



Thrumster Wastewater Scheme

**Scoping Report – State Significant
Infrastructure**

Port Macquarie Hastings Council

28 March 2023

→ **The Power of Commitment**



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1. Introduction

1.1 Overview

Port Macquarie Hastings Council (Council) operates and maintains the wastewater infrastructure for the Port Macquarie-Hastings Local Government Area (LGA). Council is proposing to develop the Thrumster Wastewater Scheme including a new wastewater treatment plant (WWTP), associated pipelines and infrastructure that includes a water recycling plant (the project) at Thrumster, a suburb of Port Macquarie on the NSW mid north coast.

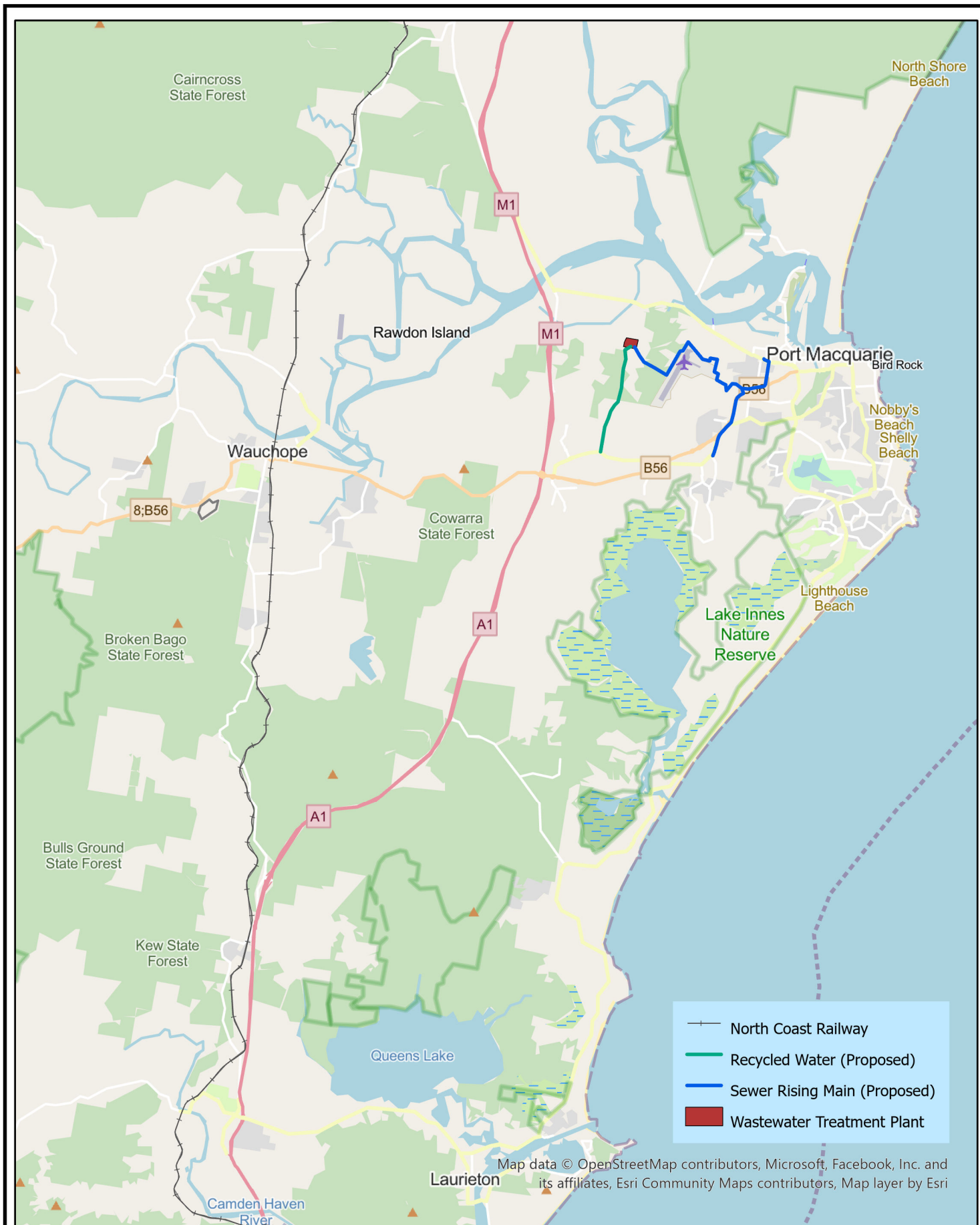
The project objective is to support recent urban growth in the outer suburbs of Thrumster and Sancrox, reduce demand on the existing Port Macquarie WWTP, improve the resilience, redundancy and ongoing capacity of Council's infrastructure services, and facilitate planned future growth in the identified areas. The scheme would also minimise the environmental impact of wastewater management by implementing reuse of recycled water.

The proposed WWTP would be situated within Lot 14, DP 1139180 on 433 Fernbank Creek Road, about 6 km west of Port Macquarie Central Business District (Figure 1.2). The route of proposed pipelines would be confirmed following detailed environmental impact assessment. Indicative routes are shown in Figure 1.2. Indicative effluent discharge points are shown in Figure 1.3. The project extends over a generally linear footprint as follows:

- A WWTP including a recycled water plant at Thrumster, at a site on the western side of Port Macquarie Airport (the treatment plant footprint). This site is about 6 km west of the Port Macquarie Central Business District. Large vehicle access to the site would be via Fernbank Creek Road from Hastings River Drive.
- Separate pipelines that would divert existing sewer pumping stations to the WWTP and connect the recycled water to the existing recycled water mains. The pipeline eastern route is about 4 km length plus additional branches to connect existing infrastructure, and the southern route is about 3.2 km length.
- An environmental discharge point and associated pipeline for treated effluent to the receiving waters of the Hastings River estuary. Three options are under investigation (refer Figure 1.3).

The following terms are used throughout this report to describe geographic areas:

- 'Locality' – land within a five kilometre radius of the study area (see Figure 1.1).
- 'Study area' – the proposed WWTP footprint and associated pipelines, inclusive of a 20 metre (m) buffer, within the Port Macquarie-Hastings LGA (see Figure 1.2).
- 'Treatment plant footprint' – the area of land that would be occupied by the WWTP including recycled water plant, and ancillary activities.





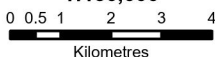
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HASTINGS**
Printed on: 24/08/2022



GDA 1994
MGA Zone 56

Thrumster Sewer Scheme Regional context Figure 2.1

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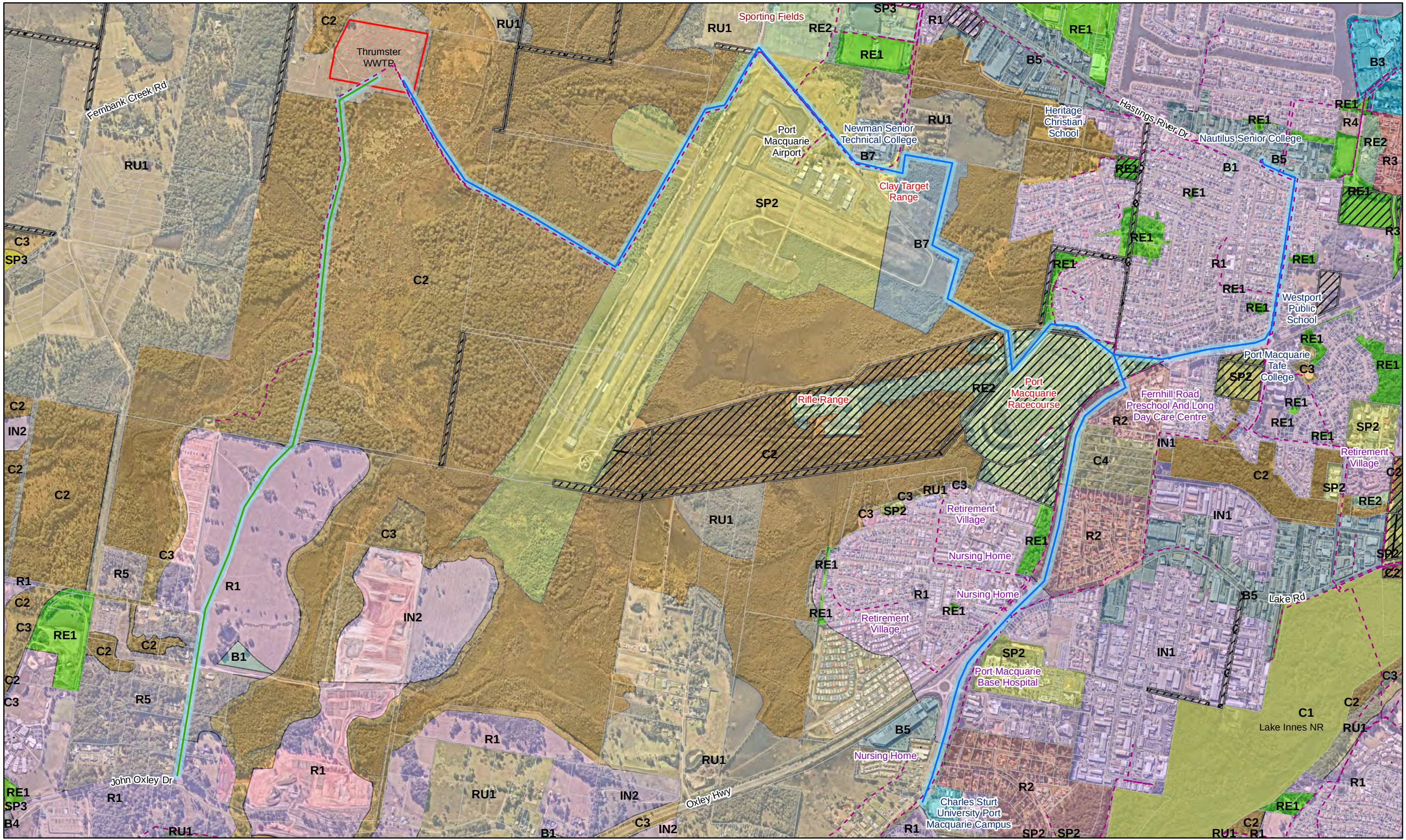
0 0.5 1 2 3 4
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Disclaimer

This map was produced by the Geographic Information Services Section of the Port Macquarie-Hastings Council using information available to Port Macquarie-Hastings Council and the Department of Lands, Bathurst. The data was captured at a scale of 1:25000 for rural areas and 1:4000 for urban areas. The positional accuracy of plots becomes less reliable when viewed at scales greater than the capture scale. Port Macquarie-Hastings Council accepts no responsibility either in contract or tort (and particularly in negligence) for any errors, omission or inaccuracies whatsoever contained within or arising from this map. NOTE: Cadastral information outside Port Macquarie-Hastings LGA not updated.



Regional Locality Map



GDA 1994
MGA Zone 56

- Recycled Water (Proposed)
- Sewer Rising Mains (Proposed)
- Pipelines (Existing)
- Wastewater Treatment Plant
- Crown Land
- Cadastre

Thrumster Sewer Scheme Site Location - Figure 1.2

0 100 200 400 600 800 1000
Meters

Scale at A4: 1:15,500

DISCLAIMER
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NOTE: Cadastral information outside the Port Macquarie-Hastings LGA not updated.



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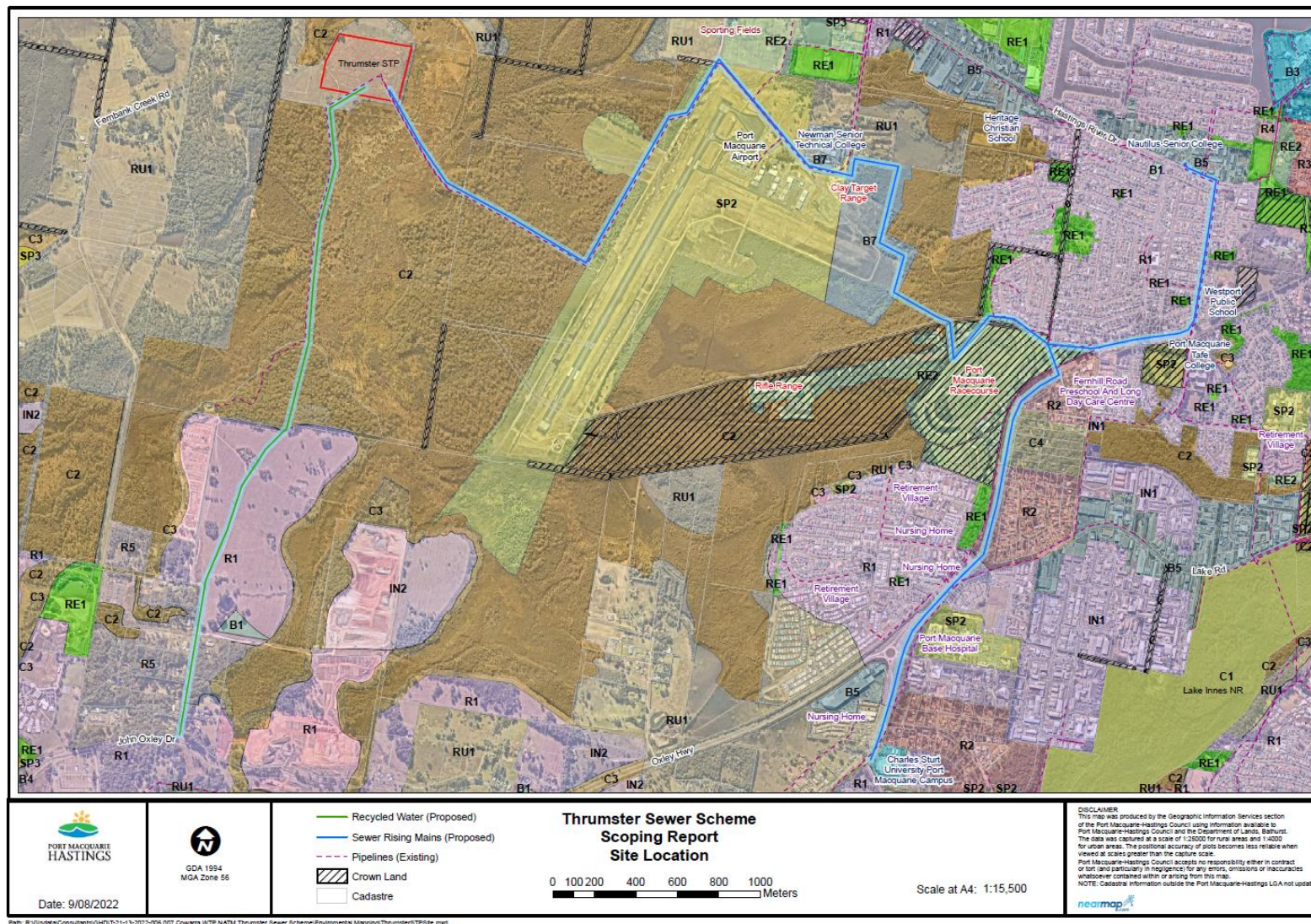


Figure 1.2 Site location



Legend

- Pipeline options
- Option 1
 - Option 2
 - Option 3
- WWTP site
- Flood prone land (DPE)

Figure 2-2 : Flood prone land

THRUMSTER WASTEWATER TREATMENT SCHEME ECOLOGICAL AND ENVIRONMENTAL ASSESSMENT

A4
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Figure 1.3 Effluent discharge points (Ramboll, 2023).

1.2 Background

Port Macquarie is one of the fastest growing regional cities in NSW with an additional 9,100 new homes required to meet the anticipated growth projections outlined in the NSW North Coast Regional Plan 2036 with the population expected to grow by 14,200 people over the next 20 years. The existing Port Macquarie WWTP is near capacity and requires expansion to meet existing and future demands.

Key strategies to avoid, minimise or offset the impacts of the project have been considered through the preliminary project design. The project footprint has been designed to follow existing easements and cleared land, where practical, to avoid areas of high ecological value and potentially sensitivity of native vegetation/communities in the locality. Consultation with affected property owners, stakeholders and the local community will continue throughout the project assessment, design and construction phases to minimise impacts where possible.

The proposed Thrumster Wastewater Scheme is one of two infrastructure schemes that Council have identified to assist with the anticipated population growth projection in the LGA. The other complimentary scheme is the Cowarra Water Supply Scheme, subject to a separate SSI application being developed concurrently as related development.

These schemes will provide servicing for over 7,000 additional homes across the LGA and will also indirectly cater for over an additional 3,000 dwellings via in-fill development within Port Macquarie. This is almost 25% of the required 41,300 extra dwellings on the North Coast that will be needed to support growth over the next 20 years as identified in the Draft North Coast Regional Plan 2041. The project is also aligned to the land-use principles outlined in Council's Local Strategic Planning Statement ensuring critical infrastructure supports growth.

1.3 Purpose of this report

The project has been declared State Significant Infrastructure SSI under Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The Minister for Planning is the approval authority, and the project is to be assessed in accordance with the provisions of Division 5.2 of the EP&A Act. An Environmental Impact Statement (EIS) must be prepared.

This scoping report has been prepared by GHD Pty Ltd (GHD) on behalf of Council to support the application for Secretary's environmental assessment requirements (SEARs). SEARs will be issued by the NSW Department of Planning and Environment (DPE). The SEARs will form the basis of an EIS prepared in accordance with the *Environmental Planning and Assessment Act 1997* (EP&A Act) and the *Environmental Planning and Assessment Regulation 2021* (EP&A Regulation). The report has been prepared in accordance with the *State significant infrastructure guidelines – preparing a scoping report* (DPIE, 2021).

1.4 The proponent

The proponent details are as follows:

- Port Macquarie-Hastings Council
- ABN: 11 236 901 601
- Address: 17 Burrawan Street Port Macquarie NSW 2444

Council owns and operates wastewater schemes for Lake Cathie/Bonny Hills, Telegraph Point, Comboyne, Long Flat, Camden Haven, Kew/Kendall, Port Macquarie, and Wauchope. The Local Government Area (LGA) has an estimated population of 86,762 with over 25 townships and localities spread over 3,686 km² of land area. There are remote villages and rural localities throughout the LGA without a municipal wastewater service. The methodology for sequencing growth in major growth areas has been based on vicinity to the existing infrastructure and approved development applications.

1.5 Scope and limitations

This report has been prepared by GHD Pty Ltd for Port Macquarie Hastings Council and may only be used and relied on by Port Macquarie Hastings Council for the purpose agreed between GHD and Port Macquarie Hastings Council as set out in Section 1.3 of this report.

GHD Pty Ltd otherwise disclaims responsibility to any person other than Port Macquarie Hastings Council arising in connection with this report. GHD Pty Ltd also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD Pty Ltd in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD Pty Ltd has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD Pty Ltd described in this report. GHD Pty Ltd disclaims liability arising from any of the assumptions being incorrect.

2. Strategic context

2.1 Strategic need for the project

Port Macquarie is one of the fastest growing regional cities in NSW with an additional 9,100 new homes required to meet the anticipated growth projections outlined in the NSW North Coast Regional Plan 2036 with the population expected to grow by 14,200 people over the next 20 years.

Council is proposing the Thrumster Wastewater Scheme project to service the predicted population growth. The project is required to provide a secure and reliable wastewater scheme to service residential growth across the Thrumster, Sancrox and Fernbank Creek areas of the LGA.

The project is intended to deliver a WWTP and recycled water supply to existing and proposed residences of Thrumster, Sancrox and Fernbank Creek areas of Port Macquarie. The project would support the growth of urban and industrial areas in these suburbs. This project will provide the required redundancy for Council's sewage treatment and reticulation network.

The project will have the following benefits:

- Provide sewage treatment capacity for population growth and construction of industrial units.
- Avoid excessive loading of Port Macquarie wastewater treatment plant beyond its design capacity by redirecting a proportion of the sewer from Port Macquarie wastewater treatment plant to Thrumster wastewater treatment plant.
- Provide recycled water for reuse scheme across Thrumster.
- Minimise the environmental impact of wastewater management by reduction of discharged effluent to downstream watercourses through reuse and recycled water schemes.
- Provide redundancy for sewerage treatment assets across the Port Macquarie LGA.

2.2 Consistency with strategic policy and plans

The project is expected to contribute to the realisation of a number of NSW State and local government policy commitments and plans including:

2.2.1 NSW Government Regional Water Strategies 2020

The NSW Government is taking action to improve the security, reliability, quality and resilience of the State's water resources. Regional water strategies (DPIE, 2020) are an integrated package and look out over the next 20 to 40 years to understand how much water a region will need to meet future demand, the challenges and choices involved in meeting those needs, and the actions that can be taken to manage risks to water availability. Strategy objectives relevant to the project include:

- Provide safe, secure and sustainable water and wastewater services to regional NSW towns. This is supported by the NSW Government Safe and Secure Water Program.

As the project aims to deliver a WWTP and associated services this is considered to respond to the objectives of the Regional Water Strategies.

2.2.2 North Coast Regional Plan 2041

The North Coast Regional Plan 2041 (DPE, 2022) is a 20-year blueprint for the future of the North Coast. It sets out NSW Government vision for the North Coast which is 'healthy and thriving communities, supported by a vibrant and dynamic economy that builds on the region's strengths and natural environment'. To achieve this vision the NSW Government has set three goals for the region:

- Liveable, sustainable and resilient
- Productive and connected
- Growth change and opportunity

The provision of a wastewater treatment system is closely linked to the ability to plan to meet the needs of projected population growth within the region. Importantly this would respond to *Objective 1: Provide well located homes to meet demand*.

2.2.3 Port Macquarie Regional City Action Plan 2036

The Port Macquarie Regional City Action Plan (DPIE, 2021a) (RCAP) has been developed by the NSW Government, in collaboration with Council, to help Port Macquarie fulfill its potential as a thriving regional centre and build on the city's growth, strong employment base, diversified economy and local character. Development of the Port Macquarie RCAP is a priority action of the North Coast Regional Plan 2036, which was released in March 2017 by the NSW Minister for Planning.

In particular, the RCAP addresses housing affordability with a coordinated approach to align infrastructure delivery with sustainable housing. This will ensure a steady supply and mixture of homes to cater for future population growth. The project will respond to this item of the RCAP by creating the wastewater infrastructure delivery to support the housing growth occurring in the LGA.

2.2.4 Shaping Our Future 2040

'Shaping Our Future 2040' (Council, 2020) is Council's Local Strategic Planning Statement and the core strategic land-use planning document for the Port Macquarie area. It outlines the vision for land-use planning in the local area over the next 20 years and sets the direction for the community's environmental, social and economic land-use needs.

The following items identified in the document are supported by development of the project:

- Effective management and maintenance of essential water, waste and sewer infrastructure
- Ensure availability and sustainable management of water and sanitation for all

2.2.5 Blueprint for Generation Equity

Council's long-term vision for future (Our Blueprint for generational equity, draft 2023) identified Thrumster Wastewater scheme as one of Council's major priorities to build and renew its sewer infrastructure to ensure reliability and resilience of the sewer management system that is fit for purpose to serve the community now and into the future (2050).

2.2.6 Community Strategic Plan

The Community Strategic Plan (CSP) (Council, 2022) and Delivery Program 2022-2026 is a 10 year plan prepared by Council and the community based on community priorities. It enables Council to coordinate its funding priorities, activities, services, and asset management including water supply.

2.3 Key features of the site

Land use around the WWTP is a mixture of rural residential, environmental management (coastal wetland), and transport infrastructure (Port Macquarie Airport). The pipeline routes cover recreational land use, Crown Land (Port Macquarie Racecourse and Rifle Range), local roads, and current or future urban residential land use. New pipelines for sewer, returned effluent, and recycled water rising mains would generally be located within utility easements and road reserves, passing through a number of zones. Zoning is shown in Figure 1.2.

Land use and planning will be further investigated during the EIS in order to undertake the following:

- Requirement for rezoning for construction of the treatment plant and associated buffer areas
- Confirm the use of utility easements and road reserves proposed to be used for the pipeline routes
- Assess reuse opportunities for recycled water and biosolids

Table 2.1 Land use and zoning

Project element	WWTP and recycled water treatment facility	Recycled water main	Sewer rising mains and associated infrastructure
Land owner	Port Macquarie Hastings Council	Various	Various
Zoning	RU1 Primary production	RU1 Primary Production R1 General Residential R5 Large Lot Residential C2 Environmental Conservation C3 Environmental Management	RU1 Primary Production R1 General Residential R2 Low Density Residential B5 Business Development B7 Business Park SP2 Infrastructure RE1 Public Recreation RE2 Private Recreation C2 Environmental Conservation C4 Environmental Living
Current site conditions	Rural, surrounded by environmental conservation and management.	Mixed cleared and vegetated road easement, transport (road) infrastructure corridor, cleared land, utility easements, urban road easement, public open area.	Mixed: cleared and vegetated road easement, transport (road and Port Macquarie Airport) infrastructure corridor, Crown Land (Port Macquarie Racecourse and Rifle Range), cleared land, utility easements, urban local road easement.

Key risks of the site are outlined in section 6 of this report and the corresponding mapping (Figures 6.1 to 6.3). These show the project interactions with the following features: Coastal Wetlands and Proximity Area for Coastal Wetland, heritage items, bush fire prone land, flooding, asbestos and acid sulfate soil (ASS) potential.

A search of the major projects register was undertaken on 27 March 2023 to identify other major projects that may contribute to cumulative impacts. A search was completed for the Port-Macquarie-Hastings LGA, which identified 10 SSD projects and no SSI projects. It is noted in Section 1.2, the Cowarra Water Supply Scheme is a complimentary scheme located the LGA, subject to a separate SSI application and being developed concurrently with this Infrastructure Approval application.

Potential cumulative impacts may occur as a result of construction occurring simultaneously or consecutively with the construction of other major projects in the vicinity of the project, particularly those within the wider Port Macquarie LGA. Cumulative impacts during construction are generally expected to be minor. Any potential cumulative impacts will be reduced through the application of individual project-specific environmental management plans.

3. Project description

3.1 Overview

Consistent with the recommendations of previous water supply investigations undertaken by Council and NSW Public Works Advisory showing that the existing Port Macquarie WWTP is operating over its design capacity and an immediate solution is required, Council is seeking approval to construct and operate a new WWTP located at 433 Fernbank Road, Thrumster. The plant would have the capacity to treat sewage primarily from the Thrumster and Sancrox development areas. The project would also involve ancillary works including upgrades to power and water supply connections.

The scope of the project for construction of the new WWTP and associated infrastructure consists of:

- Construction of a new WWTP at Thrumster including recycled water treatment facility
- Construction of new sewer rising mains, recycled water mains
- Undertake works at identified existing SPSs to reduce the current load on the existing system
- Improvements to site access and electricity supply

The project intent is to ensure the expansion of Council's sewerage system to meet the demand projected to 2050. Based on current timeframes it is anticipated that the project would be operational by 2028 (see Table 3.2 for project scheduling). A description of the proposed infrastructure is provided in Section 3.3. The project description is based on the concept design developed for the project and would be subject to further detailed assessment as part of the EIS. The indicative layout is shown in Figure 1.2. A high-level schematic of the WWTP site arrangement is provided in Figure 3.1.



Figure 3.1 Proposed Thrumster WWTP site arrangement (Image courtesy PMHC, March 2023)

3.2 Construction

3.2.1 Construction methodology

The construction of the project is expected to take place over three years. Subject to the approval and detailed design process, it is anticipated that site works would commence in 2025. Construction activities and indicative timeframes are:

1. Mobilisation and site establishment including laydown areas (2 month)
2. Civil works (4 months)
3. WWTP and RWTP construction (24 months)
4. Pipeline installation including set out underboring locations and laydown areas (12 months)

5. Testing and commissioning (6 months)
6. Site demobilisation and surface rehabilitation (1-2 months)

Site compound areas would be required along the pipeline routes and likely to be positioned at the following locations: valves, vent stacks, odour control units, flow and pressure monitoring instrumentations. Indicative construction compound sites and laydown areas will be identified while undertaking the EIS to assist in minimising construction stage impacts and disturbance area.

3.2.2 Construction equipment

Construction plant and equipment that could be used during the construction of the project is listed in Table 3.1. Type and quantity of plant and equipment may vary depending on the construction staging and construction methods and would be determined by the construction contractor.

Table 3.1 *Indicative construction equipment*

Construction equipment		
Excavators- various sizes	Concrete trucks	Welding machines
Bulldozers	Contractor service vehicles	Asphalting machines
Tipper trucks	Rollers	Boring / underboring / horizontal directional drilling (HDD) equipment
Mobile cranes- various sizes	Rock breakers	Concrete pumps
Elevated work platforms	Semi-trailers	Vacuum trucks
Chainsaws	Concrete cutters	

3.2.3 Construction schedule

Key project milestones and their estimated timeframe are included in Table 3.2.

Table 3.2 *Indicative program for construction of Thrumster WWTP*

Phase	Year 1	Year 2	Year 3
Mobilisation and site establishment	X		
Civil works	X	X	
WWTP and RWTP construction	X	X	X
Pipeline installation – including set out any underboring locations and laydown areas		X	X
Testing and commissioning			X
Site demobilisation and surface rehabilitation			X

3.2.4 Construction workforce

It is anticipated that a work force of approximately 60-100 full time equivalent (FTE) employees would be required during the construction phase of the project.

3.2.5 Construction hours

It is currently envisaged that the majority of construction would be undertaken within the recommended standard construction hours in accordance with the *Interim Construction Noise Guideline* (DECC, 2009) as follows:

- Monday to Friday: 7:00 am to 6:00 pm
- Saturday: 8:00 am to 1:00 pm
- No work on Sundays or public holidays

Some construction activities may be undertaken outside the recommended standard construction hours, which may include:

- Work determined to comply with the relevant noise management level at the nearest sensitive receiver
- The delivery of materials outside approved hours as required by the NSW Police or other authorities for safety reasons
- Emergency situations where it is required to avoid the loss of lives and properties and/or to prevent environmental harm
- Situations where agreement is reached with affected receivers
- Work where a proponent demonstrates and justifies a need to operate outside the recommended standard construction hours

The need for any work outside the recommended standard construction hours would be confirmed in the EIS. The proposed assessment process for noise and vibration is described in Section 6.3.2.

3.3 Operation

3.3.1 Wastewater treatment plant

The proposed WWTP was determined to be designed to treat a portion of wastewater currently directed to Port Macquarie WWTP and new connections from the Thrumster and Sancrox area as established in technical studies previously prepared for Council. It would occupy an area of up to 12 hectares (about 400 m x 300 m) including ancillary facilities such as access, parking, and managed vegetation buffer for bushfire protection (see Figure 1.2).

The proposed WWTP would have a design capacity of 52,000 EP and hydraulic loading of 12.6ML/Day by 2049. The concept design for the WWTP will be progressed concurrently with the preparation of the EIS, with the WWTP proposed to incorporate advanced wastewater treatment technology capable of mechanical and biological nutrients reduction, equipped with UV and chlorine disinfection systems to provide multiple barriers against pathogens for the non-potable recycled water. The ultimate recycled water design capacity of 4.3 ML / Day is provisioned for the project.

3.3.2 Sewer and recycled water mains

The proposed pipeline usage and routes would be as follows:

- New sewer rising main connecting an existing pump station on Hastings River Drive to an upgraded pump station near Oxley Highway/Clifton Drive intersection. Then a new sewer rising main from an upgraded pump station to Thrumster WWTP.
- A connection from a new pump station proposed at John Oxley Drive (near the intersection with Major Innes Road) to Thrumster WWTP via an upgraded pump station near Oxley Highway/ Clifton Drive intersection.
- Recycled water main connecting Thrumster WWTP to the existing main at the junction of Thrumster Street and John Oxley Drive.

Figure 1.2 shows these proposed routes.

3.3.3 Beneficial reuse

Beneficial reuse of outputs associated with the WWTP would be via connection of treated and recycled water to the existing Thrumster recycled water scheme, and through the reuse of treated effluent for hydroponic and agricultural lands in the vicinity of the WWTP, subject to further assessment and review of technical and site requirements.

Beneficial reuse of biosolids at PMHC waste management facility for composting purposes is being considered (see Section 6.2.6).

3.3.4 Environmental discharge

An environmental discharge point and associated pipeline for any excess treated effluent to the receiving waters of the Hastings River estuary. Three options are under investigation as shown in Figure 1.3.

3.3.5 Workforce

Once fully operational it is anticipated that three to four FTE employees would be required to manage the onsite operations at the WWTP, which is similar to Port Macquarie WWTP.

3.3.6 Traffic and access

Access to the WWTP would use the same roads as current access. Vehicles would use Fernbank Creek Road via Hastings River Drive. Heavy vehicle access, if improvements are required, would be identified in the EIS and undertaken during the construction phase. Access for installation of the pipeline in the study area may require intermittent partial road closure and traffic controls where works are within the road easement.

3.3.7 Operating hours

The project would be operational 24 hours per day, seven days per week.

3.4 Capital investment value

The estimated capital cost of the project (site development and construction, plus pre-design investigations, design documentation and procurement) is \$131 million.

3.5 Project alternatives

This section provides an overview of the available alternatives to the project.

Initial discussions with the Public Works Authority (PWA) identified three strategic options to address the Port Macquarie sewer systems' capacity issue. The alternatives are described below and are based on the previously established need for additional wastewater treatment capacity for the Thrumster and Sancrox development area of Port Macquarie. Other than the 'do-nothing' option, all other alternatives assessed are based on the allocation of wastewater capacity and treatment for new infrastructure.

A Concept Design Options Report (CH2M Hill, 2005) was previously prepared for Thrumster Wastewater Scheme which provided details of options considered for design and construction of the project. PMHC is currently revising the concept design report which would be submitted as part of EIS documentation.

3.5.1 Do nothing

The do-nothing option will result in continued pressure on the existing Port Macquarie WWTP which is already operating at, and in heavy rainfall events, beyond its design capacity. Existing system studies (PWA, 2020) have identified that this is not a feasible forward option.

3.5.2 Option 1

Option 1 is to build Thrumster WWTP to cater for the growth area only and upgrade Port Macquarie WWTP for the required additional capacity.

Based on the load projections by PWA the Port Macquarie WWTP would need to be upgraded by at least 10,000 *EP (equivalent population)* to cater for the 2050 loads. Also, with Thrumster loads removed the plant will again reach its design capacity by 2030 with continued growth in the Port Macquarie catchment. The Port Macquarie WWTP is located on a constrained site with residential properties located within 500 m of the plant. Council currently receives several odour complaints a year and is working through several Pollution Reduction Programs with the EPA to address the odour issue.

While it is likely possible to upgrade the plant's capacity on the current site with new process/treatment technology and reduce odours it is likely that this would be challenging and costly given the constraints on the site and need to keep it operational with the load near its design limit. Therefore, this option was not recommended.

3.5.3 Option 2

Option 2 is to build Thrumster WWTP to cater for the growth area and redirect several Port Macquarie Sewer Pump Stations (SPS) to reduce the load on Port Macquarie WWTP to under the design capacity and size the Thrumster WWTP accordingly.

The redirection of selected SPSs along with Thrumster area loads is assessed as being adequate to reduce the 2050 loading on the Port Macquarie WWTP to below its design capacity. This option allows the Port Macquarie WWTP to continue operating without needing a major capacity upgrade and therefore is likely more cost effective than Option 1. Redirection of pumping stations is technically straightforward and can be staged work depending on the design and construction timeframes for other elements of the project, which would still allow adequate reduction of loading on the Port Macquarie WWTP. Based on the above this option is recommended as the preferred option (PMHC, 2021).

3.5.4 Option 3

Option 3 is to redirect all sewerage to the new Thrumster WWTP, size accordingly and decommission the Port Macquarie WWTP.

The full redirection of all sewerage from Port Macquarie out to a new large WWTP at Thrumster and the decommissioning of the Port Macquarie WWTP may be a desired outcome given the location of the WWTP which has become relatively central to Port Macquarie with close proximity of residential properties. It may also be beneficial on a whole-of-life cost basis given the age of the Port Macquarie WWTP, however further detailed analysis of this option is required to determine if that is the case noting the likely significantly higher capital costs when compared to Options 1 and 2. Several parts of the Port Macquarie WWTP still have operational life, which would be lost if decommissioned thus adding to the whole of life cost of this option. Due to the immediate need to reduce the loads on the Port Macquarie WWTP the time needed for this detailed analysis cannot be afforded. It is also assessed that it would be challenging to construct a large pump station at the site and an associated rising main to redirect all sewerage out to Thrumster, while keeping the site operational. This option is therefore not recommended (PMHC, 2021).

3.5.5 Preferred option

The preferred option is to build the Thrumster WWTP and related infrastructure to cater for the Thrumster growth area and redirect a number of Port Macquarie SPSs. This would reduce the load on the Port Macquarie WWTP to under the design capacity and size the Thrumster WWTP accordingly. The location of the preferred option is shown in Figure 1.2.

The final concept design for the WWTP will be determined concurrently with the initial stages of the EIS for the project, which will occur once the Secretary's Environmental Assessment Requirements are issued. This design phase of the Environmental Impact Assessment (EIA) will inform the detailed siting and pipeline routes. The full nature and extent of the impacts of the project will then be assessed as part of the continuing EIA process.

4. Statutory context

The key requirements of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and the *Environmental Planning and Assessment Regulation 2021* in relation to the approval and assessment of the project are summarised in Table 4.1.

Table 4.1 Statutory requirements of the project

Matter	Guidance
Power to grant approval	The EP&A Act is the principal legislation regulating development in NSW. It establishes a regime for the making of development applications, assessment of their environmental impacts, and the determination of those applications. It also allows for the making of environmental planning instruments such as the state environmental planning policies and local environmental plans discussed below. Part 5, Division 5.2 of the EP&A Act provides for declaration, assessment and approval of State Significant Infrastructure (SSI) including Critical State Significant Infrastructure (CSSI). The project has been declared SSI under Part 5, Division 5.2 of the EP&A Act and will therefore be subject to the environmental assessment and approval process outlined above including the preparation of an environmental impact statement (EIS) for the project. The Minister for Planning (or delegate) would be the approval authority.
Permissibility	State Environmental Planning Policy (Planning Systems SEPP) provides for the declaration of State significant development and State significant infrastructure including Critical state significant infrastructure. Section 2.14 of the Planning Systems SEPP provides that development specified in Schedule 4 of the policy is SSI. In accordance with section 5.12(4) of the EP&A Act, specified development on specified land can be specifically declared SSI. The development has been declared SSI and may be carried out without consent under Part 4 of the EP&A Act.
Other approvals Consistent approvals	<u>Consistent approvals</u> Section 5.23 of the EP&A Act lists the approvals and legislation that does not apply to SSI projects. In relation to the project these authorisations could include: – A permit under section 201, 205 or 219 of the <i>Fisheries Management Act 1994</i> – An Aboriginal heritage impact permit under section 90 of the <i>National Parks and Wildlife Act 1974</i> – A water use approval under section 89, a water management work approval under section 90 or an activity approval (other than an aquifer interference approval) under section 91 of the <i>Water Management Act 2000</i> <u>Approvals that are not required for approved SSI</u> Section 5.24 lists the approvals and legislation that must be applied consistently to SSI projects. In relation to the project these authorisations could include: – An environment protection licence under Chapter 3 of the <i>Protection of the Environment Operations Act 1997</i> (for any of the purposes referred to in section 43 of that Act) – A consent under section 138 of the <i>Roads Act 1993</i>
Other applicable legislation	<u><i>Fisheries Management Act 1994</i></u> The objectives of the <i>Fisheries Management Act 1994</i> (FM Act) are to conserve, develop and share the fisheries resources of NSW for the benefit of present and future generations. Part 7 of the FM Act requires a permit for a number of activities, including dredging and reclamation work and those involving harm to marine vegetation. It should be noted that under the provisions of the EP&A Act, a permit under section 201, 205 or 219 of the FM Act is not required for SSI. <u><i>Protection of the Environment Operations Act 1997</i></u> The Protection of the Environment Operations Act 1997 (POEO Act) aims to protect, restore and enhance the quality of the environment. It prescribes offences mainly regarding pollution of the environment and establishes a regime for the licensing of certain scheduled activities. The POEO Act provides for an integrated system of licensing and contains a core list of activities in Schedule 1 which require an Environment Protection Licence (EPL). These activities are called 'scheduled activities' and are listed in Schedule 1 of the POEO Act. The facility is likely to trigger a need for a licence under Clause 36 of Schedule 1.

Matter	Guidance
	36 Sewage treatment – (1) <i>This clause applies to sewage treatment, meaning the operation of sewage treatment systems (including the treatment works, pumping stations, sewage overflow structures and the reticulation system) that involve the discharge or likely discharge of wastes or by-products to land or waters.</i> – (2) <i>The activity to which this clause applies is declared to be a scheduled activity if it has a processing capacity that exceeds—</i> – (a) <i>2,500 persons equivalent, as determined in accordance with guidelines established by an EPA Gazettal notice, or</i> – (b) <i>750 kilolitres per day, whichever is the greater.</i> Council currently holds five EPLs for its wastewater treatment plants operating in the LGA (EPLs No. 594, 589, 805, 804, 10339). The requirement for a new EPL for the project would be determined during the EIS process and in discussion with the EPA. Section 5.24 of the EP&A Act provides that an EPL cannot be refused if it is necessary for carrying out an approved SSI project and is consistent with the project approval. Early engagement with NSW EPA established that a new EPL would be required for the project covering both the treatment and discharge of treated effluent and recycled water production, distribution and reuse. It was noted the future EPL application may include requirements to demonstrate the adequacy of containment measures at site such as wet weather controls and sedimentation basins with baffles. Three effluent discharge points (and associated route options) are under investigation (refer to Section 6.2.6). Potential impacts on environmental factors will be considered during the EIS process. <u>Roads Act 1993</u> The <i>Roads Act 1993</i> (Roads Act) provides for the operation, maintenance and use of roadways in NSW including managing authorities, rites of passage and classification of roads. Section 138 of the Roads Act requires that a person must not carry out work in, on or over a public road or dig up or disturb the surface of a public road without the prior consent of the appropriate roads authority. <u>National Parks and Wildlife Act 1974</u> The <i>National Parks and Wildlife Act 1974</i> (NPW Act) provides for the protection of Aboriginal objects (sites, objects and cultural material) and Aboriginal places. It is an offence under Section 86 of the NPW Act to harm or desecrate an object the person knows is an Aboriginal object. It is also a strict liability offence to harm an Aboriginal object or harm or desecrate an Aboriginal place, whether knowingly or unknowingly. Section 87 of the NPW Act provides a series of defences against the offences listed in Section 86 which includes if the harm was authorised by and conducted in accordance with the requirements of an Aboriginal Heritage Impact Permit (AHIP) under Section 90 of the NPW Act. The project does not intersect with any National Park estate. The project traverses a range of land uses and ground disturbance levels with varying potential for heritage items (refer to Section 6.2.5). Potential impacts upon Aboriginal cultural heritage will be considered through preparation of an Aboriginal Cultural Heritage Assessment Report (ACHAR). Further, under section 5.23 of the EP&A Act, an AHIP permit under Section 90 of the NPW Act is not required for approved SSI. <u>Coastal Management Act 2016</u> The <i>Coastal Management Act 2016</i> (CM Act) establishes a strategic framework and objectives for managing coastal issues in New South Wales. The CM Act defines the coastal zone as four coastal management areas and establishes management objectives specific to each of these areas. As outlined in Section 1.1, the R&H SEPP aims to promote an integrated and co-ordinated approach to land use planning in the coastal zone in a manner consistent with the objectives of the CM Act. The study area traverses one of the four coastal management areas which is mapped as 'Coastal Wetlands' and proximity area to coastal wetlands. Potential impacts to this area would be considered during the EIS process. <u>Heritage Act 1977</u> The <i>Heritage Act 1977</i> (Heritage Act) is concerned with all aspects of heritage conservation ranging from basic protection against indiscriminate damage and demolition of buildings and sites, through to restoration and enhancement. Heritage places and items of particular importance to the people of NSW are listed on the State Heritage Register. An application for approval under Section 59, Part 4 of the Heritage Act is required for any direct impacts on an item on the register. An application for a permit from the

Matter	Guidance
	NSW Heritage Council under Section 139 of the Heritage Act is required to be made prior to disturbance or excavation likely to discover, expose, move, damage or destroy a relic. The potential for the project to impact a heritage item or relic is discussed in Section 6.3.4. Under section 5.23 of the EP&A Act, approval under Part 4 or an excavation permit under Section 139 of the Heritage Act is not required for approved SSI. <u>Crown Lands Management Act 2016</u> The <i>Crown Land Management Act 2016</i> (CLM Act) provides the legislative framework for the administration and management of Crown land. If the project would impact on Crown land, approval must be sought under the CLM Act. The project would directly impact on Crown land (Crown Reserve 'Port Macquarie Racecourse' and 'Rifle Range') (refer to Figure 1.2). The potential impact and associated approval would be considered during the EIS process.
Pre conditions and mandatory matters for consideration EP&A Act Objects	The objects of the EP&A Act are guiding principles that need to be considered by planning authorities when making decisions under the Act.
EP&A Act Div 5.2	Section 5.14 provides that the Ministers approval is required for SSI. Section 5.16 provides that the proponent must submit an EIS to meet the environmental assessment requirements in the form prescribed by the Minister
<i>Biodiversity Conservation Act 2016</i>	<u><i>Biodiversity Conservation Act 2016</i></u> Under Section 7.9 of the BC Act an application to carry out SSI, under the EP&A Act is to be accompanied by a Biodiversity Development Assessment Report (BDAR) unless the Planning Agency Head and the Environment Agency Head determine that the proposed development is not likely to have any significant impact on biodiversity values.
Environmental planning instruments	<u><i>State Environmental Planning Policy (Planning Systems) 2021</i></u> State Environmental Planning Policy (Planning Systems SEPP) provides for the declaration of State significant development and State significant infrastructure including Critical state significant infrastructure. Clause 2.14 of the Planning Systems SEPP provides that development specified in Schedule 4 of the policy is SSI. In accordance with section 5.12(4) of the EP&A Act, specified development on specified land can be specifically declared SSI. The development has been declared SSI and may be carried out without consent under Part 4 of the EP&A Act. <u><i>State Environmental Planning Policy (Resilience and Hazards) 2021</i></u> The R&H SEPP sets the regulatory framework for coastal management, hazardous and offensive development, and remediation of land within NSW. <u>Chapter 2 – Coastal management</u> The R&H SEPP aims to promote an integrated and co-ordinated approach to land use planning in the coastal zone in a manner consistent with the objectives of the Coastal Management Act 2016. The objectives of the R&H SEPP are to manage development in the coastal zone and establish a framework for land use planning and decision making in the coastal zone. The project intersects with areas mapped as 'Coastal Wetlands' and 'land in the proximity area to coastal wetlands' under Chapter 2 of the R&H SEPP (refer to Figure 6.1). The potential impacts of the project on the coastal environment will be considered when assessing the potential project impacts in the EIS. <u>Chapter 3 – Hazardous and offensive development</u> Chapter 3 aims to regulate, amongst other matters, the determination of development applications to carry out development for the purposes of a potentially hazardous industry or potentially offensive industry. Hazard and risk is discussed in Section 6.2.7 of this report, as well as how it would be addressed in the EIS. <u>Chapter 4 – Remediation of land</u> Chapter 4 aims to promote the remediation of contaminated land for the purpose of reducing the risk of harm to human health or any other aspect of the environment and provide a state-wide planning approach to the remediation of contaminated land. There are 11 contaminated sites currently notified to the NSW EPA in the Port Macquarie-Hastings LGA and further discussion is in Section 6.2.3. <u><i>State Environmental Planning Policy (Transport and Infrastructure) 2021</i></u> State Environmental Planning Policy (Transport and Infrastructure) 2021 (Transport and Infrastructure SEPP) aims to facilitate the effective delivery of infrastructure across the State.

Matter	Guidance
	Section 2.126(2) of the Transport and Infrastructure SEPP provides that development for the purpose of sewage treatment plants may be carried out by or on behalf of a public authority without consent on land in any of the following land use zones: – RU1 Primary Production – RU2 Rural Landscape – RU4 Primary Production Small Lots – IN1 General Industrial – IN3 Heavy Industrial – SP1 Special Activities – SP2 Infrastructure The WWTP is located in RU1 zone which is a prescribed zone. Therefore, in accordance with section 2.126(2), the proposed WWTP would be permitted without consent in accordance with the Transport and Infrastructure SEPP. Section 2.126(6) of the Transport and Infrastructure SEPP provides that development for the purpose of sewage reticulation systems may be carried out by a public authority without consent on any land. Therefore, in accordance with section 2.126(6), the proposed reticulation system would be permitted without consent in accordance with the Transport and Infrastructure SEPP. The exception arises for a section of the pipeline which traverses coastal wetlands under Chapter 2 of the R&H SEPP where development consent would typically be required. However, the project has been declared SSI as specified development on specified land pursuant to section 2.14 and Schedule 4 of the Planning System SEPP and therefore may be undertaken without development consent in accordance with section 5.12(4) of the EP&A Act. However, the project has been specifically declared SSI in accordance with the Planning System SEPP and may be undertaken without development consent in accordance with section 5.12(4) of the EP&A Act. <u>Port Macquarie-Hastings Local Environment Plan 2011</u> Port Macquarie-Hastings Local Environmental Plan 2011 (LEP 2011) sets out the environmental planning provisions administered by Port-Macquarie-Hastings Council within the Port-Macquarie-Hastings LGA. The following outlines the projects' land zoning and permissibility in accordance with the LEP 2011. The proposed WWTP (Lot 14, DP1139180) would be located on land zoned RU1 Primary Production. Wastewater treatment plants are prohibited in their current zone under the LEP 2011. The sewer rising main would be located on land zoned: – RU1 Primary Production – R1 General Residential – R2 Low Density Residential – B5 Business Development – B7 Business Park – SP2 Infrastructure – RE1 Public Recreation – RE2 Private Recreation – C2 Environmental Conservation – C4 Environmental Living The recycled water mains would be located on land zoned: – RU1 Primary Production – R1 General Residential – R5 Large Lot Residential – C2 Environmental Conservation – C3 Environmental Management

Matter	Guidance
	Apart from SP2, the current land zoning prohibits development for the sewer rising main and recycled water mains under LEP 2011. However, the project has been specifically declared SSI and may be undertaken without development consent in accordance with section 5.12(4) of the EP&A Act. It However, it is noted that section 5.22(2) of the EP&A Act provides that environmental planning instruments do not apply to or in respect of State significant infrastructure.

4.1 Environment Protection and Biodiversity Conservation Act 1999

The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is administered by the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) and provides a legal framework to protect and manage nationally important flora, fauna, ecological communities and heritage places defined as matters of national environmental significance (MNES). Part 9 of the EPBC Act provides that an action that has, will have or is likely to have a significant impact on MNES may not be undertaken without prior approval from the Commonwealth Environment Minister. Approval under the EPBC Act is also required for actions carried out by Commonwealth agencies or impacting on Commonwealth land.

A search using the Protected Matters Search Tool (PMST) with a 10 km buffer from the project was undertaken on 05 August 2022. Table 4.2 provides a summary of the results.

An assessment of whether the project will have a significant impact on these MNES will be undertaken as part of the environmental assessment process, however, based on this review of MNES in proximity to the project, a referral to DCCEEW under the EPBC Act is not considered necessary.

Table 4.2 EPBC protected matters search results

Protected matter	Matter located within search radius	Comments	Potential impact
Matters of national environmental significance			
World Heritage Property	None	N/A	N/A
National Heritage Places	None	N/A	N/A
Wetlands of International Importance	None	N/A	N/A
Great Barrier Reef Marine Park	None	N/A	N/A
Commonwealth Marine Areas	1	No impact expected from project	
Threatened Ecological Communities	5	Discussed further in Section 6.2.1	
Threatened Species	87	Discussed further in Section 6.2.1	
Migratory species	73	Discussed further in Section 6.2.1	
Other matters			
Commonwealth Land	15	None occurring on site	N/A
Commonwealth Heritage Places	None	N/A	N/A
Marine Species	105	Discussed further in Section 6.2.1	
Whales and Other Cetaceans	14	Discussed further in Section 6.2.1	
Critical Habitats	None	N/A	N/A
Commonwealth Reserves Terrestrial	None	N/A	N/A
Australian Marine Parks	None	N/A	N/A

The project is located in close proximity to habitat for Commonwealth listed Threatened Ecological Communities, Threatened Species and Migratory species. If initial biodiversity investigations indicate a potential to impact upon a MNES, then a Referral to the Commonwealth Minister for the Environment will be undertaken. If the project is deemed a controlled action by the Minister, it is assumed biodiversity-related MNES will be assessed as part of the NSW Biodiversity Assessment (BDAR) under the Amended Assessment Bilateral Agreement between NSW and the Commonwealth.

4.2 Confirmation of approval pathway

The project has been declared SSI under section 5.12 of the EP&A Act. The project is to be assessed in accordance with the provisions of Division 5.2 of the EP&A Act.

The Minister for Planning (or delegate) is the consent authority for SSI projects in NSW. The process for environmental assessment and approval of SSI is set out as follows:

- Application for approval of the Minister to carry out development
- Development of Planning SEARs
- Preparation of an EIS
- Public exhibition of the EIS
- Response to submission(s) received during public exhibition of the EIS
- Preparation of Planning Secretary's Assessment Report
- Determination regarding the development by the Minister

In accordance with section 5.17 of the EP&A Act, applications for SSI must be accompanied by an EIS.

5. Stakeholder engagement

5.1 Consultation undertaken to date

To date, engagement with key stakeholders and the community has included:

- Development of stakeholder register including all relevant sporting clubs, organisations, residents, and businesses.
- Creation of a project webpage (Thrumster Sewer Scheme Port Macquarie Hastings Council (nsw.gov.au)) for stakeholders to refer to for general project information.
- Consultation with Port Macquarie Race Club, Hastings Regional Shooting Complex and Port Macquarie Radio Control Car Club regarding potential location of mains within/near their property.
- Inception meetings and engagement of all relevant internal stakeholders in Council.
- Engagement with DPE and NSW EPA to provide an overview of the project and identify designated personnel for liaison associated with the project.
- Engagement with Oyster Farmers and North-side progress association regarding wastewater treatment plant discharge locations and potential impacts on the Hastings River estuary.
- Engagement with EPA, DPI, DPE regarding water quality modelling, environmental and ecological assessment, and discharge assessment.
- Liaison with Local Aboriginal Land Council (LALC) to share project information undertaken by Community Inclusion Team Leader.
- Development of an Expression of Interest for potential reuse of effluent and bio solids on agricultural land located in Thrumster, Fernbank Creek, and Greater Sancroix areas.

Identification and consultation with landowners who will be directly affected by the project has been undertaken. No objection to the scheme has been made. Requests for more information regarding project route and infrastructure along the pipeline route were made. The community is generally supportive of the project.

Consultation with relevant government agencies, authorities and non-government stakeholders has commenced and would continue during preparation of the EIS and for the duration of the project.

External stakeholders identified who have been contacted for the project include:

- Adjacent landowners
- General community
- Oyster Farmers and North-side progress association
- Forestry Corporation of NSW
- NPWS
- DPE
- EPA
- Port Macquarie Racecourse
- Essential Energy
- LALC
- NBN Co

Internal Council stakeholders have also been engaged and consulted.

5.2 Consultation to be undertaken during the EIS

As the project progresses, we will continue to engage with the community and stakeholders in accordance with a project specific engagement plan prepared by Council. This will include:

- Updating the project webpage when required to reflect project progress or include other important information.
- Updating our stakeholder register with any identified residents, businesses or organisations.

- Engagement of relevant stakeholders once further information on the project is available. Consultation methodologies may include:
 - Individual stakeholder briefings
 - Communications through existing Council forums and community updates
 - News and social media
 - Public exhibitions and briefings
 - Contacting relevant stakeholders throughout the project when necessary, regarding the project and construction (e.g. milestones, impacts, etc.)
 - Consultation with the landowners would be undertaken as the project progresses through concept and detail design stages and more information is made available
 - Consultation with the Aboriginal community in accordance with the Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW, 2010a)

Details of the consultation activities in relation to the project will be detailed in the EIS. The outcomes of these consultation activities will be summarised and the issues or questions raised by stakeholders identified and addressed accordingly.

Other stakeholders would be identified during the EIS process and added to the communications and engagement plan as necessary, including:

- Department of Industry - Lands
- Department of Primary Industries – Fisheries and Water
- Office of Environment and Heritage
- NSW Environment Protection Authority
- Transport for NSW
- SafeWork NSW
- NSW Safe Food
- Oyster Farms
- Air Services Australia
- Port Macquarie Airport
- Community environment groups

6. Proposed assessment of impacts

6.1 Overview

The identification of issues to be addressed in the EIS has been undertaken through a risk based and consultative approach in accordance with the *State significant infrastructure guidelines – preparing a scoping report* (DPIE, 2021). Key potential issues are those environmental aspects that will require project specific assessments to assess the potential impacts and develop measures to avoid, mitigate and/or offset those impacts, where necessary. The key assessment issues were identified with consideration of a range of factors including:

- The existing environmental context of the project and its surrounding locality (see Section 1).
- The proposed project activities (see Section 3).
- The regulatory framework applicable to the project (see Section 4).
- The outcomes of consultation undertaken with the community and other relevant stakeholders (see Section 5).
- The project team’s experience from previous environmental approvals for projects in NSW with a particular focus on experience with local government and wastewater infrastructure projects.

Key issues and the proposed level and scope of assessments were documented using DPE’s Scoping Worksheet, a copy of which is provided in Appendix C. In accordance with the Scoping Worksheet, each issue has been categorised as either a ‘Key’ issue, ‘Other’ issue, or ‘Scoping only’ issue. Further details regarding the identified issues and the proposed level and scope of assessment are presented in the following sections. Figure 6.1, Figure 6.2 and Figure 6.3 present preliminary constraints maps for the project.

6.2 Key issues

6.2.1 Biodiversity

Existing environment

The study area is located in a modified environment with a moderate level of urban development. The NSW Vegetation Type Map (SVTM) suggests exotic vegetation is the dominant community within the study area (33.31 ha; DPE, 2022a). Despite this, a large extent of native remnant vegetation is present in the study area and broader locality, occurring as a disjunct mosaic of residential, agricultural and commercial land as well as roads and infrastructure (Figure 1.2). The proposed footprint of the facility occurs within low-lying wetland vegetation in an urbanised setting (refer Figure 6.1). It adjoins onto a greater expanse of wetland vegetation associated with the Port Macquarie Airport and more broadly, the Hastings River, which occurs to the north of the study area. In addition to the facility footprint, the project requires the installation of pipelines to the east of the Pacific Highway that will intersect Partridge Creek and additional wetland habitats that may represent habitat for a variety of threatened and migratory species that occur in the locality. The project footprint has been designed to follow existing easements and cleared land, where practical, to avoid areas of high ecological value and potentially sensitive native vegetation/communities in the locality. Despite this, potential impacts to biodiversity are considered likely which may trigger an EPBC referral and potential offsetting requirements. There is also the potential risk of indirect impacts to native flora and fauna, which will require consideration.

The NSW SVTM identified 16 PCTs within the study area, the most extensive being *PCT 3959: Coast Sands Baumea articulata Sedgeland* (Table 6.1). This community is described as a very tall freshwater wetland dominated by *Baumea articulata*¹ (Jointed Twig-rush) that occurs on coastal sand deposits (DPE, 2022b). A sparse canopy of *Melaleuca quinquenervia* (Broad-leaved Paperbark) may also be present. This community is associated with the Endangered Ecological Community (EEC), Sydney Freshwater Wetlands in the Sydney Basin Bioregion under the BC Act, (Table 6.1; DPE, 2020b). The study area occurs within the NSW North Coast bioregion, outside of the accepted range of this community. Despite this, several other Threatened Ecological Communities (TECs) have the potential to occur within the study area. Seven (7) of the PCTs mapped within the study area are associated with a TEC listed under the BC Act (Table 6.1).

¹ The genus name has been changed to *Machaerina*, however as the Plant Community name (*PCT 3959: Coast Sands Baumea articulata Sedgeland*) has not changed, the name here has been kept as *Baumea* to avoid confusion.

A comprehensive list of PCTs and TECs predicted to occur within the study area is provided in Table 6.1.

Table 6.1 *Plant Community Types mapped within the study area, and their associated TECs as per the NSW Vegetation Identification System (DPE, 2022a)*

Plant Community Type	Area (ha) within Study area	Associated TECs (DPE, 2022b)
<i>PCT 3959: Coast Sands Baumea articulata Sedgeland</i>	6.81	<i>Sydney Freshwater Wetlands in the Sydney Basin Bioregion</i> EEC – BC Act
<i>PCT 3166: Northern Escarpment Brush Box-Tallowwood-Maple Wet Forest</i>	6.19	-
<i>PCT 3549: Lower North Sandplain Heathy Forest</i>	3.57	-
<i>PCT 3913: Northern Sandplain Wet Heath</i>	3.31	-
<i>PCT 3250: Northern Foothills Blackbutt Grassy Forest</i>	3.27	-
<i>PCT 4048: Northern Swamp Oak-Paperbark Forest</i>	1.41	Swamp Oak Floodplain Forest of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions EEC – BC Act Coastal Swamp Oak (<i>Casuarina glauca</i>) Forest of New South Wales and South East Queensland EEC – EPBC Act
<i>PCT 4047: Northern Swamp Mahogany-Bottlebrush Swamp Forest</i>	1.16	<i>Swamp Sclerophyll Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions</i> EEC – BC Act
<i>PCT 3160: Lower North Turpentine-Tallowwood-Grey Gum Forest</i>	0.88	-
<i>PCT 4004: Northern Melaleuca quinquenervia Swamp Forest</i>	0.66	-
<i>PCT 4008: Northern Sands Swamp Mahogany Shrubby Rush Forest</i>	0.63	-
<i>PCT 3906: Northern Lowland Clay Wet Heath</i>	0.62	<i>Swamp Sclerophyll Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions</i> EEC – BC Act
<i>PCT 3548: Far North Sands Scribbly Gum Heathy Forest</i>	0.52	-
<i>PCT 4006: Northern Paperbark-Swamp Mahogany Saw-sedge Forest</i>	0.52	<i>Swamp Sclerophyll Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions</i> EEC – BC Act
<i>PCT 3961: Coast Sands Lepironia Sedgeland</i>	0.26	<i>Sydney Freshwater Wetlands in the Sydney Basin Bioregion</i> EEC – BC Act
<i>PCT 3544: Coastal Sands Apple-Blackbutt Forest</i>	0.18	-
<i>PCT 3971: Northern Sandy Floodplain Sedge Paperbark Wetland</i>	0.15	<i>Freshwater Wetlands on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions</i> EEC – BC Act

A single threatened flora species has been previously recorded within the study area and is considered to have a high likelihood of occurrence (DPE, 2022b):

- *Allocasuarina defungens* (Dwarf Heath Casuarina) – Endangered, BC Act, EPBC Act: The species is associated with sandy soils that support heathland (DPE, 2022c)

Terrestrial fauna habitats within the study area include tall woodlands, wetlands, rainforests and disturbed land with limited native vegetation. The study area is located within the known distribution of a local population of *Phascolarctos cinereus* (Koala). The service line footprint is likely to impact native vegetation identified as 'Core Koala Habitat' under the Port Macquarie-Hastings Thrumster (Area 13) Koala Plan of Management (KPoM; DPE, 2022d). As such, the project may have to be assessed against the development standards and assessment criteria within Part 6 the KPoM (Council, 2008). Additionally, the study area intersects Swift Parrot (*Lathamus discolor*) 'Important Area' mapping listed under the BC Act which, if impacted, may require further consideration in future assessments (DPE, 2022e). The extent of impacts on threatened species has not yet been quantified, however the EIS will consider potential areas of habitat sensitivity and how the project has sought to minimise impacts.

A comprehensive list of threatened flora and fauna species recorded in the locality is provided in Appendix A. Additionally, a list of species predicted to occur in the locality is provided in Appendix B.

The study area intersects Partridge Creek, a 2nd order waterway that is mapped as Key Fish Habitat, as well as several other unnamed waterways (DPI, 2022). No threatened freshwater species are mapped within the study area, however, the Southern Purple Spotted Gudgeon (*Mogurnda adspersa*), listed as Endangered in NSW, is mapped in an unnamed creek to the far south-west of the study area (DPI, 2022). This species is associated with slow-flowing rivers and creeks with an abundance of emergent vegetation (DPI, 2017). Partridge Creek, and other waterways that intersect the study area, have the potential to represent suitable habitat for the Southern Purple Spotted Gudgeon, despite the species having not been mapped.

Additionally, the study area traverses areas that are mapped as 'Coastal Wetlands' and 'land in close proximity to coastal wetlands' under Chapter 2 of the R&H SEPP meaning that certain assessment criteria will need to be considered at the EIS stage to ensure the project is consistent with the objectives for the relevant coastal area (DPI, 2022).

Biocertification Area

The 'Biodiversity Certification of Land: Port Macquarie Airport and surrounding lands under Part 7AA of the *Threatened Species Conservation Act 1995*' applies to land within and immediately adjoining the study area for the project (the 'PMA biocertification area'). In August 2018 the NSW Minister for the Environment conferred biodiversity certification on the proposed PMA biocertification area based on an assessment of biodiversity impacts arising from future developments along with recognised conservation measures on the Council-owned land to 'improve or maintain' overall biodiversity values.

The land within the PMA biocertification area which was identified for future development and has been biodiversity certified does not require additional assessment, approval or provision of biodiversity offsets under the BC Act.

Conservation measures proposed include the secure protection of land as a Biodiversity Stewardship Site (BSS) under a Biodiversity Stewardship Agreement (BSA) to generate biodiversity credits to offset impacts of future development of the PMA biocertification area. Other land would be managed as native vegetation without secure protection under a BSA or retained as open space as part of the mix of land uses proposed for the PMA biocertification area. A BSA prohibits most development and any other activities that may adversely affect the biodiversity values protected under the BSA. Detailed design of the project would include consideration of the BSS boundary within the land proposed for conservation measures in the PMA biocertification area and exclude development impacts from this area as far as possible.

Issues for consideration

Construction

Construction associated with the project may impact on biota of conservation significance within, and adjacent to, the study area. Direct impacts may include:

- Removal or disturbance of threatened ecological communities
- Removal of potential or known habitat for threatened flora species
- Removal of potential or known habitat for threatened fauna species
- Removal of potential or known marginal foraging habitat for migratory species
- Removal of known wetland mapped under the R&H SEPP

Indirect and prescribed impacts may include:

- Sedimentation and erosion impacts on downstream aquatic environments
- Pollution of aquatic habitats resulting in reduced habitat conditions for vegetation and downstream aquatic habitats
- Introduction or spread of weeds leading to a decrease in diversity of flora and decline in the quality of fauna habitat
- Edge effects and fragmentation of fauna movement corridors as a result of vegetation removal
- Introduction of pathogens such as phytophthora (*Phytophthora cinnamomi*), myrtle rust (*Uredo rangelii*) and chytrid fungus (*Batrachochytrium dendrobatidis*) throughout the study area through vegetation disturbance and increased visitation
- Noise and vibration impacts on fauna
- Light spill impacts on fauna

Operation

The main potential for impacts during the operation phase of the project includes:

- Shading impacts from the addition of physical structures associated with the facility, which may impact native vegetation
- Impacts to fauna including:
 - Light spill impacts from the operation of infrastructure
 - Noise pollution reducing the habitat potential of surrounding vegetation
 - Nutrient / chemical spills into adjacent waterbodies

Proposed method of assessment

As the project will be assessed as SSI a BDAR will be prepared by an accredited Biodiversity Assessment Method (BAM) assessor in accordance with the BAM (DPIE 2020a) and with reference to the following guidelines and standards:

- *Guidance for the Biodiversity Development Assessment Report Template, References for requirements* (DPE 2022f)
- *Surveying threatened plants and their habitats – NSW survey guide for the Biodiversity Assessment Method* (DPIE, 2020b)
- *NSW survey guide for threatened frogs – A guide to the survey of threatened frogs and their habitats for the Biodiversity Assessment Method* (DPIE 2020c)
- *Survey guidelines for Australia's threatened bats – Guidelines for detecting bats listed as threatened under the Environmental Protection and Biodiversity Conservation Act 1999* (Department of the Environment, Water, Heritage and the Arts (former), DEWHA 2010)
- *"Species credit" threatened bats and their habitats – NSW survey guide for the Biodiversity Assessment Method* (OEH 2018)
- *Policy and Guidelines for Fish Habitat Conservation and Management – Update 2013* (DPI 2013)

- *National Light Pollution Guidelines for Wildlife including Marine Turtles. Seabirds and Migratory Shorebirds* (Department of the Environment and Energy Commonwealth of Australia, 2020)
- *Matters of National Environmental Significance Significant impact guidelines 1.1 Environment Protection and Biodiversity Conservation Act 1999* (DotE 2013)

The BDAR will include:

- A desktop assessment of biodiversity databases and other resources to confirm the suite of threatened biota and other values that could be affected by the project.
- A detailed survey and assessment of native vegetation and habitat, including fine scale mapping of PCTs and sampling of BAM vegetation integrity plots.
- Targeted surveys for threatened flora and fauna species including seasonal surveys for species credit matters such as e.g., stag watching for threatened owl species between July-August and parallel transverses for threatened flora, with a focus in the flowering months of spring.
- Confirmation of the conservation significance of the study area, including the presence of any threatened biota and matters of national environmental significance and their habitats.
- Identification and assessment potential serious and irreversible impacts (SAII) entities including Swift Parrot important areas.
- Proposed measures to avoid and mitigate impacts including a clear description of how measures to avoid impacts to biodiversity values have been incorporated in the project design and planning process.
- Assessment of direct and indirect construction, operational and cumulative impacts.
- Assessment of prescribed impacts, such as impacts on the connectivity of Koala and migratory bird movement corridors, and impacts on fauna from vehicle strike.
- BAM credit calculations to determine the biodiversity offset required for any residual impacts that cannot be avoided.
- Identification of options and a strategy for the delivery of the required offsets as required.

Impacts on ecological matters of national environmental significance (MNES) will also be assessed pursuant to the requirements of the EPBC Act. If a significant impact on MNES is likely, a Referral to the Commonwealth Minister for the Environment will be required. If the Project is deemed a controlled action by the Minister, it is assumed biodiversity-related MNES will be assessed as part of the NSW BDAR under the Amended Assessment Bilateral Agreement between NSW and the Commonwealth.

As described above, the PMA biocertification area includes land within and immediately adjoining the study area for the project. The land within the PMA biocertification area which was identified for future development and has been biodiversity certified does not require assessment, approval or provision of biodiversity offsets under the BC Act. The EIS for the project will identify the area of land that has been biodiversity certified and exclude any development footprints over this land and associated biodiversity values from the BAM impact assessment and offset calculations in the BDAR.

The conservation measures proposed for the PMA biocertification area include a BSA and so detailed design of the wastewater pipeline routes and other project elements would include consideration of the BSS boundary and exclude development impacts as far as possible. If it is not possible to exclude all development from the BSS, then additional assessment and approval would be required pursuant to section 5.16 of the BC Act.

6.2.2 Hydrology and surface water quality

Existing environment

The WWTP site and the southern pipeline is located on flat ground that drains northward towards the Hastings River. Partridge Creek is the nearest waterway to the site and at its closest point is about 150 metres from the eastern WWTP boundary. Fernbank Creek is about 400 metres north west of the site also draining north to Hastings River. The eastern pipeline would also cross another unnamed ephemeral drainage line that travels through developed and cleared land including Port Macquarie Airport.

Flooding

The proposed WWTP site and parts of the pipeline route is within the 100-year Annual Exceedance Probability flood risk mapping identified by the Council's 2012 Floodplain Risk Management Study for the Hastings River. (Refer Figure 6.2). Flood planning levels identified in the PMHC Flood Policy 2018 will be adopted to set proposed ground levels for WWTP infrastructure.

Coastal wetlands and associated areas have been considered in Section 6.2.1, and acid sulfate soils have been considered in Section 6.2.3.

Issues for consideration

Construction

Construction activities at all locations have the potential to generate sediment where erosion control is not implemented. Works near or within waterways and drainage lines therefore have the potential to cause sedimentation and higher turbidity in downstream water bodies.

The potential for soil disturbance to impact upon the receiving waters including Partridge Creek and Fernbank Creek and mapped coastal wetland areas would be considered in the assessment.

The assessment would consider potential risks to water quality associated with acid sulfate soils where there is the potential for impacts on downstream flora and aquatic fauna. Further discussion is in Section 6.2.3.

Surface water hydrology has the potential to be impacted where pipeline crossings are proposed within waterways where flow paths are not reinstated or are altered. Potential impacts also include risks to surface water quality due to spills.

Operation

Ongoing impacts to hydrological regimes, flooding and water quality would be considered (including stormwater, groundwater and flooding) resulting from the new structures, and the potential for impacts of flooding on the surrounding land use.

Any recycled water from the WWTP in excess of the reuse requirements would be discharged at one of the three locations currently under investigation (refer Figure 1.3). Impacts to the estuary/marine environment, or potential for human health impacts will be assessed and modelled as part of the EIS.

Potential changes to flood levels and velocity on the surrounding floodplain will be considered together with site access and egress requirements during a flood event.

Risks to surface water, soil and groundwater and water quality impact on Partridge and Fernbank Creeks associated with loss of containment during commissioning and operation would require assessment and establishment of mitigation measures.

Operational impacts may arise from spill or misuse of water treatment chemicals if not stored or used correctly. There would be no ongoing active disturbance of waterways and all site activities would be guided by operational policies to avoid, mitigate and manage any potential impacts that may arise from e.g. temporary site works. Treated water from the WWTP is intended for further treatment for inclusion in the Thrumster recycled water scheme.

Council is considering the beneficial reuse of adequately treated wastewater for environmental management at water-dependent sites in the vicinity of the WWTP. Environmental end uses under preliminary consideration include:

- Floodplain restoration at Partridge Creek
- Acid sulfate soil management
- Prevention of bushfire hazard and ecosystem protection

Proposed method of assessment

A surface water impact assessment (SWIA) would be undertaken for inclusion in the EIS and include an assessment of:

- Flooding and potential changes to flooding as a result of the project and the potential impact of flooding on the project with reference to the latest 2021 flood modelling and records from recent floods
- Potential impact to waterways as a result of construction including details of construction methodologies when in close proximity to, or within, waterways
- Management of treated wastewater

An assessment of the risks and benefits of the use of adequately treated wastewater for environmental management would also be undertaken.

Investigations required to assess potential impacts of the project with regard to aquatic ecology are discussed in Section 6.2.1.

6.2.3 Soil and groundwater management

Existing environment

Acid sulfate soils

Acid sulfate soils class 2, 3 and 5 are mapped within the project area. Class 3 soils generally underlie the proposed WWTP footprint. Class 2 soils are located within the path of proposed pipeline routes up to about 600 metres from the WWTP. Council has previously conducted soil testing in this area. The remainder of the proposed pipeline route east of the WWTP is mostly located on Class 5 soils (refer Figure 6.3).

Naturally occurring asbestos

The WWTP site is not in an area where the underlying geological units support soils with asbestos potential. Pipeline routes may pass through areas where the underlying geological units support soils with low asbestos potential.

Soil mapping of the project area (by the Department of Regional NSW Division of Resources and Geoscience, accessed July 2022) shows that part of the proposed pipeline route may be adjacent to or overlie part of a geological unit with a low potential for naturally occurring asbestos (refer Figure 6.3).

Contaminated sites

The NSW EPA database list of Notified and In Progress Sites identified under the CLM Act, and any sites for which notices under Section 91 of the CLM Act have been issued, was checked on 7 August 2022. The area of Port Macquarie returned 11 notified and in progress sites with the potential to be in the vicinity of the project. These are listed in Table 6.2. There are six sites issued with a Section 91 Clean Up notice in the Port Macquarie-Hastings LGA.

Table 6.2 Contaminated sites in Port Macquarie

Contaminated site	Location	Proximity to study area
Former Mobil Depot	211 Lake Road	Approx. 500 m study area. No impact.
Caltex Service Station	112-114 Gordon Street	Greater than 1 km from study area. No impact.
Caltex Port Macquarie Service Station	29 Lord Street	Greater than 1 km from study area. No impact.
Coles Myer	43 John Oxley Drive	Located within study area, however direct impacts could be avoided. To be confirmed during EIS process.
Air BP Avgas Facility	Oliver Drive	Approx. 200 m from the study area. No direct impacts anticipated. To be confirmed during EIS process.
Former Mobil Service Station	Corner Oxley Highway and Major Innes Drive	Located within study area, however direct impacts could be avoided. To be confirmed during EIS process.
Port Macquarie Council Depot	Koala Street	Greater than 1km from study area. No impact.

Contaminated site	Location	Proximity to study area
Shell Coles Express Port Macquarie Service Station	121 Gordon Street	Greater than 1 km from study area. No impact.
Caltex Service Station	92 Hastings River Drive	Approx. 500m study area. No impact.
Caltex Service Station	12-14 Bolwarra Road	Approx. 500m study area. No impact.
Car park	28 Hayward Street	Greater than 1 km from study area. No impact.

Groundwater

A 2017-2018 study for Port Macquarie Airport measured groundwater levels at three monitoring wells on the airport site. Water levels at that time found that levels ranged from approximately 1.5 metres below ground surface to level with ground.

There are five existing groundwater licences in the locality near the study area. These are placed within groundwater sources identified as 031 Hastings River Alluvium and 030 Hastings Coastal Sands (Department of Natural Resources, 2006). An additional search of groundwater bores for a range of uses in the locality and in the vicinity of the study area showed:

- About 20 water supply bores
- Up to about ten bores identified as commercial and industrial
- Five to ten irrigation bores
- Less than 5 stock and domestic use bores
- Two groundwater monitoring bores located down-gradient from the site
- Two bores used for dewatering and an unknown use in the eastern extent of the project area

Issues for consideration

Construction

Soil disturbance arising from subsurface work, clearing and vehicle movement have the potential to generate onsite and off-site impacts. Works that may generate impacts due to mobilisation of soil, without management measures, include excavations of building footings and installation of utility connections and pipelines where trenching or stabilisation is required.

Groundwater aquifers and depth will be investigated during the EIS to assess potential impacts to groundwater users and receiving environments.

Operation

Following completion of construction and soil stabilisation, no further disturbance or potential impacts on soil or groundwater are expected as a result of the project's operation.

As stated in Section 6.2.2, Council is considering the beneficial reuse of adequately treated wastewater for environmental management at water-dependent sites in the vicinity of the WWTP. Environmental end uses under preliminary consideration include restoration of Partridge creek wetland and its function as a polishing wetland and the use of water to assist in managing local acid sulfate soil conditions.

Proposed method of assessment

A detailed soil and groundwater assessment would be undertaken within the proposed WWTP footprint and proposed pipeline routes, with a buffer zone and considering alternative routing options where possible. The outcomes of the assessment will determine the approach taken for avoidance, mitigation and management of the risks associated with disturbance of acid sulfate soils in accordance with the Acid Sulfate Soils Manual and other technical guidance, and for soils with the potential identified for naturally occurring asbestos. Existing Council management plans, such as the Acid Sulfate Soil Management Plan for Pipe Infrastructure Installations, would be reviewed.

Potential impacts to groundwater bores and groundwater licences from potential localised drawdown (outside of acid sulfate soil affected areas) would be assessed.

An assessment of the risks and benefits of the use of adequately treated wastewater for environmental management including acid sulfate soils management would also be undertaken.

Locations of notified and regulated contaminated sites would be reviewed and checked against the indicative pipeline routes. A Phase 1 contamination assessment would be included with the soil and groundwater assessment in order to identify, avoid and minimise risks and potential impacts.

6.2.4 Odour and air quality

Existing environment

The existing environment around the proposed WWTP is largely undisturbed land as a mix of rural and forested catchments, as well as Port Macquarie Airport. The main anthropogenic source of air quality impacts is the Airport. Natural attenuators of air quality include the sea breeze which typically arises in the afternoon.

Local meteorological data was obtained from the Port Macquarie Airport AWS Station (Site number 060139) located in Port Macquarie (BoM, 2022). This station was closed on 17 March 2022 however as data is recent it has been used for this report. Mean monthly maximum temperatures range between 19 °C in July to 27.9 °C in January. Mean monthly minimum temperatures range between 6.4 °C in July to 18.6 °C in February. Autumn and spring are generally cool with sporadic temperature fluctuations.

Mean monthly rainfall in the area ranges between 57.2 millimetres (mm) in September to 197 mm in March, with most of the mean annual 1408 mm of rainfall occurring between November and April. Mean 9:00 am wind speeds in the area ranges between 14.7 kilometres per hour (km/h) in October to 11.5 km/h in March, and 3:00 pm wind speeds between 22.5 km/h in November to 14.9 km/h in June.

The nearest sensitive receivers to the WWTP are rural residences located approximately 500 metres north west of the site and Port Macquarie Airport about 1.2 km east of the site.

Issues for consideration

Construction

Soil disturbance leading to temporary dust generation, and construction vehicle emissions across impact areas.

Operation

The main operational air quality impact as a result of the project is odour (for example from biosolids handling, air valves and vent stacks on the proposed sewer rising mains). In addition, there would be ongoing emissions from treatment processes at the WWTP and rising mains. Odour impacts related to rising mains are considered to be negligible.

Proposed method of assessment

Construction

Construction impacts on air quality will consist of a qualitative assessment as potential impacts and mitigation measures are well understood and routinely used on similar projects.

Operation

An operational air quality impact assessment in accordance with the Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (EPA, 2016) will be undertaken as part of the EIS to assess potential impacts on nearby sensitive receptors. Key air quality issues will be identified including dust, odour and other relevant air quality characteristics. Following data collection and review of expected project emissions based on similar WWTPs, an odour model will be developed for the WWTP site. Odour emission from the air valves on the rising mains will be assessed. Appropriate odour guidelines will be established to assess outputs from the odour model. The potential for cumulative impacts and their nature will be analysed in accordance with approved methods. The results will be compiled into an air quality impact assessment report.

The assessment will include:

- Review of project information related to sources of air emissions accounting for construction and operation
- Defining the existing air quality environment at the site, including the identification of sensitive receivers
- Identification of all likely sources of odour
- Quantification of potential impacts
- Recommend appropriate mitigation and management measures

6.2.5 Aboriginal cultural heritage

Existing environment

An Aboriginal Heritage Information Management Systems (AHIMS) extensive search conducted on 10 August 2022 for the study area shown in Figure 1.2 returned seven heritage items (six artefacts and one artefact/stone quarry). For the purposes of this search, a 20 m buffer was applied. There are also two Places of Aboriginal Heritage Significance (local significance). These are 'Watoo 7' about 600 metres east and 'Thrumster Knoll' about 800 metres east of one pipeline route (refer Figure 6.1).

Issues for consideration

The project site has a high potential to contain additional heritage items. The site is a mixture of disturbed road corridors and undisturbed land that has in part been historically used for grazing, therefore ground disturbance is low. The project would involve earthworks during construction, which would disturb the ground and may have a serious and irreversible impact on Aboriginal heritage items. This may also have an intangible impact to cultural heritage of the Birpai people.

Proposed method of assessment

As there is a potential for additional sites or heritage items to be located, an Aboriginal Cultural Heritage Assessment Report (ACHAR) is proposed to be undertaken for the project. The ACHAR will be prepared in accordance with:

- *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW, 2010a)
- *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW, 2010b)
- *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (OEH, 2011)

The ACHAR would include:

- Continuation of engagement with the existing project registered Aboriginal parties (RAPs) to provide project updates and arrange field work.
- Comprehensive surveys across the entire project site.
- Development of the preliminary ACHAR covering the entire site. This would draw on the existing heritage assessment, detail the results of the surveys, and provide further recommendations and mitigation measures to avoid/mitigate impacts to items.

6.2.6 Waste

Existing environment

Biosolids are currently generated at other WWTPs within the LGA and are managed in accordance with the conditions of their EPLs (see Section 1.1). Council's existing pollution control, waste handling and storage procedures are employed at existing sites to ensure appropriate management of waste throughout all production steps.

Issues for consideration

Construction

During construction of the project, the primary waste streams would be associated with:

- Metal scrap including steel and aluminium
- Spoil from construction of pipe trenches, sludge lagoon excavation and footings for the WTP
- Putrescible waste (from site offices and crib rooms)
- Wastewater from staff amenities
- Green waste from surface clearing/works
- Concrete waste such as from pipe off cuts or pouring remnants

Consideration of quantities of waste generated, storage, transportation and disposal at licenced facilities would be undertaken. The implementation of the waste hierarchy would also be included with the aim of maximising waste avoidance, reduction, reuse and recycling.

Operation

During the operation of the project, the primary solid waste streams would be associated with:

- Biosolids, grit and screenings from sewage treatment
- Empty chemical storage containers
- General waste refuse
- Other liquid wastes generated during plant commissioning and maintenance

The requirements and potential impacts of handling and disposal of sludge generated during the treatment process will be assessed as part of the EIS and also considered with regard to NSW EPA guidelines and regulations. This would include consideration of dewatering and transfer of dewatered sludge for beneficial reuse of biosolids for composting purposes in the waste management facility of PMHC.

Proposed method of assessment

Assessment of the waste impacts of the project would include the identification and quantification of expected waste streams that would result from both the construction and operational phases of the project.

The assessment will consider guidelines including *Use and disposal of biosolids* (EPA, 1997) for beneficial reuse of biosolids. Categories of other wastes would be determined based on the *Waste Classification Guidelines* (EPA, 2014).

Construction materials selection and use would be assessed with regard to the application of the waste hierarchy to avoid, reduce, reuse, recycle or require disposal in that order of preference. Once the type, amount and preferred management options have been identified for the expected waste streams, the management options would be verified to ensure they can be practically implemented. Licensed facilities would be identified with the ability and capacity to accept the identified waste streams and referenced for inclusion into future construction and operational environmental management plans. Specific consideration would be given to the likelihood, quantities and types of wastes which may be generated. Identification of appropriate means of storage, handling and disposal will also need to be identified.

Details of proposed waste management measures would be detailed in a project specific Waste Management Plan, which would be developed prior to the commencement of construction activities.

6.2.7 Hazards and risk

Existing environment

There is no current operation in the study area that is considered a hazardous or offensive development.

The proposed WWTP site is in a designated bushfire prone area, consisting of Vegetation Category 3 with areas of Vegetation Category 1 at the site boundary (Refer Figure 6.2). The proposed pipeline routes pass through Category 1 (east and south of the WWTP site), as well as some bushfire buffer areas where passing through newer urban development at Thrumster, either side of the Oxley Highway at the south of the study area (refer Figure 6.2).

Category 1 is considered to be the highest risk for bushfire and requires a 100 m buffer, and Category 3 requires a 30 metre buffer. The project occurs within land mapped as bushfire prone. The project is located within a varied site context that is vulnerable to bushfire at the treatment plant site, and also may present a bushfire risk due to operating infrastructure in an otherwise undisturbed environment causing accidental ignition. The nearest mapped boundary of Port Macquarie Hastings Airport is 900 m east of the proposed WWTP site.

Issues for consideration

Construction

Hazards and risks as a result of construction activities have the potential to cause health and environmental risks including:

- The storage, handling and use of fuels and chemicals
- The types of chemicals, consumption rate, safe handling and storage procedures would to be confirmed after completion of the technical concept design
- Accidental spills and leaks from materials handling, transport, transfer, use and the disposal of construction materials
- Encountering contaminated land
- Accidental ignition of a fire from equipment, machinery and vehicles or power supplies

Construction activities, including hot work, would have the potential to cause a bushfire where conditions for ignition are present. Measures to avoid, mitigate and manage potential impacts relating to bushfire will be developed to ensure the risk remains very low during construction. Emergency response procedures will include fire hazard assessment and response.

Activities at and around airports may also have the potential to impact air safety and limit the scope of aviation operations at an airport through a breach of protected airspace, interference with critical communication, navigation and surveillance equipment, or the creation of other hazards. For both construction and operation, the EIS would consider the project's proximity to the airport and the application of project restrictions that may be required in relation to air transport facilities.

Operation

Operation of the project would involve exposed above-ground infrastructure including mechanical components that may be vulnerable to bushfire. Maintenance works on site or potential un-anticipated malfunction of equipment has the potential to ignite a bushfire from the site. The potential for interaction between project infrastructure and bushfire would be considered further as part of the design process.

Operation of the WWTP and RWTP would require quantities of chemical to be stored such as chlorine and sodium hypochlorite. There are risks associated with the storage and use of such chemicals if not managed in accordance with manufacturer's specification and the relevant safety data sheets (SDS).

As stated in construction above, operation of the WWTP would be considered in relation to the site's proximity to Port Macquarie Airport, the nature of operational and site hazards, and the application of project restrictions that may be required in relation to air transport facilities.

Proposed method of assessment

A preliminary risk screening would be undertaken as part of the EIS using criteria and guidance in DPE's Applying SEPP 33 (DPIE 2011), to confirm whether the project is classified as potentially hazardous, requiring a preliminary hazard analysis (PHA) and if so, the level of assessment required. The screening criteria relate to factors such as the types and quantities of hazardous materials to be stored on-site, how and where they will be stored, and the anticipated frequency of road movements of this material to and from the site.

A bushfire hazard and risk assessment will be undertaken as part of the EIS including:

- Confirmation of the vegetation and slope of land associated with the project to determine appropriate asset protection zones in accordance with *Planning for Bush Fire Protection 2019* (RFS, 2019).
- Recommendations and proposed mitigation measures to reduce any of the hazards/risk.
- Plans and procedures would be developed in consultation with NSW Fire and Rescue and the NSW Rural Fire Service. This would include consideration of appropriate safety and mitigation measures to address human safety and potential bushfire risk associated with the project.



Thrumster Sewer Scheme
Biodiversity and heritage constraints
Figure 6.1

0 200 400 600 800
Metres

Scale at A4: 1:15,500

DISCLAIMER
This map was produced by the Geographic Information Services section of the Port Macquarie-Hastings Council using information available to Port Macquarie-Hastings Council and the Department of Lands, Bathurst. The data was captured at a scale of 1:25000 for rural areas and 1:4000 for urban areas. The positional accuracy of plots becomes less reliable when viewed at scales greater than the capture scale. Port Macquarie-Hastings Council accepts no responsibility either in contract or tort (and particularly in negligence) for any errors, omissions or inaccuracies whatsoever contained within or arising from this map.
NOTE: Cadastral information outside the Port Macquarie-Hastings LGA not updated.

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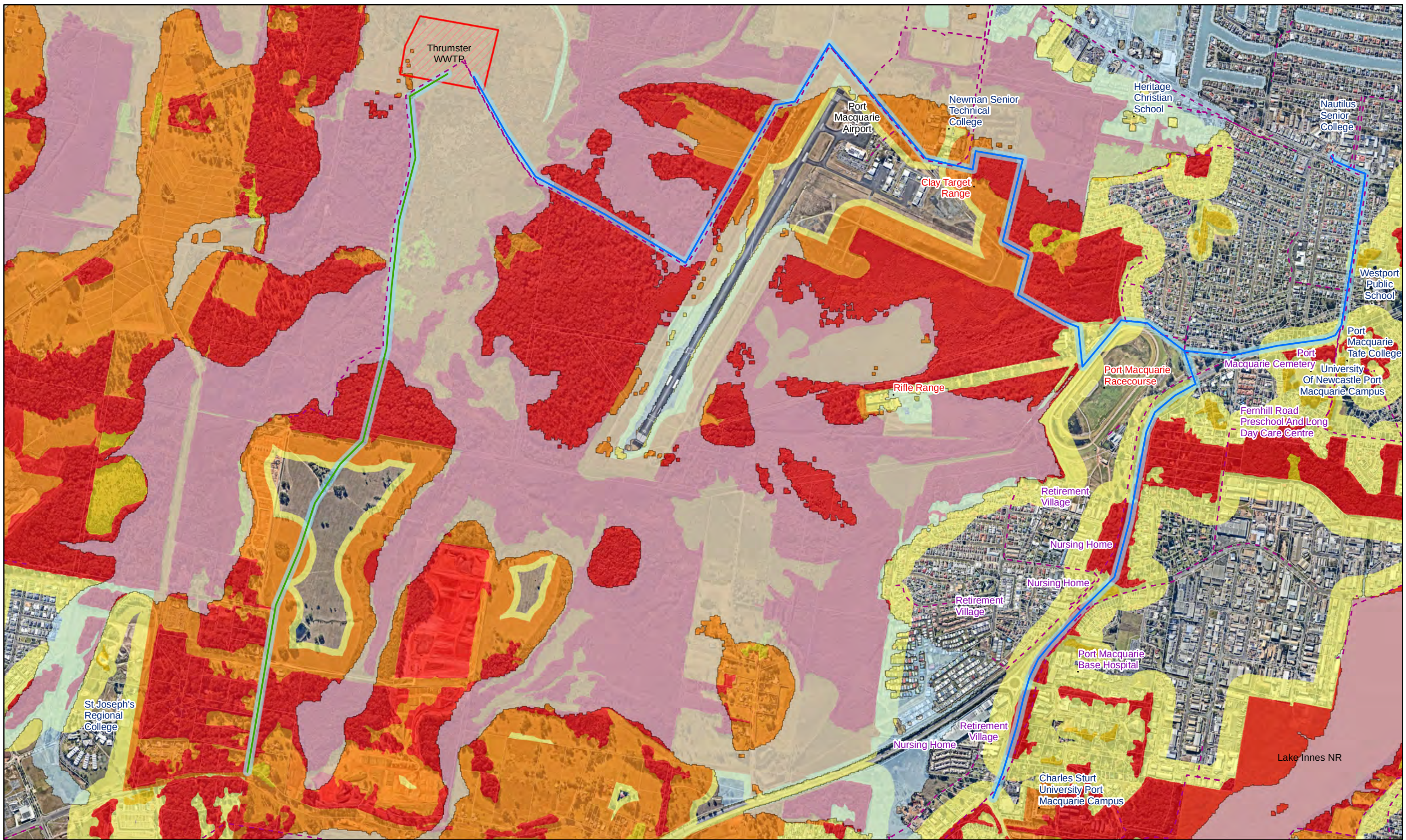
**PORT MACQUARIE
HASTINGS**

Date: 24/08/2022



GDA 1994
MGA Zone 56

- Pipelines (Existing)
- Recycled Water (Proposed)
- Sewer Rising Mains (Proposed)
- Thrumster Wastewater Treatment Plant
- Biodiversity values
- Aboriginal Place of Heritage Significance
- Item - General
- Coastal Wetlands
- Proximity Area for Coastal Wetlands
- HER Heritage**
- Coastal Wetlands SEPP**



PORT MACQUARIE
HASTINGS

Date: 24/08/2022



GDA 1994
MGA Zone 56

- Recycled Water (Proposed)
- Sewer Rising Mains (Proposed)
- - - Pipelines (Existing)
- 100 year Flood Extent
- Thrumster Wastewater Treatment Plant

Bushfire Prone Land

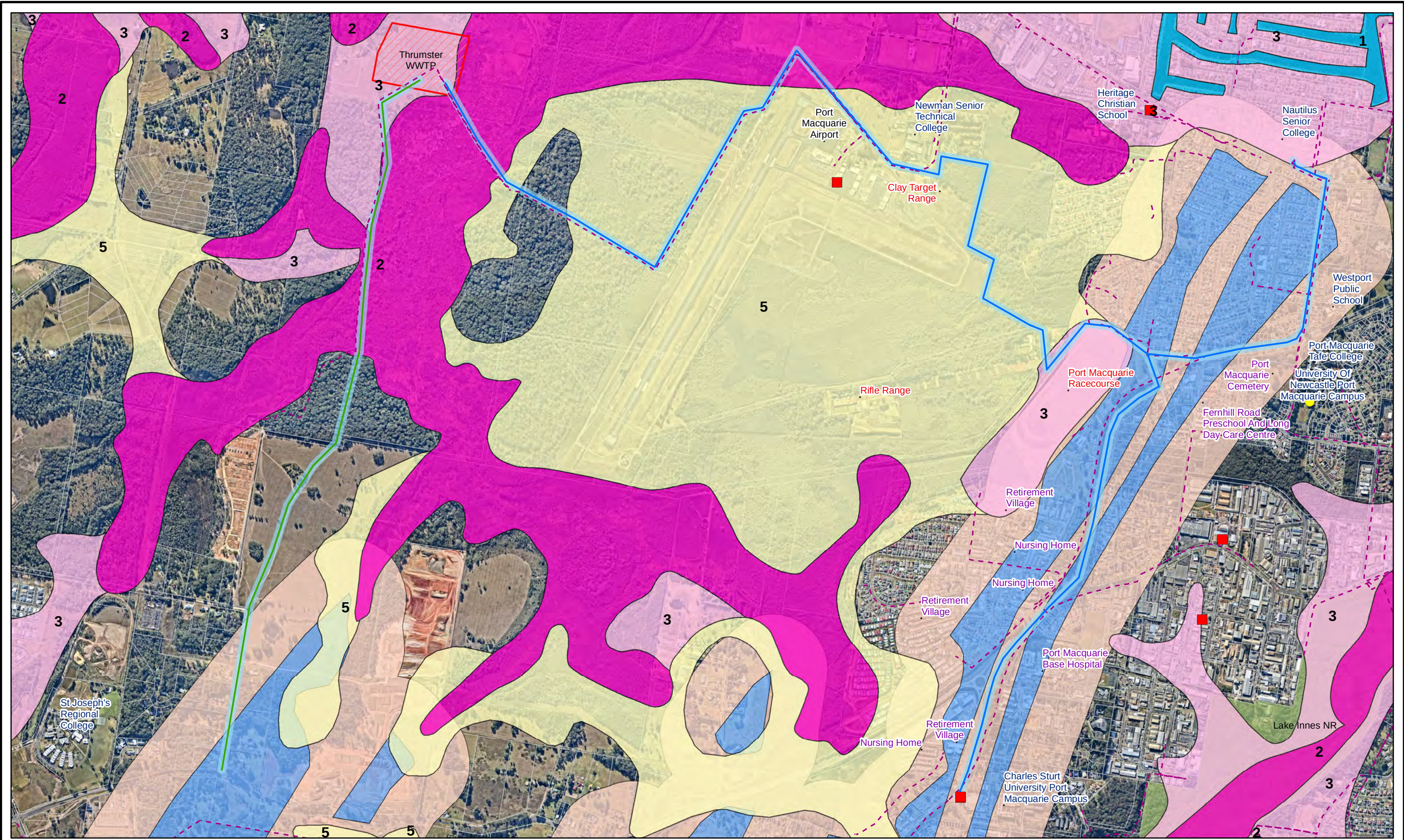
- Vegetation Category 1
- Vegetation Category 2
- Vegetation Category 3
- Vegetation Buffer

Thrumster Sewer Scheme Flooding and bushfire constraints Figure 6.2

0 200 400 600 800 Metres Scale at A4: 1:15,500

DISCLAIMER
This map was produced by the Geographic Information Services section of the Port Macquarie-Hastings Council using information available to Port Macquarie-Hastings Council and the Department of Lands, Bathurst. The data was captured at a scale of 1:25000 for rural areas and 1:4000 for urban areas. The positional accuracy of plots becomes less reliable when viewed at scales greater than the capture scale. Port Macquarie-Hastings Council accepts no responsibility either in contract or tort (and particularly in negligence) for any errors, omissions or inaccuracies whatsoever contained within or arising from this map. NOTE: Cadastral information outside the Port Macquarie-Hastings LGA not updated.





PORT MACQUARIE
HASTINGS

Date: 24/08/2022

GDA 1994
MGA Zone 56

- Contaminated Land
- Mineral Occurences Serpentine host
- Recycled Water (Proposed)
- Sewer Rising Mains (Proposed)
- - - Pipelines (Existing)

Acid Sulfate Soils

- Class 1
- Class 2
- Class 3
- Class 4
- Class 5

Asbestos Potential

- LOW Potential for any Asbestos
- Buffer of Potential Asbestos
- Thrumster Wastewater Treatment Plant

Thrumster Sewer Scheme

Soil constraints

Figure 6.3

Scale at A4: 1:15,500

0 200 400 600 800 Metres

DISCLAIMER

This map was produced by the Geographic Information Services section of the Port Macquarie-Hastings Council using information available to Port Macquarie-Hastings Council and the Department of Lands, Bathurst. The data was captured at a scale of 1:25000 for rural areas and 1:4000 for urban areas. The positional accuracy of plots becomes less reliable when viewed at scales greater than the capture scale. Port Macquarie-Hastings Council accepts no responsibility either in contract or tort (and particularly in negligence) for any errors, omissions or inaccuracies whatsoever contained within or arising from this map. NOTE: Cadastral information outside the Port Macquarie-Hastings LGA not updated.

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6.3 Other issues

6.3.1 Traffic, transport and accessibility

Existing environment

The study area covers a large area of the Port Macquarie-Hastings LGA. (refer to Figure 1.2). Access to the WWTP would use the same roads as current access. Vehicles would use Fernbank Creek Road via Hastings River Drive. There are driveways and other site access points along the proposed pipeline route in industrial and urban areas around the pipeline route.

Issues for consideration

Additional traffic movements would be generated during the project construction period by workers and for the delivery of construction materials, plant and equipment. These movements are likely to comprise heavy vehicles, such as B doubles and semi-trailers, which would access the site via Hastings River Drive. However, as part of the assessment of traffic impacts undertaken for the EIS, recommendations would be made for mitigation measures to address any potential impacts on local road users during construction.

The EIS would also consider work site access for construction laydown areas for pipes and materials, car parking for construction crew, and emergency and alternative measures in the event of site access restriction due to flood or bushfire.

Operational site access would include heavy vehicles and articulated trucks for the removal and transport of biosolids and grit. Road safety, approved routes, and emergency access routes would be considered in the EIS.

Proposed method of assessment

A traffic impact assessment would be undertaken for inclusion in the EIS and would consider cumulative impacts with other proposed developments. It would evaluate the potential for traffic generated by the project's construction and operation to impact on the performance (capacity, congestion and safety) of surrounding roads.

A summary of the assessment and any proposed mitigation and management measures would be presented in the EIS.

6.3.2 Noise and vibration

Existing environment

The existing noise environment is dominated by Port Macquarie Airport and vehicles travelling along the existing road network including Hastings River Drive and Oxley Highway.

Issues for consideration

Construction activities for the project would generate noise that has the potential to affect sensitive receptors, including residential receivers and health care facilities within 100 m of the construction activities. However, these impacts would be limited in their extent and duration given the progressive nature of construction along the pipeline alignment.

The primary noise sources from the operating plant would consist of pumps and maintenance activities including heavy vehicle access to the site.

Proposed method of assessment

A noise and vibration impact assessment will be prepared for the EIS with regard to the *Noise Policy for Industry* (EPA, 2017), *Interim Construction Noise Guideline* (DECC, 2009), *Road Noise Policy* (DECCW, 2011), *Assessing Vibration: A Technical Guideline* (DEC, 2006) and *British Standard BS 7385-2:1993, Evaluation and measurement for vibration in buildings. Guide to damage levels from ground borne vibration* (1993), and include:

- Review of background information to inform the assessment including meteorological data
- Establish background noise levels
- Identification of sensitive receivers
- Identification of noise and vibration sources and development of a noise model for activities undertaken during Stage 1 construction activities
- Identification of noise and vibration sources and development of model for proposed land uses within the site
- Identification of noise trigger levels and criteria for assessment
- Completion of an aircraft noise impact assessment, including future impact from the proposed upgrades at Newcastle Airport
- Road noise traffic impact assessment on the local road network and proposed land uses of the site
- Undertake an assessment of traffic noise impacts with consideration to the relevant guidelines
- Identification of impacts associated with construction and operation of the project
- Identification of recommended noise management strategies and mitigation measures

A summary of the noise and vibration impact assessment would be included as a chapter in the EIS.

6.3.3 Landscape character and visual amenity

Existing environment

The landscape character in the viewshed of the study area is primarily defined by three distinct land use types:

1. Undisturbed land within and directly surrounding the proposed WWTP site. This area is flat to gently sloping and features a cleared area at the proposed site. It is adjacent to back from Fernbank Creek Road.
2. Large open recreational or infrastructure uses including Port Macquarie Airport.
3. Suburban residential and sensitive land uses including houses, nursing homes, and hospitals. The topography along the pipeline routes is flat to rolling hills with roadside vegetation, patches of dense tree growth and cleared road reserves in established areas.

The nearest residential receivers from the study area would be in suburban areas along road routes adjacent to the pipeline route in the vicinity of the Oxley Highway. There is no existing private viewpoint on to the proposed treatment plant, however its location near the Airport would facilitate intermittent aerial views of the site.

Issues for consideration

Construction of the project has the potential to result in temporary visual impacts for sensitive visual receptors such as residences, roads, parks and natural areas. Construction vehicles, plant and equipment and construction activities undertaken onsite in some urban areas and close to roads may have temporary and local impact on visual amenity. Impacts would be defined by progressive construction along the pipeline alignments and the reinstatement of existing ground conditions following completion of works.

Operational amenity impacts of the WWTP and ancillary infrastructure would be considered in relation to screening by significant existing vegetation and sensitive viewpoints or land uses in the vicinity of the treatment plant site. The potential amenity impacts of the placement of vent stacks and odour control units alongside the rising mains would also be considered in the EIS.

Proposed method of assessment

An assessment of landscape character and visual amenity impacts would be prepared for inclusion in the EIS, including identification of sensitive landscapes and receivers.

The EIS would recommend mitigation strategies were considered necessary to address any residual visual impacts including site landscaping, use of suitable colours/finishes to buildings and structures and control of outdoor lighting, if appropriate. Engagement with key receivers would be required as part of the EIS process and if there are areas of the community likely to experience visual amenity impacts, would be consulted with regards to the construction works, the expected schedule and any access requirements.

6.3.4 Non-Aboriginal heritage

Existing environment

A desktop search of the relevant NSW and Commonwealth databases, and of the LEP 2011 was undertaken in August 2022 for items of non-Aboriginal heritage significance within proximity to the project site (refer Figure 6.1).

There are no items identified of known non-Aboriginal heritage significance located on the project site. However, the following items are located within 150 metres of the study area, in the vicinity of Fernhill suburb near the intersection of Oxley Highway and Widderson Street (refer to Figure 6.1).

- Cemetery (LEP, 2011). Listing No. I076, Gazette Date: 23/02/2011, located about 20 metres south of the pipeline route study area.
- "Grantham" dwelling house (LEP 2011). Listing No: I007, Gazette Date: 23/02/2011, located about 120 metres west of the pipeline route.
- "Douglas Vale" dwelling house (LEP). Listing No: I075, Gazette Date: 23/02/2011, located about 150 metres west of the of the pipeline route.

Issues for consideration

Construction

Construction would not result in any direct or indirect physical impacts to any known items of non-Aboriginal heritage significance. A review of the construction footprint would be undertaken to confirm any works in the vicinity of heritage curtilage.

Operation

Operation would not result in any direct or indirect physical impacts to items of historic heritage significance.

Proposed method of assessment

A desktop assessment of potential impacts to non-Aboriginal heritage will be included in the EIS. The chapter would consider impact to known heritage items and provide recommendations for management during construction and operation for each specific place where required.

6.3.5 Social and economic impact

Existing environment

The project is located within the Port Macquarie-Hastings LGA. The study area spans a large portion of the LGA, being a linear infrastructure project. 86,762 people reside in the Port Macquarie-Hastings LGA. The median age is 49. When compared to the rest of the state, Port Macquarie-Hastings has an older median age (NSW median age is 38) and proportion of people over 65 (ABS 2021).

Issues for consideration

Potential negative social impacts from construction of the project would be amenity impacts as discussed in the above sections of this report including noise, traffic and transport and visual amenity (refer to Sections 6.3.1, 6.3.2, 6.3.3).

Positive social impact from operation of the project would include water security (as recycled water) for the growing population and regional communities, and reliability and resilience of wastewater services for the Thrumster and Sancrox communities projected to the next 30 years.

Economic benefits would also accrue in securing a recycled water supply and wastewater services to planned residential areas and industrial units in Thrumster.

Proposed method of assessment

This initial scoping of social impacts has considered DPE's *Social Impact Assessment Guideline for State Significant Projects* (DPIE, 2021c). In accordance with these guidelines, social impact assessment scoping and initial assessment would be undertaken early in the project development and would involve:

- Establishing the social locality to understand the communities likely to be affected by the project
- An initial evaluation of the social baseline of the social locality
- An initial evaluation of social impacts
- Consideration and articulation of any project refinements

6.4 Scoping only issues

A range of other environmental aspects have been considered as part of this scoping report. These other aspects are considered to have negligible as a result of the project. Consideration of these aspects is provided in Table 6.3.

Table 6.3 Scoping only issues

Environmental aspect	Review
Built environment – Public domain	The project would not be located in an area would interact with built assets in the public domain.

7. Conclusion

The Thrumster Wastewater Scheme is among Council's future measures to provide a reliable and resilient wastewater treatment system to support population increase in the LGA. It is a medium-term (25 to 30 year) measure. The project has been declared State Significant Infrastructure SSI under Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

This Scoping Report provides a preliminary assessment of the environmental and planning considerations to guide the preparation of SEARs for the SSI application in respect of the proposed Thrumster wastewater scheme. The key areas that have been identified for further detailed assessment during the preparation of the EIS are:

- Biodiversity, with a focus on potential impacts to terrestrial ecology and wetlands in the study area
- Hydrology and surface water quality
- Soils and groundwater management
- Odour and air quality
- Heritage impacts, in relation to Aboriginal cultural heritage
- Waste management, during construction and operation
- Bushfire, hazards and risk

Other factors that will also be considered in the EIS are:

- Traffic, transport and accessibility
- Noise and vibration impacts, principally during construction and also in relation to the operation of the facility
- Landscape character and visual amenity impacts
- Heritage impacts, in relation to non-Aboriginal heritage
- Airport / Aviation safeguarding
- Health Impact Assessment
- Social and economic impacts, and the potential benefits relating to wastewater for the local community

In assessing the project, the key focus would be avoidance and minimisation of impacts on the environment and local communities, where practical and feasible, when taking into consideration engineering constraints and cost implications. The assessment would also identify mitigation and management measures to minimise impacts on the environment during construction and operation of the project. Consultation with affected property owners, stakeholders and the local community will continue throughout the project assessment, design and construction phases.

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Appendices

Appendix A

BioNet Atlas Species Search

Table A.1 BioNet threatened species records within 10 km of study area. Species identified within the study area footprint are separately identified

Scientific Name	Common Name	BC Act	EPBC Act	Records within 10 km	Records within study area
Amphibians					
<i>Crinia tinnula</i>	Wallum Froglet	V,P		423	
<i>Litoria aurea</i>	Green and Golden Bell Frog	E1,P	V	100	
<i>Litoria brevipalmata</i>	Green-thighed Frog	V,P		39	
<i>Mixophyes iteratus</i>	Giant Barred Frog	E1,P,2	E	2	
Birds					
<i>Anseranas semipalmata</i>	Magpie Goose	V,P		52	
<i>Anthochaera phrygia</i>	Regent Honeyeater	E4A,P	CE	17	
<i>Ardena carneipes</i>	Flesh-footed Shearwater	V,P	J,K	3	
<i>Artamus cyanopterus cyanopterus</i>	Dusky Woodswallow	V,P		19	
<i>Botaurus poiciloptilus</i>	Australasian Bittern	E1,P	E	7	
<i>Burhinus grallarius</i>	Bush Stone-curlew	E1,P		2	
<i>Calidris ferruginea</i>	Curlew Sandpiper	E1,P	CE,C,J,K	44	
<i>Calidris tenuirostris</i>	Great Knot	V,P	CE,C,J,K	4	
<i>Calyptorhynchus lathamii</i>	Glossy Black-Cockatoo	V,P,2		219	
<i>Charadrius mongolus</i>	Lesser Sand-plover	V,P	E,C,J,K	125	
<i>Circus assimilis</i>	Spotted Harrier	V,P		18	
<i>Climacteris picumnus victoriae</i>	Brown Treecreeper (eastern subspecies)	V,P		3	
<i>Coracina lineata</i>	Barred Cuckoo-shrike	V,P		69	
<i>Daphoenositta chrysoptera</i>	Varied Sittella	V,P		136	
<i>Dromaius novaehollandiae</i>	Emu population in the New South Wales North Coast Bioregion and Port Stephens local government area	E2,P		1	
<i>Ephippiorhynchus asiaticus</i>	Black-necked Stork	E1,P		138	
<i>Esacus magnirostris</i>	Beach Stone-curlew	E4A,P		7	

Scientific Name	Common Name	BC Act	EPBC Act	Records within 10 km	Records within study area
<i>Glossopsitta pusilla</i>	Little Lorikeet	V,P		138	
<i>Grus rubicunda</i>	Brolga	V,P		9	
<i>Haematopus fuliginosus</i>	Sooty Oystercatcher	V,P		164	
<i>Haematopus longirostris</i>	Pied Oystercatcher	E1,P		122	
<i>Haliaeetus leucogaster</i>	White-bellied Sea-Eagle	V,P		170	
<i>Hieraaetus morphnoides</i>	Little Eagle	V,P		10	
<i>Irediparra gallinacea</i>	Comb-crested Jacana	V,P		29	
<i>Ixobrychus flavicollis</i>	Black Bittern	V,P		4	
<i>Lathamus discolor</i>	Swift Parrot	E1,P,3	CE	989	
<i>Limosa limosa</i>	Black-tailed Godwit	V,P	C,J,K	1	
<i>Lophoictinia isura</i>	Square-tailed Kite	V,P,3		105	
<i>Ninox connivens</i>	Barking Owl	V,P,3		6	
<i>Ninox strenua</i>	Powerful Owl	V,P,3		67	1
<i>Onychoprion fuscata</i>	Sooty Tern	V,P		1	
<i>Oxyura australis</i>	Blue-billed Duck	V,P		2	
<i>Pandion cristatus</i>	Eastern Osprey	V,P,3		172	1
<i>Petroica boodang</i>	Scarlet Robin	V,P		4	
<i>Petroica phoenicea</i>	Flame Robin	V,P		2	
<i>Pezoporus wallicus wallicus</i>	Eastern Ground Parrot	V,P,3		29	
<i>Ptilinopus magnificus</i>	Wompoo Fruit-Dove	V,P		36	
<i>Ptilinopus regina</i>	Rose-crowned Fruit-Dove	V,P		47	
<i>Sternula albifrons</i>	Little Tern	E1,P	C,J,K	126	
<i>Stictonetta naevosa</i>	Freckled Duck	V,P		29	
<i>Thalassarche cauta</i>	Shy Albatross	V,P	V	1	
<i>Tyto longimembris</i>	Eastern Grass Owl	V,P,3		43	

Scientific Name	Common Name	BC Act	EPBC Act	Records within 10 km	Records within study area
<i>Tyto novaehollandiae</i>	Masked Owl	V,P,3		21	
<i>Tyto tenebricosa</i>	Sooty Owl	V,P,3		1	
<i>Xenus cinereus</i>	Terek Sandpiper	V,P	C,J,K	9	
Insects					
<i>Argynnis hyperbicus</i>	Laced Fritillary	E1	CE	4	
<i>Petalura gigantea</i>	Giant Dragonfly	E1		4	
Mammals					
<i>Aepyprymnus rufescens</i>	Rufous Bettong	V,P		1	
<i>Cercartetus nanus</i>	Eastern Pygmy-possum	V,P		4	
<i>Chalinolobus nigrogriseus</i>	Hoary Wattled Bat	V,P		2	
<i>Dasyurus maculatus</i>	Spotted-tailed Quoll	V,P	E	47	
<i>Falsistrellus tasmaniensis</i>	Eastern False Pipistrelle	V,P		7	
<i>Micronomus norfolkensis</i>	Eastern Coastal Free-tailed Bat	V,P		31	1
<i>Miniopterus australis</i>	Little Bent-winged Bat	V,P		430	1
<i>Miniopterus orianae oceanensis</i>	Large Bent-winged Bat	V,P		56	1
<i>Myotis macropus</i>	Southern Myotis	V,P		24	
<i>Petaurus australis</i>	Yellow-bellied Glider	V,P	V	27	
<i>Petaurus norfolcensis</i>	Squirrel Glider	V,P		55	1
<i>Phascogale tapoatafa</i>	Brush-tailed Phascogale	V,P		10	
<i>Phascolarctos cinereus</i>	Koala	E1,P	E	11096	101
<i>Phoniscus papuensis</i>	Golden-tipped Bat	V,P		1	
<i>Planigale maculata</i>	Common Planigale	V,P		5	
<i>Pseudomys gracilicaudatus</i>	Eastern Chestnut Mouse	V,P		32	
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	V,P	V	191885	1
<i>Saccolaimus flaviventris</i>	Yellow-bellied Sheathtail-bat	V,P		5	

Scientific Name	Common Name	BC Act	EPBC Act	Records within 10 km	Records within study area
<i>Scoteanax rueppellii</i>	Greater Broad-nosed Bat	V,P		29	
<i>Syconycteris australis</i>	Common Blossom-bat	V,P		2	
<i>Vespadelus troungtoni</i>	Eastern Cave Bat	V,P		13	
Plants					
<i>Acronychia littoralis</i>	Scented Acronychia	E1	E	110	
<i>Allocasuarina defungens</i>	Dwarf Heath Casuarina	E1	E	26	1
<i>Asperula asthenes</i>	Trailing Woodruff	V	V	151	
<i>Chamaesyce psammogeton</i>	Sand Spurge	E1		4	
<i>Cynanchum elegans</i>	White-flowered Wax Plant	E1	E	5	
<i>Dendrobium melaleucaphilum</i>	Spider orchid	E1,P,2		19	
<i>Diuris byronensis</i>	Byron Bay Diuris	E1,P,2		1	
<i>Eucalyptus nicholii</i>	Narrow-leaved Black Peppermint	V	V	3	
<i>Lindsaea incisa</i>	Slender Screw Fern	E1,3		3000	
<i>Marsdenia longiloba</i>	Slender Marsdenia	E1	V	5	
<i>Maundia triglochinoides</i>		V		1109	
<i>Melaleuca biconvexa</i>	Biconvex Paperbark	V	V	782	
<i>Melaleuca groveana</i>	Grove's Paperbark	V		4	
<i>Oberonia titania</i>	Red-flowered King of the Fairies	V,P,2		5	
<i>Peristeranthus hillii</i>	Brown Fairy-chain Orchid	V,P,2		1	
<i>Phaius australis</i>	Southern Swamp Orchid	E1,P,2	E	1	
<i>Rhodamnia rubescens</i>	Scrub Turpentine	E4A	CE	91	
<i>Rhodomyrtus psidioides</i>	Native Guava	E4A	CE	788	

Scientific Name	Common Name	BC Act	EPBC Act	Records within 10 km	Records within study area
<i>Senna acclinis</i>	Rainforest Cassia	E1		1	
<i>Sophora tomentosa</i>	Silverbush	E1		108	

Note: Marine species have been omitted from this assessment due to obvious habitat constraints.

P = Protected, V = Vulnerable, E = Endangered, CE = Critically Endangered.

Appendix B

Protected Matters Search Tool Report



EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 05-Aug-2022

[Summary](#)

[Details](#)

[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	1
Listed Threatened Ecological Communities:	5
Listed Threatened Species:	87
Listed Migratory Species:	73

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <http://www.environment.gov.au/heritage>

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	11
Commonwealth Heritage Places:	None
Listed Marine Species:	91
Whales and Other Cetaceans:	31
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	9
Regional Forest Agreements:	1
Nationally Important Wetlands:	1
EPBC Act Referrals:	8
Key Ecological Features (Marine):	None
Biologically Important Areas:	7
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Commonwealth Marine Area

[Resource Information]

Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside a Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area.

Feature Name	Buffer Status
EEZ and Territorial Sea	In buffer area only

Listed Threatened Ecological Communities

[Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text	Buffer Status
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	Endangered	Community likely to occur within area	In feature area
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	Endangered	Community known to occur within area	In feature area
Littoral Rainforest and Coastal Vine Thickets of Eastern Australia	Critically Endangered	Community likely to occur within area	In buffer area only
Lowland Rainforest of Subtropical Australia	Critically Endangered	Community likely to occur within area	In feature area
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to occur within area	In buffer area only

Listed Threatened Species

[Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.

Number is the current name ID.

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Anthochaera phrygia			
Regent Honeyeater [82338]	Critically Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area	In feature area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In feature area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area	In buffer area only
Cyclopsitta diophthalma coxeni Coxen's Fig-Parrot [59714]	Endangered	Species or species habitat may occur within area	In feature area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea antipodensis gibsoni Gibson's Albatross [82270]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Erythrotriorchis radiatus Red Goshawk [942]	Vulnerable	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat may occur within area	In feature area
Fregetta grallaria grallaria White-bellied Storm-Petrel (Tasman Sea), White-bellied Storm-Petrel (Australasian) [64438]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat known to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Limosa lapponica baueri Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380]	Vulnerable	Species or species habitat known to occur within area	In feature area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In feature area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat known to occur within area	In feature area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Pterodroma leucoptera leucoptera Gould's Petrel, Australian Gould's Petrel [26033]	Endangered	Species or species habitat may occur within area	In buffer area only
Pterodroma neglecta neglecta Kermadec Petrel (western) [64450]	Vulnerable	Foraging, feeding or related behaviour may occur within area	In buffer area only
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area	In feature area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche bulleri platei Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Thalassarche cauta Shy Albatross [89224]	Endangered	Species or species habitat may occur within area	In feature area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Species or species habitat may occur within area	In feature area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area	In feature area
FISH			
Epinephelus daemeli Black Rockcod, Black Cod, Saddled Rockcod [68449]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Hippocampus whitei White's Seahorse, Crowned Seahorse, Sydney Seahorse [66240]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Seriolella brama Blue Warehou [69374]	Conservation Dependent	Species or species habitat known to occur within area	In buffer area only
Thunnus maccoyii Southern Bluefin Tuna [69402]	Conservation Dependent	Species or species habitat likely to occur within area	In feature area
FROG			
Litoria aurea Green and Golden Bell Frog [1870]	Vulnerable	Species or species habitat known to occur within area	In feature area
Mixophyes balbus Stuttering Frog, Southern Barred Frog (in Victoria) [1942]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Mixophyes iteratus Giant Barred Frog, Southern Barred Frog [1944]	Vulnerable	Species or species habitat known to occur within area	In feature area
INSECT			
Argynnis hyperbius inconstans Australian Fritillary [88056]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
MAMMAL			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area	In buffer area only
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Dasyurus maculatus maculatus (SE mainland population) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat known to occur within area	In feature area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Petauroides volans Greater Glider (southern and central) [254]	Endangered	Species or species habitat known to occur within area	In feature area
Petaurus australis australis Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat known to occur within area	In feature area
Petrogale penicillata Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT) Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Endangered	Species or species habitat known to occur within area	In feature area
Potorous tridactylus tridactylus Long-nosed Potoroo (northern) [66645]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Pseudomys novaehollandiae New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Roosting known to occur within area	In feature area
PLANT			
Acronychia littoralis Scented Acronychia [8582]	Endangered	Species or species habitat known to occur within area	In feature area
Allocasuarina defungens Dwarf Heath Casuarina [21924]	Endangered	Species or species habitat known to occur within area	In feature area
Allocasuarina thalassoscopica [21927]	Endangered	Species or species habitat known to occur within area	In feature area
Arthraxon hispidus Hairy-joint Grass [9338]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Asperula asthenes Trailing Woodruff [14004]	Vulnerable	Species or species habitat known to occur within area	In feature area
Cryptostylis hunteriana Leafless Tongue-orchid [19533]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Cynanchum elegans White-flowered Wax Plant [12533]	Endangered	Species or species habitat known to occur within area	In feature area
Euphrasia arguta [4325]	Critically Endangered	Species or species habitat may occur within area	In feature area
Leichhardtia longiloba listed as Marsdenia longiloba Clear Milkvine [91911]	Vulnerable	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Macadamia integrifolia Macadamia Nut, Queensland Nut Tree, Smooth-shelled Macadamia, Bush Nut, Nut Oak [7326]	Vulnerable	Species or species habitat may occur within area	In feature area
Melaleuca biconvexa Biconvex Paperbark [5583]	Vulnerable	Species or species habitat known to occur within area	In feature area
Parsonsia dorrigoensis Milky Silkpod [64684]	Endangered	Species or species habitat may occur within area	In buffer area only
Persicaria elatior Knotweed, Tall Knotweed [5831]	Vulnerable	Species or species habitat may occur within area	In feature area
Phaius australis Lesser Swamp-orchid [5872]	Endangered	Species or species habitat known to occur within area	In feature area
Rhodamnia rubescens Scrub Turpentine, Brown Malletwood [15763]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Rhodomyrtus psidioides Native Guava [19162]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Syzygium paniculatum Magenta Lilly Pilly, Magenta Cherry, Daguba, Scrub Cherry, Creek Lilly Pilly, Brush Cherry [20307]	Vulnerable	Species or species habitat may occur within area	In feature area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Vincetoxicum woollsii listed as Tylophora woollsii [40080]	Endangered	Species or species habitat likely to occur within area	In feature area
REPTILE			
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
Coeranoscincus reticulatus Three-toed Snake-tooth Skink [59628]	Vulnerable	Species or species habitat may occur within area	In feature area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area	In feature area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area	In feature area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding likely to occur within area	In feature area
SHARK			
Carcharias taurus (east coast population) Grey Nurse Shark (east coast population) [68751]	Critically Endangered	Species or species habitat likely to occur within area	In buffer area only
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Galeorhinus galeus School Shark, Eastern School Shark, Snapper Shark, Tope, Soupfin Shark [68453]	Conservation Dependent	Species or species habitat may occur within area	In buffer area only
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Sphyrna lewini Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area	In feature area
Listed Migratory Species		[Resource Information]	
Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area	In feature area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Ardenna grisea Sooty Shearwater [82651]		Species or species habitat likely to occur within area	In feature area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat may occur within area	In feature area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area	In feature area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In feature area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area	In feature area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Sternula albifrons Little Tern [82849]		Species or species habitat may occur within area	In buffer area only
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Thalassarche cauta Shy Albatross [89224]	Endangered	Species or species habitat may occur within area	In feature area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Species or species habitat may occur within area	In feature area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area	In feature area
Migratory Marine Species			
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area	In buffer area only
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area	In buffer area only
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Carcharhinus longimanus Oceanic Whitetip Shark [84108]		Species or species habitat may occur within area	In buffer area only
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area	In feature area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area	In feature area
Dugong dugon Dugong [28]		Species or species habitat may occur within area	In feature area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area	In feature area
Eubalaena australis as Balaena glacialis australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat may occur within area	In feature area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat known to occur within area	In buffer area only
Mobula alfredi as Manta alfredi Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat may occur within area	In feature area
Mobula birostris as Manta birostris Giant Manta Ray [90034]		Species or species habitat may occur within area	In feature area
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding likely to occur within area	In feature area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area	In buffer area only
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Sousa sahalensis as Sousa chinensis Australian Humpback Dolphin [87942]		Species or species habitat likely to occur within area	In feature area
Migratory Terrestrial Species			
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area	In feature area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area	In feature area
Symposiachrus trivirgatus as Monarcha trivirgatus Spectacled Monarch [83946]		Species or species habitat known to occur within area	In feature area
Migratory Wetlands Species			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
Arenaria interpres Ruddy Turnstone [872]		Roosting known to occur within area	In buffer area only
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
Calidris ruficollis Red-necked Stint [860]		Roosting known to occur within area	In buffer area only
Charadrius bicinctus Double-banded Plover [895]		Roosting known to occur within area	In buffer area only
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In feature area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area	In buffer area only
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat known to occur within area	In feature area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area	In buffer area only
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area	In buffer area only
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area	In buffer area only
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area	In feature area
Pandion haliaetus Osprey [952]		Breeding known to occur within area	In feature area
Pluvialis fulva Pacific Golden Plover [25545]		Roosting known to occur within area	In feature area
Pluvialis squatarola Grey Plover [865]		Roosting known to occur within area	In buffer area only
Tringa brevipes Grey-tailed Tattler [851]		Roosting known to occur within area	In buffer area only
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat known to occur within area	In feature area
Xenus cinereus Terek Sandpiper [59300]		Roosting known to occur within area	In buffer area only

Other Matters Protected by the EPBC Act

Commonwealth Lands		[Resource Information]
The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.		
Commonwealth Land Name	State	Buffer Status
Commonwealth Bank of Australia		
Commonwealth Land - Commonwealth Bank of Australia [11813]	NSW	In buffer area only
Communications, Information Technology and the Arts - Australian Postal Corporation		
Commonwealth Land - Australian Postal Commission [11811]	NSW	In buffer area only
Commonwealth Land - Australian Postal Corporation [15448]	NSW	In buffer area only
Communications, Information Technology and the Arts - Telstra Corporation Limited		
Commonwealth Land - Australian Telecommunications Commission [11795]	NSW	In buffer area only

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - Australian Telecommunications Commission [11810]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [11812]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [11814]	NSW	In feature area
Commonwealth Land - Australian Telecommunications Commission [11816]	NSW	In feature area
Commonwealth Land - Telstra Corporation Limited [11808]	NSW	In buffer area only

Defence		
Commonwealth Land - Defence Service Homes Corporation [11815]	NSW	In feature area
Commonwealth Land - Defence Service Homes Corporation [11809]	NSW	In feature area

Listed Marine Species	[Resource Information]		
Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos			
Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
Anous stolidus			
Common Noddy [825]		Species or species habitat likely to occur within area	In feature area
Apus pacificus			
Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Ardenna carneipes as Puffinus carneipes			
Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Ardenna grisea as Puffinus griseus			
Sooty Shearwater [82651]		Species or species habitat likely to occur within area	In feature area
Arenaria interpres			
Ruddy Turnstone [872]		Roosting known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area	In feature area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris ruficollis Red-necked Stint [860]		Roosting known to occur within area overfly marine area	In buffer area only
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat may occur within area	In feature area
Charadrius bicinctus Double-banded Plover [895]		Roosting known to occur within area overfly marine area	In buffer area only
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In feature area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area	In buffer area only
Charadrius ruficapillus Red-capped Plover [881]		Roosting known to occur within area overfly marine area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea antipodensis gibsoni as Diomedea gibsoni Gibson's Albatross [82270]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area	In feature area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat likely to occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat known to occur within area overfly marine area	In feature area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area overfly marine area	In buffer area only
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area overfly marine area	In buffer area only
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area	In feature area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In feature area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area overfly marine area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area overfly marine area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]		Species or species habitat may occur within area overfly marine area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Numenius minutus Little Curlew, Little Whimbrel [848]	Vulnerable	Roosting likely to occur within area overfly marine area	In buffer area only
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area	In feature area
Pachyptila turtur Fairy Prion [1066]		Species or species habitat known to occur within area	In feature area
Pandion haliaetus Osprey [952]		Breeding known to occur within area	In feature area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area	In feature area
Phoebetria fusca Sooty Albatross [1075]		Species or species habitat may occur within area	In buffer area only
Pluvialis fulva Pacific Golden Plover [25545]		Roosting known to occur within area	In feature area
Pluvialis squatarola Grey Plover [865]	Endangered	Roosting known to occur within area overfly marine area	In buffer area only
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area overfly marine area	In feature area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]		Species or species habitat known to occur within area overfly marine area	In feature area
Stercorarius skua as Catharacta skua Great Skua [823]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Sternula albifrons as Sterna albifrons Little Tern [82849]		Species or species habitat may occur within area	In buffer area only
Symposiachrus trivirgatus as Monarcha trivirgatus Spectacled Monarch [83946]		Species or species habitat known to occur within area overfly marine area	In feature area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche bulleri platei as Thalassarche sp. nov. Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Thalassarche cauta Shy Albatross [89224]	Endangered	Species or species habitat may occur within area	In feature area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Species or species habitat may occur within area	In feature area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Tringa brevipes as Heteroscelus brevipes Grey-tailed Tattler [851]		Roosting known to occur within area	In buffer area only
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat known to occur within area overfly marine area	In feature area
Xenus cinereus Terek Sandpiper [59300]		Roosting known to occur within area overfly marine area	In buffer area only
Fish			
Acentronura tentaculata Shortpouch Pygmy Pipehorse [66187]		Species or species habitat may occur within area	In buffer area only
Festucalex cinctus Girdled Pipefish [66214]		Species or species habitat may occur within area	In buffer area only
Filicampus tigris Tiger Pipefish [66217]		Species or species habitat may occur within area	In buffer area only
Heraldia nocturna Upside-down Pipefish, Eastern Upside-down Pipefish, Eastern Upside-down Pipefish [66227]		Species or species habitat may occur within area	In buffer area only
Hippichthys heptagonus Madura Pipefish, Reticulated Freshwater Pipefish [66229]		Species or species habitat may occur within area	In buffer area only
Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area	In buffer area only
Hippocampus whitei White's Seahorse, Crowned Seahorse, Sydney Seahorse [66240]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Histiogamphelus briggsii Crested Pipefish, Briggs' Crested Pipefish, Briggs' Pipefish [66242]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Lissocampus runa Javelin Pipefish [66251]		Species or species habitat may occur within area	In buffer area only
Maroubra perserrata Sawtooth Pipefish [66252]		Species or species habitat may occur within area	In buffer area only
Solegnathus dunckeri Duncker's Pipehorse [66271]		Species or species habitat may occur within area	In buffer area only
Solegnathus spinosissimus Spiny Pipehorse, Australian Spiny Pipehorse [66275]		Species or species habitat may occur within area	In buffer area only
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area	In buffer area only
Solenostomus paradoxus Ornate Ghostpipefish, Harlequin Ghost Pipefish, Ornate Ghost Pipefish [66184]		Species or species habitat may occur within area	In buffer area only
Stigmatopora nigra Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area	In buffer area only
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area	In buffer area only
Trachyrhamphus bicoarctatus Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area	In buffer area only
Urocampus carinirostris Hairy Pipefish [66282]		Species or species habitat may occur within area	In buffer area only
Vanacampus margaritifer Mother-of-pearl Pipefish [66283]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Arctocephalus forsteri Long-nosed Fur-seal, New Zealand Fur-seal [20]		Species or species habitat may occur within area	In buffer area only
Arctocephalus pusillus Australian Fur-seal, Australo-African Fur-seal [21]		Species or species habitat may occur within area	In buffer area only
Dugong dugon Dugong [28]		Species or species habitat may occur within area	In feature area
Reptile			
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area	In feature area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area	In feature area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area	In feature area
Hydrophis elegans Elegant Seasnake [1104]		Species or species habitat may occur within area	In buffer area only
Natator depressus Flatback Turtle [59257]	Vulnerable	Breeding likely to occur within area	In feature area
Pelamis platurus Yellow-bellied Seasnake [1091]		Species or species habitat may occur within area	In buffer area only
Whales and Other Cetaceans			
[Resource Information]			
Current Scientific Name	Status	Type of Presence	Buffer Status
Mammal			

Current Scientific Name	Status	Type of Presence	Buffer Status
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area	In buffer area only
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area	In buffer area only
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area	In buffer area only
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area	In buffer area only
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Feresa attenuata Pygmy Killer Whale [61]		Species or species habitat may occur within area	In buffer area only
Globicephala macrorhynchus Short-finned Pilot Whale [62]		Species or species habitat may occur within area	In buffer area only
Globicephala melas Long-finned Pilot Whale [59282]		Species or species habitat may occur within area	In buffer area only
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area	In buffer area only

Current Scientific Name	Status	Type of Presence	Buffer Status
Kogia breviceps Pygmy Sperm Whale [57]		Species or species habitat may occur within area	In buffer area only
Kogia sima as Kogia simus Dwarf Sperm Whale [85043]		Species or species habitat may occur within area	In buffer area only
Lissodelphis peronii Southern Right Whale Dolphin [44]		Species or species habitat may occur within area	In buffer area only
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat known to occur within area	In buffer area only
Mesoplodon bowdoini Andrew's Beaked Whale [73]		Species or species habitat may occur within area	In buffer area only
Mesoplodon densirostris Blainville's Beaked Whale, Dense-beaked Whale [74]		Species or species habitat may occur within area	In buffer area only
Mesoplodon grayi Gray's Beaked Whale, Scamperdown Whale [75]		Species or species habitat may occur within area	In buffer area only
Mesoplodon layardii Strap-toothed Beaked Whale, Strap-toothed Whale, Layard's Beaked Whale [25556]		Species or species habitat may occur within area	In buffer area only
Mesoplodon mirus True's Beaked Whale [54]		Species or species habitat may occur within area	In buffer area only
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area	In buffer area only
Peponocephala electra Melon-headed Whale [47]		Species or species habitat may occur within area	In buffer area only

Current Scientific Name	Status	Type of Presence	Buffer Status
Physeter macrocephalus Sperm Whale [59]		Species or species habitat may occur within area	In buffer area only
Sousa sahalensis as Sousa chinensis Australian Humpback Dolphin [87942]		Species or species habitat likely to occur within area	In feature area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area	In buffer area only
Stenella coeruleoalba Striped Dolphin, Euphrosyne Dolphin [52]		Species or species habitat may occur within area	In buffer area only
Stenella longirostris Long-snouted Spinner Dolphin [29]		Species or species habitat may occur within area	In buffer area only
Steno bredanensis Rough-toothed Dolphin [30]		Species or species habitat may occur within area	In buffer area only
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area	In buffer area only
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area	In buffer area only
Ziphius cavirostris Cuvier's Beaked Whale, Goose-beaked Whale [56]		Species or species habitat may occur within area	In buffer area only

Extra Information

State and Territory Reserves			[Resource Information]
Protected Area Name	Reserve Type	State	Buffer Status
Lake Innes	State Conservation Area	NSW	In buffer area only
Lake Innes	Nature Reserve	NSW	In buffer area only
Limeburners Creek	National Park	NSW	In buffer area only

Protected Area Name	Reserve Type	State	Buffer Status
Macquarie	Nature Reserve	NSW	In buffer area only
Paperbark	Flora Reserve	NSW	In buffer area only
Queens Lake	State Conservation Area	NSW	In buffer area only
Rawdon Creek	Nature Reserve	NSW	In buffer area only
Sea Acres	National Park	NSW	In buffer area only
Woregore	Nature Reserve	NSW	In buffer area only

Regional Forest Agreements

[[Resource Information](#)]

Note that all areas with completed RFAs have been included.

RFA Name	State	Buffer Status
North East NSW RFA	New South Wales	In feature area

Nationally Important Wetlands

[[Resource Information](#)]

Wetland Name	State	Buffer Status
Limeburners Creek Nature Reserve	NSW	In buffer area only

EPBC Act Referrals

[[Resource Information](#)]

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Controlled action				
Oxley Highway to Kempsey Pacific Highway Upgrade, NSW	2012/6518	Controlled Action	Post-Approval	In buffer area only
Port Macquarie Airport Master Plan implementation and development activities, NSW	2016/7842	Controlled Action	Post-Approval	In feature area
Not controlled action				
Construction and operation of sewage treatment plant at Thrumster	2005/2312	Not Controlled Action	Completed	In feature area
development of a retirement village & facilities	2013/6738	Not Controlled Action	Completed	In buffer area only
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area
The Ruins Way Road Upgrade, Port Macquarie, NSW	2012/6577	Not Controlled Action	Completed	In feature area
Not controlled action (particular manner)				
Vegetation removal adjacent to Kooloonbung Creek Nature Park	2012/6663	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Referral decision				
Breeding program for Grey Nurse Sharks	2007/3245	Referral Decision	Completed	In buffer area only

Biologically Important Areas				
Scientific Name		Behaviour	Presence	Buffer Status
Dolphins				
Tursiops aduncus				
Indo-Pacific/Spotted Bottlenose Dolphin [68418]		Breeding	Likely to occur	In buffer area only
Seabirds				
Ardenna carneipes				
Flesh-footed Shearwater [82404]		Foraging	Known to occur	In buffer area only
Ardenna pacifica				
Wedge-tailed Shearwater [84292]		Foraging	Likely to occur	In buffer area only
Procellaria parkinsoni				
Black Petrel [1048]		Foraging	Likely to occur	In buffer area only
Sharks				
Carcharias taurus				
Grey Nurse Shark [64469]		Foraging	Known to occur	In buffer area only
Carcharodon carcharias				
White Shark [64470]		Distribution	Known to occur	In buffer area only
Whales				
Megaptera novaeangliae				
Humpback Whale [38]		Foraging	Known to occur	In buffer area only

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-Department of Environmental and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
- [-Environment and Planning Directorate, ACT](#)
- [-Birdlife Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- [-Natural history museums of Australia](#)
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-South Australian Museum](#)
- [-Queensland Museum](#)
- [-Online Zoological Collections of Australian Museums](#)
- [-Queensland Herbarium](#)
- [-National Herbarium of NSW](#)
- [-Royal Botanic Gardens and National Herbarium of Victoria](#)
- [-Tasmanian Herbarium](#)
- [-State Herbarium of South Australia](#)
- [-Northern Territory Herbarium](#)
- [-Western Australian Herbarium](#)
- [-Australian National Herbarium, Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence](#)
- [Forestry Corporation, NSW](#)
- [-Geoscience Australia](#)
- [-CSIRO](#)
- [-Australian Tropical Herbarium, Cairns](#)
- [-eBird Australia](#)
- [-Australian Government – Australian Antarctic Data Centre](#)
- [-Museum and Art Gallery of the Northern Territory](#)
- [-Australian Government National Environmental Science Program](#)
- [-Australian Institute of Marine Science](#)
- [-Reef Life Survey Australia](#)
- [-American Museum of Natural History](#)
- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- [-Other groups and individuals](#)

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact Us](#) page.

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Appendix C

Scoping spreadsheet

Environmental Impact Statement (EIS) scoping worksheet for:				Thrumster wastewater scheme - Port Macquarie Hastings Council					Date:		10-Aug-22			
What matters might be impacted?			What activities might cause an impact?		What are the characteristics of the impact?				How will the impact be managed?	What are the community and other stakeholder views?	What level of assessment and engagement is required in the EIS preparation phase?			
Social and environmental matters I.e. natural or human assets or values aggregated at the level most appropriate for informing management and assessment requirements Click on the matter for a description, or the link above for full glossary			Without any mitigation, is the proposal likely to impact on the matter? (Select from list)	If there is a 'likely' impact: 1. list the activities expected to cause the impact; and 2. if applicable, list the receptor being impacted and its status. E.g. construction noise will be heard at nearby school If 'unlikely', briefly explain why. Has the impact been actively avoided through project design or site location? (Manual entry)	Is the impact, without mitigation, expected to cause a material effect with regard to its... (Answer 'Y', 'N' or '?') Click on characteristic for description, or the link above for further detail				Does the impact need assessment in the EIS? (Auto fills)	Is the impact, without mitigation, expected to have a material cumulative effect with other impacts (including from other projects)? (Select from list)	What safeguards and management measures are expected to be required to address the impact? (Select from list)	Are there community or other stakeholder concerns regarding the impact or activity? (Based on engagement with community and other stakeholders) (Select from list)	Expected level of assessment and/or engagement required (Auto fills)	Relevant section in Scoping Report (Manual entry)
What does the proposal mean for people?	AMENITY	acoustic	Likely	Construction noise would be heard at nearby sensitive receivers including schools, residences. Confirm operational noise	?	?	N	?	Unknown	No	Standard	No	Other Issue	
		visual	Likely	Construction only. Likely but unavoidable during works. Confirm visual impact at STP site	Y	Y	?	?	Yes	Unknown	Standard	No	Other Issue + CIA	
		odour	Likely	STP will be odour source and impacts will be subject to nearest sensitive receivers and airshed behaviour	Y	Y	?	Y	Yes	No	Project Specific	Yes	Key Issue + Focussed Engagement	
		microclimate	n/a	Project is not of a sufficient extent or structure to influence microclimate in locality	N	N	N	N	No			No	No assessment necessary - Worksheet only	
		other - please specify	n/a										No assessment necessary - Worksheet only	
	ACCESS	access to property	Likely	Construction only, where pipeline installation works are in road easement, driveway access to be considered	Y	N	N	Y	Yes	No	Standard	Yes	Other Issue + Focussed Engagement	
		utilities	Likely	Construction requiring route selection to consider existing utilities such as in corridors	Y	Y	N	?	Yes	Unknown	Standard	No	Other Issue + CIA	
		road and rail network	Likely	Construction works in road easement for pipeline installation; road verge would be temporarily unavailable in some urban areas; possible traffic controls temp part road closures	Y	Y	N	Y	Yes	Yes	Standard	No	Other Issue + CIA	
		offsite parking	Unlikely	Construction only. Parking areas could be considered as options for laydown areas and construction compounds. Personnel parking to be considered	N	N	N	N	No	Unknown	Standard	Yes	Other Issue + CIA + Focussed Engagement	
		other - please specify	n/a										No assessment necessary - Worksheet only	
	BUILT ENVIRONMENT	public domain	Unlikely	Public built assets not expected to intersect with works after construction	N	N	N	?	No	No		No	Scoping Report	
		public infrastructure	Likely	Public infrastructure (Port Macquarie Airport) is adjacent to pipeline footprint . Construction impacts more relevant	Y	N	N	Y	Yes	No	Project Specific	Yes	Key Issue + Focussed Engagement	
		other built assets	Likely	Pipeline route passes adjacent to Port Macquarie Racecourse , rifle range - Crown Land	Y	N	N	Y	Yes	Unknown	Project Specific	Yes	Key Issue + CIA + Focussed Engagement	
		other - please specify	n/a										No assessment necessary - Worksheet only	
	HERITAGE	natural	n/a	Not located in natural heritage areas. Potential related issues addressed by Coastal Wetland and biodiversity assessments									No assessment necessary - Worksheet only	
		cultural	n/a		N	N	N	?	No				No assessment necessary - Worksheet only	
		Aboriginal cultural	Likely	Heritage items mapped within and near study area - AHIMS search	Y	Y	Y	Y	Yes	Yes	Project Specific	Yes	Key Issue + CIA + Focussed Engagement	
		built	Unlikely	some pipeline installataion works are adjacent to Cemetery, LEP Heritage sites	N	N	N	?	No	No	Standard	No	Other Issue	
		other - please specify	n/a										No assessment necessary - Worksheet only	
	COMMUNITY	health	Unlikely	Project not likely to affect human health except for risks in the case of emergency or hazard management planning. Operationally no significant standard issues. Separate industry and technical guidance for STPs and recycled water use at post-approval stage. Consideration of treated water for environmental management may be included in the assessment.	N	N	N	Y	No	No	Standard	Yes	Other Issue + Focussed Engagement	
		safety	Likely	Construction stage in urban areas will require safety and exclusion measures. Safety measures during construction stage required all locations.	N	Y	N	Y	Yes	No	Standard	No	Other Issue	
		services and facilities	n/a	project unlikely to impede, change or limit community services and facilities.									No assessment necessary - Worksheet only	
		cohesion, capital and resilience	n/a	Project is unlikely to affect community cohesion capital and resilience. STP footprint has limited disturbance area and is not prominent after completion									No assessment necessary - Worksheet only	
		housing	n/a	No housing affected or housing areas									No assessment necessary - Worksheet only	
		other - please specify	n/a										No assessment necessary - Worksheet only	
	ECONOMIC	natural resource use	n/a	Construction materials use will be selected based on minimising consumption and waste. No ongoing resource consumption other than electricity and standard water connection TBA	N	N	N	N	No	No			No assessment necessary - Worksheet only	
		livelihood	n/a	Project supports long term livelihood of locality due to improved capacity of wastewater system, support growth, create employment on site	N	N	N	N	No	No			No assessment necessary - Worksheet only	
		opportunity cost	n/a	Project does not remove opportunities for economic development									No assessment necessary - Worksheet only	
		other - please specify	n/a										No assessment necessary - Worksheet only	
Environment?	AIR	particulate matter	Likely	Construction stage at pipeline may generate dust that could affect sensitive resceivers (residential)	N	Y	N	Y	Yes	No	Standard	No	Other Issue	
		gases	n/a	Construction stage may generate vehicle emissions									No assessment necessary - Worksheet only	
		atmospheric emissions	n/a	No other specific atmospheric emissions e.g. exhaust or stacks associated with the project, odour mgmt separate issue									No assessment necessary - Worksheet only	
		other - please specify	n/a										No assessment necessary - Worksheet only	
	BIODIVERSITY	native vegetation	Likely	Clearing for construction, APZ, possible pipeline route clearing	?	Y	?	Y	Yes	No	Project Specific	Yes	Key Issue + Focussed Engagement	
		native fauna	Likely	Clearing for construction, APZ, possible pipeline route clearing	?	Y	?	Y	Yes	No	Project Specific	Yes	Key Issue + Focussed Engagement	
other - please specify	n/a											No assessment necessary - Worksheet only		

Environmental Impact Statement (EIS) scoping worksheet for:			Thrumster wastewater scheme - Port Macquarie Hastings Council ^{hh}							Date:		10-Aug-22		
What matters might be impacted?			What activities might cause an impact?		What are the characteristics of the impact?				How will the impact be managed?	What are the community and other stakeholder views?	What level of assessment and engagement is required in the EIS preparation phase?			
Social and environmental matters I.e. natural or human assets or values aggregated at the level most appropriate for informing management and assessment requirements Click on the matter for a description, or the link above for full glossary			Without any mitigation, is the proposal likely to impact on the matter? (Select from list)	If there is a 'likely' impact: 1. list the activities expected to cause the impact; and 2. if applicable, list the receptor being impacted and its status. E.g. construction noise will be heard at nearby school If 'unlikely', briefly explain why. Has the impact been actively avoided through project design or site location? (Manual entry)	Is the impact, without mitigation, expected to cause a material effect with regard to its... (Answer 'Y', 'N' or '?') Click on characteristic for description, or the link above for further detail				Does the impact need assessment in the EIS? (Auto fills)	Is the impact, without mitigation, expected to have a material cumulative effect with other impacts (including from other projects)? (Select from list)	What safeguards and management measures are expected to be required to address the impact? (Select from list)	Are there community or other stakeholder concerns regarding the impact or activity? (Based on engagement with community and other stakeholders) (Select from list)	Expected level of assessment and/or engagement required (Auto fills)	Relevant section in Scoping Report (Manual entry)
					extent?	duration?	severity?	sensitivity?						
What does the proposal mean for the natural env	LAND	stability and/or structure	n/a	Project would not modify or shape landform or ground surface in way that substantially would affect land stability or ground structure									No assessment necessary - Worksheet only	
		soil chemistry	Likely	Acid sulfate soils in project area. Construction stage Excavation and levelling of treatment plant site. Pipeline installation	Y	Y	Y	Y	Yes	No	Project Specific	No	Key Issue	
		capability	Unlikely	Rezoning of small area of RU1 land to IN zoning at STP site. Land not in use for agriculture. Other land use not limited by pipeline installation - largely within easements. Consideration of treated water for environmental management may be included in the assessment.	N	N	N	Y	No	Unknown	Standard	No	Other Issue + CIA	
		topography	n/a	No significant changes to topography, views, drainage / landform	N	N	N	Y	No	No	Unknown		No assessment necessary - Worksheet only	
		other - please specify	n/a										No assessment necessary - Worksheet only	
	WATER	water quality	Likely	construction stage will interact with drainage lines and coastal wetland and proximity area; operational management for hazards/risk	N	N	?	Y	Unknown	Yes	Standard	Yes	Other Issue + CIA + Focussed Engagement	
		water availability	n/a	project is water treatment project thus will intrinsically depend on water availability, however the work itself does not consume water in significant volumes, water availability expected to increase as a result fo project (recyled water)	N	N	N	?	No				No assessment necessary - Worksheet only	
		hydrological flows	Unlikely	Hydrological regimes are not expected to be affected by the project although works are adjacent to CW / in flood area	N	N	N	?	No	Unknown	Unknown	No	Key Issue + CIA	
		other - please specify	n/a										No assessment necessary - Worksheet only	
														No assessment necessary - Worksheet only
What risks does the proposal face?	RISKS	coastal hazards	n/a	Not in coastal hazard mapped area	N	N	N	Y	No	No			No assessment necessary - Worksheet only	
		flood waters	Likely	Flood zone at site may present project risk	Y	Y	Y	Y	Yes	No	Project Specific	No	Key Issue	
		bushfire	Likely	Construction stage risks for bushfire ignition on site and from off site. Operational risks to built infrastructure. Dangerous goods storage additional hazard	Y	Y	Y	Y	Yes	Unknown	Standard	Yes	Other Issue + CIA + Focussed Engagement	
		undermining	n/a	no underground or deep excavations									No assessment necessary - Worksheet only	
		steep slopes	n/a	Project is located on flat ground									No assessment necessary - Worksheet only	
		other - please specify	n/a										No assessment necessary - Worksheet only	
														No assessment necessary - Worksheet only



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