



Thrumster WWS Amendment Report RTS



Response to Submissions

Port Macquarie Hastings Council

22 July 2025

→ **The Power of Commitment**



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GHD Pty Ltd | ABN 39 008 488 373

Contact: Amylia Fletcher, RL, Mid Coast NSW | GHD

GHD Tower, Level 3, 24 Honeysuckle Drive

Newcastle, New South Wales 2300, Australia

T +61 2 4979 9999 | F +61 2 9475 0725 | E ntlmail@ghd.com | ghd.com

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Executive summary

Introduction

Port Macquarie-Hastings Council (Council) is proposing to develop the Thrumster Wastewater Scheme which includes a new wastewater treatment plant (WWTP), associated pipelines and infrastructure to service Thrumster, Sancrox, Fernbank Creek and catchment diversions from the Port Macquarie Wastewater Scheme (the project). The project is located on the Mid North Coast of NSW and is required to service key areas for future growth in the region.

The project has been declared as State Significant Infrastructure (SSI) and is a priority project for Council to ensure communities have access to necessary resources in a safe and reliable manner. The project is seeking the Minister's approval to construct and operate the wastewater scheme.

This Response to Submissions (RTS) report provides a summary of the submissions received during the exhibition of the Amendment Report and responses to the issues raised in those submissions to allow for a determination of the project by the NSW Minister for Planning and Public Spaces.

This report is subject to, and must be read in conjunction with, the limitations set out in Section 1.4 and the assumptions and qualifications contained throughout this report.

Public exhibition and submissions

An Amendment Report was prepared by GHD for the project and was placed on public exhibition between 8 May 2025 and 21 May 2025. The Department of Planning, Housing and Infrastructure (DPHI) received a total of 96 submissions during the exhibition of the EIS.

All submissions received during the consultation period were reviewed and considered. It is noted, however, that a significant number of submissions were template-based responses, resulting in repetition of content across multiple entries. Additionally, many issues fell outside the scope of the proposed project amendments in the exhibited Amendment Report. These objections have been acknowledged and a response provided to the range of issues raised where relevant to the determination of the project.

Table E.1 groups the submissions received by submitter and whether they are in support, for comment, or objection.

Table E.1 Summary of submissions received

Source	Support	Comment	Objection	Total
Government agencies advice	6	2	0	8
Community and individuals	2	1	93	96
Total	8	3	93	104

Project amendments

No further amendments have been made to the project from that described in the exhibited Amendment Report.

Stakeholder engagement

Additional consultation undertaken after the exhibition of the Amendment Report (2025a) included community pop-up sessions arranged by Council, publishing information throughout news sources (online) and email correspondence with Government agencies regarding their submissions to the Amendment Report.

Council will continue to consult with the community during construction and operation of the project.

Conclusion

A total of 93 objections to the project were received in response to the exhibition of the Amendment Report. These objections have been addressed in Section 4. The project has been designed and assessed with regard to the matters for consideration under the *Environmental Planning and Assessment Act 1979* (EP&A Act) and is consistent with the principles of ecologically sustainable development.

The project comprises the construction and operation of a new WWTP within the Port Macquarie-Hastings local government area (LGA) and is required to respond to the future population growth expected in the LGA.

With the implementation of the proposed management and mitigation measures outlined in Appendix B, the beneficial effects of the project are considered to significantly outweigh any potential negative impacts.

This report is subject to, and must be read in conjunction with, the limitations set out in Section 1.4 and the assumptions and qualifications contained throughout the report.

Terms and abbreviations

Abbreviations	Definition
ACHA	Aboriginal Cultural Heritage Assessment
ACHMP	Aboriginal Cultural Heritage Management Plan
AHIMS	Aboriginal Heritage Information Management System
AS	Australian Standard
BAM	Biodiversity Assessment Method
BDAR	Biodiversity Development Assessment Report
Council	Port Macquarie-Hastings Council
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DPE	Department of Planning and Environment
DPHI	Department of Planning, Housing and Infrastructure
DPI	NSW Department of Primary Industries
DPIE	NSW Department of Planning Industry and Environment
EIS	Environmental Impact Statement
EPA	NSW Environment Protection Authority
EP&A Act	<i>Environmental Planning and Assessment Act 1979 (NSW)</i>
EPL	Environment Protection Licence
HDD	Horizontal Directional Drilling
Heritage Act	<i>Heritage Act 1977 (NSW)</i>
IAP2	International Association of Public Participation
IPCC	Intergovernmental Panel on Climate Change
JSA	Job Safety Analysis
KPoM	Koala Plan of Management
LGA	Local Government Area
LUCRA	Land use conflict risk assessment
NPW Act	<i>National Parks and Wildlife Act 1974 (NSW)</i>
NSW	New South Wales
PAD	Potential archaeological deposits
PCT	Plant community type
POEO Act	<i>Protection of the Environment Operations Act 1997 (NSW)</i>
RAPs	Registered Aboriginal Parties
RFS	Rural Fire Service
Roads Act	<i>Roads Act 1993 (NSW)</i>
SSI	State Significant Infrastructure
TfNSW	Transport for NSW
WM Act	<i>Water Management Act 2000 (NSW)</i>
WTP	Water Treatment Plant
WWTP	Wastewater Treatment Plant
WWS	Wastewater Scheme

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1. Introduction

1.1 Background

Port Macquarie-Hastings Council (Council) is proposing to develop the Thrumster Wastewater Treatment Scheme which includes development of a new Wastewater Treatment Plant (WWTP) located on Fernbank Creek Road, with associated pipelines and infrastructure in the Port Macquarie region on the NSW Mid North Coast. The primary objective for the project is to support recent urban growth in the outer suburbs of Port Macquarie. The new wastewater scheme will reduce demand on the existing Port Macquarie WWTP and improve the resilience, redundancy and ongoing capacity of Council's infrastructure services, and facilitate planned future growth in the Thrumster, Sancrox and Fernbank Creek development areas.

The project has been declared as State Significant Infrastructure (SSI) and is a priority project for Council to ensure communities have access to a safe and reliable wastewater system. The project is seeking the Minister's approval to construct and operate the Thrumster Wastewater scheme.

GHD Pty Ltd (GHD) were engaged in 2024 to prepare an Environmental Impact Statement (EIS) (GHD, 2024) to assess the project. Following the preparation and exhibition of the EIS, between 6 August 2024 and 2 September 2024, a Response to Submissions (RTS) (GHD, 2025b) was prepared for the project in April 2025.

Since the preparation of the EIS and RTS for the project, an Amendment Report (GHD, 2025a) has been prepared to address minor scope changes to the project following the exhibition of the original EIS and the original RTS report. The Amendment Report was prepared to assess the following scope changes:

- Reduction of laydown area adjacent to the proposed WWTP to reduce impacts upon biodiversity values and adjoining wetland areas.
- Amendment of pipelines to avoid impact on the existing Biobanking site.
- Minor realignment of underbore locations to better align the design with existing services and reduce property impacts.
- Amendments to sewer pumping stations and associated pipelines to improve network connectivity.
- Minor amendment to construction footprint width at some locations on the pipeline network to provide sufficient access for construction vehicles and equipment.
- Minor amendment to pipelines to avoid construction of mains within the airport, to avoid conflict with new developments and to move further away from the existing Port Macquarie Race Club.

This RTS provides a summary of the submissions received during the exhibition of the Amendment Report between 8 May 2025 and 21 May 2025 and responses to the issues raised in those submissions to allow for a determination of the project by the NSW Minister for Planning and Public Spaces.

This report is subject to, and must be read in conjunction with, the limitations set out in Section 1.4 and the assumptions and qualifications contained throughout this report.

1.2 Project objectives

The key objectives of the project are consistent with the objectives of the original EIS and are to:

- To construct and commission the Thrumster Wastewater Scheme upgrade by 2028 to address the existing capacity constraints and operational risk faced by Council.
- To provide treatment capacity to allow for future growth and reduce the load on the current Port Macquarie WWTP to minimise loss of sewerage network containment, environmental contamination, and allow important preventative maintenance to occur.
- To promote Council as a regional leader through the project delivery and improve the standard of community and environmental outcomes in areas including:
 - Network odour and loss of containment events in the sewerage network impacting the community.

- Energy efficiency and power usage associated with sewer collection, transfer and treatment.
 - Providing high quality recycled water for third pipe scheme including potential future industrial users.
 - Enable Council to implement biosolids resource recovery processes and manage biosolids stabilisation as part of Council's broader centralised organics recycling strategy.
- To provide a reliable and resilient sewerage scheme.

1.3 Purpose and structure of this report

This Response to Submissions (RTS) report has been prepared by GHD Pty Ltd (GHD) on behalf of Council to support the application for Infrastructure Approval for the project. This report is supported by information prepared by subconsultants to GHD and Council. The purpose of this document is to respond to submissions received for the project, as well as clarify the extent of potential impacts related to the project.

During exhibition of the Amendment Report, the Department of Planning, Housing and Infrastructure (DPHI) received 96 submissions, comprised of 104 public submissions, and 8 letters of agency advice. DPHI has provided copies of these submissions to Council. In accordance with section 5.17(6) of the *Environmental Planning and Assessment Act 1979* (EP&A Act), the Secretary requires the proponent to provide responses to the issues raised in the submissions.

This report has been prepared in accordance with the DPHI guideline '*State significant infrastructure guidelines – preparing a submissions report*' (DPHI, 2024). The report is structured as follows:

- Section 1 introduction and background.
- Section 2 analysis of submissions.
- Section 3 summarises actions taken since exhibition, including any project changes, community and stakeholder engagement, and further assessment.
- Section 4 provides a response to submissions.
- Section 5 provides an updated project description.
- Appendix A includes a register of all submissions received.
- Appendix B provides a list of management measures updated in response to issues raised in the submissions.
- Appendix C supporting information, including any detailed engagement or technical reports.

1.4 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.

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

GHD has prepared this report on the basis of information provided by Port Macquarie Hastings Council and others who provided information to GHD (including Government authorities)], which GHD has not independently verified or checked beyond the agreed scope of work. GHD does not accept liability in connection with such unverified information, including errors and omissions in the report which were caused by errors or omissions in that information.

2. Analysis of submissions

2.1 Overview

DPHI received a total of 104 submissions during the exhibition of the EIS Amendment Report. Table 2.1 groups the submissions received by submitter and whether they are in support, for comment or objection.

Table 2.1 Summary of submissions received

Source	Support	Comment	Objection	Total
Government agencies advice	6	2	0	8
Community and individuals	2	1	93	96
Total	8	3	93	104

The designation of submissions as being in support, comment or objection shown in Table 2.1 is based on the designation made by DPHI on the Major Projects Website.

All submissions received during the consultation period were reviewed and considered. It is noted, however, that a significant number of submissions were template-based responses, resulting in repetition of content across multiple entries. Additionally, many issues fell outside the scope of the proposed project amendments in the exhibited Amendment Report and were not raised during the original exhibition of the EIS.

2.2 Submitters

The submissions received consist of:

- **Government agencies:**
 - NSW Environment Protection Authority (EPA).
 - Department of Primary Industries and Regional Development (DPRID) Agriculture and Biosecurity.
 - Department of Climate Change Energy, the Environment and Water (DCCEEW) Conservation Programs, Heritage and Regulation (CPHR).
 - New South Wales National Parks and Wildlife Service (NPWS).
 - DPIRD Fisheries.
 - Transport for NSW (TfNSW).
 - Heritage NSW.
 - NSW DCCEEW Water.
- **Submissions from community members and individual residents:**
 - 104 submissions.

2.3 Categorisation of issues

In accordance with the guideline *State significant infrastructure guidelines – preparing a submissions report* (DPIE, 2022), GHD has grouped issues raised in submissions into one of five broad categories:

- Project (e.g., the site/corridor, the physical layout and design, uses and activities, timing).
- Procedural matters (e.g., level or quality of engagement, compliance with the Secretary's Environmental Assessment Requirements (SEARs), identification of relevant statutory requirements).
- Economic, environmental and social impacts of the project (e.g., amenity, air, biodiversity, heritage).
- Justification and evaluation of the project (e.g., consistency of project with Government plans, policies or guidelines, support for the project).
- Issues that are beyond the scope of the project (e.g., broader policy issues) or not relevant to the project.

Table 2.2 sets out the subcategories of issues raised by the submissions received and to which of DPHI's five broad categories they relate, except for issues which are beyond the scope of the project.

Table 2.2 *Issues sub-categories*

Primary Category	Issue Sub-category
The project	More suitable alternative sites/unsuitable location
	Project cost and budgetary risk
	Design
	Road infrastructure unable to support project
Procedural matters	Exclusion of Birpai RAP from archaeological investigations
	Consultation with RAPs
	Lack of stakeholder consultation
	EIS process rushed
	Insufficient time for community to review documents
	Concerns regarding GHD report reliability
	Contradictory statements on construction hours in GHD RTS
	Redacted documentation
	Procurement and governance issues
	Undocumented complaints and concerns
	Lack of responses to previously raised issues
	Withholding of critical power supply information.
	Omission of key documents and misrepresentation of information
	Exclusion of key stakeholders from consultation
	Lack of transparency
Outdated water modelling	
Economic, environmental and social impacts	Amenity
	Tidal inundation
	Coastal hazards
	Fire risk
	Flooding
	Contamination from overflow
	Biodiversity impacts
	Impacts to water quality, Fernbank Creek and/or Partridge Creek
	Aboriginal and cultural heritage impacts
	Odour and bioaerosol pollution
	Construction dust
	Construction noise
	Public health impacts
	Health impacts of asbestos
	Traffic, transport and access impacts
	Intersection safety
	Pedestrian and cyclist safety
Impacts to threatened species and birds	

Primary Category	Issue Sub-category
	Financial pressures on taxpayers
	Potential property damage
	Vibration impacts on buildings
	Unclear emergency access planning
	Land acquisition
	Contamination of drinking water supply
	Impacts to local high school students
	Historical heritage impacts
Justification and evaluation of the project	Support for project
	Existing issues with Koala Street
	Existing issues with Koala Street and/or preference for Koala Street to be upgraded as a priority
Issues beyond the scope of the project	Concerns that adding more dwellings without Oxley Hwy and Wrights Rd upgrades is irresponsible
	Concerns around development more generally

Appendix A provides a register of the submissions received and where in this report each submission has been addressed.

2.4 Summary of issues raised

A total of 48 issues were raised in the 96 individual submissions and 8 agency advice received. Issues were raised both in support and objection to the project.

2.4.1 Location of submitters

Submissions received have been categorised based on the location of the submitter. Location categories used were:

- Local (within 5 km of the project within Thrumster, Fernbank Creek, Sancrox, Wauchope, Lake Innes or Port Macquarie) - 76 community members (individual submissions).
- Regional (between 5 - 100 km project such as Kendall, Camden Head, Lake Cathie, Bonny Hills, and Lakewood) - 7 individual submissions.
- Broader (further than 100 km from the project including Queensland, Lennox Head, Wyee, and Sydney) – 13 individual submissions and 8 State agency advice.

3. Actions taken since exhibition

3.1 Changes to the project

3.1.1 Preferred project

An overview of the project to provide context is set out in Section 3.1.2.

A number of amendments have been made to the project from that described in the exhibited EIS, which were described in detail in the Amendment Report including:

- Reduction of laydown area adjacent to the proposed WWTP to reduce impacts upon biodiversity values and adjoining wetland areas.
- Amendment of pipelines to avoid impact on the existing biobanking site.
- Minor realignment of underbore locations to better align the design with existing services and reduce property impacts.
- Amendments to sewer pumping stations and associated pipelines to improve network connectivity.
- Minor amendment to construction footprint width at some locations on the pipeline network to provide sufficient access for construction vehicles and equipment.
- Minor amendment to pipelines to avoid construction of mains within the airport, to avoid conflict with new developments and to move further away from the existing Port Macquarie Race Club.

Revised mitigation measures proposed for the project following exhibition of the Amendment Report are detailed in Appendix B.

3.1.2 Project overview

Council is proposing to develop the Thrumster Wastewater Scheme which includes a new WWTP, associated pipelines and infrastructure to service Thrumster, Sancrox, Fernbank Creek and catchment diversions from the Port Macquarie Wastewater Scheme (the project). The project is located on the Mid North Coast of NSW and is required to service key areas for future growth in the region.

The project has been declared as SSI and is a priority project for Council to ensure communities have access to necessary resources in a safe and reliable manner. The project is seeking the Minister's approval to construct and operate the wastewater scheme.

The key objectives of the project are described in Section 1.2.

The project includes the following key elements:

- New WWTP, including a recycled water plant within Lot 14, DP 1139180 on 433 Fernbank Creek Road, about six kilometres west of Port Macquarie CBD.
- Return treated effluent pipeline to Kooloonbung Creek.
- Main access road to the WWTP and a flood-free, all-weather access road.
- New sewage pumping stations (SPSs), sewer rising mains, recycled water mains and a potable water connection.
- Upgrade works at identified existing sewage pumping stations to reduce the current load on the existing system.
- Improvements to site access, optic fibre connection and electricity supply.

Site compounds would be established within close proximity to the WWTP and at key locations along the pipeline routes. Each site compound has been chosen as they are cleared of native vegetation, outside of natural drainage lines and do not contain known Aboriginal heritage.

The Thrumster WWTP would service the areas of Sancrox, Thrumster, Fernbank Creek and catchment diversions from the Port Macquarie Wastewater Scheme. The project seeks approval for a WWTP to provide a treatment capacity for 40,000 equivalent population (EP) with design flow of 9.2 mega litres per day (ML/day). The WWTP has been designed to be expandable in the future to an ultimate capacity of 80,000 EP, with a design flow of 18.4 ML/day.

3.2 Additional community and stakeholder engagement since Amendment Report exhibition

Additional consultation undertaken after the exhibition of the Amendment Report (2025a) included:

- Community pop-up sessions arranged by Council.
- Publishing information throughout news sources (online).
- Email correspondence with Government agencies regarding their submissions to the Amendment Report – the responses provided are discussed within this report.
- Email correspondence requesting written confirmation from WaterNSW regarding the scheme's eligibility for the Coastal Construction Exemption under groundwater water access licence requirements.

The following engagement and promotional activities were undertaken during the exhibition period of the Amendment Report:

- Community Pop-up engagement sessions were held on the 20 and 21 May 2025 for the community to meet the project team, hear first hand about the project, review physical copies of the Amendment Report on exhibition and find out how to make a submission on the Major Projects Portal.
- Design Amendment Notification Mail drop in May 2025 to those 115 properties on the alignment in which network refinement is adjacent to.
- Port News advertisement: promoting the exhibition period and community pop-up events.
- Project Webpage promoting the link to the Major Projects Planning Portal and the exhibition dates and community pop-up events.
- Social Media - LinkedIn posts promoting the exhibition and the community pop-up events and providing a link to the Major Projects Planning Portal.
- Social Media - Facebook event posts promoting the individual community pop-ups.
- Promotion in the Environment Matters May Newsletter.

Council will continue to consult with the community during construction and operation of the project.

4. Response to submissions

This chapter provides a summary of issues raised by individual members of the community and government authorities and the initial response to issues raised.

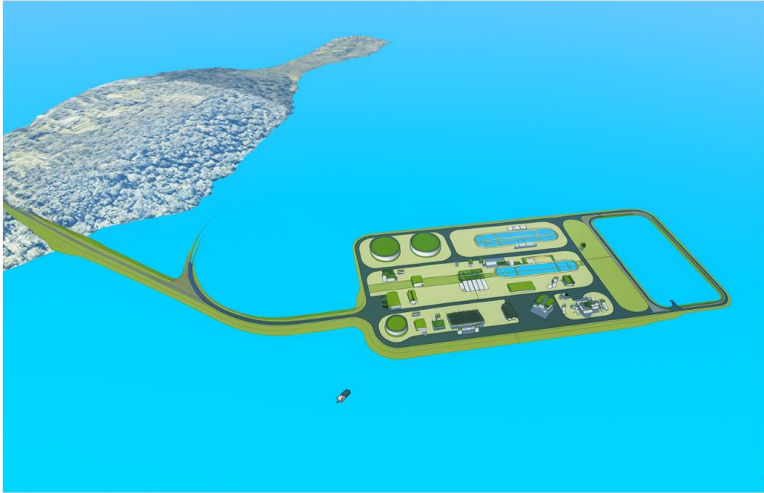
4.1 Individual submissions

Submissions received by individual members of the community are made up of the following:

- 96 submissions in total:
 - Two (2) in support
 - 93 objections
 - One (1) Comment

Table 4.1 Individual submissions and response table

Primary Category	Issue Sub-category	Issue description	Response to submission
Project	More suitable alternative sites/unsuitable location	<ul style="list-style-type: none"> - Too close to the river. - Given that the project is proposed to service Thrumster, it should be located closer to Thrumster - Danger of flood-related damage and accidents at current proposed location. - More viable wastewater management alternatives, such as upgrades to Lake Road and Koala Street facilities, have not been fully disclosed or assessed. 	<p>Site selection</p> <p>The location of the WWTP site has been investigated since the early 2000s and the sandplains site off Fernbank Creek Road has consistently been highlighted as the optimal site location for the scheme. Multi-criteria analysis and site selection review workshops were undertaken with government agency and community representatives was undertaken as part of the EIS development process and reported in section 2.6 of the EIS. Impacts upon receiving waters and nearby receivers were considered in detail as part of the EIS.</p> <p>Concerns about site accessibility during times of flood</p> <p>The facility will be accessible via two access roads:</p> <ol style="list-style-type: none"> 1. Primary Access Road: This road will be used continuously throughout both the construction and operational phases. During flood events, there is however a potential for inundation of this road, which could lead to restricted or complete loss of access to the site via this route. 2. Secondary/Emergency Access Road: The concept design includes a flood-proof, all-weather access road to provide access to the TWWTP exclusively during flood events or emergencies. <p>It was investigated and identified that the most suitable location for the emergency access road traverses private land at 555 Fernbank Creek Rd. This emergency access road will be above the 1% Annual Exceedance Probability (AEP) (1 in 100 year flood) level and will allow access to and egress from the site during flooding events that impact the primary access road. The secondary access will link into Fernbank Creek Road west to the Pacific Highway / Fernbank Creek interchange.</p>

Primary Category	Issue Sub-category	Issue description	Response to submission
			 <p data-bbox="1173 738 1935 775"><i>Figure 1: the proposed wastewater treatment plant layout showing the raised embankment compared to the 1% AEP flood event level, which is 1.55m higher than May 2025 event</i></p>
		<ul style="list-style-type: none"> <li data-bbox="568 799 779 823">– Option selection 	<p data-bbox="1173 799 2056 852">Concerns that the upgrade of existing plant was overlooked and questions of suitability of TWWTP location.</p> <p data-bbox="1173 863 2101 1023">While upgrading the existing Port Macquarie Wastewater Treatment Plant (PMWWTP) was considered, a comprehensive assessment of three strategic options concluded that constructing a new Thrumster Wastewater Scheme (Option 1) is the preferred solution. Although the cost difference between Options 1 and 2 was minimal, Option 1 scored higher in key non-cost areas such as constructability, delivery risk, and community impact.</p> <p data-bbox="1173 1034 2092 1198">Expanding the existing PMWWTP would involve complex works on an active site, increasing the risk of disruption and environmental challenges. In contrast, the new facility at Fernbank Creek offers lower construction risks and enables timely delivery of additional treatment capacity by 2028. Importantly, Option 1 also helps distributing treatment across two sites for a more resilient and adaptable wastewater network solution.</p> <p data-bbox="1173 1209 2002 1233">Concerns about higher CAPEX and OPEX of the selected TWWTP option</p> <p data-bbox="1173 1244 2101 1326">The CAPEX and OPEX are marginally higher but considering the construction risks and the non-cost criteria Option 1 was the highest scorer when the multi-criteria assessment was completed.</p>

Primary Category	Issue Sub-category	Issue description	Response to submission
			<p>Concerns about rushed process</p> <p>Council has been developing the provision to construct a new WWTP since the early 2000s to service additional growth forecasted for the areas of Sancrox, Fernbank Creek, Thrumster and several catchment areas currently serviced by the existing Port Macquarie WWTP. Council has been undertaking planning investigations to provide a new WWTP to service Urban Release Area 13 for more than 10 years, seeking to provide the optimal location for the WWTP with consideration to statutory, community, environmental, population growth and engineering design considerations. The alternatives considered are detailed in section 2.6 of the EIS.</p>
	Project cost and budgetary risk	<ul style="list-style-type: none"> - The cost is too high at \$200 million. - Alternatives would be more cost effective. - Council has not demonstrated how it intends to finance the majority of the project, with current budgets reportedly covering only around 30% of the expected cost. This lack of transparency creates unacceptable financial uncertainty for ratepayers. 	<p>Financial Planning and source of funds</p> <p>Council carefully manages the delivery of major infrastructure projects such as the Thrumster Wastewater Treatment Plant through its annual Operational Plan, which ensures that costs are staged, budgeted, and aligned with long-term financial planning. Each phase of the project is funded progressively, allowing Council to maintain financial stability while meeting the needs of a growing community. This structured approach includes detailed cost estimates, milestone tracking, and integration with the Long-Term Financial Plan, ensuring that no single project places undue pressure on Council's overall budget. Residents can be confident that Council is delivering essential infrastructure responsibly, without compromising its financial health or ability to provide core services.</p> <p>The project will be fully funded by Council from our Wastewater reserves. However, we will continue to apply for funding when appropriate grant funding streams are available from other levels of Government.</p> <p>Wastewater reserves are funded through a combination of the wastewater annual charge that is charged as part of Council's rates, loan borrowings and from Developer Contributions.</p> <p>Concerns of cost escalation relating to network and infrastructure</p> <p>As part of the Thrumster Wastewater Scheme, Council is undertaking a series of network upgrades and augmentations to support current and future demand. While some components of the network are critical to the immediate operation of the new treatment plant, others such as non-essential extensions or capacity upgrades will be staged and delivered over time. This approach ensures that the project remains financially sustainable and affordable, allowing Council to prioritise essential infrastructure while managing costs responsibly.</p>


Primary Category	Issue Sub-category	Issue description	Response to submission
			<p>Concerns Developers are not adequately contributing to project costs</p> <p>Developers of residential, commercial, and industrial projects are required to contribute to the cost of expanding sewer infrastructure through developer charges known as "headworks charges." These charges are calculated under the Development Servicing Plan for Water Supply and Sewerage (DSPW&S) and are based on the type and intensity of the development. The contributions help fund upgrades to water and sewer systems and are separate from regular water rates. This system ensures that the financial burden of infrastructure expansion is shared fairly and sustainably among those driving urban growth.</p> <p>Concerns discrepancies in cost estimates</p> <p>The initial cost estimate of \$200 million was part of a strategic plan and was not based on a reference design. A more detailed estimate of \$134 million (excluding GST, contingency, and escalation costs) was developed later, once the concept design had been prepared. This refined estimate was produced by Beca Hunter H2O and was based on a Class 4 cost estimate provided by a quantity surveyor.</p> <p>It's important to understand that early cost estimates such as those used in strategic planning are high-level and indicative, often based on limited design detail, whereas more accurate and reliable costings are developed over time as the project progresses through concept and detailed design phases; this is standard practice in infrastructure planning and ensures that budgets are refined and aligned with actual scope and design clarity.</p>
	Project Management	– Project Mismanagement concerns	<p>Council has a Project Management Policy, which outlines the use of a common project management framework across all Council-managed projects. This framework is designed to ensure consistency, accountability, and successful delivery of projects by applying structured project management principles.</p> <p>The policy, adopted on 15 February 2017, requires all Council project managers to follow this framework, which includes standardised processes for project initiation, planning, execution, monitoring, and closure. It supports effective governance, risk management, and resource allocation throughout the project lifecycle.</p> <p>This project requires Tier 3 governance, which applies to high-value and strategically significant projects, such as the Thrumster Wastewater Treatment Plant. Resulting in the projects being overseen by a multi-disciplinary steering group made up of Senior Project Managers and Engineers, Executive Leadership and technical advisors. It involves formal reporting, risk management, and compliance requirements. Tier 3 governance ensures rigorous planning, transparent decision-making, and alignment with Council's strategic goals, while also incorporating stakeholder engagement and community consultation to manage impacts and expectations effectively.</p>

Primary Category	Issue Sub-category	Issue description	Response to submission
	Design	<p>More suitable alternative design would be to upgrade existing infrastructure for the following reasons:</p> <ul style="list-style-type: none"> - Improved water quality in receiving waters. - Reduced air and odour pollution for neighbouring residents. - Lower cultural heritage impact due to disturbed land. - Reduced ecological impact and offset costs. - Avoidance of major sewer diversions. - Substantially lower CAPEX and OPEX costs. 	<p>Concerns about network design being inefficient. Questions raised about suitability of effluent discharge location and impact.</p> <p>The discharge options were initially evaluated using a multi-criteria analysis (MCA) that considered both cost and non-cost factors. A workshop with regulatory and community stakeholders was held on 17 July 2023 to compare the four initial options (excluding ocean outfall). Two follow-up workshops (14 and 19 September 2023) focused on further assessing Options 4 and 5 and confirming the final selection.</p> <p>This rigorous process ensured that all options and evaluation criteria, both cost-related and otherwise were thoroughly considered.</p> <p>Concerns about foundations and footings for the WWTP</p> <p>The selected construction contractor will be required to undertake a comprehensive geotechnical analysis to determine the necessary footings for their design. The final requirements may vary based on the contractor's detailed design. All designs must be certified by a qualified geotechnical professional, and footings must be engineered in accordance with the investigation findings and design loads to ensure structural stability and suitability for site conditions.</p>
	Capacity of local road network	Existing road system is strained. This project would worsen road conditions.	<p>Concerns about safety, capacity and condition of road to accommodate increased construction traffic</p> <p>Council prioritises funding for road upgrades and maintenance through a strategic, evidence-based approach that aligns with its long-term infrastructure and asset management plans. Roads are assessed based on factors such as safety risk, traffic volumes, current condition, and their importance to the broader transport network, including access for emergency services and growing communities like Thrumster and Sancrox. Council also considers community feedback and development trends to ensure infrastructure keeps pace with population growth and changing needs. With limited funding available, Council focuses on delivering the greatest public benefit by targeting investment where it will have the most impact, while also seeking opportunities to leverage state and federal funding partnerships to extend the reach of local resources.</p> <p>Concerns about worsened road conditions</p> <p>A condition report will be conducted prior to the commencement of works on the project, and the contractor shall be responsible for reinstating the road to its pre-construction condition, ensuring that any deterioration resulting from construction activities is rectified.</p>

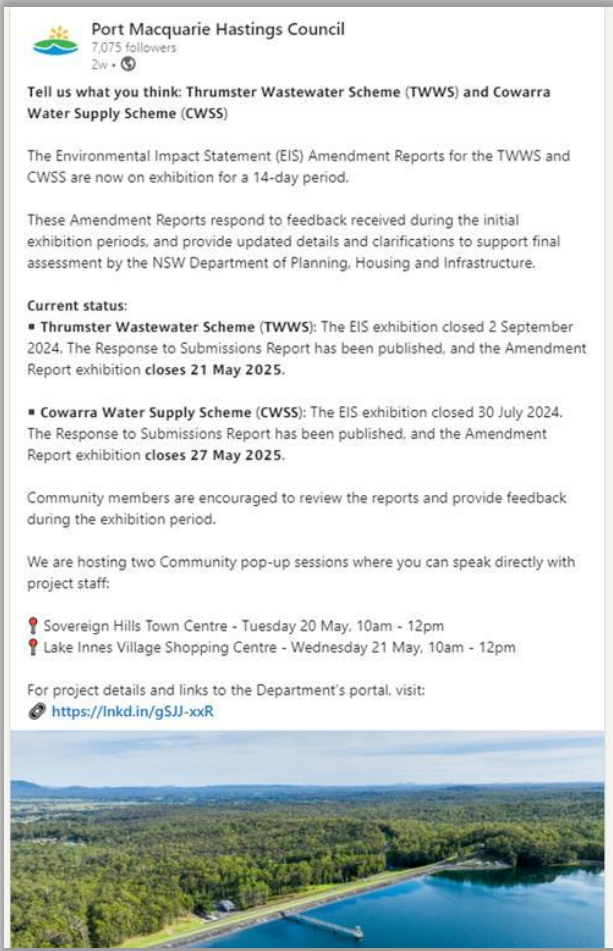
Primary Category	Issue Sub-category	Issue description	Response to submission
Procedural matters	<p>Exclusion of Birpai RAP from archaeological investigations. Undocumented complaints and concerns</p>	<p>On 20 November 2024, a representative of the Birpai Traditional Owners Indigenous Corporation who was registered to participate in test excavations was denied access to the site by GHD's subcontractor.</p>	<p>Niche were engaged for the preparation of the Aboriginal Cultural Heritage Assessment as part of the EIS.</p> <p>On 1 November 2024, an invitation to attend the test excavation was sent to the Birpai Traditional Owners Indigenous Corporation and all Registered Aboriginal Parties (RAPs). No response was received from the Birpai Traditional Owners Indigenous Corporation. However, on the day of the excavation, a representative from the Corporation arrived on site without having submitted an RSVP or providing evidence of insurance coverage.</p> <p>Due to commercial and liability considerations, RAPs are required to hold their own insurance coverage to participate in test excavations. This requirement ensures that all parties are adequately protected in the event of any incidents or claims arising during the course of the project.</p> <p>As no insurance coverage was in place, the contractor was unable to permit the representative from the Birpai Traditional Owners Indigenous Corporation to participate in the excavation. A formal complaint was lodged with Council and matters regarding the engagement process for participation in the test excavation were discussed directly with Council in meetings in February and April 2025 with follow-up emails documenting the discussions. It should be noted that representatives from Birpai LALC and Birpai Traditional Owners Indigenous Corporation attended the additional site survey held on 5 March 2025 following resolution of insurance issues.</p> <p>Council has also had ongoing engagement with Birpai Traditional Owners Indigenous Corporation regarding scared trees that fall outside the project footprint and not subject to assessment as part of the ACHAR.</p>
	<p>Consultation with RAPs</p>	<p>No representatives from the Birpai Aboriginal Land Council were involved, while representatives from the Bunyah Aboriginal Council (from outside the project area) were allowed to participate.</p> <p>The RAP's prior concerns about excavation methodologies and the risk to heritage values were disregarded.</p>	<p>Concerns about Birpai Local Aboriginal Land Council (LALC) not being consulted during the process in accordance with Act and best practice.</p> <p>The consultant who undertook the Aboriginal and Cultural and Heritage Assessment (ACHA), Niche, maintained consistent contact throughout the fieldwork and report review processes to encourage participation in these processes. Attempts were made before and during fieldwork to have a representative on site and Niche proactively sought report feedback during the review processes.</p> <p>Please refer to Appendix 1 - 12.1 Aboriginal community consultation records and Appendix 2 - Aboriginal community consultation log of the ACHAR for the comprehensive record of the engagement with Birpai LALC.</p> <p>Concerns Birpai RAP were excluded, despite formal registration and prior involvement.</p> <p>Nine Aboriginal stakeholders (or stakeholder groups) identified themselves as Registered Aboriginal Parties through the consultation process. Birpai LALC and Birpai Owners Corporation were on this list and consultation with these parties was ongoing through the development of the ACHA.</p>

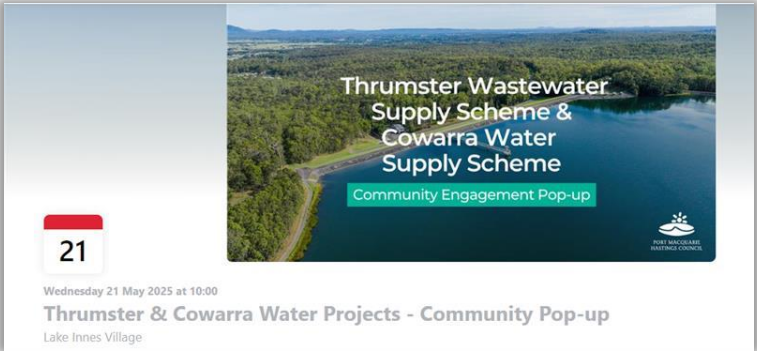

Primary Category	Issue Sub-category	Issue description	Response to submission															
			<p>It should be noted that representatives from Birpai LALC and Birpai Traditional Owners Indigenous Corporation (BTOIC) attended the additional site survey held on 5 March 2025 which was an addendum survey reviewing both the TWWS and CWWS.</p> <p>RAPs who attended the survey, inclusive of [REDACTED] from the Birpai Local Aboriginal Land Council (LALC), representatives from the Bunyah LALC, and [REDACTED] from the Birpai Traditional Owners Indigenous Corporation (BTOIC) were invited to attend due to their locality, connection to the region, and providing appropriate safety documentation and insurances.</p> <p>Niche acknowledges this and includes the below table for the representatives present for the Thrumster Project and Cowarra Project ACHAs additional surveys.</p> <p>Table 4.2 RAP representatives during additional surveys on 5 March 2025</p> <table border="1" data-bbox="1173 587 2105 836"> <thead> <tr> <th>Date</th> <th>Name</th> <th>RAP Group representing</th> </tr> </thead> <tbody> <tr> <td>5 March 2025</td> <td>[REDACTED]</td> <td>Birpai Local Aboriginal Land Council</td> </tr> <tr> <td>5 March 2025</td> <td>[REDACTED]</td> <td>Birpai Traditional Owners Indigenous Corporation (BTOIC)</td> </tr> <tr> <td>5 March 2025</td> <td>[REDACTED]</td> <td>Bunyah Local Aboriginal Land Council</td> </tr> <tr> <td>5 March 2025</td> <td>[REDACTED]</td> <td>Bunyah Local Aboriginal Land Council</td> </tr> </tbody> </table>	Date	Name	RAP Group representing	5 March 2025	[REDACTED]	Birpai Local Aboriginal Land Council	5 March 2025	[REDACTED]	Birpai Traditional Owners Indigenous Corporation (BTOIC)	5 March 2025	[REDACTED]	Bunyah Local Aboriginal Land Council	5 March 2025	[REDACTED]	Bunyah Local Aboriginal Land Council
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	Lack of stakeholder consultation	<p>Stakeholders request the public consultation period be extended.</p> <p>Absence of individual consultation for thousands of residents.</p> <p>Consultation was selectively conducted, excluding many residents most impacted by the plant's location and effluent discharge.</p>	<p>Involvement in consultation: the community are concerned that neighbours have not been part of early workshops.</p> <p>The Multi-Criteria Analysis workshop held on the specific topic of effluent discharge was a focus group called upon to assess effluent discharge options. Representatives and subject matter experts from the following stakeholder groups were in attendance:</p> <ul style="list-style-type: none"> – Port Macquarie Hastings Council (Council) – Department of Planning and Environment (DPE) – Environmental Protection Agency (EPA) – New South Wales Health – Mid North Coast – North Side Progress Association (NSPA) – Hastings Birdwatching Inc – Friends of Kooloonbung Creek – Hastings River Oyster Growers 															


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			<p>Initial engagement drop-in sessions called for a focused near-neighbour session in October 2023 which was designed to provide near neighbours an opportunity to inform the development of the Environmental Impact Statement. These were promoted widely via stakeholder emails, social media promotion, web-site promotion and Port News advertisement.</p> <p>The community have expressed concerns that there has been no public promotion of the exhibition period:</p> <p>The Amendment Report exhibition for the Thrumster Wastewater Scheme (TWWS) was publicly promoted through a range of formal channels to ensure transparency and community awareness. The exhibition was advertised on the NSW Planning Portal, where all relevant documentation including the Amendment Report and supporting materials were made available for public review. Additionally, Council promoted the exhibition through its official project page, social media, Environment Matters newsletter and a half-page advertisement in the Port News which provided the link to the submission portal.</p> <p>In addition, pop-up engagement sessions were held at Sovereign Town Centre and Lake Innes Shopping Village, where several attendees noted they had seen promotional material advertising the sessions in advance.</p> <p>Some examples of the multi-channel promotion:</p> <p>Website:</p>



Primary Category	Issue Sub-category	Issue description	Response to submission
			<div data-bbox="1189 233 1939 903"> <p>Home / Your Council / About us / Our projects / Thrumster Wastewater Scheme</p> <h2>Thrumster Wastewater Scheme</h2>  <div data-bbox="1671 304 1877 336">Project snapshot</div> <p>Project type Construction of a new sewage treatment plant and system</p> <p>Project schedule Estimated completion in 2028</p> <div data-bbox="1671 475 1877 507">Sign up for updates</div> <p>Are you interested in how we are working towards water resilience for our community? Enter your details to receive updates on this and other water projects.</p> <div data-bbox="1682 624 1787 655">Subscribe ></div> <div data-bbox="1671 703 1877 735">Feedback</div> <p>Please leave feedback or ask a question relating to the project</p> <div data-bbox="1682 799 1787 831">Contact us ></div> <div data-bbox="1671 879 1877 903">Where does my</div> <p>The exhibition of the Environmental Impact Statement (EIS) for the Thrumster Wastewater Scheme (TWWS) ended on 2 Sep 2024. All submissions received by the Department of Planning, Housing and Infrastructure during the exhibition of the proposal are available on the Department's website at: NSW Department of Industry, Planning and Environment portal</p> <p>Current status: Response to Submissions Report is published and the 14-day exhibition period for the Amendment Report closes on 21 May 2025.</p> <p>Residential growth has accelerated to the west of Port Macquarie, towards Thrumster and Sancrox, so we are proactively planning for logical and</p> </div>

Primary Category	Issue Sub-category	Issue description	Response to submission
			<div data-bbox="1189 236 1955 724" style="border: 1px solid #ccc; padding: 10px;"> <div style="display: flex; justify-content: space-between; align-items: center;"> <div data-bbox="1272 264 1731 296" style="background-color: #e0e0e0; padding: 2px 5px;">Environmental Impact Statement (EIS)</div> <div data-bbox="1753 233 1955 304" style="font-size: 0.8em;"> ■ 2005 Thrumster Wastewater Scheme Environmental Impact Statement (currently being superseded) <small>(PDF, 141MB)</small> </div> </div> <p data-bbox="1283 316 1686 368">The Environmental Impact Statement (EIS) assesses the project's potential environmental impacts and outlines how Port Macquarie Hastings Council will manage them.</p> <p data-bbox="1283 384 1686 416">The EIS submission to NSW Department of Planning, Housing, and Infrastructure includes documents with over 2,500 pages.</p> <p data-bbox="1283 432 1686 485">To help you navigate the EIS we have prepared a summary brochure which summarises the EIS for the Thrumster Wastewater Scheme and contains an easy-to-use reference guide.</p> <p data-bbox="1283 528 1373 544">Current Status</p> <ul data-bbox="1283 560 1686 612" style="list-style-type: none"> Exhibition closed: 6 September 2024 Response to the submission report has been published Amendment Report is on exhibition for 14 days until 21 May 2025 <p data-bbox="1283 639 1709 711">All submissions received by the Department of Planning, Housing and Infrastructure during the exhibition of the proposal are available on the Department's website at: Thrumster Wastewater Scheme Planning Portal - Department of Planning and Environment (nsw.gov.au)</p> </div>

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			<p>LinkedIn promotion</p>  <p>The screenshot shows a LinkedIn post from Port Macquarie Hastings Council, dated 2 weeks ago. The post title is "Tell us what you think: Thrumster Wastewater Scheme (TWWS) and Cowarra Water Supply Scheme (CWSS)". The text of the post states that the Environmental Impact Statement (EIS) Amendment Reports for both schemes are on exhibition for a 14-day period. It explains that these reports respond to feedback from the initial exhibition and provide updated details for final assessment by the NSW Department of Planning, Housing and Infrastructure. The post includes a "Current status" section with two bullet points: <ul style="list-style-type: none"> Thrumster Wastewater Scheme (TWWS): The EIS exhibition closed 2 September 2024. The Response to Submissions Report has been published, and the Amendment Report exhibition closes 21 May 2025. Cowarra Water Supply Scheme (CWSS): The EIS exhibition closed 30 July 2024. The Response to Submissions Report has been published, and the Amendment Report exhibition closes 27 May 2025. The post also encourages community members to review reports and provide feedback during the exhibition period. It lists two community pop-up sessions: <ul style="list-style-type: none"> Sovereign Hills Town Centre - Tuesday 20 May, 10am - 12pm Lake Innes Village Shopping Centre - Wednesday 21 May, 10am - 12pm At the bottom, it provides a link for project details: https://lnkd.in/gSJJ-xxR. The post is accompanied by an aerial photograph of a large water reservoir surrounded by green trees.</p>

Primary Category	Issue Sub-category	Issue description	Response to submission
			<p>Facebook promotion</p>  

Primary Category	Issue Sub-category	Issue description	Response to submission
			<p>Port News advertisement - Friday 16 May 2025</p> 

Primary Category	Issue Sub-category	Issue description	Response to submission
			<p>Environment Matters Newsletter sent 8 May 2025</p> <div data-bbox="1189 272 1783 890" style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <p style="text-align: center;">Thrumster Wastewater Supply Scheme (TWWS) and Cowarra Water Supply Scheme (CWWS) - EIS Amendment Report exhibition</p> <p>Are you interested in learning about the plans to enhance the reliability and resilience of water supply and wastewater management in Port Macquarie?</p> <p>These two state significant projects TWWS and CWWS have Environmental Impact Statement Amendment Reports which will be on exhibition for 14 days.</p> <p>For dates and times of Community Engagement Pop-up Sessions, please keep an eye on the below webpages.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <div data-bbox="1227 644 1469 711" style="background-color: #2e7d32; color: white; padding: 5px; margin-bottom: 5px;">Thrumster Wastewater Scheme</div>  </div> <div style="text-align: center;"> <div data-bbox="1507 644 1749 711" style="background-color: #2e7d32; color: white; padding: 5px; margin-bottom: 5px;">Cowarra Water Supply Scheme</div>  </div> </div> </div> <p>Insufficient time period of exhibition:</p> <p>This shorter exhibition period compared to the standard 28 days for an initial State Significant Infrastructure (SSI) application is considered appropriate when the amendments are minor or do not significantly alter the environmental or community impacts of the original proposal.</p> <p>This time period is set by the State Government and is outlined in the <i>'State Significant Infrastructure Guidelines – Preparing an Amendment Report'</i>.</p> <p>Concerns lack of engagement with environmental stakeholders</p> <p>Focus groups have been held specifically with Hastings Birdwatchers, Friends of Kooloonbung Creek, the Environmental Protection Authority, Hastings River Oyster Growers, NSW Dept. of Planning and Environment - Water. This engagement has been continued throughout the development and exhibition of the EIS and RTS.</p> <p>The promotion of the engagement sessions held during the development and exhibition periods have been promoted widely via council's environmental stakeholder database via the Environment Matters newsletter eDM and through direct stakeholder emails.</p>

Primary Category	Issue Sub-category	Issue description	Response to submission
			<p>Concerns for businesses and residents surrounding Pumping Stations in the network</p> <p>Those along the network alignment have had the project introduced through mailout notifications. See summary below:</p> <p>In June 2024, 771 letters were mailed out to businesses and residents along the alignment which included Thrumster Street, Boundary Street, Lincoln Road, The Binnacle, Hastings River Drive, Sherwood Road, Tuffins Lane, Tulloch Road, Lady Nelson Drive, Oxley Highway (between Wrights and Fernhill Roads), John Oxley Drive, Fernhill Road, Acacia Avenue, Central Road, Barton Crescent and others. The project was introduced in the letter and the August 2024 drop-in sessions were promoted in the letter.</p> <p>During the design development of the network pipeline, Council's officers have also been engaging with key businesses along the alignment that will be directly impacted in face-to-face meetings providing fact sheets, EIS information and concept design information.</p> <p>On 19 May 2025, 115 letters were delivered to businesses and residents along the amended network pipeline footprint informing them of the design amendments and the exhibition period for the Amendment Report as well as promoting the pop-up sessions.</p>
	EIS process rushed	<p>The process is being rushed to 'push through' the project.</p> <p>Rushed process means that consultation and assessment procedures have not been completed.</p>	<p>Concerns about rushed process</p> <p>Council has been developing the provision to construct a new WWTP since the early 2000s to service additional growth forecasted for the areas of Sancrox, Fernbank Creek, Thrumster and several catchment areas currently serviced by the existing Port Macquarie WWTP. Council has been undertaking planning investigations to provide a new WWTP to service Area 13 for over 10 years, seeking to provide the optimal location for the WWTP with consideration to statutory, community, environmental, population growth and engineering design considerations.</p>
	Insufficient time for community to review documents	14 days is not enough time for community members to review and to respond to a complex, multi-document proposal.	The EIS was placed upon exhibition for 28 days and advertised by DPHI in accordance with EP&A Regulation. The amendment report was exhibited for a shorter period given the refinements to the proposed scheme were minor and generally designed to minimise potential impacts associated with the project in accordance with DPHI guideline " <i>State Significant Infrastructure guidelines – preparing an amendment report</i> ".
	Concerns regarding GHD report reliability	<p>GHD RTS and Amendment Report for the Thrumster Wastewater Scheme contain inconsistencies that raise concerns about the accuracy and transparency of the information presented.</p> <p>Concerns about GHD's standard liability clause.</p>	The RTS and Amendment report accurately reflect the proposed amendments to the scheme and response to issues raised in submissions.

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	Contradictory statements on construction hours in GHD RTS	<p>GHD RTS states that work during construction won't be disruptive, however, mitigation measures have been provided to permit alternating night-time construction over extended periods. Furthermore, construction can be approved by relevant authorities to be even worse.</p> <p>This contradicts assurances that work will not be overly disruptive.</p>	Mitigation measures have been proposed as part of the EIS to minimise disruption to the community as far as practicable for such a large infrastructure undertaking.
	Redacted documentation	Transparency is essential in a project that impacts Aboriginal heritage. These hidden documents should be made publicly available to ensure thorough cultural heritage assessments.	<p>Concerns that the redacted sensitive information should be made publicly available</p> <p>Redaction of information in an Aboriginal Cultural Heritage Assessment (ACHA) report must be handled with care to balance transparency, cultural sensitivity, and legal obligations. The NSW Government's Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage outlines that:</p> <ul style="list-style-type: none"> – Sensitive cultural information—such as the location of sacred sites, burial grounds, or culturally restricted knowledge - may be redacted or generalised to protect Aboriginal cultural values and comply with community protocols. – Redactions should be agreed upon through consultation with Registered Aboriginal Parties (RAPs) or the relevant Local Aboriginal Land Council (LALC), ensuring that Traditional Owners have a say in what is disclosed. – The rationale for redaction should be documented in the report, including who requested it and why, to maintain transparency in the assessment process. – Redacted reports must still meet statutory requirements under the National Parks and Wildlife Act 1974 and any conditions of an Aboriginal Heritage Impact Permit (AHIP), ensuring that decision-makers have access to the full, unredacted version where necessary. <p>The ACHA report has followed the recommendation from the Heritage Consultant that: 'The Proponent should not publicise the location of Aboriginal cultural heritage sites or other cultural information without prior consent from the Aboriginal community. This includes the public distribution of any map'. (Pg 8 ACHAR report).</p> <p>Unredacted versions of the ACHA are made available to decision makers as required in accordance with protocol.</p> <p>Refer to section 5.2 (Pg 100) of the ACHA for the sensitive cultural information management protocol that has been adopted for the assessment.</p>


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	Procurement and governance issues	<p>Only two companies were invited to tender for the project—both of which subsequently merged.</p> <p>Reports of familial connections between Council staff and contractors involved in the project.</p>	<p>Concerns around fair competition and only two companies on tender list</p> <p>On 24 June 2024 an Industry Briefing was held to introduce the project to contractors prior to the close of Expressions of Interest for submission to be involved in Early Tenderer Involvement (ETI). This was widely promoted publicly and 23 companies attended.</p> <p>The ETI process was called for to engage contractors early to help refine the design, manage risks, and improve constructability and cost-effectiveness before the formal tender for construction was issued</p> <p>Expressions of Interest for the ETI were open from 6 June to 4 July 2024. Council received five submissions and that was narrowed down to a short-list of three. They all then took part in the ETI process where they were involved in reviewing contract and design documents to provide input to the project. The three teams selected are now part of the formal tender process.</p> <p>Concerns of family connections and conflicts of interest</p> <p>Project teams working on behalf of Council are bound by Council's Procurement Policy, which mandates compliance with all relevant legislation, ethical standards, and internal procedures throughout the procurement lifecycle. Teams must act with integrity, ensure transparency, and deliver value for money while supporting local economic development. They are required to declare and manage any conflicts of interest, including those arising from family connections, which must be disclosed and appropriately handled to maintain impartiality and public trust. The policy also emphasises confidentiality, accountability, and adherence to the Council's five guiding procurement principles: fairness, simplicity, value, collaboration, and strong governance.</p> <p>Council procurement processes are subject to audit and review. These audits and reviews help ensure that procurement activities comply with policy, deliver value for money, and uphold ethical standards. They also support continuous improvement and alignment with state government requirements.</p>
	Lack of responses to previously raised issues	Dissatisfaction with previous responses to issues raised such as odour propagation and bioaerosols collecting in roof collected drinking water. The responses provided are too vague and do not provide technical solutions.	Further specific detail has been provided on odour propagation and bioaerosols in environmental assessment response category below.
	Withholding of critical power supply information.	Council and GHD withheld this information from the Amendment Report and RTS, aiming to obtain project approval through misleading means. Planning to submit these substantial changes as an EIS modification is a breach of legislative requirements.	The design process for the scheme is ongoing and all refinements confirmed at the time of preparation of the amendment report were included for consideration as part of the determination of the project.

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			<p>The operation of the new WWTP will require a new electrical connection to the regional electricity network and Council has been in a process of ongoing liaison with Essential Energy. The preferred electrical alignment presented in the EIS was not accepted by Essential Energy and a new Connection Investigation Response was provided to Council on 07 April 2025. The Connection Investigation Response prepared by Essential Energy included a number of alternatives for consideration and Council has subsequently undertaken multi-criteria analysis and selected the Primary Feed Alternative 2 which involves extending an electrical connection along the WWTP access road.</p> <p>Selection of the preferred electrical connection was undertaken following the submission of the Amendment Report, so the changes could not have been described or assessed as part of Amendment report. Council have now initiated a Network Study to investigate any network augmentation required to support the project.</p> <p>Essential Energy is considered a determining authority and is required to consider the impact of their activities in accordance with Part 5 of the EP&A Act. However, the Thrumster Wastewater Scheme has been declared SSI in accordance with section 5.12(4) of the EP&A Act. Section 5.22 of the EP&A Act relates to the applications of other provisions of the EP&A Act and other Acts and states that Part 4 and Division 5.1 do not apply in respect of State Significant Infrastructure.</p> <p>The SSI declaration for the Thrumster scheme in Schedule 4 Clause 10 of the Planning System SEPP states:</p> <p><i>Development for the purposes of the Thrumster Wastewater Scheme on land in the Port Macquarie-Hastings local government area, including the following—</i></p> <ul style="list-style-type: none"> <i>(a) construction of a wastewater treatment plant at 433 Fernbank Road, Thrumster,</i> <i>(b) construction of sewer rising mains and recycled water mains,</i> <i>(c) works at certain existing sewer pump stations for the purposes of reducing sewer load on the existing system,</i> <i>(d) ancillary development.</i> <p>The SSI declaration includes ancillary development which reasonably would be construed as including upgrades to the electrical supply to the site where the sole focus of the electrical connection is to supply power for operation of the WWTP. The preferred option now involves extending an electrical connection from Fernbank Creek Road and extending along the WWTP access road within the project application area proposed for the project.</p> <p>The new transmission connection will not result in additional disturbance beyond the footprint proposed as part of the EIS. Installation of the new transmission connection will introduce a new project element to the site but will be visually integrated with other power lines traversing the area and is not considered to significantly alter the findings of the EIS.</p>

Primary Category	Issue Sub-category	Issue description	Response to submission
			<p>Further augmentation of the Essential Energy network beyond the direct connection from Fernbank Creek Road is considered beyond the scope of the project and would be assessed by Essential Energy in accordance with the requirements of Part 5 of the EP&A Act.</p>
	Omission of key documents and misrepresentation of information	<p>Omitted Documents Include</p> <ul style="list-style-type: none"> - Thrumster Wastewater Scheme – Strategic Wastewater Management Plan (Beca HunterH2O, 2023d). - Discharge Options Assessment (Beca HunterH2O, February 2024). - Connection Investigation Response – ECN-022950_MNC000088 – Thrumster Sewer Scheme V3 (April 2025). - Feedback from the Birpai Traditional Owners Indigenous Corporation. 	<p>Report availability</p> <p>Thrumster Wastewater Scheme – Strategic Wastewater Management Plan (Beca HunterH2O, 2023d).</p> <p>This report was undertaken as part of the preparatory planning works and is referenced in the Environmental Impact Statement dated 29 July 2024, exhibited during the August 2024 EIS exhibition period and has been summarised in the EIS and included in the reference list.</p> <p>This document has been made available on the project webpage here: https://www.pmhc.nsw.gov.au/files/assets/public/v/1/document-files/your-council/projects/thrumster-wastewater/thrumster-wastewater-scheme-strategic-wastewater-management-plan.pdf</p> <p>Discharge Options Assessment (Beca HunterH2O, February 2024)</p> <p>On 14 Dec 2023 the Discharge Options selection was presented at the Ordinary Council. The council report presented summarises the Discharge Options Assessment from Beca Hunter H2O. This document was made available on the website in May 2024 and published in the council report on the Agenda and Minute page since 14 Dec 2023.</p> <p>The Discharge Options Assessment (Beca HunterH2O, February 2024) document has also been made available on the project webpage here: https://www.pmhc.nsw.gov.au/files/assets/public/v/1/document-files/your-council/projects/thrumster-wastewater/thrumster-wastewater-scheme-discharge-options-assessment.pdf</p> <p>Connection Investigation Response – ECN-022950_MNC000088 – Thrumster Sewer Scheme V3 (April 2025)</p> <p>Recent report submitted by Essential Energy with multiple options to support the transmission connection as described above.</p> <p>Feedback from the Birpai Traditional Owners Indigenous Corporation</p> <p>This is made available in the Aboriginal and Cultural Heritage Assessment published on the NSW Planning Portal in Appendix 1 - 12.1 Aboriginal community consultation records and Appendix 2 - Aboriginal community consultation log. Please find it here: https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSI-56980459%2120250501T055340.352%20GMT</p>

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	GIPA requests	The community are concerned that council has not responded to the GIPA request in the relevant exhibition timeframe	In New South Wales, councils are generally required to decide on a GIPA (Government Information Public Access) request within 20 working days of receiving a valid application. However, this timeframe can be extended by up to 15 additional working days in certain circumstances, such as when consultation with third parties is needed or when dealing with archived records. These timeframes are designed to ensure timely access to information, but practical limitations - like staff availability, complexity of the request, or the need for clarification - can affect how quickly a council can respond.
	Exclusion of key stakeholders from consultation	Failure to fully engage Aboriginal communities.	Please refer to Appendix 1 - 12.1 Aboriginal community consultation records and Appendix 2 - Aboriginal community consultation log of the ACHAR for the comprehensive record of the engagement.
	Lack of transparency	Lack of transparency and community engagement such as the proposal's details, including site selection criteria and flood mitigation plans have not been adequately communicated to the community.	<p>Concerns about missing documentation and transparency</p> <p>Tender information: Given we are currently still in tender phase and due to commercial sensitivities, we are unable to make public any further details. The Council Procurement Policy (2025) policy mandates that all sensitive, personal, and confidential information obtained during procurement activities must be properly secured and managed. This includes supplier data, pricing, and proprietary information.</p> <p>Site selection information: the option evaluation relating to site selection has been published on the project webpage since October 2023 and can be found here: d2022-317747-thrumster-wastewater-scheme-site-location-option-evaluation2.pdf</p>
	Outdated water modelling	Outdated and inaccurate water modelling.	<p>Concerns Flood modelling has used outdated data / Historical flood levels on the site</p> <p>Flood modelling is a scientific process used to simulate how water moves across land during rainfall events, helping predict where and how flooding might occur. These models incorporate topography, land use, drainage infrastructure, and rainfall data to estimate water flow and accumulation. To account for climate change, flood models integrate projections of future rainfall patterns, sea level rise, and increased storm intensity based on climate scenarios.</p> <p>Flood models can become outdated when development alters topography, changing how water flows and accumulates across the landscape. In the specific context of the Thrumster WWTP. The surrounding landscapes and topography of Fernbank Creek and the site have remained largely unchanged for decades.</p> <p>The primary data utilised for the EIS assessment is from the Hibbard Precinct Flood Study.</p> <p>Refer to Table 3.3 of the Water Resources and Flooding Assessment for reference to the key sources and flood levels adopted in the assessment.</p>

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Economic environmental and social impacts	Amenity	There will be potential radiation exposure which will impact on nearby properties amenity.	<p>Electromagnetic fields (EMF) associated with electrical infrastructure (e.g. substations, high-voltage connections) have been considered in the planning process.</p> <p>Electrical infrastructure associated with the TWWS will be required to comply with the relevant Australian and international EMF exposure standards, including those set by the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA). These standards are designed to protect human health and are based on extensive scientific research.</p>
	Tidal inundation	Historical flood patterns in this region indicate a significant risk of inundation, which could lead to operational failures at the sewer plant and environmental contamination.	<p>Tidal inundation and corresponding sea-level-rise was considered in the water quality and flooding modelling undertaken for the project.</p> <p>To minimise potential risks from coastal hazards on the project, the site layout was elevated at a minimum level of 4.6 mAHD, corresponding to a 1 in 100 AEP event (with climate change) plus a 0.5 m freeboard, which incorporates uncertainties such as sea-level rise and wave-action. More critical infrastructure (from a water quality perspective) were to be located above the Probable Maximum Flood (PMF) level of 6.7 m AHD.</p> <p>To minimise impacts associated with climate-change and sea-level-rise flooding, a flood impact assessment was undertaken and identified that changes are very localised, with impacts not detrimentally affecting flood risk to neighbouring properties.</p> <p>Potential changes to water quality and climate-change impacts such as sea-level rise were considered in the operational water quality modelling, which included sea-level rise and general found that increased tidal flushing associated with sea-level rise will generally reduce the impact of discharges to receiving waters.</p>
	Fire risk	Addressing the risk of bushfire and pipeline damage due to bushfire.	<p>Concerns around fire risk</p> <p>To address bushfire risks, a comprehensive Bushfire Risk Assessment (TR14) has been completed, identifying the site as grassfire prone and recommending a 20-metre Asset Protection Zone (APZ) around all structures. The site will include all-weather access roads for emergency services and will implement strict controls such as hot work permits, designated smoking areas, and fire suppression equipment to manage ignition risks.</p> <p>Concerns that the 2019 peat fires will be repeated</p> <p>The Thrumster WWTP is strategically located on the stable sand plains, well removed from the areas affected by the 2019 peat fires. This siting provides a natural buffer from fire-prone peatland zones, reducing the risk of exposure to similar fire events in the future.</p> <p>Concerns pipelines will be damaged in the event of a fire</p> <p>Pipelines will be installed underground to enhance their resilience to bushfire impacts. Being buried beneath the surface protects these assets from direct flame contact, radiant heat, and airborne embers - common causes of damage during fire events. This underground placement ensures continued service during emergencies.</p>

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	Flooding	Fernbank Creek is a central disaster zone which experiences frequent flooding. The proposed hardstand surfaces would increase flood risk.	<p>Concerns about site accessibility during times of flood</p> <p>The facility will be accessible via two access roads:</p> <p>Primary Access Road: This road will be used continuously throughout both the construction and operational phases. However, during flood events, there is a potential for inundation, which could lead to restricted or complete loss of access to the site.</p> <p>Secondary/Emergency Access Road: the concept design includes for a flood-proof, all-weather access road to provide access to the TWWTP exclusively during flood events or emergencies.</p> <p>It was investigated and identified that the most suitable location for the emergency access road traverses over private land located on the property at 555 Fernbank Creek Rd. This emergency access road will be above the 1% Annual Exceedance Probability (1 in 100 year flood) level and will allow access and egress from the site during flooding events that impact the primary access road into the site. The secondary access will link into Fernbank Creek Rd west to the Pacific Highway Fernbank Creek interchange.</p>  <p><i>Figure 1: the proposed wastewater treatment plant layout showing the raised embankment compared to the 1% AEP flood event level, which is 1.55m higher than May 2025 event</i></p> <p>Concerns about floodplain loss not being included in the modelling</p> <p>In relation to potential impact on flooding because of filling associated with the site the assessment suggests the project is consistent with policy requirements for both commercial and critical infrastructure development.</p>

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			<p>The site footprint is in flood storage and flood fringe areas of the floodplain and in areas of low and medium flood hazard. Flood modelling indicates only minor and localised changes in flood levels and velocities, with all impacts remaining within the thresholds outlined in the Flood Policy.</p> <p>Refer to 7.2.4 of the Water Resources and Flooding Assessment for reference to this assessment.</p> <p>Concerns about insurance of the facility</p> <p>The elevated pad for the wastewater treatment plant has been designed in accordance with the Flood Planning Levels outlined in the Council Flood Policy (2018), incorporating a two-tiered system to ensure critical infrastructure is above the Probable Maximum Flood level, with flood modelling and a Flood Management Plan in place to manage risks during both construction and operation (see TR 1A - Water Resources and Flooding Assessment).</p> <p>The two-tiered pad design provides opportunity to locate commercial and industrial facilities major infrastructure above the 1% AEP flood level including a climate change allowance and 0.5 metre freeboard, with critical infrastructure will be located on the second tier of the pad which is located above the Probable Maximum Flood as defined by the 2006 flood study. Additionally, pipe infrastructure would be located below ground and would be suitably designed to manage impacts during flood conditions.</p> <p>Port Macquarie Hastings Council has flood insurance for assets to a specific limit of liability as part of Council's wider insurance policy. This insurance cover and the design of the plant in accordance with the Flood Policy is adequate to mitigate the risk of flooding.</p> <p>Why is residential development restricted due to flood risks, however it seems it does not apply to infrastructure development</p> <p>The wastewater treatment plant has been designed in accordance with the Council Flood Policy (2018). This Policy details the Development controls that have been determined as part of Floodplain Risk Management Studies.</p> <p>The requirements of this Policy are additional to, and complimentary to, the provisions of the Council Local Environmental Plan 2011 and Port Macquarie-Hastings Development Control Plan 2011 & 2013. Where there is an inconsistency between the Policy and another environmental planning instrument, the provisions of the environmental planning instrument must prevail.</p> <p>The Council Flood Policy 2018 sets minimum floor level requirements for commercial, industrial, and critical infrastructure developments to ensure resilience against flood events, with recent assessments confirming compliance at the WWTP site.</p> <p>Concerns around emergency access during flood events.</p> <p>Refer response above 'Concerns about site accessibility during times of flood'.</p>

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	Stormwater	The project may result in changes to site drainage and runoff associated with stormwater management.	<p>Stormwater Management and Design</p> <p>Finalisation of the stormwater drainage will be completed as part of the detailed design. All site stormwater drainage (excluding from the inlet works hardstand) will be captured in zones on each of the pad levels either as overland flow dish drains or a pit and pipe network. The stormwater will be discharged to designated outlets around the perimeter of the pad. The use of separate zones will help reduce flow concentrations and the size of the required infrastructure to manage flows. Protection and localised dissipation structures will be installed at each of the outlet locations to provide erosion control. Each localised stormwater discharge point around the pad perimeter will include stormwater quality improvement devices to improve the quality of stormwater prior to discharge. Stormwater drainage from the inlet works hardstand will be returned to the treatment plant for treatment.</p> <p>Why has the water Quality assessment used a dry month scenario to make assessment</p> <p>In water quality assessments drier time periods are assessed to establish a conservative baseline and identify worst-case scenarios. During dry conditions, natural dilution of pollutants is reduced, meaning any contaminants discharged into waterways are more concentrated. This allows assessors to evaluate the maximum potential impact of a project on water quality when the environment is least resilient. It also helps ensure that infrastructure is designed to perform safely and sustainably under low-flow or drought conditions.</p>
	Contamination from overflow	<p>E coli concentrations during a wet event or flood.</p> <p>Thrumster WWTP treatment process includes a continuous bioreactor which will agitate the water releasing the toxins</p> <p>The potential contamination of bore water and surrounding ecosystems due to unmonitored discharge.</p>	<p>Contamination from overflow</p> <p>Modelling concludes that there will be no unacceptable impacts in relation to water. The storm storage pond is also sized for population growth out to 2070 and so has redundant capacity for decades to come. The inlet screen has a capacity to receive up to 852 litres per second, which is more than 200 litres per second more than the sewage pumping system's capacity to pump to the plant. This means that even in the worst case, screening and grit removal – primary treatment of the wastewater - will be provided.</p> <p>The only scenario in which Partridge Creek or Fernbank Creek would be impacted is in the event of a major flood inundating the entire area. Incoming flows exceeding the treatment capacity of 4 x Average dry weather flow (ADWF) at the design horizon will initially be held in the 25 megalitre capacity storm storage pond and only once the storm storage pond is full there will be a potential overflow to the Partridge and Fernbank creek systems. Any overflows will be restricted to high rainfall events and will be subject to considerable dilution.</p> <p>Any chemicals and associated storages on site will be bunded and contained/roofed per Australian Standards to maintain separation from stormwater.</p>

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			<p>Emergency Overflow</p> <p>The emergency overflow has been developed as a last alternative to ensure the safety of system. Extensive engineering design work was performed to ensure that this will happen as irregularly as possible, including by increasing the maximum flow and size of the storm storage pond. The emergency overflow will release effluent to a swale to the northwest of the WWTP in the sand plain, where it will then be filtered by a mix of scour protection, native and exotic vegetation along the swale towards Partridge Creek. This overflow is only anticipated to be used during emergency situations, with regular release of the discharge being directed to Kooloonbung Creek.</p> <p>Modelling presented in Intrawater (2024) indicated only two major rainfall events would have produced significant overflow events between 2012 and 2022, both of which involved cumulative rainfall of between 400 and 500 mm over 8 to 9 consecutive days. Given the high volume of water presented in these events, it is very possible that the entire area would be flooded during these scenarios. Though we noted in the BDAR that it is possible for there to be some local 'traps' for effluent, this is not necessarily likely to occur in a flooding scenario.</p>
	Biodiversity impacts	<p>Ecological impact on wetlands resulting in harm to local ecosystems as well as hydrology and wildlife habitats</p> <p>Unaddressed threats to native species such as the Grass Owl</p>	<p>Ecology - concerned about mitigation measures for endangered species, wildlife and ecosystems</p> <p>The project team recognises the importance of protecting sensitive habitats and species, and has undertaken comprehensive environmental assessments, including the Aquatic Ecology Assessment and the Biodiversity Development Assessment Report (BDAR), to inform the planning and design of the project. These assessments have been conducted in accordance with relevant state and federal legislation and have considered potential impacts on aquatic and terrestrial biodiversity, including threatened species and ecological communities.</p> <p>Potential impacts, and mitigation measures have been incorporated into the project's design to minimise environmental disturbance. This includes the use of horizontal directional drilling (HDD) to avoid direct impacts on key fish habitat and coastal wetlands, and the implementation of a Construction Environmental Management Plan (CEMP) and ecological monitoring programs.</p> <p>We know how important the environment is to community and remain committed to ongoing engagement as the project progresses. We welcome continued dialogue to ensure that community values are reflected in the project's implementation.</p>

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			<p>Concerns Horizontal Directional Drilling is destructive to the environment Horizontal Directional Drilling (HDD) is often recommended by environmental consultants and regulatory agencies because it minimises surface disturbance, making it ideal for crossing sensitive environments like rivers, wetlands, and habitats. It reduces impacts on communities by avoiding road closures and disruptions, and it safely navigates beneath existing infrastructure. HDD aligns with the environmental and social objectives by offering a low-impact, technically feasible solution that supports both infrastructure development and environmental protection.</p> <p>Concerns environmental offset credits are not included for endangered species and are inadequate The project complies with the NSW Biodiversity Offset Scheme and has identified offset requirements proportionate to the scale and nature of the impacts. These offsets are designed to ensure no net loss of biodiversity values and will be delivered in consultation with relevant authorities.</p> <p>Concerns about noise and light impact to wildlife during operation Operational noise levels are expected to be low and not expected to significantly affect local wildlife. Security lighting within the construction site is to be minimised and where required, is to be oriented such that light spill beyond the Subject Land and into patches of retained vegetation is minimised.</p> <p>Protection of the Grass Owl: concerns about noise and light during breeding season We acknowledge the importance of the Grass Owl and the breeding season during May to June. This will be managed and mitigated under the CEMP and contractors will not undertake noisy works or operate lights in the direction of the Grass Owl breeding areas during this period.</p> <p>The response from the project team: We agree with Hastings Birdwatchers Inc that the Grass Owl is a key threatened species that will be impacted by the project. This was clear from the early stages of desktop assessment and field assessment as our team detected the Grass Owl multiple times during stratification and targeted surveys for other species. Throughout the development of the project, our team considered the footprint for the WWTP and aimed to design the project footprint to completely avoid impacts to the species if possible.</p> <p>Unfortunately for the Grass Owl, assessments of multiple alternative locations repeatedly showed that alternative locations were not technically viable and often would have had a greater impact on biodiversity overall. Acknowledging this, we advocated to maximise the protections that could be offered to the species and discussed with the project team the benefits and costs of several alternatives. The current design and mitigation measures is the conclusion of over a year of negotiation and discussion.</p>

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			<p>The Hastings Birdwatchers Inc have included several recommended mitigation measures to avoid impacts to the Grass Owl and we agree that these measures would be beneficial.</p> <p>Acknowledgement the utilisation of BirdLife data for acknowledgement of species. Concerns that threatened species are not included:</p> <p>The response from the project team:</p> <p>Highlighted Species</p> <p>We thank the Hastings Birdwatchers Inc for their submission, highlighting several threatened species that can occur in close proximity to the Thrumster Wastewater Treatment Plant (WWTP). During our surveys of the WWTP area, we noted numerous bird watchers searching the ground, skies and vegetation for birds and we thank them for their ongoing efforts to contribute to our understanding of the common and threatened species across our regions.</p> <p>The preferred habitat for many of these species are freshwater wetlands as occur within the surrounding wetlands and will only receive marginal impacts by the project. It is acknowledged that some of these species may also briefly venture into nearby habitats such as forest or moist grassland but it is not their preferred habitat. These species include:</p> <ul style="list-style-type: none"> - Magpie Goose - Comb-crested Jacana - Black Bittern - Brolga - Latham's Snipe <p>Other species highlighted included:</p> <ul style="list-style-type: none"> - Square-tailed Kite, typically found in timber habitats as occur in the broader locality of the WWTP. The species generally hunts in the canopy and is unlikely to be impacted by the project. No nests or breeding habitat was found for the species. - Osprey, which typically feed on fish over clear, open water. No nesting or breeding habitat was observed. - Spotted Harrier are mostly known to prefer grassy open woodland, riparian woodlands, grassland and shrub steppe, dWE confirmed foraging activity for this species in the locality around the WWTP but observed no nesting or breeding habitat. - Little Lorikeet are gregarious species that forage primarily on nectar and pollen of canopy species in woodlands and forests. No nesting was observed of this species on site, and pre-clearance surveys would be suitable to account for risk to the species where they foraging during construction.

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			<p>– Varied <i>Sittella</i> inhabit eucalypt forests and woodlands, typically those with rough-barked species that can provide habitat for the arthropods that it eats. This habitat is minimal within the WWTP footprint and no breeding or nesting habitat was observed.</p> <p>These species are considered as ecosystem credit entities under the NSW BAM 2020 and the addition of these species to the BDAR would not have changed the outcome of the project or the number of offsets required. In addition, each of these species were detected in our records from Bionet from the onset of our involvement in the project and from further database searches using Birddata and Atlas of Living Australia data and considered during the impact assessment process.</p> <p>Only a single species identified by the Hastings Birdwatchers Inc is a species credit, the Eastern Ground Parrot (<i>Pezoporus wallicus wallicus</i>). This species has records to the southeast and north of the WWTP in 2017 and 2018, with no records since. This species typically prefers habitats such as coastal heath, sedgeland or swampy areas. Notes associated with the previous records indicate that this species may have temporarily moved to the WWTP area from preferred habitat in Limeburners Creek National Park due to fires destroying their habitat in December 2017.</p> <p>Based on site assessments and habitat mapping, the reduced footprint of the revised WWTP intersects only a very limited extent of marginal habitat that does not align with the species' preferred structure or floristics. The impacted habitat is considered negligible and unsuitable for supporting a resident Eastern Ground Parrot population. Consequently, targeted survey effort was not undertaken. While the species was considered during desktop and spatial assessments, no further action was deemed necessary as the potential for significant impact is extremely low.</p>
	Impacts to water quality, Fernbank Creek and/or Partridge Creek	<p>Untreated wastewater spills into local waterways.</p> <p>Acid sulfate leakage and sediment pollution affecting local watercourses.</p> <p>Requests for dredging of Fernbank Creek due to capacity.</p>	<p>Fernbank Creek capacity - requests for dredging</p> <p>Creek dredging is under the jurisdiction of the NSW State Government and so outside of the scope of this project.</p> <p>Concerns about stormwater capacity being overburdened</p> <p>The design of the stormwater system needs to ensure that post-development stormwater closely matches the pre-development flow into Partridge Creek. The plant footprint is less than 2.5% of the total area of Lot 14 DP 1139180 and it should be noted that not all areas of the plant will be impervious.</p> <p>Water flowing from Partridge Creek into Fernbank Creek is controlled by a hydraulic gate which was introduced in the early 2000's to help maintain water levels for the wetlands.</p> <p>Concerns about Acid Sulfate soils in Fernbank and Partridge Creek</p> <p>An appropriate Acid Sulfate Soils Management Plan must be prepared and implemented to prevent and minimise potential exposure of Acid Sulfate Soils (ASS) to adjacent sensitive habitats.</p>

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			<p>A review of Acid Sulfate Risk Maps shows areas of high and low probability occurrence of ASS throughout the project area. The majority of the WWTP and its compound are mapped within an area with low probability of ASS occurrence.</p> <p>The sub-catchments of Partridge Creek and Fernbank Creek are examples of a high-risk ASS area which have been managed through the installation of embankments and the development of wetlands within the floodplain area. These acidic conditions have been actively managed by Council since 2001 with introduction of a hydraulic gate.</p>
	Aboriginal and cultural heritage impacts	<p>Visibility during the site inspection was very low — between 10% and 20%. As such, many more cultural items may still be present and have not been found</p> <p>The Thrumster area is known to contain highly significant cultural heritage, including artefact scatters, scarred trees, and potential intangible values that require proper consideration</p> <p>Protection of these cultural landscapes is essential to the community and to the future integrity of development on Birpai land.</p>	<p>Concerns about excavation methodology followed</p> <p>Niche has provided the following response regarding issues relating to poor visibility:</p> <p>The Code of Practice of Archaeological Investigation of Aboriginal Objects (DECCWW, 2010) requires visibility to be described and recorded to the nearest 10%, and to use this information to analyse and determine survey coverage. However, there is no stated best practice for what needs to be achieved when it comes to visibility or survey coverage. Visibility is determined by a number of factors, which are considered in the report, inclusive of dense vegetation, water coverage, and grasses.</p> <p>The visibility results are considered adequate for this assessment considering the high amounts of dense grasses present, limiting visibility and exposures to surface soils, and the report was prepared according to the appropriate guidelines and Code.</p> <p>The test pits were excavated according to Requirements 16 and 17 of the Code of Practice (DECCW 2010b) according to the methodology outlined in Section 6 of the ACHA report.</p> <ul style="list-style-type: none"> – Test excavation units were placed on a systematic grid appropriate to the scale of the area comprising approximately 65 m intervals east to west and 40 m north to south. – Test excavation pits measured 50 x 50 cm. – The excavation pits were hand excavated. – Test pits were excavated using 5 cm spits for the first test pit within each transect, and 10 cm spits for each test pit thereafter to. <p>The location of the grid system was determined based on on-the-ground observations of best placement at the time of the test excavation program. The exact locations were determined jointly by the RAPs and archaeologists present. The test pits were additionally placed in accordance with, and in consideration of identified environmental and floral constraints associated with the Subject Area, and as identified in the Ecological Assessment for the Thrumster Wastewater Scheme Project by Dewitt Consulting (2024).</p>
	Odour and bioaerosol pollution	<p>Bioaerosols and microtoxins will be released by the project</p> <p>There is no Odour control unit proposed to manage odour</p>	<p>Air contamination resulting health issues - drinking water contamination. Concerns still remain around airborne contaminants on neighbouring properties (specifically bioaerosols - microorganisms and toxins) and asbestos and silica</p>

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			<p>The design, layout and positioning of the proposed Thrumster Wastewater Plant inherently reduces the risk of bioaerosols to neighbouring properties. The concept layout for the proposed Thrumster Wastewater Treatment Plant has a 650 m buffer from the inlet works and primary treatment area to nearby properties. The concentration of pathogens distributed by bioaerosols is inversely proportional to the distance from the source. While the concentration can be significant within 1 to 2 metres of the source, such as the inlet works, the concentration quickly returns to levels similar to background levels within several hundred metres from the plant¹. Interpolation of bioaerosols colony forming unit counts per cubic metre of air reported in studies² reducing across 10 metres indicates that at 650 m concentration are likely several thousand times lower than at the source.</p> <p>The proposed secondary and tertiary biological treatment processes at the Thrumster Wastewater Treatment Plant are an oxidation ditch and membrane bioreactor, which uses air diffusers for aeration during the treatment process. Although still open to the atmosphere, aeration treatment process using air diffusers produces 20 to 80 times less airborne microorganisms than mechanical surface aerators, being similar to those registered at the background locations unaffected by the activities taking place in the wastewater treatment plant³. Oxidation ditch processes also produce less airborne contaminants than other clarifier-type secondary treatment processes⁴.</p> <p>Another high-risk area for bioaerosol release of contaminants is the sludge dewatering process. The proposed Thrumster Wastewater Plant will use enclosed centrifuges for sludge dewatering and not a more open filter press belt system. This enclosed system which is also enclosed within a building will significantly reduce the release of any bioaerosols from the dewatering process.</p> <ol style="list-style-type: none"> 1. Gotkowska-Plachta, A. et al. Airborne microorganisms emitted from Wastewater Treatment Plant Treating Domestic Wastewater and Meat Processing Industry Wastes. <i>Clean. - Soil. Air Water</i> 41(5), 429–436. https://doi.org/10.1002/clen.201100466 (2013). 2. El-Bestawy, E., Ibrahim, M.M. & Shalaby, E.A. Quantitative and qualitative analysis of bioaerosols emissions from the domestic eastern wastewater treatment plant, Alexandria, Egypt. <i>Sci Rep</i> 14, 30479 (2024). https://doi.org/10.1038/s41598-024-79645-z 3. Sánchez-Monedero, M. A., Aguilar, M. I., Fenoll, R. & Roig, A. Effect of the aeration system on the levels of airborne microorganisms generated at wastewater treatment plants. <i>Water Res.</i> 42(14), 3739–3744. https://doi.org/10.1016/j.watres.2008.06.028 (2008). 4. Li, L., Gao, M. & Liu, J. Distribution characterization of microbial aerosols emitted from a wastewater treatment plant using the Orbal oxidation ditch process. <i>Process. Biochem.</i> 46(4), 910–915. https://doi.org/10.1016/j.procbio.2010.12.016 (2011).

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			<p>Concerns temperature inversion has not been included in the odour model</p> <p>The odour dispersion model uses the wind and atmospheric stability (inversion potential) data from the Port Macquarie Airport Bureau of Meteorology weather station, which is approximately 1.5 km east of the project site.</p> <p>To model odour dispersion from the plant, a meteorological model for the site was generated. This covers a full year and incorporates observations from the Port Macquarie Airport BoM automatic weather station (which is approximately 1.5 km east of the plant - having a BoM weather station in such close proximity to the project site enhances the accuracy of the odour modelling), as well as taking into account the surrounding land use and terrain. All relevant meteorological parameters required for dispersion modelling were generated and outputs include all worst-case conditions in the modelling year when predicting worst-case odour impacts. This includes wind conditions, temperature, rainfall, and atmospheric stability (which accounts for temperature inversion).</p> <p>Requests for Odour Control Unit (OCU) to be installed from day one</p> <p>The provisional design for the OCU installation will be included in the tender documentation, with a decision to be made on whether the initial investment is required to meet regulatory thresholds and guidelines.</p> <p>Council will need to carefully weigh the upfront capital investment against the long-term lifecycle costs of the infrastructure. Planning should therefore consider not only initial expenditure but also the timing and cost of future replacements, ensuring that the asset remains functional, compliant, and cost-effective throughout its operational life.</p> <p>Response to DPHI in Response to Submissions (RTS) indicates that OCU would be included</p> <p>Both scenarios have been included in the air quality assessments and Council will need to carefully weigh the upfront capital investment against the long-term lifecycle costs of the infrastructure.</p>
	Construction impacts	Dust will worsen local air quality	<p>Concerns about construction impact in areas outside the footprint to the North and East of site</p> <p>No construction works or any activity relating to the project or operation of the plant will be undertaken outside the final corridors that will form part of the EIS determination. Access to the areas by project personnel will be prohibited.</p> <p>If the construction impact area changes due to detailed design or construction methodology and extends to impact areas not previously assessed, then the required assessment will be undertaken and an EIS Modification submitted.</p>

Primary Category	Issue Sub-category	Issue description	Response to submission
			<p>Concerns around air borne particulate matter such as silica, asbestos:</p> <p>The Construction Environmental Management Plan (CEMP) for the Thrumster Wastewater Scheme will address airborne particulate matter such as silica and asbestos. It is unlikely that asbestos will be encountered however in the event it is dust suppression measures, hazardous materials protocols, and worker safety procedures will be implemented. All personnel will receive training on identifying and safely managing these risks, ensuring compliance with relevant health and environmental regulations.</p>
	Construction noise and vibration	<p>Inadequate consideration of noise impacts.</p> <p>Noise and vibration will result in psychological effects.</p> <p>Neighbouring residents need to be given precise information of intensity, hours, days, weeks and months that noise will be affecting them from drilling, delivery of land fill during construction.</p> <p>Concerns regarding relatively low rural background noise levels.</p>	<p>Prolonged disruption (Noise, dust, vibration and traffic)</p> <p>In relation to the noise, dust, vibration, and traffic concerns over the project duration, we are committed to implementing strict environmental and safety controls—such as dust suppression, noise monitoring, and traffic management—to mitigate these impacts. The access road in will be sealed to minimise dust.</p> <p>All personnel will undergo environmental inductions, and behavioural protocols will be enforced on-site. The Construction Environmental Management Plan (CEMP) will be regularly updated, and quieter construction methods and equipment will be prioritised. Additional controls include shielding of stationary noise sources, strategic siting of plant and delivery areas, use of non-tonal reversing alarms, and minimising on-site fabrication. These measures aim to reduce disruption and protect the wellbeing of nearby residents.</p> <p>Council is committed to continue to engage on these matters to ensure they are being mitigated effectively throughout the project.</p> <p>Concerns around construction: Specific clauses (e.g., NV4 in Appendix B) potentially permit noise and vibration for up to four nights per week, which may cause significant disturbance to nearby residents.</p> <p>Noise impacts during construction have been assessed and a Noise and Vibration Impact Assessment prepared assessed in accordance with the methods outlined in the NSW Noise Policy for Industry (EPA 2017), NSW Road Noise Policy (EPA 2011), and the Interim Construction Noise Guideline (NSW DECC 2009).</p> <p>It should be noted that the noise modelling assumes that the items of equipment in the scenario are operating at maximum capacity simultaneously at the closest distance between the construction works and the receiver. As such, the predicted noise levels are often highly conservative and actual noise levels are likely to be lower than those the levels presented for much of the time.</p>

Primary Category	Issue Sub-category	Issue description	Response to submission
			<p>As the detailed design process is being worked through council is committed to sharing further information about the potential impacts during construction and identify and implement appropriate measures to minimise potential impacts from noise. Other relevant mitigation measures would also be implemented (as detailed in the Section 6 of the EIS) to address potential impacts such as:</p> <ul style="list-style-type: none"> – Additional measures to address construction noise which exceeds construction noise objectives (NV21). – A property management plan to address landowner concerns and minimise disruptions (LP7). <p>It is considered that the recommended mitigation measures are appropriate to minimise impacts to sensitive social infrastructure in close proximity to construction areas.</p> <p>Periods of prolonged night works are not anticipated, and on occasions night works are required the contractor will need to obtain the relevant permits and engage with near neighbours prior to undertaking these said works. The up to four nights per week is more applicable to larger scale road infrastructure projects.</p> <p>In a rural environment where background noise levels are typically 30–35 dB, prolonged exposure to noise exceeding 55–60 dB will be highly disruptive.</p> <p>Noise modelling assumes that the items of equipment in the scenario are operating at maximum capacity simultaneously at the closest distance between the construction works and the receiver. As such, the predicted noise levels are often highly conservative and actual noise levels are likely to be lower than those the levels presented for much of the time.</p> <p>Works will be carried out in within the approved working times. Approved working times will be conditioned to the approval. The noise and vibration assessment defines standard construction hours as Mon to Fri 7:00 am to 6:00 pm and Saturdays from 8:00 am to 1:00 pm. No work on Sundays or public holidays.</p> <p>Work generating noise with special audible characteristics and/or vibration levels will be scheduled during less sensitive time periods.</p> <p>Concerns about vibration levels that will be experienced near open trenching and potential damage from vibration:</p> <p>Managing the risk of damage from prolonged vibration involves best-practice measures such as pre-construction building condition surveys, vibration impact assessments, and real-time monitoring. If thresholds are exceeded, mitigation strategies like using low-vibration construction methods or adjusting work schedules are applied. Post-construction inspections verify any impacts. For open trenching of pipeline infrastructure progress typically occurs at 20–50 metres per day, allowing for steady advancement while maintaining environmental and structural safeguards.</p>

Primary Category	Issue Sub-category	Issue description	Response to submission
	Public health impacts	Health hazards – contaminated fill and water risks	<p>Concerns water runoff during constructions will be contaminated</p> <p>The Thrumster WWTP will manage potential contamination of stormwater runoff through a combination of on-site water management systems designed to trap and filter runoff before it leaves the site, ensuring compliance with environmental standards and protecting downstream waterways.</p> <p>Concerns around contamination of wetland and waterways</p> <p>Modelling concludes that there will be no unacceptable impacts in relation to water. The storm storage pond is also sized for population growth out to 2070 and so has redundant capacity for decades to come. The inlet screen has a capacity to receive up to 852 litres per second, which is more than 200 litres per second more than the sewage pumping system's capacity to pump to the plant. This means that even in the worst case, screening and sedimentation – primary treatment of the wastewater - will be provided.</p> <p>The only scenario in which Partridge Creek or Fernbank Creek would be impacted is in the event of a major flood inundating the entire area. Incoming flows exceeding the treatment capacity of 4 x Average dry weather flow (ADWF) at the design horizon will initially be held in the 25 megalitre capacity storm storage pond and only once the storm storage pond is full there will be a potential overflow to the Partridge and Fernbank creek systems. Any overflows will be restricted to high rainfall events and will be subject to considerable dilution.</p> <p>Not being able to flush out wetlands during flood conditions with diluted effluent pooling not dispersing</p> <p>In this type of situation, there is considerably more water flowing through all of the creeks. Discharges that might occur if the storm storage pond should ever overflow will be mixed into a very large volume of water extensively diluting it and dispersing it away.</p>
	Health impacts of asbestos	Public health hazard – asbestos risk. Material safety concerns: asbestos in construction fill.	<p>Hazardous materials: concerns about Asbestos contaminated fill material</p> <p>In NSW, importing fill material requires strict compliance with EPA regulations. Fill must be classified as either Virgin Excavated Natural Material (VENM) or Excavated Natural Material (ENM), each with specific chemical and physical criteria. Before use, the source site must be assessed and approved, and the material must undergo sampling and testing for contaminants such as asbestos and acid sulfate soils. A written sampling plan is mandatory, and all movements must be documented with gate records and certification.</p> <p>Additionally, the construction material sources are yet to be determined by the Contractor. At this stage no materials have been confirmed and anything taken to site would have to comply with relevant legislation.</p>

Primary Category	Issue Sub-category	Issue description	Response to submission
	Traffic, transport and access impacts	<p>Increased traffic incidents on a rural road.</p> <p>Increased traffic during construction.</p> <p>Chemical transportation during operation.</p>	<p>Concerns about impacts caused by construction and a 5 year timeline:</p> <p>We acknowledge your concerns and want to assure you that the Traffic Assessment represents a worst-case scenario to ensure all potential impacts are considered. In practice, the frequency and intensity of traffic will vary throughout the three-year construction program, with the most significant activity occurring during the earthworks and structural construction phases. The final year, focused on commissioning, will involve considerably less traffic. Council is committed to working closely with residents to minimise disruption, and traffic will be actively monitored and managed. A comprehensive Construction and Traffic Management Plan will be implemented throughout construction to manage this.</p> <p>Once operational, the facility will generate only limited traffic, primarily for biosolid disposal, occasional tanker deliveries, and up to four staff members. We understand the importance of maintaining your quality of life and are exploring ways to support residents during peak construction periods.</p> <p>Concerns about accidents occurring with chemical transportation</p> <p>To mitigate spillage risks during chemical deliveries to wastewater treatment plants in NSW, contractors must comply with the <i>Protection of the Environment Operations Act 1997</i> and relevant Australian Standards, ensuring all handling, storage, and transport activities prevent contamination of land and water. This includes using secondary containment systems, maintaining spill response kits on vehicles, training personnel in emergency procedures, and implementing a Pollution Incident Response Management Plan (PIRMP) where required.</p>
	Intersection safety	Existing danger at the intersection of Hastings River Drive and Fernbank Creek Road will be worsened.	During the pre-construction phase, a Traffic Management Plan (TMP) will be developed for implementation throughout the construction period, ensuring that road users and additional traffic movements are carefully considered so that road safety is not adversely affected.
	Pedestrian and cyclist safety	<p>High volume of pedestrians and cyclists.</p> <p>Increased traffic puts pedestrians and cyclists at risk of accidents.</p> <p>There is a bus-stop on the corner of Hastings River Drive and Fernbank Creek Road.</p>	During the pre-construction phase, a Traffic Management Plan (TMP) will be developed for implementation throughout the construction period, ensuring that road users and additional traffic movements are carefully considered so that road safety is not adversely affected.
	Local security	Given the current housing shortage in Port Macquarie, there is a heightened risk of illegal camping and trespassing on neighbouring properties.	<p>Concerns about local security.</p> <p>Concerns around local security and accommodation pressures are being taken seriously, there will be a requirement for contractors to have appropriate accommodation available for their workers and to secure the site. At first local skills and workers will be sourced over external workers to alleviate some of the accommodation pressure. The activity and surveillance around the site will provide security and access to surrounding properties from the adjoining council lot will be prohibited.</p>

Primary Category	Issue Sub-category	Issue description	Response to submission
	Impacts to threatened species and birds	Popular birdwatching area. Impacts to wetland birds, including Magpie geese, Swift parrot, Emu Wren and Marsh Harriers.	Refer above to response to 'Biodiversity impacts' sub-category.
	Financial pressures on taxpayers	Cheaper alternative is to upgrade Koala Street, this option places less financial pressure of tax and rate payers. Total estimated costs could approach \$400 million, to be covered by ratepayers.	Refer above to response to 'More suitable alternative sites/unsuitable location' sub-category and 'Project cost and budgetary risk' sub-category.
	Potential property damage	Property damage may arise due to increased flood risk.	Refer above to response to 'More suitable alternative sites/unsuitable location' sub-category.
	Vibration impacts on buildings	Vibration may impact nearby properties.	Refer above to response to 'Construction noise and vibration' sub-category.
	Unclear emergency access planning	No clear documentation is available indicating the location of emergency access routes in flood scenarios.	Refer above to response to 'More suitable alternative sites/unsuitable location' sub-category.
	Land acquisition	Contradictions in Council statements regarding land acquisition. Landowners are receiving pressure to sell a thoroughfare.	Concerns about being pressure and bullying and not having an opportunity to negotiate Council follows the NSW State Government's process of acquisition by agreement and recognises that this can be a challenging and sometimes emotional experience for landowners. Throughout the process, Council has remained committed to working towards an agreement and has introduced several additional support mechanisms tailored to individual circumstances. The wellbeing of landowners is a priority in every interaction. Council remains dedicated to working collaboratively with landowners to reach fair and respectful outcomes and will continue to provide support to help those involved navigate the process.
	Contamination of drinking water supply	Potential contamination of drinking water due to leaks or spills from the facility.	Concerns water runoff during constructions will be contaminated The Thrumster WWTP will manage potential contamination of stormwater runoff through a combination of on-site water management systems designed to trap and filter runoff before it leaves the site, ensuring compliance with environmental standards and protecting downstream waterways.

Primary Category	Issue Sub-category	Issue description	Response to submission
	Impacts to local high school students	Noise and vibration may impact the local high school students.	<p>Concerns about pedestrians and school children and GHD reports not representing reality relating to pedestrian activity. 'No expected pedestrian activity'</p> <p>Council recognises that in rural areas, where dedicated pedestrian infrastructure may not be available, residents may occasionally use the road verge or shoulder for walking. While this is understandable, Council encourages all pedestrians to exercise caution and follow road safety guidelines, such as walking facing oncoming traffic and wearing visible clothing, particularly in low-light conditions.</p> <p>During the project a Construction Environmental Management Plan (CEMP) and Traffic Management Plan (TMP) will be implemented to minimise disruption and ensure safety for all road users. As part of the TMP, traffic controllers can be tasked with safely directing pedestrians, particularly during periods of high vehicle movement. If required, the use of spotters or additional personnel during peak construction activity may also be implemented to monitor pedestrian safety.</p>
	Historical heritage impacts	Potential impacts to historical heritage.	As part of the EIS a Historical Heritage Assessment was undertaken and no historical heritage was identified within the project area during the survey undertaken for the site inspection. Overall, the project would have a negligible to low direct, visual and cumulative impact on historical heritage values within the project area.
Justification and evaluation of the project	Support for project	<p>The project contributes towards achieving housing targets for Council.</p> <p>The project will help alleviate housing shortages for temporary workers in the region.</p> <p>The site is ideally suited for development that supports surrounding health, education, and employment infrastructure.</p>	Comment of support is noted.
	Existing issues with Koala Street	<p>This existing facility experiences issues such as odour.</p> <p>Community support for this facility to be upgraded prior to or instead of the proposed project.</p>	<p>Refer above to response to 'Odour and bioaerosol pollution' sub-category.</p> <p>Consideration of upgrades to the existing treatment facility at Port Macquarie to provide a centralised treatment system were undertaken as part of the option evaluation process as discussed in section 2.6 of the EIS.</p>
	Existing issues with Koala Street and/or preference for Koala Street to be upgraded as a priority	The upgrade of the existing infrastructure at Koala Street with savings to the rate and taxpayers estimated to be several millions of dollars.	<p>Refer above to response to 'More suitable alternative sites/unsuitable location' sub-category.</p> <p>Consideration of upgrades to the existing treatment facility at Port Macquarie to provide a centralised treatment system were undertaken as part of the option evaluation process as discussed in section 2.6 of the EIS.</p>

Primary Category	Issue Sub-category	Issue description	Response to submission
Issues beyond the scope of the project	Broader planning and development issues.	Concerns adding more dwellings without Oxley Hwy and Wrights Rd upgrades is irresponsible.	Concerns adding more dwellings without Oxley Hwy and Wrights Rd upgrades is irresponsible Council holds a core responsibility to ensure that appropriate infrastructure and essential services are in place to support the region's growth, liveability, and resilience. This includes the planning, delivery, and maintenance of critical assets such as water and wastewater systems, transport networks, and community facilities. Road upgrades are prioritised based on strategic planning, safety, capacity, and community needs, ensuring that infrastructure keeps pace with development and provides reliable access for residents, businesses, and emergency services. Several upgrades have been earmarked for the Oxley Highway to support growth and improve safety in the Port Macquarie region. These include intersection improvements at key locations such as Wrights Road, Lake Road, John Oxley Drive, and Kings Creek Road, aimed at easing congestion and enhancing access to rapidly developing areas like Thrumster and the Health and Education Precinct. The Pacific Highway - Oxley Highway interchange is also undergoing staged upgrades, with a completed short-term expansion and a long-term solution in planning. The Oxley Highway and Pacific Highway are state-owned roads, managed by Transport for NSW, while connecting roads such as Wrights Road, Lake Road, and Clifton Drive are locally owned and maintained by Council. These coordinated efforts reflect a shared responsibility between state and local governments to ensure infrastructure keeps pace with regional development.
		Development priorities	Concerns rapid urban development is being prioritised at the expense of infrastructure and wellbeing. We acknowledge the concerns raised regarding infrastructure planning and environmental sensitivity. The Thrumster Wastewater Scheme has been strategically designed to support the region's growing population by relieving pressure on existing infrastructure and enabling sustainable urban development. The site and pipeline alignments were selected following rigorous environmental, geotechnical, and risk assessments.

4.2 DPHI

A response was received from the DPHI on 2 June 2025 and has been responded to by Beca Hunter H2O (BHH20), see Appendix D.

Response

Table 4.3 Issues raised by DPHI and response

Issue	Comment	Response
Hazards	Justification of selection of liquified chlorine.	<p>Alternative options for providing the treatment required by the Thrumster WWTP were considered as part of the Thrumster Wastewater Scheme: Treatment Plant Options Assessment (Beca HunterH2O, December 2023).</p> <p>The option assessment report recommended the use of chlorine disinfection as chlorine is an effective disinfectant for the treatment of both viruses and bacteria. Chlorine dosing was required for the Thrumster WWTP to meet the virus log reduction values required to provide safe recycled water for dual reticulation use.</p> <p>Council is in the process of standardising the disinfection systems used across their water and wastewater treatment facilities to chlorine gas. This standardisation at an organisational level enables Council to provide training to their operational staff to enable them to safely operate similar systems across different treatment facilities. Chlorine gas disinfection was adopted for the Thrumster WWTP as part of this standardisation.</p>
	Additional detail – storage and handling risk all onsite chemicals.	<p>Risks associated with chemicals other than chlorine are captured in the hazard identification table of the PHA (PHA report Table 4.1). The operational chemicals (excluding chlorine) are either not classified as dangerous goods or are corrosive dangerous goods. As listed in the hazard identification table, bunds and appropriately selected material of construction for tanks and piping as per AS3780 are the engineering controls. Safe work method statements and spill management procedures capture the administrative controls for handling.</p> <p>No update to the PHA is considered necessary.</p>
	Further operational details regarding chlorine dosing to verify consequence modelling.	<p>Chlorine gas will be provided to enable disinfection. The system will be designed to meet the requirements of AS2927 Storage and Handling of Liquified Chlorine Gas. The system will be contained in a standalone building with a drum storage room and ejector room. Gas is drawn from the drums under a vacuum created by an ejector. The ejector mixes the gas and service water to produce a concentrated liquid for dosing. The chlorine liquid is dosed directly into the main using a retractable dosing lance. All dosing lines outside of the chlorine room are to be double contained.</p> <p>In the case of a chlorine leak, the chlorine rooms will be fitted with mechanical ventilation, chlorine leak detection, chlorine scrubber and automatic shutdown devices.</p> <p>No update to the PHA or consequence model and risk assessment is considered necessary.</p>
	Detail chlorine release scenarios.	<p>The three modelled scenarios are detailed in Section 4.3 as:</p> <ul style="list-style-type: none"> – Liquid leak release from a 20 mm hole. This size is representative of a release during transport from valve damage. – Gas leak release from a 6 mm hole. This size is representative of a gas manifold release. – Catastrophic rupture of a drum.

Issue	Comment	Response
		<p>These three release scenarios capture the plausible worst-case scenarios from a chlorine facility. Smaller weeps/leaks from the line transporting chlorine, whilst possible, have consequences significantly less than the hazard scenarios analysed. These smaller, localised consequences do not travel beyond the site, so have not been considered in this PHA.</p> <p>No update to the PHA is considered necessary.</p>
	<p>Review and justify usage of probable wind direction rather than actual wind direction.</p>	<p>The PHA included the actual wind rose data from using the local Bureau of Meteorology (BOM) site – Port Macquarie Airport AWS to inform potential impacts.</p> <p>At the consequence modelling level detailed wind information does not impact the risk assessment. The consequence results display the effect zone which is the total area that may be impacted regardless of wind direction.</p> <p>Worst case chlorine dispersion generally occurs at night with low wind speeds as higher wind conditions and solar radiation reduce the consequence distances by increasing dispersion of the chlorine cloud. This is captured in the use of the 1.5/F weather category.</p> <p>Given the use of the effect zone in risk calculations no update to the PHA or consequence model and risk assessment is considered necessary.</p>
	<p>Revise likelihood analysis using presence factors.</p>	<p>The PHA likelihood calculations do not consider duration of exposure.</p> <p>Due to the nature of location impacted by the release and/or the release event it is not guaranteed that someone will be physically exposed e.g. a 20 mm release can only happen during deliveries, which take two hours – this is the number that has been used in the calculations i.e. someone is physically exposed during those two hours.</p> <p>No update to the PHA or consequence model and risk assessment is considered necessary.</p>
	<p>Update cumulative risk assessment with toxic exposure criteria.</p>	<p>For the purposes of the PHA, the worst-case criteria is used to show compliance. Therefore, the irritation toxic criterion of 50×10^{-6} is used when assessing injury.</p> <p>The cumulative risk of injury complies with both the irritation and injury criteria of HIPAP 4 (50×10^{-6} and 10×10^{-6} respectively).</p> <p>No update to the PHA or consequence model and risk assessment is considered necessary.</p>
<p>Flooding</p>	<p>Flooding context</p>	<p>Flood response saved in Appendix C and Beca H20 have provided an assessment of plant performance during the May flood event, see Appendix D.</p>
<p>Power supply</p>	<p>Power supply installation changes.</p>	<p>The operation of the new WWTP will require a new electrical connection to the regional electricity network and Council has been in a process of ongoing liaison with Essential Energy. The preferred electrical alignment presented in the EIS was not accepted by Essential Energy and a new Connection Investigation Response (ECN-022950/MNC000088) was provided to Council on 07 April 2025. The Connection Investigation Response prepared by Essential Energy included a number of alternatives for consideration and Council has subsequently undertaken multi-criteria analysis and selected the Primary Feed Alternative 2 which involves extending an electrical connection along the WWTP access road.</p>

Issue	Comment	Response
		<p>Selection of the preferred electrical connection was undertaken following the submission of the Amendment Report, so the changes could not have been described or assessed as part of Amendment report. Council have now initiated a Network Study to investigate any network augmentation required to support the project.</p> <p>Essential Energy is considered a determining authority and is required to consider the impact of their activities in accordance with Part 5 of the EP&A Act. However, the Thrumster Wastewater Scheme has been declared SSI in accordance with section 5.12(4) of the EP&A Act. Section 5.22 of the EP&A Act relates to the applications of other provisions of the EP&A Act and other Acts and states that Part 4 and Division 5.1 do not apply in respect of State Significant Infrastructure.</p> <p>The SSI declaration for the Thrumster scheme in Schedule 4 Clause 10 of the Planning System SEPP states:</p> <p><i>Development for the purposes of the Thrumster Wastewater Scheme on land in the Port Macquarie-Hastings local government area, including the following—</i></p> <ul style="list-style-type: none"> a) <i>construction of a wastewater treatment plant at 433 Fernbank Road, Thrumster,</i> b) <i>construction of sewer rising mains and recycled water mains,</i> c) <i>works at certain existing sewer pump stations for the purposes of reducing sewer load on the existing system,</i> d) <i>ancillary development.</i> <p>The SSI declaration includes ancillary development which reasonably would be construed as including upgrades to the electrical supply to the site where the sole focus of the electrical connection is to supply power for operation of the WWTP. The preferred option now involves extending an electrical connection from Fernbank Creek Road and extending along the WWTP access road within the project application area proposed for the project.</p> <p>The new transmission connection will not result in additional disturbance beyond the footprint proposed as part of the EIS. Installation of the new transmission connection will introduce a new project element to the site but will be visually integrated with other power lines traversing the area and is not considered to significantly alter the findings of the EIS.</p> <p>Further augmentation of the Essential Energy network beyond the direct connection from Fernbank Creek Road is considered beyond the scope of the project and would be assessed by Essential Energy in accordance with the requirements of Part 5 of the EP&A Act.</p>

4.3 EPA

Comment

A response was received from the EPA on 27 May 2025.

The EPA is satisfied with the information provided and has no additional comment which will affect your consideration of the application currently under assessment.

Response

No response required.

4.4 DPIRD Agriculture and Biosecurity

Comment

A response was received from DPIRD Agriculture and Biosecurity on 12 May 2025.

Noting the Department’s advice to the Environmental Impact Statement, dated 8 August 2024, and that no specific amendments alter the relevant mitigation measures or previous matters raised, the Department has no further comments.

Response

No response required.

4.5 CPHR

Comment

A response was received from CPHR on 14 May 2025.

CPHR considers that further work is required for the proponent to meet the Secretary’s requirements for coastal processes and associated hazards.

The following key issue remains:

- *the potential impacts of the coastal hazard ‘tidal inundation’, including the impacts of projected climate change-induced sea level rise, on increased tidal inundation hazard risk to the subject land or other land into the future require assessment.*

The EIS, and all relevant technical inputs, be revised to:

- *describe and assess tidal inundation risk in the study area for current day and over the future 100-year planning horizon under projected sea level rise.*
- *describe actions to avoid causing increased risk of coastal hazards on that land or other land.*

Response

Table 4.4 provides a response to each issue raised by CPHR.

Table 4.4 Issues raised by CPHR and response

Issue	Comment	Response
Coastal hazards	Describe and assess tidal inundation risk in the study area for current day and over the future 100-year planning horizon under projected sea level rise.	Tidal inundation and corresponding sea-level-rise was considered in the water quality and flooding modelling undertaken for the project. To minimise potential risks from coastal hazards on the project, the site layout was elevated at a minimum level of 4.6 m AHD, corresponding to a 1 in 100 AEP event (with climate change) plus a 0.5 m freeboard, which incorporates uncertainties such as sea-level rise and wave-action. More critical infrastructure (from a water quality perspective) were to be located above the Probable Maximum Flood (PMF) level of 6.7 m AHD.
Coastal hazards	Describe actions to avoid causing increased risk of coastal hazards on that land or other land.	To minimise impacts associated with climate-change and sea-level-rise flooding, a flood impact assessment was undertaken and identified that changes are very localised, with impacts not detrimentally affecting flood risk to neighbouring properties. Potential changes to water quality and climate-change impacts such as sea-level rise were considered in the operational water quality modelling, which included sea-level rise and general found that increased tidal flushing associated with sea-level rise is not considered likely to worsen water quality.

4.6 NPWS

Comment

A joint response was received from CPHR and the NPWS, see Section 4.5.

Response

Response to the issues raised in the joint response are provided in Section 4.5.

4.7 DPIRD Fisheries

Comment

A response was received from DPIRD Fisheries on 15 May 2025.

No further comments were made requiring a response. Support for the proposed design was provided and it was recommended that the sewage modelling methodology developed by University of NSW – Water Research Laboratory be employed to assess sewage discharge from the Thrumster WWTP overflow point into Partridge Creek.

Response

The comments are noted and no response is required.

4.8 Transport for NSW

Comment

A response was received from TfNSW on 15 May 2025.

Three crossings of TfNSW infrastructure are proposed along the proposed pipe alignment.

TfNSW concurrence under S138 (2) of the Roads Act 1993 is necessary for these crossings. Upon issue of development consent and preparation of detailed construction engineering plans, lodgement formally seeking TfNSW concurrence should be submitted to TfNSW Road Access Team via email to:

roadaccess.north@transport.nsw.gov.au

Further to the mitigation measures identified, the following additional items are recommended:

- *Consideration for the use of shuttle buses to reduce the number of light vehicles during construction (currently 220 per day – 110 AM / 110 PM).*
- *A complaint resolution and disciplinary procedure.*
- *Details of Hazardous Materials and Over Size Over Mass (OSOM) vehicle movement phases, loads and approved routes, in accordance with relevant transport codes. Hazardous Substances and OSOM movements are to be subject to all required permits under the National Heavy Vehicle Regulation (NHVR) scheme.*

Response

TfNSW's proposed mitigation measures are noted. The Traffic Management Plan (TMP) proposed to be incorporated into the CEMP would incorporate TfNSW recommendations, including measures to reduce the number of trips taken by workers, such as by carpooling and shuttle bus services.

No response is required.

4.9 Heritage NSW

Comment

A response was received from Heritage NSW on 2 May 2025.

The following two issues were raised by Heritage NSW:

It remains unclear on whether registered Aboriginal sites 'E1' (AHIMS ID# 30-3-0321) and 'Wattoo 2' (AHIMS ID# 30-3-0205) will be avoided and conserved or managed via community collection. The impact assessment presented in Table 45 (pg. 160-161) indicates that both sites can be avoided, however, the wording of the proposed management measures indicates that the potential remains that the sites cannot be avoided and thus may require management via community collection. We reiterate our request that the proponent is required to clarify the stage at which the project design is currently at an confirm whether it is possible to undertake an updated impact assessment for these two sites to establish which management strategy is to be employed.

Please request the proponent provide evidence that the revised ACHAR has been provided to all Registered Aboriginal Parties (RAPs) for review and comment. We note that the revised ACHAR contains PDF letters dated 27 March 2025, however, no documentation is provided which demonstrates that these letters (and the revised ACHAR) were provided to the RAPs. Evidence can comprise copies of dated email records, with all relevant email addresses shown, and may be provided separately to Heritage NSW for our review/records.

Heritage NSW has provided draft Conditions of Approval for consideration.

Response

Table 4.5 provides responses to issues raised by Heritage NSW.

Table 4.5 Heritage NSW comments and response

Issue	Comment	Response

		Table 4.6 Updated Impact Assessment						
		Site name	Site feature	Significance rating	Type of harm	Degree of harm	Consequence of harm	Management measure
		Wattoo 2 (30-3-0205)	Isolated Find; Artefact	Low	None	None	None	None required, identified as 5 metres no go zone buffer in all construction and induction materials.
		E1 (30-3-0321)	Isolated Find; Artefact	Low	Direct	Total	Loss of value	If impacts to site cannot be avoided, community collection is required prior to the proposed works, with mitigation of harm being through salvage surface collection of the Aboriginal object associated with E1 (AHIMS ID# 30-3-0321).

4.10 NSW DCCEEW Water Group

Comment

A response was received from NSW DCCEEW Water Group on 07 May 2025.

NSW DCCEEW Water Group have made the following comments:

NSW DCCEEW Water Group has reviewed the RTS and Amendment Report and note that the proponent has not responded to the Water Group's recommendations on the EIS., and the Amendment Report has no additional water issues. NSW DCCEEW Water Group therefore recommends that the proponent provides a response to the recommendations made on the EIS.

The following response was received from the NSW DCCEEW Water Group in response to the EIS.

The proponent should quantify the maximum annual volume of water take in each water source impacted due to aquifer interference and demonstrates sufficient entitlement can be acquired in each water source prior to take occurring.

The proponent should quantify maximum site water demands for the project both for construction and ongoing operation and identify adequate and reliable water sources to meet these demands.

Response

Responses to the NSW DCCEEW Water Group comments on the EIS are provided in Table 4.7.

Table 4.7 EIS comments from NSW DCCEEW Water Group

Issue	Comment	Response
Water supply, take and licensing	<p><i>The proponent should quantify the maximum annual volume of water take in each water source impacted due to aquifer interference and demonstrates sufficient entitlement can be acquired in each water source prior to take occurring.</i></p>	<p>Some segments of pipeline proposed to be trenched intercepts areas of alluvium and coastal sands, where shallow groundwater could be found. In these areas, there is the risk of the pipeline trenching intercepting the groundwater table, requiring dewatering.</p> <p><i>As part of the detailed design phase, an assessment of the estimated groundwater take will be undertaken using data obtained from site investigations. This assessment will support excavation planning in water-charged ground and inform the development of appropriate environmental management measures. The findings will also guide the necessary authority approvals and be integrated into the CEMP during the pre-construction phase. Detailed estimates of potential interception would be confirmed within detailed design, however it is anticipated that the volume of any take would be able to be acquired prior to construction.</i></p> <p><i>This is also noted in recommendation 2.1 and 2.2 from NSW DCCEEW.</i></p> <p>The construction of the Emergency Storage Pond may intercept groundwater, necessitating dewatering.</p> <p><i>Dewatering rates were estimated for the emergency storage pond to be approximately 0.29 m³/day (approximately 0.1 ML/year).</i></p>
	<p><i>The proponent should quantify maximum site water demands for the project both for construction and ongoing operation and identify adequate and reliable water sources to meet these demands.</i></p>	<p>Site water demands for construction and operation were discussed by Council, considering the nature of the project. No notable operational water demand is anticipated. While maximum site water demands during construction would be confirmed during detailed design, upon review of the works required, Council confirmed it will be able to provide a suitable quantity of treated water for both construction and operational phases of the plant.</p> <p>The existing water supply network and Water Access Licences (WALs) have sufficient capacity to support this without any amendments.</p>

5. Updated project justification

This section provides an updated justification for and evaluation of the project as a whole, incorporating any relevant issues raised in submissions and the applicant's response to these issues.

The project is considered to be justified because it:

- Responds to a critical, recognised need and is consistent with several state and regional government plans, policy and guidelines concerning water security.
- Improve the reliability, redundancy and resilience of wastewater infrastructure across the Port Macquarie-Hastings LGA.
- Provides short and long-term benefits to the wider Port Macquarie-Hastings LGA.
- Would not result in significant, adverse environmental, social or economic impacts.
- Is consistent with the principles of ecologically sustainable development, the objects of the EP&A Act and is considered to be in the public interest.

The issues raised in submissions do not change the overall need or rationale for the Thrumster wastewater scheme. The project is required to address continued pressure on the existing Port Macquarie WWTP capacity and to provide an essential resource to service new growth areas in the 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.

A project of this scale and geographical spread would inevitably have some potential impacts on the local environment and community, during construction and operation of wastewater infrastructure. As described in the EIS, the project would incorporate environmental management and design features to ensure the potential impacts are managed and mitigated as far as practically possible.

The project has been developed following a robust and iterative process that has involved substantial options analysis, design, environmental assessment, and stakeholder engagement. Where feasible and reasonable, the project has aimed to avoid and minimise biophysical, social and economic impacts. At this stage of assessment, a conservative worst-case assessment approach has been implemented. The potential residual construction and operational impacts of the project are considered manageable with the implementation of the proposed mitigation and management measures.

Overall, the project is a critical component in delivering reliable wastewater infrastructure to Port Macquarie-Hastings LGA and supporting the economic growth by providing the essential resources for key areas of urban development. Having regard to all of the matters considered in the EIS and Amendment Report, it is considered that the project is justified, as the need for, and the benefits of the project would outweigh the residual impacts.

6. References

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Appendices

Appendix A

Register of submissions received

Table A.1 Register of submissions – State Government Agencies

State Government Agencies	Issue Category	Issue Sub-category
EPA	No impacts identified	No impacts identified
Department of Primary Industries and Regional Development (DPRID) Agriculture and Biosecurity	No impacts identified	No impacts identified
DCCEEW Conservation Programs, Heritage and Regulation (CPHR)	Economic environmental social impacts	Tidal inundation Coastal hazards
NPWS	No impacts identified	No impacts identified
DPIRD Fisheries	No impacts identified	No impacts identified
TfNSW	No impacts identified	No impacts identified
Heritage NSW	Economic environmental social impacts Procedural matters	Aboriginal and cultural heritage impacts Consultation with RAPs
NSW DCCEEW Water	Economic environmental social impacts	Site water demands

Table A.2 Register of submissions – Individual community members

ID	Submitter	Issue category	Issue Sub-category
1, 2	Shimon Seidenman	Economic environmental social impacts	Flooding
3, 11	Xavier Dancet Louise Dancet	Procedural matters Economic environmental social impacts	Omission of key documents and misrepresentation of information. Exclusion of key stakeholders from consultation. Lack of transparency. Exclusion of Birpai RAP from archaeological investigations. Withholding of critical power supply information.
4	Name withheld	Project Procedural matters Economic environmental social impacts	Omission of key documents and misrepresentation of information. Exclusion of Birpai RAP from archaeological investigations. More suitable alternative sites/unsuitable location. Project cost and budgetary risk.
5, 6, 75	Birpai LALC John Wagstaffe	Procedural matters Economic environmental social impacts	Exclusion of Birpai RAP from archaeological investigations. Aboriginal and cultural heritage impacts.
7	Craig Carroll	Project Economic environmental social impacts	Biodiversity impacts. More suitable alternative sites/unsuitable location. Project cost and budgetary risk. Road infrastructure unable to support project. Aboriginal and cultural heritage impacts.
8, 36, 38, 39, 42, 43, 53	Simon Seidenman, Robert W. Hough Lianne Seidenman LinFang Seidenman Nili Seidenman Daniel Seidenman Shimon Seidenman	Project Procedural matters Economic environmental social impacts	Design. Outdated water modelling. Omission of key documents and misrepresentation of information. Exclusion of Birpai RAP from archaeological investigations. Road infrastructure unable to support project. Traffic, transport and access impacts. Withholding of critical power supply information. Public health impacts. EIS process rushed. More suitable alternative sites/unsuitable location. Project cost and budgetary risk.

ID	Submitter	Issue category	Issue Sub-category
9, 51, 52	Name withheld Ian Fielding-Smith John Attard	Project Procedural matters Economic environmental social impacts	Omission of key documents and misrepresentation of information. Exclusion of Birpai RAP from archaeological investigations. Lack of transparency. Withholding of critical power supply information.
10	Name withheld	Economic environmental social impacts	Impacts to water quality, Fernbank Creek and/or Partridge Creek. Contamination.
12	Name withheld	Economic environmental social impacts	Flooding Contamination
13, 40, 54, 63, 64, 65, 68 to 74	Troy Highlands Lynda Highlands Names withheld Paige Bellenger Lorraine Fabri Lindsay Steer	Project Procedural matters Economic environmental social impacts	Omission of key documents and misrepresentation of information. Lack of transparency. Lack of stakeholder consultation. Aboriginal and cultural heritage impacts. Withholding of critical power supply information. Project cost and budgetary risk. Biodiversity impacts. Contamination.
14	Britney Bosschieter	Procedural matters Economic environmental social impacts	Omission of key documents and misrepresentation of information. Lack of stakeholder consultation. Exclusion of Birpai RAP from archaeological investigations. Withholding of critical power supply information.
15	Lisa An	Economic environmental social impacts	Flooding Public health impacts Biodiversity
16	Debra King	Project Procedural matters Economic environmental social impacts	Biodiversity impacts. Impacts to threatened species and birds. Construction dust. Construction noise. Contamination. Withholding of critical power supply information. Impacts to water quality, Fernbank Creek and/or Partridge Creek. Flooding. Omission of key documents and misrepresentation of information. Lack of transparency. Project cost and budgetary risk. Design.
17, 22, 33, 34	John James Beau Hamilton Peter Alaban Cody James Sara James Jennifer Berger Jonathan Hopley Dr Charles Hopley Adam King Daniel Provost	Project Procedural matters Economic environmental social impacts	Design. Outdated water modelling. Omission of key documents and misrepresentation of information. Exclusion of Birpai RAP from archaeological investigations. Aboriginal and cultural heritage impacts. Road infrastructure unable to support project. Withholding of critical power supply information. Impacts to water quality, Fernbank Creek and/or Partridge Creek. Public health impacts. EIS process rushed. Project cost and budgetary risk.

ID	Submitter	Issue category	Issue Sub-category
18, 19	Name withheld	Project Procedural matters Economic environmental social impacts	Lack of transparency. Project cost and budgetary risk. Biodiversity impacts. Public health impacts. Aboriginal and cultural heritage impacts. Withholding of critical power supply information.
20	Name withheld	Project Procedural matters Economic environmental social impacts	Project cost and budgetary risk. Biodiversity impacts. Lack of transparency. Lack of stakeholder consultation. Aboriginal and cultural heritage impacts. Historical heritage impacts. Withholding of critical power supply information.
21	Name withheld	Project Economic environmental social impacts	Project cost and budgetary risk. Impacts to threatened species and birds.
23	Name withheld	Project Economic environmental social impacts	Flooding. More suitable alternative sites/unsuitable location.
24	Elizabeth Dancet	Project Procedural matters Economic environmental social impacts	Lack of responses to previously raised issues. Intersection safety. Omission of key documents and misrepresentation of information. Exclusion of key stakeholders from consultation. Lack of transparency. Exclusion of Birpai RAP from archaeological investigations. Withholding of critical power supply information.
25	Name withheld	Project Economic environmental social impacts	More suitable alternative sites/unsuitable location. Flooding. Project cost and budgetary risk. Financial pressures on taxpayers.
26	Letitia Caldwell	Project Procedural matters Economic environmental social impacts	Design. Aboriginal and cultural heritage impacts. Road infrastructure unable to support project. Biodiversity impacts. Health impacts of asbestos. More suitable alternative sites/unsuitable location. EIS process rushed. Project cost and budgetary risk.
27	Ian Caldwell	Project Procedural matters Economic environmental social impacts	Lack of transparency. Biodiversity impacts. Impacts to water quality, Fernbank Creek and/or Partridge Creek. Flooding. Project cost and budgetary risk. Financial pressures on taxpayers.
28	Name withheld	Project Procedural matters Economic environmental social impacts	Flooding. Biodiversity impacts. More suitable alternative sites/unsuitable location. Lack of transparency. Lack of stakeholder consultation.

ID	Submitter	Issue category	Issue Sub-category
29	Jennifer Berger	Project Procedural matters Economic environmental social impacts	Lack of transparency. Lack of stakeholder consultation. Withholding of critical power supply information. Impacts to water quality, Fernbank Creek and/or Partridge Creek. Public health impacts. More suitable alternative sites/unsuitable location. Project cost and budgetary risk.
30	Name withheld	Economic environmental social impacts	Biodiversity impacts. Impacts to threatened species and birds.
31	Christian Dancet	Procedural matters Economic environmental social impacts	Omission of key documents and misrepresentation of information. Exclusion of key stakeholders from consultation. Lack of transparency. Withholding of critical power supply information.
32, 58, 59, 60, 61, 62	Adam King Samantha Sullivan Christopher Maxwell Vincent Maxwell Theres Maxwell Hope Bellenger	Project Procedural matters Economic environmental social impacts	Insufficient time for community to review documents. Concerns regarding GHD report reliability. Pedestrian and cyclist safety. Contamination. Odour and bioaerosol pollution. Public health impacts. Outdated water modelling. Exclusion of key stakeholders from consultation. Contradictory statements on construction hours in GHD RTS. Vibration impacts on buildings. Lack of transparency. Construction dust. Unclear emergency access planning. Project cost and budgetary risk. Biodiversity impacts. Impacts to threatened species and birds. Exclusion of Birpai RAP from archaeological investigations. Redacted documentation. Aboriginal and cultural heritage impacts.
35	Hastings Birdwatchers	Economic environmental social impacts	Biodiversity impacts. Impacts to water quality, Fernbank Creek and/or Partridge Creek. Contamination. Impacts to threatened species and birds.
37	Shir Seidenman	Project Economic environmental social impacts Justification and evaluation of the project	Flooding. Financial pressures on taxpayers. Project cost and budgetary risk. Impacts to water quality, Fernbank Creek and/or Partridge Creek. Project justification.
41, 98	Birpai LALC	Procedural matters Economic environmental social impacts	Exclusion of Birpai RAP from archaeological investigations. Aboriginal and cultural heritage impacts.
44	Desmond Currie	No issues raised (no attachment provided)	
45	Name withheld	Procedural matters Economic environmental social impacts	Omission of key documents and misrepresentation of information. Lack of transparency. Exclusion of Birpai RAP from archaeological investigations. Withholding of critical power supply information.

ID	Submitter	Issue category	Issue Sub-category
46, 48, 55, 56	Name withheld Jill Crawford Wayne Bellenger Duncan Crawford	Justification and evaluation of the project	Existing issues with Koala Street and/or preference for Koala Street to be upgraded as a priority.
47	Eden Mellis	Project Economic environmental social impacts Justification and evaluation of the project	Project justification More suitable alternative sites/unsuitable location. Existing issues with Koala Street and/or preference for Koala Street to be upgraded as a priority.
49	Lisa An		Omission of key documents and misrepresentation of information. Exclusion of key stakeholders from consultation. Lack of transparency. Exclusion of Birpai RAP from archaeological investigations. Construction noise. Withholding of critical power supply information. Vibration impacts on buildings. Contamination. Biodiversity impacts.
50	Name withheld	Project Justification and evaluation of the project	Project cost and budgetary risk. More suitable alternative sites/unsuitable location. Design. Project justification. Existing issues with Koala Street and/or preference for Koala Street to be upgraded as a priority.
57, 79, 80, 81, 82	Hugh Smith Meg Smith Mary Smith Lachlan Smith Tom Smith		Omission of key documents and misrepresentation of information. Lack of responses to previously raised issues. Odour and bioaerosol pollution. More suitable alternative sites/unsuitable location. Land acquisition concern. Insufficient time for community to review documents. Concerns regarding GHD report reliability. Pedestrian and cyclist safety. Contamination. Public health impacts. Outdated water modelling. Exclusion of key stakeholders from consultation. Contradictory statements on construction hours in GHD RTS. Vibration impacts on buildings. Lack of transparency. Construction dust. Unclear emergency access planning. Project cost and budgetary risk. Biodiversity impacts. Impacts to threatened species and birds. Exclusion of Birpai RAP from archaeological investigations. Redacted documentation. Aboriginal and cultural heritage impacts.

ID	Submitter	Issue category	Issue Sub-category
66	Name withheld	Economic environmental social impacts Justification and evaluation of the project	Financial pressures on taxpayers. Existing issues with Koala Street and/or preference for Koala Street to be upgraded as a priority.
67	Fred Potter	Economic environmental social impacts	Biodiversity impacts. Impacts to threatened species and birds.
76		Project Procedural matters	Exclusion of Birpai RAP from archaeological investigations. EIS process rushed. Undocumented complaints and concerns.
77	Name withheld	Project Justification and evaluation of the project	Project cost and budgetary risk. Project justification.
78	Michelle Black	Procedural matters Economic environmental social impacts	Lack of transparency. Biodiversity impacts. Public health impacts. Financial pressures on taxpayers.
83, 84, 85, 86, 87, 88, 89	Audrey Rangal Cindy Fielding-Smith Alison Hockley Russell Dick Robert Rangal Michael Hockley	Project Procedural matters Economic environmental social impacts	Omission of key documents and misrepresentation of information. Public health impacts. Lack of transparency. Exclusion of Birpai RAP from archaeological investigations. Withholding of critical power supply information. Project cost and budgetary risk. Procurement and governance issues. Health impacts of asbestos.
90	Lestelle Tefai	Economic environmental social impacts	Flooding. Aboriginal and cultural heritage impacts. Traffic, transport and access impacts. Odour and bioaerosol pollution.
91	Name withheld	Economic environmental social impacts	Impacts to local high school students. Pedestrian and cyclist safety. Construction noise.
92	Michael Potter	Project Economic environmental social impacts	Biodiversity impacts. Traffic, transport and access impacts. Amenity. Contamination. Flooding and natural hazards. Construction noise. Vibration impacts on buildings. Aboriginal and cultural heritage impacts. Historical heritage impacts. More suitable alternative sites/unsuitable location.
93	Birpai LALC	Procedural matters Economic environmental social impacts	Exclusion of Birpai RAP from archaeological investigations. Aboriginal and cultural heritage impacts.

ID	Submitter	Issue category	Issue Sub-category
94	Peter Rumble (Rebecca Rumble)	Economic environmental social impacts	Traffic, transport and access impacts. Amenity. Impacts to water quality, Fernbank Creek and/or Partridge Creek. Contamination. Public health impacts. Odour and bioaerosol pollution. Contamination of drinking water supply.
95	Peter Rumble	Economic environmental social impacts	Traffic, transport and access impacts. Public health impacts. Contamination of drinking water supply. Flooding. Impacts to threatened species and birds. Impacts to water quality, Fernbank Creek and/or Partridge Creek.
96	Daniel Francis	Project Economic environmental social impacts Justification and evaluation of the project	Impacts to threatened species and birds. Existing issues with Koala Street and/or preference for Koala Street to be upgraded as a priority. Project cost and budgetary risk.
97	Linda Dewbery	Procedural matters Economic environmental social impacts	Exclusion of Birpai RAP from archaeological investigations. Aboriginal and cultural heritage impacts.
99	Cale Burge	Economic environmental social impacts	Aboriginal and cultural heritage impacts.
100	Ann Potter	Economic environmental social impacts	Biodiversity impacts. Impacts to threatened species and birds. Health impacts of asbestos. Contamination. Flooding.
101	Birpai LALC	Procedural matters Economic environmental social impacts	Exclusion of Birpai RAP from archaeological investigations. Aboriginal and cultural heritage impacts.
102	Patrick Cowan	Project Economic environmental social impacts Justification and evaluation of the project	EIS process rushed. Project cost and budgetary risk. Flooding. Amenity. Existing issues with Koala Street and/or preference for Koala Street to be upgraded as a priority.
103	Hopkins Consultants	Justification and evaluation of the project	Support for project.
104	Name withheld	Justification and evaluation of the project	Support for project.

ID	Submitter	Sentiment	Date	Details of submission
1	Shimon Seidenman	Object	20 May 2025	<i>I am attaching hereby several pictures taken in the last 2 days in the Fernbank Creek area. It's flooded heavily! The road leading to the planed site is closed, the alternative passage planned is too. Such amount of rainfall on the large concrete surface on he plant will rush down towards the creek which all year round is unable to accommodate any water. Its capacity at all times and spills over the neighbouring lands. No such plant, within the limited budgets is geared to be able to hold so much water and will by no doubt at all, end up as raw sewage in the marshes, the swamps and contaminate every meter of this unique ecosystem.</i>
2				<i>I am attaching here by: 1. SES dangerone map issued yesterday. It clearly shows Fernbank Creek as a central disaster zone. The "Danger logo" actually is just about where the plant is planned for. Reflecting how irresponsible it is to plan such a plant in a constant danger zone with frequent floods (Major ones: 2013,2021,2025), but the creek is in overflow most of the time as the creek is just a name, its full with everything one can imagine and its no more than a few centimetres deep. And council knows of it very clearly. 2 photos of my own land, showing water from the reek that advanced into the paddocks. The creek itself is about 150 meters away.</i>
3	Xavier Dancet	Object	21 May 2025	The below is a summary of the issues raised in the submission: <ul style="list-style-type: none"> - Omission of key documents and misrepresentation of information. - Exclusion of key stakeholders from consultation. - Deceptive and misleading public communication. - Exclusion of Birpai RAP from archaeological investigations. - Withholding of critical power supply information.
4	Name withheld – Jeff Anderson	Object	May 2025	The below is a summary of the issues raised in the submission: <ul style="list-style-type: none"> - Omission of key documents - More suitable alternative sites - Lack of transparency - Health and environmental risks - Project costs - Involvement of RAPs
5	Birpai LALC	Object	21 May 2025	Excerpt from the submissions: <i>This project is located on Birpai Country, and we are deeply concerned that the Aboriginal Cultural Heritage has not been properly investigated or protected. The current reports only mention 38 artefacts, and visibility during the site inspection was very low — between 10% and 20%. This tells us that many more cultural items may still be present and have not been found.</i> <i>Birpai LALC was not properly included in the inspection or consultation process, even though we are the recognised Traditional Custodians of this land. This is not acceptable and goes against the respect and care that should be shown when planning developments on Aboriginal land.</i> <i>We also have concerns about the destruction of native bushland, threats to endangered animals, and health risks to nearby families. Important documents have been left out of the public reports, and local residents and Traditional Owners have not been given a fair chance to be heard.</i> <i>For these reasons, we ask that:</i> <ul style="list-style-type: none"> - <i>The project is paused immediately</i> - <i>A proper Aboriginal Cultural Heritage inspection is done with Birpai LALC present</i> - <i>All missing reports are released to the public</i> - <i>A new location for the wastewater facility is considered</i>
6	John Wagstaffe	Object	May 2025	Same submission as item 5.
7	Craig Carroll	Object	May 2025	<i>As a concerned member of the community, without bias & I object to the project proposal based on the following primary concerns:</i> <ul style="list-style-type: none"> - <i>I am aware of the potential for irreversible environmental damage to the existing flood plain & the concerned the impact of this project can cause with long term damage to the natural ecosystem.</i> - <i>its my understanding that a far more economical alternative is available in the upgrade of the existing infrastructure at Koala Street with savings to the rate & taxpayers estimated to be several million of dollars.</i> - <i>the existing inferior public road system in the immediate vicinity cannot support the machinery required to undertake the proposed infrastructure & therefore put the immediate public at risk (ignoring the noise pollution they will be expected to endure).</i> - <i>and finally, I have been made aware of the existence of aboriginal relics located at & around the proposed site. If that's the case, then the respective elders should be consulted & naturally be invited to participate in the process before any decisions on approval are progressed.</i>

ID	Submitter	Sentiment	Date	Details of submission
8	Simon Seidenman, Robert W. Hough	Object	May 2025	Summary of objections raised in the submission: <ul style="list-style-type: none"> – Design revisions reveal poor initial planning. – Flawed water modelling and dismissive assumptions. – Omission of key documents and misrepresentation of information. – Neglect of cultural heritage and exclusion of Birpai RAP. – Road infrastructure cannot support the project. – Crumbling infrastructure demands immediate attention. – Concealed power infrastructure changes and impacts. – Environmental mismanagement of Fernbank Creek. – Health hazards – contaminated fill and water risks. – Questionable site selection and rushed process. – Budgetary concealment and financial risk.
9	Name withheld	Object	May 2025	Summary of objections raised in the submission: <ul style="list-style-type: none"> – Omission of key documents and misrepresentation of information. – Misleading public communication and withheld cost information. – Exclusion of Birpai RAP from archaeological excavations. – Suppression of critical infrastructure changes.
10	Name withheld	Object	May 2025	<i>The proposed location of this project is within an area that floods and/or retains water and creates a lot of runoff. Being extremely near to the Hastings River, this may result in accidental spillage into the river, poisoning the river. Another site of less risk should be found.</i>
11	Louis Dancet	Object	May 2025	Same submission as item 3.
12	Name withheld	Object	May 2025	<i>Do not build any form of sewerage or treatment plants on such low lying grounds as this. The sewerage pits are all overflowing currently due to stormwater flowing into septic lines instead of the stormwater drains to flow into the ocean.</i>
13	Troy Highlands	Object	May 2025	Summary of issues raised in the submission: <ul style="list-style-type: none"> – Omission of critical information – Limited and misleading public communication – Cultural heritage concerns – Withholding of power supply information – Financial and ethical issues – Environmental and health risks
14	Britney Bosschieter	Object	May 2025	Summary of issues raised in the submission: <ul style="list-style-type: none"> – Failure to provide essential documents and incorrect presentation of information. – Exclusion of stakeholders from consultation. – Incorrect and untruthful information to the public. – The exclusion of Birpai RAP from archaeological investigations. – Critical power supply information withheld.
15	Lisa An	Object	May 2025	<i>In addition to my previous submission, please find photos of Fernbank creek Rd and partridge creek lane taken today 20/5/25. Evidently this area floods significantly in heavy rainfall. This is an inappropriate location for a sewerage plant. In heavy rainfall I am concerned about:</i> <ol style="list-style-type: none"> <i>1) flooding to the proposed site</i> <i>2) flooding to access roads and restricted access to the site</i> <i>3) possible high frequency of discharge into the area during heavy rainfall and subsequent health impacts to humans, livestock and surrounding wildlife</i> <i>4) increasing flood prone areas adjacent to the access road and site (and into our current property) due to raising of the road and site</i>

ID	Submitter	Sentiment	Date	Details of submission
16	Debra King	Object	May 2025	<p>Summary of issues raised in the submission:</p> <ul style="list-style-type: none"> – Threat to endangered species and ecological habitats. – Aboriginal cultural heritage. – Construction impacts: noise, dust, and contamination risks. – Operational risks and maintenance concerns. – Power supply uncertainty. – Stormwater and flooding concerns. – Odour and bioaerosol pollution. – Flood-free access and traffic hazards. – Missing documents and transparency concerns. – Project cost and viability.
17	John James, Beau Hamilton Peter Alaban, Cody James, Sara James	Object	May 2025	<p>Summary of issues raised in the submission:</p> <ul style="list-style-type: none"> – Design revisions reveal poor initial planning. – Flawed water modelling and dismissive assumptions. – Omission of key documents and misrepresentation of information. – Neglect of cultural heritage and exclusion of Birpai RAP. – Neglected road infrastructure cannot support project. – Infrastructure requirements. – Power supply infrastructure and concealed environmental impact. – Environmental mismanagement of Fernbank Creek. – Health hazards – contaminated materials and drinking water risks. – Questionable process and rushed planning. – Cost vs. budget.
18	Name withheld	Object	May 2025	<p>Summary of issues raised in the submission:</p> <ul style="list-style-type: none"> – Exclusion of key findings – Financial and ethical concerns – Environmental and health risks – Inadequate public messaging – Indigenous cultural heritage concerns – Failure to disclose power supply changes
19	Name withheld	Object	May 2025	Same submission as item 18.
20	Name withheld	Object	May 2025	<p>Summary of issues raised in the submission:</p> <ul style="list-style-type: none"> – Financial and ethical concerns – Sustainability to the environment and health risks – Absence of vital information – Restricted and unclear public outreach – Historical and Indigenous heritage considerations – Failure to disclose power supply detail
21	Name withheld	Object	May 2025	<i>I object to the project based on its detrimental impact on the environment and animals (esp birds). Additionally, it will be exorbitantly expensive and there are cheaper ways to achieve the same result.</i>
22	Daniel Provost	Object	May 2025	Same submission as item 17.

ID	Submitter	Sentiment	Date	Details of submission
23	Name withheld	Object	May 2025	<i>Too close to river. Flooding is becoming more of a problem. If the sewage is for Thrumster, place it closer to Thrumster. Alternatively upgrade current facilities.</i>
24	Elizabeth Dancet	Object	20 May 2025	<p>Summary of issues raised:</p> <ul style="list-style-type: none"> – Lack of response to odour propagation issue raised in previous RTS – Safety of intersection – Omission of key documents and misrepresentation of information – Exclusion of key stakeholders from consultation – Deceptive and misleading public communication – Exclusion of Birpai RAP from archaeological investigations – Withholding of critical power supply information
25	Name withheld	Object	May 2025	<p><i>I am submitting Single page document detailing my informed and sincere objection to the so-called "Thrumster Wastewater Scheme." The name itself is misleading—this facility is not located in Thrumster, but in Fernbank Creek. It is clear that by referring to it incorrectly, the Council is obscuring the reality: this is a plan to build a sewage treatment plant in the midst of a sensitive creek environment.</i></p> <p><i>Proceeding with this project exposes both the Council and the State to serious financial and legal risks. The location is highly unsuitable, posing a real danger of flood-related damage and accidents—risks so significant that insurance companies may refuse coverage or demand prohibitively high premiums. These liabilities, combined with the already inflated project costs, could far exceed the financial capacity of Port Macquarie Hastings Council and potentially lead to financial ruin for the Council, placing an undue burden on ratepayers.</i></p> <p>No additional submission was appended.</p>
26	Letitia Caldwell	Object	May 2025	<p>Identical submission to above with appended document. Summary of issues raised is as follows:</p> <ul style="list-style-type: none"> – Poor planning and flawed design – Outdated and inaccurate water modelling – Withheld documents and misleading information – Cultural heritage breach – Unsafe road infrastructure – Essential infrastructure ignored – Hidden environmental impacts – Ecological risk and lack of environmental studies – Public health hazard – asbestos risk – Unjustified site selection and rushed process – Massive, underestimated costs
27	Ian Caldwell	Object	May 2025	<p><i>I strongly object to the misleadingly named "Thrumster Wastewater Scheme," which is actually planned for Fernbank Creek—a sensitive environmental area. By misidentifying the location, the Council obscures the true nature of this project: a sewage treatment plant in a vulnerable creek ecosystem.</i></p> <p><i>Beyond environmental concerns, this plan carries immense financial and legal risks. The site is prone to flooding, increasing the likelihood of costly accidents. Insurance may be unavailable or prohibitively expensive, adding to the already inflated costs. These liabilities could overwhelm Port Macquarie Hastings Council's financial capacity, threatening economic stability and unfairly burdening ratepayers.</i></p>

ID	Submitter	Sentiment	Date	Details of submission
28	Name withheld	Object	May 2025	<p><i>Dear Port Macquarie-Hastings Council,</i></p> <p><i>I am writing to formally object to the proposed Thrumster Wastewater Scheme, specifically the sewer plant site on Fernbank Creek Road, Fernbank Creek. As a resident of the area, I am deeply concerned about the environmental, flood-related, and procedural issues associated with this proposal.</i></p> <p><i>Flood Risk in a Swampy Location: The proposed site is a low-lying, swampy area near Fernbank Creek and the Hastings River, making it highly susceptible to flooding. Historical flood patterns in this region indicate a significant risk of inundation, which could lead to operational failures at the sewer plant and environmental contamination, such as untreated wastewater spills into local waterways. I urge the council to reconsider this location due to its unsuitability for critical infrastructure.</i></p> <p><i>Ecological Impact on Wetlands: The site appears to function as a wetland, likely supporting protected species and contributing to biodiversity. The PMHC's own planning documents emphasize conserving high-conservation-value areas in Fernbank Creek. Construction here risks irreversible harm to local ecosystems, disrupting hydrology and wildlife habitats. I request a thorough environmental impact assessment to evaluate these risks and consider alternative sites with lower ecological value.</i></p> <p><i>Inconsistency in Flood Risk Management: The council has restricted residential development in Fernbank Creek due to flood risks, yet this sewer plant is being proposed in a similarly vulnerable area. This discrepancy undermines trust in the planning process. While I understand the need to address sewage capacity, approving a plant in a flood-prone zone while denying dwellings appears inconsistent and prioritises infrastructure over community fairness. I ask for clarity on why this site was chosen and how flood risks will be mitigated without compromising environmental safety.</i></p> <p><i>Lack of Transparency and Community Engagement: The proposal's details, including site selection criteria and flood mitigation plans, have not been adequately communicated to the community. As a resident, I feel excluded from meaningful consultation. I request that the council suspend the project's approval process until a comprehensive public consultation period is held, allowing residents to fully understand and provide input on the scheme's impacts.</i></p> <p><i>In light of these concerns, I urge the PMHC to:</i></p> <p><i>Suspend the approval process for the Thrumster Wastewater Scheme until alternative, less flood-prone sites are thoroughly explored.</i></p> <p><i>Conduct and publicly release a detailed flood risk assessment and environmental impact study for the Fernbank Creek Road site.</i></p> <p><i>Extend the public consultation period to ensure all community members, particularly those in Fernbank Creek, Thrumster, and Sancrox, can voice their concerns and receive clear answers.</i></p> <p><i>I support the need for infrastructure to enable growth, but this must not come at the expense of our environment, community trust, or safety. I look forward to your response and hope the council will prioritize sustainable and transparent planning in this matter.</i></p>
29	Jennifer Berger	Object	May 2025	<p>A summary of the issues raised in the submission is as follows:</p> <ul style="list-style-type: none"> - Lack of transparency in site selection and documentation - Inadequate public engagement and cost disclosure - Undisclosed changes to power infrastructure - Insufficient infrastructure planning - Fernbank Creek Road - Creek restoration - Public health risks - Dismissal of viable alternatives - Financial mismanagement
30	Name withheld	Object	May 2025	<p><i>I am concerned about the environmental impact during the construction phase of the project. There large variety of bird species supported by the wetlands which will be directly impacted by this project.</i></p>
31	Christian Dancet	Object	May 2025	<p>The below is a summary of the issues raised in the submission:</p> <ul style="list-style-type: none"> - Omission of key documents and misrepresentation of information - Exclusion of key stakeholders from consultation - Deceptive and misleading public communication - Exclusion of Birpai RAP from archaeological investigations - Withholding of critical power supply information


ID	Submitter	Sentiment	Date	Details of submission
32	Adam King		May 2025	<p>The below is a summary of the issues raised in the submission:</p> <ul style="list-style-type: none"> - Insufficient time for public review - Inability for community to provide informed feedback - Concerns regarding GHD report reliability - Pedestrian and cyclist safety - Bioaerosols, microtoxins - Ecoli concentrations during a wet event or flood - Odour - Water and environmental contamination - Non-compliance with water quality standards - Flawed hydrodynamic modelling approach - Noise - Inadequate consideration of noise impacts - Contradictory statements on construction hours in GHD RTS - Absence of individual consultation for thousands of residents - Vibration impacts on nearby properties - Lack of communication on potential property damage - Lack of communication of effect of vibration effects on residents - Accessibility and transparency of impact data - Precise information required for residents - Air quality during construction - Site access and emergency planning - Contraindications in Council statements regarding land acquisition - Unclear emergency access planning - Power supply - Water quality monitoring during construction - Estimated development cost - Inconsistent cost estimates - Comparisons with alternative development models - Potential underquoting of development costs - Biodiversity assessment - Lack of public engagement with environmental experts - Unaddressed threats to native species - Aboriginal and Biripi land council consultation - Lack of direct consultation with Biripi Local Aboriginal Land Council representative - Incomplete and limited artefact surveys - Redacted documentation - Failure to fully engage Aboriginal communities
33	Jennifer Berger Jonathan Hopley Dr Charles Hopley	Object	May 2025	Same submission as item 17.
34	Adam King	Object	May 2025	Same submission as item 17.

ID	Submitter	Sentiment	Date	Details of submission
35	Hastings Birdwatchers	Comment	May 2025	<p>Hastings Birdwatchers believe that there are some modifications to the operational and construction procedures of the project that are necessary to protect threatened species, in particular the Grass Owl . There are also additional threatened species with in the site that were not captured during environmental surveys.</p> <p>Details outlining our concerns and requested changes are laid out in the attachment</p> <p>Summary of issues raised in the submission:</p> <ul style="list-style-type: none"> – Additional threatened species. – Impacts to the Grass Owl. – Overflow of treated water into the natural wetland and then into Partridge and Fernbank Creeks.
36	Lianne Seidenman	Object	May 2025	Same submission as item 8.
37	Shir Seidenman	Object	May 2025	<p>I am submitting a 7-page document detailing my informed and sincere objection to the so-called "Thrumster Wastewater Scheme." The name itself is misleading—this facility is not located in Thrumster, but in Fernbank Creek. It is clear that by referring to it incorrectly, the Council is obscuring the reality: this is a plan to build a sewage treatment plant in the midst of a sensitive creek environment.</p> <p>Proceeding with this project exposes both the Council and the State to serious financial and legal risks. The location is highly unsuitable, posing a real danger of flood-related damage and accidents—risks so significant that insurance companies may refuse coverage or demand prohibitively high premiums. These liabilities, combined with the already inflated project costs, could far exceed the financial capacity of Port Macquarie Hastings Council and potentially lead to financial ruin for the Council, placing an undue burden on ratepayers.</p> <p>No attachment was provided.</p>
38	LinFang Seidenman	Object	May 2025	Same submission as item 8.
39	Nili Seidenman	Object	May 2025	Same submission as item 8.
40	Lynnda Highlands	Object	May 2025	Same submission as item 13.
41	Birpai LALC	Object	May 2025	<p>Summary of issues raised in the submission:</p> <ul style="list-style-type: none"> – Destruction of Aboriginal Cultural Heritage. – Environmental and cultural risk. – Lack of transparency and incomplete reporting.
42	Daniel Seidenman	Object	May 2025	Same submission as item 8.
43	Daniel Seidenman	Object	May 2025	Same submission as item 8 (however attachment was omitted).
44	Desmond Currie	Object	May 2025	<p>Please see attached document.</p> <p>No attachment provided.</p>


ID	Submitter	Sentiment	Date	Details of submission
45	Name withheld	Object	May 2025	Summary of issues raised in the submission: <ul style="list-style-type: none"> – Omission of key documents and misrepresentation of information. – Misleading public information and withheld cost information. – Exclusion of Birpai RAP from archaeological investigations. – Withholding of critical power supply information.
46	Name withheld	Object	May 2025	<i>Please upgrade the existing waste water plant at Koala St first. I've heard it is significantly cheaper to upgrade this plant. I would drive home past it frequently and the odour is terrible at times. There are some great suburbs on the fringe of this plant that could be improved by reducing odour.</i>
47	Eden Mellis	Object	May 2025	<i>This project would be detrimental to the environment in the surrounding areas. There isn't enough research to support the demand or evidence to indicate this is the best location to build this. Would be a lot more cost effective to upgrade the current facility rather than use taxpayers money.</i>
48	Jill Crawford	Object	May 2025	Same submission as item 46.
49	Lisa An	Object	May 2025	Summary of issues raised in the submission: <ul style="list-style-type: none"> – Absence of Key Documents and Deliberate Misleading Information. – Stakeholder Exclusion. – Misleading Public Communications. – Exclusion of Birpai RAP from Archaeological Work. – Noise/vibration during construction. – Withheld Power Supply Changes. – Potential contamination of drinking water. – Environmental concerns.
50	Name withheld	Object	May 2025	<p><i>My objection to this proposal is the location the proposal is planned.</i></p> <p><i>Location is really only useful to the new area of Sovereign Hills. Given the limited good land to increase further home building this area would have reached 40-50 % of land already built on. Where the sewerage works is proposed is flood plain and swap. Problems of pipe line construction will only sky rocket once "ground is broken" and the service contractors uncover all the obvious site problems. The distances needed to connect into the "new customers" will also see a economic "blow out" on the cost of this facility.</i></p> <p><i>I worked on Darling Harbour 1985 - 1988 and the extent of effort to pile every structure was extra ordinary. This site is worse!</i></p> <p><i>Is it designed to pile every structure build in this facility? I fear not. Have any idea on the cost involved or the ability to do this work?</i></p> <p><i>Sorry but I have no faith in council project managing this. Ocean Drive duplication comes to mind.</i></p> <p><i>On to a more constructive comment.</i></p> <p><i>Why is this proposed well away from the areas of real need?</i></p> <p><i>Expansion of the heavier density houses in the southern Lake Cathie, Rainbow Estate, Gem life and soon OCR expansion. Far more houses built and yet to be built in this area. A sewerage plant located somewhere between Bonny Hills and Lake Innes on the inland side of the coastal development would be of better value to the rate payers.</i></p> <p><i>Has council considered what will happen when the current pumping from this area to the Koala St Plant goes wrong and the Lake Cathie, Bonny Hills area gets backed up or inoperable?</i></p> <p><i>I suggest council should consult the community more on where they intend to spend the rate payers money.</i></p> <p><i>This proposal does not seem sensible at the moment.</i></p> <p><i>Sorry But I don't support this.</i></p>
51	Ian Fielding-Smith	Object	May 2025	Same submission as item 9.
52	John Attard	Object	May 2025	Same submission as item 9.

ID	Submitter	Sentiment	Date	Details of submission
53	Simon Seidenman	Object	May 2025	Same submission as item 8.
54	Name withheld	Object	May 2025	Same submission as item 13.
55	Wayne Bellenger	Object	May 2025	Same submission as item 46.
56	Duncan Crawford	Object	May 2025	Same submission as item 46.
57	Hugh Smith	Object	May 2025	Submission raises concerns regarding: <ul style="list-style-type: none"> – Omission of information – Lack of response to issues raised – Odour concerns – The odour impacts from Koala Street – Use of alternative locations on Koala Street and Lake Road – Land acquisition concern The rest of the submissions is the same as item 32
58	Samantha Sullivan	Object	May 2025	Same submission as item 32.
59	Christopher Maxwell	Object	May 2025	Same submission as item 32.
60	Vincent Maxwell	Object	May 2025	Same submission as item 32.
61	Theres Maxwell	Object	May 2025	Same submission as item 32.
62	Hope Bellenger	Object	May 2025	Same submission as item 32.
63	Paige Bellenger	Object	May 2025	Same submission as item 13.

ID	Submitter	Sentiment	Date	Details of submission
64	Lorraine Fabri	Object	May 2025	Same submission as item 13.
65	Lindsay Steer	Object	May 2025	Same submission as item 13.
66	Name withheld	Object	May 2025	<i>I object on the grounds of mismanagement of rate payer funds. This project is around 150 million more expensive than upgrading Koala Street plant. This money should be put into reducing odour around the Koala Street plant instead.</i>
67	Fred Potter	Object	May 2025	<i>The treatment plant is very close to a beautiful wetland and I believe that the bird and wildlife habitat will be adversely impacted.</i>
68	Name withheld	Object	May 2025	Same submission as item 13.
69	Name withheld	Object	May 2025	Same submission as item 13.
70	Name withheld	Object	May 2025	Same submission as item 13.
71	Name withheld	Object	May 2025	Same submission as item 13.
72	Donita Rodhe	Object	May 2025	Same submission as item 13.
73	Name withheld	Object	May 2025	Same submission as item 13.
74	Name withheld	Object	May 2025	Same submission as item 13.
75	Birpai LALC	Object	17 May 2025	Same submission as item 5.

ID	Submitter	Sentiment	Date	Details of submission
76		Object	May 2025	A summary of issues raised in the submission are as follows: <ul style="list-style-type: none"> – Exclusion of Birpai Traditional Owners Indigenous Corporation. – Rushed process. – Undocumented complaints and concerns.
77	Name withheld	Object	May 2025	<i>There is not enough science to back up the implications to both the environment and impact to the local residents and surrounding area. Another ill conceived project. The cost of this is concerning, an upgrade of the current facility would be more beneficial.</i>
78	Michelle Black	Object	May 2025	<i>I object to the submission based on the how much information has been withheld from the public, the implications on the surrounding area, environmental and health implications and cost to the rate payers. This has been a very dishonest submission.</i>
79	Meg Smith	Object	May 2025	This submission raises the same concerns as item 57.
80	Mary Smith	Object	11 May 2025	This submission raises the same concerns as item 57.
81	Lachlan Smith	Object	11 May 2025	This submission raises the same concerns as item 57.
82	Tom Smith	Object	11 May 2025	This submission raises the same concerns as item 57.
83	Audrey Rangal	Object	May 2025	Summary of issues raised in this submission: <ul style="list-style-type: none"> – Omission of key documents and misleading information – Public health risks: airborne particulates and water safety – Deceptive public communication – Exclusion of Birpai RAP from cultural heritage work – Concealment of power supply changes – Environmental, financial, and operational concerns – Procurement and governance issues – Material safety concerns: asbestos in construction fill
84	Russell Dick	Object	May 2025	Same submission as item 83.
85	Cindy Fielding-Smith	Object	May 2025	Same submission as item 83.

ID	Submitter	Sentiment	Date	Details of submission
86	Alison Hockley	Object	May 2025	Same submission as item 83.
87	Russell Dick	Object	May 2025	Same submission as item 83.
88	Robert Rangal	Object	May 2025	Same submission as item 83.
89	Michael Hockley	Object	May 2025	Same submission as item 83.
90	Lestelle Tefai	Object	May 2025	<i>I have heard through community that there has been Indigenous artefacts in this area and so needs be left alone for Land Council to culturally protect the area and utilise the area for 'On Country' activities....more consult with elders. Also.....this is flood plain often..very often. Friends and family in this area get inundated with water. If treatment plant operates then will take away the tranquillity of lifestyle , lots of traffic, smelly etc.</i>
91	Name withheld	Object	May 2025	<i>I am a high school student who walks everyday along Fernbank Creek Rd to the bus stop at Hastings River Drive, often with my sisters. My parents have informed Council and GHD numerous times about the issue of safety for pedestrians like myself. Why has Council and GHD misled the Department of PHI in their RTS where they state that there is no pedestrian activity expected? I also walk my dog everyday on the road where I see heaps of other pedestrians and cyclists. Why is the Council risking my safety? With the noise and vibration expected during construction, how am I expected to study and sleep well? I also attend a local high school which will also be affected by noise and vibration. I am very effected by this project.</i>
92	Michael Potter	Object	May 2025	Summary of issues raised in this submission are as follows: <ul style="list-style-type: none"> - Impact on my land, my family, and our wellbeing. - Environmental and health risks. - Increased traffic incidents on a rural road. - Airborne particulates contaminating our rooftop water supply. - Noise and vibration with both physical and psychological effects. - Flooding, fire, and natural hazards. - Ecological impact. - Broader community impact. - This inefficiency and lack of foresight are alarming. - Cultural and heritage concerns. - Infrastructure mismanagement. - A better alternative.

ID	Submitter	Sentiment	Date	Details of submission
93	Birpai LALC	Object	May 2025	<p>We, the Members of the Birpai Local Aboriginal Land Council, wish to raise strong objections to the proposed Thrumster Wastewater Scheme.</p> <p>This project is located on Birpai Country, and we are deeply concerned that the Aboriginal Cultural Heritage has not been properly investigated or protected. The current reports only mention 38 artefacts, and visibility during the site inspection was very low — between 10% and 20%. This tells us that many more cultural items may still be present and have not been found.</p> <p>Birpai LALC was not properly included in the inspection or consultation process, even though we are the recognised Traditional Custodians of this land. This is not acceptable and goes against the respect and care that should be shown when planning developments on Aboriginal land.</p> <p>We also have concerns about the destruction of native bushland, threats to endangered animals, and health risks to nearby families. Important documents have been left out of the public reports, and local residents and Traditional Owners have not been given a fair chance to be heard.</p> <p>For these reasons, we ask that:</p> <ul style="list-style-type: none"> – The project is paused immediately; – A proper Aboriginal Cultural Heritage inspection is done with Birpai LALC present; – All missing reports are released to the public; – A new location for the wastewater facility is considered. <p>We ask that the Department of Planning, Housing and Infrastructure listen to our voices and take the right steps to protect Birpai Country and culture.</p> <p>Yours sincerely,  Birpai Local Aboriginal Land Council Member</p>
94	Peter Rumble (Rebecca Rumble)	Object	May 2025	<p>As a resident here we know the people of Fernbank Creek have had enough to contend with after the recent floods and don't need the added stress and consequences of all that this entails. I am no scientist, but totally agree with all the objections our knowledgeable neighbours have put forth. I have lived on Fernbank creek Rd all my life, 64 years, and absolutely love our neighbour hood and greatly respect our neighbours and their opinions. I have seen the escalation in traffic conditions and the lack of peacefulness that was, and am thankful that I no longer have children who need to walk the road to get to the bus stop as the traffic is too dangerous. I have also seen the decline in the state of the creeks. Living right on Partridge Creek we have seen the result of the Acid Sulphate issues and shudder to think how much worse it would be with Sewage Over flow added to the mix. We once could swim and fish in both Fernbank and Partridge creeks, but it is too contaminated now to do either and we would hate to see it get any worse. As my husband and I both have health problems, to worry about the issues of contaminates to our Tank Water ,and the bad odours are constantly on our minds. There just has to be a better way. Yours sincerely Rebecca Rumble (wife of Peter Rumble) 403 Fernbank Creek RD.</p>
95	Peter Rumble	Object	May 2025	<p>I have lived in the same house for the past 45 years, and I walk Fernbank Creek Rd every day because of health reasons and have to fight with the traffic as it is, without putting more construction traffic on the road. As a rate payer of Fernbank Creek, I will eventually have to pay for this Sewage system, along with the rest of town, and we at Fernbank Creek will get no benefit from it what so ever, but will have to put up with the smell and the Destruction of our water ways. We already have the problem of Acid Sulphate in Partridge Creek and Fernbank Creek through mismanagement and we certainly don't want to escalate the problem. We also need to think of the effect it will have on our bird life and the bird watchers and photographers who use the area regularly. There is also the problem of all this land being flood prone, as is evident after the floods of 2021. The disturbance of this low land is what causes the Acid sulphate and there is no getting around this problem. Another concern is air born particles from the treatment plant getting in our Drinking water, as we are all on Tank water,(NO TOWN WATER),There just has to be a better alternative that does not have such an impact on our environment.</p>
96	Daniel Francis	Object	May 2025	<p>This project is being constructed in a wildlife corridor where various birds of national significance reside. Not all of these have been addressed in the proposal.</p> <p>The site is generally unsuitable for a waste treatment plant, it requires significant costs to raise the height and significant investment will be required to pump the waste into the town facilities to then release into the river. Could the money be better spent by looking at options for significantly upgrading the existing facility?</p>
97	Linda Dewbery	Object	May 2025	<p>The Thrumster Wastewater Scheme is a major development proposed on Birpai land — and Birpai LALC was not properly consulted in the cultural heritage inspections. The current reports only recorded 38 artefacts with very poor visibility (10–20%), which means much more could be buried and undiscovered.</p> <p>Please stop this project until:</p> <ul style="list-style-type: none"> – Proper site inspections are done. – Cultural heritage is fully protected. – Missing reports are made public.
98	Birpai LALC	Object	19 May 2025	<p>Same submission as item 41.</p>

ID	Submitter	Sentiment	Date	Details of submission
99	Cale Burge	Object	May 2025	<p>As a Birrpai Man whose ancestors have be connected to the Wauchope/Port Macquarie/Gloucester/Taree/Kempsey communities for 5 generations minus my mother and myself , as which i have returned and lived on country a year ago and look to return to Birrpai Country very shortly i reject this proposal on the grounds of:</p> <p>A LACK OF PROPER SITE INSPECTION IN REGARDS TO CULTURAL EVIDENCE NOT A GUARANTEE ON UPHOLDING CULTURAL HERITAGE AND LIAISING WITH LALC AND COMMUNITY MEMBERS SUSPECTED HIDING OF REPORTS AND FINDINGS ON THE PROPOSED SITE AREA</p> <p>I suggest if the NSW government takes the First Nations people of this country seriously these steps need to be taken to ensure that the NSW shows that they truly respect us BIRRPai/BIRPI/BIRIPI people. Contact me if you would like my thoughts my contact details are in my account.</p> <p>I have shown you respect by writing this respect me by replying back with comments made towards the key points i identified and contact the Birpi/Bunya/Purfleet/Kempsey/Dunghutti Elders LALC with the same information i request.</p> <p>Marrumbu Birrpai/Wiradyuri Man Cale James Burge</p>
100	Ann Potter	Object	May 2025	<p>I have been visiting this area for 10 years and have been delighted, as an avid birdwatcher, to see a huge range of wetland birds, including Magpie geese, Swift parrot, e Emu Wren and Marsh Harriers. I cannot help but think that this project will inevitably adversely affect these populations both during the construction phase and for the lifetime of the works. It is widely accepted that wetlands should not be compromised. I also have grandchildren being raised in this area who may be impacted during, particularly, the construction phase of this project due to potentially harmful, asbestos materials to be brought in from a quarry. Also, my concern includes sewage overflow in a peat based swamp. I have witnessed the flooding of this swamp in the years I have been visiting and feel this could cause serious health risks for both people and the natural species.</p>
101	Birpai LALC	Object	May 2025	<p>Inadequate Aboriginal Cultural Heritage Assessment – Thrumster Wastewater Scheme The Birpai Local Aboriginal Land Council (Birpai LALC) writes to raise serious concerns about the Aboriginal Cultural Heritage assessment process associated with the Thrumster Wastewater Scheme in the Port Macquarie-Hastings region. It has come to our attention that, within the Environmental Impact Statement (EIS) comprising over 2,000 pages, only 38 Aboriginal artefacts were identified. Birpai LALC is deeply concerned that the Aboriginal site inspections and cultural due diligence undertaken as part of this project have been inadequate and do not reflect the cultural significance of Birpai Country. Birpai LALC is the legally recognised Aboriginal stakeholder for this region and one of the Traditional Custodians of this land. We are not satisfied that the current process meets legislative obligations under the NSW Aboriginal Land Rights Act 1983 and the National Parks and Wildlife Act 1974, or reflects best practice for engagement with Aboriginal stakeholders. We formally request: * That the project be paused pending further cultural heritage investigation; * That Birpai LALC cultural heritage officers be engaged to revisit the site; * That a comprehensive Aboriginal Cultural Heritage Assessment be conducted in partnership with Birpai LALC; * That the community be given the opportunity to review updated findings before any further decisions are made. The Thrumster area is known to contain highly significant cultural heritage, including artefact scatters, scarred trees, and potential intangible values that require proper consideration. Protection of these cultural landscapes is essential to our community and to the future integrity of development on Birpai land. We request that our submission be acknowledged and that immediate steps be taken to engage in meaningful consultation with the Birpai LALC moving forward. Yours sincerely, Jaclyn Rajcany Chief Executive Officer</p>
102	Patrick Cowan	Object	May 2025	<p>Hi team, The project is being rushed through, expected to cost far too much at 200 million and is a flood plain and birdwatching area. The Koala street facility could be upgraded for less. Thanks for your time</p>
103	Hopkins Consultants	Support	May 2025	<p>Hopkins Consultants comprises engineers, surveyors and town planners and are the consultants for the development of land in Sovereign Hills in Thrumster. We support the Thrumster Wastewater Scheme, which is essential for Council to reach their housing targets.</p>

ID	Submitter	Sentiment	Date	Details of submission
104	Name withheld	Support	May 2025	<p>We write in response to the public exhibition of the Thrumster Wastewater Scheme State Significant Infrastructure (SSI) application. Thank you for the opportunity to provide a submission. We wish to express our full support for the proposal.</p> <p>This submission is made on behalf of:</p> <ul style="list-style-type: none"> • Landowner of 60 John Oxley Drive, Port Macquarie NSW 2444 <p>The property is located within the John Oxley Drive Structure Plan area, specifically in the Health and Education Precinct. This strategic location makes the site ideally suited for development that supports surrounding health, education, and employment infrastructure.</p> <p>We intend to deliver co-living accommodation on the site, specifically designed to meet the growing need for flexible housing options for essential workers and temporary professionals, such as locum doctors, resident medical staff, and allied health professionals. These groups play a vital role in the region's healthcare system, yet face difficulty finding appropriate, short-term housing near their places of work. Our ability to progress this development is currently restricted by the lack of wastewater infrastructure and outdated RU1 Primary Production zoning, which was acknowledged as inappropriate for this area as far back as the 2012 John Oxley Drive Structure Plan. Despite this, zoning remains unchanged, limiting the supply of worker accommodation and the capacity to respond to local service demands.</p> <p>We note that 58 John Oxley Drive, our adjoining property, is owned by an organisation seeking to deliver a much-needed childcare facility—another essential community use that is currently held back for the same reasons.</p> <p>The Thrumster Wastewater Scheme represents critical enabling infrastructure that would unlock the potential of these strategically located blocks to contribute to regional housing supply, workforce attraction and retention, and essential service delivery.</p> <p>Given the pressing need for suitable housing and services, we strongly support approval of this SSI application and the timely delivery of the Thrumster Wastewater Scheme.</p> <p>Thank you again for the opportunity to contribute. Please don't hesitate to contact me for further information or clarification.</p> <p>Yours sincerely</p>

Appendix B

Updated management measures

Where mitigation measures have been updated, they are shown as:

- Strikethrough = ~~deleted measures or text.~~
- Bold = **new text or edit to existing mitigation measures**
- Highlighted grey = New measures.

Table B.1 Consolidated list of management measures for the project

Ref	Impact/Issue	Mitigation measure	Responsibility	Timing
Water Quality and Hydrology				
WQ 1	Surface water, geomorphology	Implementation of a CEMP, a SWMP, an Acid Sulfate Soils Management Plan, and an ESCP in accordance with the Blue Book. This includes the staging of the WWTP, recycled water facility and pipeline construction into manageable portions. Specific controls related to Potential Acid Sulphate Soils (PASS) and highly dispersible soils will be provided, including rehabilitation of disturbed areas in proximity to PASS.	Council/ contractor	Pre-construction
WQ 2	Soil and Water	During construction, collection of onsite runoff in established surface water drains and sediment basins.	Council/ contractor	Pre-construction and construction
WQ 3	Surface water	A Pollution Incidence Response Management Plan (PIRMP) would be implemented to manage operational impacts, including the management of emergency leaks and bursts.	Contractor	Construction
WQ 4	Water quality	Baseline water quality monitoring will be undertaken targeting parameters related to potential erosion and sedimentation during construction. Matching datasets would be collected during and following construction and compared to the baseline data. See Section 1.6.1 for more details.	Council/ contractor	Pre-construction, construction and post-construction
WQ 5	Water quality	Water quality monitoring will continue to be undertaken by Council in receiving waters as outlined in Section 1.6.1.	Council	Operation
WQ 6	Water quality	Identify opportunities for reuse of recycled water, which would reduce the volume of effluent discharged to the receiving waters.	Council	Anytime
WQ 7	Flooding	A Flood Management Plan (FMP) to be developed as part of the SWMP or CEMP.	Council/ contractor	Pre-construction
WQ 8	Flooding	Flood proofing to be provided for all parts of the building up to FPL4. Preferably, this is to be achieved by filling the portion of the site containing the critical infrastructure; however, alternative methods may also be considered. These may include raising areas internal to building, bunding or local raising.	Council/ contractor	Construction and Operation
WQ 9	Flooding	Flood Proofing to be provided to all aspects of the proposed development up to FPL3.	Council/ contractor	Construction and Operation
WQ 10	Flooding	Compile a site Flood Emergence Response Plan which documents the responsible staff, flood characteristics, flood warnings, flood response including evacuation, emergency contacts, and flood recovery.	Council/ contractor	Operation

Ref	Impact/Issue	Mitigation measure	Responsibility	Timing
WQ 11	Geomorphology	An OEMP is also required to stipulate ongoing inspection requirements of pipeline corridors/discharge points after rainfall and flood events to identify any areas of erosion, off-site sedimentation, and poor vegetation establishment.	Council/ contractor	Operation
WQ 12	Groundwater	A trigger action response plan (TARP) approach will be implemented to minimise and respond to any groundwater interception such that impacts to existing groundwater are minimised. The TARP shall be developed alongside a detailed further assessment of groundwater impacts for all elements of the project against the NSW AIP (2012). The assessment shall include a finalised dewatering management plan (DMP) and should be provided to the NSW DCCECEW Water Group for review.	Council/ contractor	Pre-construction and Construction
WQ 13	Groundwater	A trigger action response plan (TARP) approach will be implemented to minimise and respond to any groundwater interception such that impacts to existing groundwater are minimised. The Emergency Storage Pond will be constructed with an impermeable HDPE liner.	Council/ contractor	Construction
WQ 14	Groundwater	Implementation of an Operation Environment Management Plan which includes the implementation of typical control measures such as bunding, safely storing hazardous materials, and visual inspection of the works area and waterways, as well as pipeline maintenance. A Pollution Incidence Response Management Plan can also be utilized to manage operational impacts. The OEMP should include ongoing monitoring of PASS, including any PASS or ASS that were encountered during the construction phase.	Council/ contractor	Operation
WQ 15	Surface Water	Works within areas defined as waterfront land are to be designed and construction in accordance with the Guidelines for Controlled Activities on Waterfront Land.	Council/ contractor	Pre-construction
Aboriginal Heritage				
AH1	Consultation with RAPs	The Proponent should continue to consult with the RAPs in regard to the project in accordance with the <i>Aboriginal cultural heritage consultation requirements for proponents 2010</i> . Consultation may include, but is not limited to: <ul style="list-style-type: none"> – Finalisation of ACHA. – Participation in the proposed community collection program. – Determination of the long-term management of recovered artefacts under a care and control agreement. – Project updates and follow ups to ensure communication has been received. – Unexpected finds. Project updates should be sent to all RAPs every 6 months at a minimum to ensure the consultation associated with this ACHA remains active.	Council/ contractor	Pre- construction/ construction post construction

Ref	Impact/Issue	Mitigation measure	Responsibility	Timing
AH2	Preparation of an Aboriginal Cultural Heritage Management Plan	<p>The Proponent should develop an Aboriginal Cultural Heritage Management Plan (ACHMP) for the project that includes:</p> <ul style="list-style-type: none"> – The outcomes of the ACHA. – Measures agreed with the Traditional Owners for the protection and management of both tangible and intangible cultural heritage values and mitigation of impacts. – Agreed protocols for the identification, protection and management of any cultural heritage values discovered during the project. – Delivery of cultural awareness training to project staff and contractors to ensure that CHMP measures are implemented. <p>RAPs should be included within the development of the ACHMP.</p>	Council	Pre-construction
AH3	Buffer zones	<p>No-go buffer zone extending five (5) m must be established through temporary fencing around E1 (AHIMS ID# 30-3-0321) and a 5 m no-go buffer zone established through temporary fencing around Wattoo 2 (AHIMS ID# 30-3-0205) prior to the commencement of works to ensure avoidance and prevention of any indirect impacts during works.</p> <p>If potential impacts to the sites cannot be avoided, the sites should be subject to community collection prior to the commencement of works and would require a subsequent ASIRF submission to update the site status in AHIMS.</p> <p>Aboriginal cultural heritage site E1 (AHIMS ID# 30-3-0321) will likely be impacted, and as such it is recommended that E1 (AHIMS ID# 30-3-0321) is managed through community collection under the recommended ACHMP in consultation with identified RAPs.</p>	Contractor	Pre- construction
AH4	Impacts to identified AHIM sites within, or in proximity, to the project area	<p>The long-term management of the single artefact salvaged during the test excavation of Thrumster PAD 1 (AHIMS ID# 30-3-0390) should be formalised in a care and control agreement as determined by the RAPs. Where requested by the RAPs, the feasibility of on-Country reburial of artefacts within a conservation area should be considered by the Proponent.</p>	Council	Construction/ Post-construction
AH5		<p>The desktop assessment of Thrumster Sewerage 1 (AHIMS ID# 30-3-0405) and Partridge Creek Swamp (AHIMS ID# 30-3-0121) have determined that artefacts associated with both sites have previously been salvaged/collected. Aboriginal Site Impact Recording Forms (ASIRFs) have been submitted to provide details of the ACHA findings and to update the site status of both sites.</p>	Council	Pre-construction
AH6	Staff induction	<p>All workers and contractors associated with the works within the project area should be inducted, so they are made aware of their obligations under the SEARs prior to, during and after works.</p>	Contractor	Construction
AH7	Confidentiality	<p>The Proponent should not publicise the location of Aboriginal cultural heritage sites or other cultural information without prior consent from the Aboriginal community. This includes the public distribution of any mapping, AHIMS data and/or cultural information contained within this report.</p>	Council	Pre-construction/construction

Ref	Impact/Issue	Mitigation measure	Responsibility	Timing
AH8	Unexpected finds	In the event of unexpected finds, notification is required under section 89A of the NPW Act. During construction, all work in the area must cease immediately and: <ul style="list-style-type: none"> – The location, including a 20 m curtilage, should be secured using barrier fencing to avoid further harm. – Contact suitably qualified archaeologists immediately. No further action is to be undertaken until archaeologists have assessed the finds. 	Contractor	Construction
AH9	Human remains	In the unlikely event that suspected human remains are encountered during construction, all work in the area that may cause further impact must cease immediately and: <ul style="list-style-type: none"> – The location, including a 20 m curtilage, should be secured using barrier fencing to avoid further harm. – The NSW Police must be contacted immediately. – No further action is to be undertaken until the NSW Police provide written notification. – If the skeletal remains are identified as Aboriginal, the Proponent or their agent must contact: <ul style="list-style-type: none"> • Heritage NSW's Enviroline on 131 555 and representatives of the RAPs. • No works are to continue until Heritage NSW provides written notification. 	Contractor	Construction
Non-Aboriginal Heritage				
HH1	Avoidance of harm to "Farm Dwelling and Shed" site.	If possible, works should be amended to avoid these structures. If not possible to do so, it is recommended that archival recording of the structure is undertaken prior to construction.	Contractor	Pre-construction
HH2	Location of project works	This assessment is confined to within the Subject Area defined in this report. The parameters of project works should not extend beyond these boundaries. Should planned works locations alter, further assessment of the potential impacts would be required.	Contractor	Pre-construction/ Construction
HH3	Stop work in case of unexpected archaeological finds	In the event that unexpected historical heritage, including archaeological relics, is discovered during proposed works, all work in the immediate area will cease. A qualified archaeologist and, if necessary, Heritage NSW (in accordance with section 146 of the Heritage Act) should be contacted to assess the significance and advise on further requirements prior to the recommencement of works.	Contractor	Construction

Ref	Impact/Issue	Mitigation measure	Responsibility	Timing
Social				
SE1	Amenity and access impacts for local communities and landholders	<p>A Communication Plan (CP) will be prepared and implemented as part of the Construction Environmental Management Plan (CEMP) to help provide timely and accurate information to the community during construction. The CP will include (as a minimum):</p> <ul style="list-style-type: none"> – Mechanisms to provide details and timing of proposed activities to affected stakeholders, including changed traffic and access conditions. – Toll free number and email address for enquiries and complaints. – How the project webpage will be maintained for the duration of the proposal. – A complaint's handling procedure. – Consultation activities to be carried out. 	Construction contractor	Pre-construction/ construction
SE2		<p>Council will continue to consult with the community until completion of the project. This will include approaches to:</p> <ul style="list-style-type: none"> – Consult with landowners, landholders, emergency services, schools, aged care facilities, businesses, community groups and community and recreation facilities in close proximity to the project to notify them about the project design, construction activities and timing of construction works. During operation of the project, this may include managing responses to enquiries and complaints and providing accurate and accessible information. – Identify and engage with vulnerable persons that might be affected by the proposal. – Communicate information about potential access changes and delays, including targeted communication to affected local stakeholders (e.g., affected residents, businesses, emergency services, bus services, community and recreation facilities). 	Council	Pre-construction/ construction/ operation
SE3		Property owners and occupants affected by acquisition will be consulted, and acquisition will be undertaken, in accordance the <i>Land Acquisition (Just Terms Compensation) Act 1991</i> and in accordance with the land acquisition reforms announced by the NSW Government in 2016.	Council	Pre-construction
SE4	Impacts on community and recreational facilities	<p>Access to community facilities and infrastructure will be maintained during construction as far as practicable. Where alternate access arrangements need to be made, including changes to access for public and active transport facilities, these will be developed in consultation with relevant stakeholders and service providers, and communicated to users in accordance with the Communication Plan. Any changes to access arrangements will be managed in accordance with the Traffic and Access Management Plan.</p>	Council Construction contractor	Pre-construction/ construction
SE5		<p>Council will continue to consult with relevant key stakeholders in relation to community and recreation infrastructure with the potential to be directly affected (by the project's land requirements) and/or indirectly affected (for example, as a result of amenity impacts or access changes).</p> <p>Consultation will be undertaken in accordance with the Communication Plan and will assist with identifying measures to minimise the potential impacts of the project on community and recreation infrastructure as far as possible.</p>	Council	Pre-construction/ construction

Ref	Impact/Issue	Mitigation measure	Responsibility	Timing
		Stakeholders to be consulted will include, but not be limited to, Hastings Birdwatchers, Friends of Kooloonbung Creek, Port Macquarie Airport, Port Macquarie Racecourse, Port Macquarie Rifle Club, Newman Senior Technical College, Glenfern Lifestyle Community, emergency services, and residential neighbours.		
SE6	Local and First Nation employment and business opportunities	<p>Council will maximise the participation of local, regional and First Nation businesses in the project, such as:</p> <ul style="list-style-type: none"> – Preferential local and First Nation participation inclusions in tender documents which outline the sub-contracting and local employment goals that construction contractors would need to deliver. – Promotion of supply and employment opportunities through local industry channels and employment organisations. – Investigation of partnerships with local educational institutions and universities to support local residents to fill jobs during operation. – Explore opportunities to commission artwork from the local Aboriginal artists in design of the WWTP and RWTP to support interpretation and celebration of local Aboriginal community and culture. 	Council Construction contractor	Pre-construction/ construction
Terrestrial Biodiversity				
B1	Biodiversity offsets	A total of 105 ecosystems credits and 895 species credits are required for the project in accordance with the Biodiversity Offset Scheme. Full details of the required ecosystem and species credits for the project are summarised in Table 37 and Table 38 in Technical Report 5 – Biodiversity Development Assessment Report.	Council	Pre-construction
B2	General	All workers are to be provided with an environmental induction prior to starting work on site. This would include information on the ecological values of the site, protection measures to be implemented to protect biodiversity and penalties for breaches.	Construction contractor	Prior to clearing/ construction works
B3		<p>A Vegetation Management Plan (VMP) will be required for a duration of five years in order to guide the restoration or rehabilitation of the SRM and RWM and construction compounds.</p> <p>All areas of the SRM and RWM shall be revegetated with shallow rooted species of the PCT mapped in the area by this BDAR. Where exotic vegetation is indicated in this BDAR, the restoration may be with suitable native species of a local PCT or suitable exotic species that are not listed on the High Threat Weed list ((NSW DPE, 2022) as per Dorrrough, Oliver and Wall (2018)).</p> <p>If areas of nearby conservation lands are impacted, they shall be added to the VMP.</p>	Qualified ecologist or suitable council representative	Prior to clearing/ construction works/up to and including five years beyond construction completion.
B5		The contact details for the nearest Koala Hospital shall be kept at each site office during construction.	Construction contractor	Prior to clearing/ construction works and during construction works.

Ref	Impact/Issue	Mitigation measure	Responsibility	Timing
B6	Vegetation clearing	Limit disturbance of vegetation to the minimum necessary to undertake the project. Where possible in the implementation stage, undertake further refinement of the infrastructure such as the SRM and RWM to avoid impacts to biodiversity values including native vegetation, particularly Koala feed trees of the species Forest Red Gum (<i>Eucalyptus tereticornis</i>), Swamp Mahogany (<i>E. robusta</i>), Grey Gum (<i>E. propinqua</i>) Tallowwood (<i>E. microcorys</i>) and Bastard Mahogany (<i>E. paterntinervis</i> (a hybrid of <i>E. robusta</i> and <i>E. tereticornis</i>)).	Prior to works commencing.	Construction contractor and Project Ecologist
B7		Fencing and signage must be maintained for the duration of the construction period. Fencing should be designed to allow fauna to exit the site during clearing activities.	Prior to works commencing	Construction contractor and Project Ecologist
B8		Signage should be placed at the entrance to sites warning of the potential of Koala's to be present. The signs should contain details of the nearest Koala Hospital to facilitate prompt reporting of sick or injured Koalas.	Prior to works commencing	Construction contractor and Project Ecologist
B9		Native vegetation to be retained on site is to be protected in accordance with Development Control Plan 2014 Guidelines – Tree Preservation and Native Vegetation Management Guidelines (Section 6) and the Australian B9Standard AS4970-2009 – Protection of Trees on Development Sites.	Construction contractor and Project Ecologist	Prior to works commencing
B10		Stockpiles of soil, vegetation etc should be placed within existing cleared areas (and not within areas of adjoining native vegetation).	Construction contractor	Prior to clearing/ construction works
B11		Sedimentation and erosion control measures including silt fencing, sediment traps, etc. to prevent sediment-laden stormwater exiting the construction areas and to prevent scouring and erosion of land beyond the development footprint. All erosion and sediment control measures are to be constructed and installed in accordance with relevant guidelines, are to be regularly maintained for the duration of the construction period and are to be carefully removed at completion of works. Sediment and erosion control measures should follow recommendations of The Blue Book – Managing Urban Stormwater: Soils and Construction (Landcom 2004). Dust suppression measures to ensure dust deposition beyond the construction area is minimised.	Construction contractor	Prior to clearing/ construction works.
B12		In line with the Area 13 Koala KPOM (Figure 72), where koala food trees are removed, compensation should be provided by way of a minimum of four replacement trees (that are also preferred koala food trees) for every preferred koala food tree that is to be removed, such trees to be planted within a 100 m radius of those to be removed, and shall comply with Part 3(G)(iv) of the plan. Pre and post clearing reports are to be submitted to Council by the project ecologist for any significant vegetation removal.	Construction contractor and qualified ecologist	During construction works

Ref	Impact/Issue	Mitigation measure	Responsibility	Timing
B13	Introduction of weeds and pathogens	Develop a weed management approach to manage weeds and pathogens during the construction and operational phase of the project. Beginning at project construction, regular weed control shall be performed by a qualified individual. Weed control shall be performed regularly throughout the project. The location of significant environmental or priority weed infestations would also be identified and communicated to the contractor.	Construction contractor	Prior to clearing/ construction works/project lifespan
B14		The introduction and spread of weed species will be minimised by restricting access to areas of native vegetation and communicating the responsibilities of all Project personnel at site inductions and during regular toolbox meetings. All priority weeds identified on the site will be controlled and removed in accordance with the requirements of the <i>Biosecurity Act 2016</i> and Council's relevant Weed Control Manuals. Due to the sensitive nature of the lands to be impacted (surrounding wetland TECs and the possible contamination in the water treatment facilities by herbicide chemicals), weed control is not to involve the use of herbicides. Ongoing weed management shall be performed for at least five years following the project. All priority and environmental weeds will be cleared and stockpiled separately to all other vegetation, removed from site and disposed of at an appropriately licenced disposal facility. When transporting weed waste from the site to the waste facility, trucks must be covered to avoid the spread of weed-contaminated material. Disposal must be documented, and evidence of appropriate disposal must be kept. Waste management areas and processes are to be clearly identified.	Construction contractor	Prior to clearing/ construction works
B15		All machinery entering the site must be appropriately washed down and disinfected prior to work on site to prevent the potential spread of weeds, Cinnamon Fungus (<i>Phytophthora cinnamomi</i>), Myrtle Rust (<i>Austropuccinia psidii</i>) and Amphibian Chytrid Fungus (<i>Batrachochytrium dendrobatidis</i>) in accordance with the NSW hygiene guidelines for Phytophthora, Myrtle Rust and Amphibian Chytrid Fungus (NSW DPIE, 2020) for hygiene control.	Construction contractor	Prior to any plant or machinery being brought onto the site
B16		Incorporate control measures in the design of the project to limit the spread of weed propagules downstream of subject land. Sediment control devices, such as silt fences, would assist in reducing the potential for spreading weeds.	Construction contractor	Prior to clearing/ throughout construction works
B17		Construction activities will be managed through standard practices to avoid further spread of weeds and pests such as ensuring equipment and clothing are free of soil and vegetative matter prior to being brought to site, establishing vehicle cleaning stations with high pressure water hoses and brushes to remove soils, weeds and seeds; conducting regular vehicle inspections and restricting vehicle access zones and designated entry; ensure erosion controls are in place to minimise the spread of weed from run off (NSW Transport 2019).	Construction contractor	Prior to clearing/ throughout construction works
B18		Develop a weed management approach to manage weeds and pathogens during the construction and operational phase of the project. Beginning at project construction, regular weed control shall be performed by a qualified individual. Weed control shall be performed regularly throughout the project. The location of significant environmental or priority weed infestations would also be identified and communicated to the contractor.	Construction contractor	Prior to clearing/ construction works/project lifespan

Ref	Impact/Issue	Mitigation measure	Responsibility	Timing
B19	Removal of fauna habitat	Protocols to prevent introduction or spread of chytrid fungus should be implemented following Office of Environment and Heritage Hygiene protocol for the control of disease in frogs (DECC, 2008b).	Construction contractor	Prior to clearing throughout construction works
B20		Staged vegetation clearing shall be performed, commencing with the exotic dominated vegetation to increase the opportunity for fauna to vacate the site and disperse into areas of adjoining habitat to evade injury. Where higher condition vegetation is to be cleared, this shall be performed such that fauna species are directed away from threats such as roads and developed areas. Staged clearing should avoid creating an 'island' of habitat that is isolated from adjoining habitat.	Construction contractor	During clearing phase
B21		Pre-clearance fauna surveys, undertaken in accordance with the following procedure: <ul style="list-style-type: none"> Land shall be broken into small units to stage the clearing activities such that a pre-clearing survey can clear the area with minimal time for mobile fauna (such as the Eastern Grass Owl, Giant Dragonfly and Swift Parrot) to re-establish within an area. The pre-clearing survey should be performed with the intention of flushing all fauna from the unit of land to be cleared within the Subject Land. Habitat features such as logs should also be checked. Pre-clearing surveys shall ensure that habitat features, such as hollow-bearing trees are clearly identified. 	Qualified ecologist	Prior to and during clearing works
B22		Clearing of hollow-bearing trees procedure. If possible, tree hollows should be inspected directly prior to felling. Before felling, the HBTs should be tapped along the trunk by heavy machinery to substantially shake the tree, with the intention of causing fauna to exit. Shaking should stop if fauna is observed to be leaving the tree. Where safe to do so, take the HBT down in stages, beginning with no-hollow bearing branches before moving towards the hollow. Where safe to do so, hollows should be cut around such that they remain intact and can be gently lowered to the ground. Hollows should be thoroughly checked following felling to ensure no fauna have become trapped or injured during operations.	Qualified ecologist and construction contractor	Prior to and during clearing works
B23		Trees should be felled into an already disturbed area to avoid damaging adjacent vegetation.	Qualified ecologist and construction contractor	During clearing works
B24		Consistent with the Area13 KPoM, the clearing of native vegetation and/or earthworks or for any other purpose must be temporarily suspended within a range of 25 m from any tree that is occupied by a Koala and must not resume until the koala has moved from the tree of its own volition. If a Koala does not voluntarily move on, it is to be removed by Port Macquarie Koala Hospital staff.	Qualified ecologist	Prior to and during clearing works
B25		Where appropriate, native vegetation cleared from the Subject Land should be moved into the retained vegetation as habitat or mulched for re-use on the site, to stabilise bare ground. Hollows may be reused elsewhere on site if suitable.	Construction contractor	During clearing phase

Ref	Impact/Issue	Mitigation measure	Responsibility	Timing
B26		A suitably qualified and appropriately licenced ecologist is to be present during clearing of all native vegetation to ensure felling of trees is limited to the least extent and carried out in an appropriate manner, and that any fauna present can be rescued and relocated. Appropriate fauna 'capture and release' techniques will be implemented.	Qualified ecologist	During clearing phase
B27		A suitably qualified and appropriately licenced ecologist will be present during the clearance of all native vegetation and/or fauna habitats. Animals that require handling must not be approached or handled until the ecologist is present, unless in an emergency (e.g. when there are both no authorised persons present and where the failure to immediately intervene would place the animal at significant risk). In such an emergency, the site manager may obtain over the phone instructions from the project ecologist to ameliorate the situation. A wildlife rescue organisation (e.g. FAWNA or Koala Conservation Hospital Port Macquarie) should be made aware of operations in case any injured fauna is found.	Qualified ecologist	During clearing phase
B28		Security lighting within the construction site is to be minimised and where required, is to be oriented such that light spill beyond the Subject Land and into patches of retained vegetation is minimised.	Construction contractor	During clearing phase
B29		A reduced speed limit should be implemented in the development area, accompanied by appropriate signage indicating the speed limit within the Subject Land. The speed limit determined should be appropriate for the area and potential risk to Koalas from vehicle strike.	Construction contractor	Prior to clearing/ construction works/up to and project lifespan
B30		<p>All animals encountered will be treated humanely, ethically, and in accordance with relevant codes under the <i>NSW Prevention of Cruelty to Animals Act 1979</i>, including:</p> <ul style="list-style-type: none"> – Australian code of practice for the care of animals for scientific purposes (NHMRC, 2013). – Code of practice for the welfare of wildlife during rehabilitation (Victoria, 2001). – Animal ethics considerations and protocols outlined in this document. <p>If the project ecologist considers an animal is at risk of injury or undue stress, it is to be gently directed into secure adjoining habitat. Where deemed necessary by the project ecologist, the animal may be required to be captured and released. Capture and release operations will proceed via the following protocols:</p> <ul style="list-style-type: none"> – All construction activities that are considered by the project ecologist be likely to increase the risk of injury, mortality or stress to the animal will be halted until the animal has been removed, which will be enforced with the co-operation of the Contractor. Construction activities that do not contribute to the risk of injury, mortality or stress to the animal can continue (as determined by the project ecologist). – Only qualified ecologists or wildlife carers are authorised to handle animals. – Animals will be captured (if required) by the project ecologist using a safe and ethical technique, as is appropriate for the particular species. Native animals that are unable to depart of their own accord will be captured and held in a receptacle appropriate for that species until release. All captive-held animals will be provided with food, water and warmth as is appropriate for the species. Each receptacle will only hold one animal at a time and will be cleaned and disinfected between use to avoid the spread of disease. <p>Any fauna relocated from trees, shrubs or other areas would be recorded.</p>	Qualified ecologist	During clearing phase

Ref	Impact/Issue	Mitigation measure	Responsibility	Timing
B31		The construction contractor is to contact the Project ecologist for advice if any unexpected fauna is found during the construction period (i.e. following clearing of native vegetation when the Project ecologist is no longer on site).	Construction contractor	During clearing phase
B32	Water quality and aquatic habitats	Erosion and sediment control plans should be prepared in accordance with The Blue Book – Managing Urban Stormwater: Soils and Construction (Landcom 2004). The erosion and sediment control plans would be established prior to the commencement of construction and be updated and managed throughout as relevant to the activities during the construction phase.	Construction contractor	Prior to construction commencing
B33		Soil stockpiles are to be placed away from, and ideally downslope of, receiving water bodies and drainage lines.	Construction contractor	During clearing phase
B34		Erosion and sediment control controls would be regularly inspected, particularly following rainfall events, to ensure their ongoing functionality.	Construction contractor	Weekly during construction phase or after any significant rainfall event
B35		Stabilised surfaces should be reinstated as quickly as practicable after construction.	Construction contractor	Immediately following clearing
B36		Appropriate speeds are to be enforced to limit dust generation and minimise chances of fauna mortality through vehicle strike.	Construction contractor	During construction
B37		Ensure vehicle and equipment parking areas and stockpile areas are identified and positioned to avoid areas containing ecological value.	Construction contractor	Prior to clearing/ construction works
B38		All stockpiled material should be stored in bunded areas and, where practicable, kept away from waterways to avoid sediment or contaminants entering the waterway.	Construction contractor	During construction
B39		Spill kits would be made available to construction vehicles. A management protocol for accidental spills would be put in place.	Construction contractor	During construction
B40		Where works within KFH are unavoidable, construction methodologies that minimise creek bed, wetland and riparian zone disturbance should be preferentially applied.	Construction contractor	During construction
Aquatic Ecology				
AE1	Trenching	<p>The following recommendations will be considered to minimise impacts to aquatic and riparian habitats:</p> <ul style="list-style-type: none"> – Any creek channels that require trenching to install the various mains will be re-instated to their original form or long-term stable condition in instances where this cannot be achieved or is undesirable. – Excavated bank and bed material will be stored (for return to the site at the completion of excavation) away from the waterway to minimise potential sedimentation of downstream habitats. – All trenches and excavation pits should be backfilled to restore natural contours and avoid the creation of new preferential drainage pathways. 	Contractor	Construction

Ref	Impact/Issue	Mitigation measure	Responsibility	Timing
		<ul style="list-style-type: none"> – The backfilling of excavated creek banks or beds will use clean fill or the excavated sediments, ensuring adequate topsoil is maintained for revegetation works. – Where creek bank vegetation is removed or damaged as part of trenching, their rehabilitation will be incorporated into the project Vegetation Management Plan (VMP). – Where established assemblages of native macrophytes are removed, weed management of the area should be included in the project VMP to minimise opportunistic replacement by exotic species. This may include monitoring via macrophyte mapping. 		
AE2	Fish passage	Temporary barriers will be in place for less than six to twelve months (Fairfull 2013). Any barrier will be avoided in areas mapped as key fish habitat. Currently, barriers for construction are expected to be in place only if required and for a short period of time. Where temporary barriers are required to be in place for over 3 days, water quality monitoring should be considered upstream and downstream of the barrier to alert to potential detrimental habitat impacts for fauna in the vicinity.	Contractor	Construction
AE3		Where excavation works requiring bunding are to be conducted through waterways, adequate alternate fish passage will be provided for works where fish passage will be blocked for several weeks or more due to construction. The use of HDD has been implemented as a less invasive methodology in most areas of KFH to avoid the obstruction of fish passage at these more sensitive habitats.	Contractor	Construction
AE4		Where possible, in-stream works will be staged to avoid blocking the entire waterway. If the entire waterway must be blocked, an alternative flow and passage channel should be considered to maintain natural flow conditions of the stream for the duration of construction works.	Contractor	Construction
AE5		Temporary in-stream structures will be installed during periods of low flow, with each structure to have a management plan included in the CEMP for high flow events to prevent erosion and sedimentation.	Contractor	Construction
AE6		Temporary barriers will not be comprised of loose, imported earth fill, with all material to be fully enclosed by geotextile, sheet piling or similar to prevent erosion and sedimentation.	Contractor	Construction
AE7		At Area 9, excavation pits and associated equipment, machinery, materials and vehicles should maintain at least a 10 m buffer from adjacent Type 1 KFH Coastal Wetlands.	Contractor	Construction
AE8		Where works within KFH are unavoidable, construction methodologies that minimise creek bed, wetland and riparian zone disturbance should be preferentially applied.	Contractor	Construction
AE9	Dewatering	Prior to the commencement of dewatering inside any temporary barriers, a Dewatering Management Plan (DMP) that includes for translocation of any native fauna and management of exotic species will be prepared and undertaken by (or under the strict supervision of a suitable qualified aquatic ecologists). The DMP is required to address disposal of water, which will include the NSW DPI requirement that dewatering of a temporary in-stream structure will be pumped at least 30 metres from the waterway and not re-enter the waterway. A pre-works inspection will also be conducted by a qualified Aquatic Ecologist. Adequate sediment and erosion control structures will be erected to minimise sedimentation impacts.	Contractor	Construction

Ref	Impact/Issue	Mitigation measure	Responsibility	Timing
A10	Water quality monitoring	Visual water quality monitoring will be implemented along the proposed HDD footprint during construction to alert to collapse of the creek bed. Council has an existing water quality monitoring program which would be continued. The protocols for management of water and dispersing bed sediments if the case of a collapse must be included in the projects Sediment and Erosion Management Plan.	Council/ Contractor	Construction and operation
A11	Acid Sulfate Soil	An appropriate Acid Sulfate Soils Management Plan must be prepared and implemented to prevent and minimise potential exposure of Acid Sulfate Soils to adjacent sensitive habitats.	Contractor	Pre-construction, construction and operation
A12	Onsite Water, Sediment and Erosion Management	<p>Prepare an implement a Sediment and Erosion Management Plan that includes:</p> <ul style="list-style-type: none"> – Placement of alternative routes at stable sections of watercourses to minimise additional erosion. – On-site water management to reduce sedimentation and potential pollution of watercourses at both at trenching sites. – Management of stormwater and creek water during periods of high flow, considering the presence of flood prone areas within and in the vicinity of the Study Area. – Installing site drainage infrastructure to lead stormwater away from site, particularly where stormwater may exacerbate soil erosion and pollution of waterways. – Diverting run-on water from disturbance works occurring on upslope land, using non-erosive methods. – Installing protective measures to prevent sheet erosion where large portions of soil will be exposed. These will also need to be located in location where they are not at risk during flooding. – Implementing water management controls as stated above to prevent sedimentation and erosion resulting from movement of water. – Construction of sediment filters or sediment retention traps where appropriate, particularly below fill batters near waterways. 	Contractor	Pre-construction, construction and operation

Ref	Impact/Issue	Mitigation measure	Responsibility	Timing
A13	General construction	<p>A CEMP is to be prepared and implemented for the project. The following will be included:</p> <ul style="list-style-type: none"> – Adequately manage and store waste products and material in designated areas on the site. To prevent injury caused by ingestion or entanglement in debris, an adequate Waste Management Plan (WMP) should be prepared for the project. – All construction work locations are to have designated litter disposal bins to avoid potential for aquatic debris, included in the project WMP. – All machinery should be routinely checked for leaks, with an emergency spill kit to be kept on site at all times. All staff are to be made aware of the location of the spill kit and trained in its use. – All fuels and hydrocarbon-based products are to be stored in a sealed bunded area(s) at least 30 metres away from the water's edge. <p>All vehicles and machinery should not enter the waterway except where absolutely necessary for installation of pipeline. Where they are required to enter the waterway a washdown procedure before doing so should be implemented.</p>	Contractor	Pre-construction/ construction
A14	Unexpected encounter procedure	An appropriate unexpected encounter procedure will be included in the project's Flora and Fauna Management Plan (FFMP).	Contractor	Pre-construction, construction and operation
Traffic and Transport				
T1	Design	The design will continue to be refined to avoid or minimise on the surrounding road and transport network and property access, as far as reasonably practicable.	Council	Pre-construction
T2	Construction traffic	<p>A traffic management plan (TMP) will be developed and implemented as part of the construction environmental management plan. The TMP is to include as a minimum:</p> <ul style="list-style-type: none"> – Confirmation of haulage routes and access point. – Workers will be encouraged to carpool and use shuttle bus services to reduce the number of light vehicle movements to and from the site. – Measures to maintain access and capacity to existing roads. – Measures to minimise conflicts with pedestrians and cyclists. – Traffic control measures including signage at appropriate locations to notify road users of increase traffic volumes. – A response plan for any construction related traffic incidents. – Consultant with emergency to ensure that procedures are in place to maintain safe, priority access for emergency vehicles. – Relevant traffic safety measures including driver induction, training, safety measures and protocols. 	Contractor	Pre-construction, Construction
T3	Induction	All personnel will be inducted on the requirements of the TMP.	Contractor	Pre-construction, Construction

Ref	Impact/Issue	Mitigation measure	Responsibility	Timing
T4	Temporary lane/road closure	Road closures will be undertaken with the approval of the appropriate road authority and under the relevant road occupancy licence to be obtained prior to construction. Where feasible, road closures will be planned outside of the traffic peak to minimise the impact on the road network.	Contractor	Pre-construction, Construction
T5	Car parking	Sufficient car parking spaces will be provided within the project construction site and compounds to accommodate anticipated construction parking requirements.	Contractor	Construction
T6	Road safety – driver related	A Code of Conduct applicable to all construction workers will be developed and implemented which will define acceptable driver behaviour. The purpose of the Code of Conduct is to promote road safety and ensure that the impacts of construction-related vehicle movements on local roads and the local community are minimised. The Code of Conduct will be developed as part of a wider suite of documents under work health and safety requirements.	Contractor	Pre-construction, construction
T7	Community and stakeholder consultation	Community and stakeholder communication strategies will be established and implemented to notify the affected communities, visitors, emergency services and relevant road authorities in advance of any disruptions to traffic, anticipated delays, disruptions to property access and changes to travel routes. The strategies will be developed including details on communication channels, frequency of communication and response measures in relaying information to the community and stakeholders.	Contractor	Pre-construction, construction
T8	Consultation	Implement face-to-face consultation with landowners and tenants who will be directly affected, explaining construction processes and impacts to the surrounding area, answering questions they may have, and providing contact details that can be used for the project's entirety.	Contractor	Pre-construction, construction
T9	Environmental control	<ul style="list-style-type: none"> – All vehicles transporting loose materials will have the entire load covered and/or secured to prevent any large items, excess dust or debris depositing onto the roadway during travel to and from the site, including but not limited to construction rumble strips/wheels wash at the site egress location. – All vehicles leaving the site would be cleaned of materials that may fall on the roadway before they are allowed to leave the site. – The lead contractors will monitor the roads leading to and from the site and take all necessary steps to rectify any road deposits caused by site vehicles to maintain the safety of all road users. – Roads leading to and from the study area to be monitored for any road deposits caused from site vehicles and will be rectified as soon as possible. – Vehicles operating to, from and within the site shall do so in a manner which does not create unreasonable or unnecessary noise or vibration. – Public roads and access points will not be obstructed by any materials, vehicles, refuse skips or the like, under any circumstances. – All subcontractors must be inducted by the lead contractor to encourage that all the relevant procedures are met. – Water trucks will be used to suppress dust as required. 	Contractor	Construction

Ref	Impact/Issue	Mitigation measure	Responsibility	Timing
T10	Staff induction	All staff and subcontractors engaged on site will be required to undergo a site induction. The induction will outline the requirements on the CTMP, including site access routes, environmental and occupational health and safety responsibilities, emergency procedures, potential carpooling opportunities and vehicle height restriction under the power lines. Additionally, the Site Manager will discuss CTMP requirements regularly as a part of “toolbox talks”.	Site Manager	Pre-construction
T11	Occupational health and safety	<ul style="list-style-type: none"> – Any workers required to undertake works or traffic control shall be suitably trained and hold the required accreditation to carry out works on site and will also be site inducted. – All traffic control personnel will be required to hold TfNSW accreditation in accordance with the TfNSW TCAWS manual. 	Site Manager	Pre-construction
T12	Contact of emergency services	In the event of an emergency related construction traffic incident on the public road network, it will be the responsibility of the Site Manager to ensure that emergency services are notified. The emergency services include but are not limited to: <ul style="list-style-type: none"> – Fire – Ambulance – Police – Phone “000” in cases of emergency Furthermore, it is the responsibility of the Site Manager to advise the emergency services of any restriction of vehicular access to the public and private areas (1) one week prior to its implementation.	Site Manager	Pre-construction, construction, operation
T13	Certificates and approvals	Approval is to be obtained from TfNSW, Council and other relevant authorities as required. Approvals that may need to be obtained for items such as but not limited to: <ul style="list-style-type: none"> – Roadwork speed zone – Council Road opening permits – Road occupancy approvals – Hoarding/fencing approvals – Crane and barricades – Oversize and Articulated Vehicle use on local roads 	Contractor	Pre-construction

Ref	Impact/Issue	Mitigation measure	Responsibility	Timing
T14	Obtaining road occupancy approvals	<p>The Construction Contractor will obtain the necessary approvals, as required by the <i>Roads Act 1993</i> and NSW Traffic Acts and regulations, prior to conducting any works.</p> <p>The Construction Contractor is required to seek the concurrence of the relevant road authority prior to undertaking works.</p> <p>The Construction Contractor will ensure that all public roads to be used by construction traffic will be identified prior to construction and that management methods will be undertaken so that construction traffic uses the identified roads.</p> <p>The three specific areas of approval will include:</p> <ol style="list-style-type: none"> 1. All construction works and/or any changes to existing infrastructure. 2. The installation and/or changes of any regulatory traffic control device. 3. Occupation of the road network to conduct works, and the associated installation of temporary traffic control devices. 	Contractor	Pre-construction
T15	Roadwork speed limits	<p>Temporary roadwork speed limits are one of many traffic controls that can be implemented to manage the speed of traffic approaching and passing through a work site.</p> <p>Roadwork speed zones must be logical and credible, as well as enforceable. When considering the use of roadwork speed zones, they will:</p> <ul style="list-style-type: none"> – Only be used where they are self-enforcing or will be enforced. – Not be used alone but with other traffic control signs and devices. – Not be used in place of more effective traffic controls. – Only be used while road works are in progress or the lower speed road conditions exist. 	Contractor	Pre-construction, construction
T16	Driver's code of conduct	<p>A driver's code of conduct described how vehicles associated with construction activities are expected to behave. Typically, they will include:</p> <ul style="list-style-type: none"> – The designated haulage routes and any restrictions. – Locations of rest stops. – Details around speed limits. – Protocols for dealing with the general public. – Emergency response protocols. – Details of driver responsibilities, including: <ul style="list-style-type: none"> • Ensuring that they are not suffering from fatigue or under the influence of drugs or alcohol. • Ensuring loads are appropriately covered. • Ensuring the use of appropriate personal and protective equipment. • Understand and abide by all road rules, including speed limits, road signs, use of seatbelts, avoiding taking unnecessary risks. • Required distances between vehicles to prevent convoying. 	Drivers	Pre-construction, construction, operation

Ref	Impact/Issue	Mitigation measure	Responsibility	Timing
Air Quality				
AQ1	Dust	Prepare a dust control protocol that forms part of the Construction Environmental Management Plan (CEMP) to detail management measures, a method for recording dust complaints and monitoring requirements.	Contractor	Construction
AQ2	Dust	On days with forecast and actual high winds (i.e., over 10 m/s) reduce work effort accordingly if windblown dust is observed to be leaving the work area along the pipeline.	Contractor	Construction
AQ3	Dust, exhaust emissions	Plant and equipment should be maintained in good condition to minimise ignition risk, spills and air emissions that may cause nuisance.	Contractor	Construction
AQ4	Dust	Regularly water spraying of exposed areas.	Contractor	Construction
AQ5	Dust	Long term stockpile seeding.	Contractor	Construction
AQ6	Dust	Covering of long and medium term stockpiles and of all stockpiles in high wind periods.	Contractor	Construction
AQ7	Dust	Covering of truck loose material loads.	Contractor	Construction
AQ8	Dust	If the works are creating levels of dust which may significantly impact on residential amenity, the works should be modified or stopped until the dust hazard is reduced to an acceptable level.	Contractor	Construction
AQ9	Dust	On days with high background dust levels (due to fire or offsite dust events for example), increase dust mitigation in the form of watering or reduce dusty construction activities.	Contractor	Construction
AQ10	Dust	Revegetate and regularly water all disturbed areas as soon as practicable.	Contractor	Construction
AQ11	Dust	During construction in higher risk areas (areas within 2 m of the sensitive receptors, shown in Figure 14.1), conduct a daily inspection along all adjacent receptors for evidence of: <ul style="list-style-type: none"> – Dust deposition on residential private property including cars, letterboxes or balconies. – Evidence of mud or dirt tracked onto roadways. – The worksite adjacent receptors to check stockpiles are covered or the surface is sufficiently moist. 	Contractor	Construction
AQ12	Dust	During construction in higher risk areas (areas within 20 m of the sensitive receptors, shown in Figure 14-1) implement additional watering (>2 litres/m ³ /hr) when dust is being generated and winds are blowing towards the receptors.	Contractor	Construction
AQ13	Odour	Establish 24 hour emergency maintenance agreements with equipment manufacturers to limit the impact of equipment failures.	Council	Operation
AQ14	Odour	If elevated odour is observed during operation, undertake investigations to identify the source and minimise emissions. Record investigations and actions taken to minimise odour emissions in a log.	Council	Operation

Ref	Impact/Issue	Mitigation measure	Responsibility	Timing
AQ1 5	Odour	If an OCU is to be installed, implement a variable air flow system to reduce the number of air volume changes per hour through the OCU when works are emitting odour concentrations which may impact the nearby receptors.	Contractor	Operation
Soils and Contamination				
SC1	Contaminated Soil Management Plan (CSMP)	Development of a Contaminated Soil Management Plan (CSMP) to manage any contamination encountered during the construction of the project and to ensure the completed works are suitable for the intended land use.	Council/ contractor	Pre-construction
SC2	Further contamination delineation	Provision for further detailed assessment where appropriate to confirm the conclusions of this preliminary assessment and to determine whether any specific remediation or management of areas is required. The further assessment should be based on the following: <ul style="list-style-type: none"> – Potential areas and types of contamination identified in this assessment. – The potential for exposure to workers and to end-users based respectively on the nature of the proposed construction works and the final design of the project. 	Council/ contractor	Pre-construction
SC3	Contamination exposure	Appropriate management controls to minimise the potential for exposure of contamination to workers and recreational users within the project both during and post construction. Description of appropriate excavation, validation, management and/or disposal requirements for potentially contaminated materials, if identified by further assessment or encountered during the construction of the project.	Council/ contractor	Pre-construction
SC4	Assessment protocols	Sampling and analysis requirements for assessment of potential contaminated soils for re-use or for waste classification prior to offsite disposal.	Contractor	Construction
SC5	Contingency plans	Contingency plans including unexpected finds protocols for potentially contaminated soils (if encountered) including landfill or anthropogenic waste and PACMs.	Council/ contractor	Pre-construction
SC6	NOA Management Plan	Development of an NOA Management Plan to provide a framework for safely working with NOA encountered during the construction and operation of the project.	Council/ contractor	Pre-construction
SC7	Acid Sulfate Management Plan	An Acid Sulfate Soil Management is to be implemented for pipe infrastructure installations during excavation works.	Contractor	Construction
SC8	Documentation	Any future contamination reports should be prepared and reviewed by an appropriately qualified environmental consultant.	Council/ contractor	Pre-construction

Ref	Impact/Issue	Mitigation measure	Responsibility	Timing
Waste and Chemicals Management				
WC 1	Waste generation	Ensure that detailed design includes measures to minimise excess waste generation. Include a focus on optimising earthworks design to minimise excess spoil volumes and maximise the reuse of material on site and minimising the WWTP construction footprint. Pipe and pump wells will be retained and relined to reduce construction waste.	Council/ contractor	Detailed design
WC 2	Waste classification	Classify waste in accordance with the <i>Waste Classification Guidelines</i> (NSW EPA, 2014) and manage in accordance with the POEO Act and associated regulations.	Contractor	Construction and operation
WC 3	Emergency response	Prepare an emergency response plan prior to construction of the project, detailing hazardous materials, emergency procedures, resources, activation of the plan, reporting and termination of an emergency, etc.	Contractor	Pre-construction, construction
WC 4	Construction waste	Prepare a Construction Waste Management Plan (CWMP) prior to construction of the project. Adopt the circular economy principles and the waste hierarchy contained in the <i>Waste Avoidance and Resource Recovery Act 2001</i> . Detail processes, responsibilities, and measures to manage waste and resource use, and minimise the potential for impacts during construction.	Contractor	Pre-construction, construction
WC 5	Chemical storage	Prepare a Chemical Storage and Management Plan prior to operation of the project, detailing the safe handling procedures, labelling requirements, training and responsibilities. Prepare an emergency response plan would be developed prior to the operation, outline hazardous materials, emergency procedures, resources, activation of the plan, reporting and termination of an emergency, etc.	Contractor/ Council	Operation
WC 6	Operational waste	Prepare an Operation Waste Management Plan prior to operation of the project. Adopt the circular economy principles and the waste hierarchy contained in the <i>Waste Avoidance and Resource Recovery Act 2001</i> . Detail processes, responsibilities, and measures to manage waste and resource use and minimise the potential for impacts during operation.	Contractor/ Council	Operation
WC 7	Sludge management	Ensure dewatered sludge is stored properly in covered areas to minimise the risk of odour, runoff and potential contamination.	Council	Operation
Noise and Vibration				
Airborne noise/ground-borne noise and vibration				
NV1	Implement stakeholder consultation measures	Periodic notification (monthly letterbox drop and website notification) detailing all upcoming construction activities delivered to sensitive receptors at least 7 days prior to commencement of relevant works. In addition to Periodic Notification, the following strategies may be adopted on a case-by-case basis: <ul style="list-style-type: none"> – Project specific website – Project Infoline – Construction response line – Email distribution list 	Contractor/ Council	Pre-construction

Ref	Impact/Issue	Mitigation measure	Responsibility	Timing
		<ul style="list-style-type: none"> – Web-based surveys – Social media – Community and stakeholder meetings – Community based forums (if required by approval conditions) 		
NV2	Register of noise and vibration sensitive receptors	<p>A register of most affected noise and vibration sensitive receptors (NVSRs) would be kept on site. The register would include the following details for each NVSR:</p> <ul style="list-style-type: none"> – The address of the receptor – Category of receptor (e.g., Residential, Commercial, etc.) – Contact name and phone number <p>The register may be included as part of the Project's Community Liaison Plan or similar document and maintained in accordance with the requirements of this plan.</p>	Contractor	Pre-construction
NV3	Construction hours and scheduling	Where feasible and reasonable, construction should be carried out during the standard daytime working hours. Work generating noise with special audible characteristics and/or vibration levels should be scheduled during less sensitive time periods.	Contractor	Construction
NV4	Construction respite period	<p>Noise with special audible characteristics and vibration generating activities (including jack and rock hammering, sheet and pile driving, rock breaking and vibratory rolling) may only be carried out in continuous blocks, not exceeding three hours each, with a minimum respite period of one hour between each block.</p> <p>'Continuous' includes any period during which there is less than one hour respite between ceasing and recommencing any of the work.</p> <p>No more than two consecutive nights of noise with special audible characteristics and/or vibration generating work may be undertaken in the same NCA over any 7-day period, unless otherwise approved by the relevant authority.</p>	Contractor	Construction
NV5	Site inductions	<p>All employees, contractors and subcontractors are to receive an environmental induction. The induction must at least include:</p> <ul style="list-style-type: none"> – All relevant project specific and standard noise and vibration mitigation measures. – Relevant license and approval conditions. – Permissible hours of work. – Any limitations on noise generating activities with special audible characteristics. – Location of nearest sensitive receptors. – Construction employee parking areas. – Designated loading/unloading areas and procedures. – Site opening/closing times (including deliveries). – Environmental incident procedures. 	Contractor	Pre-construction, construction

Ref	Impact/Issue	Mitigation measure	Responsibility	Timing
NV6	Update Construction Environmental Management Plans	The CEMP must be regularly updated to account for changes in noise and vibration management issues and strategies.	Contractor	Pre-construction, construction
Source measures				
NV7	Plan worksites and activities to minimise noise and vibration	Plan traffic flow, parking, and loading/unloading areas to minimise reversing movements within the site.	Contractor	Pre-construction, construction
NV8	Equipment selection	Use quieter and less vibration emitting construction methods where feasible and reasonable. For example, where piling is required, bored piles rather than impact-driven piles will minimise noise and vibration impacts. Similarly, diaphragm wall construction techniques in lieu of sheet piling, will have significant noise and vibration benefits.	Contractor	Construction

Ref	Impact/Issue	Mitigation measure	Responsibility	Timing
Airborne noise				
NV9	Behavioural practices	<ul style="list-style-type: none"> – No swearing of unnecessary shouting or loud stereo/radios on site. – No dropping of materials from height, throwing of metal items and slamming of doors. – No excessive revving of plant and vehicle engines. – Controlled release of compressed air. 	Contractor	Pre-construction, construction
NV10	Maximum noise levels	The noise levels of plant and equipment must have operating Sound Power or Sound pressure levels compliant with the allowable noise levels in Appendix C of CNVG.	Contractor	Pre-construction, construction
NV11	Rental plant and equipment	The noise levels of plant and equipment items are to be considered in rental decisions and in any case cannot be used onsite unless compliant with the allowable noise levels in Appendix C of CNVG.	Contractor	Construction
NV12	Use and siting of plant	<ul style="list-style-type: none"> – Simultaneous operation of noise plant within discernible range of a sensitive receptor is to be avoided. – The offset distance between noise plant and adjacent sensitive receptors is to be maximised. – Plant used intermittently to be throttled down or shut down. – Noise-emitting plant to be directed away from sensitive receptors. 	Contractor	Pre-construction, construction
NV13	Non-tonal reversing alarms	Non-tonal reversing beepers (or an equivalent mechanism) must be fitted and used on all vehicles and mobile plant regularly used on site and for any out of hours work, including delivery vehicles.	Contractor	Pre-construction, construction
NV14	Minimise disturbance arising from delivery of goods to construction sites	<ul style="list-style-type: none"> – Loading and unloading of materials/deliveries is to occur as far as possible from sensitive receptors. – Select site access points and roads as far as possible away from sensitive receptors. – Dedicated loading/unloading areas to be shielded if close to sensitive receptors. – Delivery vehicles would be fitted with straps rather than chains for unloading, wherever possible. 	Contractor	Construction
NV15	Construction related traffic	<ul style="list-style-type: none"> – Schedule and route vehicle movements away from sensitive receptors and during less sensitive times. – Limit the speed of vehicles and avoid the use of engine compression brakes. – Maximise on-site storage capacity to reduce the need for truck movements during sensitive times. 	Contractor	Construction
NV16	Silencers on mobile plant	Where possible reduce noise from mobile plant through additional fittings including: <ul style="list-style-type: none"> – Residential grade mufflers. – Damped hammers such as “City” Model Rammer Hammers. – Air Parking brake engagement is silenced. 	Contractor	Construction

Ref	Impact/Issue	Mitigation measure	Responsibility	Timing
NV1 7	Prefabrication of materials off-site	Where practicable, pre-fabricate and/or prepare materials off-site to reduce noise with special audible characteristics occurring on site. Materials can then be delivered to site for installation.	Contractor	Pre-construction, construction
NV1 8	Engine compression brakes	<ul style="list-style-type: none"> – Limit the use of engine compression brakes at night and in residential areas. – Ensure vehicles are fitted with and maintained original equipment manufacturer exhaust silencer or a silencer that complies with the National Transport Commission's 'Inservice test procedure' and standard. 	Contractor	Pre-construction, construction
Path controls				
NV1 9	Shield stationary noise sources such as pumps, compressors, generators, fans etc.	Stationary noise sources would be enclosed or shielded whilst ensuring that the occupational health and safety of workers is maintained. Appendix F of AS 2436: 1981 lists materials suitable for shielding.	Contractor	Pre-construction, construction, operation
NV2 0	Shield sensitive receptors from noisy activities	Use structures to shield residential receptors from noise such as site shed placement; earth bunds; fencing; erection of operational stage noise barriers (where practicable) and consideration of site topography when siting plant.	Contractor	Pre-construction, construction, operation
NV2 1	Additional mitigation measures	Where impacts from construction noise are unavoidable and it is not feasible to achieve the construction noise objectives, additional measures such as letter box drops and phone calls are proposed in line with Table 6.3 in Technical Report 11 – Noise and Vibration Assessment.	Council/ contractor	Pre-construction, construction
Land Use and Property				
	Impacts on land use and property	The design will continue to be refined to minimise land requirements and potential impacts on land uses and properties as far as reasonably practicable. Consultation with landowners/landholders will be ongoing to confirm feasible and reasonable measures to minimise impacts on their properties.	Contractor	Pre-construction, construction and operation
	Impacts on land use and property	Construction planning will minimise the duration that land is required to the shortest possible duration, particularly where the land requirements affect recreation/nature reserve areas.	Contractor	Pre-construction and construction
	Land requirements and property acquisition	All property acquisitions will be undertaken in accordance with the requirements of the <i>Land Acquisition (Just Terms Compensation) Act 1991</i> and the land acquisition reforms announced by the NSW Government in 2016.	Council	Pre-construction

Ref	Impact/Issue	Mitigation measure	Responsibility	Timing
	Impacts on utilities	The location of all utilities and services, and requirements for access to, diversion, protection and/or support, will be confirmed prior to construction. This will include (as required) undertaking utilities investigations, including intrusive investigations, and consultation and agreement with service providers.	Council	Pre-construction and construction
	Rehabilitation of land subject to temporary use during construction	Land subject to temporary use for construction will be rehabilitated as soon as practicable to the pre-construction condition (or as agreed with the landowner/landholder), taking into consideration the existing condition, location and land use characteristics. Rehabilitation will be undertaken in consultation with the relevant landowner/landholder, and in accordance with the rehabilitation strategy.	Contractor	Construction
	Biosecurity	<p>Biosecurity controls will be implemented to minimise the risk of off-site transport or spread of disease, pests or weeds. Controls will be in accordance with <i>Come clean, go clean</i> (Qld Government, 2022) and include development of specific controls if high biosecurity risks are identified. Appropriate measures will be implemented with respect to foot and mouth disease to control any risk of introduction via the project.</p> <p>The specific controls applicable to a property will be identified in consultation with the affected landowner. The effectiveness of these controls will be monitored in a manner and time interval consistent with the level of risk on each property.</p> <p>In the event of new infestations of notifiable weeds as a result of construction activities, the relevant control authority will be notified as per <i>Biosecurity Act 2015</i> (NSW) and Biosecurity Regulation 2017.</p>	Contractor and Council	Construction and operation
	Property management	<p>A property management plan will be developed for directly impacted properties in consultation with landowners and stakeholders. The property management plans will outline the protocols that will be implemented to address landowner concerns during construction. This may include:</p> <ul style="list-style-type: none"> – The process for rectification of any damage to property infrastructure caused by construction. – The process for rehabilitation and stabilisation of disturbed areas following the completion of construction. – Measures to minimise disruption to agricultural practices during construction. – Any fencing and gate requirements. – Specific biosecurity protocols. 	Contractor	Pre-construction and construction
Hazard and Risk				
HR1	Personal injury caused by vehicle interactions	<ul style="list-style-type: none"> – Traffic management plan including standard traffic rules, signage. – Site speed limits. – One way traffic movement through the site for delivery vehicles. – Designated pedestrian areas. – Driver competency. – Construction management plan. 	Contractor	Pre-construction

Ref	Impact/Issue	Mitigation measure	Responsibility	Timing
HR2	Natural hazards causing personal injury, plant shut down and possible fire	<ul style="list-style-type: none"> - Structures and tanks designed to appropriate codes and standards. - Housekeeping standards. - Site drainage. 	Council/ contractor	Pre-construction, construction, operation
HR3	Toxic release of chlorine	<ul style="list-style-type: none"> - Implementation of standard operating procedures for drum transfer and connection and ensure personnel have been trained to reduce risk of drum damage during operation and delivery. - Notification to Safework NSW of exceeding 10% of the WHS schedule 15 threshold for chlorine. - Standard procedure for delivery of drums. - Safe piping design. - Inspection and maintenance strategies. 	Council	Operation
HR4	Contact with chemicals	<ul style="list-style-type: none"> - Training of staff prior to handling. - Staff wear appropriate PPE when handling corrosives. - Storage as per appropriate standards. - Safe work method statements. 	Contractor/ Council	Construction, operation
HR5	Spill of chemical solutions leading to soil contamination/degradation	<ul style="list-style-type: none"> - Storage as per appropriate standards, including bunding. - Design of pipework to standards, corrosion allowances where appropriate. - Inspection and maintenance strategies. - Spill management procedures. - Ensuring regular maintenance schedules are developed to detect leaks and ensure pipe fittings are in good condition. 	Contractor/ Council	Construction, operation
HR6	Access	Ensuring the site has an emergency plan for onsite staff taking the effect zone of all hazard scenarios into consideration such that the evacuation point is outside the AEGL 3 effect zone.	Contractor/ Council	Construction, operation
HR7	Emergency Access	Coordination with emergency services for off-site management if a loss of containment event was to occur.	Contractor/ Council	Construction, operation
HR8	On-site hot works	<p>Prohibited on all days of Severe, Extreme and Catastrophic Fire Danger.</p> <p>At all other times:</p> <ul style="list-style-type: none"> - Hot works requires inclusion in the Job Safety Analysis (JSA). - All hot work would require issue of a hot work permit. - All fire prevention measures (fuel free clearance zone around hot work site; wetting down measures and spark guards) specified in the JSA and/or hot work permit to be undertaken. 	Contractor/ Council	Construction, operation

Ref	Impact/Issue	Mitigation measure	Responsibility	Timing
		<ul style="list-style-type: none"> – Fire extinguishers or other fire response apparatus required by the JSA and/or hot work permit must be present at the work site. – Upon completion of hot works appropriate checks to be undertaken to ensure no fire or smouldering material remains. 		
HR9	Vehicle exhaust system contact with long grass	Vehicle access onto areas other than on constructed roads and laydown areas prohibited on all days of Extreme and Catastrophic Fire Danger. At all other times avoid parking in long grass.	Contractor/ Council	Construction, operation
HR1 0	Sparks from metal on metal or rock friction during ground engaging machinery operation	<ul style="list-style-type: none"> – Prohibited on all days of Extreme and Catastrophic Fire Danger. – Grass fire ignition prevention requires inclusion in the Job Safety Analysis (JSA) for all earthmoving and hole boring works. – Fire extinguisher to be carried on all earthmoving machinery and present at all hole boring operations. 	Contractor/ Council	Construction, operation
HR1 1	Discarded cigarette butts from smokers	No smoking on project area except in designated smoking areas at the construction office site or laydown areas.	Contractor/ Council	Construction, operation
HR1 2	Chemical reaction between hazardous materials stores or used on the WTP site	<ul style="list-style-type: none"> – Separate storage areas for hazardous chemicals. – Operating protocols for mixing of chemicals on site. – No WTP process which involve mixing of chemicals in the open are adjacent to the site perimeter/in proximity to bushfire fuels. 	Council	Operation
HR1 3	Bushfire protection	Project to be undertaken to comply with relevant PBP objectives relating to access, water supply and services and emergency and evacuation planning as detailed in Technical Report 15.	Contractor/ Council	Pre-construction, construction, operation
HR1 4	Obstacle Limitation Surface (OLS)	<p>Detailed planning and communication process need to be undertaken for preparation of CEMP for the Work. And the CEMP to be approved by the Airport Operation. That is more involved than liaison and seeking permissions. As temporary Closure of the airport activities during construction need to be provisioned by the airport operations.</p> <p>Prior written approval shall be obtained from the airport operator for any crane that may be used during the construction phase to penetrate the Obstacle Limitation Surface (OLS). To avoid doubt about whether an approval is required, applicants should check with the airport operator as soon as possible. Port Macquarie Airport Operations may be contacted on 0418 408 529 or via email at airport.operations@pmhc.nsw.gov.au (Noted, Port Macquarie Airport has already been contacted and received advice; refer to Section 4).</p>	Contractor	Pre-construction

Ref	Impact/Issue	Mitigation measure	Responsibility	Timing
HR1 5	Wildlife hazard	The project would be within a 3 km wildlife control zone (Zone A), which requires wildlife hazards to be mitigated. Where 'mitigate' is indicated, proposed development of this land use type should be assessed by a wildlife hazard expert and potential wildlife attractants be suitably mitigated either before the development is approved or as a condition of the approval. Where approved, information regarding the development should be provided to the relevant airport operator and it should be included in future monitoring activity undertaken by the relevant airport operator.	Contractor/ Council	Pre-construction, construction
Coastal Erosion				
No mitigation or management measures.				
Landscape Character and Visual Amenity				
LV1	Lighting	Any lighting during construction would be of short duration. Lighting would not be directed or spill into any adjoining landholding. Occupants of adjoining landholdings will be advised of any unlikely night-time construction and the proposed lighting requirements.	Contractor	Pre-construction
LV2	Lighting	During operation of the WWTP and SPSs, lighting will be provided in accordance with AS 4282 – <i>Control of the obtrusive effects of outdoor lighting</i> . This Standard specifically refers to the potentially adverse effects of outdoor lighting on nearby residents. Design of outdoor lighting will be required to control any obtrusive effects to an acceptable degree.	Operator	Operation
LV3	Works areas during construction	During construction, work areas will be kept tidy and clear of rubbish, stockpiles appropriately contained, and equipment, plant and parking managed and contained within identified works areas.	Contractor	During construction
Greenhouse Gas				
GH G1	Construction related emissions produced by vegetation removal	Reuse vegetation removed from the project area to be mulched or composted where possible.	Council/ Contractor	Construction
GH G2		Consideration of options for revegetation near the project site (beyond any biodiversity offsets required) to reduce the project's carbon impact.	Council	Construction/operation
GH G3	Construction related emissions produced by vehicle and equipment use	Investigate substitution of fuels with sustainable fuels such as B10 biodiesel or renewable hydrogen.	Council/ Contractor	Construction
GH G4		Use of electric construction plant and vehicles for the construction works where reasonable and feasible.	Contractor	Construction

Ref	Impact/Issue	Mitigation measure	Responsibility	Timing
GH G5	Construction related emissions produced by electricity consumption	Investigate opportunities for on site power generation through solar panels or source electricity from renewable sources.	Council/ Contractor	Construction
GH G6	Operational related emissions produced by methane	Explore an alternative to flaring such as using the captured methane as an energy source to substitute a portion of the WWTP's grid electricity requirements or, if possible, piping it into the natural gas supply.	Council	Operation
GH G7	Operation related emissions produced by electricity consumption	Where it's not possible to avoid carbon emissions, reducing emissions should be considered in the first instance. Energy efficient electrical equipment (pumps, treatment equipment etc) should be specified to reduce the electrical consumption of the WTP.	Council	Operation
GH G8		Further investigate options for onsite power generation through solar installations on the roof of the wastewater treatment plant.	Council	Operation
ESD	Sustainability	The project would be designed and constructed in accordance with the sustainability objectives.	Council/ Contractor	Pre-construction, construction
Cumulative Impacts				
CL1	General impact reduction	The mitigation measures presented in Appendix C will be implemented effectively to reduce the project's impact on the environment.		Pre-construction, construction, operation

Appendix C

Flooding response

C-1 May 2025 Flood Event - Port Macquarie

C-1-1 Review of Impacts on proposed Thrumster Wastewater Treatment Plant site

Over the period 20 to 24 May 2025 flooding was experienced along the Hastings River in the Port Macquarie Hastings Local Government Area.

Peak river levels in the lower estuary of the Hastings River recorded at the Manly Hydraulics Laboratory River gauges were:

- Dennis Bridge River Level Gauge (207444) - Peak height 3.15 m AHD
- Settlement Point River Level Gauge (207418) - Peak height = 2.09 m AHD

The river gauge locations are shown in Figure C.1 below.



Figure C.1 Location of the Manly Hydraulics Laboratory River level gauges (Dennis Bridge River Level Gauge (207444) and Settlement Point River Level Gauge (207418)) in relation to the proposed Thrumster Wastewater Treatment Plant site.

When compared to the current Hastings River Flood Study documented Annual Exceedance Probability (AEP) Flood Event levels, the May 2025 flood was approximately a 5%AEP (1in20) flood event.

Current Hastings River Flood Study 5% AEP levels:

- Dennis Bridge River Level Gauge location = 3.04 m AHD
- Settlement Point River Level Gauge location = 2.33 m AHD

The May 2025 flood peak level at the Dennis Bridge was 110 mm higher than the 5% AEP Flood Event Level.

The May 2025 flood peak level at Settlement Point was 240 mm lower than the 5% AEP Flood Event Level.

The May 2025 flood peak levels that occurred were loaded into Port Macquarie Hastings Council's waterRIDE Flood modelling software to produce a map showing the extent of the May 2025 flood. The flood extent in relation to the proposed Thrumster Wastewater Treatment Plant site is shown in Figure C.2 below. Images of the flood water extents at the Hastings River Drive / Boundary Street intersection, Hastings River Drive / Winery Drive intersection and Thrumster Sewage Pumping Station #1 were reviewed and shown to correlate to the waterRIDE modelled extents. This correlation is outlined in Appendix A.

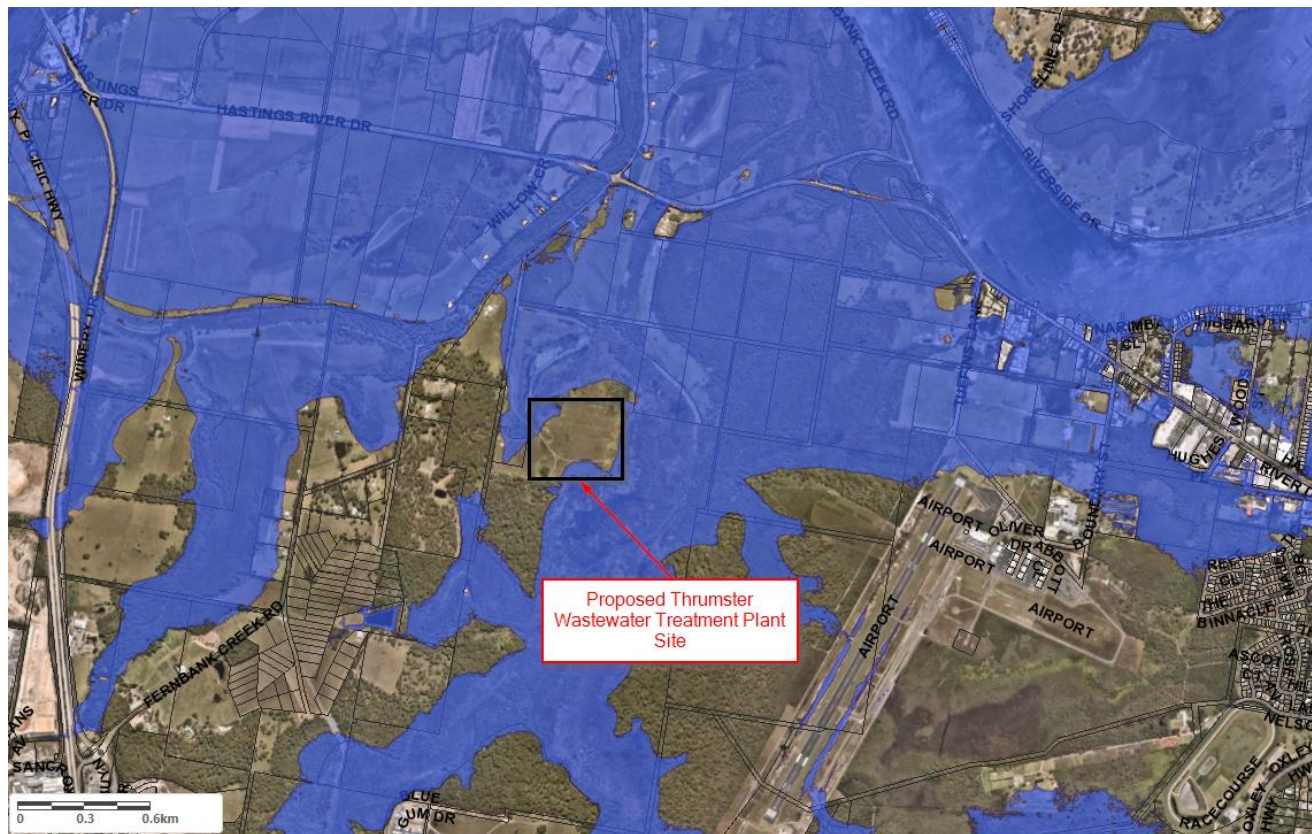


Figure C.2 Modelled May 2025 peak flood extent relative to the proposed Thrumster Wastewater Treatment Plant site

As shown in the May 2025 flood extent map (Figure C.2) the proposed Thrumster Wastewater Treatment Plant site was not impacted by the May 2025 flood. The modelled flood level was approximately 2.5 m AHD with the site being about 0.5 m higher.

Figure C.3 shows the May 2025 flood extent compared to the proposed Treatment Plant concept layout. The current access track to the site from Fernbank Creek Road was inundated with approximately 300 mm to 700 mm of flood water. The proposed flood free access road and the route along Fernbank Creek Road west to the Pacific Highway were not impacted by any flood waters, as shown in Figure C.5. The project proposes to rebuild the access track from Fernbank Creek Road, while not fully designed yet, it is likely the new access road will be 100 mm to 200 mm higher than the current track. Therefore, in a 5% AEP flood event (such as occurred in May 2025) this access road will likely be inundated with 500mm or less of water.

The proposed Thrumster Wastewater Plant will be constructed on a raised earth embankment/platform above the 1%AEP (1in100) flood event level, as shown in Figure C.6.



Figure C.3 The proposed Thrumster Wastewater Treatment Plant and access roads layout relative to the May 2025 flood peak extent



Figure C.4 Photo taken on the morning of 20 May 2025 looking southeast towards the proposed site (indicated by the red arrow in Figure 3). As shown in the far ground, indicated by the red line, the proposed site ground level is approximately 1.5m higher than the surrounding swap land. (Source: Hugh Smith - public submission).

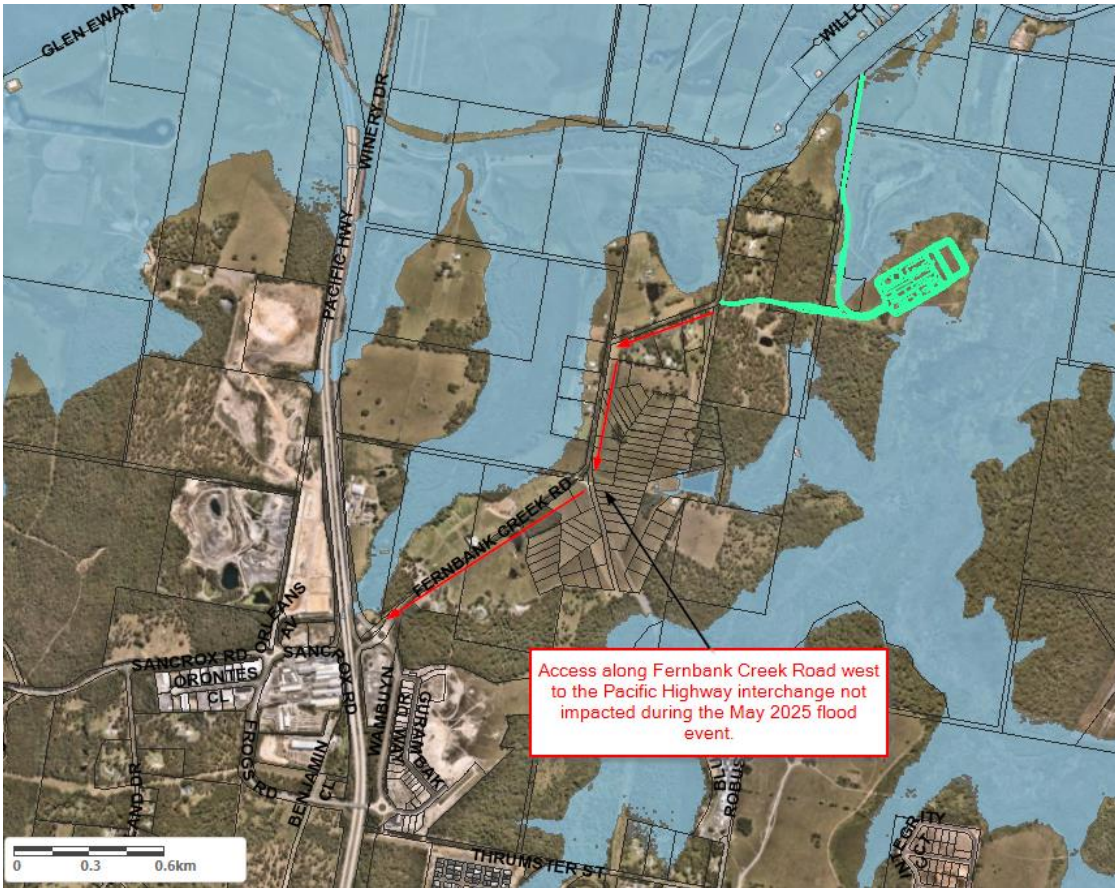


Figure C.5 The flood access road and route along Fernbank Creek Road was not impacted by the May 2025 flood event. This route is flood free up to and including a 1% AEP (including Climate Change allowance) flood event.

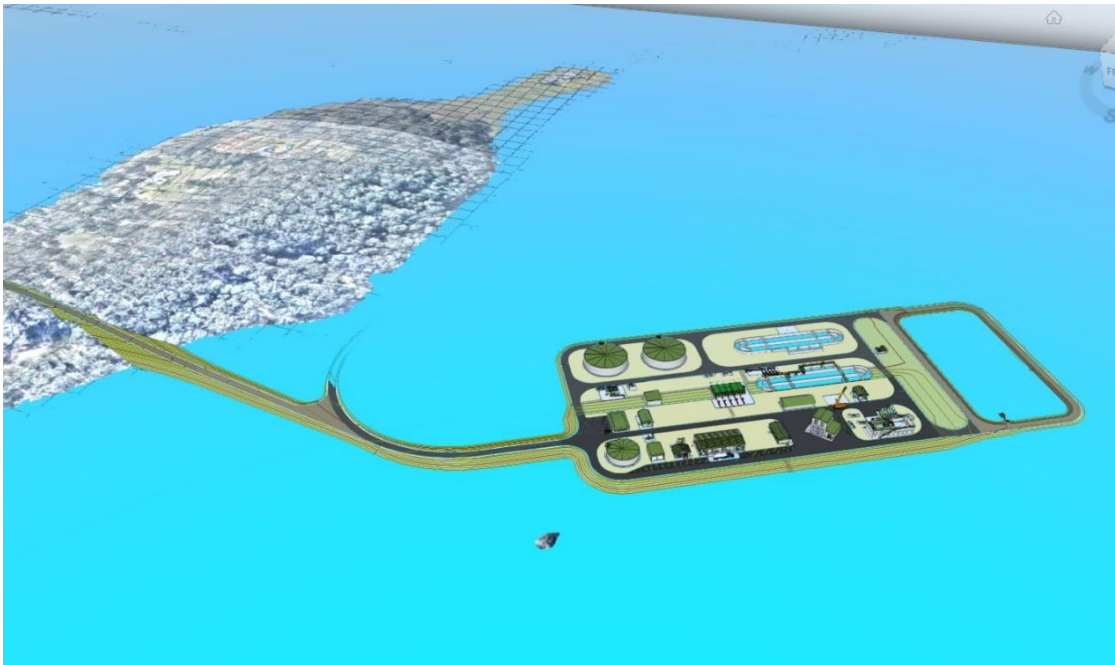


Figure C.6 The proposed wastewater plant layout showing the raised embankment compared to the 1% AEP flood event level, which is 1.55 m higher than the May 2025 event

C-2 Appendix A - Correlation of modelled flood extent to images taken of the flood levels

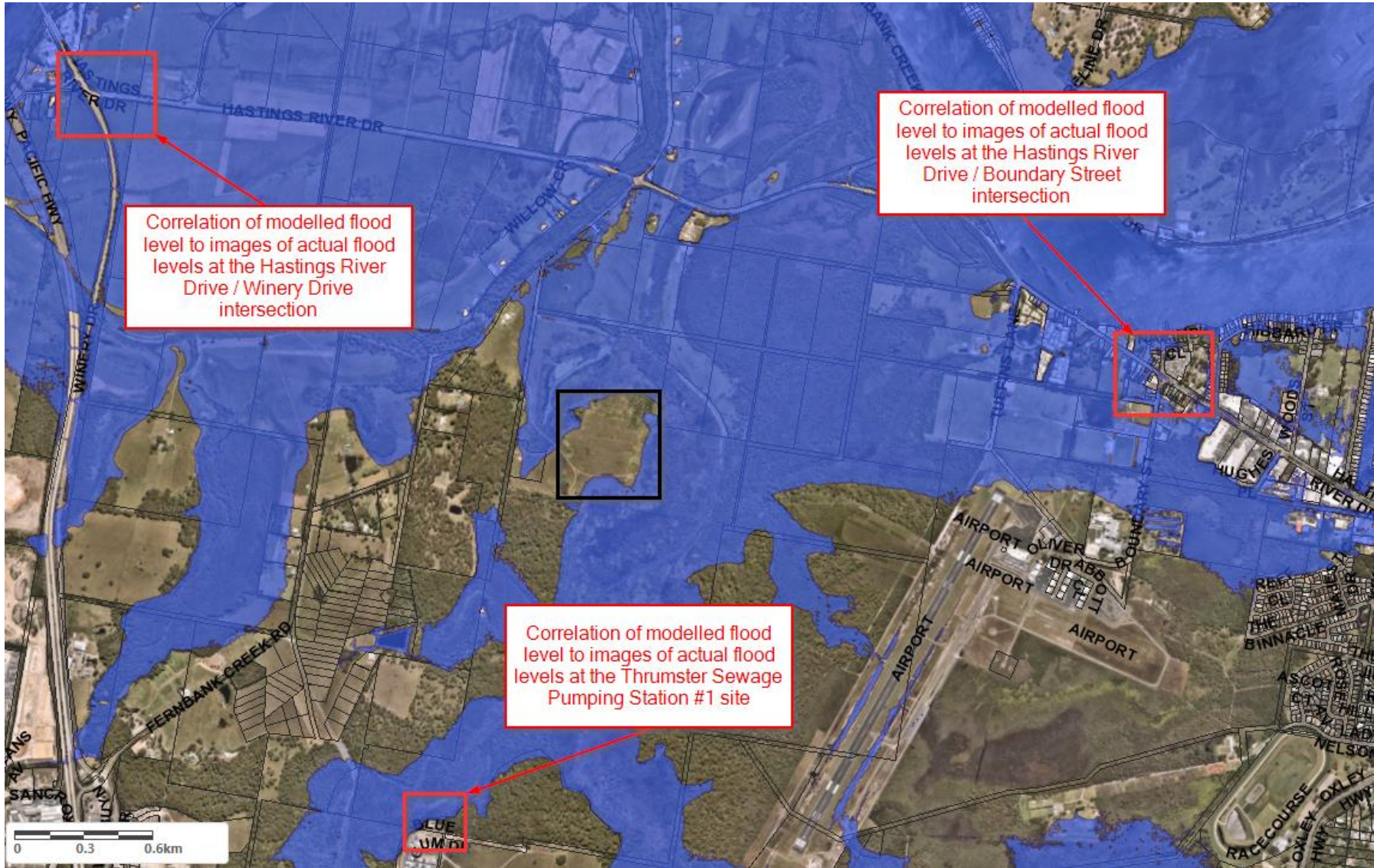
To validate the modelled May 2025 peak flood extent, images of the flood extent at three locations around the proposed Thrumster Wastewater site were reviewed. This review shows that the modelled peak flood extent correlates well with images of the flood event.

Location 1: Hastings River Drive / Winery Drive Intersection located northwest of the proposed Thruster Wastewater Treatment Plant site.

Location 2: Hastings River Drive / Boundary Street Intersection located northeast of the proposed Thruster Wastewater Treatment Plant site.

Location 3: Thrumster Sewage Pumping Station #1 site located south of the proposed Thruster Wastewater Treatment Plant site.

The locations are shown below.



C-2-1 Location 1 Correlation



Image 1 Photo (sourced from drone footage of the floods) of the Hastings River Drive / Winery Drive intersection looking west towards the Pacific Highway bridge. Time of image is estimated to be the afternoon/early evening (4 to 5 pm) on the 21 May 2025 based on low light conditions and text prompts within the video. The seventh dashed line marking can just be seen at edge of flood waters (blue circle). River level at this time at the Dennis Bridge gauge was approximately 2.65 m, 0.5 m lower than the peak of 3.15 m. (Source: McNaught, A (2025), Floods at Port Macquarie NSW. 20-24th May 2025, YouTube Video 11:33, <https://www.youtube.com/watch?v=5Y73mp24qC4>).

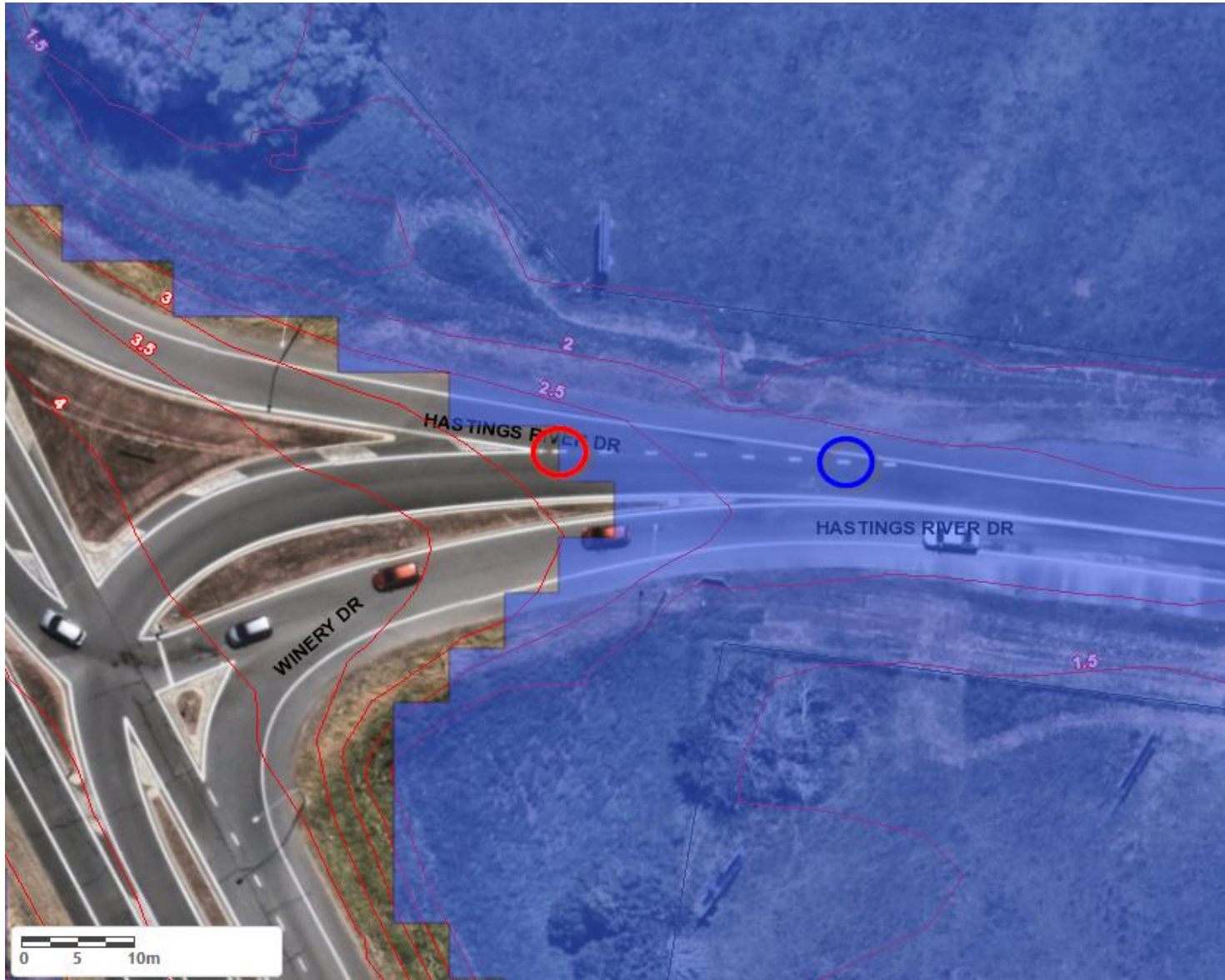


Image 2 *Modelled May 2025 flood extent based on peak levels. The modelled level is across the first dashed line (red circle), which is at an elevation of 2.72 m in Council's GIS. The seventh dashed line (blue circle) is at an elevation of 2.17 m in Council's GIS, being 0.55 m lower. This correlates well with the river height being 0.5 m lower on the afternoon of 21st May compared to the peak on the morning of 22nd May, therefore confirming the accuracy of the modelled levels at this location.*

C-2-2 Location 2 Correlation



Image 3 Photo (sourced from drone footage of the floods) of the Hastings River Drive / Boundary Street intersection looking east-south-east towards Port Macquarie. Time of image is estimated to be mid-morning (9 to 11am) on the 22 May 2025 based on shadows and text prompts within the video. The flood waters are just across the second right turn around at the intersection. River level at this time at the Settlement Point gauge was approximately 1.94m, 0.15m lower than the peak of 2.09m. (Source: McNaught, A (2025), Floods at Port Macquarie NSW. 20-24th May 2025, YouTube Video 21:16, <https://www.youtube.com/watch?v=5Y73mp24qC4>)

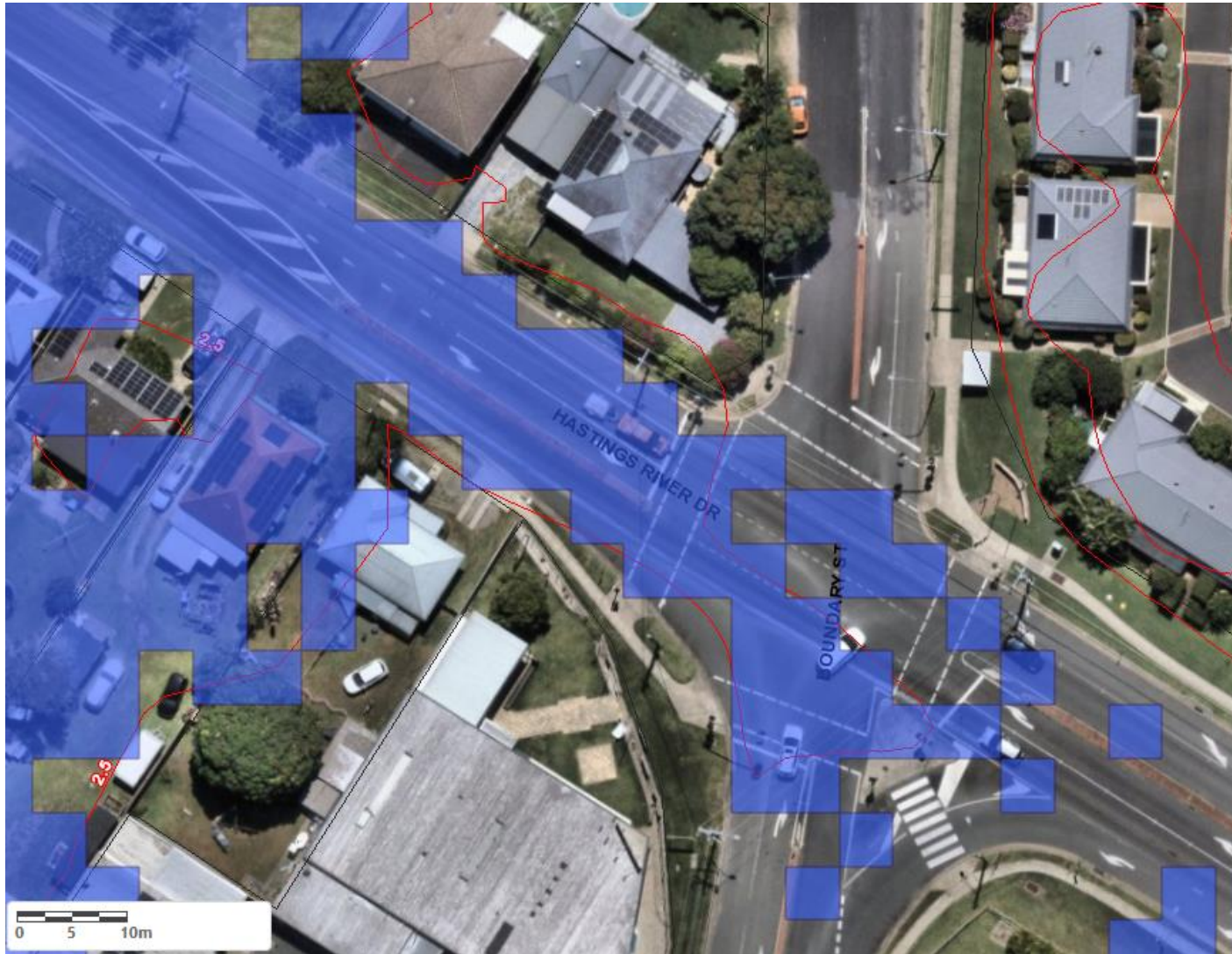


Image 4 *Modelled May 2025 flood extent based on peak levels at the Hastings River Drive / Boundary Street intersection. The modelled level is approximately 2.49 m through the intersection. The terrain elevation of the second turn arrow is 2.36 m in Council's GIS, 0.13 m lower than the modelled flood peak. This correlates with the river height being 0.15 m lower later in the morning of 22nd May (with the lower tide) compared to the peak earlier that morning, therefore confirming the accuracy of the modelled levels at this location.*

C-2-3 Location 3 Correlation



Image 5 Council staff inspection of the Thrumster Sewage Pumping Station #1, 11:04 am 23rd May 2025. Photo looking east-north-east along the northern side of the pumping station building, showing flood waters within several metres of the building. The river levels at the Settlement Point gauge are 0.45 m below the peak level at this stage.

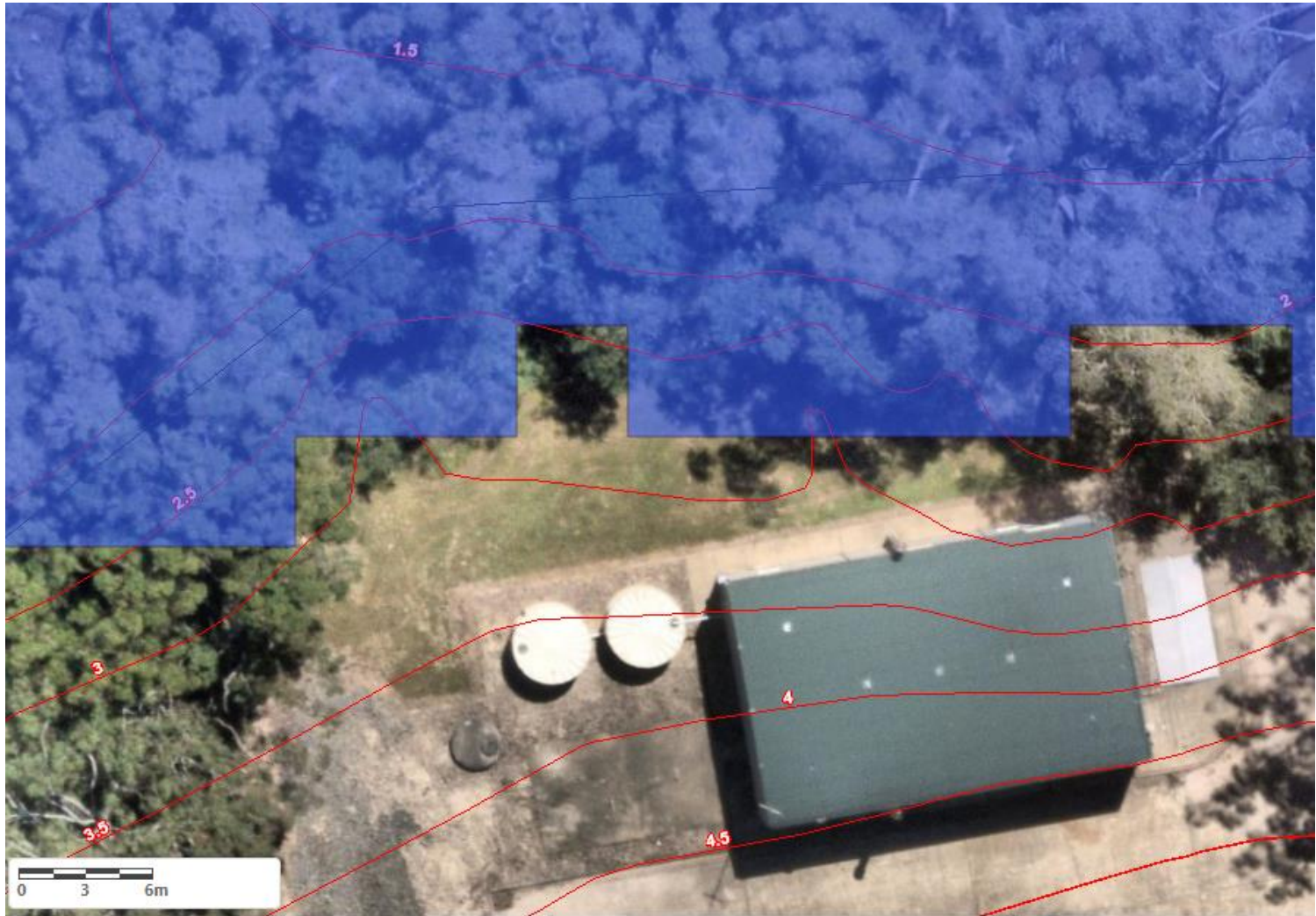


Image 6 *Modelled May 2025 flood extent based on peak levels at the northern side of the Thrumster Sewage Pumping Station #1, indicating flood waters within 5m of the building. It is noted that due to the steep embankment on the northern side of the pumping station that there is a small horizontal distance change relative to vertical changes in the flood levels*

Appendix D

Beca Hunter H2O response

Project:	9055 Thrumster WWTP Upgrade
Subject:	Information to support response to DPHI request for further information
Date:	2 July 2025
Client:	Port Macquarie Hastings Council
Beca HunterH2O:	Damon Emerson Associate Process Engineer

Background

The Department of Planning, Housing and Infrastructure has requested further information on the 2nd June 2025 as part of their review of the EIS for the Thrumster wastewater scheme.

Beca HunterH2O has been asked to provide additional information to support PMHC's response to this request.

Selection of liquified chlorine

1. As described in Hazardous Industry Planning Advisory Paper No. 6, the Department requires further justification of the selection of liquified chlorine where technically feasible solutions using less hazardous process materials could be made, considering the consequences of hazardous events for liquefied chlorine. Please examine other alternatives to liquified chlorine and provide detailed justification of the chemical selected for disinfection.

Alternative options for providing the treatment required by the Thrumster WWTP were considered as part of the Thrumster Wastewater Scheme: Treatment Plant Options Assessment (Beca HunterH2O, December 2023). Disinfection is a key process required for the production of recycled water for dual reticulation. The option assessment report recommended the use of chlorine disinfection as chlorine is an effective disinfectant for the treatment of both viruses and bacteria. Chlorine dosing was required for the Thrumster WWTP to meet the virus log reduction values required to provide safe recycled water for dual reticulation use.

PMHC is in the process of standardising the disinfection systems used across their water and wastewater treatment facilities to chlorine gas. This standardisation at an organisational level enables PMHC to provide training to their operational staff to enable them to safely operate similar systems across different treatment facilities. Chlorine gas disinfection was adopted for the Thrumster WWTP as part of this standardisation.

Prior to the concept design of Thrumster WWTP, PMHC completed a detailed options study that considered the two most commonly used chlorination chemicals for chlorine disinfection in Australia: chlorine gas and liquid sodium hypochlorite (HunterH2O, June 2022, Pretreatment and Wauchope WTP Chlorination Upgrades: Options Study Report). Chlorine gas was identified as PMHC's preferred option based on the following:

- Chlorine gas has an unlimited shelf life, unlike sodium hypochlorite where the strength of the solution degrades over time.
- Due to the potential danger associated with chlorine gas, sophisticated design is readily available to make the operation safe, simple and robust and on the whole, there are fewer WHS incidents related to chlorine gas installations.
- Does not normally require pH correction systems as a result of chlorine dosing.

- PMHC staff can operate across multiple sites, familiarity and completed training in the use of gas chlorine enables staff to utilise the same skills across multiple sites. PMHC staff operate chlorine gas systems regularly and are aware of the risks associated with chlorine gas operation.
- Industry experience suggests that chlorine gas installations are generally more reliable than sodium hypochlorite systems due to the absence of problems associated with the stability of sodium hypochlorite, the potential for gas locks which interfere with the reliable operation of the disinfection system and corrosion issues that can occur at the dosing facilities.
- Although typically result in a higher capital cost, the operating cost (chemical supply cost) is lower which generally results in a lower NPV unless site specific works are expensive.

Management of storage and handling of chemicals

2. Provide further details of how the risk of storage and handling of all chemicals on-site will be managed, including consideration of separation distances, containment, and incompatibilities of the chemicals.

The concept design allows for the bulk storage of four chemicals:

- Aluminium sulphate with a storage capacity of 2x 50 m³
- Sodium hydroxide with a storage capacity of 2x 25 m³
- Citric acid with a day tank capacity of 3m³ and additional allowance for 2x 1m³ IBCs
- Sodium hypochlorite with a day tank capacity of 3m³ and additional allowance for 2x 1m³ IBCs

Storage and handling of chemicals onsite are as per *AS3780 Storage and Handling of Corrosive Substances*. The plant specifications outline the requirements for this standard to be achieved. AS3780 outlines several requirements to manage separation distances, spill containment and incompatible chemicals.

The concept as developed accounts for the following requirements:

- Each chemical has a dedicated bund, that must comply with AS3780, key factors include:
 - Locus angles between the top of the tank and the top of the bund to avoid sprays from exiting the bunded area
 - Incompatible substances include the required separate distances of 5m (acid and bases)
 - Bund size is 110% of the largest available tank volume in case of a tank rupture all of the chemical is retained within the bund
 - Bunds do not have drainage lines and therefore leaks cannot occur, all spills are pumped from the dedicated sump via a portable sump pump
 - Dedicated truck transfer fill station which provides power to the delivery truck. This transfer switch is directly connected to the high level in the storage tank to cut power and prevent tank overflow. Each tank is sized to accept a full tanker compartment (9,000 L) to avoid only partial deliveries.
 - IBC deliveries can occur and include an allowance for three to be stored within the bunded area. The bunds allow for largest tank volume plus 10% (i.e. largest of an IBC or the day tank) to maintain containment in case of a failure.
 - Dosing pumps, valves and fittings, where possible are contained within a dosing cabinet accessible from outside of the bunded area. This avoids risk of operators routinely entering bunds to manage dosing

pump equipment. Dosing cabinets include suitable doors which are normally closed to prevent spillage outside of the bunded area.

- Chemicals that are dissimilar are placed within a 5m separation distance from each other. Dissimilar chemicals refer to their pH and compatibility.
 - Aluminium sulphate and citric acid which are both acidic and do not require this separation.
 - Sodium hydroxide and sodium hypochlorite which are both basic and do not require this separation.
- Chemical dosing lines are contained within double containment systems, also referred to as pipe in pipe. This allows any leaks from dosing pipework to be captured. Leak detection is provided at the lowest point within the double containment system to notify the operations staff that a leak has occurred. Each chemical has a dedicated pipe in pipe arrangement.

Description of proposed operation of the chlorine facility

3. Noting that further justification is required for the selection of liquefied chlorine, if liquefied chlorine is still proposed for the disinfection, then further information on the following items is requested.
- a. A detailed description of the proposed operation of the chlorine dosing, including pressure or vacuum operation, automatic shutdown devices, and handling of vented or relief gases. This information is to verify the modelled consequence distances are conservatively realistic.

Chlorine gas will be provided to enable disinfection. The system will be designed to meet the requirements of *AS2927 Storage and Handling of Liquefied Chlorine Gas*. The system will be contained in a standalone building with a drum storage room and ejector room. The storage room has space for 3x 920 kg drums and the ejector room includes the dosing equipment and service water line.

Two drums are connected at any one time, draw off occurs from a single drum only. Both drums are fitted with an automatic change over which occurs when a drum is empty. The third is a cold spare that is ready for connection when needed.

Gas is drawn from the drums under a vacuum created by an ejector. The ejector mixes the gas and service water to produce a concentrated liquid for dosing. The chlorine liquid is dosed directly into the main using a retractable dosing lance. All dosing lines outside of the chlorine room are to be double contained.

In the case of a chlorine leak, the chlorine rooms will be fitted with mechanical ventilation, chlorine leak detection, chlorine scrubber and automatic shutdown devices.

- Mechanical ventilation is installed in both rooms and will be triggered by the chlorine leak detection system.
- The chlorine leak detection system will be either pneumatic or electrically actuated emergency shutoff valves, one for each chlorine container connected to the manifold, the shut off system is connected to an emergency shut off panel with a suitably sized compressed gas receiver/cylinder or battery backup system.
- A chlorine scrubber has been provisioned to remove chlorine gas extracted via the mechanical extraction system and avoid release of chlorine gas to the atmosphere. The exit stack is to include a chlorine gas analyser.

In addition to this, the specifications for the works requires the following safety requirements are to be provided as part of the works:

- Self Contained Breathing Apparatus (SCBA) – at least one set to be always stored onsite at least 10 m away from the chlorine system, upwind of the most prevalent wind direction.

- Windsock for operators to determine the likely direction of any released chlorine gas located in a spot which is visible to the operator based on their likely approach direction.
- First aid station including as minimum first aid kit and instructions
- Protective clothing:
 - Close fitting chemical goggles with a face shield
 - PVC jacket or impervious rubber aprons
 - Elbow length rubber, or PVC gauntlet gloves
 - Rubber or PVC boots, worn inside the overall legs
- Locker or other enclosure to store the above PPE within the chlorination or amenities building
- Safety showers provided as per the relevant Australian Standards
- Fire extinguishers suitable for use in electrical/chemical fires.
- HAZCHEM signage as required by relevant legislation, the Code and Australian Standards.

4 Performance during May 2025 Flood Event

On the 2nd of June 2025 DPHI requested PMHC to provide context of the site of the proposed Thrumster WWTP and the recent flood event at Port Macquarie (May 2025 event).

The requested further assessment included:

1. Any information that the Proponent is aware of around the scale of the flood event
2. The extent and depth of inundation at and around the site
3. An estimate of how the wastewater treatment plant would have performed in that event, inclusive of:
 - a. Potential inundation of the site
 - b. Modelled treatment plant performance with regards to potential throughput
 - c. Exceedances of holding capacity and discharges from the storm storage ponds

This section outlines the information requested in points 3b and 3c.

4.1 Scale of Rainfall Event

Table 4-1 summarises design rainfall depth and annual exceedance probability (AEP) for the periods between 24 and 96 hours from the BOM Design Rainfall Data System.

Table 4-1: AEP Event Conditions (BOM Design Rainfall Data System)

Rainfall Period	Cumulative 50% AEP Rainfall	Cumulative 20% AEP Rainfall	Cumulative 10% AEP Rainfall	Cumulative 5% AEP Rainfall	Cumulative 2% AEP Rainfall	Cumulative 1% AEP Rainfall
24 hours	131 mm	182 mm	218 mm	254 mm	302 mm	340 mm
36 hours	154 mm	215 mm	258 mm	301 mm	359 mm	301 mm
48 hours	171 mm	239 mm	288 mm	337 mm	402 mm	451 mm
72 hours	192 mm	272 mm	329 mm	387 mm	463 mm	519 mm
96 hours	206 mm	292 mm	354 mm	418 mm	501 mm	563 mm

Table 4-2 compares standard AEP rainfall intensities to the rainfall that was recorded at two rain gauges within the proposed Thrumster WWTP catchment, these are:

- Thrumster No. 3 (TH03)
- Airport Rain Gauge (BOM)

Table 4-2: Rainfall and AEP Event Conditions with Classification (TH03 & Airport)

Rainfall Period	Airport Recorded Cumulative Rainfall	Airport AEP Classification	TH03 Recorded Cumulative Rainfall	TH03 AEP Classification
24 hours	244 mm	10% to 5% AEP	238 mm	10% to 5% AEP
36 hours	306 mm	5% to 2% AEP	309 mm	5% to 2% AEP
48 hours	333 mm	~5% AEP	336 mm	~5% AEP
72 hours	392 mm	5% to 2% AEP	395 mm	5% to 2% AEP
96 hours	485 mm	5% to 2% AEP	489 mm	5% to 2% AEP

Based on the available data, the rainfall event can be classified as a 5 to 2% AEP event.

4.2 Performance of Existing Sewage Pumping Stations

PMHC provided the pump well level data recorded during the rainfall event for the pumpstations that are proposed to be diverted to the Thrumster WWTP. This data is displayed in Figure 4-1.

For context, the current peak capacity of these SPS are:

- PM23 is equal to 98 L/s
- TH01 is equal to 69 L/s
- PM07 is equal to 197 L/s
- PM29 is equal to 88 L/s

Based on these records:

- PM23 lost power on 22/05/2025 and may have overflowed and once back online cleared the pumpstation contents
- TH01 may have overflowed during this event
- The level information from PM07 does not suggest that it overflowed. The level information shows the level decreasing during the event.
- PM29 did not overflow during this period.

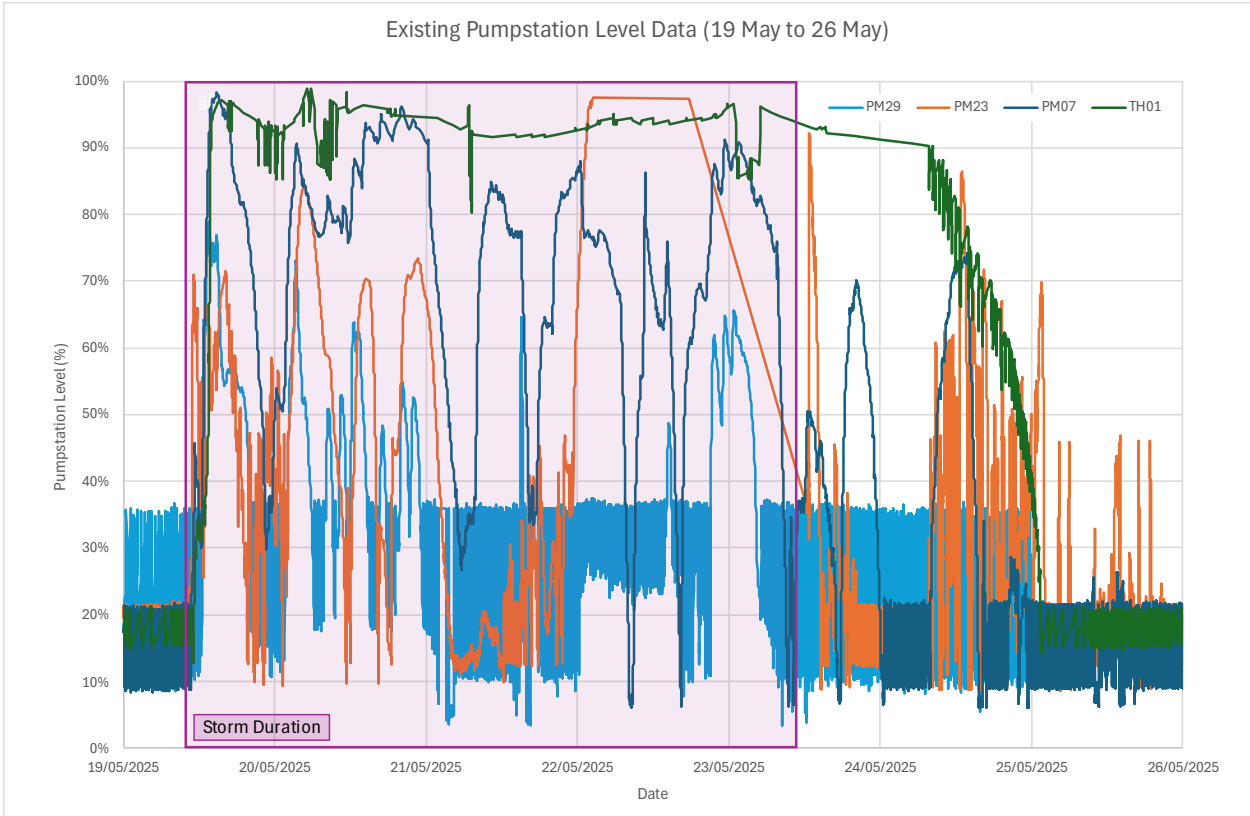


Figure 4-1: Pumpstation Level Data (19 – 27 May 2025)

4.3 Storm Pond Performance under initial Commissioning Loads

During commissioning, flows from the catchment will be diverted to the Thrumster WWTP. A flow balance has been completed to determine the volume of bypass would have occurred. The flow balance assumes that the Thrumster WWTP was commissioned at the end of 2024 and is fully operational. For the proposed initial diversions, the total pumped flow of the diverted sewage pumpstations will be slightly more than the

peak flow to full treatment capacity of the treatment plant. As a result of this, the storm pond may receive storm sewage.

Adopting the pumpstation level data and outflow data does not complete the flow balance, as the inflows to each pumpstation is not known. Therefore, as a conservative assumption, the flow balance in Table 4-3 adopts all pumpstation operating at maximum flowrate for the duration of the rainfall event (96 hours).

With the initial diversions in place, all flow received will be treated or captured in the storm pond. The flow balance calculation indicates that the total volume stored in the pond at the end of the 96 hour rain event is estimated to be 9 ML which is within the proposed storm pond capacity.

The maximum inflow to Thrumster WWTP will continue to increase as the pump capacities in the diverted pumpstations are increased and new sewage pumpstations are brought online over time.

Table 4-3: Flow Balance for Storm Pond Operation at Commissioning Loads

Proposed SPS Diversions	Current Peak Pump Capacity	Comment
TH01	69 L/s	At plant commissioning loads
PM07	197 L/s	
PM23	98 L/s	
PM29	88 L/s	Sum of current planning flows for PM29, PM57, PM53, PM54, PM80 and PM73.
Total Peak Inflow	452 L/s	Sum of TH01, PM07, PM23 and PM29 at commissioning loads.
Thrumster WWTP PFTF	426 L/s	Design value, implemented from commissioning.
Deficit Treatment Capacity	-26 L/s	Flow split after screening to the storm pond.
Storm Pond Volume Usage	9.0 ML	Assumes event duration of 96 hours (or 4 days) with all pumps operating at their peak pump capacity and no return. No overflow event would have occurred at Thrumster WWTP. This is considered conservative as all levels were shown to decrease while operational and did not operate at maximum water level for the entire duration.

Appendix E

Evidence of RAP consultation

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