

# ENVIRONMENTAL IMPACT STATEMENT

## PROPOSED CATHOLIC COLLEGE 2 KINGFISHER CLOSE AND 507 MEDOWIE ROAD, MEDOWIE Lot 412 and Lot 413 DP 1063902



Prepared on behalf of:  
**TRUSTEES OF THE ROMAN CATHOLIC CHURCH FOR THE DIOCESE OF MAITLAND – NEWCASTLE**

Prepared by:



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**JUNE 2018**

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## DECLARATION

### Environmental Impact Statement (EIS) – Proposed Catholic College at Medowie

Prepared under Part 4 of the *Environmental Planning and Assessment Act 1979*

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#### Address of the land on which the project is to be carried out

Lot 412 and Lot 413 DP 1063902, 2 Kingfisher Close and 507 Medowie Road, Medowie.

**Proposed project** Proposed Catholic College

**Certification** I certify that I have prepared the contents of this environmental impact statement and to the best of my knowledge:

- the document has been prepared in accordance with Part 4 of the *Environmental Planning and Assessment Act 1979* and Schedule 2 of the Environmental Planning and Assessment Regulation 2000;
- the contents of the environmental impact statement have been prepared in accordance with the NSW Department of Planning & Environment Secretary's Environmental Assessment Requirements;
- the document contains all available information that is relevant to the environmental assessment of the activity to which the document relates; and
- the information contained in the document is neither false nor misleading.

#### Signature

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## EXECUTIVE SUMMARY

This Environmental Impact Statement (EIS) has been prepared for Trustees of the Roman Catholic Church for the Diocese of Maitland – Newcastle to accompany a Development Application (DA) for development of a new Catholic College at Medowie. The location for the new development is 2 Kingfisher Close and 507 Medowie Road, Medowie (Lot 412 and Lot 413 DP 1063902).

Construction will be staged over ten years and the school will educate up to 1,190 high school students, 630 primary school students and 124 children in the Early Learning Centre.

### Project Summary

This document provides an overview of the site and proposed development and establishes the statutory context for the application. The DA relates to construction of new buildings including:

- Classrooms and other learning spaces (Technology and Applied Studies, Art, Science, Personal Development, Health and Physical Education, Music, Drama, Hospitality, Food Technology)
- Flexible learning village
- Library learning hub
- Multipurpose hall
- Canteen and community use cafe
- Chapel
- Early Learning Centre
- Administration and other staff & student support facilities.

Associated works include:

- Environmental works such as erosion sediment control
- Earthworks and drainage
- Car parks (approximately 272 spaces), access road and fire trail to access perimeter of development
- Associated works such as retaining walls, landscaping etc.

### Traffic and Transport

A Traffic Impact Assessment considered the existing access and proposed future situation. The school fronts Medowie Road that is a Roads and Maritime Service (RMS) classified Regional Road. There is also existing public transport in the area including school buses that service the surrounding area. The project proposes a total supply of 272 parking spaces, with 230 for the educational use which equates to a minimum of 42 spaces to cater for school period demands for the chapel and visitors. New bus bays will be able to accommodate up to 5 buses simultaneously, with 7 buses being able to wait on the slip lane so as not to impact Medowie Road traffic. Twelve disabled parking spaces will also be provided on site.

Site entry will be provided via a new access (200 metres to the south of South Street), with an upgrade to the intersection of Medowie Road and South Street allowing for one exit point for both cars and buses. The existing priority controlled T-intersection is proposed to become a signalised four-way intersection, with a new internal road for the site located directly opposite South Street. The traffic assessment found parking is appropriate to the proposed development and access and egress to the site can occur safely.

### Soils, Geology and Contamination

A Geotechnical Investigation found the site contains acid sulfate soils and as such if acid sulfate soils are encountered during excavation or dewatering of soil materials an Acid Sulfate Soil Management Plan (ASSMP) is required to be prepared and followed to ensure no off site impacts occur.

The site classification in the area of the proposed school is generally considered to be commensurate with Class P soils, due to the depth of fill material encountered at the site and the presence of existing development. Provided all the footings are founded in natural material below the filling, it is suggested that reactive soil movements commensurate with a Class P site should be accommodated in design.



The Contamination Assessment of the soils indicated that some impact was encountered within fill mounds surrounding the bituminous go-kart track that primarily consisted of polycyclic aromatic hydrocarbons (PAH). This material is considered likely to be attributable to asphaltic gravels logged within the material and further assessment is recommended to clarify this and determine whether the material can be used on site or requires off-site disposal. The site is considered to be generally suitable for the proposed development provided potential hydrocarbon contamination is remediated or managed.

#### Water Quality and Flooding

The development area is located within the Grahamstown Dam drinking water catchment. Council's flood hazard mapping indicates that the proposal is located in a low hazard flood fringe area with part of the site considered flood prone land. The south western and northern part of the site contains wetland areas. Existing surface water generally drains to low lying flooding and wetland areas (SEPP 14 wetland No.813) to the south and west. The proposed works are located more than 40 metres from a watercourse with Campvale Drain and Campvale Swamp located to the north east. Depth to groundwater varies across site with a range between 0.6m – 1.8m, averaging 1.2m in depth across site.

Changes to extent of building and paved areas may impact on surface flows. Additional or changed stormwater flows have potential to impact on drainage regimes and downstream properties. Additional flow of stormwater has potential to erode soil, divert water to new areas or impact the nearby wetland through additional volume or localised energy. Poor stormwater management has potential to impact water quality of the nearby SEPP 14 wetland or drinking water catchments.

Through appropriate design measures the project will not change the overall inundation extent within the floodplain and so no impacts with regards to environmentally beneficial flooding are expected. Flood inundation frequency and duration will remain consistent with the existing conditions as will the flood velocities. Therefore, no changes to the geomorphological regime will result from the project, such as siltation, erosion, bank stability or the resultant implications for riparian vegetation.

Roof rainwater from each new building will be directed through a new pipe/pit system to a 4,000 litre above ground rainwater tank for each building, with over flows being connected to the development's detention basins.

Retention facilities will be incorporated into the network in accordance with Council's DCP. Low flow outlet measures will be provided for minor and major rainfall events with all overflow being directed to the south west and western areas of the site. The site has been designed to incorporate a mix of Atlantis infiltration tanks and bio filtration detention ponds, gross pollutant traps, pollutant pit inserts in the carpark, bio filtration systems and as such stormwater quality for the existing site will not be compromised by the proposed development.

The hydraulic design for the project includes specification of the most efficient sanitary fixtures and tapware based on the current Water Efficiency Labelling and Standards Scheme (WELS), exceeding both the minimum requirements of AS 3600 and the Education Facilities Standards and Guidelines (EFSG).

#### Air Quality

Urban activities in the local area affect air quality, generally through use of vehicles and power tools all year and potentially wood fires utilised during winter months. The site is surrounded by local roads. Medowie Road is located to the east where public transport and traffic on these roads affect air quality through vehicle emissions and nearby industrial activities also impact on local air quality.

Construction of the proposal has minor potential to generate wind borne dust from exposed or stockpiled soil or other material. Dry and windy conditions may generate additional dust from exposed soil and movement of vehicles and wind conditions should be monitored with appropriate mitigation measures adopted where high levels of dust may be generated. Exhaust from vehicles and machinery used during construction and operation may impact local air quality.

Operation of the school is unlikely to result in impacts to air quality.

#### Noise

Construction noise has potential to impact on neighbouring premises as the proposal involves development of a new college and construction will likely take place over ten years. Dwellings to the north and east and child care across Medowie Road are sensitive receivers for noise. Normal school hours are generally from 8.00am

to 5.00pm Monday to Friday with classes usually from 8.45am to 3.15pm. The sporting fields may also be accessed by local community sporting clubs with activities typically taking place on Saturday mornings.

As the site is situated outside of the ANEF 20 contour it fits the description of “acceptable” for a school or university in accordance with Table 2.1 of AS/NZS 2021-2015 “Acoustics-Aircraft Noise Intrusion-Building Siting and Construction”.

From an acoustic point of view the main potential for noise impacts from the classroom section of the high school may come from activities in the Technology and Applied Sciences (TAS) rooms and the Music Suites. There are five TAS workshops proposed for Blocks D and E combined. Assuming all are in use at the same time (and producing the maximum noise emissions), the total received noise at the boundary would be less than 30 dB(A) Leq (15 min) and there would be no adverse noise impacts.

All other receivers are more distant from the TAS workshops and will be more acoustically shielded by the classroom buildings, which will further reduce noise levels at those receivers. Therefore, there will be no adverse impacts at any receivers as a result of emissions from the TAS workshops.

There will be two music suites as well as several music practice rooms located in Block A at the northern end of the main hall. The results of the acoustic assessment show that there will be no noise impacts at any residential receivers as a result of the assessed activities in music classes. The results are based on the assumption that the windows will be fitted with 6.38mm laminated glass. Whilst this may not be necessary to mitigate environmental noise emissions it is recommended to reduce the potential for noise flanking between the TAS workshop and other nearby classrooms.

Noise from the activities in the TAS workshops and music suites are expected to represent the worst case for noise emissions from the proposed classrooms. The other classrooms are to be general classrooms.

The noise from the car park will be at different levels when measured at various points on any individual receiver boundary, depending on the distance from individual cars/noise events etc. Noise in car parks typically comes from people walking to and from cars, doors opening and closing etc., as well as vehicles moving at slow speeds. Each noise event is characterised by a brief peak which when averaged out over a 15 minute period has a relatively low Leq. The results of the assessed car park noise show there will be no exceedance of the day time noise criterion at any receivers.

A road noise logger was located with full line of sight to the traffic on Medowie Road and, therefore, measured the existing traffic noise in the area. The logger was located at approximately the same distance from the road (i.e. traffic noise source) as the closest façade of any of the school buildings.

The results of the effects of road traffic noise on the development show that the window in the Principal's office should be fitted with glass with a minimum Rw of 24. Published sound insulation performance in terms of Rw ratings relate to partitions tested in ideal laboratory conditions or opinions based on such measurements and suppliers must be able to ensure compliance with the detailed Rw ratings when windows are installed. For example, Rw 24 could, depending on the entire window system, be achieved with standard glazing. For attenuation of the traffic noise, standard glazing will be sufficient for all windows in the schools.

There are no other predicted noise exceedances as a result of the operation of the school. Noise control recommendations will be implemented to reduce impacts on surrounding areas.

#### Flora and Fauna and Bushfire

The Biodiversity Assessment Report found that there is one mapped second order stream, located 400 metres from the western boundary of the study area. The stream runs away from the study area from east to west, where it enters the Grahamstown Reserve. An unmapped watercourse is located in the south of the subject land and appears to connect constructed waterbodies of the golf course east of Medowie Road, with the SEPP 14 wetland to the west of the subject land. The SEPP 14 wetland occurs within the southwest portion of the study area. Under the objectives of the SEPP, impacts to areas of coastal wetlands should be avoided.

The subject land is predominately covered by exotic pasture or non-native Slash Pine *Pinus elliottii* over exotic pasture, with native vegetation restricted to small patches of remnant canopy trees over exotic pasture and the edges of larger remnant patches. Shrub and mid layer vegetation strata are mostly absent in the subject land except where the subject land intersects the edge of larger, more intact remnant vegetation patches.

Native vegetation within the subject land is considered to be of marginal or low value to threatened species due to the effects of current and historic disturbance such as clearing and regular mowing of the grassy groundcover.

Direct impacts arising from the project include:

- Removal of 0.97 hectares of disturbed PCT 1564 Blackbutt - Rough-barked Apple - Turpentine - ferny tall open forest of the Central Coast
- Removal of 0.11 hectares of moderate condition PCT 1619 Smooth-barked Apple - Red Bloodwood - Brown Stringybark - Hairpin Banksia heathy open forest of coastal lowlands
- Removal of 0.11 hectares of moderate condition PCT 1598 Forest Red Gum grassy open forest on floodplains of the lower Hunter consistent with Hunter Lowland Redgum forest EEC listed under the Biodiversity Conservation Act
- Removal of 0.04 hectares of moderate to good condition PCT 1718 Swamp Mahogany – Flax leaved Paperbark swamp forest on coastal lowlands of the Central Coast consistent with Swamp Sclerophyll forest on coastal floodplains EEC listed under the BC Act
- Removal of approximately 0.34 hectares of land mapped as a SEPP 14 Coastal Wetland. The proposed development will only require the removal or modification of approximately 0.14 hectares of native vegetation within the mapped extent of the SEPP 14 Coastal Wetland within the study area. The proposed development footprint has been sited so as to avoid and minimise direct impacts to the mapped wetland. Moreover, the proposed development is not expected to significantly impact any freshwater or marine aquatic values listed under the *Fisheries Management Act 1994* (Appendix 21)
- Removal of 10 Hollow-bearing Trees providing potential roosting for threatened ecosystem credit microbats
- Removal of a total of 1.55 hectares of native vegetation providing limited foraging resources for threatened fauna
- Removal of 0.43 hectares of Koala habitat predominately within the area mapped within the Port Stephens CKPoM as 100 metres Koala habitat buffer and which provides dispersal and shelter habitat. The calculated extent of affected Koala habitat includes all patches of vegetation which contain Koala feed trees and which will be removed as a result of the proposed development.

These impacts will be permanent, will occur from the outset of the development and represent the result of efforts to avoid and minimise impacts at the project design phase. Residual impacts to native vegetation will require retirement of 23 ecosystem credits and 6 Koala species credits in accordance with the Biodiversity Offsets Scheme.

### Bushfire

The subject land is identified as being bushfire prone land on the Port Stephens Council Bush Fire Prone Land Map. The development therefore has been assessed to comply with Section 100B of the *Rural Fires Act 1997*, which includes the consideration of the NSW Rural Fire Service (RFS) document Planning for Bushfire Protection 2006.

Bushfire has potential to be a risk to the safety of occupants of the college. Bushfire risks can include smoke inhalation and direct exposure to radiant heat. The proposed building works will comply with BAL-12.5 in accordance with AS 3959-2009 Building in Bushfire Prone Areas and the construction requirements of Planning for Bushfire Protection 2006 Appendix 3 (amended May 2010).

At the commencement of building works and in perpetuity a minimum 50 metre asset protection zone will be managed 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. The asset protection zone shall be divided into the below components:

- a. Inner Protection Area – 40 metres
- b. Outer Protection Area – 10 metres

The final recommendation is that there is buildable area onsite for the development with appropriate services and asset protection zones available.

## Heritage

A background review was conducted of available information in order to identify known Aboriginal sites, areas of potential archaeological sensitivity and previous disturbance, and inform the predictive modelling for the assessment area.

The results of the background assessment indicate that four AHIMS sites are located within the study area; two of the sites identified are duplicate recordings. The sites are described below:

- AHIMS No.: 38-4-1618 (TP5 and TP4) – Site 38-4-1618 is an open artefact site located on a crest landform unit proximately 170 east of a drainage line associated with permanent swampland
- AHIMS No.: 38-4-1627 (TP7, TP9, TP10 – Medowie Power) – Site 38-4-1627 is an open artefact site identified within the lower slopes of a dune landform.

As part of the Stage 1 Aboriginal heritage assessment, preliminary consultation with the Worimi Local Aboriginal Land Council (Worimi LALC) has been undertaken. This consultation involved inviting the Worimi LALC to attend the Aboriginal field survey and to provide information on the cultural significance of the study area. No specific Aboriginal cultural values were identified during the field survey.

Based on the results of the background research, the preliminary Aboriginal community consultation, and the field survey, it has been determined that the proposed works will impact on Aboriginal cultural heritage values.

Further assessment in the form of an Aboriginal Cultural Heritage Assessment and test excavations in line with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010), and the *Aboriginal cultural heritage consultation requirements for proponents* (DECCW 2010) is therefore required, this forms Stage 2 which is currently underway.

A Historical Heritage Assessment identified no historical heritage items or areas of archaeological potential are present within the study area, and as such it is concluded that the proposal will not adversely impact on non-Aboriginal heritage.

## Visual

The development area involves a typical low density environment with a mix of child care, residential, recreation and local commercial land uses. The proposed college will be erected on a site that is predominantly vacant, with only two buildings currently occupying the site. The first is a residential dwelling being of brick and steel construction, whilst second is a shed made of steel with (mostly) concrete floor.

The proposal is a development of a new school and playground areas. The buildings are a contemporary design with appropriate space for modern educational facilities and techniques.

The maximum permissible height under LEP 2013 is 9 metres. The chapel will meet this requirement with a proposed maximum height of 7.5 metres. However, parts of Block A, G, H, I and J will exceed the height limit. At the meeting with Council it was established that there is no set numerical value that an exception to a development standard must adhere to, rather the assessment will be considered on merit.

A Design Verification Statement was prepared to ensure a high quality development with a positive visual impact. Iterative design occurred in consultation with the Catholic Schools Office, school community representatives and project design team. The seven Design Quality Principles of SEPP (Educational Establishments and Child Care Facilities) 2017 informed the design process.

Architectural plans have been prepared to ensure the development presents well to the street, provides appropriate space for modern educational purposes and has sufficient landscaping and site security for the school.

## Social

There is ongoing need for quality education in Port Stephens LGA and the Hunter generally. The proposal will result in positive social impacts through a new educational facility. The Crime Risk Assessment Report provides a number of measures to be implemented in the school including surveillance opportunities, landscaping treatments, maintenance and lighting.

### Accessibility

Two reports prepared on accessibility show that compliance with the requirements for access for people with a disability are achievable subject to further details and incorporation of the required features. At this early stage of design, full details are not shown on plans. As further planning occurs, consideration is to be given to specific elements including switches and controls, and plans showing more detailed dimensions and features are to confirm compliance at construction certificate stage.

### Economic

The college will educate up to 1,190 high school students, 630 primary school students and 124 children in the Early Learning Centre, with approximate number of teachers being: 125 high school staff, 35 primary school staff and 25 Early Learning Centre staff.

Economic impact of the development is likely to be positive. Up to 150 construction jobs may be generated by the proposed development. The school will become an integral part of the community and the development will ensure ongoing employment for staff and suppliers.

### Waste Management

When the relevant building contractor is appointed they will be required to prepare a Construction Management Plan which will include various operational components of construction, including Waste Minimisation and Management. Throughout construction, waste will be carefully managed to minimise potential impacts on adjoining areas.

Operational waste management for the school and other activities on site will be part of an overall a wider collective agreement. Services for removal of recycling and general waste will be negotiated with a private contractor or Council as the stages of the agencies and facilities come online. Once the secondary school is fully operational for example, there is likely to be two or three collections per week and these would take place outside of operational hours so that there is no opportunity for a confluence of pedestrian activity and garbage truck movements together on the site.

Localised collection of rubbish will occur daily from each building and deposited in the central waste bins, one to the northern end of the site and one at the southern end, both accessed off the carpark and road system.

Food waste (e.g. from canteen facilities, playground bins, etc) will be managed so as to minimise the availability of this resource to introduced predators such as foxes and cats.

All waste generated by the proposal will be classified in accordance with the NSW Waste Classification Guidelines Part 1: Classifying Wastes (EPA 2014) prior to being removed from the site.

### Chemical and Fuel Storage

A number of chemicals will be stored on site and a list of likely chemicals has been prepared based on a stocktake from other schools of a similar nature. Chemicals will be located in appropriate storage locations and bunds to minimise potential for accidental spillage.

### Matters of National Environmental Significance

The Matters of National Environmental Significance (NES) listed under EPBC Act are not considered to be subject to significant impacts and referral of the proposed development to the Minister for the Environment and Energy will not be required for a Matter of NES.

### Conclusion and Justification

The proposed Catholic College will provide a new purpose built development with facilities including classrooms, administration buildings and sporting facilities. The college will provide a Catholic based education to the expanding population of Medowie and the broader area.

The proposed development will provide long-term benefit to students, educators and residents of the region.

The development is consistent with the principles of ecologically sustainable development. There is unlikely to be significant impact on the environment as a result of the proposed development provided environmental mitigation measures proposed in this EIS are adopted. The proposal will not have a significant impact on the environment, including threatened species, populations or ecological communities, or their habitats.



# 1. INTRODUCTION

## 1.1 Overview of Proposal

This Environmental Impact Statement (EIS) has been prepared for the Trustees of the Roman Catholic Church for the Diocese of Maitland – Newcastle to accompany a Development Application (DA) for a new Catholic College. The proposed development is for the purpose of a new school and as such is identified as State significant development under Clause 15 of Schedule 1 of the State Environmental Planning Policy (State and Regional Development) 2011 and Part 4, Division 4.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The capital investment value for the proposed development is \$110.36 million (Appendix 32).

Detailed architectural plans and project summary are provided in this EIS to highlight proposed buildings and associated infrastructure and intended uses of the buildings. The EIS has been prepared to address matters referred to in Part 4 of the EP&A Act, matters required to be addressed as outlined in the Environmental Planning and Assessment Regulation 2000 and the Department of Planning and Environment Secretary's Environmental Assessment Requirements (SEARs) issued 18 January 2018 (Appendix 41).

The purpose of this EIS is to:

- Describe the land to which the proposal relates and the character of the surrounding area
- Describe the proposed activity
- Define the statutory framework within which the proposal is to be assessed
- Determine environmental impacts of the proposed development
- Provide environmental mitigation measures to manage potential environmental impacts.

## 1.2 Location and Context

The proposal is located at 2 Kingfisher Close and 507 Medowie Road, Medowie (Lot 412 and Lot 413 DP 1063902) (the site). The proposal is located in the Port Stephens Local Government Area (LGA) and is located approximately 20 kilometres north of Newcastle and approximately 30 kilometres west of Nelson Bay.

The following works are proposed with the delivery of the new school facility:

- Classrooms and other learning spaces (Technology and Applied Studies, Art, Science, Personal Development, Health and Physical Education, Music, Drama, Hospitality, Food Technology)
- Flexible learning village
- Library learning hub
- Multipurpose hall
- Canteen and community use cafe
- Chapel
- Early Learning Centre
- Administration and other staff and student support facilities.

## 1.3 Diocese of Maitland-Newcastle

The Diocese of Maitland-Newcastle represents the Catholic Church in a region extending from Lake Macquarie to Taree and as far inland as Merriwa and Murrurundi. A diocese is a term used to describe a community of Christ's faithful - it represents a portion of the people of God in a particular area, which is entrusted to a bishop. The Trustees of the Roman Catholic Church for the Diocese of Maitland – Newcastle are the applicant for the proposed development.

## 1.4 Approvals Pathway

This EIS has been prepared for the Trustees of the Roman Catholic Church for the Diocese of Maitland – Newcastle. The proposal includes erection of a Catholic College (school) and associated buildings on a generally vacant site. Section 4.36(2) of the EP&A Act states State Significant Development may include development identified within a State Environmental Planning Policy.

Schedule 1 Clause 15(1) of State Environmental Planning Policy (State and Regional Development) 2011 identifies State Significant Development as follows:

"Development for the purpose of a new school (regardless of the capital investment value)."

The proposal is for a new school and as such is identified as State significant development under the SEPP.

## 1.5 Need for Proposal

There is a current and future need for more education facilities within in the Port Stephens LGA and in particular the Medowie area. Port Stephens Council and the NSW Department of Planning and Environment are planning for a predicted population growth (pre-release of the 2016 census data) from 10,300 in 2016 to 17,500 people in 2036, an increase of 7,200 people, with the concurrent release of land to accommodate 2,400 new dwellings (Medowie Planning Strategy, 2016). According to the Australian Bureau of Statistics (ABS) approximately 22.7% of Medowie residents were 5-19 years of age (generally school age) in 2016. While the school will assist students from the broader area, the Census data highlights that a significant portion (almost a quarter) of the local population are of school age.

In relation to the information above it can be concluded that there is a need for more educational facilities in the Medowie area, and as such the proposed development of a Catholic College is needed to service increasing demand for educational services.

## 1.6 Project Objectives

The project has the following objectives:

- Long term financially viable solution for ongoing operation of the school
- Comply with relevant codes (Building Code of Australia, National Construction Code and Australian Standards)
- Buildings that provide contemporary educational facilities that meet community expectations
- Facilities that allow for modern delivery of education to students
- On site car parking, driveway and access
- Landscaping to meet current and ongoing needs of the school
- Associated infrastructure and services.

## 1.7 Alternatives Considered

Various options have been considered with the aim of ensuring current and future education needs of the Medowie community.

Five options were considered as follows:

- Develop a new Catholic College as proposed
- Redevelop an existing school elsewhere
- Alternative school location
- Different school size
- Do not proceed.



Option 1 involves developing the Catholic College as proposed. The diocese currently owns the site and have developed plans based on likely future growth of Medowie and surrounds. The school and associated facilities are proposed to meet ongoing educational needs of the Medowie community, including predicted population growth.

Option 2 involves redevelopment of an existing school in a different location. Option 2 has potential to impact on the environment in a number of ways including waste management, traffic, noise and disruption to current school operations at an existing school. While this option provides efficiencies in using existing infrastructure and buildings to increase student numbers, it does not provide a school in Medowie for the growing population. There is a need for a Catholic College to serve the Medowie community and therefore Option 2 is not the preferred option.

Option 3 involves constructing the school at a different location. Constructing the school at another location may result in different environmental impacts in another location. Option 3 may impact on the environment through potential tree clearing, additional materials for infrastructure, increased costs in purchasing another site and additional traffic movements to ensure adequate private and public transport options are available. Option 3 is not the preferred option due to potential environmental impact and potential distance from Medowie.

Option 4 involves a larger or smaller school size to meet different community needs. The school size has been selected based on current information on the Medowie community and likely future population growth. Option 4 is not the preferred option.

Option 5 involves not proceeding with the proposed development. The Medowie community continues to expand and not proceeding with the development may result lack of school facilities to meet ongoing needs of education for the community and is not the preferred option.

Option 1 is preferred and is considered throughout this EIS as it will facilitate the development of the Catholic College and associated infrastructure to meet future education needs of the Medowie community. The location of the school, growing demand for education services and existing transport routes provide for a positive outcome from Option 1 provided the environmental management measures of this EIS are adopted.

## **1.8 Structure of the EIS**

- Section 2 presents a summary of the proposed development
- Section 3 presents the site, its attributes and location
- Section 4 presents the statutory context
- Section 5 outlines consultation with agencies and the community
- Section 6 provides an environmental assessment of the proposed development and likely impact on the environment
- Section 7 provides consideration of matters of national environmental significance
- Section 8 provides a list of approvals and licences that may be required
- Section 9 provides consideration of Clause 228 factors
- Section 10 provides a compilation of environmental management measures
- Section 11 provides a conclusion and justification for the proposed development
- Section 12 lists references.

## 2. THE PROPOSAL

### 2.1 Introduction

This EIS accompanies an application for State Significant Development. The EIS has been prepared for Trustees of the Roman Catholic Church for the Diocese of Maitland – Newcastle and includes matters referred to in Part 4 of the EP&A Act and matters required to be addressed as outlined in the NSW Department of Planning and Environment SEARs issued 18 January 2018 (Appendix 41). The proposed development will provide the Medowie community with additional facilities to meet ongoing education needs of the community.

### 2.2 Existing Development

The property currently contains a single storey dwelling, tennis court, asphalt track and rural shed. There is a cleared section of land on the eastern half of the site facing Medowie Road. The site contains environmental conditions that have been considered in the proposed development.



**Photo 1 – Existing Dwelling and Shed (looking north west)**

There is also an existing Ausgrid substation on the eastern boundary facing Medowie Road. A number of power transmission lines are connected to the substation.



**Photo 2 – Existing Ausgrid Substation (looking west)**

## 2.3 Proposed Development

The Catholic Diocese of Maitland - Newcastle wish to erect and operate a new Catholic College in Medowie (Figure 1). The college will educate up to 1,190 high school students, 630 primary school students and 124 children in the Early Learning Centre, with construction being staged over ten years.

The proposed development provides for long-term education for residents of Medowie and the broader population. The proposed development will involve the following works:

- Clearing of vegetation within the site
- Environmental works including erosion sediment control
- Earthworks and drainage
- Construction of new buildings including:
  - Classrooms and other learning spaces (Technology and Applied Studies, Art, Science, Personal Development, Health and Physical Education, Music, Drama, Hospitality, Food Technology)
  - Flexible learning village
  - Library learning hub
  - Multipurpose hall
  - Canteen and community use cafe
  - Chapel
  - Early Learning Centre
  - Administration and other staff & student support facilities
- Construction of new driveways, car parking (272 spaces), access roads, and a fire trail to access perimeter of the development
- Associated works such as retaining walls, landscaping etc.
- Associated infrastructure and services.

The development includes the following development footprint:

- Site area of 268,300m<sup>2</sup> or 26.83 hectares
- Total building site footprint area of 13,116.63m<sup>2</sup> (Ground floor)
- Total building floor area of 17,326.33m<sup>2</sup> (Ground floor and Level 1).

The total areas for each block/building are detailed in Table 2.1 and referred to in the Architectural Plans in Appendix 23.

**Table 2.1 – School Block Areas**

Location	Area (m <sup>2</sup> )	
	GROUND FLOOR	LEVEL 1
<b>HIGH SCHOOL</b>		
BLOCK A - ADMIN	2607.9	1541.6
BLOCK B - CHAPEL	762.2	
BLOCK C - SCIENCE	670.1	
BLOCK D - TAS	634	
BLOCK E - TAS	634	
BLOCK F - ART / FITNESS	708.93	
BLOCK G - LEARNING HUB / GPLA	666.7	666.7
BLOCK H - GPLA	657.8	657.8
BLOCK I - GPLA	684.7	684.7
BLOCK J - GPLA	658.9	658.9

Location	Area (m <sup>2</sup> )	
BLOCK K – COLA	Not in Use	
<b>PRIMARY SCHOOL</b>		
BLOCK L - ADMIN / HALL / LIBRARY	1,223.9	
BLOCK M - GPLA	666.4	
BLOCK N - GPLA	286.5	
BLOCK O - GPLA	661.8	
BLOCK P - GPLA	663.1	
<b>EARLY LEARNING CENTRE</b>		
BLOCK Q - ELC	929.7	
<b>Total Learning Areas</b>	<b>13,116.63</b>	<b>4,209.7</b>

## 2.4 Development Staging

The proposal will be constructed in stages across the entire site. Full details are provided in the staging plan in Appendix 24. The staging plan sets out indicative staging, as some of the staging is likely to change with demand and allowable areas under grant guidelines.

The stages of construction will be:

- Stage EW: Early Works – Civil/RMS works, services and associated landscaping
- Stage 1A: High School – Block A (Administration, Staff and Classrooms)  
Early Learning Centre – Block Q  
Chapel – Block B  
Flexible Learning Village (Located at Block P) (demountable)
- Stage 1B: Associated landscaping, civil, hydraulics, etc.
- Stage 2A: High School – Block C (Science)  
High School – Block D (TAS)
- Stage 2B: Covered ways, associated landscaping, civil, hydraulics, etc.
- Stage 3A: High School – Block G (Learning Hub)  
High School – Block H (Classroom Hub)  
Primary School – Block K (Administration, Staff)  
Primary School – Block L (Library, Hall)  
Primary School – Block O (Classroom Hub)
- Stage 3B: Associated landscaping, civil, hydraulics, car park, etc.
- Stage 4A: High School – Block E (TAS)  
High School – Block F (PE/H/PA, Art)  
Primary School – Block M (Classroom Hub)  
Primary School – Block N (Classroom Hub)
- Stage 4B: Associated landscaping, civil, hydraulics, car park, etc.
- Stage 5A: High School – Block I (Classroom Hub)  
High School – Block J (Classroom Hub)  
High School – Block K (Covered Outdoor Learning Area [COLA])  
High School – Block A (Hall)  
Primary School – Block P (Classroom Hub)
- Stage 5B: Associated landscaping, civil, hydraulics, etc.
- Stage 6B: Sports fields and associated landscaping



Construction of the school will occur over ten years to allow appropriate development staging and ongoing education of students during that timeframe.





## 2.5 Teacher and Student Numbers

The college will educate up to 1,190 high school students, 630 primary school students and 124 children in the Early Learning Centre. An approximate number of teachers is listed below:

- 125 high school staff
- 35 primary school staff
- 25 Early Learning Centre staff.

## 2.6 Hours of Operation

Facilities accessible to the community will be typically utilised between 7am and 10pm Monday to Sunday, with minimal activities outside those times that will be in keeping with the local land use and time of day.

### School

The school will operate during typical school hours of around 7.30am until 4.30pm. There will be functions, religious occasions and community events that will occur outside these hours. Out of school hours activities associated with the school community will be typical of most schools in NSW. There may also be religious events such as midnight mass (once a year on Christmas Eve around midnight), weddings and funerals that occur at different times.

### Early Learning Centre

The Early Learning Centre will operate between 6.30am and 6.00pm. The times are typical of an Early Learning Centre to accommodate working parents and carers.

### Chapel

The chapel will provide the following:

- One weekend mass either Saturday evenings or Sunday mornings
- One weekday mass to commence after school commences (during school hours)
- Occasional baptisms, weddings and funerals.

### Sport

School sport facilities may be utilised by local junior sporting teams on Saturday morning.

Specific days and times for out of hours uses are currently unknown at the present time as the school is yet to be established and community groups unaware of the future facilities. Use of the school for sporting activities will further integrate the school community with the Medowie community.

## 2.7 Hours of Construction

The Noise Assessment (Appendix 12) noted that recommended standard construction hours are 7am to 6pm Mondays to Fridays and 8am to 1pm on Saturdays, with no work on Sundays or public holidays.

## 2.8 Signage

Proposed signage is presented in Appendix 27 and the following indicative signage is anticipated at the development:

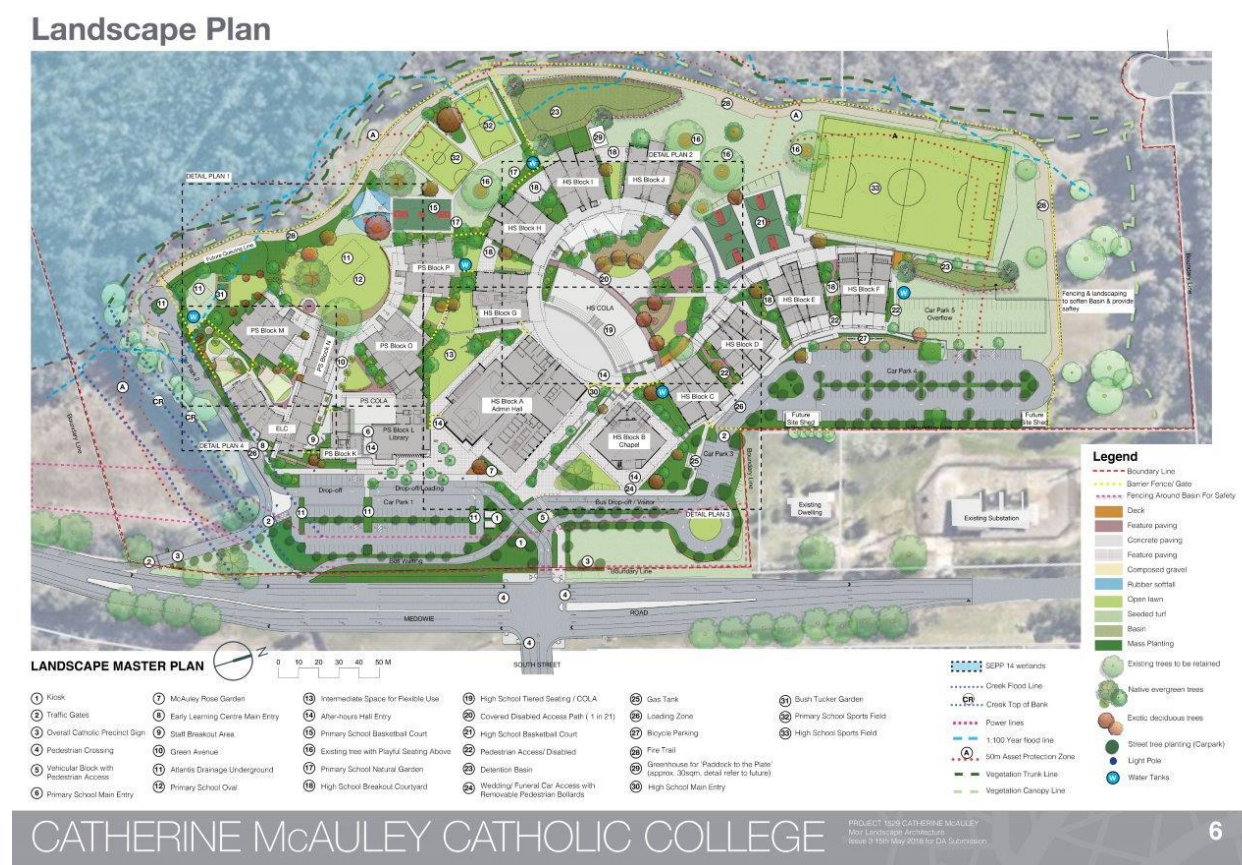
- Overall Catholic Precinct sign close to the main carpark entry which would indicate the site as McAuley Catholic Community (similar to a billboard)
- Individual Agency Signage closer to each of the four developments, Chapel, Secondary College, Primary School and Early Learning Centre. These signs may be similar to what would be installed at most of Catholic schools and may have a digital component that could change easily to provide current information to the school community



- Signage identifying each of the school buildings as well as a directional precinct sign close to the main pedestrian plaza guiding visitors towards the various facilities on the site
- Wayfinding signage at a low level will also be designed to direct visitors between buildings and other facilities
- Signage appropriate to emergency evacuation procedures.

## 2.9 Landscaping

Landscaping plans have been prepared to provide a positive outcome for the school and integrate the development into the site and surrounds (Appendix 27). The landscape plans present a range of landscape options including raised planters with seating, terrace gardens, sandstone retaining walls, outdoor learning areas, tiered seating, edge planting, outdoor playground and a bush tucker garden. Landscaping has been designed to define various spaces within the site while providing appropriate low maintenance cover for the school grounds.



### Figure 2 – Landscape Plan

## 2.10 Materials and Finishes

The building will have a contemporary character with co-ordinated internal and external materials, textures and colour schemes. As shown in the architectural plans (Appendix 23) the exterior of the building will create interest through using various materials and finishes. The materials proposed for each of the learning areas are detailed in Appendix 27 within the architectural materials and palette plans. The material for the internal and external finishes include:

- Aramax metal roof sheeting
- Arcpanel metal roof sheet
- Trimdek roof sheeting
- Light weight cladding (fibre cement, textured fibre cement and weatherboards)

- Concrete products (precast concrete wall panels, decking and seating)
- Natural surfaces (wooden step blocks and decking, gravel paths and sandstone retaining walls)
- Soft fall
- Various metal finishes
- Other timber, ceramic and lighting finishes and fixtures.

## 2.11 Utilities

A sewer servicing strategy was conducted by RPS, which found that the only sewer servicing option for the site is the extension of mains from an existing Hunter Water Corporation (HWC) Medowie 12 wastewater pump station (WWPS) to the north of the site. All internal servicing of the site will be via private house drains.

The existing Medowie 12 WWPS is at capacity and will need to be upgraded to cater for the proposed flows from the proposed development, with the upgrade of the pumps being achieved by either upsizing impellers or a complete replacement of the existing pumps. The most suitable method of achieving the required duty of Medowie 12 WWPS will be determined during the detail design phase of the project. The existing 150mm rising main has capacity to handle the additional flows (Appendix 31).

The Notification of Formal Requirements (dated 31 October 2017) from Hunter Water state that the proposed development is located in the Port Stephens Water Supply System and is supplied from the Williamtown 1A WPS (Water Pumping Station). The property has frontage to a DN150 CICL (or Diameter Nominal 150 Cast Iron Cement Lined) water main along Medowie Road and as such connection to this main is available pending required approval (Appendix 31). Negotiation is continuing with Hunter Water for water and sewer connection for the proposed development.

High Voltage powerlines run through the east of the proposed development to an electrical substation (Photo 2 above) to the north east of the site. In respect of the proximity of the development to the substation an earthing assessment has been undertaken to assess the potential impacts to and requirements of the proposed development (Appendix 31). The site has frontage to electricity and gas supply that can be augmented as required and details will be confirmed in the detail design phase.

The site has current connection to the telecommunications network, with the NBN proposed to be connected to the area between April-June 2019 (Appendix 31).

## 2.12 Building Code of Australia and Accessibility

A preliminary assessment of the proposed building design has been prepared to determine if construction shown generally complies with the National Construction Code / Building Code of Australia 2016. The assessment found the design is in general compliance with National Construction Code / Building Code of Australia 2016 with the plans being suitable for submission for Development Application. The design can readily incorporate the requirements listed in the report and as required by other specialist consultants at the Construction Certificate stage (Appendix 10).

Section 10 of the assessment provides general advice on access for people with a disability. An access consultant (Appendix 16) was engaged to provide detailed design advice and input for complying construction and report included in Construction Certificate documentation.

## **3. Site Attributes and Location**

### **3.1 Site Location**

The site is located at 2 Kingfisher Close and 507 Medowie Road, Medowie (Lot 412 and Lot 413 DP 1063902). As indicated in Photo 1 the site of the proposed development contains a single storey dwelling, tennis court and rural shed with areas of cleared land and native vegetation.

### **3.2 Site Area**

The site is approximately 26.83 hectares in size (Lot 413 is 10 hectares and Lot 412 is 16.83 hectares). Site area will not change as a result of the development.

### **3.3 Physical Features**

#### **3.3.1 Topography**

The site slopes to the west and south towards the existing watercourses and wetland areas, whilst parts of the site also slope gently to the north west.

#### **3.3.2 Geotechnical and Contamination**

The site is mapped as containing acid sulfate soil. According to Valley Civilab (Appendix 11) acid sulfate soils were identified at the site at 3.0 metres below the surface at one location and may commence from 2.0 metres below the surface. The hazardous material audit did not encounter potential asbestos; however potential for synthetic mineral fibre (SMF) may be encountered within possible insulated area (Appendix 8).

The site is located approximately 2.2 kilometres north of the NSW Environmental Protection Agency's mapped investigation area for potential PFAS (per- and poly-fluoroalkyl substances) contamination associated with the use of PFAS in firefighting chemicals at the RAAF Base at Williamstown.

The Contamination Assessment (Appendix 8) found that of three (3) samples found that PFAS concentrations were greater than the laboratory PQL (Practical Quantitation Limit) in one sample; however, these were all below the current guideline criteria for residential human health and ecological criteria.

#### **3.3.3 Flooding and Watercourses**

Council's flood hazard mapping indicates that the proposed development is located in a low hazard flood fringe area with part of the site being considered flood prone land. The south western and northern part of the site contains wetland areas (Appendix 4 and 6).

The Flood Risk and Impact Assessment (Appendix 9) stated that the flood impacts associated with the proposed development are negligible in terms of affecting property, assets and infrastructure and therefore result in no detriment to the overall social or economic status of the community. A Stormwater Management Plan has been developed for the site (Appendix 15).

#### **3.3.4 Vegetation and Trees**

The site is predominantly clear in the area of proposed development. A number of scattered trees are located in the middle of the site with more dense vegetation on the western part.

A Biodiversity Development Assessment Report (Appendix 21) has been prepared for the EIS to consider potential impact of tree removal.

#### **3.3.5 Traffic and Access**

Access will be provided from Medowie Road, with new entrances being constructed to accommodate vehicles for the High School, Primary School and Early Learning Centre, including school buses.

A Traffic Impact Assessment (Appendix 18) has been prepared to highlight and manage traffic, parking and access for the proposed development.

### **3.3.6 Bushfire Prone Land**

The site is considered bushfire prone land.

A Bushfire Threat Assessment (Appendix 20) has been prepared for the EIS to identify the potential fire hazards to the development, with the final recommendation being that there is buildable area on site for the development with appropriate services and asset protection zones available. The proposed development can comply with the requirements of Planning for Bushfire Protection 2006 (NSW RFS, 2006) as required under Section 100B of the *Rural Fires Act 1997*.

### **3.3.7 Coastal Zone**

The site is not located within the coastal zone.

### **3.3.8 Drinking Water**

The site is located in the Drinking Water Catchment. A Contamination Assessment (Appendix 8) has been prepared and the groundwater concentrations were compliant with the drinking water guidelines (Australian Government, 2017), however it is noted that assessment of additional compounds would be required prior to the use of groundwater for drinking and/or irrigation.

## **3.4 Aboriginal Heritage**

Four Aboriginal Heritage Information Management System (AHIMS) sites are located within the study area; two of the sites identified are duplicate recordings. Aboriginal Heritage Advice (Appendix 13) has been prepared to identify potential impact on Aboriginal heritage.

## **3.5 Non-Aboriginal Heritage**

The site is not located in a heritage precinct and does not contain a known heritage item, as per the Historical Heritage Assessment (Appendix 22).

## **3.6 Mine Subsidence**

The site is not located within a Mine Subsidence District.

## **3.7 Surrounding Area**

### **3.7.1 Land to the North**

Native vegetation, recreation areas and dwellings are located to the north. The proposed development will also have access to Kingfisher Close on the northern boundary. Hunter Water assets are located on the northern boundary and accessed from Kingfisher Close.





**Photo 3 – Kingfisher Close (looking north)**



**Photo 4 – View from Kingfisher Close to Existing Dwelling (looking south-east)**



### 3.7.2 Land to the East

A range of land uses are located to the east. Dwellings, a childcare centre and Pacific Dunes golf course are located west of the site. Local commercial premises and dwellings in the Medowie suburb are located further east.



**Photo 5 – Child Care on Medowie Road (looking east)**



**Photo 6 – Pacific Dunes Golf Course on Medowie Road (looking north east)**

### 3.7.3 Land to the South and West

Native vegetation, a creek and wetlands are located south of the site. Wetlands extend into the site (Appendix 4 and 6). Ausgrid infrastructure is also located on the southern boundary.



**Photo 7 – Ausgrid Infrastructure and Native Vegetation (looking west)**



## 4. STATUTORY CONTEXT

### 4.1 Commonwealth Legislation

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) provides a national framework for environmental protection and management of nationally and internationally important flora, fauna, ecological communities and heritage places. Part 3 of the EPBC Act lists nine matters of National Environmental Significance (NES) that may require approval from the Commonwealth Minister for the Environment. Further details regarding the impact of the development on places or matters of NES is provided in Section 7.

An action taken by any person on Commonwealth land that is likely to have a significant impact on the environment (Section 26(1)) or an action taken by any person outside of Commonwealth land that is likely to have a significant impact on Commonwealth land (Section 26(2)) may require approval from the Commonwealth Minister for the Environment. The proposal does not involve work by a Commonwealth agency and will not impact or be impacted by an activity, or impact on Commonwealth land.

### 4.2 Environmental Planning and Assessment Act 1979 and Environmental Planning and Assessment Regulation 2000

The proposal is development that requires consent pursuant to Part 4 the EP&A Act. The development is State Significant Development in accordance with Section 4.36(2) of the EP&A Act that states State Significant Development may include development identified within a State Environmental Planning Policy, in this case State Environmental Planning Policy (State and Regional Development) 2011.

#### Permissibility / existing use

The proposed development involves a new school. Clause 35 of SEPP (Education and Child Care) states development for the purpose of a school may be carried out by any person with development consent on land in a prescribed zone. The proposed development is permissible with consent in the R2 Low Density Residential, R5 Large Lot Residential and RU2 Rural Landscape zones pursuant to Clause 35 of SEPP (Education and Child Care).

#### Contributions

Section 7.11 of the EP&A Act states if a consent authority is satisfied that development for which development consent is sought will or is likely to require the provision of or increase demand for public amenities and public services within the area, the consent authority may grant the development consent subject to a condition requiring dedication of land free of cost and / or payment of a monetary contribution.

The proposed development is an erection of a new school for new staff and students and therefore will increase demand for public amenities or services and the proponent will comply with relevant requirements under Section 7.11 of the EP&A Act.

The applicant requests exemption from the requirement to provide a Section 7.12 contribution levied under the provisions of the Port Stephens Fixed Development Contributions Plan 2006 (Amendment No.8) (Section 7.12 (94A) Plan) for the Early Learning Centre, on the grounds stated below.

Clause 2.10 of the Section 7.12 Plan states as follows:

*Council may consider exempting other development types, or components of developments from the Section 7.12 levy or may vary the levy to a lesser amount, at its complete discretion. For such claims to be considered, any such request will need to include a comprehensive submission arguing the case for exemption or reduction.*

St Nicholas Early Learning Centre is a not for profit service operated by a registered charity. The charity delivers community services in the form of early childhood education (child care) in a manner that provides considerably more comprehensive support to children and their families/carers than would a for profit centre.

Furthermore, the proposed Centre progresses a number of Council's policies, particularly those expressed in the Port Stephens 2013-2023 Community Strategic Plan.

As a result, it is considered that the St Nicholas Early Learning Centre should receive exemption from a contribution under the Port Stephens Fixed Development Contributions Plan 2006 (Amendment No.8) (Appendix 35).

### **Information requirements**

Section 4.39 of the EP&A Act requires a development application for State Significant Development to be accompanied by an EIS prepared by or on behalf of the applicant in the form prescribed by the EP&A Regulation. Schedule 2 of the EP&A Regulation outlines the requirements of the Secretary of the Department of Planning & Environment and approval bodies relating to the preparation of an EIS.

In accordance with Schedule 2, Section 3, an application was made to the Secretary for the SEARs with respect to the proposed development. SEARs were provided on 18 January 2018 (Appendix 41) and are summarised in Table 4.1 with a corresponding comment on where each requirement has been addressed in the EIS.

**Table 4.1 – Summary of Secretary’s Environmental Assessment Requirements (SEARs)**

Matter	Key Issues to be addressed	Relevant Section of EIS
The Department of Planning and Environment – NSW Government		
General requirements	Prepared in accordance with Schedule	Section 1 and throughout
	Environmental Risk Assessment	Section 6.17
	Baseline data, potential cumulative environmental impact and environmental management measures	Section 6
	Quantity surveyor providing CIV, estimated number of jobs during construction and operation and certification	Section 1.1, Section 6.12 and Appendix 32
Key Issues	Statutory and Strategic context	Section 4
	Permissibility	Section 4
	Development standards	Section 4.13.6
	Policies	Section 4.3
	Operation	Section 2
	Built form and urban design	Section 2,3 and 6.9
	Environmental amenity	Section 6
	Transport and accessibility	Section 6.1 and Appendix 18
	Ecologically sustainable development	Section 6.16
	Social impacts	Section 6.10 and Appendix 19
	Biodiversity	Section 6.6 and Appendix 21
	Aboriginal heritage	Section 6.7 and Appendix 13
	Bushfire	Section 6.6 and Appendix 20
	Noise and vibration	Section 6.5 and Appendix 12
	Sediment, erosion and dust controls	Section 6.3 and 10.1
	Contamination	Section 6.2 and Appendix 8
	Utilities	Section 2.11, 5.4 and 5.5 and Appendix 31
	Contributions	Section 4.2
	Water	Section 6.3 and Appendix 15
	Drainage	Section 6.3 and Appendix 15
	Flooding	Section 6.3 and Appendix 9
	Waste	Section 6.13
	Construction hours	Section 2.6

Matter	Key Issues to be addressed	Relevant Section of EIS
Plans and documents	Site plans	Section 2.4 and Appendix 23
	Architectural	Appendix 23
	Perspective drawings	Appendix 25
	Survey	Appendix 34
	Site analysis	Section 2.3 and Appendix 34
	Stormwater concept	Section 6.3 and Appendix 15
	Sediment and erosion control	Section 6.3 and Appendix 15
	Shadow diagrams	Appendix 23
	View analysis / photomontages	Appendix 25
	Landscape plan (including tree removal and retention)	Section 2.9 and Appendix 27
	MUSIC modelling	Section 6.3.3.4 and Appendix 15
	Geotechnical and structural report	Section 6.2 and Appendix 11
	Accessibility report	Section 6.11 and Appendix 16 & 17
	Arborist report	Section 6.6 and Appendix 33
	Salinity investigation report (if required)	Section 6.2 and Appendix 8
Consultation	Acid sulfate soils management plan	Section 6.2
	Schedule of materials and finishes	Section 2.10 and Appendix 23 and 27
References	Local, State and Commonwealth government authorities	Section 5
	Guidelines, policies and plans	Section 12

### 4.3 State Environmental Planning Policy (State and Regional Development) 2011

SEPP (State and Regional Development) identifies development that is considered State significant and requires an EIS and approval from the Department of Planning and Environment.

Schedule 1 of SEPP (State and Regional Development) states:

#### 15 Educational establishments

**(1) Development for the purpose of a new school (regardless of the capital investment value).**

(2) Development that has a capital investment value of more than \$20 million for the purpose of alterations or additions to an existing school.

(3) Development for the purpose of a tertiary institution (within the meaning of *State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017*), including associated research facilities, that has a capital investment value of more than \$30 million.

The proposed development is a new school and as such is identified as State significant development under the SEPP.

## 4.4 State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017

State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017 SEPP (Education and Child Care) seeks to improve certainty and efficiency of planning for education and early education establishments. Clause 35 of the SEPP (Education and Child Care) states development for the purpose of a school may be carried out by any person with development consent on land in a prescribed zone. The proposed development is permissible with consent in the R2 Low Density Residential, R5 Large Lot Residential and RU2 Rural Landscape zones pursuant to Clause 35.

The proposal has considered development controls in Part 3 of the Education and Child Care SEPP that identify specific development controls for early education and child care facilities and Part 4 which identifies specific development controls for schools.

Clause 35 of SEPP (Education and Child Care) states:

- (6) Before determining a development application for development of a kind referred to in subclause (1), (3) or (5), the consent authority must take into consideration:
  - (a) the design quality of the development when evaluated in accordance with the design quality principles set out in Schedule 4, and
  - (b) whether the development enables the use of school facilities (including recreational facilities) to be shared with the community.
- (7) Subject to subclause (8), the requirement in subclause (6) (a) applies to the exclusion of any provision in another environmental planning instrument that requires, or that relates to a requirement for, excellence (or like standard) in design as a prerequisite to the granting of development consent for development of that kind.
- (8) A provision in another environmental planning instrument that requires a competitive design process to be held as a prerequisite to the granting of development consent does not apply to development to which subclause (6) (a) applies that has a capital investment value of less than \$50 million.

Webber Architects secured the project through a Design Competition run by the Catholic Schools Office. Four architects were invited to prepare a design for a seven stream high school on the site at 507 Medowie Road. The focus of the brief was the high school, however consideration was to be given to the inclusion of a two stream primary school, chapel and Early Learning Centre as well as at some future date.

Each architect presented their design on Friday 14th October 2016 to a panel of stakeholders who assessed the designs against a number of selection criteria. Feedback from the panel was then reviewed by a six person Project Evaluation Committee, who made a recommendation to the Bishop. The Bishop then signed off on the recommendation and Webber Architects were appointed to the project.

The Design Verification Statement (Appendix 26) references Better Schools – A design guide for schools in NSW. The statement addresses the seven principles in Schedule 4 and demonstrates the proposal has given consideration to the site, attributes and future users, with comments from GANSW.

In relation to the proposed child care, Clause 35 of SEPP (Education and Child Care) states:

- (10) Development for the purpose of a centre-based child care facility may be carried out by any person with development consent on land within the boundaries of an existing school.

The Early Learning Centre is proposed as ancillary development to the school. The school is permitted under Clause 35 of the SEPP (Education and Child Care) and the Early Learning Centre will be an ancillary part of the school under the same Clause and as such is considered permissible with consent. Clause 23 of the SEPP (Education and Child Care) requires a consent authority to consider any applicable provisions of *Child Care Planning Guideline* that have been considered design development for the project.

Part 7 relates to traffic generating development. Educational establishments that have a capacity of 50 or more students is considered a Traffic Generating Development that needs to be referred to Roads and Maritime Services (RMS). The proposal has been referred to RMS and consultation is currently ongoing.

#### 4.5 State Environmental Planning Policy No.14 – Coastal Wetlands

The boundaries of designated wetlands covered by State Environmental Planning Policy No.14 – Coastal Wetlands (SEPP 14) are mapped under the policy.

The site contains SEPP 14 wetland No. 813. Clause 7 of SEPP 14 states:

- (1) In respect of land to which this policy applies, a person shall not:
  - (a) clear that land,
  - (b) construct a levee on that land,
  - (c) drain that land, or
  - (d) fill that land,

except with the consent of the council and the concurrence of the Director.

Clause 7(3) states development for which consent is required by subclause (1) is declared to be designated development for the purposes of the Act.

Section 4.12(8) of the EP&A Act states that a development application for designated development must be accompanied by an environmental impact statement.

In addition, Clause 8 states “Where a council receives an application for consent to carry out development referred to in clause 7 (1), the council shall, within 7 days of its receipt of that application, forward a copy of the application to the Director of National Parks and Wildlife.”

Given the minimisation of direct impacts to the mapped extent of the SEPP 14 coastal wetland given a range of measures will be implemented to ensure indirect impacts are minimised, the proposed development is not considered to be in opposition to the aims and objectives of SEPP 14 - Coastal Wetlands. Moreover, the proposed development is not expected to significantly impact any freshwater or marine aquatic values listed under the *Fisheries Management Act 1994* (Appendix 21).

#### 4.6 State Environmental Planning Policy No.44 – Koala Habitat Protection

State Environmental Planning Policy No.44 – Koala Habitat Protection (SEPP 44) aims to encourage conservation and management of natural vegetation areas that provide habitat for Koalas to ensure permanent free-living populations will be maintained over their present range and to reverse the current trend of Koala-population decline. SEPP 44 applies to the Port Stephens local government area.

The Biodiversity Development Assessment Report (Appendix 21) found the results of these assessments have determined that the development will be consistent with the objectives of the Port Stephens Council Comprehensive Koala Plan of Management (CKPoM) and therefore with SEPP No. 44, provided the recommended safeguards are implemented.

#### 4.7 State Environmental Planning Policy No.55 – Remediation of Land

State Environmental Planning Policy No.55 – Remediation of Land (SEPP 55) aims to promote remediation of contaminated land for the purpose of reducing the risk of harm to human health or any other aspect of the environment. The site is located approximately 2.2 kilometres north of the NSW Environmental Protection Agency's mapped investigation area for potential PFAS (per- and poly-fluoroalkyl substances) contamination associated with the use of PFAS in firefighting chemicals at the RAAF base at Williamtown.

A Contamination Assessment has been prepared (Appendix 8). The assessment found the site is suitable for the proposed use as a Catholic College subject to:

- Confirmation of the source of hydrocarbons within the fill mounds and determination of the appropriate uses of that material, with either management or remediation options available
- Consideration of the extent of excavation and implementation of an Acid Sulfate Soil Management Plan (ASSMP) if excavation is likely to impact on acid sulfate soils

- PFAS concentrations were found; however, these were all below the current guideline criteria for residential human health and ecological criteria.

## 4.8 State Environmental Planning Policy No. 64 – Advertising and Signage

State Environmental Planning Policy No.64 – Advertising and Signage (SEPP 64) aims to ensure that signage communicates effectively and suits the desired amenity of an area.

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.

Schedule 1 assesses the signage in relation to specific criteria in relation to character of the area, special areas, views and vistas, streetscape, setting or landscape, site and building, associated devices and logos with advertisements and advertising structures, illumination and safety (Appendix 38).

The diocese currently anticipates the following indicative signage at the development (Appendix 27):

- Overall Catholic Precinct sign close to the main carpark entry which would indicate the site as Catherine McAuley Catholic Diocese Educational Campus
- Individual Agency Signage closer to each of the four developments, Church, Secondary College, Primary School & Early Learning Centre. These signs may be similar to what would be installed at most of our schools and may have a digital component that could change easily to provide current information to the school community
- Signage identifying each of the school buildings as well as a directional precinct sign close to the main pedestrian plaza guiding visitors towards the various facilities on the site
- Wayfinding signage at a low level will also be designed to direct visitors between buildings and other facilities.

Furthermore, proposed signage is consistent with signage across other development of the same nature in the area.

## 4.9 Port Stephens LEP 2013

Educational establishments are not permitted in the R2, R5 or RU2 zones under the Port Stephens Local Environmental Plan 2013 (LEP); however, permissibility for an educational establishment is achieved through Clause 28(1) of SEPP (Infrastructure) 2007 as the proposed development will occur in prescribed zones.

Relevant Clauses of the LEP are discussed in Table 4.2.

**Table 4.2 – Consistency with LEP 2012**

Clause	Consistency
1.2 Aims	The LEP provides for appropriate development within the LGA. The proposal has given due consideration to the site and surrounds and is in keeping with the aims of the LEP.
2.1 Land use zones	<p>Clause 35 of SEPP (Education and Child Care) states development for the purpose of a school may be carried out by any person with development consent on land in a prescribed zone. The proposed development is permissible with consent in the R2 Low Density Residential, R5 Large Lot Residential and RU2 Rural Landscape zones pursuant to Clause 35.</p> <p>The school is permitted under Clause 35 of the SEPP (Education and Child Care) and the Early Learning Centre will be an ancillary part of the school under the same Clause and as such is considered permissible with consent.</p>
2.3 Zone objectives	With respect to development for the purpose of an educational establishment, objectives of the zones need to have been considered in design development.



Clause	Consistency
	<p>Objectives of the R2 zone are as follows:</p> <ul style="list-style-type: none"> <li>➤ To provide for the housing needs of the community within a low density residential environment.</li> <li>➤ To enable other land uses that provide facilities or services to meet the day to day needs of residents.</li> <li>➤ To protect and enhance the existing residential amenity and character of the area.</li> <li>➤ To ensure that development is carried out in a way that is compatible with the flood risk of the area.</li> </ul> <p>Objectives of the R5 zone are as follows:</p> <ul style="list-style-type: none"> <li>➤ To provide residential housing in a rural setting while preserving, and minimising impacts on, environmentally sensitive locations and scenic quality.</li> <li>➤ To ensure that large residential lots do not hinder the proper and orderly development of urban areas in the future.</li> <li>➤ To ensure that development in the area does not unreasonably increase the demand for public services or public facilities.</li> <li>➤ To minimise conflict between land uses within this zone and land uses within adjoining zones.</li> </ul> <p>Objectives of the RU2 zone are as follows:</p> <ul style="list-style-type: none"> <li>➤ To encourage sustainable primary industry production by maintaining and enhancing the natural resource base.</li> <li>➤ To maintain the rural landscape character of the land.</li> <li>➤ To provide for a range of compatible land uses, including extensive agriculture.</li> </ul> <p>The design development stage has given due consideration to the above zone objectives. The proposed development aims to reduce potential conflict between land uses within this zone and land uses within adjoining zones.</p>
4.1 Minimum subdivision lot size	Minimum lot size is 500m <sup>2</sup> (R2 zoned land), 2,000m <sup>2</sup> (R5 zoned land) and 20 hectares (RU2 zoned land). No subdivision is proposed.
4.3 Height of buildings	The maximum building height for the site is 9 metres in the R2 zoned land with no maximum permissible height in the R5 and RU2 zoned land. Maximum building height of the proposed development is approximately 11.15 metres.
4.6 Exceptions to development standards	<p>Flexibility is provided in the LEP for development standards. The height encroachments over the 9 metre limit are as follows:</p> <p>Block A: 2100mm</p> <p>Block G: 1700mm</p> <p>Block H: 1200mm</p> <p>Block I: 2150mm</p> <p>Block J: 1000mm</p> <p>The maximum building height is appropriate to the site and its location to achieve an architecturally designed building that meets the needs of high quality education facilities.</p> <p>At a pre-DA meeting Council advised: "It was established that there is no set numerical value that an exception must adhere to, rather the assessment would be based on merit. Points that should be included in any request for an exception include visual impact on the streetscape, bulk and scale, articulation, and the overall design" (Appendix 7).</p> <p>It is considered unnecessary and unreasonable to require a 9 metre maximum height for the school site and as such an exception to the development standard is required to achieve the</p>

Clause	Consistency
	overall objectives of the development. Refer to Section 6.9.2 and Appendix 37.
5.5 Development within the coastal zone	The proposed development is not within the coastal zone.
5.9 Preservation of trees or vegetation	A Biodiversity Development Assessment Report (Appendix 21) has been prepared to identify potential impact on fauna and flora.
5.10 Heritage conservation	Aboriginal Heritage Advice (Appendix 13) has been prepared to identify potential impact on Aboriginal heritage.
6.2 Public utility infrastructure	Services are available to the site and will be augmented as required for the proposed development.
7.1 Acid sulfate soils	The Contamination Assessment (Appendix 8) found acid sulfate soils were identified at the site at 3.0 metres below the surface at one location and may commence from 2.0 metres below the surface. Depending on the extent of excavation being undertaken, an ASSMP may be required.
7.2 Earthworks	The Geotechnical Investigation (Appendix 11) was prepared for the purpose of site classification and pavement design. The investigation states that earthworks conducted at the site should be controlled in accordance with AS 3798-2007 and guided by Section 8.1 to 8.4.2 of the investigation.
7.3 Flood planning	<p>Part of the site is considered flood prone land. A Flood Risk and Impact Assessment (Appendix 9) states that if only minor alterations to the topography and surface elevations of the small area in question within the Low Hazard Flood Storage (less than 0.4 hectares) occur, the project is expected to have a negligible impact on the flood levels at the site and surrounding area, or on the broader flood behaviour. A detailed modelling based impact assessment is therefore deemed unnecessary (Appendix 9).</p> <p>The flood impacts associated with the proposed development are negligible in terms of affecting property, assets and infrastructure and therefore result in no detriment to the overall social or economic status of the community (Appendix 9).</p> <p>The Flood Risk and Impact Assessment (Appendix 9) found that a Flood Emergency Response Plan for the site would be beneficial, detailing what to do prior to, during and after a major flood event.</p>
7.6 Essential services	Essential services will be provided to the proposed development. Through the development process application to the relevant service authorities will be required.
7.8 Drinking water catchments	<p>A Contamination Assessment has been prepared (Appendix 8) and states concentrations observed meet levels that would allow for human ingestion as the site is within a Hunter Water drinking water catchment, noting some minor uncertainty with benzo(a)pyrene and some pesticides due to detection limit. Additional testing would be required to fully assess whether the groundwater is suitable for drinking (Appendix 8).</p> <p>Metals concentrations were found to be in excess of those relevant for freshwater aquatic systems, however in the absence of significant metals concentrations in the soil and potential contamination activities at the site it is considered that these concentrations are likely a regional issue. The concentrations should be taken into account during construction, dewatering, or otherwise to ensure that the handling and disposal options are appropriate (Appendix 8).</p>
7.9 Wetlands	The Biodiversity Assessment Report (Appendix 21) found the proposed development footprint has been sited so as to avoid and minimise direct impacts to the mapped wetland. Moreover, mitigation measures are to be implemented during construction and operation of the proposed College and associated infrastructure such that the environmental effects of the proposed development are likely to be negligible. Moreover, the proposed development is not expected to significantly impact any freshwater or marine aquatic values listed under the <i>Fisheries Management Act 1994</i>

Clause	Consistency
	(Appendix 21).
7.10 Williams River Catchment	A Stormwater Management Plan (Appendix 15) has been developed to reduce the impact of stormwater runoff on the surrounding wetlands and watercourses. This has been achieved through proposed detention basins and Atlantis tanks to regulate the flow of water off site. Appropriate stormwater management will ameliorate potential impact on the Williams River Catchment.

## 4.10 Port Stephens Council Comprehensive Koala Plan of Management

The Port Stephens Council Comprehensive Koala Plan of Management (CKPoM) has been prepared by Port Stephens Council and the Australian Koala Foundation (AKF). The document contains a brief discussion of issues relating to the management of Koalas and Koala habitat in the Port Stephens Local Government Area (LGA) and the recommended actions to address these issues.

The Biodiversity Development Assessment Report (Appendix 21) recorded one Koala to the south-west of the impact area within the Swamp Mahogany- paperbark swamp vegetation (PCT 1718) adjacent to the subject land. This area is mapped as preferred Koala habitat on the Koala habitat planning map (Figure 7 of Appendix 21) due to the presence of important feed tree species. The preferred Koala habitat to the west of the subject land has potential to be utilised as foraging, breeding and dispersal habitat.

Given the minimisation of direct impacts to the Preferred Koala Habitat and given a range of measures that will be implemented to ensure indirect impacts are minimised, the proposed development is considered to be consistent with the aims and objectives of SEPP 44 – Koala Habitat Protection (Appendix 21).

## 4.11 Other NSW Legislation

Table 4.3 details relevant NSW legislation, purpose of the legislation and its relevance to the Proposal.

**Table 4.3 – Legislative Requirements and Approvals**

Legislation (Responsible Agency)	Purposes of Legislation	Relevance to the Proposal and Approval Requirements
<i>Biodiversity Conservation Act 2016</i>	<p>The purpose of this Act is to maintain a healthy, productive and resilient environment for the greatest well-being of the community, now and into the future, consistent with the principles of ecologically sustainable development.</p> <p><b>7.9 Biodiversity assessment for State significant development or infrastructure</b></p> <p>(1) This section applies to:</p> <p>(a) an application for development consent under Part 4 of the <i>Environmental Planning and Assessment Act 1979</i> for State significant development, and</p> <p>(b) an application for approval under Part 5.1 of the <i>Environmental Planning and Assessment Act 1979</i> to carry out State significant infrastructure.</p> <p>(2) Any such application is to be accompanied by a biodiversity development assessment report unless the Planning Agency Head and the Environment Agency Head determine that the proposed development is not likely to have any significant impact on biodiversity values.</p> <p>(3) The environmental impact statement that accompanies any such application is to include the biodiversity assessment required by the environmental assessment requirements of the Planning Agency Head under the <i>Environmental Planning and Assessment Act 1979</i>.</p>	<p>A Biodiversity Development Assessment Report (Appendix 21) found that a total of 12.1 hectares of native vegetation was recorded within the study area; mostly represented by the Hunter Lowland Redgum Forest EEC and Swamp Sclerophyll Forest EEC. Through an iterative design process, which considered the biodiversity values known and likely to occur within the study area, the subject land was identified for the proposed development and ancillary infrastructure that minimises biodiversity impacts to the removal of 1.55 hectares of native vegetation and associated habitat and removal of 10 isolated hollow bearing paddock trees.</p> <p>Flora and fauna are discussed in Section 6.6 and Appendix 21.</p>
<i>Contaminated Land Management Act 2008</i>	<p>The Act establishes a process for investigating and (where appropriate) remediating land that the Environment Protection Authority (EPA) considers to be contaminated significantly enough to require regulation under Division 2 of Part 3.</p> <p>Furthermore, under Section 60 a person whose activities have contaminated land or a landowner whose land has been contaminated</p>	<p>A Contamination Assessment has been prepared (Appendix 8). The assessment found the site is suitable for the proposed use as a Catholic College subject to:</p> <ul style="list-style-type: none"> <li>➤ Confirmation of the source of hydrocarbons within the fill mounds and determination of the appropriate uses of that material, with either management or</li> </ul>

Legislation (Responsible Agency)	Purposes of Legislation	Relevance to the Proposal and Approval Requirements
	is required to notify the EPA when they become aware of the contamination.	<p>remediation options available</p> <ul style="list-style-type: none"> <li>➤ Consideration of the extent of excavation and implementation of an ASSMP if excavation is likely to impact on acid sulfate soils</li> <li>➤ PFAS concentrations were found, however these were all below the current guideline criteria for residential human health and ecological criteria.</li> </ul>
<i>Environmentally Hazardous Chemicals Act 1985</i>	The Act regulates use and storage of environmentally hazardous chemicals or declared chemical waste. It provides the OEH with assessment and control mechanisms for chemicals and chemical wastes.	A list of the chemicals stored on site can be found in Appendix 30.
<i>Fisheries Management Act 1994 and Fisheries Management Regulation (General) 2002</i>	<p>The objects of this Act are to conserve, develop and share the fishery resources of the State for the benefit of present and future generations. It outlines the circumstances in which approvals are required in order to carry out dredging or reclamation work, and the exemptions that apply.</p> <p>Reclamation work refers to using any material to fill in or reclaim water land or depositing any such material on water land for the purpose of constructing anything over water land (such as a bridge) or draining water from water land for the purpose of its reclamation.</p>	No approvals or licences are required pursuant to the Act.
<i>Heritage Act 1977</i>	<p>The Heritage Act is administered by the Heritage Office within the Office of Environment &amp; Heritage and concerns protection and restoration and enhancement of State heritage items.</p> <p>The relevant provisions of the Act are:</p> <ul style="list-style-type: none"> <li>➤ Section 139 prohibits disturbance of a relic unless an excavation permit is obtained from the Heritage Office</li> <li>➤ Section 146 requires notification to the Heritage Office of any discovery of relics.</li> </ul>	<p>No State or local heritage items are listed for the site or immediate vicinity (Appendix 22).</p> <p>The Proposal will not require removal of or impact to a heritage item.</p> <p>Aboriginal Heritage Advice (Appendix 13) has been prepared to identify potential impact on Aboriginal heritage. Four Aboriginal Heritage Information Management System (AHIMS) sites are located within the study area; two of the sites identified are duplicate recordings.</p>
<i>Mine Subsidence Compensation Act 1961</i>	Section 15 requires approval to alter or erect improvements within a mine subsidence district or to subdivide land therein.	The site is not located within a mine subsidence district.
<i>National Parks and Wildlife Act 1974</i>	<p>The Act aims to conserve nature and objects, places or features of cultural value.</p> <p>An Aboriginal Heritage Impact Permit is required under Section 90 to harm or desecrate Aboriginal objects or places.</p>	Aboriginal Heritage Advice (Appendix 13) has been prepared to identify potential impact on Aboriginal heritage. Four Aboriginal Heritage Information Management System (AHIMS) sites are located within the study area; two of the sites identified are duplicate recordings.
<i>Protection of the Environment Operations Act 1997</i>	<p>The POEO Act primarily regulates pollution control and waste disposal in NSW and is administered by the OEH.</p> <p>It identifies development for which a POEO Licence is required.</p>	<p>Reasonable and feasible environmental measures must be implemented to minimise pollution as a result of the Proposal.</p> <p>Refer to Section 10 for environmental management measures that will ameliorate potential impact to the environment.</p>
<i>Roads Act 1993</i>	Objects of the Act are to, among other things, confer certain functions (in particular, the function of carrying out road work) on RMS and on other roads authorities, and to provide for the distribution of the functions conferred by this Act between RMS and other roads authorities.	<p>Traffic issues are addressed in Section 6.1.</p> <p>RMS have been consulted as Medowie Road is a classified road under care and control of RMS and they must provide concurrence for all road works and intersection upgrade (Appendix 36).</p>

Legislation (Responsible Agency)	Purposes of Legislation	Relevance to the Proposal and Approval Requirements
<i>Rural Fires Act 1997</i>	Under Section 63 public authorities must take all practicable steps to prevent the occurrence and spread of bush fires on or from land vested in or under its control or management.	A Bushfire Threat Assessment has been prepared (Appendix 20). The subject land is identified as being bushfire prone land on the Port Stephens Council Bush Fire Prone Land Map. The development therefore has been assessed to comply with Section 100B of the <i>Rural Fires Act 1997</i> , which includes the consideration of the NSW Rural Fire Service (RFS) document Planning for Bushfire Protection 2006 (NSW RFS 2006). Bushfire is discussed in Section 6.6.
<i>Soil Conservation Act 1938</i>	The Act allows for conservation of soil resources and erosion mitigation.	Erosion and sediment control is discussed in Section 6.3 and Appendix 15.
<i>Waste Avoidance and Resource Recovery Act 2001</i>	Objects of the Act include encouraging efficient use of resources and reducing environmental harm in accordance with the principals of ecologically sustainable development. The Act establishes the waste hierarchy of avoidance, resource recovery and disposal.	Waste management is discussed in Section 6.13.
<i>Water Management Act 2000</i>	<p>The Act outlines approval requirements for activities at a specified location in, on or under waterfront land. Waterfront land includes the bed of any river, lake or estuary and all land within 40 metres of the highest bank of the river, lake or estuary.</p> <p>The Act also outlines water access rights and approval / concurrence requirements for use of groundwater and surface water runoff.</p> <p>Taking groundwater that is not managed by a water sharing plan requires a groundwater licence (Section 92).</p>	<p>A controlled activity approval is required for the proposed development as it involves work within a SEPP 14 wetland for the purpose of an Asset Protection Zone.</p> <p>Consultation with Department of Primary Industries (Water) also found that a 10 metre setback from the surface drainage line on site would be appropriate.</p> <p>Potential impact to watercourses is discussed in Section 6.3.</p> <p>The development is unlikely to require extraction of significant amounts of groundwater. However, if during construction more than 3 mega litres of groundwater is proposed to be extracted an approval/license is required from the NSW Office of Water.</p>

## 4.12 NSW Plans and Policies

### 4.12.1 NSW State Priorities

One of the NSW State priorities is improving education standards as well as academic result.

The proposed Catholic College at Medowie will provide a new education facility for students. The proposed development is in keeping with the NSW State priorities.

### 4.12.2 A Plan for growing Sydney

This plan is not applicable to the Port Stephens LGA.

### 4.12.3 Future transport strategy 2056 and supporting plans

The Future Transport Strategy 2056 sets the 40 year vision, directions and outcomes framework for customer mobility in NSW and will guide transport investment over the longer term. This plan aims to place the customer at the centre and with feedback harness the rapid advancement of technology and innovation across the transport system to transform customer experience, improve communities and boost economic performance (TfNSW 2017).

The strategy will be delivered through a series of supporting plans, one of which is the Draft Greater Newcastle Future Transport Plan, this plan applies to the development area and is discussed below.



#### 4.12.4 Crime Prevention Through Environmental Design (CPTED)

A Crime Risk Assessment Report has been prepared to review the proposed development against Crime Prevention Through Environmental Design (CPTED) principles and provides recommendations for the design, construction and future management practices of the development (Appendix 14).

The report found that the Port Stephens LGA was susceptible to these common criminal offences; break, enter and steal from dwelling, theft of/ from motor vehicle, assault and/ or robbery (with or without a weapon) of residents, stealing and malicious damage. Medowie's common offences were found to theft, malicious damage to property and assault which are in a stable trend. The risk rating of Medowie from the crime risk assessment found that it was of a moderate risk (rating) (Appendix 14).

The CPTED design principles were applied to the current site plan to help mitigate the risk of the aforementioned offences from occurring. Using the four design principles the assessment found the following about the proposal. The surveillance assessment found that the siting and orientation of the administration buildings provide good natural surveillance of access points into the college. The access control assessment found that the pathways, landscaping, edge treatments, fencing and gates on the site will be clear indicators of the different levels of appropriate public and private access. The territorial reinforcement assessment found that the location of pathways and administration buildings transition the public and private spaces on the site. The activity and space management assessment found that the layout of the proposal encourages space management through the separation of spaces and their specific uses for each area being clearly defined. Overall the principles are designed in the hope that they help reduce potential criminal activity.

Further details of the CPTED report including recommendations, mitigation methods and more detailed assessment of the Catholic College can be seen in Appendix 14.

#### 4.12.5 Healthy Urban Development Checklist, NSW Health

Reflecting the understanding of healthy urban development and the determinants of health, the ten characteristics of healthy urban development focused on in the Healthy Urban Development Checklist are:

- Healthy food
- Physical activity
- Housing
- Transport and physical connectivity
- Quality employment
- Community safety and security
- Public open space
- Social infrastructure
- Social cohesion and social connectivity
- Environment and health.

As an educational establishment focused around holistic education, the Catholic College will promote physical activity, healthy food, community involvement and quality education. The Catholic College will provide appropriate levels of sporting activity and facilities for students and allows for healthy lifestyle options.

#### 4.12.6 Better Placed — An integrated design policy for the built environment of NSW 2017

*"Better Placed is an integrated design policy for the built environment of NSW. It seeks to capture our collective aspiration and expectations for the place where we work, love and play. It creates a clear approach to ensure we get the good design that will deliver the architecture, public places and environments we want to inhabit now and those we make for the future."* (GANSW 2017)

Better Placed advocates for a shared responsibility in realising good design processes and outcomes for NSW.

This policy highlights education opportunities as a way for communities to address wider economic and social trends. Well-designed education environments enhance productivity, the attractiveness of the design creates a sense of local pride and identity, thus are more likely to be well maintained.

The proposed development links to the outcomes of the policy through modern and interesting designs and layouts, while also providing a visually stimulating environment for both students and staff.

#### **4.12.7 Social Impact Assessment Guidelines**

Social Impact Assessment (SIA) is the process of identifying, predicting, evaluating and developing responses to the social impacts of a proposed development. A Social Impact Assessment has been conducted by Key Insights Pty Ltd to accompany this EIS (Appendix 19). Currently there is only one guideline for SIA which is for mining and petroleum and extractive industries the principle of proportionality has been applied, as the proposal is not of this nature.

The SIA goes into detail about the current community profile of Medowie, research findings and analysis. According to 2016 Census Medowie's population has increased to 9,563 from 8,843 in 2011. The school aged portion of the population in Medowie is higher than the surrounding suburbs. However, with the current lack of secondary schools in Medowie students are forced to travel to Raymond Terrace and beyond, even further if they want a Catholic education. With many of the students commuting out of their suburb and LGA, there is a ripple effect into the Medowie community. The Medowie community struggles to mesh together by this disruption, as people are not able to get involved with community events and local sporting groups as the Medowie residents are spending their time travelling rather than getting involved within the community.

The new Catholic college will have social impacts on both Medowie and surrounding suburbs, consultation with stakeholders was undertaken to understand these impacts. In the SIA it was found that the proposal would have a low social risk with a generous benefit to the public as a result. The social impacts as a result from the proposal include:

- Amenity
- Access
- Built Environment
- Heritage
- Community
- Economic.

For the most part these impacts have been assessed elsewhere in this report such as heritage and access (traffic and access). Amenity was one of the social impacts and it was largely found that the amenity impact would be positive with the negative impacts mostly being in the construction phase and the ongoing concern of traffic movement as a result of the proposal.

Another social impact is community impact where it was found that the proposal would have a positive impact on the cohesion of the Medowie community. The community impact from the proposal will extend further with an increase of education and job opportunities the Catholic college will help the region reap these benefits.

Further details of the social impacts and mitigation measures can be found in Appendix 19.

#### **4.12.8 Disability (Access to Premises – Buildings) Standards 2010**

The objects of these Standards are:

- (a) to ensure that dignified, equitable, cost-effective and reasonably achievable access to buildings, and facilities and services within buildings, is provided for people with a disability; and
- (b) to give certainty to building certifiers, building developers and building managers that, if access to buildings is provided in accordance with these Standards, the provision of that access, to the extent covered by these Standards, will not be unlawful under the Act.

The Accessibility Study results can be found in Section 6.11 and Appendices 16 and 17.

## 4.13 Regional Plans

### 4.13.1 Hunter Regional Plan 2036

The Hunter Regional Plan aims to guide NSW Government's land use planning priorities over the next 20 years. The plan states all levels of government, the private sector and the community will have to work together to deliver the plan (NSW Government 2016).

The proposal is consistent with the Hunter Regional Plan 2036. **Goal 1 – The leading regional economy in Australia and Goal 4 – Greater housing choice and jobs.** The plan identifies education as a growing sector in the Hunter region and the new Catholic College will provide the type of facility that will help in Newcastle's economy growth. The college will also be promoting housing and job growth in the significant land cluster of Medowie through the creation of employment and construction opportunities.

### 4.13.2 Hunter Regional Transport Plan 2014

Movement of traffic to and from the site has been considered in the development. As the proposal is for a new school, new staff and students will increase traffic and access requirements.

A Traffic Impact Assessment (Appendix 18) found that the additional traffic movements generated by the development will have a manageable impact on the surrounding road network, with the use of bus services limiting the volume of traffic for this development. The typical parking demands associated with the development can be accommodated on site, with the parking provided in accordance with the Port Stephens Council Development Control Plan (DCP) and as such will not impact upon the adjacent road network.

### 4.13.3 Draft Greater Newcastle Future Transport Plan

The Draft Greater Newcastle Future Transport Plan is a supporting plan for the Draft Future Transport Plan 2056 (TfNSW, 2017), with a vision, state-wide direction and initiative to deliver set outcomes.

The Greater Newcastle area is considered a key global gateway city, which is benefited by its education precincts along with other important industries.

The proposal fits in with the plan as the Williamstown-Medowie-Karuah precinct is identified as a growth area and education facilities will be required. The proposal is consistent with the plan as traffic management has been considered and addressed throughout the design process.

### 4.13.4 Draft Greater Newcastle Metropolitan Plan

The plan aims to:

- connect strategic centres in Greater Newcastle
- develop a national Centre of Excellence for Health and Education
- expand the capacity of Global Gateways – Newcastle port and airport; and
- establish governance.

The proposal is consistent with the Greater Newcastle Metropolitan Plan as the establishment of a new school can potentially lead to significant cluster of important services within the area, thus providing more employment and activity within the region.

### 4.13.5 Medowie Planning Strategy

The Medowie Planning Strategy has been prepared to provide local direction for land use planning and sustainable growth over the next 20 years. The Medowie Planning Strategy identifies Medowie as a growth area. Land is identified to accommodate 2,400 new dwellings in residential release areas and additional 180 in rural residential release areas. The population of Medowie in 2016 (pre-release of the 2016 census data) was 10,300 people; with growth to increase by 7,200 people to a total of 17,500 people by the year 2036 (Medowie Planning Strategy, 2016). These figures are estimates under a 'maximum growth' scenario.

Some of the key changes proposed include:

- Medowie Road: A sub-arterial road which provides the main access to Medowie and a major link to Williamtown RAAF Base and Newcastle to the south. The existing road reserve width is to be retained to facilitate long-term investigation of 4 lanes
- Future bus stop potentially to be located near development site
- Off-road shared path from Ferodale Rd to South St of east side of Medowie Rd
- Proposed change of speed from 80km/h down to 50km/h past development site.

This planning strategy identifies the area for the proposed development to be suitable for a potential school, with the proposal being for a new Catholic college, the development aligns with the current strategy.

#### 4.13.6 Port Stephens Development Control Plan 2014

Port Stephens Development Control Plan 2014 (DCP 2014) provides guidance to development of land under LEP 2013 and is intended to act as an integrated planning document. The purpose of DCP 2014 is to implement Council's LEP 2013 by facilitating ecologically sustainable development.

The general provisions of each subsection and location with this EIS in each part of DCP 2014 are presented as follows in Table 4.4

**Table 4.4 – Summary of Port Stephens DCP**

<b>B General Provisions</b>			
<b>No.</b>	<b>Part</b>	<b>This Part applies to development that:</b>	<b>Relevant section within EIS</b>
B1	Tree Management	<ul style="list-style-type: none"> <li>is to remove or prune trees or other vegetation within urban areas</li> </ul>	Section 6.6
B2	Natural Resources	<ul style="list-style-type: none"> <li>is located on land or is within 500m of land that contains items of environmental significance, such as; threatened species or communities, listed migratory species, wildlife corridors, wetland or riparian corridors and has the potential to impact biodiversity</li> <li>is seeking to use biodiversity offsets</li> <li>is located on land containing noxious weeds</li> <li>is located on land identified as koala habitat</li> </ul>	Section 6.6
B3	Environmental Management	<ul style="list-style-type: none"> <li>is located on land identified as bushfire prone land</li> <li>is located on land that contains acid sulfate soils</li> <li>has the potential to be contaminated land</li> <li>has the potential to produce air pollution, such as dust or odour</li> <li>has the potential to produce adverse offensive noise</li> <li>is defined as or involves earthworks</li> <li>will produce significant waste</li> </ul>	Section 6.6
B4	Drainage & Water Quality	<ul style="list-style-type: none"> <li>increases non-permeable surfaces</li> <li>requires connection to public drainage</li> <li>involves a controlled activity within 40m of waterfront land</li> </ul>	Section 6.3
B5	Flooding	<ul style="list-style-type: none"> <li>is situated within the flood planning area or at/or below the flood planning level</li> </ul>	Section 6.3

B6	Essential Services	<ul style="list-style-type: none"> <li>is not connected to essential services, being water, electricity, sewerage, stormwater drainage and suitable vehicular access, but there is capacity to achieve connection in the future</li> </ul>	Section 2.11 & 5
B7	Williamstown RAAF Base – Aircraft Noise & Safety	<ul style="list-style-type: none"> <li>is situated within the aircraft noise planning area, bird strike zone, extraneous lighting area or the Williamstown RAAF Base Obstacle Limitations or Operations Surface Map</li> </ul>	Section 6.5
B8	Heritage	<ul style="list-style-type: none"> <li>is situated on land that contains a heritage item or within a heritage conservation area</li> </ul>	Section 6.7 & 6.8
B9	Road Network & Parking	<ul style="list-style-type: none"> <li>has the potential to impact on the existing road network or creates demand for on-site parking</li> </ul>	Section 6.1
B10	Social Impact	<ul style="list-style-type: none"> <li>is deemed to have a significant social impact</li> </ul>	Section 6.10



## 5. CONSULTATION

### 5.1 Department of Primary Industries

Email correspondence with the NSW Department of Primary Industries (Water) (13 September 2017) confirmed that the required setback from the watercourse running to the south of the development was to be 10 metres (Appendix 40).

### 5.2 Port Stephens Council

Two meetings were held with Council on 10 August 2017 and 20 November 2017 with minutes provided in Appendix 7. Key issues discussed at the meeting include:

- Zoning
- Car parking
- Ecology
- Building heights
- Noise assessment
- Approval process.

Issues discussed at the meeting have been considered in the overall design of the school and addressed in the EIS.

### 5.3 Government Architect NSW

Meetings have been held with the Government Architect NSW (12 February 2018 and 27 February 2018) and a Design Verification Statement has been prepared (Appendix 26). The statement addressed the seven Design Quality Principles and demonstrates the proposed development has considered those principles to achieve an appropriate outcome. Minutes for the meetings can be found in Appendix 40.

### 5.4 Hunter Water

Hunter water have been contacted and a HWC Notice of Formal Requirements for the development has been obtained (31 October 2017).

### 5.5 Ausgrid

Consultation has occurred with Ausgrid and a letter of response was received dated 8 September 2017. The response refers to existing easements on site and terms of those easements. The response also identifies earthing requirements and need for earthing designs to be undertaken.

Ausgrid identified that an Earthing Assessment should elaborate on:

1. High touch voltages measured at the Ausgrid owned property south of the substation due to the 33kV pole being located right in front of the house. A similar configuration may exist around the poles and neighbouring properties on the college property
2. The expected high number of students in the college having access to the 33kV poles in the neighbouring Ausgrid easement
3. Touch voltage associated with the 33kV poles located on the college property
4. Touch voltage associated with the neighbouring buildings and their low voltage supply.

An Earthing Assessment has been prepared by Electrical Projects Australia (Appendix 31) which found that the proposed development is expected to be compliant with ENA EG-0 (*Power System Earthing Guide Part 1*:

*Management Principles.* Energy Networks Australia) for earth faults with Medowie zone substation and proximate 33kV feeders.

## **5.6 Transport for NSW**

Transport for NSW responded in a letter dated 23 February 2018 that the agency supports key issues in the SEARs and had no further comments at that stage (Appendix 40).

## **5.7 Roads and Maritime Services**

Consultation with Roads and Maritime Services is currently ongoing. Meetings were held 21 February 2018 and 5 April 2018, with some concerns expressed with traffic impact assessment including assumptions on number of cars traveling to and from site, queuing length and location of bus waiting areas. Ongoing consultation with RMS continues to resolve issues with traffic and access (Appendix 36).

## **5.8 School Community**

The Catholic Schools Office of the Diocese of Maitland-Newcastle established a Project Implementation Committee. The Project Implementation Committee meets to consider the construction and establishment of the school at Medowie every three months. Members of the committee include representatives from the Catholic Schools Office, Parish Priest, Principal and parents.

Outcomes of meetings are reported to the School Planning and Development Committee of the Catholic Schools Office (Appendix 40).

## **5.9 Exhibition**

After lodgement of the application, community consultation will be undertaken in accordance with the EP&A Act. Schedule 1(9) of the EP&A Act outlines exhibition and notification requirements for State Significant Development and requires the consent authority to:

- (a) place the application and any accompanying information on public exhibition for a period (of not less than 30 days) prescribed by the regulations (the submission period) commencing on the day after which notice of the application is first published as referred to in paragraph (b), and
- (b) cause notice of the application to be given and published in accordance with the regulations.

## 6. ENVIRONMENTAL ASSESSMENT

### 6.1 Traffic and Transport

#### 6.1.2 Existing Environment

A Traffic Impact Assessment has been undertaken to assess the potential impact of the new development and is summarised below (Appendix 18).

The site has existing access off Medowie Road, with a driveway located 50 metres to the south of the intersection of Medowie Road and South Street (this access will not be retained as part of the proposed development). Medowie Road is located west of the site and has the following characteristics:

- RMS classified Regional Road (MR518)
- Approximately 15-17 metres pavement width, with one lane of travel in each direction
- 80km/h speed limit applies
- No footpaths along either side of the road
- Indented bus stop located along the school frontage
- Other roads in the area are local roads with 50km/h speeds.

#### Public Transport

In terms of public transport the bus services in the locality are provided by Hunter Valley Buses. There are two routes that run along Medowie Road in the vicinity of the subject site which include:

- 136 – Raymond Terrace to Stockton: Operates 7 days a week with frequent trips throughout the day
- 137 – Raymond Terrace to Lemon Tree Passage: Operates daily, with frequent trips Monday-Friday and limited trips on weekends and public holidays.

There are also a number of school buses that pick up / drop off along South Street. The Medowie Traffic and Transport Study (2012) states there are 5 school buses which currently service the area.

There are no footpaths on Medowie Road or South Street in the locality, reflecting the low demands in the area.

#### Intersection Performance

Site entry will be provided via a new access (200 metres to the south of South Street), with an upgrade to the intersection of Medowie Road and South Street allowing for one exit point for both cars and buses. The existing priority controlled T-intersection shall become a signalised four-way intersection, with a new internal road for the site located directly opposite South Street. The operation of these traffic signals has been assessed with SIDRA, based upon the current traffic numbers surveyed as part of this project and confirm that the installation of traffic signals can accommodate the future development flows and background growth, with acceptable delays and congestion (Appendix 18). Buses will gain access to the school via a slip road between the two above mentioned intersections.

#### 6.1.3 Potential Environmental Impact

There will be an increase in traffic during construction. Construction vehicles will range from light weight to large trucks and equipment such as rigid trucks for deliveries and a crane for lifting construction materials and equipment into position.

Traffic will also increase as a result of the ongoing use of the site. Council has advised that the South Street / Medowie Road intersection requires upgrading (see Appendix 36 for intersection concept plan). It is understood there is potential to consider developer contributions in lieu of works to the school's smaller round-a-bout to allow for infrastructure to be set for a future dual lane upgrade.

Parking demand will increase and will be managed through drop off and pick up zones, parking in local areas and onsite parking. The Traffic Impact Assessment (Appendix 18) has considered up to 1,820 students. In regards to traffic and parking, the development will have the following important features:

- New entry and exits to the site to be developed will allow for safe and appropriate access
- New on-site car parking will accommodate 272, with 230 educational car spaces, 2 more parks than required by the Council DCP
- The bus slip lane off Medowie Road and the internal road layout will allow for the efficient movements of buses into the site and safe movements for buses travelling back onto the external road network, controlled by the proposed traffic signals
- The internal roads for the development will be designed to allow for the appropriate movements of service vehicles. All waste collection will be completed outside of school drop off and pick up times to ensure that there is no conflict between waste collection and student / parent / teacher vehicle movements
- Additional lanes provided at the upgraded intersection will increase the capacity in this location as well as road safety and will cater for the turn movements associated with the outbound traffic movements from the school.

### Parking During Operation

Parking requirements for educational establishments under the Port Stephens DCP are as follows:

- 1 car space per employee
- 1 car space per 8 senior high school students
- 2 bike spaces per 20 employees and students
- 1 Accessible car space per 20 car spaces.

Parking requirements for Child Care Centres under the Port Stephens DCP are:

- 1 car space for every 4 childcare places
- 1 Accessible car space.

The Port Stephens DCP requires a merit-based assessment for the purposes of calculating the general parking requirements for a chapel. For the purpose of these parking calculations, we have adopted a parking rate of 1 car space per 3 seats. This is consistent with the DCP rate set by the adjoining Newcastle City Council and also Lake Macquarie Council. Maitland DCP provides a parking rate of 1 space per 10 seats or 1 space per 10m<sup>2</sup> of public area whichever is greater. Port Stephens Council does specify bike and accessible parking requirements, which are:

- 2 bike spaces per 20 employees and visitors
- 1 accessible car space per 20 car spaces.

There are four formal parking areas and one informal overflow parking area designated on site, with parking provision as per Table 6.1.

**Table 6.1 – Parking Layout**

Parking Area	Allocation
Car Park 1	<ul style="list-style-type: none"> <li>➤ 10 spaces for Early Learning Centre drop off, including 1 accessible space</li> <li>➤ 12 spaces for the Early Learning Centre staff</li> <li>➤ 41 spaces for visitor use</li> <li>➤ 38 spaces for the secondary school students, including 2 accessible spaces</li> <li>➤ 2 accessible spaces for primary school use</li> <li>➤ 1 accessible space for visitor use</li> <li>➤ 8 drop off/ pick up spaces</li> </ul>

Car Park 2	➤ 10 spaces for Early Learning Centre staff
Car Park 3	➤ 16 spaces for primary school staff
Car Park 4	➤ 125 spaces for secondary school staff, including 6 accessible spaces ➤ 17 spaces for primary school staff
Car Park 5	➤ 50 informal spaces

Parking requirements for the proposed development are provided in Table 6.2.

**Table 6.2 – Parking requirements for Schools and Child Care Centre**

	Capacity	Number of Staff	DCP Requirement	Number Accessible spaces	of Number of Bike Spaces
Secondary School	1,190 (assume 25% seniors)	125	125+38=163	8 of 163	132
Primary School	630	35	35	2 of 35	66
Early Learning Centre	124	22	30	1 of 30	0
<b>Total Parking</b>			<b>228</b>	<b>11</b>	<b>198</b>

The proposed supply of 230 spaces (with 12 designated accessible spaces) for the educational services sees an excess of 2 spaces over the DCP requirement.

The parking demand for the chapel would see a requirement for 167 parking spaces. Shared use of the parking on site will be practical with peak parking demand for the chapel use occurring separate to the school use. Mass occurs of a Saturday evening and Sunday when the school and Early Learning Centre are closed, thus demand will be catered for within the school parking. Wedding services of a Saturday can also make use of school parking facilities.

General parking demands associated with mid-week chapel use, during school hours, will be accommodated within additional parking on site provided for visitors. There are 42 spaces allocated for visitors on site including 1 accessible space. The school and bus drop zones are also to be used for chapel parking, providing an additional 16 parking spaces (with 8 accessible) during the day, outside of the school drop off and pick up period. This equates to between 42-58 spaces to cater for school period demands for the chapel and visitors, which is considered adequate to cater for demand.

#### Service Vehicles

Loading bays are provided on site for service vehicles, allowing servicing to be completed without impacting upon internal circulation for the site. The layout of the car park will be designed to ensure appropriate circulation of service vehicles, allowing vehicles to enter and exit the site in a forward direction, as per AS 2890 and Council requirements.

#### Pedestrian and Bicycle Facilities

The proposed signalised intersection of Medowie Road and South Street is to include provision for pedestrian crossing on all legs of the intersection. The upgraded intersection will provide pedestrian crossing on all legs, with the development including a pedestrian pathway linking the site to the intersection. This pathway travels along the north of the school access road, meeting Medowie Road at the location of the crossing on the northern leg of the intersection.

There is a wide network of pedestrian paths on site linking the various developments to the surrounding parking areas, enabling all internal movements to occur in a safe manner. Bicycle storage facilities will be provided within the school grounds adjacent to the entry points that can cater for both staff and student demands



## Transportation Analysis

The Traffic Impact Assessment (Appendix 18) provides a likely traffic generation and cumulative traffic generation. It has also been assumed that up to 104 students, or 6% of the student population could walk or cycle to the school. The modal split for the school population is provided in Table 6.3.

**Table 6.3 – Modal Split for School Portion of Development**

	Student Numbers	Private Use	Vehicle	Walk / Cycle	Bus	Buses Required
<b>Primary</b>	630	252 (40%)		32 (5%)	346 (55%)	6.9
<b>Secondary</b>	1,190	302 (25.4%)		72 (6%)	816 (68.6%)	16.3
<b>Total</b>	1,820	554		104	1,162	24

The RMS Guide to Traffic Generating Developments does not provide a traffic generation rate for educational facilities. A traffic generation rate for the site has been applied based on the expected demands / operations of the school, with consideration given to comparable schools.

Staff movements typically do not correspond with the peak movement of students, as the vast majority of staff will arrive at the school before the student arrival periods and leave after the students have departed. Allowing for the full complement of staff on site across the two schools, there would be 160 staff arriving in the AM and 160 departing in the PM. This would give total flows of 438 vehicles in both the morning and afternoon. These have not been included in the traffic modelling for peak vehicle movements, with the student related trips determined to generate the peak demands for this development.

For the proposed secondary school capacity of 1190 students this rate was applied and equates to 226 vehicle movements in the AM drop off period (113 inbound and 113 outbound movements) with the same in the PM pick up period. Additional trips have been allowed for senior students driving to school. There are 38 parking spaces to be provided under the DCP for senior students on site, assuming full use, senior student movements in the AM (inbound) and PM (outbound) will be 38 vehicles.

For the secondary school this gives a total of 151 vehicles inbound and 113 outbound in the AM, with the reverse applying in the PM. Allowing for an average occupancy of 2 students per vehicle, 302 students are therefore being transported to/from the secondary school by private motor vehicles, equating to 25.4% of the total secondary student population. Accounting for walking/cycling of 6% would see the remaining 68.6% of secondary school students travel via bus.

For the primary school, accounting for the walking/cycling movements outlined previously of 5%, and primary bus travel of 55% the remaining 40% of primary school students' travel shall be via private vehicle. For the proposed primary school capacity of 630 students this equates to 252 students and applying a vehicle occupancy rate of 2 students per vehicle, indicates in the order 126 inbound and 126 outbound movements in the AM with the same in the PM pick up period.

### Early Learning Centre

For the proposed capacity of 124 children, the childcare centre would therefore generate up to 100 peak hour trips during the morning peak hour (50 inbound / 50 outbound) and 87 trips during the afternoon / evening peak (44 inbound / 43 outbound). Note that these rates do not allow for reduced demand associated with absenteeism, holidays/leave and shared trips with siblings. It is therefore considered the peak traffic generation for the proposed child care centre could be less than that calculated.

### Chapel

The RMS Guide does not provide trip rates for chapels. Equating the suggested parking rate of 1 space per three seats, to vehicle trips will see 1 vehicle trip per three seats, being 167 vehicle movements for full capacity events (500 seats). These vehicle movements will occur outside of the traditional drop off and pick up times associated with schools, with peak chapel demands occurring of a weekend or during the daytime (after 9.30am) associated with funerals, all being outside of the peak periods for the road network. As such, traffic impacts for the chapel are much less significant than that relating to the school use on site and will be accommodated by the road network

assessed to cater for school traffic. This traffic has therefore not been included in the cumulative peak hour assessments.

### **Impact on Road Safety**

The installation of traffic signals at the existing intersection of Medowie Road and South Street will increase the level of safety for turning movements over the existing give-way controlled T-intersection. Traffic signals will ensure safety is maximised for both road users and pedestrians.

The development will include a new entry only access off Medowie Road. The proposed left turn into this access will include a channelised left turn deceleration lane designed to RMS standards. The right turn into this access will also provide a channelled turn lane, with sufficient length to cater for any potential vehicle queues. It is considered that the additional traffic flows will not have an adverse impact upon the road capacity or safety in this location, with the development flows accommodated by the proposed upgrades.

A 40 km/h school speed zone will be in place during the busy drop off and pick up periods associated with the school which will also improve road safety for all users

### **Impact of Generated Traffic**

The overall impact upon daily traffic flows in the locality will be relatively low, as outside of the drop off and pick up periods the traffic movements associated with the school are minimal.

For the critical northbound PM peak which currently exceeds 900 vehicles per hour (3:45 – 4:45PM) the additional traffic generated by the proposed development will occur prior to 3:45PM therefore not impacting upon its current level of service. Any additional movements during the peak period will be minor and have a relatively low impact upon the existing operation of the road. Outside of this peak demand period there will be no impact on the overall flows along Medowie Road.

The additional lanes provided at the upgraded intersection will increase the capacity in this location as well as road safety and will cater for the turn movements associated with the outbound traffic movements from the school.

The existing peak hour traffic adjacent to the site are well within acceptable limits for their classifications as local urban roads, as demonstrated in Section 3.5.1 (of Appendix 18). The current traffic flows have been compared with the capacity of these roads and all of the road in the vicinity of the subject site currently have significant spare capacity. It is considered that as these roads have spare capacity during the critical peak periods, then there is spare capacity to cater for the additional traffic movements associated with the development for the daily impact.

### **Peak Hour Impact on Intersections**

The SIDRA analysis has reviewed the operation of the road layout with the proposed upgrades for the following scenarios:

- Existing situation based on surveyed traffic flows (2017) plus full development flows
- Future design year (2027) allowing for 2.4% growth along Medowie Road plus full development flows.

The results of the SIDRA modelling are presented in Section 4.4.2 (of Appendix 18).

The above results show that accounting for future growth, both intersections will operate at the same Level of Service (LoS) with minor increases in average delays and queues for all movements.

### **Impact of Queuing**

A key consideration for this development will be associated with the queuing provision on-site in the PM peak. Typical school operation sees the majority of vehicles arriving in the 15 minutes prior to school finishing and therefore being required to hold on site until school finishes, as opposed to the morning drop off period which occurs more efficiently with parents dropping off and leaving with minimal delay. Sufficient queuing is required to ensure that traffic generated by the development does not impact upon the operation of the proposed school entry access on Medowie Road.

The operation of pick up / drop offs will be monitored over the initial stages of the development, whilst the capacity is lower. The modal split for students travelling to the school during operation will be assessed to

determine the actual reliance on private vehicle use. The proposed layout providing 502 metres of queuing (84 vehicles) and 41 parking spaces to accommodate pick up demands for up to 125 vehicles being 11 spaces over anticipated. Pending this data, the proposed layout, has the potential to be upgraded to provide up to 625 metres, or total queuing/parking for up to 145 vehicles.

### **Impact of Construction Traffic**

Construction work will require a number of trucks, to deliver materials including concrete to the site. This will occur over a number of weeks and months as the site is developed, thereby reducing the impact of this traffic during the peak periods. An important factor for the construction will be the impact of construction workers and their vehicles. All construction vehicles related to the site works will be able to park on site. This can be determined during the detailed design stage of the project.

The development will require upgrade of the road corridor along Medowie Road, which will require a Construction Traffic Management Plan (CTMP). A formal CTMP will be completed as part of the detailed design phase and within the requirements of a RMS WAD (Work Authorisation Deed) for the construction work along Medowie Road.

All works on site will be governed by the relevant EP&A Act rules and as stipulated within any development consent granted. This will include hours of work.

### **Construction Management**

The construction programme including demolition and preliminary works is proposed to be conducted over 12 stages; however, subject to construction and delivery programming it is possible that various stages will overlap during the construction period. Construction staging surrounding the various aspects of the project will enable logical construction processes as well as limit the impact of construction traffic on the local road network through the staging process. Construction would take place during normal construction times being 7am-6pm Monday Friday 8am-1pm Saturday with no work occurring on Sundays or public holidays.

It is anticipated delivery of the completed school will ultimately span across a number of years due not only to size, but operational requirements. It is important to recognise however that construction will not likely be continuous over this period. Construction is envisaged to commence in late 2018, subject to approval. It is anticipated some students will begin school in January 2020 with the staging and construction required to accommodate operations and minimise potential adverse impacts. Detailed construction programming will be required prior to establishing on site.

The construction programme would likely be separated into the following stages, however as indicated it is important to note that through the detailed design phase and construction planning a detailed Construction Management Plan will be required. In addition, the very nature of the site results in all works and associated traffic, parking and the like associated with construction the ability to be located on site even through the later stages of the project. The construction staging will likely occur as follows.

#### Site preparation

Site preparation will likely include more detailed investigations to assist with detailed design including survey and or geotechnical works. This initial site preparation stage will also include site establishment including temporary office set up, site services, logistics (including traffic management) and perimeter fencing where relevant to construction staging.

Some preliminary works may overlap with early works however, this is to include the demolition of the existing buildings on site (single storey brick dwelling and a shed of steel construction), this will involve the use of excavator/s, trucks and other plant and equipment associated with demolition works. All works will be strictly managed to ensure that vehicle movement and dust is controlled and kept to a minimum any demolition will be in accordance with the relevant Australian Standards and best practice.

It is anticipated that a traditional top down demolition approach employing good building practices will be used.

Further geotechnical works could be required if conditions encountered during construction are different to those contained in the Geotechnical report and site reassessment should be undertaken.

#### Early works:

The early works will include the initial civil construction works including that of the RMS work for Medowie Road, with site bulk earthworks, establishment site and external lead in works along with associated landscaping.

### Stages 2 – 12

These stages are essentially the development of the school and associated infrastructure including Classrooms, School Hall, Car Parking, Offices/Administration building, Library and Amenities. These stages will form the main construction, however within each stage there will be various components of construction including earthworks/civil construction, landscaping and internal works.

#### **Construction intent**

Bulk Civil and excavation works where appropriate will be undertaken across multiple stages or infrastructure routes and will generally be undertaken and confined to the relevant staging. A temporary perimeter retention system will be provided. Excavation techniques will be chosen to minimise vibration (and noise) in order to minimise damage and disturbance to surrounding properties and to reduce impact on the local community and school activities. Excavation will be undertaken in accordance with the Geotechnical Investigation

Spoil arising will be checked for contamination (such as acid sulfate soils) and will be classified for either removal off-site or stockpiled on-site within an allocated bunded area in order to eliminate off-site contamination. Excavation machinery will be used for construction of building foundations and substructure.

Scaffolding will be erected once required as construction reaches multiple levels.

The internal fit out works will generally be labour intensive and include a mix of wet and dry trades to form the internal floors, ceilings, finishes and mechanical, electrical and hydraulic services works.

A detailed Construction Management Plan will be prepared prior to the commencement of works on site. The detailed Construction Management Plan will consider the matters identified by the relevant specialist consultant reports including but not limited to acoustic and traffic.

The construction traffic ingress and egress will be carefully located to minimise any impact on surrounding roads and local road users. Construction access will be from Medowie Road, including construction zone, and egress for construction vehicles will vary according to the particular stage of construction. All construction traffic entering and leaving the site will be closely controlled. Notice regarding planned closures and diversions of roads and footpaths adjacent to the site (if and when necessary) will be given by the construction manager to Port Stephens Council, NSW Police, the fire brigade and other emergency services sufficiently in advance of the required closure or diversion dates.

The anticipated traffic construction impacts and the measures to be employed to manage these impacts will be provided in the Traffic Management Plan as part of the detailed design stage of the project. Prior to any works commencing, a detailed Construction Traffic Management Plan will be prepared and implemented to manage all environmental aspects of the construction of the development. This will be prepared in consultation with Council and the RMS.

All construction will be required to adhere to the parameters set within the acoustic report including but not limited to hours of work, operating techniques, noise limiting machinery and plant.

The detailed Construction Management Plan will identify construction measures and practices to be established for the purposes of minimising potential construction impacts such as dust emission, erosion and sediment transfer, stormwater drainage, waste disposal, construction traffic and parking, noise, vibration and worker and pedestrian safety.

#### **6.1.3.1 School Accessibility**

##### Driveway and Car Parking Access

There will be an entry only driveway located at the southern boundary of the site on Medowie Road. This driveway will allow both left turns and right turns into the site, with sheltered turn lanes provided for both movements. To the north of this access driveway, 100 metres prior to South Street, there is a slip lane provided for buses only to enter the site.

This access provides the main access to the car parking areas onsite, with the internal roads allowing for circulation through the site, providing access to the various parking areas on site, as well as the school drop

zone. Turning bays are provided on site where required, to ensure forward circulation through parking aisles. All vehicles will exit the site at the proposed signalised intersection of Medowie Road and South Street.

A further site access will be provided via an upgrade to the intersection of Medowie Road and South Street. The existing priority controlled T-intersection shall become a signalised four-way intersection, with a new internal road for the site located directly opposite South Street. This new leg of the intersection will provide for outbound movements only, with all vehicles to exit the subject site at this location (Appendix 18).

#### Bus Bay

Bus access to the school will be via the dedicated bus slip lane off Medowie Road and the internal road layout which will allow for the efficient movements of buses into the site. Designated bus drop off and loading areas are provided to accommodate up to 5 spaces for loading, as well as a minimum of 7 spaces for buses to hold along the internal road (slip lane), to prevent impacting on traffic along Medowie Road (Appendix 18).

To achieve this provision for queuing (12 total spaces) all buses are required to access the development from a southerly direction, with buses approaching from the north along Medowie Road to utilise the roundabout at the intersection with Richardson Road (1km south) to undertake a U-turn to access the bus zone.

#### Servicing

All waste collection will be completed outside of school drop off and pick up times to ensure that there is no conflict between waste collection and student / parent / teacher vehicle movements.

There is a bin loading zone along the internal road near the Early Learning Centre, which allows for waste collection to occur off the circulation road. This zone allows for service vehicle access in and out in a forward direction, with drivers able to proceed to the site exit (signalised intersection of Medowie Road and South Street) and leave the site in a forward direction.

There is a further loading zone off the circulation roadway to the north of the site adjacent to the secondary school buildings. There is a turning bay provided upon exiting this zone to allow vehicles to turn around in one movement and proceed to exit the site in a forward direction.

#### Emergency Access

Provision is made for emergency vehicle access to the school grounds. Usual practice is to provide the vehicular access directly via the car parking areas and/or directly to open space playing fields. The car parks should provide access to emergency vehicles, potentially by use of the whole internal driveway as this is a rare occurrence.

### **6.1.4 Environmental Management Measures**

The following environmental management measures are proposed:

- New signalised intersection at Medowie Road and South Street
- Single entry and exit points
- On site car parking designed in accordance with AS 2890 and Council's DCP requirements
- The layout of the access points and internal roads shall be designed to allow for two way traffic movements in accordance with AS 2890
- Incorporate access for ambulance and fire service vehicles to all sports fields and parking areas
- Bus zones to accommodate up to 5 spaces for loading, as well as a minimum of 7 spaces for buses to hold along the internal road (slip lane)
- Buses to only access site from the south, buses from the north to use roundabout at Richardson Road one kilometre to the south to access site.
- Prepare Construction Traffic Management Plan.



## 6.2 Soils, Geology and Contamination

### 6.2.2 Existing Environment

#### Geotechnical

The Geotechnical Investigation (Appendix 11) was prepared for the purpose of site classification and pavement design and is summarised below.

Site slopes were generally to the south / south west at 5 to 10°, reducing to 0 to 3° in the lower western and southern portions of the site. Site drainage was generally by overland flow towards the south and west, a contour drainage line existed within the south east portion of the site and ran to the south. The southern and western most portions of the site were understood to flood during times of long duration storm events.

#### **Geological Setting**

Reference to the 1:250,000 Newcastle Geological Map indicates that the majority of the site is underlain by the Permian Tomago Coal Measures consisting of shale, mudstone, sandstone, tuff and coal. The lower lying southern and western most portions of the site indicated to be underlain by Quaternary Alluvium consisting of gravel, sand, silt, clay, "Waterloo Rock", Marine and freshwater deposits.

#### **Mine Subsidence**

Reference to the Mine Subsidence District Maps indicates that the site is not undermined.

#### **Acid Sulfate Soils Risk Map**

In reference to the Acid Sulfate Soils Management Advisory Committee (ASSMAC) risk maps the southern portion of the site lies within an area in which acid sulfate soils are known or expected to occur.

Refer to Annex A (of Appendix 11) for site plan showing the approximate extent of the site that lies within the acid sulfate soil risk area.

#### **Site Classification**

The site was classified as Class P due to the depth of fill material encountered at the site and the presence of existing development. Classification of the site has not taken into account the effects of abnormal moisture conditions. If the site undergoes any earthworks operations, the site shall be reclassified in accordance with AS 2870-2011.

#### Contamination

A Contamination Assessment was prepared by RCA (Appendix 8). The assessment found that potential for gross contamination at the site is low with some concentrations of hydrocarbons, zinc, metals and PFAS being located on site through soil testing and groundwater sampling.

A summary of site features includes:

- A current dwelling of brick and steel construction
- A current shed of steel and concrete floor
- Access from Medowie Road to the shed and dwelling is compacted dirt
- Hydrocarbons were found within fill mounds surrounding the bituminous go-kart track
- A hardstand tennis court is present in the central portion of the site
- Acid sulfate soils (ASS) identified on site.

A total of fifty-six (56) soil samples were taken from twenty-three (23) chosen locations to provide characterisation of potential herbicide and pesticide contamination with logging and assessment of the soil for potential fill at the site. Three (3) locations were chosen to determine potential for acid sulfate soils, with eleven (11) samples taken. Three (3) groundwater wells were sampled. One (1) bulk sample was taken of cement sheeting to be analysed for the presence of asbestos

The samples were selected to target the identified potential sources of contamination and were analysed for some or all of the following potential contaminants:

- Total Recoverable Hydrocarbons (TRH)
- Benzene, Toluene, Ethylbenzene and Xylene (BTEX)
- Polychlorinated Aromatic Hydrocarbons (PAH)
- Organochloride and Organophosphorus Pesticides (OCP/OPP)
- Poly-fluoroalkyl substances (PFAS)
- Heavy metals (As, Cd, Cr, Cu, Pb, Hg, Ni, Zn)
- Asbestos identification.

Subsurface investigation identified fill materials across the site with minor soil impacts. Results of the subsurface investigation and laboratory testing indicated the following:

### Soil

- No presence of asbestos from sampled material
- TRH concentrations were below the PQL (Practical Quantitation Limit) in all of the samples with the following exceptions:
  - BH13A which exceeded the vapour based human health limit for F2 (TRH >C10-C16 minus naphthalene) by 1.18 times the residential with access to soil guideline
  - BH13A and BH17A which exceeded the ecological criterion for TRH fractions TRH >C10-C16 and TRH >C16-C34 respectively by a maximum of 1.5 times the applicable criteria
- Concentrations of PAH compounds were generally below the laboratory PQL, or else below the applied site guideline with the exception of:
  - BH17B which reported a concentration of Carcinogenic PAH (B(a)P equivalent) that exceeded by over 4.5 times the criterion. This result represents a 'hotspot' (>250% criterion). The concentration of benzo(a)pyrene at this location was also above the ecological criterion
  - BH17C reported a concentration of Carcinogenic PAH (B(a)P equivalent) that exceeded the guideline criterion by 1.8 times. This sample also exceeded the benzo(a)pyrene ecological criterion
- Concentrations of metals were either below the laboratory PQL or at concentrations which were below the applied site criteria within all samples with the following exceptions
  - BH20A exceeded the ecological criterion for zinc, with a concentration in excess of the applied site criterion by 1.06 times
- Organochlorine and organophosphorus pesticides were not reported above laboratory detection in any of the samples analysed
- PFAS concentrations were greater than the laboratory PQL in sample BH4A; however, these were all below the current guideline criteria for residential human health and ecological criteria. Concentrations in BH2A and BH3A were below laboratory quantification.

### Groundwater

- BTEX concentrations were below the PQL in all three (3) samples and as such are considered below the applied site criteria
- TRH concentrations were below laboratory quantification in all three (3) samples and as such are considered below the applied site criteria
- PAH concentrations were below laboratory quantification in all three (3) samples and as such are considered below the applied site criteria
  - It is noted that the PQL for benzo(a)pyrene is higher than the criterion.

- OCP & OPP concentrations were below laboratory quantification in all three (3) samples and as such are considered below the applied site criteria
- PFAS compounds were not reported above laboratory PQL in any of the three (3) samples and as such are considered below the applied site criteria
- Concentrations of metals were either below laboratory quantification or at low levels below the applied site criteria with the following exceptions:
  - MW1 reported chromium and zinc concentrations above the ecological guidelines for aquatic ecosystems
  - MW2 reported cadmium, copper, nickel and zinc concentrations above the ecological criterion for aquatic ecosystems.
- No exceedance of the human health ingestion guidelines was observed noting that the PQL for benzo(a)pyrene, and some pesticides were higher than the criteria.

RCA considers the site is suitable for the proposed use as a Catholic College subject to:

- Confirmation of the source of hydrocarbons within the mounds and determination of the appropriate uses of that material
- If PAH concentrations are identified separate to asphalt within the stockpile, or are associated with coal tar, the material will not be considered suitable for the proposed site use. The current waste classification is hazardous waste however additional testing may indicate that the material can be classified as restricted waste
- Consideration of the extent of excavation and implementation of an ASSMP if excavation is likely to impact on acid sulfate soils.

### 6.2.3 Potential Environmental Impact

Construction has potential to result in erosion and subsequent loss of topsoil. Excess soil from construction will need to be managed on site or disposed off-site. Excess soil will need to be managed to ensure it is not lost into previously undisturbed areas or into adjacent land. A designated stockpile location will be required at the construction compound. It is likely excavated material will be reused within the site, with the presence of acid sulfate soils, off site impacts are possible through leaching of acidic surface water from the material while excavating/handling during construction. Acid sulfate material cannot be disposed of off-site without treatment and cannot be re-used off site under any waste order/exemption (Appendix 8).

#### Earthworks

The Geotechnical Investigation (Appendix 11) was prepared for the purpose of site classification and pavement design. The investigation states that earthworks conducted at the site should be controlled in accordance with AS 3798-2007 and guided by Section 8.1 to 8.4.2 of the investigation.

Erosion and sediment control plans have been prepared by MPC Engineering and are shown in Appendix 15.

The proposed staged development plans are provided in Appendix 24, with these being a guide for the construction/earthworks progression throughout the development.

#### Geotechnical

The site classification in the area of the proposed school is general considered to be commensurate with a Class P classification, due to the depth of fill material encountered at the site and the presence of existing development. Provided all the footings are founded in natural material below the filling, it is suggested that reactive soil movements commensurate with a Class P site should be accommodated in design.

The site is suitable for the use of both shallow and deep footing systems dependant on the development and structural bearing pressure required. The Geotechnical Investigation (Appendix 11) provides comment on excavation and batters, retaining walls, pavement design and subgrade preparation.

## Contamination

According to the Contamination Assessment prepared by RCA (Appendix 8) the site is considered to be generally suitable for the proposed development, subject to remediation as follows:

- Hydrocarbon contamination was identified in the fill mounds situated on the western and northern side of the bituminous go-kart track in the central portion of the site and included concentrations of carcinogenic PAH at hotspot concentrations which require remediation and/or management. RCA considers that the identified concentrations may have come from asphalt within the stockpile and, if this is the case, there is negligible risk to either human health or the environment
- Consideration of the extent of excavation and implementation of an ASSMP if excavation is likely to impact on acid sulfate soils.

The assessment identified concentrations of zinc in excess of the ecological criterion, however this was localised and is not considered to present a risk to the environment. Acid sulfate soils were identified at the site at 3.0 metres below the surface at one location and may commence from 2.0 metres below the surface. Depending on the extent of excavation being undertaken, an ASSMP may be required.

The assessment identified concentrations of metals in excess of the ecological criteria, however in the absence of significant concentrations in soil and the absence of a potential contaminating activity, RCA has considered these concentrations to be a regional issue. Should the use of groundwater and/or dewatering be required during the development stage or thereafter, appropriate testing and assessment for suitability of the intended use/disposal should be sought. Groundwater concentrations were compliant with the drinking water guidelines however it is noted that assessment of additional compounds would be required prior to the use of groundwater for drinking. Other approvals would also be required.

PFAS compounds were not reported above laboratory PQL in any of the three (3) samples and as such are considered below the applied site criteria.

RCA considers that there is minimal potential for site contamination in those areas within the proposed development which were not sampled in the absence of any point sources of contamination. Standard 'unexpected finds' protocols should be implemented during construction works to address any potential uncertainty.

## Mine Subsidence

The site is not located in a Mine Subsidence District.

### **6.2.4 Environmental Management Measures**

The following environmental management measures are proposed:

- Construction will comply with requirements of the Geotechnical Investigation, Valley Civilab, November 2017 including excavation and batters, retaining walls and subgrade preparation and Contamination Assessment, RCA Australia, March 2018
- Management and/or remediation of the material within the fill mounds currently situated on the northern and western side of the bitumen go-kart track
- Further assessment in the area of BH13 to determine the character of the identified hydrocarbons
- Preparation, depending on the intended depth of excavations, of an ASSMP
- Erosion and sediment control will be in accordance with a erosion and sediment control plan in accordance with the *Managing Urban Stormwater: Soils and Construction, 4<sup>th</sup> Edition, Vol. 1*, (the "Blue Book"), Landcom, 2004
- All waste generated by the proposal will be classified in accordance with the NSW Waste Classification Guidelines Part 1: Classifying Wastes (EPA 2014) prior to being removed from the site
- Management of acid sulfate soils through an ASSMP.

## 6.3 Water Quality and Flooding

### 6.3.1 Existing Environment

The development area is located within the Grahamstown Dam drinking water catchment. Council's flood hazard mapping indicates that the proposal is located in a low hazard flood fringe area with part of the site considered flood prone land. The south western and northern part of the site contains wetland areas. Existing surface water generally drains to low lying flooding and wetland areas to the south and west. The proposed works are located more than 40 metres from a watercourse with Campvale Drain and Campvale Swamp located to the north east. Surface water drains to SEPP 14 wetland (Number 813) located on the southern part of the site. Depth to groundwater varies across site with a range between 0.6m – 1.8m, averaging 1.2m in depth across site (Appendix 11).

Bureau of Meteorology data indicates that the mean monthly rainfall ranges from 59.7mm (September) to 123.0mm (June) (Williamtown RAAF NSW approximately 7.2 km away). Mean monthly rainfalls are outlined in Table 6.4.

**Table 6.4 – Mean Monthly Rainfall (millimetres)**

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
101.1	118.3	119.8	111.9	110.8	123.0	71.9	73.6	59.7	73.0	82.4	79.0

Source: Bureau of Meteorology (accessed 23 January 2018)

As shown in Table 6.3 higher rainfall occurs during cooler months. As construction will occur over a ten year period there is limited option to avoid periods of heavier rainfall. Erosion and sediment control will be required throughout construction and rehabilitation of the ground surface.

The site is considered a low hazard flood fringe area (Appendix 9) with only part of the site considered flood prone land.

### 6.3.2 Potential Environmental Impact

Changes to extent of building and paved areas may impact on surface flows. Additional or changed stormwater flows have potential to impact on drainage regimes and downstream properties. Additional flow of stormwater has potential to erode soil, divert water to new areas or impact nearby wetland through additional volume or localised energy. Poor stormwater management has potential to impact water quality of the nearby SEPP 14 wetland or drinking water catchments.

#### 6.3.2.1 Groundwater

The development is unlikely to require extraction of significant amounts of groundwater. However, if during construction more than 3 ML of groundwater is proposed to be extracted an approval/license is required from the NSW Office of Water.

The site has the presence of acid sulfate soils, with offsite impacts possible through leaching of acidic surface water from the material while excavating/handling during construction. Acid sulfate material cannot be disposed of off-site without treatment and cannot be re-used off site under any waste order/exemption (Appendix 8).

#### 6.3.2.2 Drinking Water

The proposed development is located within the Grahamstown Dam drinking water catchment, with no impact expected due to the development provided appropriate construction and stormwater management controls are in place.

Groundwater concentrations were compliant with the drinking water guidelines; however, it is noted that assessment of additional compounds would be required prior to the use of groundwater for drinking (Appendix 8).



### 6.3.2.3 Flooding

The flood risk and impact assessment is summarised below (Appendix 9).

The assessment found that the proposed school buildings, car parking and playing fields are situated outside of the 1% AEP flood extent (8.1 metre AHD) and that most of the site is situated above the Flood Planning Level (FPL) (8.6 metre AHD). However, it should be noted that the land at the north of the site is affected to some degree by the 1% AEP and FPL.

The finished floor levels of the proposed buildings as marked on the detailed site plan (Appendix 23) are generally at or above 9.3 metre AHD, which means the finished floor levels are situated above the Probable Maximum Flood level (PMF) (9.2 metre AHD) of Campvale Swamp. The buildings located in the southern most section of the proposed development (Primary School) are located on land below the FPL however the buildings are designed with finished floor levels set at 9.3 metre AHD. Not only does this level raise the buildings above the required FPL, it also situates them above the PMF level which considerably minimises any risk to life from a flood emergency perspective.

If only minor alterations to the topography and surface elevations of the small area in question within the Low Hazard Flood Storage (less than 0.4 ha) occur, the project is expected to have a negligible impact on the flood levels at the site and surrounding area, or on the broader flood behaviour. A detailed modelling based impact assessment is therefore deemed unnecessary.

The project should not change the overall inundation extent within the floodplain and so no impacts with regards to environmentally beneficial flooding are expected. Flood inundation frequency and duration will remain consistent with the existing conditions as will the flood velocities. Therefore, no changes to the geomorphological regime will result from the project, such as siltation, erosion, bank stability or the resultant implications for riparian vegetation.

Given the nature of the local topography, the elevation of the proposed floor levels and the long duration nature of Campvale Swamp flooding, an appropriate flood emergency response should be readily achieved through evacuation of the site. Flood Emergency Response Plan for the site would be beneficial, detailing what to do prior to, during and after a major flood event. This will ensure appropriate personnel on site are aware of the local flood risks and what to do in the event of a major flood occurring. Evacuation from Medowie, or directly from the school, may be possible along Medowie Road towards Williamstown and Richardson Road towards Salt Ash or Raymond Terrace. However, insufficient information is available to confirm the broader extent of potential evacuation and this would be dependent on individual road conditions during a particular flood event scenario.

The flood impacts associated with the proposed development are negligible in terms of affecting property, assets and infrastructure and therefore result in no detriment to the overall social or economic status of the community.

### 6.3.2.4 Stormwater

A Stormwater Management Plan (Appendix 15) presents the proposed stormwater management system that is summarised below.

The principal stormwater management components and their function are listed below:

- a). The proposed works consists of redevelopment of the entire site. Stormwater systems are designed to cater for roof, hardstand, and landscaped areas.
- b). Roof rainwater from each new building will be directed through a new pipe/pit system to a 4000 litre above ground rainwater tank per building, with over flows being connected to the developments detention basins.
- c). Retention facilities will be incorporated into the network in accordance with councils DCP. Low flow outlet measures will be provided for minor and major rainfall events with all overflow being directed to the south west and western areas of the site. The site has been designed to incorporate a mix of Atlantis infiltration tanks and bio filtration detention ponds, Gross Pollutant traps, pollutant pit inserts in the carpark, bio filtration systems and as such stormwater quality for the existing site will not be compromised by the proposed development (refer Appendix B of Appendix 15);

### Stormwater Harvesting

The piped minor drainage system will be designed to accommodate flows for storm events and will be distributed throughout the development to capture flows from the landscaped and paved surfaces, a 4000 litre rainwater harvesting tank for each building will be used to store roof water which is to be used for re-use and irrigation purposes.

Rainwater tanks will be used as a retention system for the proposed roof catchment areas. Water will be released from the rainwater tanks at the calculated pre-developed flows.

A high level overflow pipe will be provided in the event of high rainfall periods and a blocked overflow which is directed to the sites retention pond.

### Stormwater Detention

A volume of detention storage will be provided appropriate to store peak flows from the proposed new development and limit discharges such that post developed flows will be limited to the pre developed flow for all storm events. All outflows from the detention tank/basins will be discharged through the stormwater system to the surrounding existing wetlands and watercourses.

The Stormwater Detention is proposed to be in a combination of underground Atlantis infiltration tanks and above ground bio-retention basins. Each of the detention tanks and bio retention ponds rely on infiltration as a slow release with high level piped systems allowing release of stormwater at pre-developed flow rates. This method has been adopted due to the flatness of the lower end of the site and that there is limited ability to provide a piped slow release on the site. We have also not used any detention in the carparks to ensure that they remain serviceable without nuisance water during rainfall events.

The drainage system is to be designed for peak run-off with this run-off being released at a rate comparable with natural conditions during peak rainfall.

The Stormwater Detention is proposed to be a combination of underground Atlantis tanks and above ground bio-retention basins (Appendix 15).

### Stormwater Quality Improvement and Reuse

The site has been designed to incorporate a mix of Atlantis infiltration and detention tanks, Gross Pollutant traps, bio filtration systems (detention basins) and as such stormwater quality for the existing site will not be compromised by the proposed development. (Appendix 15)

Water Quality measures for the site have been modelled using MUSIC software and include the following:

- Rainwater from the roof of each building will be directed through a first flush device before being stored in a water re-use tank
- Stormwater from impervious areas will be directed through enviropod inserts in each pit, Atlantis cell infiltration tanks, GPT's then to a bio-retention basin
- Proprietary "Gross Pollutant Trap" has been specified in the location shown on the stormwater management plans
- Bio-filtration facilities have been incorporated in the catchment 3 and 4 basins.

The stormwater quality devices and systems have been specified on the stormwater management plans included in Appendix B (of Appendix 15), which collectively achieve the water quality targets listed below:

- Total Suspended Solids – 89.4% reduction
- Total Phosphorus – 78.2% reduction
- Total Nitrogen – 48.8% reduction
- Gross Pollutants – 100% reduction

A copy of the MUSIC model diagram, including the receiving node pollution reductions achieved, are included in Appendix E (of Appendix 15).

The basin has also been sized as a temporary sediment control basin for initial bulk earthworks construction phase, in accordance with the procedures in the “Soils and Construction – Managing Urban Stormwater” guidelines. Additional details in this regard are included in Appendix D (of Appendix 15).

### Erosion and Sediment

The construction phase approach adopted for this site will incorporate principles recommended by the NSW Department of Housing, namely:

- Plan for erosion and sediment control concurrently with engineering design and in advance of earthworks proper assessment of site constraints and integration of the various needs
- Minimise the area of soil exposure
- Conserve the topsoil where possible:
- Control water flow from the top of the development area, through the works and out the bottom of the site, for example:
  - divert clean runoff above denuded areas
  - minimize slope gradient and length
  - keep runoff at non-erodible velocities
  - trap soil and water pollutants
- Rehabilitate disturbed lands quickly.

A preliminary design of erosion and sediment controls for the overall site development is shown in Appendix D (of Appendix 15). Controls will be provided on the site prior to and during all earthworks in accordance with EPA Site Work Practices. Features of the construction phase erosion and sediment controls adopted for this site include:

- Prevention of sediment and polluted runoff water from entering the existing adjacent watercourse. This involves the provision of silt fences, catch drains and sediment traps
- Control of actual and potential soil erosion – grassing and stabilization of embankments and drainage outlets where required
- Stabilised stockpile areas to prevent wind and water erosion
- Scour protection at discharge locations
- Stabilised site access to provide a firm base for vehicle entry/exit and to prevent the main access from becoming a source of sediment.

Erosion and sediment control will be in accordance with a staged erosion and sediment control plan in accordance with the *Managing Urban Stormwater: Soils and Construction, 4<sup>th</sup> Edition, Vol. 1*, (the “Blue Book”), Landcom, 2004.

### **6.3.2.5 Potable Water**

The hydraulic design for the project includes specification of the most efficient sanitary fixtures and tapware based on the current Water Efficiency Labelling and Standards Scheme (WELS), exceeding both the minimum requirements of AS 3600 and the Education Facilities Standards and Guidelines (EFSG).

The minimum WELS rating of both sanitary fixtures and tapware to comply with AS 6400 requirements is 1 star, with a maximum star rating of 3 stars for showers and 6 star for tap outlets, urinals and toilets which have been specified. The current EFSG minimum requirements for sanitary fixtures and tapware efficiency are as follows:

- Basins, sinks and bubblers – 5 Star
- Showers – 3 Star
- Toilets and urinals – 4 Star

The hydraulic design for the project to be developed during the next stage of documentation, will include specification of water efficient sanitary fixtures and tapware. These will be based on exceeding the minimum

requirements of WELS rating and in line with the intended Green Star rating the project is being targeted toward. The WELS ratings being targeted are as follows:

- Basins, sinks & bubblers – 6 star
- Showers – 3 star
- Toilets – 5 star
- Urinals – 6 star

A comprehensive rainwater reuse system supplying non-potable water to the amenity areas for flushing of toilets and to external hose taps for landscape irrigation is planned to be detailed in the next stage of documentation.

### **6.3.3 Environmental Management Measures**

The following environmental management measures will be implemented:

- Erosion and sediment control will be in accordance with a staged erosion and sediment control plan in accordance with the *Managing Urban Stormwater: Soils and Construction, 4<sup>th</sup> Edition, Vol. 1* (the “Blue Book”), Landcom, 2004.
- Stormwater management will be in accordance with Stormwater Management Plan prepared by MPC Engineering (Appendix 15)
- Stormwater management will be staged in accordance with construction staging
- Oils, fuels and chemicals will be stored in a locked bund capable of holding 110% of the capacity of the containers within the bund
- A response kit will be on site during construction to manage any accidental spills
- Equipment will be serviced and maintained to minimise potential for loss of fluids
- The construction compound and stockpile area(s) will be in an existing cleared area
- If during construction more than 3 ML of groundwater is proposed to be extracted an approval/license is required from the NSW Office of Water
- Acid sulfate soils will be managed through an ASSMP
- Flood Emergency Response Plan will be prepared for the site.

## 6.4 Air Quality

### 6.4.1 Existing Environment

Table 6.4 below is a summary of the temperature and rainfall collected by the Bureau of Meteorology for Medowie (rainfall and temperature data from Williamtown RAAF NSW weather station located 7.2 kilometres from Medowie); In Summer the mean daily temperatures range from 27.3°C to 28.1°C. In winter mean daily temperatures range from 17.1°C to 18.7°C.

**Table 6.5 – Summary of the climate in Medowie**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rainfall (mm)												
Mean	101.1	118.3	119.8	111.9	110.8	123.0	71.9	73.6	59.7	73.0	82.4	79.0
Highest Daily	225.0	276.0	148.8	156.02	95.0	147.0	72.9	100.8	122.9	106.0	100.0	99.4
Temperature (°C)												
Mean	28.1	27.6	26.3	23.7	20.4	17.7	17.1	18.7	21.5	23.8	25.6	27.3

Source: Bureau of Meteorology (accessed 23 January 2018)

Urban activities in the local area affect air quality, generally through use of vehicles and power tools all year and potentially wood fires utilised during winter months. The site is surrounded by local roads Medowie Road is located to the east where public transport and traffic on these roads affect air quality through vehicle emissions and industrial activities that also impact on local air quality.

### 6.4.2 Potential Environmental Impact

Construction of the proposal has minor potential to generate wind borne dust from exposed or stockpiled soil or other material. Dry and windy conditions may generate additional dust from exposed soil and movement of vehicles and wind conditions should be monitored. Exhaust from vehicles and machinery used during construction and operation may impact local air quality. Dust should be monitored during dry and windy conditions with appropriate mitigation measures adopted where high levels of dust may be generated.

Operation of the school is unlikely to result in impacts to air quality and additional mitigation measures are not considered necessary.

### 6.4.3 Environmental Management Measures

Environmental management measures to minimise impact on air quality are:

#### Construction Phase

- Maintain vehicles and machinery to minimise emissions
- Limit dust-generating activities during periods of dry and windy weather
- Stage the work, where practicable, to minimise extent of disturbed areas
- Apply water as necessary to control and manage dust from exposed soil
- Dust suppression will be used during construction and may include water trucks
- All stockpiles will be covered to minimise potential generation of dust
- Reduce vehicle speeds along the access route until works are completed.

#### Operational Phase

- Maintain landscaping to minimise exposed soil
- Maintain plant and equipment.



## 6.5 Noise

### 6.5.1 Existing Environment

A Noise Assessment (Appendix 12) has been prepared and is summarised below.

Construction noise has potential to impact on neighbouring premises as the proposal involves development of a new college and will likely take place over ten years. Dwellings to the north and east and child care across Medowie Road are sensitive receivers for noise. Normal school hours are generally from 8.00am to 5.00pm Monday to Friday with classes usually from 8.45am to 3.15pm. The sporting fields may also be accessed by local community sporting clubs with activities typically taking place on Saturday mornings.

The Chapel would be used during school hours and also for a Mass either on a Saturday evening (5.30pm to 6.00pm) or Sunday morning (8.00 to 9.00am). The Chapel may be used occasionally for weddings, funerals and baptisms.

The Office of Environment and Heritage (OEH) and Port Stephens Council generally share responsibility for the approval and control of noise emissions from commercial and industrial premises within council boundaries. These approvals are usually based on procedures and criteria detailed in the Noise Policy for Industry (NPI). The NPI doesn't contain specific procedures for the assessment of noise emissions from schools but, in keeping with similar situations in other local government areas, it is used in this assessment as a guide for determining potential noise impacts and applicable criteria.

The NPI describes intrusive and amenity criteria applicable to industrial sites. These noise criteria depend on the existing background noise level at potentially affected residential receiver areas. Ambient noise levels representative of the residential area near the site were measured as part of the acoustic assessment for the current project. Ambient noise levels were measured on the site at the location shown in Figure 2 (of Appendix 12) from 5 to 11 December, 2017.

Ambient Leq and background noise levels, obtained from the logger, are summarised in Table 6.6 and shown graphically in Appendix I (of Appendix 12). The time trace from the logger data (shown in Appendix I of Appendix 12) is typical of an area near a busy road with characteristically high traffic flow from early morning and early evening.

**Table 6.6 – Measured Ambient Noise Levels**

Measured Ambient Noise Levels dB(A) – Site Logger		
Period	L90	Leq (15 min)
Day	49	58
Evening	44	55
Night	38	54

In setting noise goals for a particular project, the NPI considers both Amenity and Intrusiveness criteria. The former is set to limit continuing increase in noise from industry, whilst the latter is set to minimise the intrusive impact of a particular noise source. Table 6.7 specifies the noise criteria determined for the site derived in accordance with procedures in the NPI.

**Table 6.7 – Measured Ambient Noise Levels**

Noise Criteria			
Criterion	Day (7am-6pm)	Evening (6pm-10pm)	Night (10pm-7am)
Intrusiveness dB(A), Leq(15-min.) <sup>1</sup>	54	49	43
Amenity dB(A), Leq(period) <sup>2</sup>	53	43	38
<b>Project-Specific Noise Goals</b>	<b>53 (15 min)</b>	<b>43 (15min)</b>	<b>38 (15 min)</b>

1 Rating Background Level (RBL) + 5dB. RBL is the median value of each ABL (Assessment Background Level) over the entire monitoring period. The ABL is a single figure representing the “L90 of the L90’s” for each separate day of the monitoring period.

2. Project amenity noise level (ANL) is suburban ANL (NPI Table 2.1) minus 5 dB(A) plus 3 dB(A) to convert from a period level to a 15-minute level.

### Aircraft Noise

The location of the proposed College is depicted on Figure 3 of Appendix 12. This shows that the location lies outside of the “Aircraft Noise Planning Area” as defined in the PSC DCP (2104). Figure 3 also shows that the site is outside of the ANEF 20 contours for 2012 and 2025 for the Newcastle Airport and RAAF Base, Williamtown (RAAF Base Williamtown and Salt Ash Weapons Range ANEF”, GHD, Appendix E Figure 2, 10 August 2011), as defined on RAAF endorsed plans.

As the site is situated outside of the ANEF 20 contour it fits the description of “acceptable” for a school or university in accordance with Table 2.1 of AS/NZS 2021-2015 “Acoustics-Aircraft Noise Intrusion-Building Siting and Construction” (the Standard).

Under Section 2.3 “Action resulting from acceptability determination” of the Standard, Section 2.3.1 states that, for the “acceptable” classification, specific protection against aircraft noise is not necessary. It has been indicated by Port Stephens Council, however, that consideration should be given to maximum noise levels from aircraft to ensure the future amenity of all school uses. To assess any potential impacts guidance has been taken from the Standard.

Table 6.8 shows design indoor aircraft noise levels as specified in Table 3.3 of the Standard.

**Table 6.8 – Extract from AS 2021-2000**

Extract from Table 3.3 of AS 2021-2000	
Building Type and Activity	Indoor design sound level, dB(A), Lmax
<b>Schools, universities</b>	
Library, study areas	50
Teaching areas, assembly areas	55
Workshops, gymnasias	75
<b>Commercial Buildings, offices, shops</b>	
Private Offices, conference rooms	55
<b>Public Buildings</b>	
Churches, religious activities	50

## Road Traffic Noise

The NSW Road Noise Policy (RNP) details (in Table 4 of the RNP) “Road traffic noise assessment criteria for non-residential land uses affected by road projects and traffic generating developments”. For a school classroom the recommended internal noise level is 40 dB(A) Leq (1hr) when the room is in use.

Similarly, the recommended internal noise level for a chapel is 40 dB(A) Leq (1hr) when in use.

For the current assessment this criterion has been used to determine the appropriate design noise level inside the new classrooms and chapel.

## Construction Noise

The assessment of potential construction noise impacts is undertaken in accordance with the Interim Construction Noise Guideline (ICNG, 2009) and Assessing Vibration: A Technical Guideline (AVTG, 2006). These guidelines are non-mandatory but are usually referred to by local councils and the NSW Department of Planning and Environment when construction/demolition works require development approval.

The criteria in the ICNG cover all activities and machinery associated with construction on the site including, but not limited to, site preparation, excavation work and erection of buildings, the concrete batching plant and related infrastructure. It is designed to ensure noise emissions resulting from the construction are maintained to minimise potential impacts to nearby receivers.

Section 1.5 of the ICNG outlines the steps for management of construction noise impacts as follows;

1. identify sensitive land uses that may be affected.
2. identify hours for the proposed construction works.
3. identify impacts at sensitive land uses.
4. select and apply the best work practices to minimise noise impacts.

Each of the above four points are assessed in detail in the Noise Assessment in Appendix 12.

## 6.5.2 Potential Environmental Impact

### School Classrooms

The proponent has supplied the following information in relation to the operation of the school. The high school will, typically, cater for approximately 1,190 students, with 630 in the infants/primary classes and a further 124 in the Early Learning Centre.

The high school will be built as a series of classroom blocks around a central open space. The blocks will be isolated from each other. There will be a playing field, capable of hosting football games, at the north western corner of the high school site.

The primary school will be similarly built as a series of classrooms in a generally semi-circular arrangement around an open space. Smaller play area will be located away from residential receivers and acoustically shielded from them by the class room buildings. Due to the separation between the class rooms and the residential receivers noise emissions from general class room activities will be at levels that will not create any adverse impacts at any receivers.

From an acoustic point of view the main potential for noise impacts from the classroom section of the high school may come from activities in the Technology and Applied Sciences (TAS) rooms and the Music Suites. To assess these potential noise impacts data was taken from the Spectrum Acoustics technical database. All sound levels in the technical database have been measured with a Bruel & Kjaer Type 2260 Precision Sound Level Analyser with calibration performed before and after the survey.

The relevant measured Leq noise levels from the technical database are shown in Table 5 of Appendix 12.

For the purpose of assessing a worst case these measured noise levels shown in Table 5 (of Appendix 12) were considered to be constant for the full 15 minute assessment period. Blocks D and E of the proposed high school will be used for TAS classes. Each block will house TAS workshops. To assess the potential impacts from activities in the TAS workshops, a noise source with the Leq (15min) sound pressure level for TAS, shown in

Table 5 (of Appendix 12), was considered to be located near the internal walls (closest to the receivers) of the TAS workshops in Block D.

Noise levels were then theoretically propagated to the nearest residences taking into account the effects of transmission loss through building elements and hemispherical spreading (distance loss). From consideration of the dimensions and orientation of the various building elements, the sound pressure levels immediately outside these were propagated to the nearest receiver using an equation (Bies and Hansen, 1996) giving the sound field due to an incoherent plane radiator. The predicted received noise levels were then compared to project noise goal to determine noise impacts.

There are five TAS workshops proposed for Blocks D and E combined. Assuming all are in use at the same time and producing the maximum noise emissions assessed in Table 6 (of Appendix 12), the total received noise at the boundary would be less than 30 dB(A) Leq (15 min) and there would be no adverse noise impacts.

All other receivers are more distant from the TAS workshops and will be more acoustically shielded by the class room buildings, which will further reduce noise levels at those receivers. There will, therefore, be no adverse impacts at any receivers as a result of emissions from the TAS workshops.

There will be two music suites as well as several music practice rooms located in Block A at the northern end of the main hall. The music suites and practice rooms will be located within the class room Block and will not have any facades which are exposed to residential receivers. The music will be adequately attenuated by the structure of the building and intervening building elements such that there will be minimal noise emission in the direction of any residential receivers. Further assessment of this noise is not considered warranted.

The results in Table 6 (of Appendix 12) show that there will be no noise impacts at any residential receivers as a result of the assessed activities in music classes. The results are based on the assumption that the windows will be fitted with 6.38mm laminated glass. Whilst this may not be necessary to mitigate environmental noise emissions it is recommended to reduce the potential for noise flanking between the TAS workshop and other nearby classrooms.

Noise from the activities in the TAS workshops and music suites are expected to represent the worst case for noise emissions from the proposed class rooms. The other class rooms are to be general class rooms.

#### Playing Fields and Outdoor Play Areas

The high school will have a dedicated playing field which will be used for organised class activities as well as informal play during recess and lunch breaks. It is envisaged that the main playing field at the north western corner of the site may be used for organised sporting activities on Saturday mornings.

It is considered that the worst case for noise generation from the playing field will occur during organised activities or Saturday morning competitions. For the current assessment the noise from a sporting event was considered to be three separate sources located generally around the playing field as shown in Figure 4 (of Appendix 12). The nearest potentially affected residential receivers are also shown on Figure 4 (of Appendix 12).

The results in Tables 8 and 9 show that, under the assessed conditions, there will be no adverse impacts due to noise emissions from the playing fields. The calculations are simplistic as they don't take into account any acoustic barrier effects for fencing along the boundary to Receiver 1, or for classroom buildings between the playing fields and Receiver 2. This will apply a degree of conservatism to the results.

Other outdoor play areas for the primary and high school will be at various locations around the site. Each of these playground areas will be used, on average twice a day, at recess (for 15 minutes) and at lunch time (for 50 minutes). The 15 minute Leq noise emissions from these areas will vary depending on the type of activity which may be taking place at any time.

Each play area or group would have an average Lw of between 75 and 80 dB(A) Leq (15 min) (based on noise measurements made at existing schools in general play areas). This implies compliance with the day time noise criterion at distances of greater than 10m from the playing groups (that is for an Lw of 80 dB(A) minus 28 for distance loss of 10m).

As all play areas will be significantly more distant from any receivers than this and will be acoustically shielded from any receivers by the intervening classroom buildings, the received noise at all residences will be in compliance with the day time noise criterion.

### Class Bell/Siren

It is anticipated that a bell or siren would be operated to indicate the start and finish of class periods and breaks etc. In order to be heard all over the school it is anticipated that such a bell or sirens would need a sound pressure level of between 10 and 15 dB(A) above the existing Leq noise level and extend for a period of between 3 to 5 seconds.

Assuming a worst case of a sound pressure level of 73 dB(A) at the boundary (i.e. existing Leq + 15) and a duration of 5 seconds, this equates to a 15 minute Leq of 45 dB(A). That is when averaged over a full 15 minute noise assessment period the noise level would be 45 dB(A). The assessment has shown, however, that the operation of the school bell will not cause any undue noise impacts, provided it has a sound pressure level of 78 dB(A) Leq at the school boundary and it operates for less than 5 seconds.

### Car Park

There will be six car parking areas associated with all of the schools. For most of each day the car parking spaces will be occupied and there will be very little movement of cars in and out. The majority of use of the car and vehicle movements will usually coincide with the period at the start and end of each school day. The worst case for noise generation from the car park would be during one of those periods.

A heavy usage of the car park would result in up to 50% of the car parks being used in a single 15 minute period. To ensure consideration of the absolute worst case for the current assessment it was assumed that 75% of the car parks would be used in a single 15 minute period, as may be the case in the afternoon when school finishes.

Noise in car parks typically comes from people walking to and from cars, doors opening and closing etc., as well as vehicles moving at slow speeds. Each noise event is characterised by a brief peak which when averaged out over a 15 minute period has a relatively low Leq. The impact of each noise event on any single receiver is also variable depending upon the location of individual cars within a car park and as they move in and out.

Typical noise levels from car parks have been sourced from the Spectrum Acoustics technical database. This contains noise measurements from a series of vehicles arriving and departing a car park with people moving to and from vehicles. The measurements were made over a representative period to ascertain a typical noise level from these activities. The measurements were made at varying distances from each car to approximate the situation in relation to an adjacent residence over a 15 minute interval. That is, at any time throughout each 15 minute interval various car parks, at different distances from the nearest residences, will be in use.

The measurements in the database show a noise level of 53 dB(A) Leq measured over a 5 minute period where up to 6 vehicles moved in and out of a car park. The measurements were made at an average distance of 7 metres. Assuming the noise from the 6 vehicles is consistent for a full 15 minutes at a distance of 7 metres this equates to a sound power level of 73 dB(A) Leq (15 min) for that car park noise. This value has been used to determine impacts over a 15 minute assessment period during the morning before school.

Due to the layout of the car parks, individual parking spaces will be at various distances from receivers. The proposed layout is for a series of "banks" of parking spaces. To assess potential impacts the car park was considered to consist of 18 banks of 10 to 12 parking spaces each with a worst case average Lw of 76 dB(A) Leq (15 min). Received noise levels were determined for each "bank" and the combined result calculated for the most potentially affected receivers in Medowie Road and Blueberry Road.

The noise from the car park will be at different levels when measured at various points on any individual receiver boundary. That is, depending on the distance from individual cars/noise events etc. To assess the practical impacts the noise was calculated for a single theoretical reception point at the most affected point on the boundary of the site and Receivers R1 and R2 (as shown on Figure 5 of Appendix 12).

A summary of the results of the assessment of car park noise, as described above, is shown in Table 6.9.



**Table 6.9 – Calculated Sound Pressure Level**

Calculated Sound Pressure Level – Leq (15 min) – Car Park		
Car park number	R1 dB(A)/distance	R2 dB(A)/distance
1	17 (370m)	21 (230m)
2	17 (370m)	21 (230m)
3	17 (370m)	21 (230m)
4	17 (340m)	22 (200m)
5	17 (340m)	22 (200m)
6	18 (310m)	23 (170m)
7	24 (310m)	23 (170m)
8	21 (230m)	29 (90m)
10	28 (100m)	44 (150m)
11	30 (75m)	32 (60m)
12	34 (35m)	29 (90m)
13	28 (100m)	36 (40m)
14	33 (75m)	34 (80m)
15	36 (40m)	30 (80m)
16	27 (110m)	32 (60m)
17	29 (85m)	36 (40m)
18	34 (50m)	29 (90m)
<b>Total Leq (15 min)</b>	<b>41</b>	<b>46</b>
<b>Criterion Leq (15 min)</b>	<b>53</b>	<b>53</b>

The results in Table 6.9 show there will be no exceedance of the day time noise criterion at any receivers as a result of the assessed car park noise.

#### Aircraft Noise

Maximum aircraft noise levels have been previously published (2009) for the Joint Strike Fighter (JSF) aircraft at Williamtown. Based on the published contours it is anticipated that worst case maximum noise levels of up to 80 dB(A) may be experienced from JSF aircraft at the proposed College location. Noise levels from all other aircraft types are lower than those for the JSF at this location.

Standard glazing will achieve an adequate internal noise level in all class rooms in the schools. External windows to libraries and the chapel should be fitted with minimum 6.38mm laminated glass.

#### Road Traffic Noise

The noise logger was located with full line of sight to the traffic on Medowie Road and, therefore, measured the existing traffic noise in the area. The logger was located at approximately the same distance from the road (i.e. traffic noise source) as the closest façade of any of the school buildings.

It is usual for RMS and Councils to require design standards to meet projected traffic levels for the ten years after a development is completed. There are no AADT figures for Medowie Road. Assuming an increase in traffic volumes of 10% over current levels, this would lead to a resultant increase in traffic noise of slightly less than 0.5 dB(A) Leq or a total at the logger location of 58.5 dB(A), Leq (15 hr) during the day.

This indicates that the class room buildings and offices must be capable of attenuating up to 19 dB(A) Leq (1 hr) in order to achieve the adequate internal noise levels detailed in Section 3.3. This is applicable to all areas of the schools. Published sound transmission loss data from window suppliers indicate that, in a typical construction scenario, 4mm float glass windows will attenuate up to 28 dB(A) of road traffic noise. Similarly, fitting the same windows with 6.38mm laminated glass will attenuate up to 30 dB(A) of road traffic noise.

Sample calculations of the required  $R_w$  for windows in the school were undertaken. The measured Leq noise level from the logger was assumed to be impacting on the outer façade of the windows in the Administration Building. From this the required  $R_w$  was calculated in accordance with the mathematical procedure given in AS 3671-1989 "Acoustics - Road traffic noise intrusion - Building siting and construction".

The results show that the window in the Principles office should be fitted with glass with a minimum  $R_w$  of 24. Published sound insulation performance in terms of  $R_w$  ratings relate to partitions tested in ideal laboratory conditions or opinions based on such measurements and suppliers must be able to ensure compliance with the detailed  $R_w$  ratings when windows are installed. For example,  $R_w$  24 could, depending on the entire window system, be achieved with standard glazing. Attenuation of the traffic noise, standard glazing will be sufficient for all windows in the schools.

### Mechanical Plant

The most acoustically significant mechanical plant associated with the school will be air conditioning equipment for the various areas of occupancy. It is most likely that this will be provided by split system air conditioners.

Typical condenser units on split systems for applications such as this have sound power levels in the vicinity of 67 to 70 dB(A). This means that in the free field, with no reflecting surfaces and no impediments or barriers to noise, the a/c units would produce sound pressure levels of around 50 dB(A) at between about 3 to 4 metres from the condenser.

In terms of noise impacts on adjoining properties, the cumulative effects of more than one condenser operating at the same time, and in relatively close proximity, needs to be considered.

Table 6.10 shows the calculated noise impact at the nearest residential boundary from the combined emissions from six condenser units located at ground level. This would be considered a worst case scenario where all condensers in the set of six units were operating at maximum sound power levels.

In relation to potential impacts at surrounding receivers, the distance of each condenser to the closest point on the nearest residential boundary is variable depending upon where it is mounted. As each condenser will be at varying distances from each other and the boundary a representative calculation has been carried out for a distance of 10 metres.

**Table 6.10 – Air Conditioner Noise Impact**

Air Conditioner Noise Impact	
Item	dB(A)
6 x condensers	78
Distance loss (10m)	28
Received Noise	50 Leq (15 min)
Criterion	53 Leq (15 min)

Given the proposed layout of the school it is considered feasible that all air conditioner condensers can be mounted either a sufficient distance from the boundary and/or behind an effective acoustic barrier (i.e. in this case shielded by building elements of the school buildings). Care must be taken when locating the units to avoid the effects of reflected noise from nearby buildings or off barriers etc.

In addition to minimising environmental noise as a result of the condensers, there may be the potential for structure borne noise to impact on classrooms within the building. To avoid the possibility of structure borne noise due to vibrations, all duct work for HVAC venting must be isolated from the main structure of the building. Duct and pipe penetrations must be kept free of the structure either by externally lagging or by use of non-setting sealants at the point of penetration.

Vibrating equipment such as a/c condenser units must be mounted such that vibrations cannot transfer to the surrounding structure.

### Construction

The most significant noise emissions from construction activities will occur during the site excavation and preparation and initial foundation works for the class room buildings, playing fields and car parks etc.

Other works will involve fitout of the various buildings. For the most part these will be undertaken internally within the buildings with resultant reduced received noise.

Typical noise levels of construction plant items are shown in Table 12 (of Appendix 12) (as adapted from the Environmental Noise Management Manual and supplemented with data from the Spectrum Acoustic technical database).

Results of a calculation of potential noise impacts at the most potentially affected receivers due to general construction works taking place at the closest parts of the car parks to the various boundaries. The results in Table 13 (of Appendix 12) show, that under the assessed conditions, there will be an exceedance of the construction noise criterion at the closest point on the boundary to Receiver R2. This exceedance will be of a short term nature and will occur only during those parts of the construction when the works are closest to the receiver.

The received noise will result in received noise in the “noise affected” category but below the “highly affected” category of the ICNG. The calculations shown in Table 13 (of Appendix 12) are for that phase of construction involving heavy machinery ground preparation work for the closest parts of the car park to the residences, as described previously. This phase of the construction will be only relatively short term in nature.

As construction progresses the major noise generating activities will be carried out inside buildings or will be substantially shielded by building elements. As a result, at these times, received noise levels will be less than those shown in Table 13 (of Appendix 12).

### **6.5.3 Environmental Management Measures**

During construction and demolition activities, mitigation strategies to manage noise include:

- All neighbouring residents will be notified of the proposed works. Particular emphasis should be placed on the time frame of the works. A contact name and phone number of a responsible person should be given out so that complaints can be dealt with effectively and efficiently. All complaints or communication should be answered
- During the liaison process note will be made of any particularly noise sensitive times of day and care be taken to avoid scheduling noisy works at these times
- All personnel working on the job including contractors and their employees will be made aware of their obligations and responsibilities with regard to minimising noise emissions
- Contractors should familiarise themselves with methods of controlling noisy machines and alternative construction procedures. These are explained in AS 2436-1981 “Guide to Noise Control on Construction, Maintenance and Demolition Sites”
- Activities that are known or have the potential to create excessive noise, where possible, will be scheduled to occur at times to cause least annoyance to the community. Carrying out such work during

early morning will be avoided. This includes start up and idling etc. of heavy machinery prior to commencement of work

- Mechanical plant will be silenced using best available control technology. Noise suppression devices will be maintained to manufacturer's specifications. Internal combustion engines will be fitted with appropriate, well maintained, high efficiency mufflers
- Machines which are used intermittently will either be shut down in the intervening periods between work or throttled down to a minimum
- Alternatives to reverse alarms such as manually adjustable or ambient noise sensitive types ("smart" reversing alarms) will be considered. Alternative site management strategies can be developed, in accordance with a site OH&S Plan, with the concurrence of the appropriate OH&S Officer
- Any portable equipment with the potential to create high levels of noise e.g. compressors, generators etc. should only be selected for use if it incorporates effective noise control. This equipment will be located where practical so that natural ground barriers or site sheds etc. are between it and the nearest potentially affected receivers
- Where possible loading and unloading of plant and materials will be carried out away from potentially affected receivers
- All windows in the external facades of the TAS workshops will be minimum 6.38 mm laminated glass
- Windows to the TAS workshops will be closed whilst machinery is being operated
- Any siren or bell must be adjusted to have a maximum sound pressure level of 45 dB(A) Leq (5 sec) when measured at the boundary of the site and have a maximum duration of 5 seconds
- Air conditioner condensers will be mounted at ground level either a sufficient distance from the boundary and/or behind an effective acoustic barrier
- To avoid the possibility of structure borne noise due to vibrations, all duct work for HVAC venting must be isolated from the main structure of the building.

## 6.6 Flora, Fauna and Bushfire

### 6.6.1 Existing Environment – Ecology

A Biodiversity Development Assessment Report (BDAR) was prepared by Biosis (Appendix 21) and is summarised below.

The study area is within the:

- NSW North Coast Interim Biogeographic Regionalisation of Australia (IBRA) Bioregion
- Karuah Manning IBRA subregion
- Sydney-Newcastle Barriers and Beaches Mitchell Landscape
- Newcastle Coastal Ramp Mitchell Landscape
- Port Stephens Local Government Area (LGA)

There is one mapped second order stream, located 400 metres from the western boundary of the study area. The stream runs away from the study area from east to west, where it enters the Grahamstown Reserve (Figure 1 (of Appendix 21)). An unmapped watercourse is located in the south of the subject land and appears to connect constructed waterbodies of the golf course east of Medowie Road, with the SEPP 14 wetland to the west of the subject land. The SEPP 14 wetland occurs within the south west portion of the study area. Under the objectives of the SEPP, impacts to areas of coastal wetlands should be avoided.

The subject land is predominately covered by exotic pasture or non-native Slash Pine *Pinus elliottii* over exotic pasture, with native vegetation restricted to small patches of remnant canopy trees over exotic pasture and the edges of larger remnant patches (Figure 4 (of Appendix 21)). Shrub and mid layer vegetation strata are mostly absent in the subject land except where the subject land intersects the edge of larger, more intact remnant vegetation patches.

### Extent of Native Vegetation Cover

The study area supports 12.1 hectares of native vegetation with varying levels of disturbance. Native vegetation within the study area varies in composition and condition as a result of previous land uses. The western portion of the study area consists mostly of native vegetation, whilst the eastern portion is largely cleared, with scattered remnants.

The following Plant Community Types (PCTs) were assessed as present within the within the subject land:

- PCT 1564 Blackbutt – Rough-barked Apple – Turpentine – ferny tall open forest of the Central Coast.
- PCT 1598 Forest Red Gum grassy open forest on floodplains of the lower Hunter
- PCT 1619 Smooth-barked Apple – Red Bloodwood – Brown Stringybark – Hairpin Banksia heathy open forest of coastal lowlands
- PCT 1718 Swamp Mahogany – Flax leaved Paperbark swamp forest on coastal lowlands of the Central Coast.

Two of these PCTs within the subject land are consistent with threatened ecological communities (TECs) listed under the NSW BC Act. These include:

- Swamp Sclerophyll Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions Endangered Ecological Community (Swamp Sclerophyll Forest EEC):
  - Restricted to PCT 1718 and located to the west and north of the subject land. The subject land contains 0.22 hectares of Swamp Sclerophyll Forest EEC.
- Hunter Lowland Redgum Forest in the Sydney Basin and NSW North Coast Bioregions (Hunter Lowland Redgum Forest EEC):
  - Restricted to the PCT 1598 and located along the western edge of the subject land. The subject land contains 0.17 hectares of Hunter Lowland Redgum Forest EEC.

The total extent of native vegetation to be removed is 1.55 hectares

### Assessment of Connectivity Value

Habitats within the study area are primarily those associated with coastal sclerophyll forests. For highly mobile fauna species and seed/pollen dispersal of some flora species, habitats within the study area are well connected to the vegetation of Tilligerry State Conservation Area to the south and Campvale Swamp to the west. The higher quality habitat connectivity links for fauna and flora occur to the west and south of the subject land, where most of the moderate and good condition vegetation remnant are located and barriers to dispersal are minor.

The subject land is well connected to the larger study area with only minimal disturbances such as vehicle tracks along the western boundary of the subject land, these are not considered to be barriers to species movement within the area. A power easement running from east to west divides vegetation within the study area but is not considered to provide a significant barrier for fauna species. Campvale Road lies between the Conservation area and freehold land and may provide a barrier to dispersal of less mobile and terrestrial species into and from Tilligerry State Conservation Area.

### Terrestrial Fauna Habitat Present

The study area supports 12.1 hectares of native vegetation with varying levels of disturbance while the subject land is predominately covered by exotic pasture or non-native Slash Pine *Pinus elliottii* over exotic pasture, with native vegetation restricted to small patches of remnant canopy trees over exotic pasture and the edges of larger remnant patches. Fauna habitat within the subject land mostly consists of isolated native canopy trees over a mown ground cover of primarily exotic grasses and a narrow strip of Slash Pine along the south east boundary (Figure 4 of (Appendix 21)), under which the understorey has been largely removed. Better quality habitat is associated with larger remnant patches of PCT 1718 and PCT 1598 at the western edge of the subject land. APZs associated with the proposed development will impact very narrow strips of this habitat.

Native vegetation within the subject land is considered to be of marginal or low value to threatened species due to the effects of current and historic disturbance such as clearing and regular mowing of the grassy groundcover.



These practices have resulted in substantially modified vegetation composition and structure within the subject land and have likely lead to an increase in introduced predator (e.g. European Fox *Vulpes vulpes*, Cat *Felis catus*) pressure.

One ephemeral creek crosses a portion the subject land in the south east. This creek line may provide some marginal dispersal habitat for threatened frogs and provides connectivity between habitat to the east of the subject land, across Medowie Road and to the west of the subject land. The aquatic habitats associated with this watercourse are further discussed in Section 3.2.6 (of Appendix 21).

Within the subject land there are 11 hollow-bearing trees which may be removed by the development. These trees provide hollows potentially suitable for roosting for threatened microbats but are considered to be unsuitable for breeding by other threatened species due to a variety of factors including aspect, size, position within the tree and position within the landscape.

Habitat within the subject land may provide foraging resources for some threatened species in the form of large flowering eucalypts including Swamp Mahogany, Blackbutt and Rough-barked Apple within PCT 1564 and Red Gum within 1598 (Figure 4 (of Appendix 21)). Swamp Mahogany and Forest Red Gum are winter-flowering species and therefore individuals within the subject land likely provide nectar resources for nectivorous birds, including threatened species such as Swift Parrot *Lathamus discolor* and Regent Honeyeater *Anthochaera phrygia*. The PCT 1718 and PCT 1598 vegetation adjoining the subject land to the west is well connected to surrounding larger areas of bushland considered to provide higher quality habitat for all threatened species with potential to occur within the subject land.

The study area and surrounding bushland were observed to provide foraging resources for some threatened species during targeted fauna survey (refer Section 3.5 (of Appendix 21)).

#### Aquatic Habitat Present

One unnamed and unmapped ephemeral waterway traverses the southern section of the subject land (Figure 1 (of Appendix 21)). The waterway is moderately modified due to its location within a routinely mown landscape, past canopy clearing and weed infestation. There is an existing culvert structure connecting the subject land with the southern section of the study area. A number of additional small culvert sections provide access across the waterway within the south western sections of the study area and existing vehicle track crosses near the western boundary of the study area.

The waterway appears to feed the mapped wetlands located across Medowie Road, south east of the study area. Fringing, or submerged native aquatic plants and instream habitat structures such as logs or rocks were observed within some sections of the stream (Plate 1 and Plate 2 (of Appendix 21)). Isolated pools occurring within the waterway are considered to provide limited refuge habitat for aquatic fauna. Several drainage pipes and other infrastructure were found along the waterway (Plate 3 of (Appendix 21)).

The unnamed stream is not considered Key Fish Habitat as defined by the NSW Department of Primary Industry (DPI 2013) as it is a first order gaining stream. The stream experiences intermittent flows and offers sporadic refuge, breeding and/or feeding areas for aquatic fauna within semi-permanent pools. The stream is therefore classified as a Class 3 – Minimal key fish habitat for fish passage.

The stream is not linked to the Strahler stream order system as it is downstream of the waterways on the Pacific Dunes golf course to the east (Personal comm. Ryan Shepherd, Water Regulations Officer, DPI). However, following advice from DPI, the stream is considered to be a first order stream for the purposes of assessment against relevant provision of the WM Act and FM Act (Personal comm. Ryan Shepherd, Water Regulations Officer, DPI).

The SEPP 14 wetland within the study area is classified as Highly Sensitive Key Fish Habitat within the study area (DPI 2013). However, the proposed development is not expected to significantly impact any freshwater or marine aquatic values listed under the *Fisheries Management Act 1994* (Appendix 21).

#### Targeted Threatened Flora Survey

Habitat for threatened flora species within the subject land is considered to be very limited. Historical and ongoing disturbance in the form of vegetation removal, periodical grass mowing and invasion of dense and smothering exotic plant species has significantly degraded the habitats present. However, Marginal habitat can be found along the west and south boundaries adjacent to moderate and good condition vegetation. Candidate species (as

listed in Table 9 (of Appendix 21)) are low growing ground-cover species, highly sensitive to this form of disturbance. As such, potential occurrence of these species is considered to be low.

Targeted surveys did not record any threatened flora species within the subject land or in adjoining native vegetation.

#### Targeted Threatened Fauna Survey

Fauna habitat within the subject land was found to be significantly degraded due to previous disturbance and the lack of understorey and native ground cover for foraging and shelter. As such, the potential presence of the majority of the listed fauna species outlined above is considered to be on a transient basis only, as they fly over the site foraging as part of their larger home range.

Six threatened fauna species were recorded outside of the subject land but within the study area during detailed field investigations. These include:

One Koala was recorded to the south west of the impact area within the Swamp Mahogany- paperbark swamp vegetation (PCT 1718) adjacent to the subject land. The subject land is considered to be of lower importance to the Koala as adjacent areas provide higher-quality resources within preferred Koala habitat.

One Powerful Owl and Two Masked Owls were also recorded within vegetation to the south west of the study area, the individuals responded vocally to call playback and were then observed to land in tall trees adjacent to the study area. There are no suitable hollow-bearing trees within the subject land for nesting by either Powerful Owl or Masked Owl and the subject land is considered to contain marginal foraging habitat compared to the adjacent open forest in which both species were observed.

A response to call playback for the Wallum Froglet was observed within the south western corner of the study area within the swamp vegetation. This species is unlikely to occur within the subject land as there is no suitable habitat available.

One White-bellied Sea-eagle was observed flying over the study area during diurnal bird survey. The White-bellied Sea-eagle is considered unlikely to utilise the study area as the area does not support foraging or breeding habitat, in addition no nests were located during field investigations.

Grey-headed Flying-fox was observed flying over the subject land from the east on all nights of the field investigation and was recorded foraging within Eucalypts spp. and *Melaleuca quinquenervia* within the study area. Individuals flying over and foraging within the study area most likely travel from a small camp located in Moffat's Swamp approximately 3 kilometres north east of the subject land.

#### Ecosystem Credit Species

Species reliably predicted to occur based on PCTs present within the subject land (i.e. ecosystem credit species) based on information obtained from the Threatened Biodiversity Data Collection, were returned from the BAM Offsets Calculator and refined as per Section 6 (of Appendix 21) of the BAM (Table 8 (of Appendix 21)). Impacts to these species require further assessment, however targeted survey is not required.

#### Species Credit Species

A list of species credit species potentially occurring within the study area was generated in accordance with Section 6.4 of the BAM, including information obtained from the Threatened Biodiversity Data Collection. An assessment of whether suitable habitat occurs within the study area, and therefore whether a species is to be considered a candidate species credit species is also provided. The identification of candidate species credit species was assessed in accordance with Sections 6.3 and 6.4 of the BAM (of Appendix 21).

#### Biodiversity Credits

This section provides a summary of biodiversity credits required for impacts on the biodiversity values within the development site, following consideration of measures to avoid, minimise and mitigate impacts. Table 6.11 and 6.12 provides a summary of ecosystem and species credits resulting from the proposed development. The full credit profile is provided in Appendix 3 (of Appendix 21) with Vegetation zones provided visually in Figure 3.

**Table 6.11 – Summary of ecosystem credits for all vegetation zones**

Vegetation Zone	PC type code	Plant community type	Management zone area (ha)	Vegetation integrity loss	Biodiversity Risk Weighting	Candidate SAI	Ecosystem credits required
VZ1	1598	Forest Red Gum grassy open forest on floodplains of the lower Hunter	0.05	-1	2	No	1
VZ2	1598	Forest Red Gum grassy open forest on floodplains of the lower Hunter	0.11	-49.7	2	No	3
VZ3	1718	Swamp Mahogany – Flax leaved Paperbark swamp forest on coastal lowlands of the Central Coast	0.10	-15.1	2	No	1
VZ4	1718	Swamp Mahogany – Flax leaved Paperbark swamp forest on coastal lowlands of the Central Coast	0.07	-22.7	2	No	1
VZ5	1598	Forest Red Gum grassy open forest on floodplains of the lower Hunter	0.01	-31.9	2	No	1
VZ6	1564	Blackbutt - Rough-barked Apple - Turpentine - ferny tall open forest of the Central Coast	0.97	-25.5	1.5	No	9
VZ7	1718	Swamp Mahogany – Flax leaved Paperbark swamp forest on coastal lowlands of the Central Coast	0.01	-34.5	2	No	1
VZ8	1619	Smooth-barked Apple – Red Bloodwood - Brown Stringybark - Hairpin Banksia heathy open forest of coastal lowlands	0.11	-39.3	1.5	No	2
VZ9	1619	Smooth-barked Apple – Red Bloodwood - Brown Stringybark - Hairpin Banksia	0.05	-5.1	1.5	No	1

		heathy open forest of coastal lowlands <sup>1</sup>					
VZ10	1598	Forest Red Gum <sup>1</sup> grassy open forest on floodplains of the lower Hunter	0.04	-9.5	1.5	No	1
VZ11	1619	Smooth-barked Apple – Red Bloodwood - Brown Stringybark - Hairpin Banksia heathy open forest of coastal lowlands	0.04	0	1.5	No	1
VZ12	1718	Swamp Mahogany – Flax leaved Paperbark swamp forest on coastal lowlands of the Central Coast	0.04	-55.4	2	No	1
<b>Total</b>							<b>23</b>

**Table 6.12 – Summary of species credit for all management zones**

Species Credit Species	Management Zone	Habitat loss (Vegetation integrity loss)	Area of habitat	Biodiversity Risk Weighting	Candidate SAI	Species credits required
Koala <i>Phascolarctos cinereus</i>	VZ1	-1	0.5	2	No	0
	VZ2	-49.77	0.11			3
	VZ3	-15.1	0.1			1
	VZ4	-22.7	0.07			1
	VZ5	-31.9	0.01			0
	VZ6	-25.5	0.03			0
	VZ7	-34.5	0.01			0
	VZ8	-39.3	0.01			0
	VZ12	-55.4	0.04			1
Total						6



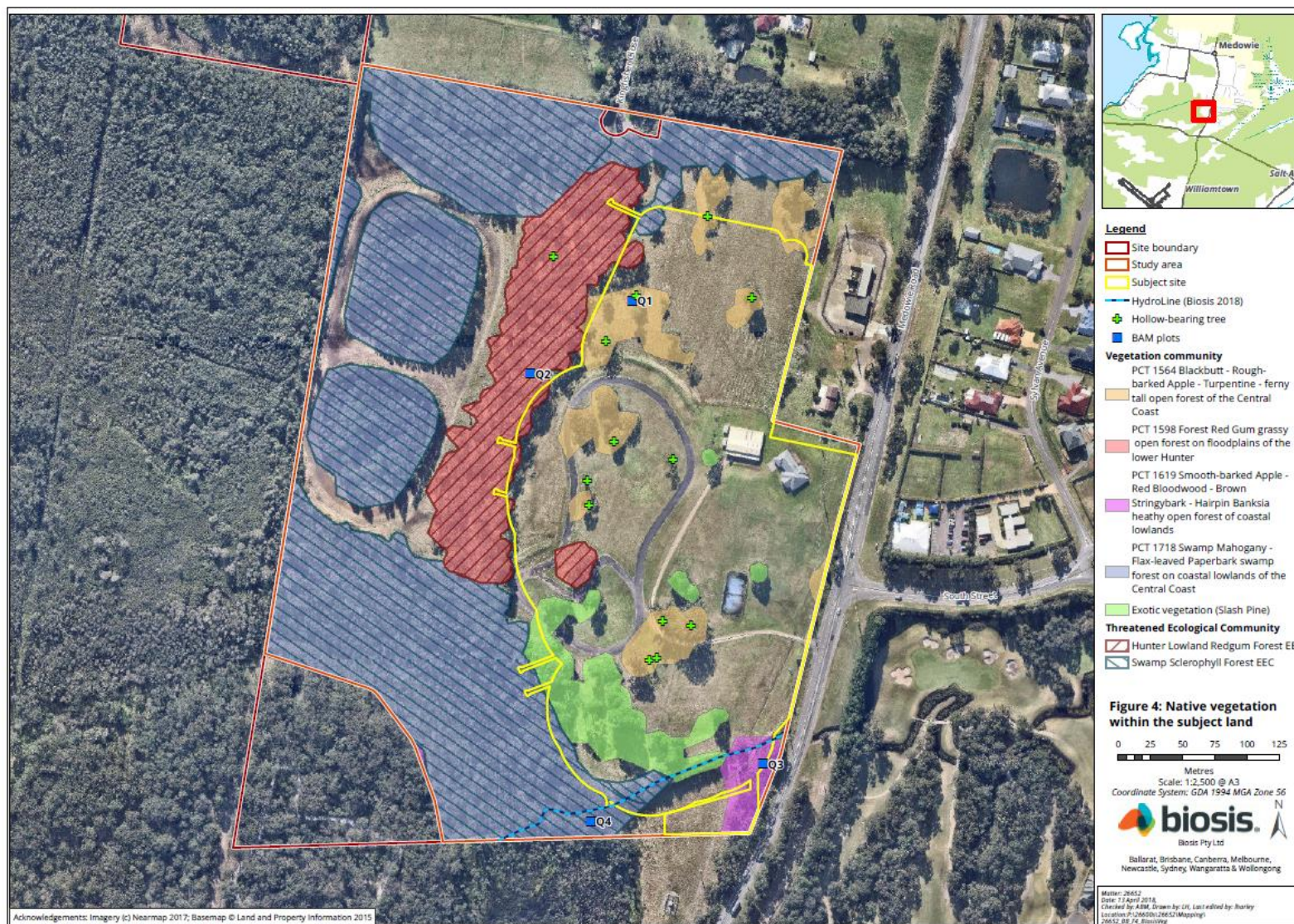


Figure 3: Native vegetation within subject land



### Species Listed Under EPBC Act

An assessment of the impacts of the proposed development on Matters of NES, against heads of consideration outlined in Commonwealth of Australia (2013) was prepared to determine whether referral of the project to the Commonwealth Minister for the Environment is required. Matters of NES relevant to the project are summarised in Table 6.13.

**Table 6.13 – Assessment of the project against the EPBC Act**

<b>Matters of NES</b>	<b>Project specifics</b>	<b>Potential for significant impact</b>
<b>Threatened species</b>	12 flora species and 20 fauna species have been recorded or are predicted to occur in the locality. As no impacts to significant flora or fauna habitats will result from the proposed development, and no listed species were recorded within the subject land, no impacts to threatened species will result from the project. Significant impact criteria (SIC) assessments have been prepared for two fauna species recorded within the study area; the Grey-headed Flying-fox and the Koala.	Significant impact unlikely to result from the proposed development as per SIC assessments provided in Appendix 4 (in Appendix 21).
<b>Threatened ecological communities</b>	No Threatened Ecological Community listed under the EPBC Act were mapped in the study area.	Significant impact unlikely to result from the proposed development.
<b>Migratory species</b>	21 migratory bird species have been recorded or are predicted to occur in the locality. The study area does not provide important habitat for any of these species.	Significant impact unlikely to result from the proposed development.
<b>Wetlands of international importance (Ramsar sites)</b>	The study area does not flow directly into a Ramsar site and the development is not likely to result in a significant impact.	The proposed development will not result in changes to the ecological character of any Ramsar site.

On this basis, the Matters of National Environmental Significance listed under EPBC Act are not considered to be subject to significant impacts and referral of the proposed development to the Minister for the Environment and Energy will not be required.

### **6.6.2 Potential Environmental Impact – Ecology**

Based on the proposed development footprint a number of trees will require removal. Removal of trees has potential to impact on threatened flora and fauna and their habitats, in particular Koala habitat.

#### Potential direct impacts

Direct impacts arising from the project include:

- Removal of 0.97 hectares of disturbed PCT 1564 Blackbutt - Rough-barked Apple - Turpentine - ferny tall open forest of the Central Coast.
- Removal of 0.11 hectares of moderate condition PCT 1619 Smooth-barked Apple - Red Bloodwood - Brown Stringybark - Hairpin Banksia heathy open forest of coastal lowlands.
- Removal of 0.11 hectares of moderate condition PCT 1598 Forest Red Gum grassy open forest on floodplains of the lower Hunter consistent with Hunter Lowland Redgum forest EEC listed under the BC Act.
- Removal of 0.04 hectares of moderate to good condition PCT 1718 Swamp Mahogany – Flax leaved Paperbark swamp forest on coastal lowlands of the Central Coast consistent with Swamp Sclerophyll forest on coastal floodplains EEC listed under the BC Act.
- Removal of approximately 0.34 hectares of land mapped as a SEPP 14 Coastal Wetland.

- The proposed development will only require the removal or modification of approximately 0.14 hectares of native vegetation within the mapped extent of the SEPP 14 Coastal Wetland within the study area. The proposed development footprint has been sited so as to avoid and minimise direct impacts to the mapped wetland.
- Removal of 10 Hollow-bearing Trees providing potential roosting for threatened ecosystem credit microbats.
- Removal of a total of 1.55 hectares of native vegetation providing limited foraging resources for threatened fauna.
- Removal of 0.43 hectares of Koala habitat predominately within the area mapped within the Port Stephens CKPoM as 100 metres Koala habitat buffer and which provides dispersal and shelter habitat. The calculated extent of affected Koala habitat includes all patches of vegetation which contain Koala feed trees and which will be removed as a result of the proposed development.

These impacts will be permanent, will occur from the outset of the development and represent the result of efforts to avoid and minimise impacts at the project design phase. Mitigation measures outlined in Section 4.1 (of Appendix 21) will help to minimise the potential impacts to biodiversity values that remain present within the study area.

#### Potential indirect impacts

Potential indirect impacts arising from the project are outlined and addressed in Table 14 (of Appendix 21). Consideration of indirect impacts was undertaken across an area encompassed by a 1,500 metre buffer around the study area (Figure 6 (of Appendix 21)) and included consideration of the change in land use from the current large lot residential land use to college and associated activities.

#### Prescribed impacts

Assessment of prescribed biodiversity impacts are outlined and addressed in Table 15 (of Appendix 21).

#### Biodiversity Offset Strategy

Residual impacts to native vegetation will require retirement of 23 ecosystem credits and 6 Koala species credits in accordance with the Biodiversity Offsets Scheme, as outlined in Table 6.12 and 6.13 above.

#### Conclusion

A total of 12.1 hectares of native vegetation was recorded within the study area; mostly represented by the Hunter Lowland Redgum Forest EEC and Swamp Sclerophyll Forest EEC. Through an iterative design process, which considered the biodiversity values known and likely to occur within the study area, a subject land was identified for the proposed development and ancillary infrastructure that minimises biodiversity impacts to the removal of 1.03 hectares of native vegetation and associated habitat and removal of 10 isolated hollow-bearing paddock trees.

The subject land includes approximately 0.34 hectares of a mapped SEPP 14 Coastal Wetland which includes 0.14 hectares of native terrestrial vegetation and 0.20 hectares of non-native vegetation.

Residual impacts to native vegetation will require retirement of 14 ecosystem credits and 10 Koala species credits in accordance with the Biodiversity Offsets Scheme

Measures to avoid and minimise impacts to biodiversity values of the study area were considered during the design and planning stage of the proposed development, resulting in substantial minimisation of direct impacts on native vegetation, especially identified EECs, SEPP 14 Wetlands and Preferred Koala Habitat. Measures to mitigate potential indirect impacts to biodiversity values are detailed in Section 4 (of Appendix 21).

### **6.6.3 Environmental Management Measures**

The following environmental management measures will be implemented:

#### Construction

- Prior to construction, a Construction Environmental Management Plan is to be developed which includes standard measures, including:

- Installation of appropriate exclusion fencing to the boundary of the retained vegetation and any construction areas where there is some potential for accidental encroachment. This will include appropriate signage such as 'No Go Zone' or 'Environmental Protection Area'. Identification of any 'No Go Zones' in site inductions for all construction personnel.
- All site perimeter is to be of a design that excludes terrestrial fauna, in particular Koala, so as to minimise the risk of Koala ingress to the construction site.
- Internal fencing / barricades are to be used to establish tree protection zones (TPZs) around retained native trees in accordance with the Standards Australia Committee (2009).
- All material stockpiles, vehicle parking and machinery storage should be located within the areas proposed for clearing, and not in areas of native vegetation that are to be retained.
- Sedimentation and erosion control measures including silt fencing, sediment traps, etc. to prevent sediment-laden stormwater exiting the construction areas and to prevent scouring and erosion of land beyond the development footprint. All erosion and sediment control measures are to be constructed and installed in accordance with relevant guidelines, are to be regularly maintained for the duration of the construction period and are to be carefully removed at completion of works.
- Sediment and erosion control measures should follow recommendations of The Blue Book – Managing Urban Stormwater: Soils and Construction (Landcom 2004)
- Dust suppression measures to ensure dust deposition beyond the construction area is minimised.
- Weed and pathogen management including weed hygiene protocols for personnel, machinery and construction materials entering and exiting construction areas to minimise risk of weed and pathogen introduction and spread.
- Waste management is to ensure food scraps and other organic waste that may attract introduced predators (e.g. fox, cats) or other pests (e.g. rats) is not stored for prolonged periods within the construction site.
- Development of an Ecological Management Plan (EMP) for inclusion in the Construction Environmental Management Plan. The EMP will outline measures for staged vegetation clearing to manage fauna species during tree removal, including having a spotter / catcher present. Staged removal involves clearing of understorey vegetation and non-hollow-bearing trees in Stage 1, with removal of hollow-bearing trees in Stage 2. There should be a minimum of 24 to 48 hours between Stage 1 and Stage 2.
- Ecologist pre-clearance surveys should include dusk stag watch for microbats with anabat, not greater than one week prior to felling of hollow-bearing trees on site. The project ecologist is to be present during hollow-bearing trees clearing to manage any microbats or other hollow-dependent fauna that may be present in hollows at time of clearing.
- The EMP will detail procedures for dealing with trapped or injured wildlife during the construction period with particular focus on rescue and care of Koalas should an individual gain entrance to the construction site.
- Residual impacts to native vegetation will require retirement of 23 ecosystem credits and 6 Koala species credits in accordance with the Biodiversity Offsets Scheme
- A 10 metre VRZ is to be maintained along either side of the waterway traversing the southern section of the subject land from the top of both banks.
- Road crossings are permitted within the 10 metre VRZ according to the riparian corridor matrix provided in Controlled activities on waterfront land - guidelines for riparian corridors on waterfront land (NSW Office of Water, 2012a). The proposed access road crossing is to be constructed with reference to the recommendations made in Controlled activities on waterfront land - guidelines for watercourse crossings on waterfront land (NSW Office of Water, 2012b) and the Policy and Guidelines for Fish Friendly Waterway Crossings (2003).
- Sediment and silt-screens are to be used to manage instream sedimentation and erosion during construction of the access roads over the unnamed stream in the south of the subject land. Sediment

and erosion control measures should follow recommendations of The Blue Book – Managing Urban Stormwater: Soils and Construction (Landcom 2004).

- As far as practicable, all construction activities are to undertaken during daylight hours to minimise noise impacts on fauna utilising adjacent habitats.
- Selection and retention of suitable logs (>10 centimetres diameter only) and hollows for placement within retained native vegetation adjoining the subject land.
- Where appropriate native vegetation cleared from the study area should be mulched for re-use on the site, to stabilise bare ground.
- Security lighting within the construction site is to be minimised and where required, is to be oriented such that light spill beyond the subject site and in to patches of retained vegetation is minimised.
- Consideration is to be given to the installation of nest boxes prior to commencement of vegetation clearing for construction. Installation of nest boxes prior to clearing will allow time for microbats and other hollow-dependent fauna to encounter these new resources prior to removal of existing hollows within trees to be removed.
- Establishment of APZs
  - The establishment of the IPZ surrounding the College will require the removal of non-native trees and shrubs and lopping of some branches of mature native trees in order to achieve the IPZ performance criteria outlined in Newcastle Bushfire Consulting (2018).
  - Establishment of the OPZ will require lopping of canopy branches of some mature native trees within the Swamp Sclerophyll Forest EEC and Hunter Lowland Red Gum forest EEC
  - As far as practicable, establishment of APZs will seek to remove trees not considered Koala feed trees in preference to Koala feed trees.

#### Operation

- Stormwater generated from roof, hardstand and landscaped areas associated with the college and ancillary areas (e.g. carparks, etc.) is to be detained and treated on-site such that any discharge to the SEPP 14 wetland and associated retained native vegetation west of the subject land is not of substantially different volume relative to the pre-development regime.
- Stormwater infrastructure for the college has been designed to incorporate a mix of Atlantis infiltration tanks and bio filtration detention ponds, gross pollutant traps (GPTs) and pollutant pit inserts (in carpark areas). As such stormwater quality for the existing site will not be compromised by the proposed development. Water quality exiting the subject land will comply with the requirements of the Protection of the Environment Operations Act 1997 and Port Stephens Council DCP.
- Security lighting for the college is to be located and designed so as to minimise light spill to retained native vegetation and associated habitats beyond the subject land.
- Food waste (e.g. from canteen facilities, playground bins, etc) is to be managed to minimise the availability of this resource to introduced predators such as foxes and cats. Bins are to be of a design that restricts access by introduced pests including introduced predators.
- Regular monitoring and pest treatment of the college and ancillary facilities is to be undertaken to minimise build-up of introduced pest populations within the school boundaries and immediate adjoining areas.
- All perimeter fencing and some internal fencing (e.g. between retained canopy trees) is to be of a 'fauna-friendly' design which minimises potential impacts to gliding arboreal mammals (e.g. sugar gliders) if utilising retained trees within the subject land.
- Lapped and capped timber fencing (or similar) that is impermeable to Koala is to be installed north, west and south of the school to discourage movement of Koalas through the school grounds where they could become trapped. This will encourage Koalas moving east/west through the landscape to use retained habitat north and south of the development.

- Current vehicle speed limits along Medowie Road should be reviewed in consultation with Roads and Maritime Services. It is assumed normal school vehicle speed limit regimes of 40 km/h in the morning and afternoon peak school drop-off / pick-up hours will apply. Retention of the 40 km/h speed limit at all times of day in the vicinity of the college would benefit Koala and other mobile fauna species that occasionally cross Medowie Road and thereby increase the function of the link over cleared land identified in the Port Stephens CKPoM. The speed limit for all internal roads, including the permitter firetrail, is to be 40 kph or lower.
- Appropriate signage warning road users of fauna crossing along internal college access roads and approaches from Medowie Road are to be installed to minimise vehicle – wildlife interactions.
- Landscaping of the college is to use locally native species where practicable to limit the potential spread of weeds in to adjoining retained native vegetation and maximise the foraging resources available for highly mobile species. Where landscaping is undertaken outside the college perimeter fencing, Koala feed trees should be included in landscaping to compensate for loss of Koala feed trees at the locality.
- The presence of Koala and other threatened native fauna within the study area provides exceptional environmental education opportunities for the college which can help to raise awareness of biodiversity and lead to improved biodiversity conservation outcomes. Environmental education could incorporate simple surveys for Koala and other threatened fauna in adjoining bushland as part of the school science curriculum.
- A Vegetation Management Plan (VMP) is to be developed to guide the management of retained native vegetation within the College and adjoining APZs. The VMP will describe retention of native vegetation (where appropriate and in accordance with APZ objectives) and the management of weeds, rubbish etc. within APZs, at the boundary between APZs and adjoining native vegetation beyond the subject land and at points of discharge of stormwater infrastructure. The VMP will prescribe measures to minimise fertiliser and herbicide use in situations where chemicals could be transported beyond the subject land.
- A 10 metre VRZ is to be maintained along either side of the waterway traversing the southern section of the subject land from the top of both banks. Wherever possible works within the VRZ should be avoided and the VRZ protected.

#### 6.6.4 Existing Environment – Bushfire

##### Bushfire Hazard

A Bushfire Threat Assessment has been prepared (Appendix 20). The subject land is identified as being bushfire prone land on the Port Stephens Council, Bush Fire Prone Land Map. The development therefore has been assessed to comply with Section 100B of the *Rural Fires Act 1997*, which includes the consideration of the NSW Rural Fire Service (RFS) document *Planning for Bushfire Protection 2006* (NSW RFS 2006).

The building construction standard is based on the determination of the Bushfire Attack Level (BAL) in accordance with Method 1 of AS 3959-2009 Construction of buildings in bushfire-prone areas (AS 3959). The BAL is based on known vegetation type, effective slope and managed separation distance between the development and the bushfire hazard.

#### 6.6.5 Potential Environmental Impact – Bushfire

Bushfire has potential to be a risk to the safety of occupants of the college. Bushfire risks can include smoke inhalation and direct exposure to radiant heat.

A bushfire safety authority will be required from the NSW Rural Fire Service.

An overview of the bushfire threat assessment of the site is shown in Table 6.14

**Table 6.14 – Bushfire Threat Assessment**

	North	East	South	West
AS3959 (2009) Vegetation Structure	Forest	Remnant Vegetation <50 metre fire run towards building	Forested Wetland	Remnant Vegetation <50 metre fire run towards building



Asset Protection Zone	130 metres	87 metres	50 metres	50 metres
Accurate Slope Measure	1 degree downslope	Level	Level	1 degree downslope
Slope Range	1 to 5 degrees downslope	Level/Upslope	Level/Upslope	1 to 5 degrees downslope
PBP (2006) Table A2.6 Minimum Setbacks	60 metres	30 metres	50 metres	40 metres
AS3959 (2009) Bushfire Attack Level (BAL)	BAL – LOW	BAL – 12.5	BAL – 12.5	BAL – 12.5

### Access

The proposed development can be accessed directly from the Medowie Road, an entrance along the front of the school and the internal road network allows access from the playing fields surrounding the rear of the school.

A fire trail has been proposed running around the western perimeter of the school to improve access for firefighters to fight fire. The 4 metre wide fire trail will connect to the internal road network of the school, allowing multiple fire trucks to enter and leave the property without turning the vehicle around.

The existing Public Road network is deemed adequate to handle increased volumes of traffic in the event of a bush fire emergency. No new public roads are proposed for this development.

### Water Supply

A reticulated water supply and street hydrant access is available in the local street network. A hydrant system shall be designed for the school in accordance with AS 2419.1 – 2005.

### Gas and Electrical Supplies

The electrical supply to the subject land is overhead. Tree branches and leaves should not be closer to a powerline than the distance specified in 'ISSC 3 Guideline for Managing Vegetation Near Power Lines' (Industry Safety Steering Committee, 2005).

Reticulated or bottled gas installed and maintained in accordance with AS 1596-2002 and the requirements of the relevant authorities.

### Landscaping

It is recommended that landscaping is undertaken in accordance with Appendix 5 of Planning for Bushfire Protection 2006 and maintained for the life of the development.

### Conclusion

The final recommendation is that there is buildable area onsite for the development with appropriate services and asset protection zones available. The proposed development can comply with the requirements of Planning for Bushfire Protection 2006 guidelines (NSW RFS, 2006) as required under section 100B of the *Rural Fires Act 1997*. This report should be referred to NSW Rural Fire Service for the issue of a Bushfire Safety Authority.

## **6.6.6 Environmental Management Measures**

The following environmental management measures will be implemented:

- The proposed building works shall comply with BAL-12.5 in accordance with AS 3959-2009 Building in Bushfire Prone Areas and the construction requirements of Planning for Bushfire Protection 2006 Appendix 3 (amended May 2010)
- At the commencement of building works and in perpetuity a minimum 50 metre asset protection zone shall be managed 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. The asset protection zone shall be divided into the below components:

- a. Inner Protection Area – 40 metres
- b. Outer Protection Area – 10 metres
- Water, electricity and gas are to comply with section 4.2.7 of Planning for Bush Fire Protection 2006
- The property access is to comply with section 4.2.7 of Planning for Bush Fire Protection 2006
- Landscaping is to be undertaken in accordance with Appendix 5 of Planning for Bushfire Protection 2006 and managed and maintained in perpetuity
- An Emergency /Evacuation Plan is to be prepared consistent with AS 3745 'Emergency control organisation and procedures for buildings, structures and workplaces' and consider bushfire.

## 6.7 Aboriginal Heritage

### 6.7.1 Existing Environment

Aboriginal Heritage Advice (Appendix 13) has been prepared to identify potential impact on Aboriginal heritage and is summarised below.

Biosis has undertaken a background review of available information in order to identify known Aboriginal sites, areas of potential archaeological sensitivity and previous disturbance, and inform the predictive modelling for the assessment area. The following steps have been undertaken as part of this assessment:

- Review and consolidation of background research including the following:
  - Review of previous reports conducted in the area
  - Review of landforms, hydrology, and geology
  - Review of ethnographic sources
- An extensive search of the Aboriginal Heritage Information System (AHIMS) to identify any recorded sites that may exist within the study area or surrounds
- A review of AHIMS site cards
- Review of aerial photographs and other resources to gauge the existing landscape and previous history of land disturbance
- A review of the Port Stephens LEP.

The results of the background assessment indicate that four AHIMS sites are located within the study area; two of the sites identified are duplicate recordings. The sites are shown in Figure 2 of Appendix 13 and described below:

- AHIMS No.: 38-4-1618 (TP5 and TP4) – Site 38-4-1618 is an open artefact site located on a crest landform unit proximately 170 east of a drainage line associated with permanent swampland
- AHIMS No.: 38-4-1627 (TP7, TP9, TP10 – Meadowie Power) – Site 38-4-1627 is an open artefact site identified within the lower slopes of a dune landform.

### 6.7.2 Potential Environmental Impact

#### Preliminary Aboriginal Community Consultation

As part of the Stage 1 Aboriginal heritage assessment, Biosis has undertaken preliminary consultation with the Worimi Local Aboriginal Land Council (Worimi LALC). This consultation involved inviting the Worimi LALC to attend the Aboriginal field survey and to provide information on the cultural significance of the study area. No specific Aboriginal cultural values were identified during the field survey

#### Field Survey

A field survey of the study area was undertaken on 13 February 2018, by Taryn Gooley, Consultant Archaeologist and Jamie, a site officer from Worimi LALC. The principal aims of the survey were to identify Aboriginal heritage

values associated with the study area. This included inspecting AHIMS sites located within the study area as well as identifying any areas of archaeological potential or previous disturbance.

Surface visibility and ground exposure were noted to be 0-5% throughout the entire property due to high levels of grass cover. Regrowth vegetation in the western portions of the study area also impacted on the levels of surface visibility and ground exposure noted during the survey. This limited the ability of the surveyors to identify any Aboriginal objects or sites that may be present.

## Results

Based on the results of the background research, the preliminary Aboriginal community consultation, and the field survey, it has been determined that the proposed works will impact on Aboriginal cultural heritage values.

Further assessment in the form of an Aboriginal Cultural Heritage Assessment and test excavations in line with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010), and the *Aboriginal cultural heritage consultation requirements for proponents* (DECCW 2010) is therefore required.

Biosis has begun the consultation process in line with the *Aboriginal cultural heritage consultation requirements for proponents* (DECCW 2010) and will be undertaking test excavations as part of the Aboriginal cultural heritage assessment which is currently underway.

### **6.7.3 Environmental Management Measures**

The following environmental management measures will be implemented:

- Four recorded AHIMS sites have been identified within the study area as part of the assessment. An Aboriginal Cultural Heritage Assessment (ACHA) must therefore be prepared. The ACHA must be prepared in accordance with the *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW* (OEH 2011). This includes an Archaeological Report prepared in accordance with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010) and consultation with Aboriginal community in accordance with the Aboriginal cultural heritage consultation requirements for proponents 2010 (DECCW 2010). Biosis has commenced Aboriginal community consultation in accordance with the *Aboriginal cultural heritage consultation requirements for proponents 2010* (DECCW 2010), and is currently completing the Aboriginal cultural heritage assessment on behalf of Webber Architects
- In order to assess the extent and significance of the archaeological deposits identified at sites 38-4-1618/38-4-1627, and 38-4-1619/38-4-1628, archaeological test excavations must be undertaken as part of the Aboriginal cultural heritage assessment
- All Aboriginal objects and Places are protected under the *NSW National Parks and Wildlife Act 1974*. It is an offence to knowingly disturb an Aboriginal site without a consent permit issued by the Office of Environment and Heritage (OEH). Should any Aboriginal objects be encountered during works associated with this proposal, works must cease in the vicinity and the find should not be moved until assessed by a qualified archaeologist. If the find is determined to be an Aboriginal object the archaeologist will provide further recommendations. These may include notifying the OEH and Aboriginal stakeholders
- An Aboriginal cultural heritage assessment is required, which is currently underway
- Aboriginal ancestral remains may be found in a variety of landscapes in NSW, including middens and sandy or soft sedimentary soils. If any suspected human remains are discovered during any activity you must:
  1. Immediately cease all work at that location and not further move or disturb the remains
  2. Notify the NSW Police and OEH's Environmental Line on 131 555 as soon as practicable and provide details of the remains and their location
  3. Not recommence work at that location unless authorised in writing by OEH.
- No construction work will commence until outcome of the Aboriginal cultural heritage assessment is known.

## **6.8 Non-Aboriginal Heritage**

### **6.8.1 Existing Environment**

The site is not located in a heritage precinct and does not contain any known non-Aboriginal heritage items.

### **6.8.2 Potential Environmental Impact**

A Historical Heritage Assessment (Appendix 22) identified no historical heritage items or areas of archaeological potential are present within the study area, and as such it is concluded that the proposal will not adversely impact on non-Aboriginal heritage.

### **6.8.3 Environmental Management Measures**

No additional environmental management measures are necessary to minimise impact on non-Aboriginal heritage.

## **6.9 Visual**

### **6.9.1 Existing Environment**

The development area involves a typical low density environment with a mix of child care, residential, recreation and local commercial land uses. The proposed college will be erected on a site that is predominantly vacant, with only two buildings on site. The first residential dwelling being of brick and steel construction, whilst the shed is steel with (mostly) concrete floor.

### **6.9.2 Potential Environmental Impact**

The proposed development will significantly alter the current visual environment. The Medowie Planning Strategy (2016) identifies Medowie as a growth area. The strategy identifies an additional 2,400 new dwellings in residential release areas and 180 in rural residential release areas. The population of Medowie in 2016 (pre-release of the 2016 census data) was 10,300 people; with growth to increase by 7,200 people to a total of 17,500 people by the year 2036. These figures are estimates under a 'maximum growth' scenario (Medowie Planning Strategy, 2016).

Construction and operation of the college will facilitate education and associated services for future residents of the Medowie area.

The proposal is the development of a new school and playground areas. The buildings are a contemporary design with appropriate space for modern educational facilities and techniques.

The maximum permissible height under LEP 2013 is 9 metres. The maximum permissible height under LEP 2013 is 9 metres. The chapel will meet this requirement with a proposed maximum height of 7.5 metres. However, parts of Block A, G, H, I and J will exceed the height limit. At the meeting with Council (Appendix 7) it was established that there is no set numerical value that an exception must adhere to, rather the assessment will be considered on merit. The amount that each building exceeds the 9 metre height limit is as follows:

- Block A: 2100mm
- Block G: 1700mm
- Block H: 1200mm
- Block I: 2150mm
- Block J: 1000mm

The proposal seeks to vary a development standard contained within the LEP 2013. This application supports the request to vary the standard and, along with the information contained in the Environmental Impact Statement, demonstrates:

- a) Compliance with that development standard is unreasonable or unnecessary in the circumstances of the case.

b) There are sufficient environmental planning grounds to justify contravening the development standard. This request has been prepared using the Port Stephens Council's Application Form to Vary a Development Standard as a guide to what should be included in the written request.

A Clause 4.6 justification for the variation of height of buildings from LEP 2013 can be found in Appendix 37.

It is considered unnecessary and unreasonable to require a 9 metre maximum height for the school site and as such an exception to the development standard is required to achieve the overall objectives of the development.

Architectural plans (Appendix 23) have been prepared to ensure the development presents well to the street, provides appropriate space for modern educational purposes and has sufficient landscaping and site security for the school. A Design Verification Statement was prepared to ensure a high quality development with a positive visual impact. Iterative design occurred in consultation with the Catholic Schools Office, school community representatives and project design team. The seven Design Quality Principles of SEPP (Educational Establishments and Child Care Facilities) 2017 and comments from GANSW informed the design process (Appendix 26 and 39).

As shown in Figures 3 and 4 the proposed school will fit within the site and present a visually interesting place to the street. In accordance with the design philosophy, the proposed school will be a place where Learning is the core of the vision and purpose of the school; Learning should be student – focused; Learning spaces should be supportive of the curriculum, flexible, productive and rich in technological capacity; Learning spaces should not be limited to internal “classrooms” as integrated external teaching spaces are equally as important.



**Figure 4: Concept Impression of Senior School College classroom pod**





**Figure 5: Concept Impression of Senior College walkway link**

### **6.9.3 Environmental Management Measures**

Architectural plans (Appendix 23) have been prepared to ensure the development presents well to the street, provides appropriate space for modern educational purposes and has sufficient landscaping and site security for the school. No additional measures are considered necessary.

## **6.10 Social**

### **6.10.1 Existing Environment**

According to the Australian Bureau of Statistics (ABS, accessed 20 September 2017) approximately 22.7% of Medowie is 5-19 years of age. While the school will assist students from the broader area, the Census data highlights that a significant portion of the local population are of school age.

### **6.10.2 Potential Impact**

There is ongoing need for quality education in Port Stephens and the Hunter generally. Creation of new purpose built education facilities will provide long term facilities for the community, including new classrooms and administration buildings. The proposal will result in positive social impacts through a purpose built educational facility.

#### Social Impact Assessment

A Social Impact Assessment has been prepared by Key Insights Pty Ltd (Appendix 19) that assesses the proposed development potential social impacts and provides recommendations for the design and management of the development. The social impacts associated with the proposal include:

- Decanting activities
- Operational noise impacts
- Economic impacts
- Community use of the college
- Landscape and Visual impacts
- Public Transport. Pedestrian and bicycle networks
- Construction impacts
- Sustainable development
- Aboriginal heritage

Community engagement undertaken for this Social Impact Assessment found there to be widespread and strong support for a Catholic College on this site. Concerns were expressed around traffic management, particularly during construction. Medowie Progress Association has offered a page on its website as a communication tool for the Catholic Education Office.

### Crime Risk

A Crime Risk Assessment Report has been prepared to review the proposed development against Crime Prevention Through Environmental Design (CPTED) principles and provides recommendations for the design, construction and future management practices of the development (Appendix 14)

The types of criminal offences most likely to be committed (or attempted) in or around a typical residential environment include:

- break, enter and steal from dwelling
- theft of / from motor vehicle
- assault and / or robbery (with or without a weapon) of residents
- stealing
- malicious damage.

Other offences (homicide, drug offences, sexual assault etc) may be possible but are less likely given the demographics of the area and the nature of proposed uses

The NSW Bureau of Crime Statistics and Research (BOCSAR) monitors and reports crime trends and statistics in NSW. BOSCAR provides analysis and evaluation on a number of crime categories and geographic locales. The most recent report of NSW Recorded Crime Statistics, 2015 – 2017 provides crime trend data for Port Stephens Local Government Area (LGA). These are described in Table 1 of Appendix 14. The crime statistics for Medowie during the period October 2015 – September 2017 indicate that there is no significant upward or downward trend, or that trends have not been calculated due to the very small number of reported offences. Statistics obtained for Medowie are provided in Table 6.15:

**Table 6.15 – Crime Statistics September 2016 – September 2017**

Crime	Trend (2 year)	Count (Year to Sept 2017)	Rate (Year to Sept 2017) <sup>1</sup>
Assault	Stable <sup>3</sup>	33	336.4
Homicide	n.c <sup>2</sup>	2	0.00
Robbery	n.c	2	0.00
Sexual Offences	n.c	14	142.7
Theft	Stable	105	1070.4
Malicious Damage to property	Stable	78	795.2

Source: BOSCAR Crime Mapping Tool, accessed 1 February 2018

<sup>1</sup> rate is per 100,000 head of population

<sup>2</sup> n.c means “not calculated”. This generally occurs if the 12-monthly totals in the series have a value of less than 20.

<sup>3</sup> stable means there is no significant upward or downward trend

Having regard to the BOSCAR crime statistics the rates of crime in the Medowie area are generally very low. The following are the most likely offences for which specific mitigation measures should be designed and implemented for the proposed development:

- theft
- malicious damage to property
- assault

A community meeting held on 26 January 2018 identified community concerns regarding crime risk in the area, including (Appendix 40):

- people accessing the site with their cars and doing 'doughnuts' particularly after periods of rain
- the visual impact of the built form, including security fencing, along the front boundary and whether both will allow visual connection between the site and the public domain

Following a review of the site context and the design the development is deemed to have a low risk of crime subject to adopting the recommendations outlined in Appendix 14.

### 6.10.3 Environmental Management Measures

Development of the school will result in a positive social impact. The following Crime Prevention Through Environmental Design measures will be implemented:

- Lighting should help maintain sightlines and illuminate potential concealment areas. Outside of business hours, motion activated lighting is appropriate around the car park and school ground entrances
- External lighting is to be directed toward approaches to buildings rather than illuminating observers or vantage points (windows and doors)
- Vehicle entry points should be adequately signposted to enhance way finding and prevent unauthorised access to any restricted areas of site.
- Signposting is required to enhance way finding and prevent unauthorised access to any restricted area of the site
- All internal and external signage and directions around school grounds should be built / installed in accordance with the Australian standards (AS 1428)
- Internal access points into buildings such as doors and windows should be lockable, preferably by key or magnetic system to maintain access control both inside and outside of operating time
- Consideration should be given to the use of an access control measure in the car park entrance to limit after hour access
- Pathways, landscaping, edge treatments, fencing and gates should provide clear indicators of appropriate access or restrictions of movement throughout the site
- Boundary fencing should clearly delineate public and private spaces and restrict access where necessary. It is considered that rear and side boundaries should be appropriately fenced using palisade or wire mesh style fencing. Front boundaries can be defined through the use of fencing, landscape treatments, or a combination of both. Front fencing will largely depend on the security needs of the school
- Signage / line marking within the car parking area should clearly define visitor and staff parking, bus waiting and service areas
- Ensure timely repair of damaged property and lighting, and 'rapid removal' approach to graffiti
- The use of organised security (i.e. alarms, 'back to base' alerts and security patrols) is recommended for outside of normal operating hours when natural surveillance is limited
- Consideration should be given to the use of graffiti resistant materials and surface treatments
- Landscaping along boundaries including the street frontage should include a mixture of low growing shrubs and mature / canopy trees (shape and size dependant on space available)
- Plants should be selected, sited and maintained where they will not reduce the effectiveness of lighting or interpretation of signage
- Landscape maintenance should promote natural surveillance by pruning low branches to approximately 2 metres high, and ground cover / hedges at around waist height
- Vegetation type and location should limit the ability for natural 'ladders' to promote access to upper building levels or to scale fencing.

## 6.11 Accessibility

Two Access Reports in relation to building access and car parking access were conducted by BCA Access Solutions (Appendix 16 & 17) to assess the compliance for access for people with a disability.

Both reports show that compliance with the requirements for access for people with a disability are achievable subject to further details and incorporation of the required features. At this early stage of design, full details are not shown on plans. As further planning occurs, consideration is to be given to specific elements including switches and controls, and plans showing more detailed dimensions and features are to confirm compliance at construction certificate stage.

Requirements and recommendations to achieve compliance with the Premises Standards, Building Code of Australia and Australian Standards for accessibility and to minimise the risk of action under the Disability Discrimination Act, have been explained in this report.

## 6.12 Economic

The college will educate up to 1,190 high school students, 630 primary school students and 124 in the Early Learning Centre. With approximate number of teachers list below:

- 125 high school staff
- 35 primary school staff
- 25 Early Learning Centre staff.

Economic impact of the development is likely to be positive. Up to 150 construction jobs may be generated by the proposed development. The school will become an integral part of the community and the development will ensure ongoing employment for staff and suppliers.

## 6.13 Waste Management

### Demolition Waste

Demolition waste will consist of:

- Concrete
- Steel
- Cement sheeting
- Timber.

### Construction Waste

Construction waste will include the following:

- General waste (food scraps, wrappings etc.)
- Concrete slurry
- Steel
- Packaging
- Pipe offcuts
- Timber
- General construction materials.

When the relevant building contractor is appointed they will be required to prepare a Construction Management Plan which will include various operational components of construction, including Waste Minimisation and Management. Throughout construction, waste will be carefully managed to minimise potential impacts on adjoining areas.

Waste management is to ensure food scraps and other organic waste that may attract introduced predators (e.g. fox, cats) or other pests (e.g. rats) is not stored for prolonged periods within the construction site.

## Operational Waste

Operational waste management for the schools and other agencies on site would be part of an overall a wider collective agreement. Services for removal of recycling and general waste will be negotiated with a private contractor or Council as the stages of the agencies and facilities come online. Once the secondary school is fully operational for example, there is likely to be 2 or 3 collections per week and these would be organised well outside of operational hours so that there is no opportunity for a confluence of pedestrian activity and garbage truck movements together on the site.

Localised collection of rubbish will occur daily from each building and deposited in the central waste bins, one to the northern end of the site and one at the southern end, both accessed off the carpark and road system.

Food waste (e.g. from canteen facilities, playground bins, etc) will be managed so as not to minimise the availability of this resource to introduced predators such as foxes and cats. Bins will be of a design that restricts access by introduced predators.

### **6.13.1 Environmental Management Measures**

- A Waste Management Plan for construction waste
- A private contractor or Council will be engaged to manage ongoing waste collection from the site
- Determine volumes and nature of material to be removed from site, including potential for recycling
- Additional investigation for contamination will also occur following demolition of site structures in order to confirm remediation and waste disposal requirements
- Erosion and sediment control will be in accordance with a staged erosion and sediment control plan in accordance with the *Managing Urban Stormwater: Soils and Construction, 4<sup>th</sup> Edition, "the Blue Book"*, Landcom, 2004
- All waste generated by the proposal will be classified in accordance with the NSW Waste Classification Guidelines Part 1: Classifying Wastes (NSW EPA, 2014) prior to being removed from the site
- Prior to demolition a hazardous materials report will be prepared to determine potential hazardous materials in existing buildings and methods for their disposal.

## **6.14 Chemical and Fuel Storage**

### **6.14.1 Potential Impact**

Chemicals will be used and stored on site in two main areas, for the facilities and grounds maintenance requirements and also for the secondary school science requirements. Small quantities of localised cleaning chemicals will also be stored in cleaning cupboards that are distributed around the facilities.

#### Facilities and Grounds Maintenance

Chemical and fuel for facilities and grounds maintenance will include a range of fuels for operation of maintenance equipment, including diesel, petrol, oils and lubricants. Other chemicals stored within the facilities maintenance area within the site may include paints, thinners, turpentine, pesticides and other cleaning chemicals. Needless to say that depending upon quantities and actual chemicals being used on site, the particular storage requirements will be as per Australian Standards.

#### Secondary School Science

The chemicals used as part of the secondary school science curriculum requirement will also be stored based upon the requirements of the Australian Standards. Typically, the science preparation area will have a lockable approved chemical storage cupboard as well as a corrosives storage facility. The size and requirements will be based upon the actual chemicals being stored and the quantities of each. A detailed chemicals register will be established and under current legislation will be provided to the local fire brigade including small scale plans of the schools facilities identifying the location of all chemicals and quantities being stored on site.



Examples of Chemical Registers for another school within the Diocese (St Joseph's College Lochinvar) are attached for information. The register indicates the detailed information that will be provided once the new school commences (Appendix 31).

#### **6.14.2 Environmental Management Measures**

The following environmental management measures will be implemented:

- A Response and Incident Plan will be prepared
- Oils, fuels and chemicals will be stored in a locked bund capable of holding 110% of the capacity of the containers within the bund
- Oils, fuels and chemicals will be stored in accordance with manufacturers requirements and relevant Australian Standard
- A spill kit will be located at each chemical and fuel storage location appropriate to the volume and nature of the material
- Material Safety Data Sheet will be kept on site for all oils, fuels and chemicals stored.

### **6.15 Management Plans**

A Construction Environmental Management Plan (CEMP) will be prepared by the preferred contractor that incorporates the mitigation measures identified in this EIS. The CEMP will include a stormwater management plan, groundwater management plan, erosion and sediment control plan, construction traffic management plan and waste management plan. The CEMP will also identify measures to engage and maintain communication with those who may be affected by construction activities and to manage any complaints that are received.

An Operational Management Plan will be prepared and include a Waste Management Plan and relevant operational measures identified in this EIS, in particular those relating to the minimisation of contamination, waste, noise, traffic impacts and dust.

An Infrastructure Management Plan will be prepared in consultation with relevant agencies detailing information on the existing capacity and any augmentation and easement requirements of the development and for the provision of utilities. Initial consultation has commenced and the progress so far can be found in Appendix 31.

### **6.16 Cumulative issues**

Development of the school will not occur at the same time as any other known major developments in the area and as such there is unlikely to be cumulative impact of several major constructions at the same time.

Removal of trees will be addressed early in the development to allow for other stages of construction. Traffic and access will be impacted during construction; however, this can be managed through a construction traffic management plan.

Noise during construction may impact on surrounding residents, however noise can be managed with appropriate management measures and monitoring. Visual impact can be managed through a tidy construction site and architecturally designed buildings. Waste management will be required during construction and operation and can be appropriately managed.

The flood impacts associated with the proposed development are negligible in terms of affecting property, assets and infrastructure and therefore result in no detriment to the overall social or economic status of the community.

There is unlikely to be significant cumulative issues as a result of the proposed development of the school.

## 6.17 Ecologically Sustainable Development

Ecologically Sustainable Development (ESD) is defined in Section 6(2) of the *Protection of the Environment Administration Act 1991*. ESD and how it has been considered in this EIS is presented in Table 6.16.

**Table 6.16 Ecologically Sustainable Development Principles**

ESD Principle and Programme	Comment
<p>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.</p> <p>In the application of the precautionary principle, public and private decisions should be guided by:</p> <p>(i) careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment, and</p> <p>(ii) an assessment of the risk-weighted consequences of various options</p>	<p>The proposed development has sought necessary information, including specialist advice, to have an understanding of potential environmental impacts. Environmental mitigation measures have been proposed to ameliorate potential impacts to the environment.</p>
<p>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</p>	<p>Positive impacts of a modern educational establishment through the development of a school will be a benefit to future generations. Environmental impacts of the development have been minimised through appropriate design and environmental mitigation measures.</p>
<p>conservation of biological diversity and ecological integrity—namely, that conservation of biological diversity and ecological integrity should be a fundamental consideration</p>	<p>Specialist ecological advice has been sought on the proposed development. Measures to avoid and minimise impacts to biodiversity values of the study area were considered during the design and planning stage of the proposed development, resulting in substantial minimisation of direct impacts on native vegetation, especially identified EECs, SEPP 14 Wetlands and Preferred Koala Habitat.</p>
<p>improved valuation, pricing and incentive mechanisms—namely, that environmental factors should be included in the valuation of assets and services, such as:</p> <p>(i) polluter pays—that is, those who generate pollution and waste should bear the cost of containment, avoidance or abatement,</p> <p>(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</p> <p>(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.</p>	<p>Environmental attributes of the site have been identified throughout this EIS. Impact to the environment has been avoided, where practicable, and environmental mitigation measures are identified to ameliorate environmental impact.</p>

A full report outlining the Ecologically Sustainable Development measures to be addressed as per the conditions stated within the SEARs can be found in Appendix 39, with a summary detailed below.

The project will incorporate a number of measures which will be detailed to full technical resolution for implementation during the next stage of the project. These will provide positive environmental and resource efficiency outcomes, and which embody best practice ESD principles. There are a number of individual, but interconnected passive design measures, including building orientation, arrangement of fenestration, maximising natural light & ventilation, which combine to improve occupant comfort and reduce reliance on active systems

such as artificial lighting and air conditioning. Where active building systems are necessary, these will be carefully considered in the detailed design to ensure good ESD outcomes and assessment against whole-of lifecycle costs.

Section J of the National Construction Code sets out minimum statutory energy efficiency requirements relating to building design and include items such as thermal performance, sustainability of building services such as mechanical systems & lighting, and building envelope sealing and insulation. A Section J compliance report has been prepared by WEBB Australia in Attachment 1 (of Appendix 39).

The environmental measures outlined in this statement and in the Green Star assessment table in Attachment 2 (of Appendix 39) are intended to be adopted in the development and all best efforts will be made to adopt these initiatives. However, it is noted that as this is a staged development over a number of years, some of these items may prove difficult to achieve, hence the Catholic Diocese of Maitland Newcastle is not intending to pursue a formal 4 Star Green Star Rating.

The hydraulic design for the project to be developed during the next stage of documentation, will include specification of water efficient sanitary fixtures and tapware. These will be based on exceeding the minimum requirements of WELS rating and in line with the intended Green Star rating the project is being targeted toward. The WELS ratings being targeted are as follows:

- Basins, sinks & bubblers – 6 star
- Showers – 3 star
- Toilets – 5 star
- Urinals – 6 star

A comprehensive rainwater reuse system supplying non-potable water to the amenity areas for flushing of toilets and to external hose taps for landscape irrigation is planned to be detailed in the next stage of documentation.

## 6.18 Environmental Risk Assessment

Environmental risks have been considered based on specialist investigations, findings of this EIS and proposed environmental mitigation measures. The EIS found that environmental risks can be appropriately managed through the environmental mitigation measures and is unlikely to have a significant impact on the environment.

**Table 6.17 –Environmental Risk Rating Following Implementation of Environmental Mitigation Measures**

Environmental Issue	Risk	Comment
Traffic and Transport	Low	Access to the site is provided from Medowie Road. Consultation with RMS and the traffic assessment found the proposed development can be accessed appropriately with adequate parking (Appendix 18).
Soils, Geology and Contamination	Low	An unexpected finds protocol and testing of soil to be removed from site will ameliorate risk of contaminated material damaging the environment. Some additional testing of material may be required. An erosion and sediment control plan will ameliorate potential loss of soil from the construction site.
Water Quality and Flooding	Low	The site contains SEPP 14 wetland No. 813. The proposal will not significantly impact the wetland and will not impact a wetland of international importance. Moreover, the proposed development is not expected to significantly impact any freshwater or marine aquatic values listed under the <i>Fisheries Management Act 1994</i> (Appendix 21).  A stormwater management plan has been prepared to manage off site water flow and quality
Air Quality	Low	Dust (airborne particulate matter) during construction is identified as being the key air quality issue to be assessed. Appropriate dust control during construction will ameliorate potential off site dust emission.

Environmental Issue	Risk	Comment
Noise	Low	Noise will be managed during construction through mitigation strategies, vibration management and monitoring.
Flora, Fauna and Bushfire	Low	<p>Approximately 10 hollow-bearing trees will require removal. The proposed development will result in minor losses of modified native vegetation and potential fauna habitat, with 1.55 hectares of vegetation across four plant community types (PCTs) to be permanently removed, including 0.43 hectares of Koala habitat.</p> <p>Two of these PCTs are listed as a NSW or Commonwealth listed threatened ecological community. As such impacts to native vegetation will require retirement of 23 ecosystem credits and 6 Koala species credits in accordance with the Biodiversity Offsets Scheme.</p> <p>Measures to avoid and minimise impacts to biodiversity values of the study area were considered during the design and planning stage of the proposed development, resulting in substantial minimisation of direct impacts on native vegetation, especially identified EECs, SEPP 14 Wetlands and Preferred Koala Habitat.</p>
Heritage	Medium	<p>No historical heritage items or areas of archaeological potential were identified within the study area.</p> <p>Four recorded AHIMS sites have been identified within the study area as part of the assessment, with two being duplicate recordings. A Stage 1 Aboriginal heritage assessment was undertaken and based on the results of the background research, the preliminary Aboriginal community consultation, and the field survey, it has been determined that the proposed works will impact on Aboriginal cultural heritage values.</p> <p>Stage 2 will involve an Aboriginal Cultural Heritage Assessment (ACHA), which is currently being undertaken.</p>
Visual	Low	The proposal is the development of a new school and playground areas. The buildings are a contemporary design with appropriate space for modern educational facilities and techniques
Social	Low	The proposal will result in positive social impacts through a new educational facility. A number of measures to be implemented in the school to reduce crime risk including surveillance opportunities, landscaping treatments, maintenance and lighting.
Economic	Low	The proposal will be of economic benefit with up to 150 construction jobs generated, including apprentices. The development will create new employment opportunities for staff and relevant suppliers.
Waste Management	Low	All waste generated by the proposal will be classified prior to disposal to a licenced facility through an approved Waste Management Plan.
Chemical and Fuel	Low	<p>Oils, fuels and chemicals will be stored in a locked bund capable of holding 110% of the capacity of the containers within the bund.</p> <p>A spill kit will be located at each chemical and fuel storage location appropriate to the volume and nature of the material</p> <p>Material Safety Data Sheet will be kept on site for all oils, fuels and chemicals stored</p>

## 7 MATTERS OF NATIONAL ENVIRONMENTAL SIGNIFICANCE

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) provides a national framework for environmental protection and management of nationally and internationally important flora, fauna, ecological communities and heritage places. Part 3 of the EPBC Act lists nine matters of National Environmental Significance (NES) that may require approval from the Commonwealth Minister for the Environment. An action taken by any person on Commonwealth land that is likely to have a significant impact on the environment (Section 26(1)) or an action taken by any person outside of Commonwealth land that is likely to have a significant impact on Commonwealth land (Section 26(2)) may require approval from the Commonwealth Minister for the Environment.

An EPBC Act Protected Matters Report (17 January 2018) (Appendix 30) identified the following matters of NES that may occur within 10km of, or may relate to, the site. Refer to Section 6.6 for discussion on flora and fauna.

**Table 7.1: Matters of National Environmental Significance (NES)**

Matters of NES	Occurrence in or near the site (10km buffer)
World Heritage Properties	None
National Heritage Places	None
Wetlands of International Importance	1
Great Barrier Reef Marine Park	None
Commonwealth Marine Areas	None
Threatened Ecological Communities	3
Threatened Species	72
Migratory Species	68

An action taken by any person on Commonwealth land that is likely to have a significant impact on the environment (Section 26(1)) or an action taken by any person outside of Commonwealth land that is likely to have a significant impact on Commonwealth land (Section 26(2)) may require approval from the Commonwealth Minister for the Environment. Other matters protected by the EPBC Act, including Commonwealth land, identified in the search is presented in Table 7.2.

**Table 7.2: Other Matters**

Other Matters Protected by the EPBC Act	Occurrence in or near the site (10km buffer)
Commonwealth Land	6
Commonwealth Heritage Places	1
Listed Marine Species	100
Whales and Other Cetaceans	13
Critical Habitats	None
Commonwealth Reserves Terrestrial	None
Commonwealth Reserves Marine	None

A meeting was held with Council on 10 August 2017 with minutes provided in Appendix 7. Council raised the issue of potential referral to the Commonwealth for noise sensitivity, building height and Limitation or Operations Surface and extraneous lighting. It is understood the EIS may be referred to the Commonwealth for comment.



Commonwealth land will not be affected by the Proposal. Other relevant issues have been considered throughout this EIS.

Table 7.3 provides an assessment of the proposed development against each matter of NES.

**Table 7.3: Matters of NES Assessment**

Matters of NES	Comment	Likely Impact
World Heritage Properties	No world heritage properties will be significantly affected by the proposal.	Nil
National Heritage Places	No national heritage places will be significantly affected by the proposal.	Nil
Wetlands of International Significance	The proposal will not significantly impact a wetland of international significance.	Nil
Great Barrier Reef Marine Park	The Great Barrier Reef Marine Park will not be impacted by the proposal.	Nil
Commonwealth Marine Areas	No Commonwealth Marine Areas will be significantly impacted by the proposal.	Nil
Threatened Species and Ecological Communities	12 flora species and 20 fauna species have been recorded or are predicted to occur in the locality. As no impacts to significant flora or fauna habitats will result from the proposed development, and no listed species were recorded within the subject land, no impacts to threatened species will result from the project. No threatened Ecological Communities were mapped in the study area	Nil
Migratory Species	21 migratory bird species have been recorded or are predicted to occur in the locality. The study area does not provide important habitat for any of these species.	Nil

The Matters of National Environmental Significance listed under EPBC Act are not considered to be subject to significant impacts and referral of the proposed development to the Minister for the Environment and Energy will not be required (Appendix 21).

## **8 LIST OF APPROVALS AND LICENCES**

### **8.1 Groundwater Extraction**

If during construction more than 3 ML of groundwater is proposed to be extracted an approval/license is required from the NSW Office of Water.

### **8.2 Asbestos Removal**

A WorkCover NSW asbestos removal work licence under the Work Health and Safety Regulation 2011 needs to be issued (if required) and complied with, including appropriate notification prior to commencement.

### **8.3 Rural Fire Service**

It is understood the EIS will be referred to the NSW Rural Fire Service for comment.

### **8.4 Department of Primary Industries – Water**

A controlled activity approval under Section 91(2) of the *Water Management Act 2000* will be required for the clearing of vegetation within the SEPP 14 wetland area in order to create the needed asset protection zone (APZ).

## 9 CLAUSE 228 FACTORS

Factors required to be taken into account under Clause 228 of the *Environmental Planning and Assessment Regulation 2000* are presented in Table 8.1.

**Table 9.1 – Consideration of Environmental Assessment**

Proposal Description:		Construction of Catholic College
Assessment Factor		Description of potential impact
a)	Any environmental impact on a community	<p>The proposal will result in minor impact on the environment through removal of native vegetation and will be offset by 10 ecosystem credits and 4 credit species credits. Contamination on the site will be managed through the recommendations set out in the Contamination Assessment (Appendix 8). Visual impact will be permanent however will result in a positive outcome through architecturally designed buildings with associated landscaping.</p> <p>The proposal will not result in a significant impact on a community.</p>
b)	Any transformation of a locality	The proposal will result in development of new school buildings and infrastructure, transforming the local community in a positive manner.
c)	Any environmental impact on the ecosystems of the locality	Providing the recommendations of the various specialist reports are adopted, it is unlikely the proposal will have a significant impact on any threatened species, populations and / or ecological communities under the <i>Biodiversity Conservation Act 2016</i> or <i>Environment Protection and Biodiversity Conservation Act 1999</i> .
d)	Any reduction of the aesthetic, recreational, scientific or other environmental quality or value of a locality	The proposal will have a visual positive impact on the locality and through appropriate building design and landscaping will not reduce environmental quality or value of the locality.
e)	Any effect on a locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or other special value for present or future generations	The proposed development will result in permanent long term impact by erection of buildings. Social impact of the proposal will be positive with local and ongoing education for school aged children. Aboriginal heritage will be managed in accordance with relevant legislation and further investigations are occurring.
f)	Any impact on the habitat of protected fauna (within the meaning of the <i>National Parks and Wildlife Act 1974</i> )	Providing the ecologist recommendations are adopted it is unlikely that the proposal will have a significant impact on any threatened species, populations and / or ecological communities <i>Biodiversity Conservation Act 2016</i> or <i>Environment Protection and Biodiversity Conservation Act 1999</i> .
g)	Any endangering of any species of animal, plant or other form of life, whether living on land, in water or in the air	Providing the ecologist recommendations are adopted it is unlikely that the proposal will have a significant impact on any threatened species, populations and / or ecological communities <i>Biodiversity Conservation Act 2016</i> or <i>Environment Protection and Biodiversity Conservation Act 1999</i> .
h)	Any long-term effects on the environment	The proposal will result in minor impact on the environment through removal of native vegetation and will be offset by 23 ecosystem credits and 6 Koala species credits in accordance with the Biodiversity Offsets Scheme. Contamination on the site will be managed through the recommendations set out in the Contamination Assessment (Appendix

		8). Long term visual impacts will be positive in the form of architecturally designed buildings.
Assessment Factor		Description of potential impact
i)	Any degradation of the quality of the environment	The proposal will result in minor impact on the environment through removal of native vegetation and will be offset by 23 ecosystem credits and 6 Koala species credits in accordance with the Biodiversity Offsets Scheme. Contamination on the site will be managed through the recommendations set out in the Contamination Assessment (Appendix 8).  Overall quality of the environment will not be significantly degraded by the development.
j)	Any risk to the safety of the environment	Environmental mitigation measures will minimise risk to the safety of the environment during construction.
k)	Any reduction in the range of beneficial uses of the environment	The proposal will not result in reduction of beneficial uses of the environment.
l)	Any pollution of the environment	Environmental mitigation measures will ameliorate potential for pollution of the environment.
m)	Any environmental problems associated with the disposal of waste	Wastes generated will be classified and removed from site for disposal at an appropriate waste facility.
n)	Any increased demands on resources (natural or otherwise) that are, or are likely to become, in short supply.	The proposal will utilise resources that are not in short supply.
o)	Any cumulative environmental effect with other existing or likely future activities	The proposal is unlikely to have a significant cumulative impact on the environment.
p)	Any impact on coastal processes and coastal hazards, including those under projected climate change conditions	None.

## 10 COMPILATION OF MITIGATION MEASURES

### 10.1 Construction Environmental Management Plan

A construction environment management plan (CEMP) or equivalent will be prepared for the proposed works.

The CEMP will be prepared in accordance with the *Guideline for the Preparation of Environmental Management Plans* (Department of Infrastructure, Planning and Natural Resources, 2004). Figure 4.1 of the guideline outlines information to be included in a CEMP including:

- Users of the EMP document (background, environmental management, implementation and monitor and review)
- Background (introduction, project description, EMP context, EMP objectives and environmental policy)
- Environmental Management (environmental management structure and responsibility, approval and licensing requirements, reporting, environmental training and emergency contacts and response)
- Implementation (risk assessment, environmental management activities and controls, environmental management plans or maps and environmental schedules)
- Monitor and Review (environmental monitoring, environmental auditing, correction action and EMP review).

The CEMP or equivalent will include any licences and permits that may be required, environmental management measures outlined in Section 6 of this EIS and additional site specific measures that may be required as part of establishing the construction site or construction methodology.

An Operational Management Plan and Infrastructure Management Plan will also be prepared as part of detailed design in consultation with relevant stakeholders.

### 10.2 Traffic and Transport

- New signalled intersection at Medowie Road and South Street
- Single entry and exit points
- On site car parking designed in accordance with AS 2890 and Council's DCP requirements
- The layout of the access points and internal roads shall be designed to allow for two way traffic movements in accordance with AS 2890
- Incorporate access for ambulance and fire service vehicles to all sports fields and parking areas
- Bus zones to accommodate up to 5 spaces for loading, as well as a minimum of 7 spaces for buses to hold along the internal road (slip lane)
- Buses to only access site from the south, buses from the north to use roundabout at Richardson Road one kilometre to the south to access site.
- Prepare Construction Traffic Management Plan.

### 10.3 Soils, Geology and Contamination

- Construction will comply with requirements of the Geotechnical Investigation, Valley Civilab, November 2017 including excavation and batters, retaining walls and subgrade preparation and Contamination Assessment, RCA Australia, March 2018
- Management and/or remediation of the material within the fill mounds currently situated on the northern and western side of the bitumen go-kart track
- Further assessment in the area of BH13 to determine the character of the identified hydrocarbons
- Preparation, depending on the intended depth of excavations, of an ASSMP



- Erosion and sediment control will be in accordance with a erosion and sediment control plan in accordance with the Managing Urban Stormwater: Soils and Construction, 4th Edition, Vol. 1, (the “Blue Book”), Landcom, 2004
- All waste generated by the proposal will be classified in accordance with the NSW Waste Classification Guidelines Part 1: Classifying Wastes (EPA 2014) prior to being removed from the site
- Management of acid sulfate soils through an ASSMP.

## 10.4 Water Quality and Flooding

- Erosion and sediment control will be in accordance with a staged erosion and sediment control plan in accordance with the Managing Urban Stormwater: Soils and Construction, 4th Edition, Vol. 1 (the “Blue Book”), Landcom, 2004.
- Stormwater management will be in accordance with Stormwater Management Plan prepared by MPC Engineering (Appendix 15)
- Stormwater generated from roof, hardstand and landscaped areas associated with the college and ancillary areas (e.g. carparks, etc.) is to be detained and treated on-site such that any discharge to the SEPP 14 wetland and associated retained native vegetation west of the subject land is not of substantially different volume relative to the pre-development regime.
- Stormwater infrastructure for the college has been designed to incorporate a mix of Atlantis infiltration tanks and bio filtration detention ponds, gross pollutant traps (GPTs) and pollutant pit inserts (in carpark areas). As such stormwater quality for the existing site will not be compromised by the proposed development. Water quality exiting the subject land will comply with the requirements of the Protection of the Environment Operations Act 1997 and Port Stephens Council DCP.
- All stockpiles will be covered to minimise potential generation of dust
- Oils, fuels and chemicals will be stored in a locked bund capable of holding 110% of the capacity of the containers within the bund
- A response kit will be on site during construction to manage any accidental spills
- Equipment will be serviced and maintained to minimise potential for loss of fluids
- The construction compound and stockpile area(s) will be in an existing cleared area
- If during construction more than 3 ML of groundwater is proposed to be extracted an approval/license is required from the NSW Office of Water
- Acid sulfate soils will be managed through an ASSMP
- Flood Emergency Response Plan will be prepared for the site.

## 10.5 Air quality

### Construction Phase

- Maintain vehicles and machinery to minimise emissions
- Limit dust-generating activities during periods of dry and windy weather
- Stage the work, where practicable, to minimise extent of disturbed areas
- Apply water as necessary to control and manage dust from exposed soil
- Stormwater management will be staged in accordance with construction staging
- Dust suppression will be used during construction and may include water trucks
- Reduce vehicle speeds along the access route until works are completed.

## Operational Phase

- Maintain landscaping to minimise exposed soil
- Maintain plant and equipment.

## **10.6 Noise**

- All neighbouring residents will be notified of the proposed works. Particular emphasis should be placed on the time frame of the works. A contact name and phone number of a responsible person should be given out so that complaints can be dealt with effectively and efficiently. All complaints or communication should be answered
- During the liaison process note will be made of any particularly noise sensitive times of day and care be taken to avoid scheduling noisy works at these times
- All personnel working on the job including contractors and their employees will be made aware of their obligations and responsibilities with regard to minimising noise emissions
- Contractors should familiarise themselves with methods of controlling noisy machines and alternative construction procedures. These are explained in AS 2436-1981 "Guide to Noise Control on Construction, Maintenance and Demolition Sites"
- Activities that are known or have the potential to create excessive noise, where possible, will be scheduled to occur at times to cause least annoyance to the community. Carrying out such work during early morning will be avoided. This includes start up and idling etc. of heavy machinery prior to commencement of work
- Mechanical plant will be silenced using best available control technology. Noise suppression devices will be maintained to manufacturer's specifications. Internal combustion engines will be fitted with appropriate, well maintained, high efficiency mufflers
- Machines which are used intermittently will either be shut down in the intervening periods between work or throttled down to a minimum
- Alternatives to reverse alarms such as manually adjustable or ambient noise sensitive types ("smart" reversing alarms) will be considered. Alternative site management strategies can be developed, in accordance with a site OH&S Plan, with the concurrence of the appropriate OH&S Officer
- Any portable equipment with the potential to create high levels of noise e.g. compressors, generators etc. should only be selected for use if it incorporates effective noise control. This equipment will be located where practical so that natural ground barriers or site sheds etc. are between it and the nearest potentially affected receivers
- Where possible loading and unloading of plant and materials will be carried out away from potentially affected receivers
- All windows in the external facades of the TAS workshops will be minimum 6.38 mm laminated glass
- Windows to the TAS workshops will be closed whilst machinery is being operated
- Any siren or bell must be adjusted to have a maximum sound pressure level of 45 dB(A) Leq (5 sec) when measured at the boundary of the site and have a maximum duration of 5 seconds
- Air conditioner condensers will be mounted at ground level either a sufficient distance from the boundary and/or behind an effective acoustic barrier
- To avoid the possibility of structure borne noise due to vibrations, all duct work for HVAC venting must be isolated from the main structure of the building.

## 10.7 Flora, Fauna and Bushfire

### Construction

- Prior to construction, a Construction Environmental Management Plan is to be developed which includes standard measures, including:
  - Installation of appropriate exclusion fencing to the boundary of the retained vegetation and any construction areas where there is some potential for accidental encroachment. This will include appropriate signage such as 'No Go Zone' or 'Environmental Protection Area'. Identification of any 'No Go Zones' in site inductions for all construction personnel.
  - All site perimeter is to be of a design that excludes terrestrial fauna, in particular Koala, so as to minimise the risk of Koala ingress to the construction site.
  - Internal fencing / barricades are to be used to establish tree protection zones (TPZs) around retained native trees in accordance with the Standards Australia Committee (2009).
  - All material stockpiles, vehicle parking and machinery storage should be located within the areas proposed for clearing, and not in areas of native vegetation that are to be retained.
  - Sedimentation and erosion control measures including silt fencing, sediment traps, etc. to prevent sediment-laden stormwater exiting the construction areas and to prevent scouring and erosion of land beyond the development footprint. All erosion and sediment control measures are to be constructed and installed in accordance with relevant guidelines, are to be regularly maintained for the duration of the construction period and are to be carefully removed at completion of works.
  - Sediment and erosion control measures should follow recommendations of The Blue Book – Managing Urban Stormwater: Soils and Construction (Landcom 2004)
  - Dust suppression measures to ensure dust deposition beyond the construction area is minimised.
  - Weed and pathogen management including weed hygiene protocols for personnel, machinery and construction materials entering and exiting construction areas to minimise risk of weed and pathogen introduction and spread.
  - Waste management is to ensure food scraps and other organic waste that may attract introduced predators (e.g. fox, cats) or other pests (e.g. rats) is not stored for prolonged periods within the construction site.
  - Development of an Ecological Management Plan (EMP) for inclusion in the Construction Environmental Management Plan. The EMP will outline measures for staged vegetation clearing to manage fauna species during tree removal, including having a spotter / catcher present. Staged removal involves clearing of understorey vegetation and non-hollow-bearing trees in Stage 1, with removal of hollow-bearing trees in Stage 2. There should be a minimum of 24 to 48 hours between Stage 1 and Stage 2.
  - Ecologist pre-clearance surveys should include dusk stag watch for microbats with anabat, not greater than one week prior to felling of hollow-bearing trees on site. The project ecologist is to be present during hollow-bearing trees clearing to manage any microbats or other hollow-dependent fauna that may be present in hollows at time of clearing.
  - The EMP will detail procedures for dealing with trapped or injured wildlife during the construction period with particular focus on rescue and care of Koalas should an individual gain entrance to the construction site.
- Residual impacts to native vegetation will require retirement of 23 ecosystem credits and 6 Koala species credits in accordance with the Biodiversity Offsets Scheme
- A 10 metre VRZ is to be maintained along either side of the waterway traversing the southern section of the subject land from the top of both banks.
- Road crossings are permitted within the 10 metre VRZ according to the riparian corridor matrix provided in Controlled activities on waterfront land - guidelines for riparian corridors on waterfront land (NSW

Office of Water, 2012a). The proposed access road crossing is to be constructed with reference to the recommendations made in Controlled activities on waterfront land - guidelines for watercourse crossings on waterfront land (NSW Office of Water, 2012b) and the Policy and Guidelines for Fish Friendly Waterway Crossings (2003).

- Sediment and silt-screens are to be used to manage instream sedimentation and erosion during construction of the access roads over the unnamed stream in the south of the subject land. Sediment and erosion control measures should follow recommendations of The Blue Book – Managing Urban Stormwater: Soils and Construction (Landcom 2004).
- As far as practicable, all construction activities are to undertaken during daylight hours to minimise noise impacts on fauna utilising adjacent habitats.
- Selection and retention of suitable logs (>10 centimetres diameter only) and hollows for placement within retained native vegetation adjoining the subject land.
- Where appropriate native vegetation cleared from the study area should be mulched for re-use on the site, to stabilise bare ground.
- Security lighting within the construction site is to be minimised and where required, is to be oriented such that light spill beyond the subject site and in to patches of retained vegetation is minimised.
- Consideration is to be given to the installation of nest boxes prior to commencement of vegetation clearing for construction. Installation of nest boxes prior to clearing will allow time for microbats and other hollow-dependent fauna to encounter these new resources prior to removal of existing hollows within trees to be removed.
- Establishment of APZs
  - The establishment of the IPZ surrounding the College will require the removal of non-native trees and shrubs and lopping of some branches of mature native trees in order to achieve the IPZ performance criteria outlined in Newcastle Bushfire Consulting (2018).
  - Establishment of the OPZ will require lopping of canopy branches of some mature native trees within the Swamp Sclerophyll Forest EEC and Hunter Lowland Red Gum forest EEC
  - As far as practicable, establishment of APZs will seek to remove trees not considered Koala feed trees in preference to Koala feed trees.

### Operation

- Security lighting for the college is to be located and designed so as to minimise light spill to retained native vegetation and associated habitats beyond the subject land.
- Food waste (e.g. from canteen facilities, playground bins, etc) is to be managed to minimise the availability of this resource to introduced predators such as foxes and cats. Bins are to be of a design that restricts access by introduced pests including introduced predators.
- Regular monitoring and pest treatment of the college and ancillary facilities is to be undertaken to minimise build-up of introduced pest populations within the school boundaries and immediate adjoining areas.
- All perimeter fencing and some internal fencing (e.g. between retained canopy trees) is to be of a 'fauna-friendly' design which minimises potential impacts to gliding arboreal mammals (e.g. sugar gliders) if utilising retained trees within the subject land.
- Lapped and capped timber fencing (or similar) that is impermeable to Koala is to be installed north, west and south of the school to discourage movement of Koalas through the school grounds where they could become trapped. This will encourage Koalas moving east/west through the landscape to use retained habitat north and south of the development.
- Current vehicle speed limits along Medowie Road should be reviewed in consultation with Roads and Maritime Services. It is assumed normal school vehicle speed limit regimes of 40 km/h in the morning and afternoon peak school drop-off / pick-up hours will apply. Retention of the 40 km/h speed limit at all times of day in the vicinity of the college would benefit Koala and other mobile fauna species that

occasionally cross Medowie Road and thereby increase the function of the link over cleared land identified in the Port Stephens CKPoM. The speed limit for all internal roads, including the permitter firetrail, is to be 40 kph or lower.

- Appropriate signage warning road users of fauna crossing along internal college access roads and approaches from Medowie Road are to be installed to minimise vehicle – wildlife interactions.
- Landscaping of the college is to use locally native species where practicable to limit the potential spread of weeds in to adjoining retained native vegetation and maximise the foraging resources available for highly mobile species. Where landscaping is undertaken outside the college perimeter fencing, Koala feed trees should be included in landscaping to compensate for loss of Koala feed trees at the locality.
- The presence of Koala and other threatened native fauna within the study area provides exceptional environmental education opportunities for the college which can help to raise awareness of biodiversity and lead to improved biodiversity conservation outcomes. Environmental education could incorporate simple surveys for Koala and other threatened fauna in adjoining bushland as part of the school science curriculum.
- A Vegetation Management Plan (VMP) is to be developed to guide the management of retained native vegetation within the College and adjoining APZs. The VMP will describe retention of native vegetation (where appropriate and in accordance with APZ objectives) and the management of weeds, rubbish etc. within APZs, at the boundary between APZs and adjoining native vegetation beyond the subject land and at points of discharge of stormwater infrastructure. The VMP will prescribe measures to minimise fertiliser and herbicide use in situations where chemicals could be transported beyond the subject land.
- A 10 metre VRZ is to be maintained along either side of the waterway traversing the southern section of the subject land from the top of both banks. Wherever possible works within the VRZ should be avoided and the VRZ protected.

## 10.8 Bushfire

- The proposed building works shall comply with BAL-12.5 in accordance with AS 3959-2009 Building in Bushfire Prone Areas and the construction requirements of Planning for Bushfire Protection 2006 Appendix 3 (amended May 2010)
- At the commencement of building works and in perpetuity a minimum 50 metre asset protection zone shall be managed 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. The asset protection zone shall be divided into the below components:
  - a. Inner Protection Area – 40 metres
  - b. Outer Protection Area – 10 metres
- Water, electricity and gas are to comply with section 4.2.7 of Planning for Bush Fire Protection 2006
- The property access is to comply with section 4.2.7 of Planning for Bush Fire Protection 2006
- Landscaping is to be undertaken in accordance with Appendix 5 of Planning for Bushfire Protection 2006 and managed and maintained in perpetuity
- An Emergency /Evacuation Plan is to be prepared consistent with AS 3745 'Emergency control organisation and procedures for buildings, structures and workplaces' and consider bushfire.

## 10.9 Heritage

- Four recorded AHIMS sites have been identified within the study area as part of the assessment. An Aboriginal Cultural Heritage Assessment (ACHA) must therefore be prepared. The ACHA must be prepared in accordance with the *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW* (OEH 2011). This includes an Archaeological Report prepared in accordance with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010) and consultation with Aboriginal community in accordance with the Aboriginal cultural heritage



consultation requirements for proponents 2010 (DECCW 2010). Biosis has commenced Aboriginal community consultation in accordance with the *Aboriginal cultural heritage consultation requirements for proponents 2010* (DECCW 2010), and is currently completing the Aboriginal cultural heritage assessment on behalf of Webber Architects

- In order to assess the extent and significance of the archaeological deposits identified at sites 38-4-1618/38-4-1627, and 38-4-1619/38-4-1628, archaeological test excavations must be undertaken as part of the Aboriginal cultural heritage assessment
- All Aboriginal objects and Places are protected under the *NSW National Parks and Wildlife Act 1974*. It is an offence to knowingly disturb an Aboriginal site without a consent permit issued by the Office of Environment and Heritage (OEH). Should any Aboriginal objects be encountered during works associated with this proposal, works must cease in the vicinity and the find should not be moved until assessed by a qualified archaeologist. If the find is determined to be an Aboriginal object the archaeologist will provide further recommendations. These may include notifying the OEH and Aboriginal stakeholders
- An Aboriginal Cultural Heritage Assessment is required, which is currently underway
- Aboriginal ancestral remains may be found in a variety of landscapes in NSW, including middens and sandy or soft sedimentary soils. If any suspected human remains are discovered during any activity you must:
  1. Immediately cease all work at that location and not further move or disturb the remains
  2. Notify the NSW Police and OEH's Environmental Line on 131 555 as soon as practicable and provide details of the remains and their location
  3. Not recommence work at that location unless authorised in writing by OEH.
- No construction work will commence until outcome of the Aboriginal cultural heritage assessment is known.

## 10.10 Visual

Architectural plans (Appendix 23) have been prepared to ensure the development presents well to the street, provides appropriate space for modern educational purposes and has sufficient landscaping and site security for the school. No additional measures are considered necessary.

## 10.11 Social

- Lighting should help maintain sightlines and illuminate potential concealment areas. Outside of business hours, motion activated lighting is appropriate around the car park and school ground entrances
- External lighting is to be directed toward approaches to buildings rather than illuminating observers or vantage points (windows and doors)
- Vehicle entry points should be adequately signposted to enhance way finding and prevent unauthorised access to any restricted areas of site.
- Signposting is required to enhance way finding and prevent unauthorised access to any restricted area of the site
- All internal and external signage and directions around school grounds should be built / installed in accordance with the Australian standards (AS1428)
- Internal access points into buildings such as doors and windows should be lockable, preferably by key or magnetic system to maintain access control both inside and outside of operating time
- Consideration should be given to the use of an access control measure in the car park entrance to limit after hour access

- Pathways, landscaping, edge treatments, fencing and gates should provide clear indicators of appropriate access or restrictions of movement throughout the site
- Boundary fencing should clearly delineate public and private spaces and restrict access where necessary. It is considered that rear and side boundaries should be appropriately fenced using palisade or wire mesh style fencing. Front boundaries can be defined through the use of fencing, landscape treatments, or a combination of both. Front fencing will largely depend on the security needs of the school
- Signage / line marking within the car parking area should clearly define visitor and staff parking, bus waiting and service areas
- Ensure timely repair of damaged property and lighting, and 'rapid removal' approach to graffiti
- The use of organised security (i.e. alarms, 'back to base' alerts and security patrols) is recommended for outside of normal operating hours when natural surveillance is limited
- Consideration should be given to the use of graffiti resistant materials and surface treatments
- Landscaping along boundaries including the street frontage should include a mixture of low growing shrubs and mature / canopy trees (shape and size dependant on space available)
- Plants should be selected, sited and maintained where they will not reduce the effectiveness of lighting or interpretation of signage
- Landscape maintenance should promote natural surveillance by pruning low branches to approximately 2 metres high, and ground cover / hedges at around waist height
- Vegetation type and location should limit the ability for natural 'ladders' to promote access to upper building levels or to scale fencing.

## 10.12 Economic

No additional measures are considered necessary.

## 10.13 Waste Management

- A Waste Management Plan for construction waste
- A private contractor or Council will be engaged to manage ongoing waste collection from the site
- Determine volumes and nature of material to be removed from site, including potential for recycling
- Additional investigation for contamination will also occur following demolition of site structures in order to confirm remediation and waste disposal requirements
- Erosion and sediment control will be in accordance with a staged erosion and sediment control plan in accordance with the *Managing Urban Stormwater: Soils and Construction, 4<sup>th</sup> Edition, "the Blue Book"*, Landcom, 2004
- All waste generated by the proposal will be classified in accordance with the NSW Waste Classification Guidelines Part 1: Classifying Wastes (NSW EPA, 2014) prior to being removed from the site
- Prior to demolition a hazardous materials report will be prepared to determine potential hazardous materials in existing buildings and methods for their disposal.

## 10.14 Chemical and Fuel Storage

- A Response and Incident Plan will be prepared
- Oils, fuels and chemicals will be stored in a locked bund capable of holding 110% of the capacity of the containers within the bund

- Oils, fuels and chemicals will be stored in accordance with manufacturers requirements and relevant Australian Standard
- A spill kit will be located at each chemical and fuel storage location appropriate to the volume and nature of the material
- Material Safety Data Sheet will be kept on site for all oils, fuels and chemicals stored.

## **11. CONCLUSION AND JUSTIFICATION FOR THE PROPOSAL**

The proposed Catholic College will provide a new purpose built development with facilities including classrooms, administration buildings and sporting facilities. The college will provide a Catholic based education to the expanding population of Medowie and the broader area.

The proposed development will provide long-term benefit to students, educators and residents of the region.

The development is consistent with the principles of ecologically sustainable development. There is unlikely to be significant impact on the environment as a result of the proposed development provided environmental mitigation measures proposed in Section 10 of this EIS are adopted. The proposal will not have a significant impact on the environment, including threatened species, populations or ecological communities, or their habitats under the EPBC Act, therefore referral to the Commonwealth Minister of the Environment is not deemed necessary for the current proposal.

## 12. REFERENCES

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- Roads and Maritime Services (RMS), n.d., *Interim Guideline for the Planning and Design of School Traffic and Pedestrian Facilities* (refer to Appendix 18).
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- Standards Australia AS 1428.1-2009 Design for access and mobility - General requirements for access - New building work.
- Standards Australia AS 1596-2002 The storage and handling of LP Gas.
- Standards Australia AS 2021-2015 Acoustics - Aircraft Noise Intrusion - Building Siting and Construction.
- Standards Australia AS 2436-1981 Guide to Noise Control on Construction - Maintenance and Demolition Sites.
- Standards Australia AS 2870-2011 Residential slabs and footings.
- Standards Australia AS 2890 Parking facilities.
- Standards Australia AS 3600 Concrete structures.
- Standards Australia AS 3671-1989 Acoustics - Road traffic noise intrusion - Building siting and construction.
- Standards Australia AS 3745 Emergency control organisation and procedures for buildings, structures and workplaces.
- Standards Australia AS 3798-2007 Guidelines on earthworks for commercial and residential developments.





Standards Australia AS 3959-2009 Construction of buildings in bushfire-prone areas.

Standards Australia AS 6400 Water efficient products – Rating and labelling.

Transport for NSW, 2017, *Future Transport Strategy 2056*



## APPENDICES



## **APPENDIX 1**

### **Location Plan**



## **APPENDIX 2**

### **Aerial Photograph**



## **APPENDIX 3**

### **Zoning Plan**





## **APPENDIX 4**

### **SEPP 14**



## **APPENDIX 5**

### **Height of Buildings**



## **APPENDIX 6**

### **Port Stephens Council Wetland Mapping**



## **APPENDIX 7**

### **Minutes of Pre-Lodgement Concept Meeting with PSC**



## **APPENDIX 8**

### **Contamination Assessment prepared by RCA Australia**



## **APPENDIX 9**

### **Flood Risk and Impact Assessment prepared by BMT**





## **APPENDIX 10**

### **Pre-Construction BCA / NCC Compliance Assessment prepared by Dix Gardner**



## **APPENDIX 11**

### **Geotechnical Investigation prepared by Valley Civilab**



## **APPENDIX 12**

### **Noise Assessment prepared by Spectrum Acoustics**



## **APPENDIX 13**

### **Aboriginal Heritage Advice prepared by Biosis**



## **APPENDIX 14**

### **Crime Risk Assessment Report prepared by de Witt Consulting**



## **APPENDIX 15**

### **Stormwater Management Plan prepared by MPC Engineering**





## **APPENDIX 16**

### **Accessibility Review prepared by BCA Access Solutions**



## **APPENDIX 17**

### **Accessibility Review (Car Parking) prepared by BCA Access Solutions**



## **APPENDIX 18**

### **Traffic Impact Assessment prepared by SECA Solution**

## **APPENDIX 19**

### **Social Impact Assessment prepared by Key Insights**



## **APPENDIX 20**

### **Bushfire Assessment Report prepared by Newcastle Bushfire Consulting**



## **APPENDIX 21**

### **Biodiversity Development Assessment Report prepared by Biosis**





## **APPENDIX 22**

### **Historical Heritage Assessment prepared by Biosis**



## **APPENDIX 23**

### **Architectural Drawings / 3D Render**



## **APPENDIX 24**

### **Staged Development Plans**



## **APPENDIX 25**

### **View Analysis / Photomontages**

## **APPENDIX 26**

### **Design Verification Statement as per comments from GANSW**



## **APPENDIX 27**

### **Landscape Design prepared by Moir Landscape Architecture**





## **APPENDIX 28**

### **Aboriginal Heritage Information System Search Results**



## **APPENDIX 29**

### **EPBC Protected Matters Search**



## **APPENDIX 30**

### **Potential Chemicals to be stored on site**

## **APPENDIX 31**

### **Existing and Proposed Infrastructure**



## **APPENDIX 32**

### **Quantity Surveyor Report prepared by Muller Partnerships**



## **APPENDIX 33**

### **Arborist Report prepared by Joseph Pidutti Consulting Arborist**

## **APPENDIX 34**

### **Detail Survey undertaken by Pilver Copper & Blackley**





## **APPENDIX 35**

### **Request for Contributions exception for Early Learning Centre**



## **APPENDIX 36**

### **Medowie Road Intersection Design prepared by MPC Engineering**



## **APPENDIX 37**

### **Clause 4.6 Variation**



## **APPENDIX 38**

### **SEPP 64 (Advertising and Signage) – Assessment Criteria: Schedule 1**



## **APPENDIX 35**

### **Ecologically Sustainable Development (ESD) Measures**



## **APPENDIX 40**

### **Correspondence**



## **APPENDIX 41**

### **Secretary's Environmental Assessment Requirements**