impact on the community and social environment should the social impacts envisaged occur, compared to the baseline scenario of the existing use of the site and social context.

The purpose of the social impact analysis was to:

- Identify, analyse and assess any likely social impacts, whether positive or negative, that people may experience at any stage of the project lifecycle, as a result of the project.
- Investigate whether any group in the community may disproportionately benefit or experience negative impacts and proposes commensurate responses consistent with socially equitable outcomes.
- Develop social impact mitigation and enhancement options for any identified significant social impacts.

The two main types of social impacts that may arise as a result of the proposed development are the direct and indirect impacts caused by the project. Direct impacts may lead to changes to the existing community, as measured using social indicators, such as population, health and employment. Indirect impacts are generally less tangible and more commonly related to matters such as community values and identity and sense of place.

The SIA has identified the following key social factors relevant to the assessment of social impacts of the project:

- **Way of life**: how people live, get around, work, play and interact with one another on a day-to-day basis
- **Community**: its composition, cohesion, character, how it functions, and sense of place
- **Accessibility**: how people access and use infrastructure, services and facilities
- **Culture**: people's shared beliefs, customs, values and stories, and connections to Country, land, water, places and buildings
- **Health and wellbeing**: people's physical, mental, social and spiritual wellbeing
- **Surroundings**: access to and use of natural and built environment, including ecosystem services, public safety and security, as well as aesthetic value and amenity
- **Livelihoods**: including impacts on employment or business, experience of personal breach or disadvantage, and the distributive equity of impacts and benefits

- **Decision-making systems**: the extent to which people are able to participate in decisions that affect their lives, procedural fairness, and the resources provided for this purpose.

With respect to impacts on **decision-making systems**, Ethos Urban concluded that these were negligible and did not further assess this in its SIA.

The key affected communities considered to experience social impacts and/or benefits included:

- Hospital communities (staff, volunteers, suppliers etc)
- Patients attending the health facilities within the hospital precinct, their carers and visitors
- Neighbouring residents, including aged care living residents
- Neighbouring pre-school parents and students
- Neighbouring businesses
- Local area workers
- Visitors to other institutions and businesses within walking distance of the area
- Temporary construction workers in the area.

Each impact was considered on the magnitude and likelihood to occur and attributed a score from 'low' to 'very high' as per Tables 5-7 of the SIA (see page 34). The impacts were also split between during construction and during the operation of the redevelopment.

The following provides a high level summary of Ethos Urban's findings arising from its SIA, and applying the above methodology.

7.20.1 Way of Life

Overall improved access to high quality health care facilities at the Shoalhaven Hospital site would have a significant positive benefit to way of life. The redevelopment of the site, if impacts associated with construction are well mitigated, will ensure positive social outcomes for the community. Long term positive impacts associated with improved hospital facility and capacity are expected to be almost certain. Existing constraints for the hospital operations have been identified and the proposal is consistent with the strategic ISLHD vision and objectives. Negative social impacts associated with way of life are medium during construction, and positive social impacts associated with way of life are high during operation.

- Construction: Temporary Medium (likely minor) - negative
- Operation: Long term High (likely moderate) - positive

7.20.2 Health and Wellbeing

Overall, the new facilities at the Shoalhaven Hospital site would have a significant positive benefit to health and wellbeing of residents, patients, and the community. The redevelopment of the site, if impacts associated with construction are well mitigated, will ensure positive health and wellbeing outcomes for the community. Negative social impacts associated with health and wellbeing are medium during construction, but low during operation:

- Construction: Temporary Medium (possible moderate) – Negative
- Operation: Long term Very high (almost certain major) – Positive

7.20.3 Accessibility

Overall improved access to high quality health facilities at the site would have a significant positive benefit to accessibility. Negative social impacts associated with accessibility are medium during construction, but low during operation.

- Construction: Temporary Medium (possible moderate) – Negative
- Operation: Long term High (likely moderate) – both Positive and Negative

7.20.4 Livelihoods

Provision of new contemporary health care facilities at this location would have a significant positive benefit to livelihoods, subject to the needs and cultural sensitives of a diversity of future patients and visitors is taken into account and well-executed in the design. The operation of the facilities will provide employment opportunities both indirect and direct. Negative social impacts associated with livelihoods are low during construction and operation.

- Construction: Temporary Medium (possible moderate) – Positive
- Operation: Long term Medium (likely minor) – Positive

7.20.5 Community, including its composition, cohesion, character, sense of place

Overall improved high quality health care facilities at Shoalhaven Hospital would have a significant positive benefit to community. The refurbishment and expansion of the site, if impacts associated with construction are well mitigated, will ensure positive social outcomes for the broader community. Any negative social impacts on the community composition and cohesion are medium during construction, but low during operation.

- Construction: Temporary Medium (likely minor) - negative
- Operation: Long term Low (unlikely minimal) – Negative or Positive, depending on the perspective of the residents of the Secondary Study Areas.

7.20.6 Culture: shared beliefs, customs, values and stories, and connections to land, places, buildings

Provision of high-quality contemporary health care facilities at this location would have a positive benefit to culture subject to cultural needs of the worker, patient and carer community being taken into account and executed in the hospital design and operation. Negative social impacts associated with culture are low during construction and operation:

- Construction: Temporary Low (unlikely minor) – Negative
- Operation: Long term Low (unlikely minimal) – Negative

7.20.7 Surroundings – amenity (access to and use of natural and built environment, including ecosystem services, public safety and security as well as aesthetic value and amenity)

Provision of high-quality health facilities at this location would have a significant positive benefit to surroundings. Negative social impacts associated with surroundings are medium during construction, but low during operation:

- Construction: Temporary Medium (likely minor) – Negative
- Operation: Long term Low (unlikely minimal) – Positive

7.20.8 Conclusion

Generally, the impacts associated with the construction phase are likely to be temporary and negative, and of medium levels of impact, and with a medium to high probability to occur. Management and mitigation is expected or required to reduce impacts.

The operation of the redevelopment is likely to generate a range of long term and positive impacts most of which medium to high and very high impacts. The myriad long-term positive benefits of the operation of the development outweigh the few minor and short-term negative or adverse impacts likely to arise, mainly at construction.

The main social benefits arising, based on Ethos Urban's SIA are:

- **Ongoing benefits health and wellbeing of staff, visitors and patients** of Shoalhaven Hospital and the broader Secondary Study Areas, associated with the provision of the new building to meet contemporary healthcare needs of a growing and ageing population of the region. In addition, the proposal will take pressure off hospitals in Wollongong and Sydney, where currently patients to the Shoalhaven Hospital have been required to travel to, to receive additional specialist care.
- **Ongoing benefits to way of life, daily routines, and health and wellbeing** associated with the delivery of the improved capacity of health facilities on the site and the integrated, contemporary healthcare campus and community infrastructure the project aims to achieve. The proposal is consistent with the ISLHD Health Care Services Plan (2020-2030) and the Shoalhaven Hospital Clinical Service Plan (CSP) which indicates a need for the hospital to enhance its infrastructure to support the introduction of contemporary models of care.
- **Ongoing benefits to livelihoods** associated with increased employment opportunities, including during the construction phase and operational phase. Benefits to the broader Shoalhaven region – and to local businesses, residents and visitors, will likely arise.

The few short-term impacts arising relate chiefly to construction and would be managed through appropriate mitigation measures as identified by this EIS, as well as construction management and

ongoing consultation during the construction phase. The key negative impacts are identified by Ethos Urban as:

- **Temporary impacts on the surroundings and amenity** of the PSA associated with the proposed construction phase and potential associated traffic impacts, dust, noise, and/or vibration, with the proposed development to occur in a 'live' hospital environment. Patients and carers visiting the current facilities may be experiencing illness, disabilities and/or distress, and may be particularly sensitive to construction-related disruption.
- **Temporary negative impacts to way of life** associated with changes to wayfinding and pedestrian and vehicle access routes associated with construction activities may also be experienced. To minimise disruption, implementation of the Staging Plan is recommended. In addition, the impacts should be managed through a Construction Management Plan, and more broadly, compliance with relevant legislation and regulation.
- Due to the proposed increased capacity of the hospital (and additional onsite carparking, and various changes to the accessibility of the site) there may be ongoing **traffic impacts to the Shoalhaven Hospital visitors, patients, residents and hospital workers**. However, appropriate recommendations as per the Traffic Impact Assessment, if implemented correctly, should mitigate impacts accordingly. Ongoing monitoring will be required.

Overall, Ethos Urban concludes that the development will support various community priorities identified in local strategic documents, such as improved community health, public realm, amenity and streetscape, and access to health and community services. The development also has the potential to support community accessibility and inclusiveness with proposed landscaped activity areas, to facilitate social interactions and connections.

Accordingly, the consequences of not proceeding with the Shoalhaven Hospital Redevelopment at this site can only be identified as negative.

7.21 Economic Impacts

The Shoalhaven Hospital Redevelopment will generate a significant level of economic activity both during the construction and the operation of the development. These positive impacts are both immediate and short-term as well as more durable and long-term. The positive economic impacts also likely to be visible and tangible at a localised level and across the region.

It is anticipated some 548 construction jobs will be generated with an operational workforce of 680 FTE staff generated by 2031. Indirectly, additional construction-related manufacturing jobs and ancillary trades are likely to be generated by the development. This is amplified through the choice of sustainable building materials locally produced and through maximising locally manufactured and sourced materials through the supply chain as set out in this development's ESD report in attaining the equivalent 5-star Green Star points target.

The economic multipliers at a local level are already visible, with numerous specialist consulting rooms, and other associated health and affiliated developments around the hospital's perimeter. This will be expected to grow to foster further benefits of adjacency and to grow the anticipated Nowra health hub / medical precinct.

Again, to forego the development would have significant and lasting direct and indirect economic impacts upon the locality, the development and evolution of the Nowra health hub / medical precinct, and the region more generally.

7.22 Suitability of the site

The site's suitability for the proposed development is demonstrated through:

- the existing permissibility of the development (and concurrent proposed rezoning to clarify permissibility as co-related to HAC's acquisition of the preschool and Nowra Park sites) in accordance with both Shoalhaven LEP 2014 and the Transport and Infrastructure SEPP.
- the proposal's consistency with the relevant zone objectives, noting no development controls apply to limit the development.

- the site's urban context and location within a precinct that is under transformation and evolving into a stronger health hub / medical precinct.
- the development's general consistency with key strategic planning policies of both the State and Council relevant to Nowra, the LGA, the Illawarra-Shoalhaven region, and for this type of development.
- the site's location as part of the ongoing and progressive redevelopment of the Shoalhaven Hospital campus in enhance capacity and functionality.
- the site's general lack of significant or prohibitive environmental issues including contamination, natural hazards, heritage, biodiversity, stormwater management and flooding, and hazardous or offensive development thresholds that cannot otherwise by suitably managed or else offset or mitigated.
- the proposal's overall relative low environmental impacts upon other uses within the locality and the site's immediate vicinity in terms of streetscape, visual impacts, operational traffic and noise generation, and environmental impacts.
- the low level and short term negative social impacts that are likely to occur which are offset by the more significant long-term social and economic benefits arising, and the public interest in carrying out and operating the development, including ensuring medical and health care can be provided closer to home, and to meet increased demand for aged care, medical, surgical and cancer services within the locality and region.

7.23 The Public Interest

The proposed development involves the planned growth and redevelopment of Shoalhaven Hospital consistent with the long-established Zonal masterplan and consistent with the current Clinical Services Plan. The delivery of the Shoalhaven Hospital Redevelopment will futureproof capacity at the hospital to cater for population growth, future demand for services, and changed clinical and health needs whilst also providing a modern fit-for-purpose health facility.

The proposed development ensures ISLHD is able to continue its services to the highest contemporary levels and meet the specialised needs of its clientele and the community.

The proposal suitably addresses or mitigates impacts upon the environment and the amenity of its neighbours. It provides for upgrades to services, infrastructure, amenity, and connectivity as well as built form appropriate to its use and location. It is clear, based on the information provided in this EIS and its appendices, that to forego the development as proposed would not be in the public interest.

8 Project Justification / Conclusion

The Shoalhaven Hospital Redevelopment project is justified as it will have significant positive social and economic impacts for the locality; the development and evolution of the Nowra health hub / medical precinct; the region; and the ISLHD. The environmental impacts are broadly likely to be low to medium only across both the construction and operational phases of the development. Any more significant impacts identified, such as construction noise and traffic, are able to be suitably managed and mitigated to reduce impacts and environmental risks.

The development as a whole satisfies the principles of ecologically sustainable development. The design of the development will seek to meet the equivalent of a 5-star Green Star rating and seek to exceed a 10% improvement upon the NCC 2019 Section J DTS requirements. No significant biodiversity impacts arise that require offsetting under legislation, or further consultation with the Commonwealth under the EPBC Act.

The existing hospital campus and sites of the former Nowra Park and the Shoalhaven Community Pre-school are highly modified, disturbed and urbanised environments with no (or little opportunity for) heritage or cultural value, poor or low biodiversity value, and no direct natural scenic or highly valued or rare environmental qualities. The redevelopment of the campus to future proof capacity at the hospital to cater for population growth, future demand for services, and changed clinical and health needs whilst also providing a modern fit-for-purpose health facility, is suitable and justified in the context.

The development satisfies and supports all relevant strategic planning objectives and aims as they relate to the provision of health services; to the Shoalhaven LGA and the evolving Nowra health hub / medical precinct; and the Illawarra-Shoalhaven region generally. There are no existing or concurrently proposed planning controls, legislative and prerequisite requirements and environmental risks or impediments that would limit or prevent the development as proposed.

Community consultation and engagement, as well as consultation with relevant stakeholders has so far broadly supported the Shoalhaven Hospital Redevelopment. Further engagement remains around individual detailed aspects of the development, whether related to on-street parking demand and supply, connections to services, and the like. These however are reasonably commonplace and routine discussions that remain as part of the planning and detailed design process.

The findings of this EIS and its supporting studies and reports is that the development will generally be of a low impact and with environmental risks relative to the project's scale and complexity. Suitable measures have been proposed throughout to address a range of environmental and operationally-related impacts that would arise from the construction and operation of the development. Ongoing communication with the immediately-affected community is proposed in relation to a number of construction-related impacts, chiefly from noise, vibration, and traffic management. Monitoring for previously undetected or unrecorded Aboriginal objects and other heritage or archaeology (however unlikely) is also planned in dialogue with, and involvement of, the community.

The design and siting of the development has sought to not only meet the immediate clinical and health services needs of the hospital and ISLHD, but also sought to avoid or minimise the impacts of the project, applying mitigation measures were needed or required under legislation.

We recommend that the Shoalhaven Hospital Redevelopment be approved.