Your ref: SSI-56980459
Our ref: DOC24/642139-11

Department of Planning, Housing and Infrastructure
PO Box 5022
PARRAMATTA NSW 2150

Attention: Mr Nick Hearfield

Dear Mr Hearfield

RE: EIS Thrumster Wastewater Scheme – Port Macquarie (SSI-56980459)

Thank you for your referral in the Major Projects Planning Portal dated 5 August 2024 requesting advice from the Biodiversity, Conservation and Science Group (BCS) of the NSW Department of Climate Change, Energy, the Environment and Water (DCCEEW) on the Environmental Impact Statement (EIS) for the Thrumster Wastewater Scheme.

This is a joint response from BCS and the National Parks and Wildlife Service (NPWS).

We have reviewed the exhibited EIS against the Secretary's Environmental Assessment Requirements (SEARs) provided by the Department of Planning, Housing and Infrastructure (DPHI) to the proponent on 28 April 2023.

We consider the EIS does not meet the Secretary's requirements for biodiversity, NPWS-managed lands, acid sulfate soils, water and coastal hazards.

In summary, our key issues are as follows:

Biodiversity

- The project has the potential to cause a Serious and Irreversible Impact (SAII) on Giant Dragonfly and BCS recommends the proponent make further effort to avoid and minimise the impacts. We note that this issue has a simple resolution documented in Attachments B and C.
- The subject land assessed in the Biodiversity Development Assessment Report (BDAR) does not cover the full extent of the development footprint.
- The proponent needs to revise the Plant Community Type (PCT) mapping to ensure it is consistent with the requirements of the Biodiversity Assessment Method 2020 (BAM)
- The project includes development within a BioBanking site which may not be permissible.
- The proponent needs to prepare a species polygon for *Melaleuca biconvexa*.
- The proponent needs to provide further details of the adaptive management plan for prescribed impacts to biodiversity values within Kooloonbung Creek.

Water

- The EIS does not clearly demonstrate how the project will contribute to achieving Water Quality Objectives over time where they are currently not being achieved.

Coastal processes and associated hazards

- The EIS does not assess and describe 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.

NPWS

- The EIS needs to recognise lands reserved or acquired under the *National Parks and Wildlife Act 1974* (NPW Act) in the project area.
- The proponent needs to consider and appropriately manage the construction impacts on NPWS-managed lands.
- The proposal creates operational risks which need to be identified and addressed, including through assessing of the likelihood of asset failure and identifying emergency measures to prevent or minimise impacts to the upper reaches of Kooloonbung Creek in Lake Innes Nature Reserve.

A summary of our assessment and advice is provided in **Attachment A.** Detailed comments are provided in **Attachments B and C.**

All plans required as a Condition of Approval that relate to biodiversity, flooding or coastal management should be developed in consultation with, and to the satisfaction of, BCS.

If you have any questions about this advice, please do not hesitate to contact Mr Bill Larkin, Acting Senior Team Leader Planning North East, BCS, via bill.larkin@environment.nsw.gov.au or 6659 8216.

Yours sincerely

GABRIELLE PIETRINI
Director North East
Biodiversity, Conservation and Science

2 September 2024

Enclosures: Attachment A - BCS and NPWS Assessment Summary for Thrumster Wastewater Scheme Environmental Impact Statement (SSD 56980459); Attachment B - SERIOUS AND IRREVERSIBLE IMPACTS – ADVICE ON SAII ENTITIES; Attachment C - Detailed comments for Thrumster Wastewater Scheme Environmental Impact Statement (SSD 56980459)

ATTACHMENT A

BCS and NPWS Assessment Summary for Thrumster Wastewater Scheme Environmental Impact Statement (SSD 56980459)

In preparing this advice, BCS and NPWS have reviewed the Environmental Impact Statement – Thrumster Wastewater Scheme (EIS), GHD July 2024 and associated technical reports.

Key issues raised by BCS and NPWS are summarised below. These issues and recommendations are detailed in **Attachment C**, along with other minor issues which also need to be addressed prior to determination of the SSI application.

Key BCS Assessment Issues

1.	The project has the potential to cause a Serious and Irreversible Impact (SAII) on Giant Dragonfly and BCS recommends the proponent make further efforts to avoid and minimise the impacts	Giant Dragonfly is an endangered species listed as at risk of SAII and was recorded on the wastewater treatment plant site. The proposal includes direct impact to 1.67ha of high condition wetland habitat and BCS understands there is potential to further avoid and minimise these impacts.
		BCS recommended actions:
		• The proponent refines the project design to further avoid and minimise impacts to the high condition wetland areas.
		• The assessor amends the BDAR to document all measures the proponent has taken to avoid and minimise impacts in accordance with Section 7.1 and 7.2 of BAM.
		• The accredited assessor revises the SAII assessment for Giant Dragonfly to:
		  ○ Describe any further efforts by the proponent to avoid and minimise impacts.
		  ○ Provide an accurate description of the potential impacts to the species habitat.

	Extent and Timing	Extent: Increased avoidance of wetland habitat is likely to result in reduced biodiversity impacts (including to SAII entities) and offset requirements. Timing: Pre-determination

2.	The subject land assessed in the BDAR does not cover the full extent of the development footprint	The subject land assessment in the BDAR does not include some areas of the development footprint likely to require assessment. **BCS recommended action** • The assessor revises the BDAR to include all areas of the project footprint (excluding Biodiversity Certified land) within the subject land.
	Extent and Timing	Extent: Changes to the extent of the subject land are likely to influence the offset requirements. Timing: Pre-determination

3.	Plant Community Type (PCT) mapping needs to be revised to accord with BAM	The proponent needs to make minor revisions to the PCT mapping in the BDAR to ensure it meets the requirements of sections 4.2 and 4.3 of BAM. **BCS recommended action** • The assessor revises the vegetation mapping to ensure all native vegetation is mapped to the most likely PCT and that vegetation zones represent areas in the same broad condition state.
	Extent and Timing	Extent: Changes to the PCT mapping and vegetation zones are likely to influence the offset requirements. Timing: Pre-determination

4.	The project includes development within a BioBanking site which may not be permissible	The proponent has proposed trenching for pipelines within BioBanking Site BA487. This may not be a permissible activity within the conservation lands of the Biobanking agreement.
		BCS recommended actions
		• The EIS be revised to either:
		  ○ Propose a redesigned project that avoids direct impacts within any BioBanking Site, or
		  ○ Demonstrate that the proposed works within the BioBanking Site are permissible under the BioBanking Agreement.

	Extent and Timing	Extent: Changes to the alignment would likely involve revised assessments in the EIS. Timing: Pre-determination

5.	A species polygon is required for *Melaleuca biconvexa*	The BDAR does not include a species polygon for *Melaleuca biconvexa*, however, to meet the requirements of section 5.2.5(3) of the BAM, a species polygon is required for this species. **BCS recommended actions** • The accredited assessor revises the BDAR to include a species polygon for *Melaleuca biconvexa*.
	Extent and Timing	Extent: Adding the species polygon would result in *Melaleuca biconvexa* species credits being generated. Timing: Pre-determination

6.	Further details of the adaptive management plan for prescribed impacts to biodiversity values within Kooloonbung Creek are required	The BDAR identifies that the prescribed impacts associated with hydrological changes to Kooloonbung Creek are uncertain. The proponent needs to provide further detail on the proposed adaptive management approach to meet the requirements of section 8.5 of the BAM. **BCS recommended actions** • The accredited assessor revises the BDAR to include further details of the adaptive management plan for uncertain impacts associated with the proposal.
	Extent and Timing	Timing: Pre-determination

7.	The EIS needs to clearly demonstrate how the project will contribute towards achieving Water Quality Objectives over time where they are currently not being achieved	The EIS acknowledges there is the potential for localised cumulative increases in algal biomass due to higher nutrient loading and other localised impacts. It also states that *"regardless of the scenario, concentrations of all nutrient indicators within the creek remain elevated and in excess of the applicable water quality objectives"* (Intrawater Report Section 7.1). However, the EIS does not describe actions to maintain or improve water quality and ecosystem integrity. **BCS recommended actions** • The EIS be revised to assess and describe strategies required to improve the health of Kooloonbung Creek receiving waters given all water quality indicators are well above the guidelines.
	Extent and Timing	Timing: Pre-determination

8.	Tidal Inundation risk for current and future timeframes under projected climate change induced sea level rise need to be described and assessed, and the project needs to include appropriate measures to avoid impacts.	Tidal inundation is a coastal hazard that may present a current day and future risk to development and infrastructure. Projected climate change induced sea level rise is expected to result in higher tidal inundation levels in estuaries and should be assessed and considered in the EIS. **BCS recommended actions** Revise the EIS, and all relevant technical inputs, to: • Describe and assess tidal inundation risk in the study area for current day and over the future 100-year planning horizon. • Describe actions to avoid causing increased risk of coastal hazards on that land or other land.
	Extent and Timing	Timing: Pre-determination

Key NPWS Assessment Issues

9.	Recognition of NPWS-managed lands	The EIS needs to recognise that the proposed project is close to Lake Innes Nature Reserve, as land reserved under the *National Parks and Wildlife Act 1974* (NPW Act). **NPWS recommended actions** Revising the EIS, and all relevant technical inputs to ensure: • Using the NPWS-managed lands layer available on SEED which shows lands reserved under the NPW Act or vested under Part 11 of the NPW Act, the proponent identifies all land reserved or vested under the NPW Act particularly the sections of the proposed Treated Effluent Pipeline alignment adjoining the NPWS estate. • All figures and maps are appropriately scaled to show tenure, the Treated Effluent Pipeline alignment (including any temporary construction easements and site compounds) and any NPWS (and service provider) assets in proximity to the scheme. • All potential impacts identified in the guide *Developments adjacent to National Parks and Wildlife Service lands: guidelines for consent and planning authorities* (DPIE NPWS 2020) are

		considered in relation to the Treated Effluent Pipeline construction and operations.
	Extent and Timing	Pre-determination

10.	Minimising construction impacts on NPWS-managed lands	The proponent needs to demonstrate that constructing the Treated Effluent Pipeline does not pose a risk to Lake Innes Nature Reserve. **NPWS recommended action** Impose conditions of consent that require the Construction Environmental Management Plan to: • include an Erosion and Sediment Control Plan (ESCP) for the Treated Effluent Pipeline installation that explicitly outlines measures aimed at preventing impacts on the adjacent parts of Lake Innes Nature Reserve consistent with the 'Blue Book', specifically Managing Urban Stormwater: Soils and construction - Volume 2A Installation of services (DECC 2008) and Managing Urban Stormwater: Soils and construction - Volume 1 (Landcom 2004) • identify NPWS as a stakeholder to be notified of any incidents likely to result in impacts to Lake Innes Nature Reserve.
	Extent and Timing	Pre-construction, as a condition of determination

11.	Hydrologic impacts on NPWS-managed lands	The EIS needs to recognise that Treated Effluent Pipeline discharge may introduce nutrients or toxins to Kooloonbung Creek, which could spread into the upper reaches of the creek and so into Lake Innes Nature Reserve. The EIS also needs to assess the operational risk of the proposal with regards to asset failure. **NPWS recommended actions** Revising the EIS to identify and detail: • potential upstream impacts to Kooloonbung Creek, with reference to the impacts on key fish habitat and land mapped as Coastal Wetlands under the State Environmental Planning Policy (Resilience and Hazards) 2021 • operational risks of the scheme, and specifically the Treated Effluent Pipeline. This should consider the likelihood of asset failure and how this will potentially affect Kooloonbung Creek and Lake Innes Nature Reserve, and set out emergency intervention measures. • the cumulative impacts of the proposal, as this project will significantly increase the amount of treated effluent already discharged into the creek
	Extent and Timing	Pre-determination

ATTACHMENT B SERIOUS AND IRREVERSIBLE IMPACTS – ADVICE ON SAII ENTITIES

SAII Entity: Swift parrot (*Lathamus discolor*), Giant dragonfly (*Petalura gigantea*)

	Steps	BCS Recommendation
1	Identify relevant entities at risk of SAII	The BDAR includes a detailed assessment for two SAII entities: • Swift Parrot (*Lathamus discolor*) • Giant Dragonfly (*Petalura gigantea*). **Swift Parrot** The project would impact 1.07ha of habitat mapped on the Important Area Map for Swift Parrot. **Giant Dragonfly** The project would impact on 14.32ha of Giant Dragonfly habitat, comprising 4.22ha of native vegetation and 10.1ha of exotic vegetation. Three additional candidate SAII species were recorded or assumed present, but the BDAR concludes that they are not at risk of SAII from the project due to the absence of potential breeding habitat on or near the subject land: • Little Bent-winged Bat (*Miniopterus australis*) • Large Bent-winged Bat (*Miniopterus orianae oceanensis*) • Eastern Cave Bat (*Vespadelus troughtoni*). The assessor has identified the relevant entities at risk of SAII for the project.
2	Evaluation of the current extinction risk of the impacted entities	**Swift Parrot** The Swift Parrot meets SAII principle 1 as set out in clause 6.7 of the Biodiversity Conservation Regulation 2017, this being species in a rapid rate of decline. The accredited assessor has also identified the Swift Parrot is likely to meet the criteria for SAII principle 2, species with small population size. The assessor based the area of habitat for Swift Parrot on the Swift Parrot Important Area Map. Based on this mapping the Swift Parrot is presumed to potentially use part of the subject land for foraging. The accredited assessor has evaluated the current extinction risk for Swift Parrot appropriately.

	Steps	BCS Recommendation
		Giant Dragonfly The Giant Dragonfly meets SAII principle 4, being that the impacted species or ecological community is unlikely to respond to measures to improve its habitat and vegetation integrity and therefore its members are not replaceable. The area of habitat for Giant Dragonfly to be impacted has been based on the species polygon and includes the non-native vegetation in this area. There are only 6 records of Giant Dragonfly in the Port Macquarie area in the past 30 years. The accredited assessor has generally evaluated the current extinction risk for Giant Dragonfly appropriately, however the direct impacts to wetland and potential breeding habitat have not been fully described.
3	Detail measures taken to avoid impacts on the entity	**Swift Parrot** The BDAR notes the proponent has made efforts to avoid and minimise impacts to higher biodiversity value areas including mapped Swift Parrot Important Areas. These measures include narrowing the development footprint to avoid and minimise impacts to vegetation that may present foraging habitat for the species and using cleared land for the development wherever possible. BCS considers satisfactory measures have been taken to avoid impacts on Swift Parrot important habitat. **Giant Dragonfly** The BDAR includes details of measures the proponent has taken to avoid impacts on the Giant Dragonfly. These measures include micro-siting the treatment plant and avoiding wetland areas where possible, including wetland edge areas which are most likely to provide breeding habitat. The assessor also did a targeted survey for breeding burrows, and no burrows were recorded, however BCS notes it is extremely difficult to find burrows. The BDAR includes conflicting information on the avoidance of habitat for Giant Dragonfly. Several sections of the SAII Assessment (page 369-378) state that all potential breeding habitat has been avoided, however a total of 1.67ha of high condition wetland is within the project footprint. The two areas of wetland habitat within the footprint are a narrow strip for the emergency discharge swale, and a larger area which is part of a large indicative compound/ laydown area. BCS considers that there are further opportunities for the proponent to avoid and minimise direct impacts to wetland habitat proposed, in particular through detailed design of the indicative compound/laydown area.

	Steps	BCS Recommendation
		Giant Dragonfly burrows are most likely to be located at the edges of the wetland and therefore the design should include a buffer to the wetland.
4	Evaluate the impacts from the proposal	**Swift Parrot** The project would impact 1.07ha of habitat mapped on the Important Area Map for Swift Parrot. This is comprised of 0.71ha of exotic dominated vegetation and 0.36ha of low to moderate condition native vegetation. The impact is spread across several smaller areas, where remaining patches of higher condition habitat will be retained. Given the minimal impacts to native vegetation mapped as Swift Parrot important habitat, BCS considers the increase of extinction risk from the proposal on the Swift Parrot is minimal. **Giant Dragonfly** The project would impact 14.32ha of native (4.22ha) and exotic (10.1ha) vegetation. The Giant Dragonfly was recorded within the project footprint and therefore the impacts are confirmed foraging habitat. Potential breeding habitat in higher quality wetland areas are also within the footprint, although this is not acknowledged in the BDAR. The Giant Dragonfly is listed under principle 4, as it is unlikely to respond to measures to improve its habitat and vegetation integrity and therefore its members are not replaceable. Given this, BCS considers the proposal is likely to increase the risk of extinction of Giant Dragonfly.
5	Provide advice on whether the proposal is **likely** or **unlikely** to result in SAII	**Swift Parrot** After reviewing the information in the BDAR and completing a site inspection, BCS consider the impact of the project is **unlikely** to result in SAII to Swift Parrot. **Giant Dragonfly** After reviewing the information in the BDAR and completing a site inspection, BCS consider the impact of the project, as currently proposed, is **likely** to result in SAII to Giant Dragonfly.
Other Recommendations/Comments		
1	• A large area (approximately 1.5ha) of high-quality wetland providing habitat for Giant Dragonfly (and other threatened species) is within the current development footprint as part of indicative compound/laydown area. BCS recommends the project design is refined to avoid and minimise impacts on higher condition wetland which provides habitat for the Giant Dragonfly. Based on discussions with Port Macquarie-Hastings Council during the site inspection, BCS understands it is likely that most of the high condition wetland area can be avoided. • If the consent authority decides to grant consent to the project, it is necessary to include the mitigation measures in Section 8.8 of the BDAR in the consent conditions to mitigate the potential impacts to SAII entities.	

ATTACHMENT C Detailed comments for Thrumster Wastewater Scheme Environmental Impact Statement (SSD 56980459)

Biodiversity

The Biodiversity Development Assessment Report (BDAR) at Technical Report 5 of the EIS does not meet the Secretary's requirements for biodiversity.

Biodiversity Development Assessment Report

The proposal needs to further demonstrate measures taken to avoid and minimise impacts to native vegetation and threatened species habitat, including for Giant Dragonfly which is at risk of SAII (pages 166-178)

The proposal includes direct impacts to 1.67ha of high condition (Vegetation Integrity Score 70) wetland representative of the *Freshwater wetlands on coastal floodplains of the NSW North Coast, Sydney Basin and South East Corner bioregions* Endangered Ecological Community (EEC). The wetland also provides habitat for several threatened species including the endangered Giant Dragonfly which is an entity at risk of SAII.

The BDAR does not provide details of the works proposed within most of the wetland area that would be impacted, however Figure 3.2b of the EIS shows the area is an indicative compounds/laydown area. Section 7 of the BDAR (Avoid and Minimise Impacts) does not meet the requirements set out in sections 7.1 and 7.2 of BAM as it does not include details of how the compounds/laydown area have been located or designed to avoid and minimise impacts.

Based on discussions between BCS officers and a project representative from Port Macquarie Hastings Council during our site inspection, BCS understand that direct impacts to the wetland can be largely avoided with the higher elevation sandplain area likely to have sufficient space for the compounds/laydown areas (*Figure 1*).

Given the high biodiversity values of the wetland area (including providing habitat for Giant Dragonfly) and ability to redesign project components in this area, BCS considers the proponent should avoid and minimise impacts further.

BCS recommended actions:

1. The proponent refines the project design to further avoid and minimise impacts to the high condition wetland areas.
2. The assessor amends the BDAR to document all measures the proponent has taken to avoid and minimise impacts in accordance with Sections 7.1 and 7.2 of BAM.

Figure 1: Screenshot of the proposed treatment plant with red semi-circle indicating high condition wetland within current footprint and green rectangle showing indicative suitable location for compound/laydown area.

SAII assessment for Giant Dragonfly does not describe all impacts to the species habitat (page 369-378)

The SAII assessment for Giant Dragonfly in Appendix 5 of the BDAR indicates all wetland areas have been avoided and no potential breeding habitat would be impacted, however, 1.67ha of high condition wetland habitat, including edge habitat which may be used for breeding, is present within the development footprint. BCS recommends the proponent avoid and minimise impacts to this habitat further.

BCS recommended actions:

3. The assessor revises the SAII assessment for Giant Dragonfly to:
    i. Describe any further efforts by the proponent to avoid and minimise impacts as identified in recommendation 1.
    ii. Provide an accurate description of the potential impacts to the species habitat.

The subject land assessed in the BDAR does not cover the full extent of the development footprint (pages 20-25)

The subject land assessed in the BDAR does not accord with Section 2(3) of BAM. BCS recognises that the proponent has excluded some areas from the subject land due to the proposed impacts occurring within Biodiversity Certified land or where horizontal directional drilling will avoid direct impacts. However, the proponent has excluded several sections of trenching in the proposed development layout from the subject land without explaining why. These areas include trenching along Fernhill Road and Acacia Avenue, and slivers of land within the Biodiversity Certification area that are not Biodiversity Certified or BioBanking Agreement land (***Figure 2***).

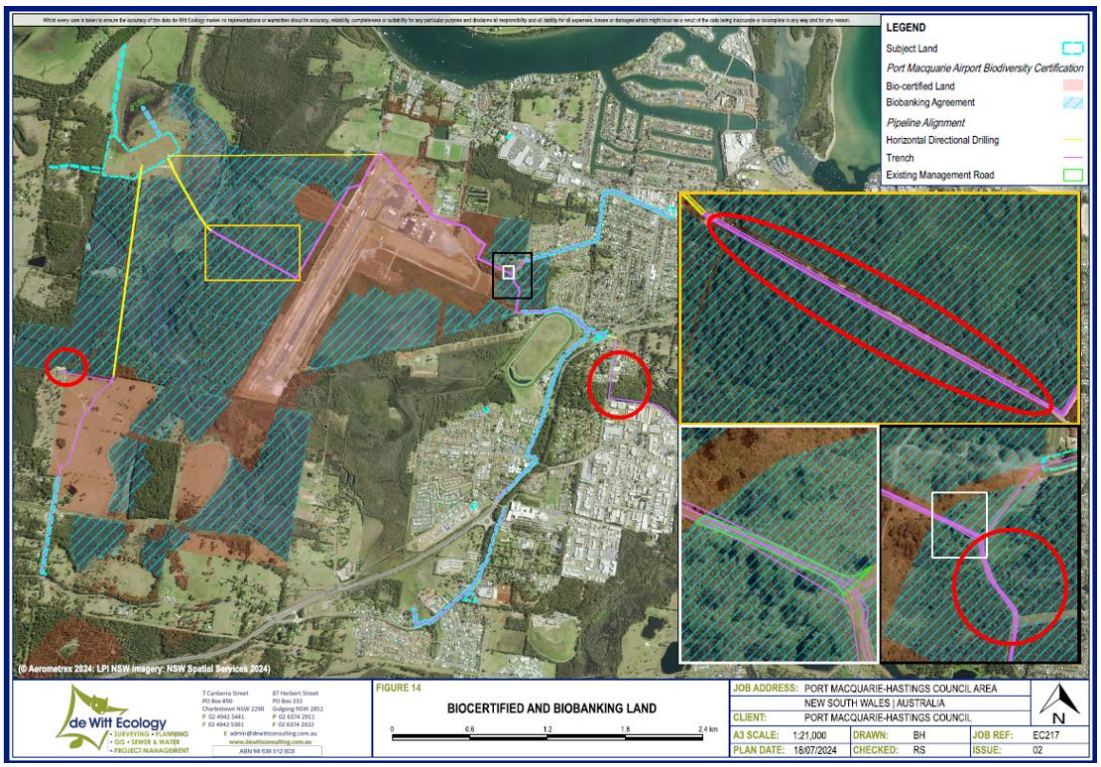

Figure 2: Indicative areas of proposed development not included within the subject land (circled in red).

BCS recommended actions:

4. The assessor revises the BDAR to include all areas of the project footprint (excluding Biodiversity Certified land) within the subject land.

Plant community type (PCT) mapping needs to be revised to accord with the BAM (pages 96-101)

Based on desktop review (including ArcGIS Shapefiles) and site inspection, BCS considers that the PCT and vegetation zone mapping need minor revisions to accord with sections 4.2 and 4.3 of BAM.

The accredited assessor has applied Vegetation Zone 5 – 'PCT3544 exotic' (VZ5) to large proportion of the subject land, however BCS has identified several areas of native vegetation present within the zone, including forest and scattered mature trees. This includes an area of forest mapped as VZ5 along John Oxley Drive, between Major Innes Road and The Ruins Way which should be reassigned to a higher condition zone and likely PCT 3167, in line with the mapping for the surrounding forest.

During the site inspection, BCS officers observed that areas of native-dominated vegetation along the edges of the existing dirt access road to the proposed treatment plant site between Fernbank Creek Road and the locked gate, adjacent to wetland that are mapped in the BDAR as VZ5 .

Scattered mature trees are present in several areas mapped as VZ5, including hollow-bearing tree number 4. Section 4.3.1(1.b) of BAM requires the assessor to map vegetation into vegetation zones of the same broad condition state, and identifies that the presence of disturbance to growth form groups can be used to distinguish area of similar condition. BCS considers mature trees represent a different condition state to the majority of VZ5. The assessor should map these areas as a different zone (and PCT if appropriate) and the project should avoid these trees where possible. Examples of where these trees occur are in the Port Macquarie Race Club grounds and near the Lake Innes Village Shopping Centre.

BCS recommended actions:

5. The assessor revises the vegetation mapping to ensure all native vegetation is mapped to the most likely PCT and vegetation zones represent areas in the same broad condition state.

A species polygon is required for *Melaleuca biconvexa* to accord with the BAM (page 142)

The BDAR does not include a species polygon for *Melaleuca biconvexa*. Although the project footprint avoids the individual recorded during the survey, *Melaleuca biconvexa* is a species assessed by area of suitable habitat (BAM Box 2). To accord with section 5.2.5(3) of BAM, a species polygon is required for this species.

BCS recommended actions:

6. The assessor revises the BDAR to include a species polygon for *Melaleuca biconvexa*.

Further details of the adaptive management plan for prescribed impacts to biodiversity values within Kooloonbung Creek are required (page 207)

Section 8.4 of the BDAR identifies that the prescribed impacts associated with hydrological changes to Kooloonbung Creek are uncertain. The proponent proposes developing a Vegetation Management Plan as an adaptive management measure to address the uncertain impacts.

The proponent needs to provide further detail on the proposed adaptive management approach to meet the requirements set out in section 8.5 of BAM. The adaptive management plan should also include the option to the use of biodiversity credits to mitigate prescribed impacts should monitoring indicate the other mitigation measures have failed, as outlined in section 8.6 of BAM.

BCS recommended actions:

7. The assessor revises the BDAR to include further details of the adaptive management plan for uncertain impacts associated with the proposal.

Environmental Impact Statement

The project includes development within a BioBanking site which may not be permissible (page 67)

The proponent proposes trenching for pipelines within conservation lands of a BioBanking Site BA487. This is not described within the EIS, however detail is provided in Figure 14 and Section 8.2.1 of the BDAR. The BioBanking Site was established as conservation land as part of the Port Macquarie Airport Biodiversity Certification. BCS understands trenching is not a permissible activity within the BioBanking Site under the Biodiversity Certification Agreement. BCS has identified alternative alignment options for the pipeline route to stay within Biodiversity Certified land instead of passing through the conservation lands of the BioBanking site.

BCS recommended actions:

8. The EIS be revised to either:
    i. Propose a redesigned project that avoids direct impacts within any conservation lands of the BioBanking Site, or
    ii. Demonstrate that the proposed works within the conservation lands of the BioBanking Site are permissible under the BioBanking Agreement.

Potential impacts from acid sulfate soils have not been assessed (page 235)

Section 15.4.2 of the EIS notes that there is a high probability of acid sulfate soils being present in several areas of the project. This includes trenching and horizontal direct drilling areas in proximity to areas of high biodiversity value. The mitigation measures in section 15.5 of the EIS propose to develop an Acid Sulfate Management Plan to manage potential impacts. As there is a high likelihood of exposing acid sulfate soils, the proponent needs to prepare the Acid Sulfate Management Plan and include it in the EIS prior before the consent authority can approve the project.

BCS recommended actions:

9. An Acid Sulfate Management Plan be prepared and included with the EIS.

Water

The EIS needs to clearly demonstrate how the project will contribute towards achieving Water Quality Objectives over time where they are currently not being achieved

The aim of Chapter 2 – Coastal Management of State Environmental Planning Policy (Resilience and Hazards) 2021 (SEPP (Resilience and Hazards)) is to promote an integrated and coordinated approach to land use planning in the coastal zone in a manner consistent with the objects of the *Coastal Management Act 2016* (CM Act). Object (a) of the CM Act is to protect and enhance natural coastal processes and coastal environmental values including natural character, scenic value, biological diversity and ecosystem integrity and resilience.

Clause 2.7(4) of SEPP (Resilience and Hazards) requires that a consent authority must not grant consent for development referred to (in subsection (1)) unless they are satisfied that sufficient measures have been, or will be, taken to protect, and where possible enhance, the biophysical, hydrological and ecological integrity of the coastal wetland or littoral rainforest.

Clause 2.10(2) of SEPP (Resilience and Hazards) requires that development consent must not be granted to development on land (to which the section applies) unless the consent authority is satisfied that the development is designed, sited and will be managed to avoid an adverse impact on the integrity and resilience of the biophysical, hydrological (surface and groundwater) and ecological environment, and coastal environmental values.

The EIS acknowledges the potential for localised cumulative increases in algal biomass due to higher nutrient loading and other localised impacts. It also acknowledges that *"regardless of the scenario, concentrations of all nutrient indicators within the creek remain elevated and in excess of the applicable water quality objectives"* (Intrawater Report Section 7.1). The EIS does not describe actions to maintain or improve water quality and ecosystem integrity.

BCS recommended actions:

10. The EIS be revised to assess and describe strategies required to improve the health of Kooloonbung Creek receiving waters given all water quality indicators are well above the guidelines.

Coastal Processes and Associated Hazards

Current and future tidal inundation risk, including under projected climate change induced sea level rise, needs to be described and assessed, and appropriate measures be taken to avoid impacts

Object (f) of the CM Act is to mitigate current and future risks from coastal hazards, taking into account the effects of climate change. Clause 2.12 of SEPP (Resilience and Hazards) requires that development consent must not be granted to development on land within the coastal zone unless the consent authority is satisfied that the proposed development is not likely to cause increased risk of coastal hazards on that land or other land.

The NSW Coastal Design Guidelines (2023) include guidance to ensure that the location and design of a development reduces exposure to risks from coastal hazards over the life of the development.

Tidal inundation is a coastal hazard that may present both a current and future to development and infrastructure. Projected climate change induced sea level rise is expected to result in higher tidal inundation levels in estuaries and should be assessed and considered in the EIS.

BCS recommended actions:

11. Revise the EIS, and all relevant technical inputs, to:
    i. Describe and assess tidal inundation risk in the study area for current day and over the future 100-year planning horizon.
    ii. Describe actions to avoid causing increased risk of coastal hazards on that land or other land.

Flooding

BCS has reviewed the flooding component in Section 7 of the EIS (and Technical Report 1).

BCS considers that the EIS addresses the Secretary's requirements for flooding and the project design and proposed works are consistent with the policy and objectives of the Flood Risk Management Manual 2023.

National Parks and Wildlife Service comments

The NPWS has a statutory obligation to ensure developments do not adversely affect the values or management of lands reserved (Part 4) or acquired (Part 11) under the *National Parks and Wildlife Act 1974* (NPW Act).

NPWS acknowledges that the Thrumster Wastewater Scheme will not directly affect and burden (in perpetuity) lands reserved under the NPW Act. The Secretary's Environmental Assessment Requirements (SEARs) as issued for SSI-56980459 on 28 April 2023 in Items 38 – 40 require the proponent to consider the NPWS estate and for the proponent to engage with NPWS. NPWS advises that Port Macquarie Hastings Council has complied with the Secretary's requirements around engagement.

There are three key elements of the Thrumster Wastewater Scheme: a new wastewater treatment plant; sewage pumping stations; and linear infrastructure including a Treated Effluent Pipeline to Kooloonbung Creek. Of these, NPWS's primary interest is in relation to the Treated Effluent Pipeline as it may directly and indirectly affect Lake Innes Nature Reserve and neighbouring Part 11 lands.

Land reserved under the *National Parks and Wildlife Act 1974*

The EIS states that Lake Innes Nature Reserve is located approximately 840 metres from the proposal, with the closest site being a proposed compound area at the junction of Major Innes Road and John Oxley Drive. Some parts of the proposed Treated Effluent Pipeline are actually located only approximately 40 metres north of Lake Innes Nature Reserve.

NPWS recommended actions:

12. Revise the EIS, and all relevant technical reports, to ensure:
    i. Using the NPWS-managed lands layer available on SEED which shows lands reserved under the NPW Act or vested under Part 11 of the NPW Act, the proponent identifies all land reserved or vested under the NPW Act particularly the sections of the proposed Treated Effluent Pipeline alignment adjoining the NPWS estate.
    ii. All figures and maps are appropriately scaled to show tenure, the Treated Effluent Pipeline alignment (including any temporary construction easements and site compounds) and any NPWS (and service provider) assets in proximity to the scheme.
    iii. All potential impacts identified in the guide Developments adjacent to National Parks and Wildlife Service lands: guidelines for consent and planning authorities (DPIE NPWS 2020) are considered in relation to the Treated Effluent Pipeline construction and operations.

Minimising construction impacts on NPWS-managed lands

NPWS is concerned about the construction impacts associated with the Treated Effluent Pipeline. The EIS currently proposes to manage and mitigate impacts by applying Construction Environmental Management Plan (CEMP). The proponent should obtain the required technical input when developing the CEMP to effectively manage potential impacts, particularly given the proximity of the Treated Effluent Pipeline to Lake Innes Nature Reserve from Lake Road.

NPWS recommended actions:

13. Impose conditions of consent that require the Construction Environmental Management Plan to:

i. include an Erosion and Sediment Control Plan (ESCP) for the Treated Effluent Pipeline installation that explicitly outlines measures aimed at preventing impacts on the adjacent parts of Lake Innes Nature Reserve consistent with the 'Blue Book', specifically *Managing Urban Stormwater: Soils and construction - Volume 2A Installation of services*[i] (DECC 2008) and *Managing Urban Stormwater: Soils and construction - Volume 1*[ii] (Landcom 2004)

ii. identify NPWS as a stakeholder to be notified of any incidents likely to result in impacts to Lake Innes Nature Reserve.

Hydrologic impacts on NPWS-managed lands

The EIS and Technical Reports 1A and 1B confirm there are potential operational impacts of the project relating to treated effluent discharged via the Treated Effluent Pipeline into existing drainage infrastructure at Kooloonbung Creek. A potential risk of toxicity is predicted at the Lake Road release point and within the upstream reaches of the creek, including within Lake Innes Nature Reserve, which may impact highly sensitive key fish habitat and the Coastal Wetlands mapped under the SEPP (Resilience and Hazards).

NPWS is concerned around the operational risk of the scheme with regards to increased flows into Kooloonbung Creek that may occur in the event of asset failure.

NPWS recommended actions:

14. Revising the EIS, and all relevant technical reports, to identify and detail:
    i. potential upstream impacts of the effluent discharge to Kooloonbung Creek, including any proposed mitigation strategies to protect water quality in key fish habitats, coastal wetlands and Lake Innes Nature Reserve
    ii. operational risks of the scheme, and specifically the Treated Effluent Pipeline, with an assessment around the likelihood of asset failure and emergency intervention measures, with a consideration of how this will potentially affect Kooloonbung Creek and upstream flows into Lake Innes Nature Reserve.
    iii. the cumulative impacts of the proposal, as this project will significantly increase the amount of treated effluent already discharged into the creek.

References

[i] Blue Book Volume 2A - www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Water/Water-quality/managing-urban-stormwater-soils-construction-volume-2a-installation-services-0801.pdf

[ii] Blue Book Volume 1 - www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Water/Water-quality/managing-urban-stormwater-soils-construction-volume-1-fourth-edition.pdf