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Environmental Impact Statement for a State Significant Development Application Construction of a New Hospital Building

Byron Shire Central Hospital

Submitted to:
Department of Planning & Environment
on Behalf of
NSW Health Infrastructure

Site: Lot 100 in DP 1140936
Ewingsdale Road, Ewingsdale

Our Ref: 13/330
Date: 14 August 2014

Newton Denny Chapelle
SURVEYORS PLANNERS ENGINEERS

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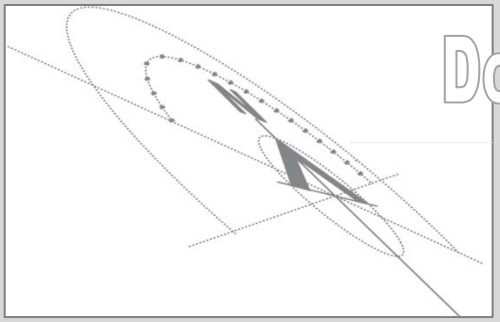

Document Control Sheet

Document Control Sheet

Document and Project Details	
Document Title:	Environmental Impact Statement for Proposed Byron Shire Central Hospital at 54 Ewingsdale Road, Ewingsdale
Author:	Damian Chapelle
Project Manager:	Damian Chapelle
Date of Issue:	14 August 2014
Job Reference:	13/330
Project Outline:	This document presents an Environmental Impact Statement for the proposed Byron Shire Central Hospital.

Document Distribution

Date	Status	Distribution – Number of Copies		
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13/8/14	Final Draft	1	0	0
14/8/14	Final	1		

Documentation Verification	
Checked by:	Health Infrastructure – Ms Leone McEntee & Ms Kerry Ross Aurora Projects Pty Ltd – Mr Malcolm Naylor Newton Denny Chapelle – Mr Damian Chapelle

USAGE NOTE:

This report was prepared for the purpose and exclusive use of NSW Health Infrastructure and is not to be used for any other purpose or by any other person or corporation. Newton Denny Chapelle accept no responsibility for any loss or damage suffered, however so arising, to any person or corporation who may use or rely on this report for any purpose other than that described above.

The maps, development plans and exhibits shown in this report are suitable only for the purposes of this report. No reliance should be placed on this information for any purpose other than for the purposes of this report. All dimensions, number, size and shape of lots as shown on plans in this document are subject to detailed engineering design plans and final survey and may vary subject to conditions of consent issued by Department of Planning & Environment.

Executive Summary

This Environmental Impact Statement (*"EIS"*) relates to the proposed development of the Byron Shire Central Hospital (*"BSCH"*).

This EIS is submitted to the Minister for Planning and Environment for a State Significant Development (*"SSD"*) Development Application pursuant to Part 4 of the *Environmental Planning and Assessment Act 1979* (*"EP&A Act"*) *and State Environmental Planning Policy State and Regional Development 2011* (*"SEPP SRD"*).

The Proponent of this application is NSW Health Infrastructure (*"HI"*).

This EIS relates to development of the Byron Shire Central Hospital ("*BSCH*")and seeks approval for the construction of a hospital building including a new emergency department, facilities for renal services, space for future peri-operative services, plant, mental health and community services and maternity.

The proposed development has a total Capital Investment Value (*"CIV"*) of $64,979,760 and is therefore classified as SSD pursuant to Schedule 1 of the SEPP SRD.

A request to issue Secretary's Environmental Assessment Requirements ("*SEAR's*") for environmental assessment for the proposed BSCH was sought on the 19 June 2014 and these were issued to NSW Health Infrastructure (*"HI"*) on 9 July 2014.

The Site

The BSCH is proposed to be located at 54 Ewingsdale Road, Ewingsdale. The site is described as Lot 100 DP 1140936, Parish of Brunswick, County of Rous.

The site is located approximately 5km west of the centre of Byron Bay and approximately 1km east of the northern interchange with the Pacific Highway. The site is embellished with an ambulance station developed by the NSW Ambulance Service, located within the north-east portion of the property.

Land uses that immediately surround the site are a combination of rural residential, industrial, urban infrastructure and agriculture. An existing residential estate is situated immediately adjacent to the southern boundary of the site, industrial (Readymix Concrete and Essential Energy substation) land is situated adjacent to the north-western corner, Ewingsdale Hall is located directly adjacent to the western boundary and agricultural land (grazing) is situated to the north of Ewingsdale Road.

The rural residential area of Ewingsdale is located immediately to the south of the subject site, containing approximately 160 dwellings located on lots ranging in size from 2,000m^2 to 5,000m^2. A school is located to the south-east of this rural-residential area.

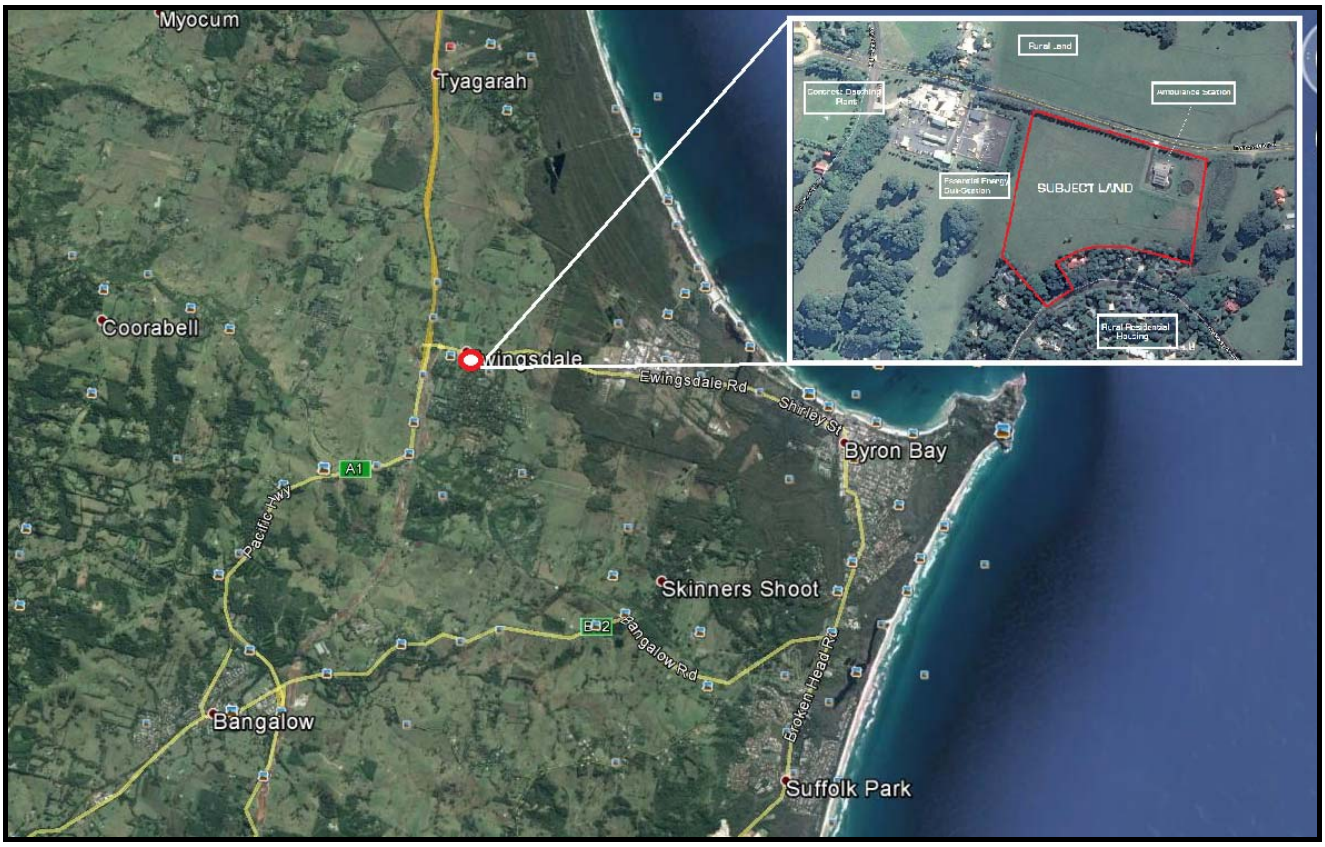


Illustration 1: The land subject to the Development Application.

Project Purpose

The purpose of this project is to provide the residents of the Byron Shire with a 65-bed Hospital in addition to core services such as an emergency department, medical imaging, low risk birthing services for the Ballina and Byron Shires and private and public surgical services for residents of Byron Shire.

The proposal objective is to enable the advancement of the planned Byron Central Hospital and Ambulance Station which recognises the inherent qualities of the subject site and is responsive to the surrounding land uses and visual exposure provided by the land's main road location.

The development of an integrated single health facility on a greenfield site will have many benefits including:

- Replacement of out-dated hospital infrastructure with a new purpose-built hospital on a greenfield site;
- Relocation of hospital services to be more accessible to the majority of Byron Shire residents;
- Consolidation of two smaller district hospitals onto one site providing the opportunity to develop integrated services;
- Expand the range of specialised diagnostic and treatment services available to support the delivery of inpatient services on site;
- Achieve critical mass of allied health staffing enabling more specialised allied health services to be provided to inpatient and ambulatory patients in the Byron Shire;
- Improved access to a higher level of ED services;
- A purpose built low risk birthing suite;
- Development of a non-acute inpatient mental health unit;
- Enhanced capacity to provide drug and alcohol treatments;
- Increased capacity to provide oral health services;
- Improved integration of hospital and community health services including greater capacity to provide more integrated models of care;

- Greater capacity to meet the health care requirements of the growing aged population now and into the future;
- More effective and efficient use of available clinical staff, improved staff satisfaction and greater capacity to attract and retain staff;
- Capacity for pooling and sharing of resources and improved communication between teams and access to administration services.

Statutory & Strategic Planning Context

This EIS describes the subject site and surrounding areas, together with the relevant planning controls and policies relating to the site and the form of development proposed. The policies that are particularly applicable to this proposal are:

- Environmental Planning and Assessment Act 1979;
- Environmental Planning and Assessment Regulation 2000;
- Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth);
- Threatened Species Conservation Act 1995;
- Roads Act 1993;
- NSW State Plan 2010;
- State Environmental Planning Policy (State & Regional Development) 2011;
- State Environmental Planning Policy (Infrastructure) 2007;
- State Environmental Planning Policy No. 33 – Hazardous and Offensive Development;
- State Environmental Planning Policy No. 64 – Advertising and Signage;
- State Environmental Planning Policy No. 55 – Remediation of Land;
- Far North Coast Regional Strategy (2006);
- Byron Local Environmental Plan 2014.

An assessment of the proposal against the above legislation and policies is undertaken in **Section 5** of this EIS.

Environmental Impact Statement

The EIS provides an assessment of the environmental impacts of the project in accordance with the Secretary's Environmental Assessment Requirements ("*SEAR's*") and sets out the undertakings made by HI to manage and mitigate potential impacts arising from the development.

Key Matters for Consideration

A detailed assessment of the key issues identified in the SEAR's and the assessments completed by the project team assembled by HI is contained in **Section 5** of this EA.

Mitigation Measures

The EIS identifies appropriate mitigation measures to control potential environmental impacts of the proposed development during both the construction and ongoing operation of the facility. The mitigation measures address issues such as traffic, noise, infrastructure services (water/sewer) and construction management as well as the management of the hospital and its ancillary components for day to day operations.

As part of the environmental impact assessment, specialist technical consultants have been engaged and consulted with to identify the suitable mitigation measures to be implemented to minimise environmental impacts of the proposal. These mitigation safeguards are set out in **Section 7** of this EIS.

Secretary's Environmental Assessment Requirements

This EIS has been prepared to address the issues outlined in *Schedule 2, Part 3, Clause 6 and 7* of the *Environmental Planning and Assessment Regulations 2000* and the Secretary's Environmental Assessment Requirements (SEARs) specifically for the site.

The SEARs were issued by the Department of Planning and Environment on 9 July 2014 and a copy is attached at **Attachment 23**.

The table below summarises the SEAR's and includes a reference identifying where each has been addressed in this EIS.

Table 1: Secretary's Environmental Assessment Requirements

Key Issues	Detailed Requirements	Where Addressed in EIS
1. Statutory and Strategic Context	Address the statutory provisions applying to the development contained in all relevant environmental planning instruments, including: • State Environmental Planning Policy (State & Regional Development) 2011; • State Environmental Planning Policy (Infrastructure) 2007; • State Environmental Planning Policy No. 33 – Hazardous and Offensive Development; • State Environmental Planning Policy No. 55 – Remediation of Land; and • Byron Shire Local Environmental Plan 2014. *Permissibility* Detail the nature and extent of any prohibitions that apply to the development. *Contamination* Demonstrate that the site is suitable for the proposed use in accordance with SEPP 55. → *Relevant Policies and Guidelines:* • *Managing Land Contamination: Planning Guidelines – SEPP 55 Remediation of Land (DUAP).*	**Section 4** of this EIS and the attachments referred to therein.
2. Policies and Guidelines	Address the relevant planning provisions, goals and strategic planning objectives in the following: • NSW 2021; and • Far North Coast Regional Strategy.	**Section 4** of this EIS and the attachments referred to therein.

3. Built Form and Urban Design	• Address the height, density, bulk and scale, setbacks of the proposal in relation to the surrounding development, topography and streetscape. • Address design quality, with specific consideration of the overall site layout, streetscape, open spaces, facade, rooftop, massing, setbacks, building articulation, materials, colours and Crime Prevention Through Environmental Design Principles. • Detail how services, including but not limited to waste management, loading zones, and mechanical plant are integrated into the design of the development.	**Section 5.1** of this EIS and the attachments referred to therein.
4. Environmental Amenity	• Detail amenity impacts including solar access, acoustic impacts, visual privacy, view loss, overshadowing, lighting impacts and wind impacts. A high level of environmental amenity for immediately adjacent residential land uses must be demonstrated.	**Section 5.2** of this EIS and the attachments referred to therein.
5. Transport and Accessibility	Include a transport and accessibility assessment, which details: • the existing and proposed pedestrian and cycle movements within the vicinity of the site; • An estimate of the total daily and peak hour trips generated by the proposal, including vehicle, public transport, pedestrian and cycle trips; • the adequacy of public transport to meet the likely future demand of the proposed development; • measures to promote travel choices that support the achievement of State targets, such as a location-specific sustainable travel plan; • the daily and peak vehicle movements impact on Ewingsdale Road and nearby intersections, with consideration of the cumulative impacts from other approved developments in the vicinity, and the need/associated funding for upgrading or road improvement works (if required); • the proposed access arrangements and measures to mitigate any associated traffic impacts and impacts on public transport, pedestrian and cycle networks; • proposed car parking provision, including consideration of the availability of public transport and the requirements of the relevant parking codes and Australian Standards; • estimated service vehicle movements (including vehicle type and the likely arrival and departure times); and • access and car parking arrangements at all stages of construction and measures to	**Section 5.3** of this EIS and the attachments referred to therein.

	mitigate any associated pedestrian, cycleway, public transport or traffic impacts. →*Relevant Policies and Guidelines:* • *Guide to traffic generating development (RMS).* • *Planning guidelines for walking and cycling.* • *EIS Guidelines – road and related facilities (DP&I).*	
6. Ecologically Sustainable Development (ESD)	• Detail how ESD principles (as defined in clause 7(4) of Schedule 2 of the Environmental Planning and Assessment Regulation 2000) will be incorporated in the design, construction and ongoing operation phases of the development. • Demonstrate that the development has been assessed against a suitably accredited rating scheme to meet industry best practice. • Include a description of the measures that would be implemented to minimise consumption of resources, water (including water sensitive urban design) and energy.	**Section 5.4** of this EIS and the attachments referred to therein.
7. Bushfire	Provide a bushfire hazard assessment that addresses the requirements of clause 44 of the Rural Fires Regulation 2013 and the requirements for Special Fire Protection Purpose Development as detailed in Planning for Bush Fire Protection 2006 guidelines.	**Section 5.5** of this EIS and the attachments referred to therein.
8. Noise and Vibration	Identify and provide a quantitative assessment of the main noise and vibration generating sources during construction and operation. Outline measures to minimise and mitigate the potential noise impacts on surrounding occupiers of land. →*Relevant Policies and Guidelines:* • *NSW Industrial Noise Policy (EPA).* • *Interim Construction Noise Guideline (DECC).*	**Section 5.6** of this EIS and the attachments referred to therein.
9. Aboriginal Heritage	Address aboriginal heritage in accordance with the Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation (DEC 2005) and Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010.	**Section 5.7** of this EIS and the attachments referred to therein.
10. Sediment, Erosion and Dust controls (Construction and Excavation)	Detail measures and procedures to minimise and manage the generation and off-site transmission of sediment, dust and fine particles. →*Relevant Policies and Guidelines:* • *Managing Urban Stormwater – Soils & Construction Volume 1 2004 (Landcom).* • *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (EPA).*	**Section 5.8** of this EIS and the attachments referred to therein.

11. Utilities	• In consultation with relevant agencies, the EIS shall address the existing capacity and any augmentation requirements of the development for the provision of utilities including staging of infrastructure through the preparation of an Infrastructure Management Plan. • Prepare an Integrated Water Management Plan detailing any proposed alternative water supply, proposed end users of potable and non-potable water, demonstration of water sensitive urban design and water conservation measures.	**Section 5.9** of this EIS and the attachments referred to therein.
12. Contributions	Address any Section 94 Contributions Plan and Section 64 water and sewer developer service charges and/or provide details of any Voluntary Planning Agreement.	**Section 5.10** of this EIS and the attachments referred to therein.
13. Staging	Details regarding the staging of the proposed development.	**Section 5.11** of this EIS and the attachments referred to therein.
14. Drainage	Provide details of the drainage associated with the proposal, including stormwater, drainage infrastructure and OSD, which shall be designed in consultation with council and must avoid any adverse impacts on downstream properties.	**Section 5.12** of this EIS and the attachments referred to therein.
15. Flooding	An assessment of any flood risk on site in consideration of any relevant provisions of the NSW Floodplain Development Manual (2005) including the potential effects of climate change, sea level rise and an increase in rainfall intensity.	**Section 5.13** of this EIS and the attachments referred to therein.
16. Waste	Identify, quantify and classify the likely waste streams to be generated during construction and operation and describe the measures to be implemented to manage, reuse, recycle and safely dispose of this waste. Identify appropriate servicing arrangements (including but not limited to, waste management, loading zones, mechanical plant) for the site.	**Section 5.14** of this EIS and the attachments referred to therein.
Consultation	During the preparation of the EIS, you must consult with the relevant local, State or Commonwealth Government authorities, service providers, community groups and affected landowners. In particular you must consult with: • Byron Shire Council; and • Roads and Maritime Services. The EIS must describe the consultation process and the issues raised, and identify where the design of the development has been amended in response to these issues. Where amendments have not been made to address an issue, a short explanation should be provided.	**Section 5.16** of this EIS and the attachments referred to therein.

Plans and Documentation	The EIS must include all relevant plans, architectural drawings, diagrams and relevant documentation required under Schedule 1 of the *Environmental Planning and Assessment Regulation 2000*. Provide these as part of the EIS rather than as separate documents. In addition, the EIS must include the following: • Architectural drawings; • Site Survey Plan, showing existing levels, location and height of existing and adjacent structures/buildings and boundaries; • Site Analysis Plan; • Stormwater Concept Plan; • Shadow Diagrams; • View Analysis/Photomontages; • Landscape Plan (identifying any trees to be removed and trees to be retained or transplanted); • Preliminary Construction Management Plan, inclusive of a Preliminary Construction Traffic Management Plan; • Geotechnical and Structural Report; • Arborist Report; • Acid Sulphate Soils Management Plan (if required); and • Schedule of materials and finishes.	**Attachments 1 & 2** and the plans contained therein.

In addition, the SEAR's sets out the plans and documents that must accompany the Application as set out the following table along with an indication of where they have been provided in this EIS.

Table 2: Plans and Documents Accompanying the EIS

Plans and Documents to accompany the Application		
QS	• Prepared by a qualified quantity surveyor; • a detailed calculation of the capital investment value (as defined in Clause 3 of the Environmental Planning and Assessment Regulation 2000) of the proposal, including details of all assumptions and components from which the CIV calculation is derived; • an estimate of the jobs that will be created by the development during the construction and operational phases of the development; and • certification that the information provided is accurate at the date of preparation.	**Attachment 19** • Approximately 26,000 work days (based on 50 FTE on site + 50% off site for a period of 18 months) construction jobs; and • Approximately 185 FTE jobs operationally.
Plans	The EIS must include all relevant plans, architectural drawings, diagrams and relevant documentation required under Schedule 1 of the *Environmental Planning and Assessment Regulation 2000*. Provide	

	these as part of the EIS rather than as separate documents. In addition, the EIS must include the following:	
	• Architectural drawings;	**Attachment 1**
	• Site Survey Plan, showing existing levels, location and height of existing and adjacent structures/ buildings and boundaries;	**Attachment 1**
	• Site Analysis Plan;	**Attachment 1**
	• Stormwater Concept Plan;	**Attachment 11**
	• Shadow Diagrams;	**Attachment 1**
	• View Analysis/Photomontages;	**Attachment 1**
	• Landscape Plan (identifying any trees to be removed and trees to be retained or transplanted);	**Attachment 2**
	• Preliminary Construction Management Plan, inclusive of a Preliminary Construction Traffic Management Plan;	**Attachment 21**
	• Geotechnical and Structural Report;	**Attachment 6**
	• Arborist Report;	**Attachment 17**
	• Acid Sulphate Soils Management Plan (if required); and	**N/A**
	• Schedule of materials and finishes.	**Attachment 1**

Conclusion

The EIS addresses the SEAR's issued by the Department of Planning and Environment on 9 July 2014, and demonstrates the environmental impacts of the proposal can be satisfactorily mitigated.

The development results in positive changes to the health services infrastructure for the Northern NSW community with minimal environmental impacts. Accordingly, it is considered that the works are in the public interest and approval is recommended.

Given the planning merits outlined in the EIS, the proposed development is justified and warrants approval by the Minister for Planning and Environment.

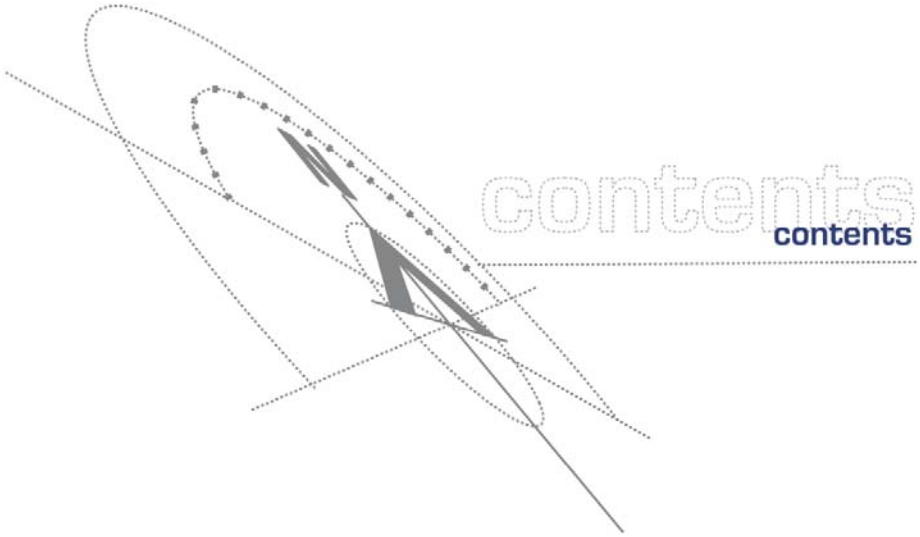
Declaration & Certification

I certify that the contents of the Environmental Impact Statement to the best of my knowledge, has been prepared as follows:

- In accordance with *Schedule 2* of the *Environmental Planning and Assessment Regulations 2000*;
- The statement contains all available information that is relevant to the environmental assessment of the proposed development; and
- To the best of my knowledge the information contained in this EIS is neither false nor misleading.

Prepared by:

DAMIAN CHAPELLE
Town Planner. BTP CPP.
Partner Newton Denny Chapelle



contents

Newton Denny Chapelle
SURVEYORS PLANNERS ENGINEERS

Attachments

Attachment	Author	Project Discipline
1	Woods Bagot Architects	Architectural Plans & Design Statement
2	360°	Landscape Architectural Plans & Design Statement
3	Taylor Thomson Whitting	Traffic & Parking Review
4	Taylor Thomson Whitting	Civil Design Package (bulk earthworks, roads/driveways, erosion & sediment control)
5	Tim Fitzroy & Associates	Contamination
6	Geotech Investigations Pty Ltd	Geotechnical Engineering
7	Advitech	Aboriginal Heritage & Archaeology
8	Aecom	Noise and Vibration
9	Tim Fitzroy & Associates	Waste Management
10	Tim Fitzroy & Associates	SEPP 33 Hazardous Materials
11	Tim Fitzroy & Associates	Integrated Water Management Assessment
12	Taylor Thomson Whitting	Structural Design Report
13	Bushfire Certifiers	Bushfire Hazard Assessment
14	Farrady	ELF EMF Assessment
15	Wood and Greive	Light Spill
16	Aecom	ESD Statement
17	Advitech	Flora & Fauna
18	Donnelley Simpson Cleary	Hydraulic And Fire Services
19	Woods and Grieves Engineers	Electrical, ICT and Security Services
20	Altus Page Kirkland	Cost Analysis
21	Taylor Thomson Whitting	Preliminary Construction Management Plan
22	Aurora	BSCH Communications Register
23	Department of Planning & Environment	Secretary's Environmental Assessment Requirements

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Introduction

Section 1

1.1 Purpose

This Environmental Impact Statement ("*EIS*") is intended to accompany a Development Application for the new Byron Shire Central Hospital ("*BSCH*"). The EIS has been prepared by Newton Denny Chapelle ("*NDC*") for Aurora Projects Pty Ltd on behalf of NSW Health Infrastructure (*"HI"*).

The purpose of this report is to describe the site, its existing and proposed uses and to address all the issues relevant to the application's assessment and approval.

A request for the issue of the Secretary's Environmental Assessment Requirements ("*SEAR's*") was sought by HI by written correspondence on 18 June 2014. The SEAR's were issued to HI on 9 July 2014 (**Attachment 23**).

This EIS and accompanying attachments form an application for SSD to the NSW Department of Planning and Environment (*"DoPE"*).

1.2 Site Details

Property Address:	54 Ewingsdale Road, Ewingsdale Lot 100 in Deposited Plan 1140936 Parish of Brunswick County of Rous.
Landowner:	Health Administration Corporation
Proponent:	NSW Health Infrastructure
Applicant:	NSW Health Infrastructure
Local Authority:	Byron Shire Council
Total Site Area:	6 hectares
Existing Land Use:	NSW Ambulance Station
Land Zoning:	SP2 Health Services Facility

1.3 Structure of Report & its Scope

Section 2 of this report describes the physical characteristics of the subject land and its planning context. The development proposal is described at Section 3. Section 4 examines the development proposal against the statutory and policy planning provisions relating to the land, with particular regard to the proposal described in Section 3 of this report. Section 5 provides a review of the environmental interactions and specific matters for consideration as listed within the project SEAR's. Section 7 outlines the recommended mitigation measures

which HI are committing to for the BSCH project. The final Section of the report undertakes a general review of the proposal and summation of the appropriateness of the project having regard to the applicable planning provisions.

1.4 Project Team & Technical Advice

Aurora Projects on behalf of Health Infrastructure have assembled a team of consultants who have been involved with the design of the building and assessment of technical aspects of the proposal. This team includes the following:

Consultant	Project Discipline
Auroa Projects	Project Managers
Woods Bagot Architects	Architecture & Design Statement
Newton Denny Chapelle	Town Planning
Taylor Thomson Whitting	Traffic & Parking Engineers
Tim Fitzroy & Associates	Acoustic Consultants
360°	Landscape Architect & Design Statement
Taylor Thomson Whitting	Civil Design Package
Tim Fitzroy & Associates	Contamination
Geotech Investigations Pty Ltd	Geotechnical Engineering
Advitech	Aboriginal Heritage & Archaeology
Aecom	Noise and Vibration
Tim Fitzroy & Associates	SEPP 33 Waste Management
Tim Fitzroy & Associates	Hazardous Materials
Tim Fitzroy & Associates	Integrated Water Management Assessment
Taylor Thomson Whitting	Structural Design Report
Bushfire Certifiers	Bushfire Hazard Assessment
Farrady	EMR Assessment
Wood and Greive	Light Spill
Aecom	ESD Statement
Advitech	Flora & Fauna
Donnelley Simpson Cleary	Hydraulic And Fire Services
Woods and Grieves Engineers	Electrical, ICT and Security Services
Altus Page Kirkland	Cost Analysis

1.5 What is the Byron Shire Central Hospital?

Development of a Byron Shire Central Hospital (BSCH) has been the basis for comprehensive community engagement over the planning process undertaken over the last 10 years. Land for this purpose has been purchased at Ewingsdale. A Clinical Service Plan was completed in 2013 which builds on previous planning and decisions undertaken for the consolidation of Health Services in Byron Shire.

Development of a new BSCH on a greenfield site provides the opportunity to replace the current Byron Bay District Hospital (BBDH) and Mullumbimby and District War Memorial Hospital (M&DWMH). The development of a purpose-built facility with contemporary functional design and models of care with a significantly larger critical mass of acute, sub-acute, clinical support and primary health services will have the capacity to meet the needs of the Byron Shire community to 2021 and beyond.

Accordingly, the objective of the BSCH development project is to provide contemporary healthcare facilities suited to the current and future needs of the population of the Byron Bay and surrounding villages with the hospital function allowing efficient bed utilisation and staffing to better meet the areas current and future needs.

The BSCH will comprise of a 65-bed hospital, inclusive of core services such as an Emergency Department and acute medical beds, in addition to low risk maternity services.

The following is the make-up of services proposed for the BSCH:

- Emergency Department – operating 24 hours a day, 7 days per week, with 4 bays;
- 45 Overnight beds (incorporating 2 birthing rooms);
- 20 non-acute Mental Health beds;
- 13 Emergency care spaces;
- Delivery suite (co-located with 2 birthing rooms)
- chemotherapy service;

- 4 oral health chairs;
- Enhanced and integrated community based services including nursing, allied health, mental health and drug and alcohol services.

The proposed BSCH will be located within the catchment of the Northern New South Wales Local Health District (*"NNSW LHD"*) which comprises 14 hospitals within the district which extends from the Clarence Valley in the south to Tweed in the north. **Plates 1 & 2** below shows the NNSW LHD local catchment and the state-wide district map.

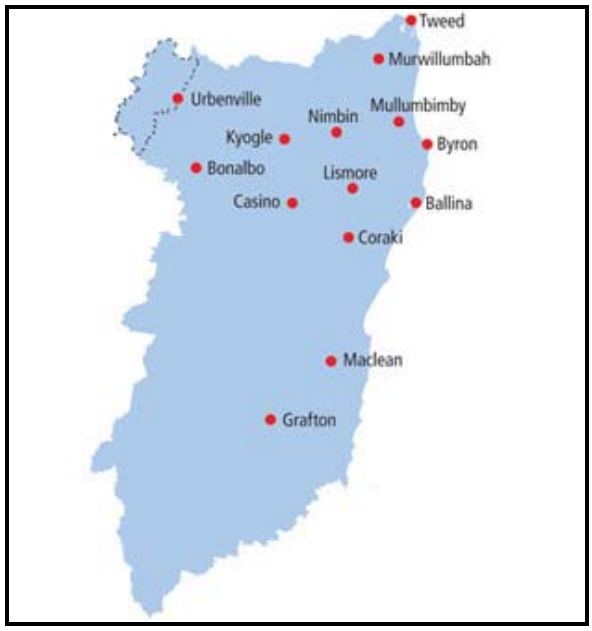

Plate 1: NNSW LHD Catchment & Hospital Locations (Source: NSW Health)

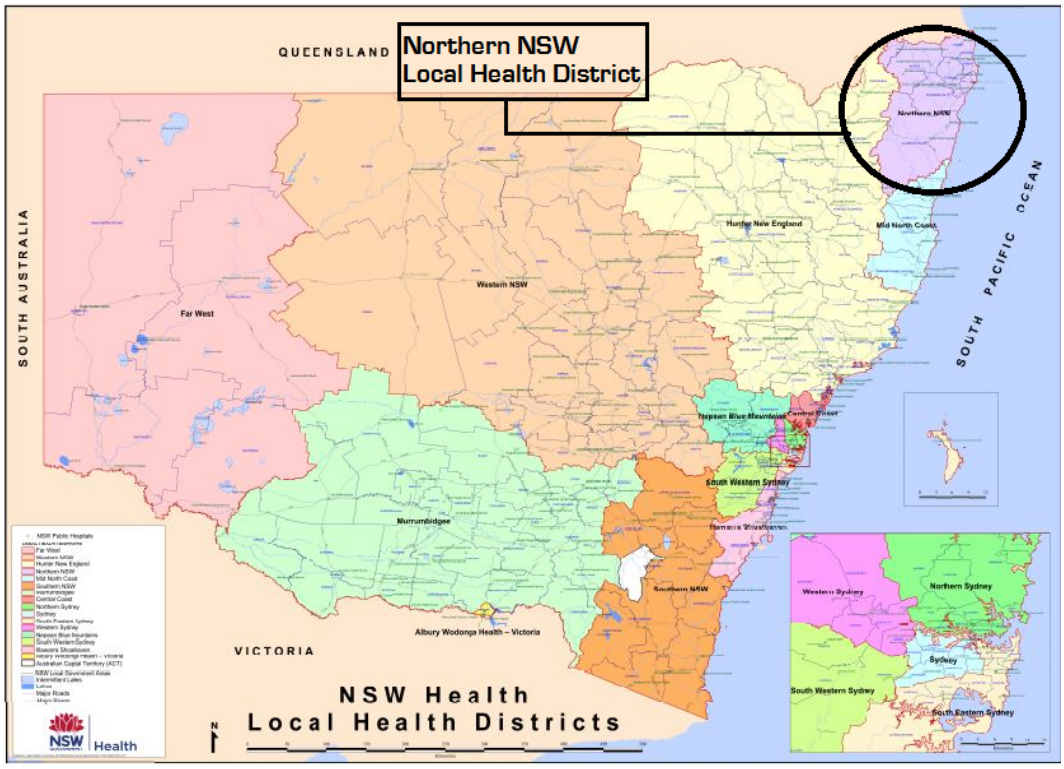

Plate 2: NSW Health Local Health Districts (Source: NSW Health)

1.6 Consultation

This SSD Application and this EIS have been informed by consultation with the local community, Council and other key stakeholders. Details of these consultation processes are outlined in **Section 5.16** of this EIS.

1.7 Analysis of Alternatives

The following section provides an analysis of options available to HI to meet the objectives for the project as set out above, and in light of the above issues.

Do Nothing

The existing facilities at Byron Bay and Mullumbimby are out-dated and unsuited to the delivery of modern healthcare and are below the critical mass required to support contemporary models of acute care.

The BSCH proposal provides for the realignment of services and implementation of new models of care which will deliver:

- Reduced need for admission to hospital;
- Decreasing lengths of stay for overnight care;
- Earlier transfer from referral centres for post-acute care and slow stream rehabilitation;
- More services delivered in an ambulatory and community setting;
- More seamless transition along the continuum of care; and
- Strengthening of clinical support and consultation networks with referral and referring centres.

In this regard, the community will benefit from a more comprehensive range of services delivered through the development of a central hospital. As such this option is not considered to be suitable.

Alternative Location

In 1998 a planning process was undertaken by the Northern NSW Local Health District (NNSWLHD) in Mullumbimby and surrounding areas to make recommendations for the future of Mullumbimby Hospital. A Value Management Study (VMS) was undertaken as part of this process by consultants appointed by the Northern NNSWLHD. The preferred option from the VMS was to further explore the option of one central hospital for the Byron Shire and not to rebuild the Mullumbimby Hospital.

In 1999 a joint consultative committee, with membership from across the Byron Shire, endorsed this option. 10,000 flyers were distributed across the Byron Shire and the community showed support for replacement of Mullumbimby and Byron Bay Hospitals with a centrally located Hospital in the Byron Shire.

After extensive community consultation a plan was finalised for a central hospital. The NNSWLHD engaged consultants to undertake a review of several land holdings for a new hospital. Following the conclusion of this assessment, a rezoning submission was lodged with Byron Shire Council to rezone the site which is the subject of this application to permit the use of the land for a hospital. The rezoning application was endorsed by Byron Shire Council with the land appropriately zoned to support the Byron Shire Central Hospital.

Accordingly, this option to find an alternative location or rebuild the Mullumbimby Hospital is not considered to be suitable.

Subject land & Locality

Section

2

2.1 Cadastral Description

The site is described in cadastral terms as Lot 100 DP 1140936, Parish of Brunswick, County of Rous. The site has a total site area of 6 hectares.

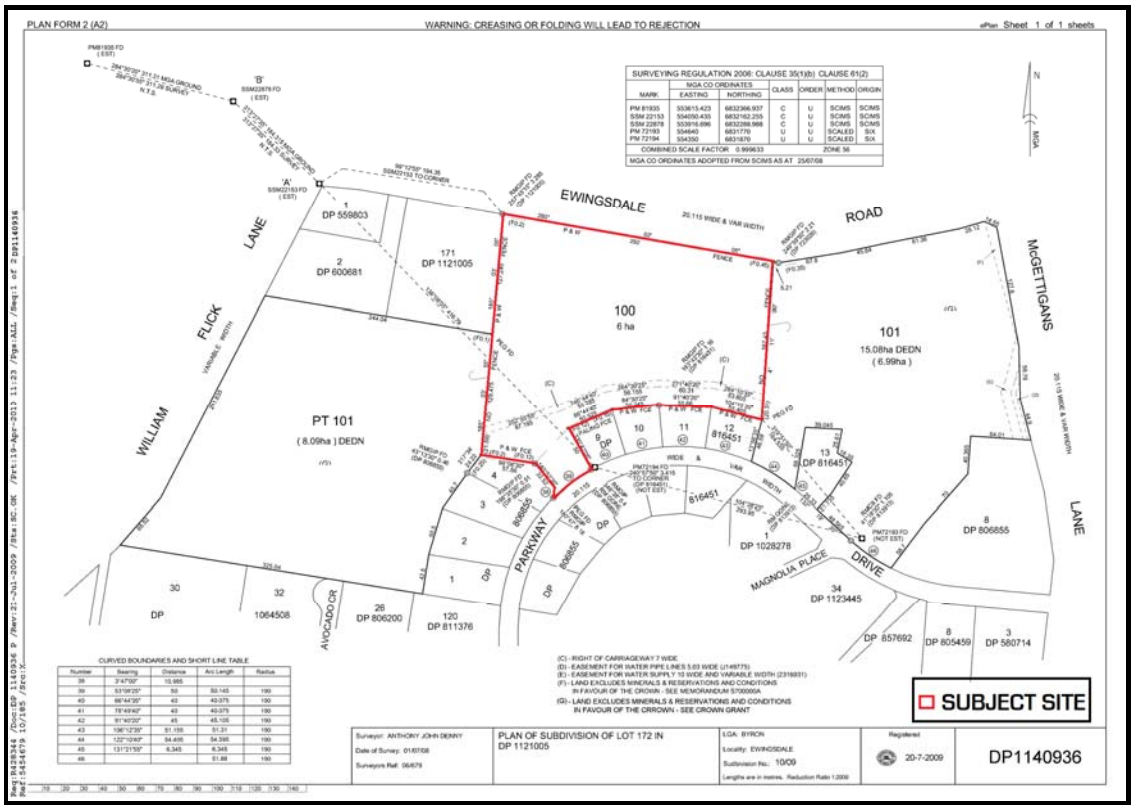

Plate 3: Deposited Plan.

2.2 Location

The site is located approximately 5km north-west of the centre of Byron Bay and approximately 500m east of the northern interchange with the Pacific Highway. Reference should be made to **Plate 4** which illustrates the subject allotment within a local context.

Land uses that immediately surround the site are a combination of urban residential, industrial, urban infrastructure and agriculture. An existing residential estate is situated immediately adjacent to the southern boundary of the site, industrial (Readymix Concrete and Essential Energy) land is situated adjacent to the north-western corner, Ewingsdale Hall is located directly adjacent to the western boundary and agricultural land (grazing) is situated to the north of Ewingsdale Road.

The rural residential area of Ewingsdale is located immediately to the south of the subject site, containing approximately 160 dwellings located in lots ranging in size from 2,000m^2 to 5,000m^2. A school is located to the south-east of this rural-residential area.

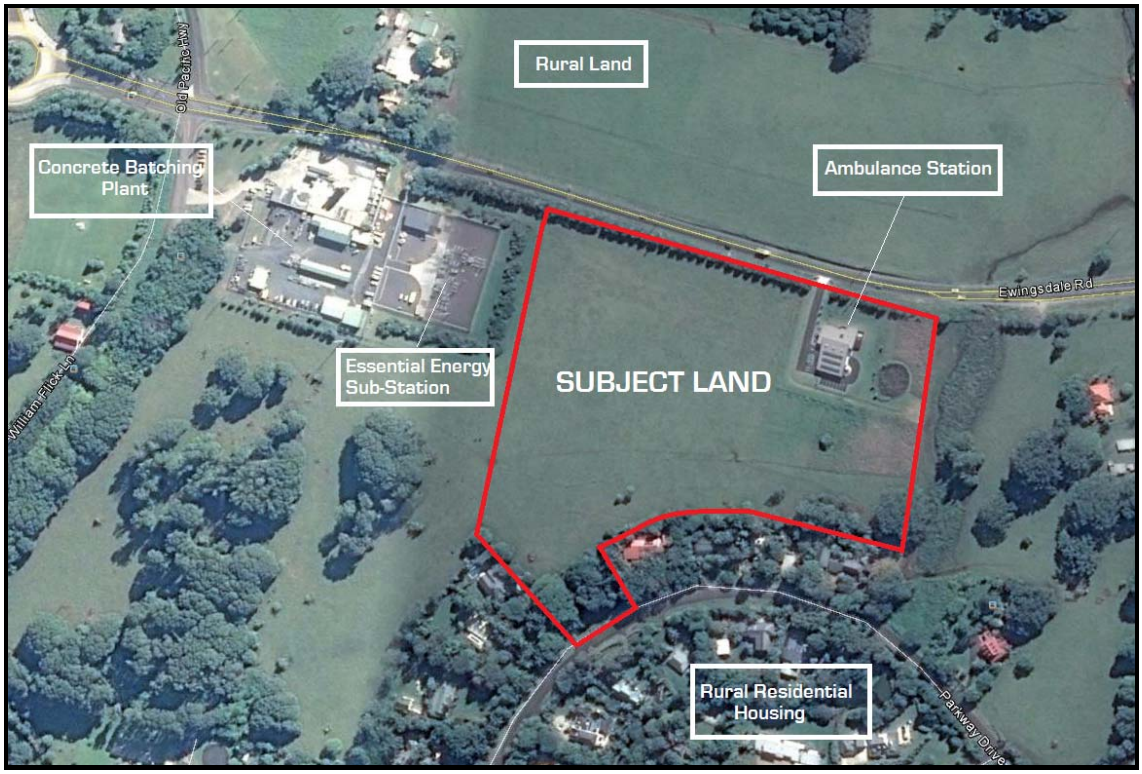

Plate 4: Site in Local Context. (Source: Google Earth Accessed 14/7/14)

2.3 Site Analysis

A site analysis is provided at **Plan 2.** The site analysis plan is a composite drawing illustrating site planning considerations. In particular, the plan shows:

- The land use context of the surrounding locality;
- The location of the local road network; and
- Primary structures on and adjacent to the site.

An architectural site analysis is also provided within the Woods Bagot Architectural plan set (**Attachment 1**) which focuses on the site conditions within the immediate locality.

2.4 Description of Site & Adjoining Lands

2.4.1 Subject Site

The site property currently supports a NSW Ambulance station located within the north-eastern area of the site. The structure is single storey in form and is accessed from a sealed driveway connecting to Ewingsdale Road. The project was completed under the provisions of State Environmental Planning Policy (Infrastructure) 2007, where the development is able to proceed without the need to obtain development consent from Byron Shire Council.

The site is on gently undulating terrain. The highest point on the site is approximately RL 30 metres AHD while the lowest point of the site, at approximately RL 13.5 metres AHD, is located at the most eastern point. A small unnamed creek, traverses along the eastern portion of the proposed site in a northerly direction. The creek is a tributary of Simpsons Creek which drains the Tyagarah catchment.

The site predominately drains to the east and into the unnamed creek. Given the flat topography, it is unlikely that the site is subject to landslip or instability.

The soils of the area are mapped by Morand (1994) as being Ewingsdale Landscape. These Krasnozems soils are described as up to 300cm of self-mulching dark red clay loam overlying between 100cm and 300cm of reddish brown strongly structured clay.

Below this there is mottled medium clay with weathered basalt overlying Lismore basalt bedrock. Typically basaltic clays such as these are slightly to moderately reactive and exhibit Class S to M classification under AS2870-1996 (Standards Australia, 1996).

2.4.2 Adjoining Lands

A variety of land uses are located in the immediate vicinity of the subject site. Details of the land uses are provided within **Table 2.1**.

Table 2.1 – Surrounding Land Uses

Location	Land Use Details
North	Ewingsdale Road directly borders the subject site forming the northern boundary. North of Ewingsdale Road is Lot 5 DP 848222 which contains a rural dwelling, open grazing land and small-scale horticulture.
South	The area south of the BSHC is essentially dedicated to rural residential housing. The creation of the Ewingsdale rural residential precinct commenced within the mid 1980's with a recent approval issued by Byron Shire Council for a further 40 rural residential lots in 2013.
East	Lot 101 DP 1140936 (eastern portion) The property is currently severed by the BSCH site (Lot 100 DP 1140936). The site is bounded by Ewingsdale Road to the north and McGettigans Lane to the east. The land is currently utilised for pasture/ grazing and supports a single dwelling house which is listed as an item of heritage under the Byron Local Environmental Plan. Byron Shire Council is currently in receipt of a proposal to amend the Byron Local Environmental Plan to permit seniors housing on this portion of the land.
West	Lot 171 DP 1121005 – Ewingsdale Road An electricity sub-station is located immediately west of the subject. The sub-station is located fronting Ewingsdale Road and extends 127m southwards along the common boundary of the BSCH site. Lot 2 DP 600681 – Ewingsdale Road & William Flick Lane The property currently supports an existing zone electricity substation and Country Energy Depot. Lot 1 DP 559803 – Ewingsdale Road The Readymix Group, a fully owned subsidiary of CSR Limited operates an existing pre-mixed concrete batching plant with vehicular access to Ewingsdale Road. The hours for operation of the plant are between 6am and 6pm during weekdays and 6am to 4pm on Saturdays. Lot 101 DP 1140936 (western portion) The property is currently severed by the BSCH site (Lot 100 DP 1140936). The site is bounded by Ewingsdale Road to the north and William Flick Lane to the west. The land is currently utilised for pasture/grazing. Byron Shire Council is currently in receipt of a proposal to amend the Byron Local Environmental Plan to permit seniors housing and residential care facilities, retail facilities including a supermarket and specialty stores and medical facilities.

2.5 Urban Infrastructure

2.5.1 Roads

The site is located with frontage to Ewingsdale Road (north) and Parkway Drive (south).

The site will be accessed by Ewingsdale Road which forms the northern boundary. This road is a dual carriageway accommodating eastbound and westbound traffic and providing access to the Pacific Highway at its western end, whilst the eastern section of the road links to the Byron Bay Town Centre.

Taylor Thomson Whitting (NSW) Pty Ltd ("*TTW*") has completed a Traffic and Parking Assessment for the project (**Attachment 3**). The TTW report identifies the Pacific Highway is a two lane undivided carriageway with a daily traffic volume of 15,000 – 27,000 vehicles per day along its section north and south of Ewingsdale Road, respectively. TTW also identify Ewingsdale Road has two travel lanes with an average daily traffic volume of about 15,000 vehicles per day with peak hourly traffic volumes of approximately 1,450 vehicles per hour.

2.5.2 Water & Sewer Infrastructure

The BSCH development is proposed upon a Greenfield site. Accordingly, there are no existing hydraulic services presently directly servicing the site to service the BSCH.

The existing ambulance building located in the lowest north-east corner of the site is connected to an existing small water connection to the existing water main found within Ewingsdale Road, whilst sewer is drained to a small on-site septic type system for treatment.

2.5.3 Stormwater

TTW has completed a Civil Engineering Assessment for the BSCH project (**Attachment 4**). TTW has outlined the key existing drainage features for the BSCH site as provided below.

As mentioned above, there is an existing stormwater and retention/detention dam located between the ambulance station and the eastern boundary. It is envisaged that the dam be increased in size to accommodate the proposed hospital stormwater.

There are 3 x 900mm diameter pipes that convey the Simpsons' Creek tributary under Ewingsdale Road. Ewingsdale Road is graded so as to sheet flow into grass swales that drain to Simpsons' Creek tributary. Other than pipes conveying the swale flow under driveways, there is no pipe stormwater within the frontage of the hospital site.

2.6 Geotechnical & Groundwater

A geotechnical study has been undertaken across the BSCH site by Geotech Investigations Pty Ltd with their findings in the Geotechnical Investigations Report at **Attachment 6**.

The results of the field work by Geotech Investigations Pty Ltd revealed areas of topsoil over residual clays, with weathered basalt at depth, which are considered part of the Lamington Volcanic series.

Groundwater seepage was initially observed by Geotech Investigations Pty Ltd at depths between 5.8m and 6.1m. Groundwater levels were measured in the monitoring well at 3.2m depth following installation. It should be noted that groundwater is affected by climatic conditions, soil permeability, and will vary.

2.7 Acid Sulfate Soils

The development site is not classified by Byron Shire Council Local Environmental Plan mapping as having a risk of Acid Sulfate Soils (ASS). Mapping contained within the Byron Local Environmental Plan 2014 illustrates the site is free of any mapped ASS as evidenced in **Plate 5**.

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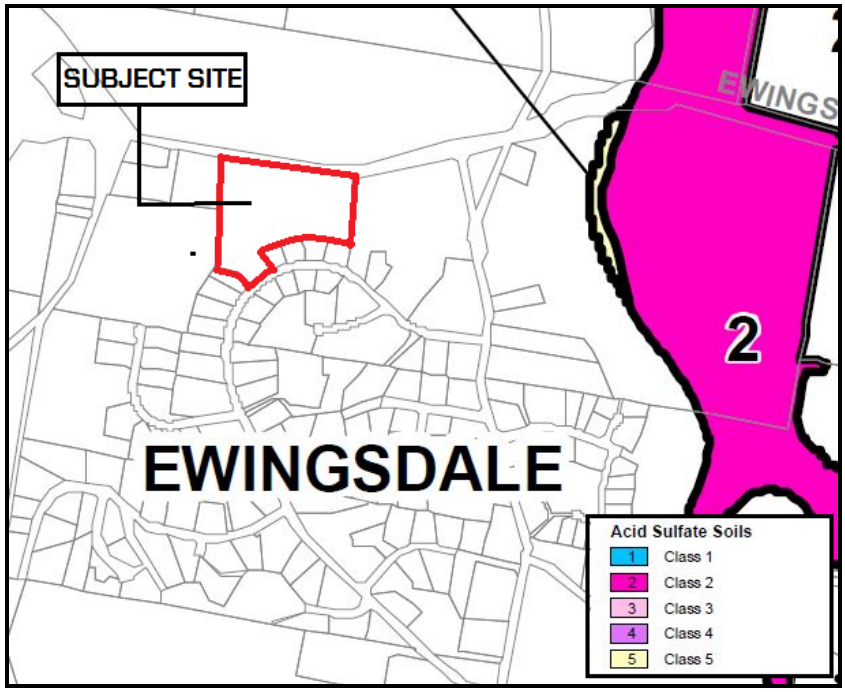

Plate 5: Byron LEP 2014 ASS Mapping (Source NSW Legislation 2014)

2.8 Heritage

There are no buildings or structures on the site that are listed as items of environmental heritage.

A search of the Byron Shire Local Environmental Plan (BLEP) (2014) was undertaken on 16 July, 2014. Two items are located within 300 metres of the project site (see **Plate 6**):

- Higgins House (including detached kitchen wing and mature Moreton Bay Fig trees) at Lot 101 DP 1140936 on the parcel to the immediate east of the project site (Item I107);
- St Columbus Church group (including church, hall and former school site and trees) at Lot 1 DP 124387, Lot 1 DP 134548 and Lot 377 DP 47409 at 300 metres to the immediate west of the site (Item I112).

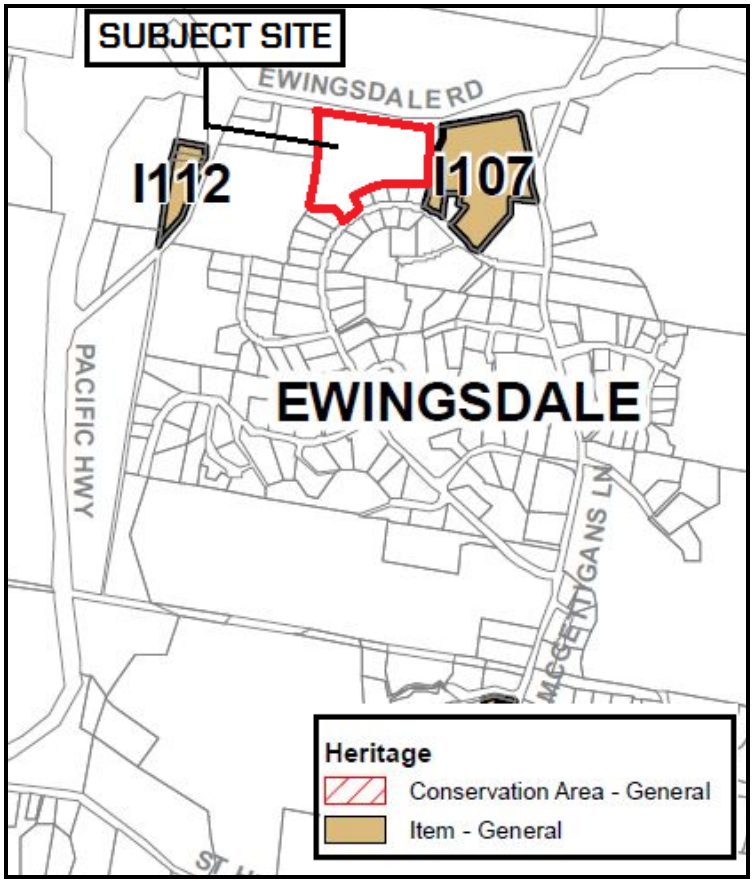

Plate 6: Byron LEP 2014 Heritage Mapping (Source NSW Legislation 2014)

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Proposed Development

Section 3

3.1 Overview

This EIS has been prepared for the Byron Shire Central Hospital, which involves the construction of a new hospital building, infrastructure works (sewage, water, drainage and bulk earthworks), landscape works and signage.

The objective of the BSCH development project is to provide contemporary healthcare facilities suited to the current and future needs of the catchment population. Facility function should allow efficient bed utilisation and staffing to better meet the current and future needs of the catchment.

Development of a BSCH has been the basis for comprehensive community engagement over the planning process undertaken over the last 10 years. Land for this purpose has been purchased at Ewingsdale. A Clinical Service Plan (CSP) was completed in 2013 which builds on previous planning and decisions undertaken for the consolidation of Health Services in Byron Shire.

Development of a new BSCH on a greenfield site provides the opportunity to replace the current Byron Bay District Hospital (BBDH) and Mullumbimby and District War Memorial Hospital (M&DWMH). The development of a purpose-built facility with contemporary functional design and models of care with a significantly larger critical mass of acute, sub-acute, clinical support and primary health services will have the capacity to meet the needs of the Byron Shire community.

3.2 Description of Development

3.2.1 Built Form

Proposed Built Form and Design Intent

The proposed building is illustrated in detail in the Architectural Design Plans prepared by Woods Bagot.

Woods Bagot has also provided an Architectural Design Statement which is provided within **Attachment 1**. This statement outlines the design approach for the building. In particular we note that the building has been designed such that it is a modern contemporary building which:

Site Planning

The design of the new Byron Shire Central Hospital (BSCH) primarily consists of three wings; a Northern wing, Central wing and a Southern wing with a central circulation spine connecting all three wings along the north – south axis.

The main approach to the hospital is from Ewingsdale Road to the north of the site. The Main Entry and entry to the Emergency Department (ED) are located to the west of the Central and Northern wings respectively, providing good visual access from Ewingsdale Road. 'Back of house' support areas including the Loading Dock and Mortuary is located to the east of the Northern wing with good visual screening from Ewingsdale Road. Public access to the Hospital's main entry is located on the West of the Central wing. Patient and visitors can easily access all of the Hospital's clinical services via the central connecting spine.

Woods Bagot has had regard to the location and topographical characteristics of the subject site in the development of the site layout for the BSCH. In this regard, Woods Bagot has outlined the key considerations associated with the site planning.

This unique site is located on Ewingsdale Road in a rural area, situated just east of the main freeway. The architectural approach to the design, planning and overall methodology, draws on Byron's rural setting and connection with place and nature, as a concept. Working with the sites natural contours, the building footprint connects gently with the landscape and takes advantage of solar access and aspect enhancing the patient experience and offering views and privacy where required.

While the site is located in a rural area, there is no significant vegetation on the site. A buffer zone between houses situated directly to the south of the site with native vegetation screening the development from the existing houses. An existing ambulance facility is located on the eastern side hospital development. This facility is used to house a number of ambulances, although observed traffic levels are low entering and exiting the building. There is an electrical substation located to the north-west of the site with heavy vehicles entering and exiting. The site generally falls east, which naturally falls towards the creek, located to the east of the site. Prevailing winds are from the west.

Built Form

The building form and scale is fitting of its location with the majority of the development being single storey in height. There are 3 main wings orientated in the east – west direction, creating long Northern facades. The main building block to the north end of the site adjacent to Ewingsdale road, is partially 2 storey in height and is approx. 11m above the natural ground plane on its eastern end.

Setbacks adopted for the project form the cadastral boundaries of the subject site are as follows:

- Northern Boundary – 12.5m;
- Western Boundary – 40.2m;
- Eastern Boundary – 120.04m;
- Southern Boundary (adjoining rural residential allotments) – 48.04m.

Internal Land Uses

Each wing consists of a distinct separation of functional areas.

The Northern wing separates Acute Services including the Emergency Department (ED) and the Inpatient Unit (IPU) from Ambulatory and Community Care services located in the Central wing. The ED and IPU are collocated in the same wing, with both operating on a 24 hours/7 days a week basis. The Northern wing includes a subsidiary wing to the south accommodating Medical Imaging directly adjacent to ED and with ready access from the IPU. The Maternity Unit is located to the south of the IPU as a separate entity in response to its unique model of care, accommodating low risk midwifery led birthing.

Additionally the Northern wing separates patient areas contained at Ground Floor from staff support and back of house functions located at the Lower Ground Floor. The separation of patient and visitor functions from support areas over two floors takes advantage of the natural fall of the site's topography.

The Central wing accommodates Main Entry, Pharmacy and Medical Records with Ambulatory and Community Health functional areas to the East of the central connection spine. Ambulatory and Community Health services generally operate Monday to Friday from 8am to 5pm.

The Southern wing accommodates the Mental Health Non-Acute Inpatient Unit. This wing has a dedicated and discrete entry, and appropriate landscaping to provide additional visual privacy screening.

The Byron Bay Central Shire Hospital has the project has provisioned for future theatre space in the overall master plan for the site. Currently a market sounding exercise to potentially provide surgical services for the hospital is being undertaken.

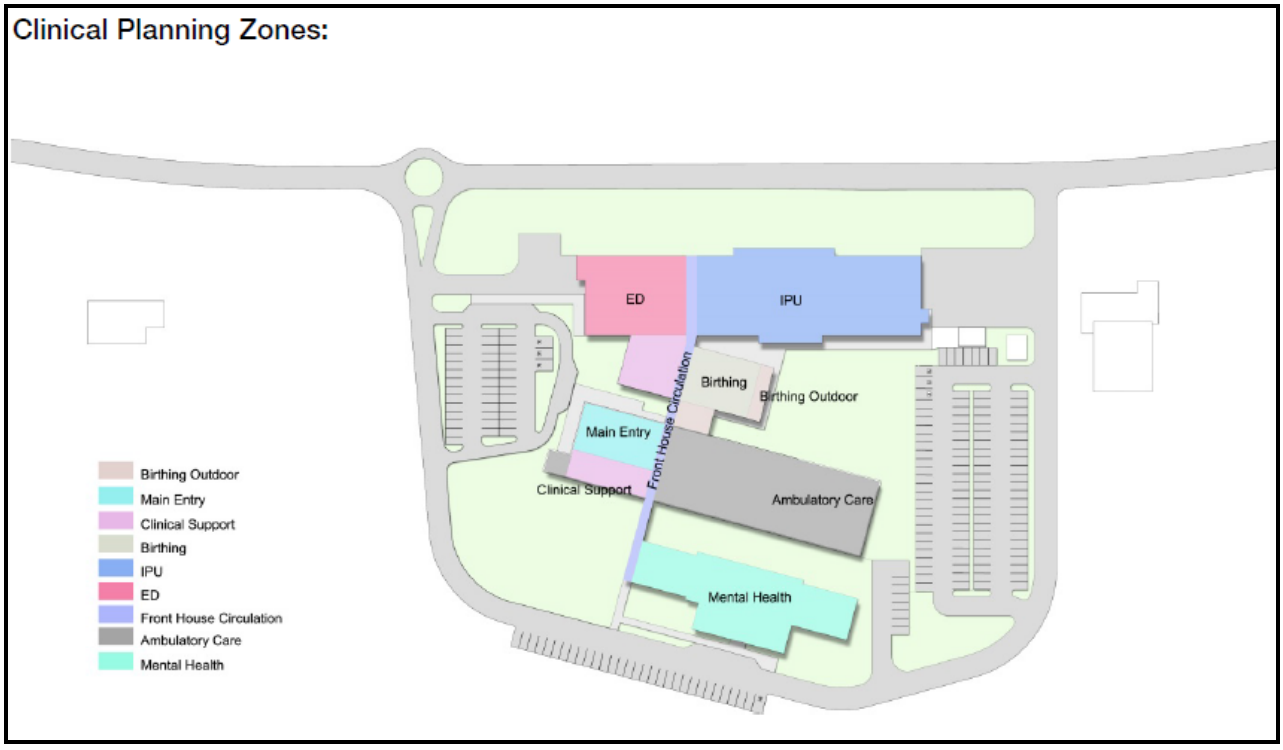

Plate 7: BSCH Designated Internal Floor Area

The proposed BSCH area budget is summarised in **Table 3.1**.

Table 3.1: Proposed Development Floor Budget

Land Use	Total (m^2)
Site Area	60,000m^2
BSCH GFA	9,400m^2
Accessways & Car Park	1,424m^2
Plant Area	770m^2

Plate 8: BSCH Main Entry Perspective (Source Woods Bagot)

3.2.2 Proposed Hours of Operation

The BSCH is a rural health care service provider. As such the facility operates 24 hours per day, all year.

The hours of operation for the hospital inter-relate with the following hospital functions:

- access for patients, visitors, staff and the general public;
- security requirements;
- location of health planning units and their relativity to other health planning units;

- entry and exit points of the overall facility; and
- Refer hours of operation by service type.

The differences in the hours of operation between emergency care, inpatient care, ambulatory and community services for the proposed Hospital is outlined below in **Table 3.2**.

Table 3.2: BSCH Hours of Operation

Service Location	Hours of Operation	Days of Operation
Emergency Department	24/7	365
Inpatient Services	24/7	365
Ambulatory Care	8.30am–5pm	Generally Monday – Friday
Primary and Community Health	8am–5pm (some evenings)	Generally Monday – Friday
Acute Mental Health Services	8am–10.30pm	365
Extended Mental Health Services	8am–5pm	Generally Monday – Friday

3.2.3 Landscape Treatment & Tree Removal

The Site is almost completely dominated by Low Closed Grassland comprised of Couch grass (*Cynodon dactylon*); Paspalum (*Paspalum dilatatum*) and Carpet grass (*Axonopus affinis*). Buffalo grass (*Stenotaphrum secundatum*) and Kikuyu (*Pennisetum clandestinum*) occur sporadically throughout.

Landscape species occurring on the site comprise essentially of alternate plantings of Juniper (*Juniperinus* sp.) and Tibochina (*Tibochina* sp.) along the Ewingsdale Road frontage. It is proposed to remove a significant portion of these trees for the development, with compensatory landscape treatment designed by 360° as contained within **Attachment 2**.

The key principles that underpin the basis of the proposed landscaping scheme are set out below and are derived from the Woods Bagot design statement accompanying this application:

- *Retention and creation of a rural landscape character specific to Byron Bay*
- *A fluidly integrated and rational way finding strategy for vehicles and pedestrians that is organised in a safe an accessible manner.*
- *Landscape design that utilises a simple but bold material palette, robust and easy to manage.*
- *A welcoming, warm and safe entry that acts as the 'front door' for the arrival of all patients and visitors. It aims to provide amenity and opportunity for congregation for all.*
- *Landscape acting as a key component in the restorative health and welfare of all patients*
- *A mix of accessible, social and therapy places that harness the power of healing and enrich the life of those who encounter it. This shall include a place that is culturally respectful and supportive of Aboriginal communities and customs.*
- *The selection and use of locally native plant species that are predominately bushfire retardant and assist in creating an identity for a coastal hospital.*

Refer to the landscape plans prepared by 360º at **Attachment 2** for further detail.

3.2.4 Vehicular Access & Car Parking

The architectural design plans identify the following transport and access components of the development:

Pedestrian Access – Public pedestrian access to both the BSCH will be from Ewingsdale Road.

Vehicular Access – The development proposes a total of three vehicle crossovers, comprising of two crossovers on Ewingsdale Road and one crossover from Parkwalk Drive.

Car Parking – Prior to lodging the SSD application for the BSCH, a Review of Environmental Factors was approved for the construction of an internal road. At grade car parks are exempt development under Schedule 1 of State Environmental Planning Policy (Infrastructure) 2007. The internal road and at grade car parking for 195 vehicles is currently under construction.

The 195 on-site parking spaces include:

- 117 staff;
- 27 Fleet;

- 45 outpatient;
- 6 accessible.

3.2.5 Infrastructure Services

Water

An assessment of the water and sewer utilities has been undertaken by Donnelley Simpson Cleary (**Attachment 18**).

The hospital will be supplied from the existing 150mm authority water main in Ewingsdale Road via a water meter and dual back flow prevention assembly located at the boundary adjacent to the main entry. The metered supply then fills the 100,000 litre storage tank and pressure pump assembly where the water supply serves the building at a constant pressure.

On site water storage is required and has been sized to cater for a 24 hour authority water main outage (as advised by the local authority) this is due to the authority infrastructure is incomplete and not deemed as reliable at this stage of the areas early development.

Sewer

As established by Donnelley Simpson Cleary (**Attachment 18**) plumbing and drainage will connect all sanitary fixtures and plant equipment to the new site network gravitating to the north-eastern corner of the site via manholes and inspection openings in accordance with current requirements.

The majority of the hospital is single story built on ground, the hospital will be served by inground and aerial drainage to minimize venting.

The sewer drainage system will discharge to a capped junction which will be provided for the hospital site and connected to the West Byron Sewerage Treatment Works.

Gas Services

Donnelley Simpson Cleary (**Attachment 18**) has identified Liquefied Petroleum Gas will be supplied to the BSCH site via a bulk storage tank adjacent to the existing ambulance building and reticulated throughout the site to the various plant and equipment.

The gas distribution pipework will be predominantly located external to the building with isolation valves provided at each building entry point for easy maintenance, capped off provisions will be located in the areas for future expansion.

Fire Services

Donnelley Simpson Cleary (**Attachment 18**) have outlined within their technical report, BSCH will be protected by a new fire hydrant system including tanks and pumps in compliance with current standards. The building coverage will be provided by a combination of internal and external hydrants.

In respect to the sprinkler system, Donnelley Simpson Cleary have established the BSCH structure will be protected by a new fire sprinkler system including tanks and pumps in compliance with current standards.

A fire hydrant booster valve assembly will be located adjacent to the main entry on Ewingsdale Road for Brigade use.

Electricity

Wood and Grieve Engineers (**Attachment 19**) have calculated the maximum demand of the BSCH will be in the order of 840 kVA (1,212A). A new 1,000kVA kiosk type substation will need to be established to supply the development. The substation is proposed to be located on the northern boundary fronting Ewingsdale Road as illustrated in the design plans prepared by Woods Bagot (**Attachment 1**).

Telecommunications

Existing Optus and Telstra infrastructure is located along the Ewingsdale Road boundary and will be connected to the site to service the BSCH.

3.2.6 Stormwater

TTW Civil Engineering report provided within **Attachment 4** outlines the proposed stormwater management for the project.

In accordance with Byron Shire Council Onsite Detention Policy and Council's Draft DCP, OSD will be required for the development.

The proposed development stormwater will be picked up and conveyed via pipe, swales, and overland flow to the OSD basin. The OSD basin will replace the existing retention/detention dam constructed for the ambulance station. The OSD basin will maintain the discharge point at the Simpsons' Creek tributary.

All proposed roofs will collect stormwater via gutters and downpipes and be connected to the in-ground system.

Stormwater pipes and pits will be in accordance with AS3500 – National Plumbing and Drainage Code and in accordance with Byron Shire Council & Northern River's Stormwater Drainage management guidelines.

The stormwater concept plan for the BSCH project is provided within **Plate 9**.

Due to the natural fall of the land – west to east, the detention basin is proposed to be on the eastern boundary, reconstructing the existing retention/detention dam. Initial basin estimates are for a volume of 900m^3 with a footprint of about 1,000m^2.

As stormwater is being retained and released at pre-development rate in accordance with Council's requirements, there will be no increase in stormwater impact on downstream properties and this includes flows in Simpsons' Creek tributary.

An Integrated Water Management Plan prepared by Tim Fitzroy & Associates within **Attachment 11** of this EIS.

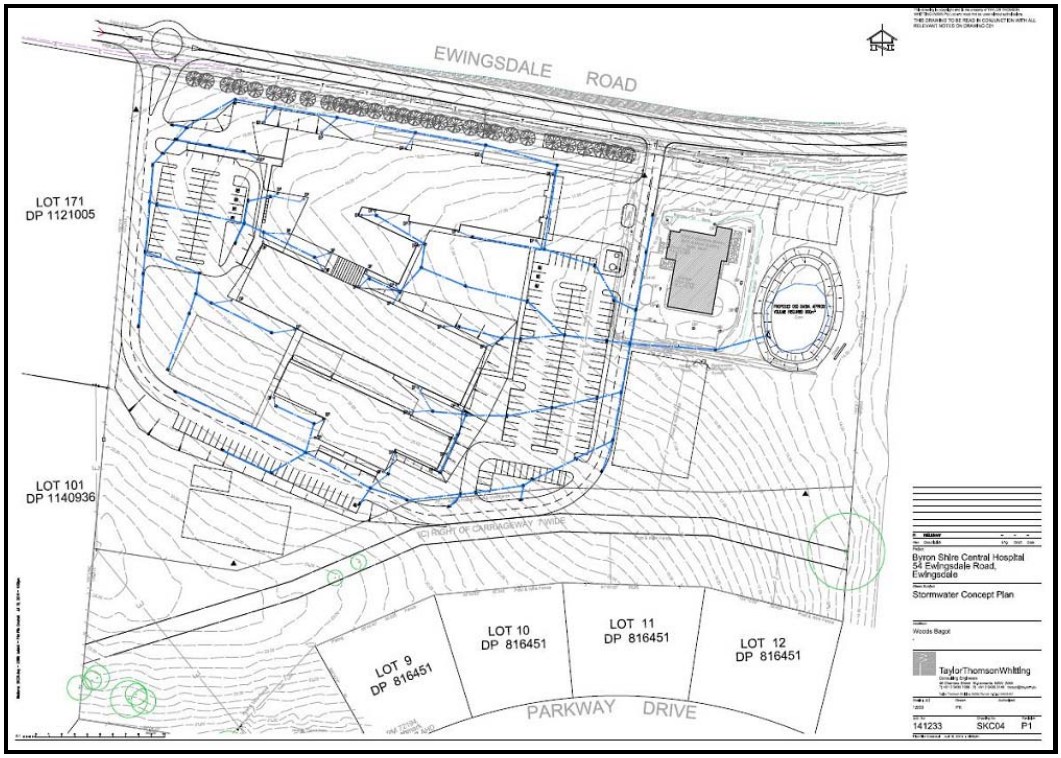

Plate 9: Stormwater Concept Plan (Source: Taylor Thompson Whitting)

3.2.7 Earthworks

The civil assessment completed by TTW outlines the sitting of the BSCH building has been carried out to minimise cut and fill. Accordingly, given the lower floor level (FFL16.5) and loading dock expected to be about 1-2m below the existing ground levels, additional engineered fill may be required to be stockpiled around the site in lieu of disposing off-site.

TTW have concluded it is likely that cut material from the site cannot be reused for building platforms due to the high clay content. As a result, engineered material is likely to be required to be brought onto the site. All building slabs will be slab-on-ground construction, no suspended slabs are expected.

Due to the height difference from the ground floor to the existing levels, retaining walls will be required. Where space permits, batters may be able to reduce the amount of retaining walls.

Reference should be made to **Attachment 4** of this EIS in respect to the proposed civil works for the BSCH project.

3.3 Design Plans

The proposal, as described within this Section is illustrated within the architectural and landscape design plans contained within **Attachments 1 & 2** of this EIS. These plans form the basis for the project assessment.

Table 3.3: Development Plans

Plan Reference	Plan Title	Plan Author	Plan Date
A0000	Cover Sheet	Woods Bagot	24/7/14
A1001	Site Analysis Plan	Woods Bagot	24/7/14
A1002	Site Plan	Woods Bagot	24/7/14
A1003	Site Section & Elevations	Woods Bagot	24/7/14
A2200	Lower Ground Floor Plan	Woods Bagot	24/7/14
A2201	Ground Floor Plan	Woods Bagot	24/7/14
A2202	Roof Plan	Woods Bagot	24/7/14
A3000	Building 1 & Overall Elevations	Woods Bagot	24/7/14
A3001	Building 2 & 3 Elevations	Woods Bagot	24/7/14
A3100	Sections 01	Woods Bagot	24/7/14
A9100	Sun Shadow Diagrams	Woods Bagot	24/7/14
A9200	Perspectives	Woods Bagot	24/7/14
A9201	Perspectives	Woods Bagot	24/7/14
A9300	External Finishes Board	Woods Bagot	24/7/14

3.4 Capital Investment Value

The Capital Investment Value of the project is estimated at $64,979,760. This figure is confirmed by the Quantity Surveyor Cost Statement prepared by Altus Page Kirkland and attached at **Attachment 20**.

Statutory & Policy Planning Assessment

Section 4

4.1 Introduction

Section 4 documents the range of planning controls applicable to the proposed application pursuant to Section 79C (1)(a) of the Act and tabulates the effect of these instruments in the circumstances of the development proposal described at Section 3 of this EIS.

This assessment addresses the Planning Legislation & Policies which are included within the SEAR's issued for the BSCH project.

4.2 Byron Local Environmental Plan 2014

4.2.1 Part 1 – Preliminary

Part 1 of Byron Local Environmental Plan 2014 outlines a range of administrative matters relating to the status, making and application of the Plan. **Table 4.1** outlines the provisions of Part 1 which are directly relevant to the current application, with these matters discussed in more detail below.

Table 4.1: Part 4 – Provisions Applicable to Application

Clause		Applicable
1.1	Name of Plan	No
1.1AA	Commencement	**Yes**
1.2	Aims of Plan	**Yes**
1.3	Land to which Plan applies	**Yes**
1.4	Definitions	**Yes**
1.5	Notes	No
1.6	Consent authority	Yes
1.7	Maps	No
1.8	Repeal of planning instruments applying to land	No
1.8A	Savings provision relating to Development Applications	No
1.8B	Amendment of SEPP applying to land	No
1.9	Application of SEPPs	No
1.9A	Suspension of covenants, agreements and instruments	No

Clause 1.1AA – Commencement & Clause 1.3 – Land to which plan applies

Byron Local Environmental Plan 2014 (BLEP 2014) commenced on 21 July 2014 and is the Local Environmental Plan applicable to the subject site.

Clause 1.2 – Aims of Plan

The aims of BLEP 2014 are reproduced below, together with the proposal's response to these provisions:

(1) This Plan aims to make local environmental planning provisions for land in Byron in accordance with the relevant standard environmental planning instrument under section 33A of the Act.

(2) The particular aims of this Plan are as follows:

(a) to progressively respond to changes in the natural, social and economic environment in a way that is consistent with the following principles of ecologically sustainable development:

(i) the precautionary principle—this principle means that where there are threats of serious or irreversible damage to the community's ecological, social or economic systems, a lack of complete scientific evidence should not be used as a reason for postponing measures to prevent environmental degradation (In some circumstances this will mean actions will need to be taken to prevent damage even when it is not certain that damage will occur.),

(ii) the principle of intergenerational equity—this principle means that the present generation must ensure that the health, integrity, ecological diversity, and productivity of the environment is at least maintained or preferably enhanced for the benefit of future generations,

(iii) the principle of conserving biological diversity and ecological integrity—this principle aims to protect, restore and conserve the native biological diversity and enhance or repair ecological processes and systems,

(iv) the principle of improving the valuation and pricing of social and ecological resources—this principle means that users of goods and services should pay prices based on the full life cycle costs (including the use of natural resources at their replacement value, the ultimate disposal of any wastes and the repair of any consequent damage),

(v) the principle of eliminating or reducing to harmless levels any discharge into the air, water or land of substances or other effects arising from human activities that are likely to cause harm to the environment,

(vi) the principle of encouraging a strong, growing and diversified economy that promotes local self-reliance, and recognises and strengthens the local community and its social capital in ways that safeguard the quality of life of future generations,

(vii) the principle of providing credible information in open and accountable processes to encourage and assist the effective participation of local communities in decision making,

(b) to integrate local planning provisions with applicable regional and State planning controls and policies,

(c) to provide a framework for land use management in Byron,

(d) to promote and coordinate the orderly and economic use and development of land,

(e) to build and sustain community resilience by encouraging a diversity of housing choice and affordable housing in appropriate localities,

(f) to encourage development that contributes to a vibrant, socially-diverse community,

(g) to encourage development that contributes to a strong, growing and diversified economy,

(h) to ensure the timely provision and coordination of community services and facilities,

(i) to protect, manage and restore the natural environment and biodiversity of Byron,

(j) to protect the cultural heritage of Byron, including the conservation of built heritage and Aboriginal heritage,

(k) to provide for public involvement and participation in environmental planning and assessment,

(l) to minimise conflict between land uses within a zone and adjoining zones and ensure minimal impact of development on the amenity of adjoining and nearby land uses.

Comment: The BSCH is considered to be consistent with the overarching aims of the BLEP 2014 in so far as the project provides for a land use of the site consistent with the strategic intent for the land, provides improved access to residents to health services, a healthy environment for all involved in healthcare,

maximises the site opportunities for natural light, preserves and enhances natural vegetation, affords generous green space, provides buffer areas to adjoining land uses to minimise land use conflicts importantly provides a community health facility underpinned by ESD principles.

Clause 1.4 – Definitions

The proposed Byron Shire Central Hospital is defined as a "hospital" which fits within the broader definition of "health services facility" pursuant to the provisions of the BLEP 2014. Copies of these definitions are provided below.

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

- *(a) day surgery, day procedures or health consulting rooms,*
- *(b) accommodation for nurses or other health care workers,*
- *(c) accommodation for persons receiving health care or for their visitors,*
- *(d) shops, kiosks, restaurants or cafes or take away food and drink premises,*
- *(e) patient transport facilities, including helipads, ambulance facilities and car parking,*
- *(f) educational purposes or any other health-related use,*
- *(g) research purposes (whether or not carried out by hospital staff or health care workers or for commercial purposes),*
- *(h) chapels,*
- *(i) hospices,*
- *(j) mortuaries.*

Note. *Hospitals are a type of* ***health services facility****—see the definition of that term in this Dictionary.*

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

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

Clause 1.6 – Consent Authority

Clause 1.6 specifies that Byron Shire Council is the consent Authority for the purposes of the Plan. However, as the application is being processed as a State Significant Development pursuant to the provisions of SEPP (State and Regional Development) 2011, the consent authority in this instance is the Minister for Planning & Environment.

4.2.2 Part 2 – Permitted or Prohibited Development

Part 2 of the LEP establishes the land zoning framework for the Shire and identifies permissible land uses and certain approval requirements. **Table 4.2** outlines the provisions of particular relevance to the current application, with these matters discussed in more detail below.

Table 4.2: Part 2 – Provisions Applicable to Application

Clause		Applicable?
2.1	Land use zones	No
2.2	Zoning of land to which Plan applies	**Yes**
2.3	Zone objectives and Land Use Table	**Yes**
2.4	Unzoned land	No
2.5	Additional permitted uses for particular land	No
2.6	Subdivision—consent requirements	No
2.7	Demolition requires development consent	No
2.8	Temporary use of land	No

2.1 – Zoning of Land to which Plan applies

As illustrated on **Plate 10**, the subject property is zoned SP2 Health Services Facility pursuant to BLEP 2014.

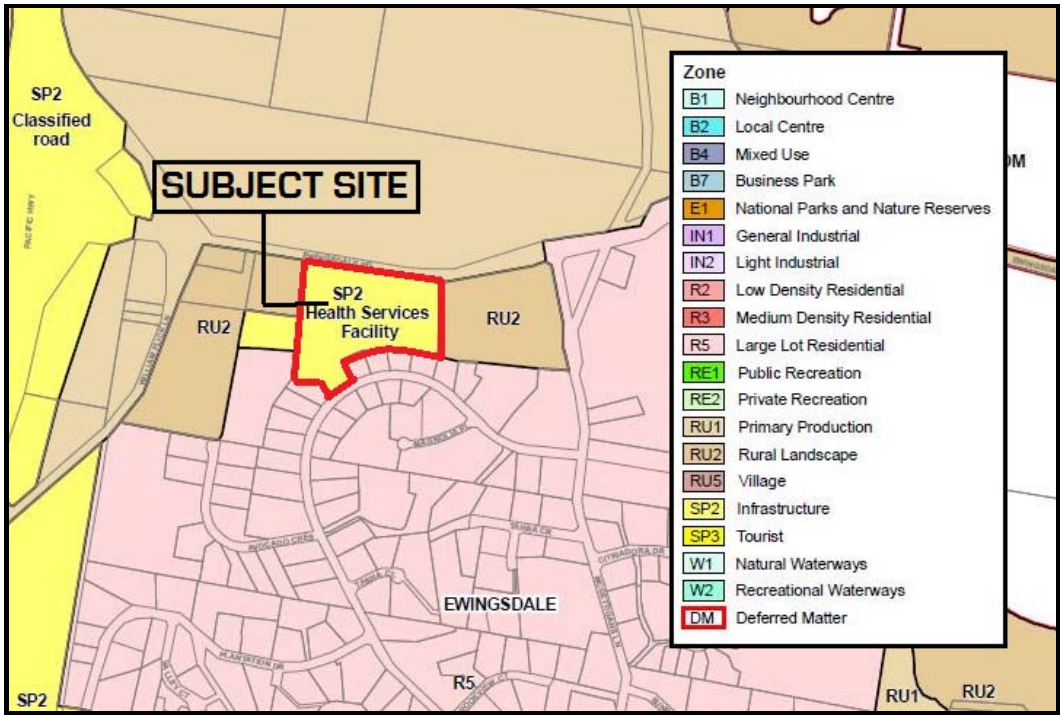

Plate 10: BLEP 2014 Zoning Map Extract. (Source NSW Legislation 2014)

2.2 – Zone objectives and Land Use Table

The land use table for the SP2 Zone is provided below, together with the proposal's response to the applicable planning objectives:

Zone SP2 Infrastructure

1 Objectives of zone

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

2 Permitted without consent

Environmental protection works

3 Permitted with consent

Environmental facilities; Roads; The purpose shown on the Land Zoning Map, including any development that is ordinarily incidental or ancillary to development for that purpose.

Comment: The site is zoned for infrastructure purposes, with the land zoning map identifying "Health Services Facilities" as the nominated land use for the site.

Hospitals are included within the parent definition of "Health Services Facilities" and are therefore permissible with development consent in the zone. The use of the land for the Byron Shire Central Hospital is directly consistent with the nominated land use for the site and the applicable zone objectives.

4.2.3 Part 4 – Principal Development Standards

Part 4 of the BLEP 2014 contains the principal development standards applicable to development in the Shire. As outlined in **Table 4.3,** only one of these standards is applicable to the current application, namely Clause 4.3 Height of Buildings.

Table 4.3: Part 4 – Provisions Applicable to Application

Clause		Applicable?
4.1	Minimum subdivision lot size	No
4.1A	- Minimum subdivision lot size for strata plan schemes in certain rural and residential zones	No
4.1AA	Minimum subdivision lot size for community title schemes	No
4.1B	Minimum subdivision lot size for multiple occupancy or rural land sharing community developments	No
4.1C	Minimum subdivision lot size for boundary adjustments in certain rural and residential zones	No
4.1D	Exceptions to minimum subdivision lot sizes for certain split zones	No
4.1E	Minimum lot sizes for dual occupancies, multi dwelling housing and residential flat buildings	No
4.2	Rural subdivision	No
4.2A	Erection of dwelling houses and dual occupancies (attached) on land in certain rural zones	No
4.2B	Maximum number of dwelling houses or dual occupancies on multiple occupancy or rural landsharing community developments	No
4.2C	Erection of rural workers' dwellings on land in Zones RU1 and RU2	No
4.3	Height of buildings	**Yes**
4.4	Floor space ratio	No
4.5	Calculation of floor space ratio and site area	No
4.6	Exceptions to development standards	**Yes**

Clause 4.3 – Height of Buildings

As illustrated in **Plate 11**, the Height of Buildings Map applies a 9.0 building height limitation to the site.

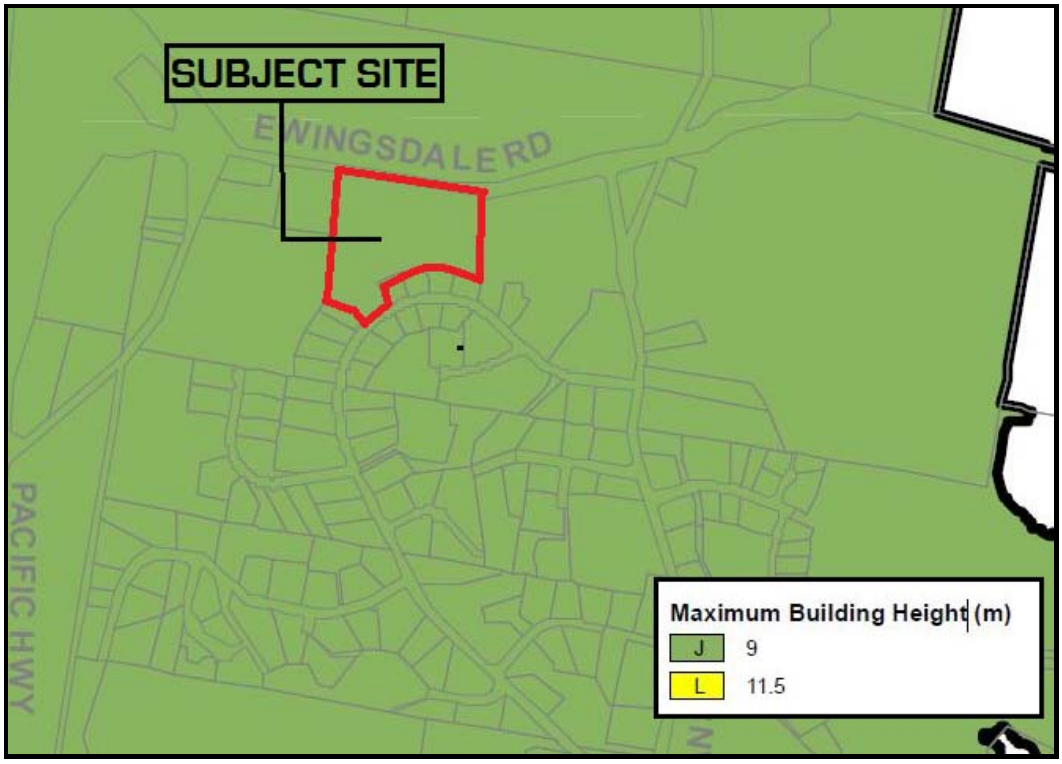

Plate 11: BLEP 2014 Height of Building Map Extract. (Source NSW Legislation 2014)

Comment: The proposed hospital will involve one and two storey structures with a maximum building height of approximately 11m. As outlined below, Clause 4.6 of the LEP enables variations to development standards in certain circumstances. Further information, including a justification with respect to this variation is provided below.

Clause 4.6 – Exceptions to Development Standards

Clause 4.6 provides for flexibility in the application of development standards in certain circumstances. Clause 4.6(3) specifies that an application seeking to vary the development standard, needs to be accompanied by a written statement justifying the departure from the standard. The following comments are made with respect to the provisions of Clause 4.6(3):

4.6 (3)(a) that compliance with the development standard is unreasonable or unnecessary in the circumstances of the case,

Comment: The proposed hospital is required to be designed to accord with the Clinical Services Plan for the project. In order to accommodate the required fit-

out and equipment, each level is required to provide a 4.2m floor to ceiling clearance. As such, once slab, subfloor and roof structures are accommodated, the two storey component of the building necessarily exceeds the 9m height limit.

4.6(3)(b) that there are sufficient environmental planning grounds to justify contravening the development standard.

Comment: The development of the site for a health service facility (hospital) is consistent with the strategic planning for the site. In this respect, the site has been the subject of a specific rezoning proposal and therefore the development of the land for a hospital structure is not prejudiced by the current land zoning.

The building form and scale is fitting of its location with the majority of the development being single storey in height. The main building block to the north end of the site adjacent to Ewingsdale Road, is partially 2 storey in height and is approximately 11m above the natural ground level on its eastern end. Through the adopted design, the encroachment above 9m occurs only in a portion of the hospital structure thereby generating no issues associated with overshadowing or overlooking of the adjoining residential properties located south of the hospital site.

4.2.4 Part 5 – Miscellaneous Provisions

Part 5 of the BLEP2014 contains a range of town planning provisions applicable to the assessment of Development Applications in the Shire. Those items applicable to the current application are identified in **Table 4.4,** and discussed in more detail below.

Table 4.4: Part 5 – Provisions Applicable to Application

Clause		Applicable?
5.1	Relevant acquisition authority	No
5.2	Classification and reclassification of public land	No
5.3	Development near zone boundaries	No
5.4	Controls relating to miscellaneous permissible uses	No

5.5	Development within the coastal zone	No
5.6	Architectural roof features	No
5.7	Development below mean high water mark	No
5.8	Conversion of fire alarms	No
5.9	Preservation of trees or vegetation	**Yes**
5.9AA	Trees or vegetation not prescribed by development control plan	No
5.10	Heritage conservation	**Yes**
5.11	Bush fire hazard reduction	No
5.12	Infrastructure development and use of existing buildings of the Crown	No
5.13	Eco-tourist facilities	No

Clause 5.9 – Preservation of Trees or Vegetation

Comment: The proposal requires the removal of vegetation from the site to entertain the hospital structure and associated vehicular access.

A Flora & Fauna Report has been completed for the project and is contained within **Attachment 9** of this EIS. No significant issues have been raised which prejudiced the project as outlined within this EIS.

Clause 5.10 – Heritage Conservation

Comment: The subject site is not identified on the Heritage Map as containing an Item of Environmental Heritage. However, two items are located within 300m of the site, namely:

- Higgins House (including detached kitchen wing and mature Moreton Bay Fig trees) at Lot 101 DP 1140936 on the parcel to the immediate east of the project site (Item I107);
- St Columbus Church group (including church, hall and former school site and trees) at Lot 1 DP 124387, Lot 1 DP 134548 and Lot 377 DP 47409 at 300 metres to the immediate west of the site (Item I112).

The Heritage Assessment prepared by Advitech and contained at **Attachment 7** did not identify issues of concern with respect to adverse impacts of these items.

4.2.5 Part 6 – Additional Local Provisions

Part 6 of the BLEP 2014 documents a range additional local provisions which apply to development in the Shire. **Table 4.5** outlines the applicability of these requirements to the current application, whilst an assessment against these provisions is provided below.

Table 4.5: Part 6 – Provisions Applicable to Application

Clause		Applicable?
6.1	Acid sulfate soils	No
6.2	Earthworks	**Yes**
6.3	Flood planning	No
6.4	Floodplain risk management	No
6.5	Drinking water catchments	No
6.6	Essential services	**Yes**
6.7	Affordable housing in residential and business zones	No
6.8	Rural and nature-based tourism development	No
6.9	Location of sex services premises	No

Clause 6.2 – Earthworks

Comment: Given the topography of the subject site, earthworks are required to accommodate the proposed hospital building. These works are illustrated in the Civil Design Package provided in **Attachment 4.** The following comments are made with respect to the assessment criteria documented in Clause 6.2(3) of the BLEP 2012:

> *6.2(3)(a) the likely disruption of, or any detrimental effect on, drainage patterns and soil stability in the locality of the development,*

Comment: The subject site is gently sloping and is not traversed by significant drainage lines. **Attachment 6** contains a Geotechnical Report which indicates that ground conditions are such that the proposed construction works are able to be accommodated utilising conventional construction methods.

The Integrated water management plan prepared by TFA (**Attachment 11**) details site drainage will be designed in accordance with the Northern Rivers Local Government Development Design and Construction Manuals, Byron Shire Council Comprehensive Guidelines for Stormwater Management and relevant

Australian Standards. Accordingly, the proposed Stormwater Management Plan for the BSCH addresses: the capture and conveyance of all stormwater runoff from impervious areas; areas subject to changes to natural ground level including excavation or filled areas; and areas where the natural or pre-development overland flow regime is disrupted to the potential detriment of an adjoining property. In conclusion TFA has identified the proposal does not introduce, impede or divert stormwater runoff in such a manner as to increase stormwater flow across a boundary onto adjoining property.

6.2(3)(b) the effect of the development on the likely future use or redevelopment of the land,

Comment: The site is purposefully zoned for a hospital. Consequently, the proposed earthworks provide for the long-term hospital use of the land.

6.2(3)(c) the quality of the fill or the soil to be excavated, or both,

Comment: Assessments have been completed in relation to potentially contaminated soil in addition to the geotechnical qualities of the site. In this respect, both assessments have found no impediments to the completion of the proposed civil works.

6.2(3)(d) the effect of the development on the existing and likely amenity of adjoining properties,

Comment: The proposed earthworks are removed from the adjoining rural residential dwellings to the south of the site. Accordingly, the nature of the proposed earthworks combined with the separation distance and ecological buffer to be planted between the hospital and rural residential lots will not adversely impact the amenity experienced by the adjoining rural residential residents.

6.2(3)(e) the source of any fill material and the destination of any excavated material,

Comment: TTW have codetermined within their Civil Design report (**Attachment 4**) it is likely that cut material from the site cannot be reused for building

platforms due to the high clay content. As a result, engineered material is likely to be required to be brought onto the site. There is potential to reuse excavated site material as engineered fill and backfill.

Appropriate certification of the source fill relating to the type of material, status as clean fill and volume will be determined prior to the commencement of civil works under this EIS.

6.2(3)(f) the likelihood of disturbing relics,

Comment: A preliminary archaeological assessment was also completed for the BSCH site and surrounds as part of the rezoning submission lodged with Byron Shire Council in 2007. The assessment by Place Environmental surveyed the land being the subject of the rezoning submission for Aboriginal sites. One isolated find was recorded and is located outside of the development area along the creek which falls east of the BSCH site. Place Environmental recommended the isolated find be protected and concluded the item was under no threat of disturbance or destruction as a result of the proposed BSCH development.

An Aboriginal Due Diligence Cultural Heritage Assessment was carried out on Lot 101 DP 1140936 to accompany a planning proposal to amend the local planning instrument to include additional permissible uses in the locality. The intention was to facilitate a development concept for the site that includes seniors housing, aged care facility, medical centre and retail facilities.

The results of the assessment, inclusive of the requisite Aboriginal consultation, found that:

- No Aboriginal objects or places of intangible significance were identified within the project area as a result of the field survey and community consultation;
- No areas were identified that are considered to potentially contain subsurface deposits of significant Aboriginal heritage; and
- No archaeological areas were identified that required further cultural heritage investigation.

Place Environmental in concluding their assessment identified the BSCH proposal will not have a significant effect on Aboriginal sites or Aboriginal archaeological sites or relics and there are no objections to the proposal on Aboriginal cultural heritage or archaeological grounds.

Advitech has completed a desk-top assessment for this EIS. The report as provided within **Attachment 7** has indicated that the proposed development is unlikely to impact any item of Aboriginal or historic heritage. The assessment recommends a due-diligence assessment in accordance with participation with local Aboriginal representatives in order to provide clarity as to the results of the desktop assessment whilst ensuring that cultural perspectives, views and concerns of Aboriginal representatives are taken into account. The due-diligence assessment has commenced and will be completed prior to the commencement of any civil works upon the site.

6.2(3)(g) the proximity to, and potential for adverse impacts on, any waterway, drinking water catchment or environmentally sensitive area,

Comment: The land is not located within the drinking water catchment or environmentally sensitive area.

6.2(3)(h) any appropriate measures proposed to avoid, minimise or mitigate the impacts of the development.

Comment: An erosion and sedimentation control plan has been prepared for the project as contained within **Attachment 4**.

Clause 6.6 – Essential Services

Comment: The proposed hospital will be connected to all essential water, sewage, electricity and telecommunication facilities as demonstrated within the civil services report prepared by Taylor Thomson Whitting, Donnelley Simpson Cleary and Woods and Grieves Engineers within **Attachments 3, 18** and **19** respectively of this EIS.

4.3 SEPP (State & Regional Development) 2011

Clause 8 of SEPP (State and Regional Development) 2011 advises that:

> *(1) Development is declared to be State significant development for the purposes of the Act if:*
>
> *(a) the development on the land concerned is, by the operation of an environmental planning instrument, not permissible without development consent under Part 4 of the Act, and*
>
> *(b) the development is specified in Schedule 1 or 2.*

Schedule 1 of the SEPP identifies hospitals with a capital investment value greater than $30 million. An extract of this clause is provided below:

> ***14 Hospitals, medical centres and health research facilities***
>
> *Development that has a capital investment value of more than $30 million for any of the following purposes:*
>
> *(a) hospitals,*
>
> *(b) medical centres,*
>
> *(c) health, medical or related research facilities (which may also be associated with the facilities or research activities of a NSW local health district board, a University or an independent medical research institute).*

Given the above, the project is being advanced in accordance with the procedures identified within SEPP (State and Regional Infrastructure) 2011. In this regard, a request to issue Secretary's Environmental Assessment Requirements ("SEAR's") for environmental assessment of the proposed BSCH was sought on the 19 June 2014 and these were issued to NSW Health Infrastructure on 9 July 2014. As outlined in the Executive Summary of this Report, this EIS has been prepared in accordance with the SEAR's.

Clause 11 of SEPP (State and Regional Development) 2011 advises as follows:

> ***11 Exclusion of application of development control plans***
>
> *Development control plans (whether made before or after the commencement of this Policy) do not apply to:*
>
> *(a) State significant development, or*
>
> *(b) development for which a relevant council is the consent authority under Section 89D (2) of the Act.*

The current application is being processes as State Significant Development and accordingly, the provisions of Byron Development Control Plan 2014 do not apply to the project. Further discussion regarding this matter is provided in Section 4.10.

4.4 SEPP (Infrastructure) 2007

State Environmental Planning Policy (Infrastructure) 2007 aims to facilitate the effective delivery of infrastructure across the State by providing a consistent planning regime for infrastructure and the provision of services.

Division 10 of SEPP (Infrastructure) applies to Health Services Facilities and is therefore applicable to the current application. A copy of the Health Services Facility definition is provided below:

> ***health services facility*** *means a facility used to provide medical or other services relating to the maintenance or improvement of the health, or the restoration to health, of persons or the prevention of disease in or treatment of injury to persons, and includes the following:*
>
> *(a) day surgeries and medical centres,*
> *(b) community health service facilities,*
> *(c) health consulting rooms,*
> *(d) facilities for the transport of patients, including helipads and ambulance facilities,*
> *(e) hospitals.*

Clause 57 of the SEPP identifies that Development for the purpose of Health Services Facilities may be carried out by any person with consent on land in a prescribed zone. Clause 56 identifies the SP2 zone to be a "prescribed zone".

Given the above, the proposed development of the land for the purpose of a health services facility (hospital) is permissible with development consent pursuant to the provisions of SEPP Infrastructure 2007.

4.5 SEPP No. 33 – Hazardous & Offensive Development

SEPP 33 provides clear definitions of hazardous and offensive industries and aims to facilitate development defined as such and to ensure that in determining developments of this nature, appropriate measures are employed to reduce the impact of the development and require advertisement of applications proposed to carry out such development.

SEPP 33 requires an assessment of hazardous materials, involving a screening method based on the quantities of dangerous goods on a site, to assist in determining if a development is likely to be a potentially hazardous industry.

An assessment under SEPP 33 has been completed by Tim Fitzroy & Associates ("*TFA*") as provided within **Attachment 10** of this EIS. The assessment has been completed for the BSCH project based on the proposed storage of the following hazardous materials:

- 4,500L LPG (Liquefied Petroleum Gas) storage tank which on average will distribute approximately 1,200 litres per day to the hospital;
- 50L of diesel fuel for the fire pumps to provide 4 hours of pumping;
- VIE 3,000 vessel of liquid oxygen (vacuum insulated evaporator vessel with a volume of approximately 2,460m^3);
- 2 x packs of 15 cylinders (400nman15) of medical oxygen gas for backup supply;
- 4 x G size cylinders of medical air;
- 2 x G size cylinders of medical nitrous oxide;
- 1 x G size cylinders of medical carbon dioxide.

The risk screening assessment of hazardous materials completed by TFA in accordance with *Applying SEPP 33* guidelines (Department of Planning, 2011) identified the hazardous materials associated with the development do not trigger the screening thresholds for quantities of materials nor transportation

movements and therefore the development is not considered potentially hazardous and therefore SEPP 33 does not apply.

4.6 SEPP No. 55 – Remediation of Land

State Environmental Planning Policy No. 55 – Remediation of Land aims to promote the remediation of contaminated land for the purpose of reducing the risk of harm to human health or any other aspect of the environment. As part of this, the SEPP establishes requirements associated with ascertaining the suitability of the land for the intended purpose.

In this instance, Tim Fitzroy and Associates completed a Preliminary Site Contamination Report, inclusive of site history and soil analysis. A copy of this Report is provided at **Attachment 5**. In summary, the report does not identify impediments (from a contamination perspective) to the proposed development of the site for the BSCH.

Based on the assessment completed for the site, the carrying out of the BSCH project may proceed.

4.7 SEPP 64 – Advertising Signage

The aim of this Policy is to improve the amenity of urban and natural settings by managing the impact of outdoor advertising. This application seeks consent for signage for the proposed new hospital building, as set out in **Section 3.3** of this EIS. Signage is proposed to provide identification to the hospital, the new emergency department and directional/way-finding signage.

Clause 8 of SEPP 64 states that a consent authority must not grant development consent to an application to display signage unless the consent authority is satisfied:

(a) that the signage is consistent with the objectives of this Policy as set out in Clause 3 (1) (a), and

(b) that the signage the subject of the application satisfies the assessment criteria specified in Schedule 1.

In terms of the objectives in Clause 3(1)(a) the concept signage proposed as part of this development is:

- compatible with the desired amenity and visual character of the locality;
- provides effective communication in a suitable location and reflective of the land use in which it is servicing, and
- designed to a professional design and finish standard.

With regards to consistency with the assessment criteria of Schedule 1 of the SEPP we believe the proposed signage:

- will not result in any obscuring of any views, the skyline or vistas;
- respects the viewing rights of other advertisers in the area;
- is of a scale, proportion, form and design that is appropriate for the streetscape and land use which the signage will be associated with;
- will not result in any visual clutter through a professional finish;
- will not result in any adverse/excessive illumination or glare. Backlighting and surface lighting is proposed for illumination; and
- will not reduce the safety for any public road, pedestrians or bicyclists.

The proposed concept signage is therefore consistent with SEPP 64.

4.8 NSW 2021

NSW 2021: A plan to make NSW number one is a 10 year plan to guide the growth of the State and delivery of services and infrastructure. The Plan includes 32 Goals. Of these, the project is aligned to the following goals.

- Goal 12 is to *"provide world class clinical services with timely access to effective infrastructure".*
- Goal 19 to *"Invest in critical infrastructure*".

The investment of the NSW government in the subject proposal will provide modern health services to the Byron Shire, and surrounding areas providing better equipped and resources health care needs. On this basis, the proposal is considered to support the goals of the NSW State Plan.

NSW 2021 is supplemented by a series of Regional Action Plans. The Northern Rivers Regional Action Plan addresses the growth of the regional economy in a manner which ensures the protection of the region's natural features. The vision seeks to ensure that the region is:

- Sustainably managed, through the protection of natural resources and the local environment, and recognised for biodiversity, tourism and recreation;
- Socially inclusive, providing appropriate support for all community members by investing in quality health and community services;
- Economically strong, by investing in infrastructure, education and training to drive job growth; and supporting knowledge-based and clean, green industries.

Whilst the BSCH is not specifically identified, the Action Plan nominated the Northern NSW Local Health District Capital Plan as a key mode to deliver services to the region. The current project is a core element of the Capital Plan.

4.9 Far North Coast Regional Strategy 2006 – 2031

The Far North Coast Regional Strategy (FNCRS) was adopted in December 2006. This strategy consolidates and builds on previous planning work, including the Northern Rivers Regional Strategy and local council settlement strategies.

With specific reference to health, the FNCRS identifies the Region's population is changing. Over the next 25 years the median age of the population is projected to increase from 39 years to 51 years due to more than doubling of the population aged 65+ years and a declining proportion of young people (aged between 0 and 14 years). As a consequence from the changing population profile, the FNCRS identifies an increase in the demand for seniors living housing as well as for local services and amenities such as public transport, health care and recreational facilities.

The proposed development is directly consistent with the vision for the Far North Coast in that it works to achieve a healthy and prosperous community. However, the Strategy, does not nominate specific locations for large community/ infrastructure facilities, such as the Byron District Hospital. Similarly, the strategy does not include the land as a proposed future urban release area or employment lands. Rather, it is mapped as "Rural Land" (Map P14 FNCRS), and is identified as being located within the Coastal Area.

Appendix 3 of the FNCRS identifies the Major Infrastructure Projects nominated for the nominated six local government areas. Within the Byron Shire LGA, the development of the Ambulance Station (on the subject land) is the sole project identified.

The FNCRS applies to the period 2006–31 and was intended to be reviewed every five years. With specific reference to Infrastructure Projects, the final Strategy includes regional infrastructure projects outlined in the State Infrastructure Strategy (SIS), which was released in May 2006. It is expected that the Regional Strategy, and the SIS, will be updated over time, to include further capital programs for health infrastructure inclusive in this instance of the Byron Central Hospital. The recent rezoning of the land to provide for the SP2 zoning indicates a strategic intent by the State Government for a key health infrastructure item on the site.

4.10 Byron Development Control Plan 2014

Clause 11 of SEPP (State and Regional Development) 2011 advises as follows:

> ***11 Exclusion of application of development control plans***
>
> *Development control plans (whether made before or after the commencement of this Policy) do not apply to:*
>
> *(a) State significant development, or*
>
> *(b) development for which a relevant council is the consent authority under section 89D (2) of the Act.*

The current application is being processes as State Significant Development and accordingly, the provisions of Byron Development Control Plan 2014 do not apply to the project.

Whilst the development controls within the DCP have not been specifically considered within this Report, key elements of the DCP which would otherwise require consideration within a Development Application have been addressed. Cross-references to the relevant assessments are provided in **Table 4.6**.

Table 4.6: DCP Considerations

DCP Part	Topic	Addressed
Part A	**Preliminary (Administrative)**	
Part B	**Controls Applying Generally to Development Applications**	
Chapter B1	Natural Environment	Section 5.4 and **Attachment 17**
Chapter B2	Preservation of Trees and other Vegetation	Section 5.2 and **Attachment 17**
Chapter B3	Services	Section 5.9 and **Attachment 4**
Chapter B4	Traffic Planning, Vehicle Parking, Circulation and Access	Section 5.3 and **Attachment 3**
Chapter B5	Providing for Cycling	Section 5.3 and **Attachment 3**
Chapter B6	Buffers and Minimising Land Use Conflict	**Attachment 2**
Chapter B8	Waste Minimisation and Management	Section 5.14 and **Attachment 9**
Chapter B9	Landscaping	Section 5.2 and **Attachment 2**

Chapter B10	Signage	Section 4.7 and **Attachment 1**
Chapter B11	Planning for Crime Prevention	Section 5.1 and **Attachments 1 & 2**
Chapter B13	Access and Mobility	**Attachment 1**
Chapter B14	Excavation and Fill	Section 5.8 and **Attachment 4**
Part C	**Further Controls Applying to Land With Specific Constraints and Environmental Considerations**	
Chapter C1	Non Indigenous Heritage	Section 4.2 and **Attachment 7**
Chapter C2	Areas Affected by Flood	N/A
Chapter C3	Visually Prominent Sites, Visually Prominent Development and View Sharing	N/A
Chapter C4	Development in a Drinking Water Catchment	N/A
Part D	**Further Controls Applying to Specific Land Uses**	
Chapters DA – D8	**Various**	N/A
Part E	**Further Controls Applying to Specific Localities**	
Chapters E1, E2, E3, E4, E6 & E7	Various	N/A
Chapter E5	Certain Locations in Byron Bay and Ewingsdale	See Below and **Attachment 2**.

Chapter E5 – Certain Locations in Byron Bay and Ewingsdale

Section E5.6 of the DCP applies specifically to the Byron Central Hospital Site. The objectives of the section are:

1. *To facilitate achievement of the objectives of R5 zone on land adjoining development to which this Section applies.*
2. *To minimise conflict between land uses within the SP2 Hospital zone and land uses within adjoining zones.*
3. *To promote retention of a semi-rural landscape in the locality.*

Section E5.6.3 of the DCP specifies that:

*Development Applications must be accompanied by a landscape plan consistent with the requirements of Chapter B9 Landscaping. The landscape plan must include (but is not limited to) construction of a mounded and landscaped buffer a minimum of 20m wide between the proposed development and adjoining land within the R5 zone. The buffer must be designed, located, intensively planted and maintained in perpetuity as a visual and acoustic screen. All planting must utilise **locally indigenous** species.*

Comment: The Development Plans incorporate a 37m wide buffer zone to the adjoining residents fronting Parkway Drive. Within this buffer, the following species will be planted as illustrated within the design plans prepared by 360° and contained within **Attachment 2** of this EIS.

Trees

- *Melaleuca quinquenervia* – Broad-Leafed Paperbark;
- *Elaeocarpus eumundii* – Eumundi Quandong;
- *Elaeocarpus reticulates* – Blueberry Ash;
- *Callitris columellaris* – Coastal Cypress Pine.

Grasses and Groundcovers

- *Lomandra longifolia* – Mat Rush;
- *Gahnia sieberiana* – Saw Sedge;
- *Acrostichum speciosum* – Mangrove Fern.

4.11 Water Management Act 2000

Under the Water Management Act 2000 (WM Act) an approval is required to undertake controlled activities on waterfront land, unless that activity is otherwise exempt (Section 91E).

Controlled activities include the carrying out of building work, such as erecting buildings and other structures, and the installation of infrastructure. They also include excavating or depositing material within 40 metres of the highest bank of the watercourse.

Reference is made to the Water Management Act given infrastructure works associated with the BSCH will be completed within 40 metres of the watercourse located west of the BSCH site on Lot 101 DP 1140936.

Regard has been made to the Water Management (General) Regulation 2011 which sets out a number of exemptions in relation to controlled activities.

Pursuant with Clause 38 of the Water Management (General) Regulation 2011, a public authority is exempt from section 91E (1) of the Water Management Act 2000 in relation to all controlled activities that it carries out in, on or under waterfront land.

Accordingly, the BSCH project is exempt in this instance from the requirement to obtain a controlled activity approval under the Water Management Act as the work is being undertaken by a public authority.

4.12 Environmental Planning & Assessment Act S79C

In determining an EIS, a consent authority is to take into consideration such of the following matters as are of relevance to the development the subject of the Development Application:

a) the provisions of:

i. any environmental planning instrument

Comment: Relevant aspects of the Byron Local Environmental Plan 2014 have been addressed within Section 4.2 of this report.

With the exception of the proposed building height exceeding the prescribed 9m standard for a portion of the building, the proposal is consistent with the relevant provisions.

ii. any proposed instrument that is or has been the subject of public consultation under this Act and that has been notified to the consent authority

Comment: No Draft Environmental Planning Instrument relates to the subject land or form of development as at the date of this report.

iii. any development control plan

Comment: Relevant provisions of the Byron Development Control Plan 2014 have been addressed within Section 4.10 this report.

iv. the regulations (to the extent that they prescribe matters for the purposes of this paragraph), that apply to the land to which the Development Application relates,

Comment: The proposal is considered to satisfy the relevant requirements of the EP&A Regulations 2000 relating to the application and associated requirements within Schedule 2 relating to an EIS.

b) the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality,

Primary Matters	Proposal
Context & Setting	Impacts which may potentially be generated by this proposal have been addressed within Section 5 of tis EIS. Furthermore, measures to mitigate against these impacts are outlined within **Section 7** of this EIS
Access, Transport & Traffic	Reference should be made to Section 5.3 of this report together with the Traffic and Parking Assessment completed by TTW (**Attachment 3**).
Utilities	Reference should be made to Section 5.9 of this report together with the assessment completed by Donnelley Simpson Cleary (**Attachment 18**) and Wood & Grieve Engineers (**Attachment 19**).
Waste	Reference should be made to Section 5.6 of this EIS together with the assessment completed by Tim Fitzroy & Associates (**Attachment 9**).
Noise & Vibration	Reference should be made to Section 5.6 of this EIS together with the assessment completed by AECOM (**Attachment 8**).
Safety, Security & Crime Prevention	Reference should be made to Section 5.1 of this EIS.
Site Design & Internal Design	Reference should be made to Section 5.1 of this EIS together with the design plans and associated Architectural Design Statement prepared by Woods Bagot (**Attachment 1**).

c) the suitability of the site for the development,

Primary Matters	Proposal
Does the proposal fit in the locality	The suitability of the site for the proposed development can be justified as follows: • The proposal is permissible under the Byron Local Environmental Plan 2014 and satisfies the designated strategic use of the land which was rezoned specifically for a hospital; • The site is physically capable of sustainably accommodating the proposed development; • The proposed building will be of a contemporary building and more functionally efficient than the Byron and Mullumbimby Hospital buildings it will replace; • The proposal will not generate any significant irreversible *"impact"* in the locality, subject to adopting the recommended mitigation measures in **Section 7** of this EIS; • The proposal will continue the modernisation, integration and expansion of the services pursuant to the adopted Clinical Services Plan 2013 for the NNSWLHD; • The proposal will result in the provision of greater, and more contemporary and efficient services which will better meet the needs of the community of the Byron Shire and surrounds.

e) the public interest.

Primary Matters	Proposal
Local, State & Federal Governments	The proposed development is considered to be in the public interest in that: • It is consistent with the objectives of the Environmental Planning and Assessment Act 1979 of encouraging the economic and orderly development of land; • The new hospital building will provide a facility which addresses increasing demand for its services arising from population increases and demographic changes; • The new hospital has been designed and located in a manner which reflects the community consultation outcomes generated through the site specific rezoning of the land for the purposes of a hospital; • The development represents a significant capital investment in the infrastructure of the Byron Shire; • The new facility has been designed to minimise the impact on the natural and built environment; • The design approach has been developed to be consistent with principles of ecological sustainability; • This EIS demonstrates that the development does not result in any adverse irreversible environmental impacts and therefore, the project is deemed to be in the public interest.

Environmental Considerations

Section 5

In addition to the statutory controls addressed in Section 4 of this EIS, the Secretary's Environmental Assessment Requirements ("SEAR's") provide that the environmental impacts of the proposal must be assessed, and specify key issues be considered. These relate to built form and urban design, environmental amenity, transport and accessibility, ecologically sustainable development, noise and vibration, contamination, heritage, Aboriginal heritage, drainage and stormwater, flooding, utilities, staging, flora and fauna, hazards and consultation. This section provides the assessment of key issues listed within the SEAR's and includes recommended mitigation measures where necessary.

5.1 Built Form & Urban Design (SEAR 3)

The SEAR's contain the following consideration requirements:

- *Address the height, density, bulk and scale, setbacks of the proposal in relation to the surrounding development, topography and streetscape.*
- *Address design quality, with specific consideration of the overall site layout, streetscape, open spaces, facade, rooftop, massing, setbacks, building articulation, materials, colours and Crime Prevention Through Environmental Design Principles.*

Consideration

The Byron Local Environmental Plan 2014 does not prescribe any floor space ratio or setback standards for development on the subject site. This is reflective of the Special Purpose zoning of the land.

The BLEP does however include a prescribed building height of 9m. A variation to the prescribed building height is addressed within Section 4.2 of this EIS.

A design statement has been prepared by Woods Bagot (**Attachment 1**), which explains the concept underpinning the design of the proposed new building and provides some background as to how the Clinical Services Plan has informed the design of the BSCH.

The following is a series of extracts from the design statement.

Development of a new BSCH on a greenfield site provides the opportunity to replace the current Byron Bay District Hospital (BBDH) and Mullumbimby and District War Memorial Hospital (M&DWMH). The development of a purpose-built facility with contemporary functional design and models of care with a significantly larger critical mass of acute, sub-acute, clinical support and primary health services will have the capacity to meet the needs of the Byron Shire community to 2021 and beyond.

This unique site is located on Ewingsdale Road in a rural area, situated just east of the main freeway. The architectural approach to the design, planning and overall methodology, draws on Byron's rural setting and connection with place and nature, as a concept. Working with the sites natural contours, the building footprint connects gently with the landscape and takes advantage of solar access and aspect enhancing the patient experience and offering views and privacy where required.

Access to the site is currently from Ewingsdale Road to the Existing Ambulance Facility. Additional access is provided via a main entry and exit point at the north-west of the site, addressing the major traffic route from the Pacific Highway, also to the north-west of the site. A continuous loop road allows staff and service vehicles to continue around the site and access the car park and loading zones on the east side of the site.

The loop road connects the existing ambulance station road with the proposed hospital infrastructure and allows a secondary entry and exit point at this location.

- *Generous drop-off space will be provided with under cover access to the building entry for arrivals, plus the inclusion of a number of seating options for comfortable waiting.*
- *New signature trees within the street and drop-off space reference the existing cultural trees and clearly identify drop off facility for those arriving by car and on foot.*
- *Ewingsdale road is proposed to be made wider for additional traffic with public transport links and dual carriage roadways under current investigation.*

Height, Bulk and Scale

The adopted design for the BSCH appropriately responds to the low density residential built-form character found to the west of the site, maintains a balance between meeting the services needs outlined in the 2013 clinical services plan and functional briefs, and ensuring the building is appropriately sited and scaled to minimise impacts on the surrounding locality.

The design concentrates the mass of the building to a humanistic scale by adopting primarily a single storey built form and placing the highest portion of the building within the eastern portion where the greatest variations in materials and form respond to the clinical service requirements for the health facility.

The reduction in the height of the building at the eastern-most extent is an adopted design response to the low density residential context. The proposed massing of the eastern elevation, the use of a variety of building materials, glazing and screening, combined with the proposed landscaped "buffer" to the southern site boundary, collectively contribute in successfully address the visual bulk and scale of the proposed building when viewed from the east and west.

Materiality

The following is an extract from the design statement which sets out the principles guiding the adopted materials and finishes for the proposed BSCH.

The proposal for the new facility is to use materials that are fit for purpose and will provide cost effective solutions for the various requirements.

The palette is drawn from the indigenous nature and the surrounding local environment. The material decisions are conceived as a direct response to the practical need and context of the facility. The need for openings and windows are directly related to clinical needs and planning responses. Given the location of the facility and local rural context, we have endeavoured to include a reference to the historical building materials and local industry.

In addition to the above, materials and finishes has been driven by the following considerations:

- Low or zero maintenance;
- Ready availability;

- Proven technologies;
- A connection with nature and soft material palette;
- The need to provide robust and tough materials to areas where vehicles; are manoeuvring or as required in high pedestrian traffic areas;

Connectivity

Internal connectivity and street activation/connectivity are key features of the proposed new building. In this respect, all paths of travel from the proposed building to the public domain and other areas and buildings within the BSCH site are clearly shown on the plans prepared by Woods Bagot. Activation areas are provided to the designated car park areas with associated defined building entrances, clear drop-off at the western end of the Hospital to assist with the connectivity through the BSCH campus.

Crime Prevention Through Environmental Design

The planning, layout and proposed materials of the building have taken into consideration the principles of Crime Prevention Through Environmental Design (*"CPTED"*). CPTED outlines four key principles, and the building has been designed in accordance with these, as assessed below.

1. **Natural Surveillance** – A design concept directed primarily at keeping intruders easily observable. Promoted by features that maximise visibility of people, parking areas and building entrances; doors and windows that look out on to streets and parking areas; adequate night-time lighting. Surveillance can be 'technical/mechanical' or 'organised' and is often used in combination with natural surveillance.

2. **Territorial Reinforcement** – Physical design can create or extend a sphere of influence. Users then develop a sense of territorial control while potential offenders, perceiving this control, are discouraged. Features that define property lines and distinguish private spaces from public spaces using landscape plantings, pavement designs, gateway treatments, and "CPTED" fences promote this.

3. **Natural Access Control** – A design concept directed primarily at decreasing crime opportunity by denying access to crime targets and creating in offenders a perception of risk. Designing streets, sidewalks, building entrances and neighbourhood gateways to clearly indicate public routes and discouraging access to private areas with structural elements achieve this.

4. **Space Management & Target Hardening** – Coordinate regular maintenance to keep the area clean and attractive by removing graffiti, renewing decayed items and replacing broken lighting. Target hardening is accomplished by features that prohibit entry or access: window locks, dead bolts for doors, interior door hinges.

Having regard to the above principals a CPTED assessment of the BSCH project is provided within **Table 4.7**.

Table 4.7: CPTED Assessment

Performance Criteria	Design Requirements/ Suggestions	Proposal
Ownership Measures		
Landscaping		
Use vegetation as barriers to deter unauthorised access. Avoid large trees/ shrubs and buildings works that could enable an intruder to gain access to the dwelling or to neighbouring dwellings	• Prickly plants can be used as effective barriers. Species include bougainvilleas, roses, succulents, and berberis species. • Avoid large trees, carports, skillion extensions, fences, and downpipes in situations that could provide a means of access to second storey windows or balconies.	Landscaping has been designed to provide a positive visual layer to the development, however incorporating CPTED principles into the final design (ie. landscape palate and planting location). Species selected for the development contribute to providing a clear delineation of the site and in doing so encourage people to access the within preferred/directed locations.
Security		
Use security hardware and/or human measures ONLY where required to reduce opportunities for unauthorised access	• Install quality locks on external windows and doors. • Install viewers on entry doors. • If security grilles are used on windows they should	Target hardening measures have been employed into the design through selected building materials, window location, security locks and the provision of a monitored CCTV system.

	be openable from inside in case of emergencies. • Ensure skylights and/or roof tiles cannot be readily removed or opened from outside. • Consider monitored alarm systems. • Provide lockable gates on side and rear access ways. • Consider building supervisors or security guards.	
Maintenance		
Create a 'cared for' image	• Ensure the speedy repair or cleaning of damaged or vandalised property. • Provide for the swift removal of graffiti. • Provide information advising where to go for help and how to report maintenance or vandalism problems.	The property manager shall be responsible for: • Removing graffiti in a timely manner, • Maintaining the common spaces (ie. car park etc). • Regular landscape maintenance, • Repairing all broken common area lighting, • Repairing all damaged, broken or decaying building elements, • Ensuring that bins are kept in locked enclosures.
Materials		
Use materials which reduce the opportunity for vandalism	• Strong, wear resistant laminate, impervious glazed ceramics, treated masonry products, stainless steel materials, anti-graffiti paints and clear over sprays will reduce the opportunity for vandalism. Flat or porous finishes should be avoided in areas where graffiti is likely to be a problem. • Where large walls are unavoidable, consider the use of vegetation or anti-graffiti paint. Alternatively, modulate the wall, or use dark colours to discourage graffiti on vulnerable walls.	The proposal as illustrated within the architectural design plans prepared by Woods Bagot (**Attachment 1**) appropriately responds to the recommended suggestions.

	• External lighting should be vandal resistant. High mounted and/or protected lights are less susceptible to vandalism.	
Spaces		
Spaces should be clearly defined to express a sense of ownership and reduce illegitimate use/entry.	• Physical and/or psychological barriers (eg. fences, gardens, lawn strips, varying textured surfaces) can be used to define different spaces.	The proposal defines the property boundaries through fencing and landscape treatments, thereby clearly allowing: • People to know when they are trespassing on private property. • Passers-by to clearly identify when someone is trespassing and illegally using the premises.
Natural Surveillance		
Lighting		
Provide lighting to enable natural surveillance Refer to Section 1.1 for other relevant criteria and design requirements	• Leave some lights on at night or use sensor lights.	Lighting is an essential tool in surveillance and deterring illegitimate users. • Lighting will be an integral feature to the car park and building design in order to provide people to see what is ahead within the car park area and building entrance/exit. • Allow natural surveillance after daylight hours. • Facilitates formal surveillance (Police or private security company).
Design & Building Layout		
Provide entries which are clearly visible from the street. Maximise the access and visibility of facilities	• Locate main entrances/ exits at the front of the site and in view of the street. • If staff entrances must be separated from the main entrance, they should maximise opportunities for natural surveillance from the street. • Avoid blank walls fronting the street. • In industrial developments, administration/offices	The proposal adopts the recommended design solutions with the building containing clearly defined access points at the western entry orientated towards the Ewingsdale Road access. The area will be appropriately lit to provide a clear identification of the entry point. All areas external to the primary entry point are appropriately landscaped to prevent blind corners which contributes to a feeling of

	should be located at the front of the building. • Locate toilets and parent's rooms close to areas of active uses or regularly staffed areas.	safety for staff and patients/ visitors.
Access Control		
Lighting		
Provide adequate lighting to encourage use and access to the facility.	Illuminate all external edges and access points to car parks during opening hours of the car park.	Lighting is to be provided in a manner which provides a safe environment for staff and customers, whilst also addressing the provisions of AS2482. Reference is made to the lighting assessment by Woods and Greive as contained within **Attachment 15** and the Electrical, ICT and Security Services report by Woods and Grieves in **Attachment 19**.
Security		
Provide security to monitor access to area.	• Use security devices (eg. intercom or remote lock facility) where appropriate. • Consider the installation of boom gates or similar devices at entrances and exits of the car park.	Security measures inclusive of lock facilities and restricted access areas will result in the ability to identify legitimate users from trespassers.
Site and Building Layout		
Ensure ease of access and safety within the car park Clearly distinguish between private and public space	• Minimise the number of entry and exit points. • Pedestrian corridors should be created for large developments. • Where possible, locate entry/exit points in close proximity and close to the car park operator or shops, cafes etc. • Staff car park should be separated and secured.	As outlined previously, the building is designed so as to provide clearly designated public entry point, whilst the rear loading area is restricted to staff/suppliers only with appropriate target hardening measures incorporated into the northern elevation.
Signage		
Ensure that parking areas are clearly identified by signage to prevent unintended access and to assist persons trying to find their car.	• Provide signage that is clearly visible, easy to read and simple to understand • Use strong colours, standard symbols and simple graphics for signs.	Signage adopting the recommended solutions will be employed on-site to identify such matters as the building entrance, security devices and operating hours.

	• Upon entering the car park provide both pedestrians and drivers with a clear understanding of direction to the premises. • Provide signs at the car park advising users to lock their cars.	

5.2 Amenity (SEAR 4)

The SEAR's contain the following consideration requirements.

- *Detail amenity impacts including solar access, acoustic impacts, visual privacy, view loss, overshadowing, lighting impacts and wind impacts. A high level of environmental amenity for immediately adjacent residential land uses must be demonstrated.*

Consideration

Acoustic Impacts

The acoustic impacts of the development have been considered by AECOM in the report at **Attachment 8**. Further, **Section 5.6** of this EIS provides a summary of the findings of the assessment undertaken by AECOM.

The conclusion of the assessment undertaken by AECOM is that subject to adopting the recommendations of the report, the proposed development will not generate any adverse construction or operational noise impacts within the site and externally.

Visual Privacy

The main area of consideration in terms of visual privacy is the potential for overlooking by the development to the residential properties to the south of the site. In this respect, the inclusion of the 37m wide landscape buffer will adequately screen the development with very little opportunity to view the private open space of the adjoining residents. The project landscape design will preserve the existing levels of privacy enjoyed by the residents of the rural residential area.

Lighting

Woods and Grieves Engineers have undertaken a desk-top review of lighting which will be installed for the BSCH project as contained within **Attachment 15**. In this regard, lighting will be provided for the following areas:

- External lighting;
- Access roads;
- Outdoor car parking;
- Pedestrian pathway.

The exterior lighting will comply with the following standards and guidelines:

- AS 4282- Control of obtrusive effects of outdoor lighting;
- AS/NZS 1158.3.1- Pedestrian area lighting (category P);
- AS 3000- SAA wiring rules.

It is proposed that a combination of photo electric cell (PE Cell) controlled external lights and PE Cell and time clock controlled external lights be utilised. This will allow some lights to remain on from dusk to dawn and others to switch off at a pre-set time at night

Mitigation measures are included in **Section 7** of this EIS to ensure that there will be no light spill or other lighting-related impacts resulting from the development.

View Loss

The proposed new building is positioned with a generous separation distance combined with a biological buffer. Furthermore, the adjoining rural residential properties contain established vegetation cover which also contributes to the screening of the hospital. Accordingly, the built form proposed for the BSCH is not envisaged to adversely impact views from and adjoining property.

Wind Impacts

The development site and proposed building is not located in a high density context with surrounding high storey buildings. Therefore, it is considered that the development is unlikely to have any adverse wind impact on the surrounding environment.

Solar Access

Sun shadow diagrams prepared by Woods Bagot and contained within the design package within **Attachment 1** of this EIS illustrate the built form of the BSCH will not impact solar access to any adjoining property, being either privately of publically owned.

Recommended Mitigation Measures

All external lighting will be installed to meet the minimum Australian and New Zealand Lighting Standards. External lighting will be installed so as to not result in any light spill or other lighting-related impacts on the surrounding locality.

As set out in **Section 5.6** and **Section 7** of this EIS, the recommendations of the Noise and Vibration Impact Assessment undertaken by AECOM (**Attachment 8**) are included as mitigation measures to ensure that any adverse impacts are appropriately managed.

5.3 Transport & Accessibility (SEAR 5)

The SEAR's contain the following consideration requirements.

- *the existing and proposed pedestrian and cycle movements within the vicinity of the site;*
- *An estimate of the total daily and peak hour trips generated by the proposal, including vehicle, public transport, pedestrian and cycle trips;*
- *the adequacy of public transport to meet the likely future demand of the proposed development;*
- *measures to promote travel choices that support the achievement of State targets, such as a location-specific sustainable travel plan;*
- *the daily and peak vehicle movements impact on Ewingsdale Road and nearby intersections, with consideration of the cumulative impacts from other approved developments in the vicinity, and the need/associated funding for upgrading or road improvement works (if required);*
- *the proposed access arrangements and measures to mitigate any associated traffic impacts and impacts on public transport, pedestrian and cycle networks;*

- *proposed car parking provision, including consideration of the availability of public transport and the requirements of the relevant parking codes and Australian Standards;*
- *estimated service vehicle movements (including vehicle type and the likely arrival and departure times); and*
- *access and car parking arrangements at all stages of construction and measures to mitigate any associated pedestrian, cycleway, public transport or traffic impacts.*

A traffic and parking assessment has been prepared by TTW to address this SEAR and is contained within **Attachment 3** of this EIS. A summary of the findings of that assessment is provided below:

Traffic

Section 5 of the TTW report assesses the potential traffic impact of the development. TTW conclude within their assessment as provided below:

A traffic generation of 120 vehicles per hour (during peak periods) has been estimated for the future Hospital activities – considering that not all staff arrive or depart at the same time. Assuming 80% of all cars arriving or departing the site during a peak hour plus 12 vehicle trips associated with fleet and service vehicles.

Considering this level of vehicular traffic (i.e. about 2 car per minute), the road system will continue to operate at a good level of service.

The introduction of parking management measures will provide an appropriate parking condition for the new facility.

The development proposals will ensure the accessibility of the Hospital in terms of vehicular and pedestrian movements. As part of the concept plan proposal, appropriate walkways should be provided within the Hospital site. Vehicular access and pick-up and set-down facilities should also be included to provide amenity for the Hospital's users.

Directional signs should be placed as part of the concept master plan to improve the accessibility for the Hospital and to encourage a higher use of the Hospital's Entrance at designated locations.

Access

The BSCH site will be serviced by two entry points off Ewingsdale Road. TTW has incorporated within their assessment for the main entry point to the site

(western side) to be treated by a single lane roundabout, while the eastern entry point will be a T – junction with restriction left in/left out only (ambulance access could be excepted with provision for right turn movements during emergency situations).

Along with the two access points, TTW propose the implementation of a 60km/hr speed limit along a section of Ewingsdale Road adjacent to the Hospital site, subject to RMS and Council approval.

Accordingly, an assessment of intersections performances were carried out using SIDRA traffic modelling software and proposed intersections layouts to the proposed site with consideration to the morning and afternoon commuter peak hour traffic volumes.

TTW modelling results have identified all proposed access points and intersections relevant to the site will operate at a good level of service during the morning and afternoon commuter peak hours on a weekday. The average delay for all vehicles at these intersections is well below the 28 seconds per vehicle (i.e. very good level of service), indicating an ample capacity at these intersections. Since the allowable maximum average delay for vehicles is about 70 seconds per vehicle.

Service Vehicles

Section 4.2 of the TTW report addresses service vehicle access to the BSCH.

All service vehicles including trucks will enter and exit the site in a forward direction.

The architectural drawings for the site demonstrate the loading areas and associated improvements. A total of 5 truck movements are likely to occur within a day (about 2 during the morning period and 3 in the afternoon). Approximately 10 other deliveries also occur throughout the day using vans, smaller trucks for couriers and other services.

Car Parking

Pursuant to State Environmental Planning Policy (Infrastructure) 2007, at grade car parking is identified as an exempt development. Accordingly, the early works for the BSCH project has commenced with the construction of a car park to accommodate 195 cars.

In respect to the total number of spaces, TTW has addressed the quantum of parking within Section 3.2 of their report.

Initially the estimated parking requirements were developed by TTW based on the Byron Shire Development Control Plan (DCP) (2010 and Draft 2014). TTW have then compared parking generation to the assumed anticipated staff, visitor and patient numbers to better ascertain expected parking demand specifically for the Byron Shire Central Hospital development.

From the assessment completed by TTW, a parking demand of 195 spaces during the peak period as part of the BSCH is identified. This figure exceeds the number specified under the Byron Development Control Plan 2014.

The design plans lodged with this EIS shows the total parking supply of 195 car spaces. The on-site car parking is complimented by the creation of 28 bicycle and 16 motorcycle spaces, all of which are currently under construction.

Construction Access

TTW have undertaken a review of the likely construction traffic for the project with an anticipated 30 vehicular trips associated with construction staff during each AM and PM peak periods.

TTM have identified the following recommendation associated with construction access:

- *A Construction Traffic Management Plan (CTMP) will be prepared prior to commencement of works. Provision for pedestrian and cyclist access will be made as part of the CTMP.*
- *As part of the car parking provision strategy for construction workers the following measures are therefore proposed:*
    - *Endeavour should be made to provide maximum parking on site for construction workers during the construction period.*
    - *High level incentive among construction workers to utilise carpooling – this could be included as part of the contract to selected builder.*

Transport Management Strategy

Section 5 of the report prepared by TTW sets out a transport management strategy for the development, which draws on key transport objectives of a number of key planning documents (including the NSW State Plan).

To address the objectives in these documents and as a part of the proposed redevelopment plan for the Hospital, we refer to the following extract from Section 6 of the TTW report:

It is vital to take into account the future level of population increase within the region and to provide solutions that are complementary to State, regional and local transport plans.

Therefore, the following could be considered in order to achieve the desired goals and targets:

- *Preparation of Go 2 Work Travel Plan for the Hospital*
- *Preparation of Transport Access Guide for the Hospital*
- *Provision of incentive schemes among staff*
- *Negotiation with bus agencies for provision of frequent bus services with faster and more direct destinations e.g. shuttle bus between city centre/shopping areas and the Hospital.*
- *Provision of better, safer (in terms of route alignment as well as security) bicycle and pedestrian routes. This measure should be devised in consultation with Council and other authorities.*
- *Promotion of the merits of walking and bicycle riding in order to encourage staff living near the Hospital to leave their cars at home.*
- Provision of bicycle parking within the campus.

Recommended Mitigation Measures

The recommendations of the report prepared by TTW (**Attachment 3**) in relation to transport management are to be implemented, including, but not limited to, the preparation of a Construction Traffic Control Plan prior to the commencement of works. A Travel Plan and Transport Access Guide for the hospital will be prepared prior to occupation of the proposed BSCH.

5.4 Ecologically Sustainable Development (SEAR 6)

The SEAR's contain the following consideration requirements.

- Detail how ESD principles (as defined in clause 7(4) of Schedule 2 of the Environmental Planning and Assessment Regulation 2000) will be incorporated in the design, construction and ongoing operation phases of the development.
- Demonstrate that the development has been assessed against a suitably accredited rating scheme to meet industry best practice.
- Include a description of the measures that would be implemented to minimise consumption of resources, water (including water sensitive urban design) and energy.

Consideration

The principles of ESD are defined by Clause 7(4) of Schedule 2 of the EP&A Regulation:

*"**Schedule 2 Environmental impact statements***
7 Content of environmental impact statement

(4) The principles of ecologically sustainable development are as follows:

*(a) the **precautionary principle**, namely, 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. In the application of the precautionary principle, public and private decisions should be guided by:*

(i) careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment, and

(ii) an assessment of the risk-weighted consequences of various options,

*(b) the **precautionary principle**, namely, 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. In the application of the precautionary principle, public and private decisions should be guided by:*

(iii) careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment, and

(iv) an assessment of the risk-weighted consequences of various options,

*(c) **inter-generational equity**, namely, that the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations,*

(d) ***conservation of biological diversity and ecological integrity****, namely, that conservation of biological diversity and ecological integrity should be a fundamental consideration,*

(e) ***improved valuation, pricing and incentive mechanisms****, namely, that environmental factors should be included in the valuation of assets and services, such as:*

(i) polluter pays, that is, those who generate pollution and waste should bear the cost of containment, avoidance or abatement,

(ii) the users of goods and services should pay prices based on the full life cycle of costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of any waste,

(iii) environmental goals, having been established, 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."

The Precautionary Principle has been applied to the proposal through the careful evaluation of a range of options for the delivery of this critical piece of public health infrastructure. The proposal will not result in serious and irreversible damage to the environment and is therefore considered to comply with the Precautionary Principle.

AECOM has completed an ESD strategy report for the BSCH project. The strategies proposed by AECOM are designed to meet the regulatory requirements of the Building Code of Australia and Byron Shire Council.

The specific policy targets on which the strategies are based on include:

- Building Code of Australia Part F;
- Building Code of Australia Part J;
- Byron Shire DCP 2014;
- Byron Shire LEP 2014; and
- NSW Director Generals Requirements.

The strategies that have been incorporated into the design meet these various statutory performance targets.

The design has also been guided by the following voluntary sustainable design guidelines:

- NSW Health Sustainability Strategy; and
- The Green Building Council of Australia's Green Star Healthcare v1 rating tool.

The proposed BSCH building features a number of sustainability initiatives to reduce the environmental impacts of the development, enhance economic and social benefits and offer high quality indoor and outdoor amenity to building users. The following are a series of extracts from the ESD statement prepared by AECOM:

Architectural Design

- *A series of narrow, east-west oriented buildings provides:*
  - *opportunities for natural ventilation;*
  - *deep penetration of daylight into the floor plate;*
  - *large areas with access to external views;*
  - *outdoor spaces that can be used as courtyards with passive surveillance;*
  - *minimal west-facing façade area and summer afternoon heat loads; and*
  - *ideal northern aspect for rooftop solar power/hot water generation.*
- *Building form is sympathetic to the site, minimising requirements for excavation.*

Water

- *Efficient fittings and fixtures will be provided, including dual flush toilets.*

Energy

- *Central heating and cooling systems will provide energy efficient space conditioning and heat recovery utilised where possible from waste heat.*
- *Economy cycle will be used when outside conditions are favourable (100% outside air) and mixed mode air conditioning will be implemented in the LDRPs and Birthing suite. Natural ventilation is not considered viable for spaces such as Acute Wards and areas in which security is of higher importance.*
- *A large amount of floor space (ie. the middle 'finger' of the 3 floor plate fingers) will be powered off between 6pm and 7am to conserve energy.*
- *Appropriate zoning control for HVAC systems to condition spaces only when required.*
- *Variable speed drives will be considered for fans, pumps and air handling plant.*
- *Building management and control system to optimise performance in operation.*
- *Daylight dimming connected to daylight sensors to harvest natural light where possible.*
- *Energy efficient light fittings with high levels of control and motion detection at night.*

Materials

- *Consideration will be given to locally sourced, modular and pre-fabricated building materials.*
- *Construction materials sourced from environmentally and socially responsible suppliers will be investigated.*
- *Operational procurement policy to consider materials sourced locally, with recycled content and/or low environmental impacts.*

Economic Sustainability

- *Reduced length of patient stay due to increased amenity, particularly access to daylight and high quality external views.*
- *Increased staff productivity due to increased flexibility of facilities.*
- *Increase in local employment opportunities.*
- *Increased flexibility due to flow separation of consults from workspaces.*
- *Future proofing through including of expansion zones and consideration of climate change risks.*
- *Increased flexibility due to functional design and flows throughout the building. Namely separation of consultation rooms and staff workstation enables increased utilisation of clinical areas.*

Social Sustainability

- *Improved accessibility for patients and carers due to integrated services on one site.*
- *Increase in the equitable access to a range of public health services, including ambulatory, community health, community mental health, drug and alcohol and emergency care.*
- *Reduced distress and disability associated with illness and having to travel long distances to other hospitals to access specialist services.*
- *Enhanced social cohesion due to improved accessibility of health services in regional and rural areas and in achieving the long standing community goal of a new purpose built hospital that will meet the health service needs of the Byron Shire now and in the future.*
- *Improved facilities supporting nurse, doctor and allied health training in partnership with universities.*
- *Reduced waiting time for and greater access to medical imaging, expanding scope (e.g. OPG, CT) so patients are transferred less often.*
- *The development is encouraging the provision of safe access to cyclists as well as new provision of public transport access.*
- *Increased number of access points will improve overall accessibility and reduce walking distances.*

AECOM has also undertaken an assessment of the BSCH proposal against the following voluntary sustainable design guidelines:

- NSW Health Sustainability Strategy; and
- The Green Building Council of Australia's Green Star Healthcare v1 rating tool.

The review completed by AECOM demonstrate the BSCH project is capable of achieving greater than minimum compliance requirements and has the potential to achieve a 4 Star Green Star rating under the Green Building Council of Australia's Green Star Healthcare v1 rating tool.

In respect to integrated water management, TFA has completed a management plan for the BSCH project as contained within **Attachment 11** of this EIS. This Integrated Water Management Plan combines the proposal scheme designs for the water supply, sewage management and stormwater management.

TFA has outlined the following overview for the BSCH Integrated Water Management Plan.

The proposed water supply system involves provision of on-site storage tanks for 'drinking water' supply and fire-fighting purposes. The tanks will be connected to the supply authority water main in Ewingsdale Road. Pump assemblies will supply water to the development from the storage tanks.

An alternative water supply utilising recycled stormwater is not considered appropriate for any internal uses in the proposed hospital due to the sensitivity of the development to public health concerns.

The proposed sewage management system involves provision of a gravity sewer lines within the site that will connect to Councils sewer reticulation system by either: gravity connection to Council's future sewer system along Ewingsdale Road; or by construction of an on-site sewage pump station which will pump to Council's system.

The proposed stormwater management system involves stormwater capture and conveyance via pipe, swales, and overland flow to an on-site detention basin in the eastern portion of the site. The stormwater management system will capture runoff from roofs, roadways, car parks, hardstand areas and some adjoining pervious areas. The basin will provide sufficient detention of flows to maintain pre-development flow rates in the release to the creek. The stormwater management system will incorporate treatment measures as required to achieve stormwater quality objectives of maintaining or improving pre-development stormwater quality. The treatment measures will incorporate Water Sensitive Urban Design principles.

On review of the integrated water management plan by TFA and ESD report by AECOM, the proposal is considered to be consistent with principles of ESD.

In regard to ESD initiatives associated with the construction works TTW (**Attachment 4**) has identified sustainable design measures for the following components:

- **Concrete**: To address the GBCA Mat-4 Concrete Credit to reduce greenhouse gases, opportunities are available to reduce the Portland

cement content, use of reclaimed water for mix water and utilisation of slag aggregates as a proportion of the course aggregate.

- **Steel**: To address the GBCA Mat-5 Steel Credit review whether or not the majority of steel used is in slab reinforcing or structural steel.
- **Excavated Material**: There is potential to reuse excavated site material as engineered fill and backfill. The benefit of reusing this material would reduce the amount of material sent to landfill.
- **Stormwater Reuse**: Due to the potential for contaminants to enter the recycled stormwater network and the sensitivity of the development, being a public hospital, rainwater reuse will not be incorporated in to the building

Recommended Mitigation Measures

Incorporate all of the ESD principles and measures set out in the ESD Strategy Statement by AECOM (**Attachment 16), and** the Integrated Water Management Plan prepared by Tim Fitzroy & Associates (**Attachment 11**) in the detailed design documentation of the development.

5.5 Bushfire (SEAR 7)

The SEAR's contain the following consideration requirements.

- *Provide a bushfire hazard assessment that addresses the requirements of clause 44 of the Rural Fires Regulation 2013 and the requirements for Special Fire Protection Purpose Development as detailed in Planning for Bush Fire Protection 2006 guidelines.*

Consideration

A bushfire hazard assessment has been completed by Bushfire Certifiers as contained within **Attachment 13** of this EIS to address SEAR's 7.

Although the BSCH site is not identified as being bushfire prone within the gazetted bushfire prone mapping held by Byron Shire Council, Bushfire Certifiers have identified the development is classified as a *Special Fire Protection Purpose*

(SFPP) development as defined by Planning for Bushfire Protection 2006 (PBP2006) with an assessment completed of the items contained within Clause 44 of the Rural Fires Regulation 2013.

The assessment incorporates a specific exceptional circumstance section addressing future adjoining development land uses and outlines the reasonableness not to provide a Bushfire Attack Level (BAL) to the proposed BSCH buildings on this basis.

Based on the assessment by Bushfire Certifiers, the following recommendations are provided and capable of being implemented within the BSCH project:

1. *The proposed hospital would require construction to BAL-12.5 AS-3959 2009 + Appendix 3 Addendum PBP 2006; alternatively*

   No level of construction required with concurrence from the NSW RFS that, with the proposed future uses and current commercial agricultural uses to the north, there is strong likelihood in the near future of managed land within 50m of the proposed hospital.

2. *At the commencement of construction and in perpetuity the property surrounding the hospital for a distance of 50 metres or to the property boundary, whichever the lesser is to be maintained as an inner protection area (IPA) as outlined within section 4.1.3 and Appendix 5 of Planning for Bush Fire Protection 2006 and the NSW Rural Fire Service's document Standards for Asset Protection Zones. It is noted that APZs must be contained wholly within the subject property boundary although the managed public road reserve may be included as part of an APZ.*

3. *Water, gas and electricity are to comply with section 4.2.7 Planning for Bushfire Protection 2006. A fire hydrant system complying with AS 2419.1-2005 will satisfy the water requirements relating to s4.2.7 PBP2006.*

4. *The internal property access road is to comply with section 4.2.7 (Internal Roads) Planning for Bushfire Protection 2006 with exception to the perimeter road being required to comply with PBP2006 Table 4.1 rather than 8m width for the entirety of the access road. It is noted that at the curves, Table 4.1 will supersede the requirement of 6m between inner and outer curves if it requires a greater width.*

5. *An emergency evacuation procedure and detailed plans of all Emergency Assembly Areas (onsite and offsite) are to be prepared in accordance with the RFS Guidelines for the Preparation of Emergency/Evacuation Plan.*

6. *Landscaping is to be undertaken in accordance Appendix 5 of Planning for Bushfire Protection 2006 and managed and maintained in perpetuity.*

Recommended Mitigation Measures

The Bushfire Assessment prepared by Bushfire Certifiers contains recommendations within the report which deliver general compliance with Chapter 4 and the aim and objectives of Planning for Bushfire Protection 2006. Accordingly, the project is able to proceed based on the recommendations in the report being adopted. To this end, these recommendations are included as mitigation measures in **Section 7** of this EIS.

5.6 Noise & Vibration (SEAR 8)

The SEAR's contain the following consideration requirements

- *Identify and provide a quantitative assessment of the main noise and vibration generating sources during construction and operation. Outline measures to minimise and mitigate the potential noise impacts on surrounding occupiers of land.*

Consideration

AECOM have completed an environmental noise and vibration impact assessment for the proposed BSCH. The assessment incorporated environmental noise monitoring at two (2) locations in the vicinity of the development site.

The scope of this environmental noise and vibration impact assessment is to:

- Establish the existing background noise levels in the vicinity of the BSCH;
- Establish the environmental noise and vibration limits that would apply during the operational and construction phases from the proposed development;
- Predict environmental noise levels at nearby residential receivers due to the operation and the construction of the development;
- Predict noise levels from additional traffic generated by the operation and construction of the development;
- Review any sources of vibration that may have effects on buildings and human comfort; and

- Provide mitigation measures where necessary to reduce noise emission and vibration impacts from the development to comply with established noise and vibration limits.

AECOM in completing the assessment addressed the following key documents:

- Environment Protection Authority (EPA) NSW Industrial Noise Policy (INP), 2000;
- Department of Environment, Climate Change and Water (DECCW) NSW Road Noise Policy (RNP), 2011;
- Department of Environment and Climate Change (DECC) NSW Interim Construction Noise Guideline (ICNG), 2009;
- Department of Planning Development near Rail Corridors and Busy Roads – Interim Guideline, 2008;
- Department of Environment and Conservation (DEC) Assessing Vibration: A technical guideline (AVATG), 2006.

Noise emission from the proposed development has been assessed. The environmental noise emission for the development is based upon the requirements of the SEAR's, EPA, and the measured ambient noise levels at the site. Details of the specific elements of the project assessed by AECOM are provided below.

Construction Noise

The results show that exceedances of varying magnitude are expected at all residential receivers during all construction stages. Construction noise levels are less than the 'highly noise affected' level of 75 dB(A) at all receivers. Predicted noise levels will comply with the construction noise levels at all commercial receivers.

It should be noted that the results above represent the worst case 15 minute period noise, which assumes all equipment operating at the worst-case location within the development site. Although this is possible, it is unlikely to happen for significant periods of time as construction equipment is generally scattered and construction methodologies involving the equipment are generally sequential. In addition, as the construction scenario evolves the structures on the site will provide shielding for construction equipment. However, the available construction information is not currently detailed enough to allow accurate modelling of this.

When construction staging and methodologies are further developed it is recommended that the Building Contractor determine and adopt all feasible and reasonable mitigation measures to reduce noise and vibration impacts and handle residents' complaints in an efficient and effective manner. Indicative mitigation measures, based on preliminary construction staging and methodologies, have been detailed in section 5.5.

AECOM have identified mitigation measures inclusive of the preparation of a Construction Noise and Vibration Management Plan, community consultation and nomination of construction hours and works scheduling.

Construction Traffic

The assessment of potential construction traffic noise generation from the BSCH development by AECOM concludes:

The amount of traffic generated by the construction of the BSCH has not been determined as yet. However, the number of additional truck movements which could occur and still meet the RNP criteria are presented in Table 22. Only day time volumes have been presented as there are no works proposed outside of standard construction hours.

It is recommended that heavy vehicles use an entry/exit point located on Ewingsdale Road as the main route in and out of the site. Main corridors should be used where available. Additional mitigation measures are provided in Section 5.5.

Construction Vibration

The assessment of potential construction vibration from the BSCH development by AECOM concludes:

Vibration intensive works are proposed to occur as part of the construction of the BSCH. The works may include the use of vibratory rollers. Typical safe working distances for different ratings of vibratory rollers are provided below in Table 22. These safe working distances are based upon the criteria presented in section 3.4.2.

Maps showing the distances of houses away from the alignments are provided within Appendix D. The maps have been provided to indicate where vibration intensive works are likely to result in compliance with the appropriate criteria at receiver locations. The maps are intended to be used as a tool to assist construction planning. Where elevated vibration levels may occur at a building, alternative methods of construction should be used.

Table 22 Recommended safe working distances for vibration intensive plant

Plant	Rating/Description	Minimum Safe Working Distance (m)		
		Cosmetic Damage		Human Response
		Residential	Industrial	
Vibratory roller	< 50 kN (Typically 1-2t)	5	2	15-20
	< 100 kN (Typically 2-4t)	6	2	20
	< 200 kN (Typically 4-6t)	12	4	40
	< 300 kN (Typically 7-13t)	15	5	100
	> 300 kN (Typically 13-18t)	20	6	100
	> 300 kN (> 18 t)	25	8	100

For this development, the nearest residential receiver is located 37 m away. This setback could be within the buffer distances for human comfort for vibratory rollers, depending on the rating of the vibratory roller.

Appendix C should be used to manage and avoid any adverse impacts which may occur due to the use of vibratory equipment.

The assessment of potential operating mechanical noise generation from the BSCH development by AECOM concludes:

While the BSCH is in its normal operation, the air-handling plants and cooling towers will be operating. AECOM anticipates that noise generated by other minor plant in addition to the above will not contribute further to the noise emission.

As all of the louvre openings for the three plant rooms are either shielded by the retaining walls or the hospital building, noise emission impacts from the AHU plant rooms and chiller plants to the nearby residences on Parkway Drive will be minimal. However, the cooling tower compound on the rooftop of the maternity ward is exposed and will be the dominant noise contributor at the residences.

Based on the distance of 130 m between the cooling tower compound and the nearest residential receiver, the resultant noise level at the NSR will be 47 dB(A) and does not comply with the INP noise criteria presented in section 3.3.1. AECOM advises that by introducing a solid noise barrier which extends 400 mm above the top of the cooling towers on the southern side of the cooling tower compound, the resultant noise level at the NSR can be reduced to 38 dB(A) and comply with the relevant environmental noise emission criteria. It should be noted that this assumes all plant is operating at 100% capacity, which is unlikely during the night-time period, therefore this assessment is considered conservative,

Although not necessary for the noise emission impact at the residences, noise breakout from the plant rooms will need to be controlled to minimise negative impact within adjacent spaces of the hospital. Plant room noise breakout treatment includes the use of acoustic louvres, plant room internal wall absorptive linings, and typical treatment to discharges such as duct lining and/or attenuators which will be incorporated during the detailed design phase of the project if required.

AECOM recommends that the final detailed designs for all mechanical equipment be assessed and approved by a suitably qualified acoustic consultant at the detailed design phase of the project.

It can be seen that noise emissions associated with the operation of the proposed BSCH is likely to comply with the established INP operational criteria.

Traffic Noise

The assessment of potential traffic noise generation from the BSCH development by AECOM concludes:

Based on information provided in the Traffic study by Taylor Thomson Whitting (TTW) for the proposed BSCH development, AECOM understands that an anticipated additional 120 vehicle trips will be generated during the peak hour. Previous traffic count information indicated that the average daily traffic (ADT) is 16,480 (2012 data) and 16,159 (2010 data) per day, and the peak hour traffic flow on Ewingsdale Road is approximately 1,330 (11am-12noon, 2010 data) vehicles per hour.

The 120 vehicle trips increase due to the proposed development represents a 10% increase in the total traffic movement. This can be considered an insignificant increase in traffic movement and is not expected to adversely impact the acoustic amenity of nearby residential premises and would comply with RNP requirements.

Car Park Noise

The assessment of potential car park noise generation from the BSCH development has been assessed by AECOM as provided below:

AECOM has undertaken calculations of the likely noise level at the nearest residential receiver resulting from activities associated with the use of the car park at BSCH. Typical car park associated activities include car accelerating, engine starts, car door closing and patrons talking. Calculations indicate that the worst case scenario resultant noise level at the rear boundary of nearest residential receiver on Parkway Drive from simultaneous activities is approximately 43 dB(A) during the peak hour. AECOM advises that this noise level complies with the daytime and evening criteria. It is likely that car movements will be at least 50% lower during the night-time period and therefore the likely noise level from car parking activities will be up to 40 dB(A).

The calculations have been based on the nearest car park which is the 30 staff car parking on the southern end of the site. The majority of the car parks are located further away from the nearest residential receiver. Therefore this assessment is considered conservative, however it is recommended that following good practices are implemented:

1) *Introduction of low speed limit for traffic within the car park;*
2) *Management of the car parking locations such that the parking bays furthest away from the nearest residential receivers are filled first before occupying the parking bays closest to the residences; and*
3) *Installation of signage around the car park which promotes "minimising noise and respecting the amenities of neighbours", "no car door slamming", etc.*

Traffic Noise Intrusion

Internal noise levels due to traffic noise must comply with the State Environmental Planning Policy (Infrastructure) 2007 and its guideline document 'Development near Rail Corridors and Busy Roads – Interim Guidelines'. The SEPP 2007 criteria for road traffic noise intrusion are 35 dB(A) for hospital wards and 45 dB(A) for other noise sensitive areas within the hospital.

The assessment of potential traffic noise intrusion to the BSCH development has been completed by AECOM concludes:

Based on the unattended and attended noise measurements results, the northern façade facing Ewingsdale Road will be the most critical façade, particularly for the bedrooms in the In-Patient Unit (IPU). Therefore, the northern façade of the building fronting Ewingsdale Road shall have a minimum R_w (weighted sound reduction index) of 35.

For external glazing, a single layer of 10.38 mm laminated glass will provide the R_w 35 rating required. Standard glazing construction will be sufficient for all other façades.

The roof and ceiling construction will also be required to be complementary of the acoustic performance of the façade to ensure the acoustic integrity of the overall building envelope system.

This acoustic assessment indicates that standard noise amelioration strategies are required for the project and will sufficiently treat noise emission to minimise possible acoustic impacts on neighbouring areas.

Predicted traffic noise increases generally comply with the applicable criteria outlined by the Road Noise Policy.

Environmental noise emission from the site can be controlled at all neighbouring residential premises by standard noise control techniques.

The recommended glazing system will adequately attenuate road traffic noise levels to meet the internal noise criteria detailed in SEPP (Infrastructure) 2007.

Based upon the assessment documentation there are no undue acoustic impacts and applicable criteria will be complied with at the nearest sensitive receivers.

The impact of construction noise and vibration has been assessed. It is likely that construction noise management levels will be exceeded at times and to address this issue, mitigation measures have been presented. Mitigation measures will be reviewed and refined at the detailed design and construction stage.

Recommended Mitigation Measures

The Noise and Vibration Impact Assessment prepared by AECOM concludes that there will be no adverse construction or operational noise and vibration impact, providing the recommendation of the report are adopted. To this end, these recommendations are included as mitigation measures in **Section 7** of this EIS.

5.7 Aboriginal Heritage (SEAR 9)

The SEAR's contain the following consideration requirements

- *Address aboriginal heritage in accordance with the Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation (DEC 2005) and Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010.*

Consideration

Advitech Environmental (Advitech Pty Limited) has undertaken a desktop heritage assessment for the BSCH site. The assessment has had specific regard to the following matter.

1. **AHIMS Register**: A Basic AHIMS search indicated that two Aboriginal objects are located within one kilometre of the subject site. No objects are located within 200 metres of the site.

2. **Byron Shire Local Environmental Plan**: A search of the Byron Shire Local Environmental Plan (BLEP) (2014) was undertaken on 16 July, 2014. Two items are located within 300 metres of the project site (see **Plate 6**):

    - Higgins House (including detached kitchen wing and mature Moreton Bay Fig trees) at Lot 101 DP 1140936 on the parcel to the immediate east of the project site (Item I107);
    - St Columbus Church group (including church, hall and former school site and trees) at Lot 1 DP 124387, Lot 1 DP 134548 and Lot 377 DP 47409 at 300 metres to the immediate west of the site (Item I112);

Recommended Mitigation Measures

Implementation of the proposed recommendations provided within the Advitech Desktop Heritage Assessment (**Attachment 7**). In this regard it is acknowledged Advitech Environmental has already been commissioned to complete an assessment address Aboriginal heritage in accordance with the Aboriginal Cultural Heritage Impact Assessment and Community Consultation (DEC, 2005) and the Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW, 2010). This assessment will be completed prior to the commencement of works under this EIS.

5.8 Sediment, Erosion & Dust Controls (Construction Excavation) (SEAR 10)

The SEAR's contain the following consideration requirements:

Detail measures and procedures to minimise and manage the generation and off-site transmission of sediment, dust and fine particles.

Relevant Policies and Guidelines:

- *Managing Urban Stormwater – Soils & Construction Volume 1 2004 (Landcom)*
- *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (EPA)"*

Consideration

Erosion and sediment control measures will be undertaken for the excavation and construction works required for this project. These measures will be undertaken generally in accordance with "The Blue Book".

During construction, erosion and sediment control measures will be put in place to prevent or ensure any site stormwater run-off is cleaned prior to discharge. TTW have recommended dust suppression, construction vehicle inspection and cleaning systems be in place during the civil works period.

Erosion control and sediment collection devices will need to be modified and adjusted to suit building work as it progresses.

A preliminary Erosion and Sedimentation Control Plan is provided within appendix 2 of the TTW report at **Attachment 4** of this EIS.

Recommended Mitigation Measures

A comprehensive soil and sedimentation plan shall be completed as part of the detailed design documentation generally in accordance with the preliminary plan prepared by TTW at **Attachment 4.**

5.9 Utilities (SEAR 11)

The SEAR's contain the following consideration requirements

- *In consultation with relevant agencies, the EIS shall address the existing capacity and any augmentation requirements of the development for the provision of utilities including staging of infrastructure through the preparation of an Infrastructure Management Plan.*
- *Prepare an Integrated Water Management Plan detailing any proposed alternative water supply, proposed end users of potable and non-potable water, demonstration of water sensitive urban design and water conservation measures.*

An assessment of the utility requirements for the BSCH inclusive of augmentation requirements for the provision of utilities for the development given the Greenfield location for the project has been undertaken by the project team. The findings of the assessments are outlined below.

Water

Donnelley Simpson Cleary propose to service the BSCH with a new 100mm water connection to the existing 150mm authority water main in Ewingsdale Road adjacent to the existing ambulance building. This will supply water to the hydraulic and fire services for the new hospital campus and will allow for future expansion.

The hospital will be supplied from the existing 150mm authority water main in Ewingsdale Road via a water meter and dual back flow prevention assembly

located at the boundary adjacent to the main entry. The metered supply then fills the 100,000 litre storage tank and pressure pump assembly where the water supply serves the building at a constant pressure.

Refer to the services statement in the Hydraulic and Fire Service report prepared by Donnelley Simpson Cleary at **Attachment 18** for confirmation of the above.

Sewer

Donnelley Simpson Cleary confirm a network of main sewer drainage lines will be provided external to each finger of the hospital to serve all of the wet area requirements. The sewer drainage system will gravitate to the low point of the site via manholes and inspection openings for easy maintenance.

The majority of the inground drainage system will be located external to the building to ensure minimal hospital disruption should a blockage occur.

Sewer drainage system will connect to either an authority capped junction provided adjacent to the low point of the site in Ewingsdale Road or an internal blackwater treatment plant located adjacent to the existing ambulance building located at the low point of the site.

Recommended Mitigation Measures

Compliance with the requirements of the relevant public authorities in regard to the connection to, relocation and/or adjustment of services affected by the construction of the proposed development is included as a recommendation of this EIS.

Furthermore, the recommendations set out in the TTW Civil Design Report (**Attachment 4**), Donnelley Simpson Cleary Hydraulic and Fire Services Report (**Attachment 19**) and the Integrated Water Management plan prepared by Tim Fitzroy & Associates (**Attachment 11**) are to be employed within the detailed design documentation and ongoing operation of the BSCH development.

5.10 Contributions (SEAR 12)

The SEAR's contain the following consideration requirements:

- *Address any Section 94 Contributions Plan and Section 64 water and sewer developer service charges and/or provide details of any Voluntary Planning Agreement.*

Consideration

Reference is made to Planning Circular D6 *Crown Development Applications* and *Conditions of Consent* (revised issue September 1995) which sets out procedures and advice to Crown agencies for the lodgement and determination of Crown Development Applications (DA).

The Circular includes advice on the policy relating to conditions of consent appropriate for Crown DAs, particularly Section 94 conditions on Crown activities provided with an underlying philosophy of essential community service.
For the provision of Health Services, such as the BSCH development, Council may only seek payment of contributions for the following off-site works as a condition of consent:

- Drainage;
- Upgrading of local roads and local traffic management off-site.

Reference is also made to the *Byron Shire Developer Contribution Plan 2012* and specifically the provisions within Section 2.16 relating to public benefit exemptions. Clause 2.16 states in part:

2.16 Other Public Benefit Exemptions from the Contributions Plan

It is not always possible to identify in advance all developments which may be able to make a meritorious case for an exemption from the obligation to pay some or all of the applicable contributions. On the principle of ensuring public accountability, transparency and equity between all developers, this section specifies the limited opportunity for making a merit-based case for exemption.

Council may formally consider, on the individual merits, a case for exempting the following types of development from the levying of contributions:

- *Developments which provide a distinct community benefit on a not-for-profit basis including but not necessarily limited to: accommodation associated with fire stations, police stations or police shop fronts, ambulance stations, rescue services, State Emergency Service (SES) and Rural Fire Services (RFS) operational bases and the like. This provision is not intended to include corporate headquarters of any type; and*
- *Development by or for non-profit or cooperative organisations which provide a distinct community benefit including but not limited to: the provision of childcare services (especially for under-2s and/or special needs children) including kindergartens and pre-schools; outreach services, community services or the like, on a cooperative or not-for-profit basis.*

The proposed BSCH project falls within the provisions of Clause 2.16 of the *Byron Shire Developer Contribution Plan* 2012 given the project provides a clear and distinctive community benefit through the improved accessibility to contemporary health service facility for the Byron Shire.

Recommended Mitigation Measures

For the reasons set out above, we recommend that no Section 94 or Section 64 contributions be imposed for the development as it will contribute to providing a significant social and health benefit to the community.

5.11 Staging (SEAR 13)

The SEAR's contain the following consideration requirements:

- *Details regarding the staging of the proposed development.*

Consideration

The BSCH project will be completed as a single construction project with no staging incorporated into this application. The project design does however provide scope should demand necessitate the growth of the BSCH.

Recommended Mitigation Measures

No mitigation measures are applicable in this instance.

5.12 Drainage (SEAR 14)

The SEAR's contain the following consideration requirements:

- *Provide details of the drainage associated with the proposal, including stormwater, drainage infrastructure and OSD, which shall be designed in consultation with council and must avoid any adverse impacts on downstream properties.*

Consideration

TTW has prepared schematic drainage design with specific regard to the Byron Shire Council Development Control Plan, Northern Rivers Local Government Handbook of Stormwater Drainage Design, AS3500, and Australian Rainfall and Runoff to address the requirements of SEAR's 14.

Excerpts from the TTW Civil Design Report (**Attachment 4**) demonstrate the proposed stormwater management for the BSCH project

Stormwater

The proposed development stormwater will be picked up and conveyed via pipe, swales, and overland flow to the OSD basin. A larger OSD basin will replace the existing retention/detention dam constructed for the ambulance station. The OSD basin will maintain the discharge point at the Simpsons' Creek tributary.

All proposed roofs will collect stormwater via gutters and downpipes and be connected to the in-ground system.

Stormwater pipes and pits will be in accordance with AS3500 _ National Plumbing and Drainage Code and in accordance with Byron Shire Council & Northern River's Stormwater Drainage management guidelines.

A stormwater concept plan is shown in ***Appendix 1.***

On-site Stormwater Detention

In accordance with Byron Shire Council Onsite Detention Policy and Council's Draft DCP, OSD will be required for the development. It is required post development flows are to be reduced to the pre development flow rates for storms including the 5 year ARI up to the 100 year ARI.

Due to the natural fall of the land – west to east, the detention basin is proposed to be on the eastern boundary, reconstructing the existing retention/detention dam.

Initial basin estimates using DRAINS stormwater modelling program indicates that 900m³ OSD volume is required with a footprint of about 1,000m².

As stormwater is being retained and released at pre-development rate in accordance with Council's requirements, there will be no increase in stormwater impact on downstream properties and this includes flows in Simpsons' Creek tributary.

Recommended Mitigation Measures

The recommendations of the civil design report as they relate to the management of the drainage network for the BSCH project prepared by TTW at **Attachment 4** are to be implemented within the detailed design documentation

5.13 Flooding (SEAR 15)

The SEAR's contain the following consideration requirements

- *An assessment of any flood risk on site in consideration of any relevant provisions of the NSW Floodplain Development Manual (2005) including the potential effects of climate change, sea level rise and an increase in rainfall intensity*

Consideration

TTW has reviewed the potential flood inundation of the BSCH site within their Civil Design Report contained at **Attachment 4**. Section 6.1 of the TTW report provides the following flood impact assessment.

The Byron Hospital site is not known to be located within a flood area. However, the Simpsons' Creek Tributary has been previously assessed (Black Earth Environmental Services, 2010) to have a 1% AEP flood height of RL 15.00.

The hospital is required to sit above the 1% AEP flood height plus the required freeboard. The freeboard as required by Council is 0.5m above the 1% AEP.

Recommended Mitigation Measures

As the site is not known to be flood prone, no recommended mitigation measures are identified for the BSCH project.

5.14 Waste (SEAR 16)

The SEAR's contain the following consideration requirements.

- *Identify, quantify and classify the likely waste streams to be generated during construction and operation and describe the measures to be implemented to manage, reuse, recycle and safely dispose of this waste. Identify appropriate servicing arrangements (including but not limited to, waste management, loading zones, mechanical plant) for the site.*

Consideration

Preliminary assessment of the construction and operational waste management for the BSCH has been completed by TFA for the BSCH project. The assessment is provided within **Attachment 9** of this EIS.

Construction Waste

The waste management assessment by TFA and sets out the likely waste streams to be generated during construction and the associated actions to be incorporated into the final construction waste management plan, which will be required to the completed by the selected contractor. These measures are set out below

- *The relatively large scale of the development will involve detailed materials estimates that will be incorporated into a purchasing policy to minimise purchase of excess quantities;*
- *potential reuse/recycling opportunities of excess construction materials will be identified and pursued;*
- *prefabricated components will be utilised to provide efficiencies in construction and minimise waste;*
- *a site construction plan and erosion and sediment control plan will nominate storage areas of materials for use, recycling and disposal;*
- *contractors will be made aware of the legal requirements for disposing of waste and employ appropriate transport, processing and disposal of waste and recycling. All waste exported off site will be transported to a place that can lawfully be used as a waste facility. All records demonstrating lawful disposal of waste will be retained on site accessible for inspection by regulatory authorities such as Council, EPA or WorkCover NSW;*
- *separate collection bins or areas for the storage of residual waste will be utilised with clear 'signposting' of the purpose and content of the bins and storage areas;*
- *the earthworks planning and site erosion and sediment control plan (refer to Taylor Thomson Whitting, 2014) will minimise site disturbance and limit unnecessary excavation..– refer also to* ***Section 2.1.1***

Operational Waste

TFA in reviewing the operational waste requirements for the BSCH project have had due regard to the *NSW Health Waste Management Policy* which requires hospitals to incorporate the following plans and/or actions.

- Waste Management Policy, outlining the accountabilities and responsibilities of managers, employees and staff
- Waste Management Committee which will have the main function of implementing Waste Management Policy
- Waste Management Plan based on NSW Health *Waste Management Guidelines for Health Care Facilities - August 1998* to assist the facility to manage their waste streams correctly, efficiently and effectively. The guidelines aim to: minimise waste generation and environmental impacts of waste treatment/disposal; ensure compliance with legislative requirements; protect public health and safety; and provide a safer working environment.

Under NSW Health policy, the BSCH will have its own Waste Management Policy, Waste Management Committee, and Waste Management Plan based on NSW Health *Waste Management Guidelines for Health Care Facilities - August 1998.*

Recommended Mitigation Measures

The recommendations set out in the Tim Fitzroy & Associates report as contained within **Attachment 9** are to be adopted for the BSCH project. .

5.15 Hazards (SEAR 17)

The SEAR's contain the following consideration requirements:

- *The EIS shall include a description of the proposed storage, use and management of any hazardous materials and measures to be implemented to manage hazards and risks associated with the storage*

Consideration

Electromagnetic Field Assessment

The BSCH site is located adjacent to the electrical Zone Substation owned by Essential Energy. High Voltage (HV) cabling is distributed overhead along the northern boundary of the lot, while the western, and in parts southern boundaries have the HV and Low Voltage (LV) services laid underground.

Accordingly, an EMF assessment to identify potential impacts of the adjoining substation has been completed for the project by Farraday Pty Ltd. The assessment as provided within **Attachment 14** of this EIS was completed in order to satisfy the following matters for considerations.

- conduct power frequency electromagnetic field (EMF) measurements within Lot 54 to establish the levels of the electromagnetic interference (EMI) from the Zone Substation and associated overhead and underground cabling;
- extrapolate the levels of EMI at present, and considering future maximum demand;
- assess the measured and calculated EMI levels against limits set in the relevant standards and guidelines;
- recommend solutions in cases of non-compliance, including EMF mitigation and/or establishing of exclusion zones, if necessary.

Farrady Pty Ltd has had regard to the following documents in assessing the required levels of exposure for the BSCH:

- National Health & Medical Research Council (NH&MRC).
  Interim guidelines on limits of exposure to 50/60 Hz electric and magnetic fields.
- UK National Radiological Protection Board – Advisory Group on Non-Ionising Radiation (AGNIR).
  Power Frequency Electromagnetic Fields and the Risk of Cancer.
- Australian and New Zealand Standard AS/NZS™ 61000.6.1:2006
  Electromagnetic Compatibility (EMC) Generic standards – Immunity for residential, commercial and light-industrial environments.

- Australian and New Zealand Standard AS/NZS™ 61000.4.8:2012. *Electromagnetic compatibility (EMC) – Testing and measurement techniques - Power frequency magnetic field immunity test.*
- Australian/New Zealand Standard AS/NZS™ 3003:2011. *Electrical installations – Patient areas.*
- various MRI units installation manuals.

As evidenced within the Faraday Pty Ltd assessment, none of the magnetic field limits prescribed in the standards and guidelines referred to within the assessment were currently exceeded within the boundaries of the BSCH site.

Importantly, the assessment has had regard to potential for the recorded values from the substation to increase over time. In this respect, recorded levels may increase following the increased load on electrical system as well as expansion of services by Essential Energy.

Essential Energy forecasts the increase in power consumption to up to 68% (winter load) of the substation's total capacity by 2019.

Faraday Pty Ltd has stated there are presently no plans to increase the designed capacity of the substation, but the recorded magnetic field may still double after 2019. However, for the next five years, the magnetic field should not increase to levels exceeding its current values by 50%.

The EMF assessment has identified none of the magnetic field limits, as stated in the referenced standards and guidelines should be exceeded in the event of the substation being loaded to its maximum capacity. This is with the exception of faults or severely unbalanced phase loads.

Faraday Pty Ltd has concluded within their assessment the expected increases in the magnetic field level may impact only on the most sensitive hospital equipment due to the externally generated field will combine with the field generated by in-building electrical services.

Accordingly, Faraday Pty Ltd has recommended magnetic shielding may be required to some of the in-building electrical services to protect the highly

sensitive hospital equipment. The future shielding requirement, if any, can be determined based on the magnetic field calculations considering the field sources external and internal to the building.

Hazardous Materials Storage

TFA has identified the following hazardous materials will be stored on site for use in the operation of the BSCH as part of their SEPP 33 Hazardous Material assessment (**Attachment 10**):

- 4,500L LPG (Liquefied Petroleum Gas) storage tank which on average will distribute approximately 1,200 litres per day to the hospital;
- 50L of diesel fuel for the fire pumps to provide 4 hours of pumping;
- VIE 3,000 vessel of liquid oxygen (vacuum insulated evaporator vessel with a volume of approximately 2,460m^3);
- 2 x packs of 15 cylinders (400nman15) of medical oxygen gas for backup supply;
- 4 x G size cylinders of medical air;
- 2 x G size cylinders of medical nitrous oxide;
- 1 x G size cylinders of medical carbon dioxide.

Through TFA applying the SEPP 33 guidelines (Department of Planning, 2011), a risk screening method is established to determine whether a proposed development is potentially hazardous and thus affected by SEPP 33.

The screening method is based on broad estimates of the possible off-site effects or consequences from hazardous materials present on site. TFA have therefore had regard to the following potential risks:

- properties of the substance(s) being handled or stored;
- conditions of storage or use;
- quantities involved;
- location with respect to the site boundary; and
- surrounding land use.

TFA following the completion of the SEPP 33 assessment has concluded as follow:

A risk screening assessment of hazardous materials has been undertaken for the proposed development in accordance with Applying SEPP 33 guidelines (Department of Planning, 2011).

The hazardous materials associated with the development did not trigger the screening thresholds for quantities of materials nor transportation movements and therefore the development is not considered potentially hazardous and therefore SEPP 33 does not apply.

Nevertheless, the safety management regime for the materials should be based on observance of standard engineering codes and standards.

Recommended Mitigation Measures

The recommendation set out in the Faraday Pty Ltd report as contained within **Attachment 14** and TFA Hazardous Materials SEPP 33 Assessment contained within **Attachment 10** are to be employed within the detailed design and operation of the BSCH.

5.16 Flora & Fauna Report

Whilst the SEAR's identified the need for an arborist report, it was deemed prudent to review the BSCH site to identify potential biodiversity issues associated with the proposed project with Advitech Environmental undertaking a flora and fauna assessment which addressed the below listed legislative planning requirements, including:

- Effects on threatened species, populations and ecological communities, as listed under the Threatened Species Conservation Act 1995 (TSC Act), pursuant to section 5A of the Environmental Planning & Assessment Act 1979 (EPA Act);
- Likely impacts on nationally listed threatened species, populations and ecological communities, as listed under the Environment Protection and Biodiversity Conservation Act 1999; and
- Effects on potential Koala habitat pursuant to State Environmental Planning Policy 44 - Koala Habitat Protection (SEPP 44).

Advitech Environmental has outlined within their report as contained within **Attachment 17** the following key observations from the field survey of the BSCH site:

Flora

- According to local vegetation mapping (Byron Shire Council, 2012), no native vegetation communities are mapped within the site boundary (Figure 4). Recent aerial photographs and the field survey confirmed this to be the case with the majority of the site composed of exotic pasture with a small number of remnant and planted trees present in the southern portion of the site.
- The pasture across the site was largely composed of exotic grasses and herbs with Axonopus affinis (Carpet Grass), Stenotaphrum secundatum (Buffalo Grass), Asclepias curassavica (Redhead Cottonbush), Gomphocarpus physocarpus (Balloon Cotton Bush), Senecio madagascariensis (Fireweed) and Cirsium vulgare (Spear Thistle) common throughout.
- The proposed development footprint is situated almost entirely within an area of exotic pasture; clear of any trees, apart from the planted roadside vegetation adjacent to Ewingsdale Road (identified as Clump 2 within the tree schedule). No native trees will be removed as a result of the proposal.
- The site supports a small number of remnant rainforest trees; however, given the isolated nature of these trees and the cleared nature of the understorey, these areas are not considered to be representative of any Endangered Ecological Communities (EEC) listed under the TSC Act or EPBC Act.

Fauna

- Fauna habitat within the subject site is limited due to its mostly cleared state and limited connectivity to other habitat areas. Key habitat features of the subject site include:

- Grassland areas which provide foraging resources for a range ground foraging birds and terrestrial mammals;
- Limited ground cover in the south of the site which includes leaf litter and fallen timber may provide habitat and cover for a range of small terrestrial species;
- Remnant trees, including the large Moreton Bay Fig in the sites' southeast, may provide foraging habitat for a range of birds, mammals, reptiles and frogs. The trees on site may also provide potential nesting sites for nest building birds; and
- Wetland areas, associated with the retention basin for the Ambulance Station and the drainage line along the eastern boundary of the site, provide habitat for a range of frogs, reptiles and wetland birds.

- One threatened fauna species, Ephippiorhynchus asiaticus (Black-necked Stork), was observed flying over the site during field surveys. Two specimens were observed flying from the east, over the site towards the west. No preferred habitat is considered to be present within the site, although this species may occasionally forage within the Ambulance Station retention dam and the drainage line adjacent to the eastern boundary.

The impact assessment completed by Advitech Environmental for the BSCH development generated the following findings:

<u>Threatened Flora</u>

- No threatened flora species were found to be present despite targeted surveys. Potential habitat was considered to be present within regrowth or remnant patches of vegetation on site for 17 of the 50 species assessed.

- The habitat available on site was generally considered to be marginal given its disturbed nature. The proposal aims to preserve remnant vegetation with the proposed facility positioned almost entirely within exotic grassland. Accordingly, the proposed works are unlikely to have an adverse impact on the lifecycle of any of the above flora species.

Threatened Fauna

- One threatened fauna species, Ephippiorhynchus asiaticus (Black-necked Stork), was observed flying over the site during field surveys. Two specimens were observed flying from the east, over the site towards the west. Habitat for this species on site is very limited, with no nesting habitat present and only marginal foraging habitat present within the Ambulance Station retention dam and the drainage line adjacent to the eastern boundary. Habitat for this species will be retained within the scope of the proposal. Accordingly, the proposed works are unlikely to have an adverse impact on the lifecycle of this species.

Section 5A Assessment

- Given the limited habitat to be impacted, the proposed works are unlikely to have a significant impact on any threatened species, population or EEC such that a local population is placed at risk of extinction.

SEPP 44 Assessment

- The subject site does not contain any listed Koala feed trees and therefore, does not constitute 'core Koala habitat' or 'potential Koala habitat' as defined by SEPP 44.

EPBC Act 1999

- No nationally threatened species were recorded on site although habitat of varying quality was present for C. elegans, M. longiloba, D. jerseyana, D. johnsonii, E. williamsianus, E. floydii, E. muelleri subsp. bracteata, G. fragrantissima, S. hodgkinsoniae, S. moorei, F. praealta, H. pinnatifolia, M. tetraphylla, D. campbellii, E. radiatus, C. diopthalma coxeni, L discolour, A. phrygia, D. maculatus, P. cinereus, P. poliocephalus and C. dwyeri. Given the limited habitat available and to be impacted, the proposed works are unlikely to have a significant impact on any of these species and no further assessment under the provisions of the EPBC Act is warranted.

Advitech Environmental based on their flora and fauna assessment of the BSCH site having regard to the proposed development have concluded:

This assessment has concluded that the proposed development is unlikely to result in an unacceptable or significant impact on local flora and fauna habitat and, in particular, threatened species, populations or endangered ecological communities listed under the TSC Act 1995 and the EPBC 1999.

Recommended Mitigation Measures

The recommended mitigation measures contained within Section 5 of the flora and fauna assessment prepared by Advitech Environmental (**Attachment 17)** are contained in the mitigation measures in **Section 7** of this EIS.

5.17 Consultation

In accordance with the SEAR's for this project, consultation was undertaken with relevant public authorities, Council and the Northern NSW Local Health District. A summary of the consultation undertaken to-date with Council and Agencies is provided below, whilst the full communications register for the project is provided within **Attachment 22.** Further to this, several consultants have undertaken consultation with relevant parties as part of the preparation of their reports.

Table 5.1: Consultation Meetings

Meeting Attendees	Key Issues	Response
Roads & Maritime Service Byron Shire Council	• Traffic – RMS would not accept turning lane from Ewingsdale Road. • Parking – Address Council's DCP • Utilities (water/sewer) – Council to review connection to the West Byron STP which has capacity. Council requires indicative sewer loads for the Hospital. • Project Scope – Council seeking project scope and associated timeframes to determine timing of works • Future development of adjoining Lands as a Planning Proposal has been lodged.	• Incorporate the construction of a roundabout on Ewingsdale Road to provide an alternative access to the existing NSW Ambulance Station. • Address Council's DCP 2014 in formulating the car parking numbers for the project. • HI has provided correspondence to Byron Shire Council (Dated 9 July 2014) outlining the project scope, sewer load and project timing. • Reference has been made to the Planning Proposal lodged for Lot 101 DP 1140936 to permit seniors housing, medical centres, business premises, restaurants or cafes, and shops.

Further to meetings with the above referenced government agencies, NSW HI has undertaken a number of consultation meetings with representatives of the Northern NSW Local Heath District in relation to the physical and service elements of the proposed BSCH.

The proposed development will be placed on public exhibition in accordance with clause 83 of the *Environmental Planning and Assessment Regulation 2000*. During the public exhibition period Byron Shire Council, State agencies and the public will have an opportunity to make formal submissions on the project

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Environmental Risk Assessment

Section 6

An Environmental Risk Assessment (ERA) establishes residual risk by reviewing the significance of environmental impacts and the ability to manage those impacts. The ERA for the BSCH has been adapted from Australian Standard AS4369.1999 Risk Management and Environmental Risk Tools with the methodology described below.

The level of risk has been assessed by considering the potential impacts of the proposed hospital prior to application of any mitigation or management measures.

Risk comprises the likelihood of an event occurring and the consequences of that event. For the proposal, the following descriptors were adopted for 'likelihood' and 'consequence'.

Likelihood:		**Consequence:**	
A	Almost certain	1	Widespread irreversible impact
B	Likely	2	Extensive but reversible (within 2 years) impact or irreversible local impact
C	Possible	3	Local, reversible (within 2 years) impact
D	Unlikely	4	Local, reversible, short term (<3 months) impact
E	Rare	5	Local, reversible, short term (<1 month) impact

Risk levels for likely and potential impacts were derived using the following risk matrix.

	Likelihood				
	A	B	C	D	E
1	High	High	Medium	Low	Very Low
2	High	High	Medium	Low	Very Low
3	Medium	Medium	Medium	Low	Very Low
4	Low	Low	Low	Low	Very Low
5	Very Low	Very Low	Very Low	Very Low	Very Low

In accordance with the SEARs, the ERA addresses, as applicable:

- the adequacy of baseline data;
- the potential cumulative impacts arising from other developments in the vicinity of the site; and
- measures to avoid, minimise, offset the predicted impacts where necessary involving the preparation of detailed contingency plans for managing any significant risk to the environment.

Table 6.1 – Environmental Risk Assessment

Aspect	Potential impact	Likelihood	Consequence	Risk Level	Mitigation Measures
Visual Impact	• Overshadowing from hospital buildings on land outside of the hospital site • Visual appearance of the BSCH hospital building • Loss of bushland setting and screening vegetation on hospital site	E B C	3 2 2	Very Low	• The building is sited to negate overshadowing of the southern adjoining rural residential dwellings • The building has been sited and incorporates design mechanisms to reduce height and bulk, within the context of functional requirements and the topographical features of the site.
Traffic and Parking	• Increased traffic on local roads • Increased parking on local road	B E	2 5	Medium Very Low	• Parking will be provided in accordance with the RMS Guidelines for Traffic Generating Development.

					• The generation of traffic caused by the proposed development will not have any adverse impacts on the surrounding road networks and intersections.
Flora and Fauna	• Loss of trees within the development site • No significant impact identified in regard to flora and fauna	D D	4 4	Low Low	• This application seeks consent for the removal of landscape species only with no native trees to be removed. • Indirect impacts on local ecosystems will be managed through mitigation measures such as erosion and sediment control.
Bushfire	• Increased bushfire risk level	D	4	Low	• Building design and internal access addresses the potential bushfire hazard.
Aboriginal heritage	• Damage to Aboriginal sites or artefacts	D	2	Low	• No known sites occur upon the development site. • Due-diligence assessment is being undertaken for the project prior to commencement of the development works.
European Heritage	• Damage to historic heritage sites	D	2	Low	• The site contains no listed heritage items under the Byron LEP 2014.
Contamination	• Exposure of contamination or hazardous materials during contamination	D	4	Low	• Contamination levels have been assessed as likely to be below those considered a risk for the purpose of the hospital use.
Drainage	• Reduced water quality from poor quality runoff from hospital site	D	3	Low	• During construction, erosion and sediment controls will be undertaken in accordance with the construction management plan. • Stormwater management protocol will be put in place.

Waste Management	• Generation of Waste • Control of waster to address potential occurrence of pollution.	D	3	Low	• Waste management will be addressed as part of the Construction and Operational Management Plans prepared by the contractor on site. This will include initiatives such as: - Investigate the use of recycled materials in construction materials; - Maximisation of the recycling of wastes where possible; - All waste for disposal will be removed by a licensed waste contractor and disposed of at a licensed landfill facility; and - Use of the existing hospital waste management protocol.
Noise & vibration	• Increase in noise and vibration levels during construction activities • Increase in noise levels of visitors and patients • Increase in noise levels during operation and function of hospital building	A A A	2 3 3	High Medium Medium	• Implementation of a Construction Noise and Vibration Measures which considers the construction methodology and details specific mitigation measures in accordance with the DECCW Interim Construction Noise Guideline. • Appropriate sound minimisation measures to be incorporated within the plant and mechanical areas.
Air Quality	• Emissions from construction plant/equipment • Significant greenhouse gas emissions	A D	5 5	Very Low Very Low	• The proposed development is not expected to significantly change pollution levels in the area. Measures will be implemented during construction to minimise dust

					generation through the preparation of a Construction Management Plan. • Consideration of non-car travel modes including public transport and cycling for staff and visitors. • NSW Health and NSW Health Infrastructure are subject to the NSW Government commitment to become carbon neutral by 2020.
Energy Conservation	Significant demand on energy resources in short supply	E	4	Very Low	• ESD measures are to be implemented into the design of the built form and construction methodologies.

An Environmental Risk Assessment (ERA) establishes residual risk by reviewing the significance of environmental impacts and the ability to manage those impacts. The ERA for the BSCH has been adapted from Australian Standard AS4369.1999 Risk Management and Environmental Risk Tools with the methodology described below.

The level of risk has been assessed by considering the potential impacts of the proposed hospital prior to application of any mitigation or management measures.

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Mitigation Safeguards

Section 7

The following measures have been compiled based on the EIS undertaken in the preparation of this EIS and following review and consideration of the issues raised in consultation with government agencies.

They provide a commitment by HI and indicate the responsibilities required to implement measures to prevent potential environmental impacts that have been identified through the assessment.

Schedule 2 of the Environmental Planning and Assessment Regulation 2000 requires a full description of the measures proposed to mitigate any adverse effects of the development on the environment.

Issues	Action
General	The development will be undertaken accordance with the Environmental Impact Statement dated 14 August 2014 prepared by Newton Denny Chapelle (including accompanying Attachments) and drawings.
Building Code of Australia	The development will comply with the statutory energy efficiency requirements of Section J of the BCA. The development will also generally comply with the "deemed to satisfy" provisions of the BCA and where required, 'alternative solutions' complying with the performance objectives and requirements of the BCA will be employed to address any deviations from DTS provisions.
Erosion and Sediment Control	A detailed soil and sedimentation plan will be prepared in accordance with The Blue Book prior to construction and will be included in the Construction Management Plan. The plan will be prepared in accordance with the preliminary erosion and sediment control plan and preliminary construction management plan both prepared by TTW at **Attachments 4** and **22** respectively.

Hazardous Materials	A Safety Management Plan for the storage of materials based standard engineering codes and standards shall be prepared for implementation prior to the operation of the BSCH.
Hazardous Waste	The Proponent commits to the continued implementation of the existing NSW Health Policy by the Northern NSW Local Health District for management processes of hazardous waste.
EMF	Expected increases in the magnetic field level from the adjoining sub-station may impact only on the most sensitive hospital equipment detailed assessment as part of the detailed design shall be completed in order to determine whether magnetic shielding to in-building electrical services to protect the highly sensitive hospital equipment as outlined within the Faraday Pty Ltd ELF EMF Measurement as contained within **Attachment 14**.
Geotechnical	In accordance with the findings of the Geotechnical Assessment undertaken by Geotech Investigations Pty Ltd at **Attachment 6**, the additional geotechnical investigations recommended will be undertaken prior to construction. All other recommendations of the geotechnical report will be satisfied.
Contamination	The Stage 1 Environmental Assessment by Tim Fitzroy and Associates incorporated a total of 40 soil samples taken from across the site as part of the preliminary site investigation to accompany the Development Application to Byron Shire Council. Analysis of the samples show contaminant levels were below the relevant Australian and New Zealand Environment and Conservation Council (ANZECC) and Health Investigation Guidelines from NEPM (National Environmental Protection, Assessment of Site Contamination, Measure), 2013; Schedule B1. Based on the site history, site inspections and the laboratory results from soil sampling, TFA has recommended no ameliorative safeguards required in this instance within the contamination assessment found at **Attachment 5**.
Services	The Proponent will comply with the requirements of the relevant public authorities in regard to the connection to, relocation and/or adjustment of services affected by the construction of the proposed development as outlined within the Civil Design Report by TTW (**Attachment 4**) and Hydraulic and Fire Service Report by Donnelley Simpson Cleary (**Attachment 18**).
Accessibility	The design of the facilities will permit effective, appropriate, safe and dignified use by all people, including those with disabilities and will be in accordance with the relevant NSW Health Facility Guidelines for access and mobility and relevant accessibility standards.
Drainage	All of the recommendations of the civil design report prepared by TTW at **Attachment 4** will be satisfied and all final civil documentation will be prepared generally in accordance with the plans prepared by TTW at **Attachment 4**. Water Sensitive Urban Design measures identified in the civil design report prepared by Tim Fitzroy & Associates at **Attachment 11** will be implemented into the detailed design of the development.

Parking	Parking shall be provided in accordance with the design plans by Woods Bagot at **Attachment 1** pursuant to the car parking assessment by TTW (**Attachment 3**).
Transport Management	The recommendations of the traffic and parking assessment report prepared by TTW (**Attachment 3**) in relation to transport management are to be implemented, including, but not limited to, the preparation of a Travel Plan and Transport Access Guide for the hospital. These plans will be prepared prior to occupation of the BSCH.
Noise and Vibration	The recommendations of the Noise and Vibration Impact Assessment prepared by AECOM at **Attachment 8** are to be implemented to ensure that any potential adverse construction and operational noise and vibration impacts are adequately managed and mitigated.
Heritage	The recommendations of the Heritage Assessment prepared by Advitech (**Attachment 7**) to address Aboriginal heritage in accordance with the Aboriginal Cultural Heritage Impact Assessment and Community Consultation (DEC, 2005) and the Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW, 2010) is to be completed prior to the commencement of works under this EIS.
Ecologically Sustainable Development	The detailed design of the development will incorporate all of the ESD principles prepared by AECOM (**Attachment 16**) and measures set out in the Integrated Water Management Plan prepared by Tim Fitzroy & Associates (**Attachment 11**). The development will comply with the energy efficiency requirements of Section J of the National Construction Code (NCC 2012, previously known as the Building Code of Australia).
External Lighting	All external lighting will be installed to meet the minimum Australian and New Zealand Lighting Standards as detailed within the Electrical, ICT and Security Services Report prepared by Wood and Grieve Engineers (**Attachment 19**)
Construction Management	Prior to commencement of construction, a detailed Construction Management Plan which draws on the preliminary CMP prepared by TTW (**Attachment 21**) will be prepared which addresses (but is not limited to) the following key areas (with associated technical reports): • Construction noise and vibration (AECOM at **Attachment 8**); • Construction traffic management (TTW at **Attachment 3**); • Dust management and air pollution monitoring(TTW at **Attachment 4**); • Odour control; • Removal and management of hazardous materials; • Soil and erosion control (TTW at **Attachment 4**); • Tree protection (where relevant); • Site management in accordance with legislative requirements; • House of construction work (AECOM at **Attachment 8**);

	• Construction Waste management (TFA at **Attachment 9**); • Community safety plan; • Arrangements for temporary pedestrian and vehicular access; and • Contact and complaints handling procedures.
Operational Management	An operational environmental management plan will be prepared prior to the opening of the hospital to the public, a copy will be submitted to the Department of Planning and Environment for information. The plan will address, but will not be limited to, the following matters: • Minimisation of anti-social behaviour; • Visitor safety; • Site security; • Noise management; • Traffic and pedestrian management; • Storage of materials; • Emergency and evacuation procedures; • Fire safety; • Waste management and ESD initiatives; • Lighting; • Signage.
Flora & Fauna	The recommendations of the Flora & Fauna assessment prepared by Advitech Environmental (**Attachment 17**) are to be implemented to ensure that any potential flora and fauna impacts are adequately managed and mitigated.
Bushfire	The recommendations of the Bushfire Threat Assessment Report prepared by Bushfire Certifiers at **Attachment 13** are to be implemented to ensure that any potential adverse bushfire threat impacts are adequately managed and mitigated.

Conclusion

Section 8

This Environmental Impact Statement when read in conjunction with the accompanying design plans and technical reports, successfully addresses the issues relevant to Council's assessment of this application for the proposed Byron Shire Central Hospital at 54 Ewingsdale Road, Ewingsdale.

This EIS addresses the matters for consideration outlined in the Secretary's Environmental Assessment Requirements issued by the Department of Planning & Environment on 9 July 2014.

This EIS accords with the requirements of Schedule 2 of the EP&A Regulation with regard to consideration of relevant statutory and strategic instruments, built form and social and environmental impacts.

The grounds for this approval are summarised below:

- The site is capable of accommodating the proposed development by virtue of its capacity, size and location.
- The design has emerged from a detailed analysis of the existing site, having regard for the streetscape, environmental effects, heritage and urban form.
- The proposed building represents a scale and form that responds to the residential density nature of the surrounding locality;

- Byron Local Environmental Plan 2014 and State Environmental Planning Policy (Infrastructure) permits the development with consent;
- The proposal demonstrates an appropriate and sympathetic design which is responsive to the site whist meeting the specific requirements of the end user; and
- Car parking is provided on site in excess of the prescribed parking required under Byron Shire Council Development Control Plan 2014.

In consideration of the issues and information provided, approval of the State Significant Development for the Byron Shire Central Hospital is warranted in the manner prepared, subject to reasonable and relevant conditions.

DAMIAN CHAPELLE
Town Planner BTP. CPP.

Date: 14 August 2014