

Review of Environmental Factors

**Condong Riverbank Erosion Repair (Shoebridge)  
– Tumbulgum Rd, Tyngah**

May 2024

## Version control

Version number	Date	Prepared by	Reviewed by
1.0 Draft for internal review	6/5/2024	Engineering Division Environmental Scientists	Engineering Division Environmental Scientists
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## Important notes and definitions

This Review of Environmental Factors (REF) has been prepared in accordance with the Tweed Shire Council Procedure titled: Environmental assessment procedures for Council Infrastructure Works V1.0, 2019 (the Procedure).

REF (Type A projects) template: Infrastructure works assessed using the REF (Type A project) template include routine maintenance works, emergency works, and projects with minor or predictable environmental impacts that can be managed using standard operating procedures and work methods, and industry adopted mitigation measures and management approaches.

Projects assessed using this template typically have minor environmental impacts, and do not require detailed assessment and environmental management plans to manage or offset project impacts. Refer to Part C, Section 5.0 of the Procedure for further guidance on REF assessment pathways.

## Prior to works commencing

An activity under Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A) must not be commenced prior to both the REF being “determined” by an appropriately delegated staff member and the determination report (the certified REF) being recorded in the Council’s electronic data/records system.

The REF must sign off that Council has fulfilled its duty to consider the environmental impact of the activity pursuant to Section 5.5 of the EP&A Act. This includes certifying that the environmental safeguards and mitigation measures proposed ensure the environmental impact is not significant.

It is the responsibility of the person completing this REF that:

- Section 9.0 (certification and signoff) of this REF has been completed
- the project can proceed subject to project mitigation measures and relevant environmental safeguards outlined in Section 10.0 and any associated plans and external authorities
- all relevant approvals, licences, and permits have been obtained prior to works commencing
- all relevant construction personnel are aware of:
  - their responsibilities under this REF
  - the project specific mitigation measures and environmental safeguards outlined in Section 10.0
  - the conditions in any approvals, licences or permits
  - the project details and likely impacts of the project on the community.

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## Consultation

Environmental planning instruments (EPIs) set out obligations to notify and/or consult with stakeholders, including state agencies, councils and the community as part of the Division 5.1 process of the EP&A Act. Community consultation and referrals may also be required for certain types of approvals (consents, licences and permits) granted by determining authorities under legislation other than the EP&A Act. Proponents and determining authorities must consider any feedback from stakeholders on the proposed activity and/or its environmental impacts. EPIs set out obligations to notify stakeholders. All notification and consultation requirements must be met before a determination is made on the activity. A decision statement by each determining authority needs to be published alongside the published REF document.

Determining authorities will keep the following REF documentation available for public access once a determination has been made:

- the final REF document including appendices
- any associated SIS or BDAR
- the Decision Statement
- any REF document addenda.

The REF must be published on the determining authority's website or the NSW planning portal if the activity is triggered by any of the requirements outlined in clause 171(4) of the EP&A Regulation (clause 171(4)). For further information, refer to Section 6.0 of this REF.

## Terms of reference for the assessment

For the purposes of this assessment, the following terms of reference are used:

- Disturbance footprint – refers to the direct footprint subject to development, including any disturbance associated with ancillary works (e.g. temporary access tracks or stockpile sites).
- Study area – the study area includes the disturbance footprint and any additional lands approximately 50 m either side of the disturbance footprint that could be affected directly or indirectly from the proposal. The objective of the assessment would ensure that impacts beyond the direct disturbance footprint are also considered where relevant.
- Subject site – refers to the parcel/s of land on which the development is proposed.
- Broader study area – lands within 10 km of the local study area and includes the Office of Environment and Heritage (OEH) Atlas of NSW Wildlife and Commonwealth Protected Matters database search areas.
- IBRA bioregion and subregion – the Interim Biogeographic Regionalisation for Australia (IBRA) identifies the lands within the Tweed Shire as within the South Eastern Queensland IBRA bioregion. Subregions within this bioregion include the Sunshine Coast-Gold Coast Lowlands, Burringbar-Conondale Ranges and Scenic Rim. These terms are used to describe the occurrence of threatened species, populations and communities at a regional level.

Direct and indirect impacts are defined in accordance with DPE (2022) as follows:

- Direct impacts are those that usually occur at the same time as the project and in the vicinity of the site.
  - For example, impacts may directly affect the habitat of species and ecological communities and of individuals using the study area. They include, but are not limited to, death through predation, trampling, poisoning of the animal/plant itself and the removal of suitable habitat
- Indirect impacts are those that occur as a consequence of the project of the direct impacts of a project. They may be delayed and happen further away from the site.

- For example, impacts may sterilise or reduce the habitability of adjacent or connected habitats. They can include loss of individuals through starvation, exposure, predation by domestic and/or feral animals, loss of breeding opportunities, loss of shade/shelter, reduction in viability of adjacent habitat due to edge effects, deleterious hydrological changes, increased soil salinity, erosion, inhibition of nitrogen fixation, weed invasion, noise, light spill, fertiliser drift, or increased human activity within or directly adjacent to sensitive habitat areas.

Impact significance is rated as low, medium or high in this REF. Examples of low and high adverse impacts are as follows:

Low adverse impacts typically:	High adverse impacts typically:
are small scale	are large scale
are localised	are extensive
are short term	are long term
have a small impact dispersed over a long period	have a large impact over a short or long period
have reversible impacts	have potentially irreversible impacts
have effective mitigation measures available	have unavailable or untested mitigation measures
are totally compliant with standards, plans and policies	have uncertain or part compliance with standards, plans and policies
have a low interest from the public	have a high interest from the public
have a high level of understanding of the activity and expected impacts	have a low level of information on and understanding of the key issues

For further guidance on evaluating impacts, refer to Attachment A of the Department of Planning and Environment, Guidelines for Division 5.1 assessments, June 2022.

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## 1.0 Project details


Table 1: Project details

<b>Project name</b>	Condong Riverbank Erosion Repair [REDACTED]
<b>Project location</b>	Lot 1 DP 557660, 366 Tumbulgum Rd, Tyngah
<b>Project owner</b>	Tweed Shire Council
<b>Project brief number</b>	No brief
<b>Environmental Scientist (assessing officer)</b>	[REDACTED]
<b>Determining Officer</b>	[REDACTED]
<b>Project Client</b>	[REDACTED]
<b>Project Manager</b>	[REDACTED]



## 2.0 Site details

**Table 2.1: Site details**

Site/Parcel description	Zoning	Landowner
Lot 1 DP557660 366 Tumbulgum Rd, Tygalgah (Figure 1 and 2)	RU1 = Primary Production (Figure 3)	 (Figure 4)

**TABLE NOTES:**

- A: For works on Crown Land refer to Activity Specific Procedure – Council Infrastructure Works on Crown Land.  
 B: Owner's consent is not required for the preparation of Part 5 assessments of private land. Prior to works commencing on private land, Council officers are to notify property owners advising details of project and entry to land as permitted by the Powers of Entry provisions in sections 191A-193 of the Local Government Act, 1993.

### 3.0 Proposal description and permissibility

**Table 3.1: Project proposal details**

Description	Comment
Project background and need	<p>Tweed Shire Council seek to undertake bank stabilisation works along the Tweed River at Tyngah. The works are proposed to address ongoing erosion caused by historical clearing, flooding, fluvial action and boat wash that has occurred at the site over time and reduce the loss of adjacent private land. The project would be funded by the NSW Estuary Grants.</p> <p>The proposal intends to mitigate the direct and cumulative visual impact of the construction of rock revetment walls in the Tweed River estuary. This is in accordance with the aims of the Tweed River Bank Erosion Management Plan 2014.</p>
Alternatives considered	<p>The do-nothing approach would see continued erosion, loss of land, loss of riparian vegetation, increased sedimentation and reduced water quality. Stabilisation would halt these processes.</p>
<p>Proposal description key project elements (e.g. nature, scale and extent of proposed activity)</p>	<p>The proposed works would utilise a combination of hard and soft stabilisation techniques including approximately 600 m rock revetment and 10 m wide x 500 m long revegetation of the upper bank adjacent the rock revetment. Installation of 10 fish habitat features is also proposed. Occasional trees would also be planted adjacent the house mown area. Refer to Figure 5.</p> <p>The proposed disturbance footprint extends for approximately 600 m along the western bank of the Tweed River. The site is generally low-lying with an elevation that ranges between 0 m to 3 m Australian Height Datum (AHD).</p> <p>All works are located within the private property adjacent to the Tweed River.</p>
<p>Construction activities (e.g. how will the project be constructed?). Explain construction footprint, site preparation activities (e.g. vegetation clearing, alternate access etc.), construction</p>	<p>In summary, the proposed activity would involve:</p> <ul style="list-style-type: none"> <li>• installation of environmental management controls</li> <li>• construction of bank stabilisation works using the following methodologies as depicted in Appendix A             <ul style="list-style-type: none"> <li>○ installation of geotextile material</li> </ul> </li> </ul>

Description	Comment
timeframes, hours of operation, relevant work methods, plant and equipment, earthworks, management of materials, traffic and access management, sensitive receivers etc.)	<ul style="list-style-type: none"> <li>○ installation of rock revetment (below full height of bank)</li> <li>○ installation of riparian vegetation (mass planting) using jute matting – approximately 500 m long x 10 m wide between sugar cane cropping and riverbank areas</li> <li>○ installation of occasional trees (minimum 4) within 5 m of riverbank revetment within the house mown area (approximately 100 m long section)</li> </ul> <ul style="list-style-type: none"> <li>● installation of fish habitat features adjacent sugar cane cropping rock revetment area</li> <li>● stabilisation of any other disturbed surfaces</li> <li>● removal of environmental management controls including vegetation protection barriers.</li> </ul> <p>Design plans of the proposed works are provided in Appendix A. Figure 5 outlines the types and locations of the proposed works.</p>
Ancillary facilities (e.g. site compounds, stockpiles, set down areas, vegetation clearing and protection requirements, sensitive receivers etc.)	<p>Ancillary activities associated with construction for the proposed bank stabilisation works would include:</p> <ul style="list-style-type: none"> <li>● establishment of a construction compound</li> <li>● establishment of a suitable access path to the site to enable the delivery of materials</li> <li>● material stockpiling</li> <li>● equipment laydown</li> <li>● environmental management activities (including erosion and sediment control, tree/marine vegetation protection measures).</li> </ul> <p>All ancillary activities would be undertaken in previously cleared areas adjacent the alignment.</p>
Property access and acquisition requirements	<p>All of the proposed works are planned to occur within private property where the banks of the Tweed River are present. Access to the site is generally restricted to the general public and access for undertaking works would be via Tumbulgum Road. No acquisitions are required however landowner's consent would be sought prior to works occurring.</p>
Estimated construction commencement date	August 2024

Description	Comment
Estimated construction completion date	December 2024
Estimated cost of works	
Construction hours	Monday to Saturday 7 am to 6 pm. No works on Sunday or public holidays.

**Table 3.2: Environmental site description**

Description	Comment
<b>Include a brief background description of the following environmental assessment elements.</b>	
Biodiversity (vegetation communities, flora and fauna species)	<p>The proposed works comprises land within private property adjoining the Tweed River waterway. The southern end of the disturbance footprint adjoins the road reserve of Cane Road. The private property has primarily been used for primary production, namely sugar cane production and historically cleared of vegetation.</p> <p>The Tweed Vegetation Management Strategy (TVMS) mapping (OEH, 2012) identifies 2 vegetation communities as occurring within the study area, being 'substantially cleared of native vegetation' and 'open water'. Field investigations indicate that the mapping is generally reflective of the site.</p> <p>The majority of flora species present within the river bank are exotic species including elephant grass (<i>Cenchrus purpureus</i>), Singapore daisy (<i>Sphagneticola trilobata</i>) and mile-a-minute (<i>Ipomoea cairica</i>). A native species present is cottonwood hibiscus (<i>Hibiscus tiliaceus</i>).</p> <p>No marine vegetation is mapped as present in the disturbance footprint.</p>
Surface water and ground water	The proposed works occurs on the bed and banks of the Tweed River where tidal influences is present.
Flood prone land	The subject site is impacted by flooding as it is located on the banks of the Tweed River. The site occurs within a design flood inundation area up to 4.4 m AHD.
Soils and geology	The soil landscape within the proposed works is identified as the Tweed (tw) landscape. The Tweed landscape is

Description	Comment
	described as extensive marine plain of lower Tweed catchment consisting of deep Quaternary alluvium and estuarine sediments. Vegetation of this landscape is described as totally cleared closed-forest (rainforest) now predominantly sugar cane. Soils of this landscape are described as comprising deep (>200 cm), poorly drained Humic Gleys on backplain (Morand, 1996).
Bushfire risk	According to Bushfire Prone Land 2023 mapping, the subject site is located within Vegetation Category 3 with Vegetation Buffer present to the east.
Coastal hazards	The subject site is located outside the coastal hazard zone as per the Tweed Shire Coastal Hazards Assessment completed in November 2013.
Extreme climate/weather events	The subject site is subject to extreme climate weather events particularly flooding caused by rain events.
Traffic and transport	<p>The proposed works occurs within private property bordering the Tweed River. Access is via Tumbulgum Road. The road reserve of Cane Road borders the southern extent of the disturbance footprint.</p> <p>Tumbulgum Road is identified as a local access road, and services rural properties. No traffic counts have been completed for this section of Tumbulgum Road.</p>
Noise and vibration	The subject site is situated within a rural primary production area of sugar cane, where few residential houses are present. The subject site is located opposite the Condong sugar mill. Sources of noise would include farming machinery, the sugar mill, vehicular traffic and boat traffic.
Scenic value	The subject site is located between sugar cane cropping land and the Tweed River. The Draft Scenic Landscape Strategy has the subject site mapped as within Sugar Cane and Rivers and Creeks landscape character units. The subject site is also mapped as having low visibility. The subject site is visible from people using the Tweed River and from vehicles crossing the Cane Road bridge. Few waterfront residential properties at Condong would also have views of the subject site.
Property and land use	The subject site is located wholly on private property including the waterway banks and bed. Currently the waterway banks are mostly overgrown with environmental weeds. The remainder of the land is used for sugar cane

Description	Comment
	cropping and a farm house. The Tweed River waterway is used for recreational purposes by the general public.
Public access	Generally the subject site is restricted to the general public as the land is private property. Access to the banks of the Tweed River could be accessed by the general public, however it is private land.
Aboriginal heritage and historic (non-Aboriginal) heritage	<div style="background-color: black; height: 20px; width: 100%;"></div> <p>The subject site does not have any State or local significant heritage items mapped as occurring. The Tweed River adjacent to the subject site, is however mapped as the Condong Mill Conservation Area (C1 in Schedule 5 of <i>Tweed Local Environmental Plan 2014 (TLEP)</i>).</p>
Any other environmental elements	Nil.

**Table 3.3: Consultation**

Description	Comment
<b>Include a description of the public authority and community consultation requirements and outcomes.</b>	
Public authorities	<p>Part 2 Division 1 of the State Environmental Planning Policy (Transport and Infrastructure) 2021 (T&amp;I SEPP) defines the consultation required with relevant public authorities during the assessment process and prior to development commencing. Sections 2.15(1) and 2.15(2) refer to the proponent's consultation requirements with public authorities other than Councils for a specified development. Section 2.15(1) states that a public authority must not carry out specified development that this Policy provides may be carried out without consent, unless the authority has provided notice to respective authorities as per subsection 2.15(1)(a) and (b).</p> <p>The proposed works are not considered specified development.</p>
Community consultation	Community engagement would occur prior to works being undertaken and in line with the Community Engagement and Participation Plan 2019–2024.

**Table 3.4: Permissibility of the proposal**

Description	Comment
Relevant planning instrument	State Environmental Planning Policy (Transport and Infrastructure) 2021
Division/section/subsection	Division 25 Waterway or foreshore management activities Section 2.165 Development permitted without consent
Controlling provisions/performance criteria	<p>(1) Development for the purpose of waterway or foreshore management activities may be carried out by or on behalf of a public authority without consent on any land.</p> <p>(2) To avoid doubt, subsection (1) does not permit the subdivision of any land.</p> <p>(3) In this section, a reference to development for the purpose of waterway or foreshore management activities includes a reference to development for any of the following purposes if the development is in connection with waterway or foreshore management activities—</p> <ul style="list-style-type: none"> <li>(a) construction works</li> <li>(d) environmental management works</li> </ul>
Comments	<p>Section 2.164 Definitions</p> <p>In this Division—</p> <p><b><i>waterway or foreshore management activities</i></b> means—</p> <ul style="list-style-type: none"> <li>(a) riparian corridor and bank management, including erosion control, bank stabilisation, resnagging, weed management, revegetation and the creation of foreshore access ways.</li> </ul>

**Table 3.5: Design options**

Description	Comment
<b>Include a description of design constraints and measures taken to avoid and minimise potential environmental impacts.</b>	
Avoid/minimise/offset measures	<p>A number of stabilisation techniques were investigated during the preliminary design phase. The proposed stabilisation technique will have the most effective outcome for reducing impacts caused by flooding and boat wash and will also improve terrestrial and aquatic habitats whilst improving water quality over time.</p> <p>There are no offsets legally required for the proposed works.</p>



## 4.0 Duty to consider environmental impacts pursuant to Section 5.5 of the Environmental Planning and Assessment Act 1979

### 4.1 Confirmation of design and construction footprint

This section is to confirm the design and construction footprint of the proposed activity prior to undertaking the environmental impact assessment in the following sections.

**Table 4.1: Confirmation of design and construction footprint**

Footprint type	Confirmed (Yes/No)	Date confirmed	Comment or outcome  (e.g. Design footprint confirmed by Civil Engineering Designer; construction footprint confirmed by Construction Engineer; not relevant as works are within an existing building)
Design footprint	Yes	1/5/2024	Project Manager confirmed design footprint by email.
Construction footprint	Yes	1/5/2024	Project Manager confirmed construction footprint and entry to subject site by email.

## 4.2 Environmental planning requirements

This section is intended to fulfil the duty to consider environmental impacts pursuant to Section 5.5 of the EP&A Act 1979:


*“a determining authority in its consideration of an activity shall ... examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of that activity.”*

**Table 4.2: Environmental planning, cultural, and community impact considerations and assessment**

Impact considerations		Relevance to proposal? (Yes/No)	Impact identification and assessment (Direct, indirect and cumulative; consider type, extent, size, duration, importance, level of concern/interest) (Consider construction & operation)	Impact evaluation <sup>1</sup> (Low, medium, high) <sup>2</sup>	Mitigation actions <sup>#</sup> (See notes below)
<b>Environmental and ecological considerations</b>					
1	Does the subject site contain Environmental Protection Zones (as defined under the Tweed LEP 2014)?	No	N/A	N/A	N/A
2	Are works within or adjacent to a national park, nature reserve, Aboriginal area, conservation area, marine park or marine reserve?	No	N/A	N/A	N/A
3	Does the subject site contain Matters of National Environmental Significance (NES) (RAMSAR Wetlands, threatened species, migratory birds, World Heritage, National Heritage, nature reserve etc.) or on Commonwealth land (refer Commonwealth Department of Agriculture, Water and the Environment)?	Yes	Refer to Appendix B for the assessment of the matters of NES.  The grey-headed flying-fox ( <i>Pteropus poliocephalus</i> ) is considered likely to fly over the subject site. It is listed as Vulnerable under the EPBC Act.	Low	A

Impact considerations		Relevance to proposal?	Impact identification and assessment	Impact evaluation <sup>1</sup>	Mitigation actions <sup>#</sup>
4	Will the project impact upon Matters of NES described above?	Yes	The grey-headed flying-fox is considered likely to fly over the subject site. It is not considered likely to be impacted by the works as the disturbance footprint is small-scale in comparison to its home range, the works would be short-term, and the site is [REDACTED]. Currently there are limited resources for foraging within the site. Post-construction, it is expected that once revegetation matures that foraging resources would be greatly improved and, in the future, a positive impact is likely on the grey-headed flying-foxes.	Low	A
5	Are works within or near areas protected by State Environmental Planning Policies (SEPP) for conservation purposes?	No	N/A	N/A	N/A
6	Does the subject site contain NSW endangered or vulnerable species, populations, or ecological communities or their habitats, pursuant to the NSW Biodiversity Conservation Act 2016 (BC Act) or the Fisheries Management Act 1994 (FM Act)?	Yes	The eastern osprey ( <i>Pandion cristatus</i> ) and grey-headed flying-fox ( <i>Pteropus poliocephalus</i> ) are considered likely to fly over the subject site.  Both species are listed as Vulnerable under the BC Act.	Low	A
7	Will the project impact upon NSW endangered or vulnerable species, populations, or ecological communities or their habitats, pursuant to the NSW BC Act or the FM Act?	Yes	The eastern osprey is considered likely to fly over the subject site. It is not considered likely to be impacted by the works as the disturbance footprint is small-scale in comparison to its home range, the works would be short-term, and the site is [REDACTED]. The proposed works are not likely to significantly impact this species during or post-construction.  The grey-headed flying-fox is considered likely to fly over the subject site. It is not considered likely to be impacted by the works as the disturbance footprint is small-scale in comparison to its home range, the works would be short-term, and the site is [REDACTED]. Currently there are limited resources for foraging within the site. Post-construction, it is expected that once revegetation matures that foraging resources would be greatly improved and, in the future, a positive impact is likely on the grey-headed flying-foxes.	Low	A
8	Does the subject site contain, or is the site adjacent to a flying-fox colony?	No	[REDACTED] and is sufficiently removed. Impacts on the colony or their feeding habitat are not expected.	N/A	N/A



Impact considerations		Relevance to proposal?	Impact identification and assessment	Impact evaluation <sup>1</sup>	Mitigation actions <sup>#</sup>
16	Working within a Crown Land waterway, Coastal Reserve, or other Crown Land reserve?	No	Al though the Tweed River is a Crown waterway, the area of waterway bank and bed where works are proposed are located within freehold land. Therefore Crown land licences are not required to undertake the proposed works.	N/A	N/A
<b>Historic archaeological heritage considerations</b>					
17	Are works within the 'place' of a 'Heritage Item' identified on the Register of the National Estate, under the NSW <i>Heritage Act 1977</i> or an environmental planning instrument (refer Commonwealth and State Heritage Registers, Schedules of the Tweed Local Environmental Plan 2014 (TLEP))?	No	The subject site does not have any State or local significant heritage items mapped as occurring. The Tweed River adjacent to the subject site, is however mapped as the Condong Mill Conservation Area (C1 in Schedule 5 of <i>Tweed Local Environmental Plan 2014</i> (TLEP)). The proposed works would not enter nor impact the conservation area.	N/A	N/A
18	Are works within or adjacent to a mapped predictive or known location of Aboriginal Cultural Heritage (ACH) identified in the Aboriginal Cultural Heritage Management Plan (ACHMP) 2018? Is it located in or near a declared site or place identified by the Aboriginal Heritage Information Systems (AHIMS) Web Services?	Yes	 Works can proceed with caution. Refer to section 4.5 and Appendix D for further information.	Low	A
<b>Community considerations</b>					
19	In regards to specified development described in Division 1 of the SEPP Transport and Infrastructure, is consultation required with other public authorities?	No	N/A	N/A	N/A
20	Will the project involve generating, handling, storing,	No	N/A	N/A	A

Impact considerations		Relevance to proposal?	Impact identification and assessment	Impact evaluation <sup>1</sup>	Mitigation actions <sup>#</sup>
	transporting or disposing of special (e.g. asbestos, clinical, tyres), liquid, hazardous (batteries, coal tar, lead paint waste etc.), or restricted solid waste (e.g. contaminated soil etc.), dangerous goods, or controlled chemicals?				
21	Involve discharging anything to a waterway or stormwater drain?	Yes	Runoff from the subject site during construction is expected to enter the Tweed River. Mitigation measures including erosion and sediment controls would be implemented throughout construction. Maintenance of these controls would be undertaken periodically and after weather events to reduce impacts on the local waterway systems. Without these controls it is expected that a medium impact would occur on these waterways due to sediment entering the system. These controls reduce the sediment entering the waterways and therefore a low impact is expected during construction. Post-construction, all disturbed surfaces would be stabilised and controls would be removed. It is expected that there would be no impacts on waterways post-construction.	Low	A
22	Disturb subsurface or above ground utilities – Country Energy, Telstra, local council water and sewer?	No	N/A	N/A	N/A
23	Works requiring interception of a ground aquifer (i.e. dewatering)?	No	N/A	N/A	N/A
24	Works that intercept acid sulfate soils (ASS) or potential acid sulfate soils (PASS)?	Yes	The subject site is mapped as being within a Class 4 ASS area. The Tweed River in the study area is mapped as Class 1 (the waterway). Given the shallow nature of the works and the limited earthworks proposed, the proposal is unlikely to impact upon ASS. Refer to Section 4.2 for additional information regarding ASS.	Low	A
25	Works involving noise generating activities such as pile drivers, hydraulic hammers, machine-mounted rock breakers, generators or similar equipment in an urban area?	Yes	Works would inherently result in the increase of noise at the site. Mitigation measures are proposed to minimise the potential impacts associated with construction works. Given the temporary nature of the works and the limited number of sensitive receivers adjoining the site, the potential impacts would be minimal.	Low	A

Impact considerations		Relevance to proposal?	Impact identification and assessment	Impact evaluation <sup>1</sup>	Mitigation actions <sup>#</sup>
26	Is it expected that traffic volumes would be similar to the most recent traffic counts? Is it expected that the proposed works would impact traffic?	Yes	<p>The proposed works occurs within private property bordering the Tweed River. Access is via Tumbulgum Road. The road reserve of Cane Road borders the southern extent of the disturbance footprint.</p> <p>Tumbulgum Road is identified as a local access road, and services rural properties. No traffic counts have been completed for this section of Tumbulgum Road.</p> <p>It is expected that traffic volumes would be low and only servicing properties off of Tumbulgum Road. Proposed works are located within private property, therefore it is not expected that any impacts to traffic would be experienced during construction.</p>	Low	A
27	Community consultation or engagement		Community engagement would occur prior to works being undertaken and would be in line with the Community Engagement and Participation Plan 2019–2024.		
<b>Will works occur in other sensitive or constrained areas as outlined below?</b>					
28	Working on a classified road including freeway, highway, main road, tourist road etc.?	No	N/A	N/A	N/A
29	Using flames during a total fire ban or working within bushfire protected lands?	No	N/A	N/A	N/A
30	Areas or items of high architectural, historical, environmental protection or scientific value?	No	N/A	N/A	N/A
31	Coastline and dune fields, caves, wetlands (not state significant) or other unique landforms?	Yes	The proposed works are located on the banks of the Tweed River. The Tweed River is the main waterway for the Tweed shire. The proposed works are likely to improve the water quality by reducing erosion and sedimentation caused by fluvial action and flooding. Terrestrial and aquatic habitats are also expected to improve through the construction of fish habitat features and revegetation on the river bank.	Low (improvement)	A
32	Areas or items of high scenic value?	Yes	The subject site is located between sugar cane cropping land and the Tweed River. The Draft Scenic Landscape Strategy has the subject site mapped as within the Sugar Cane and the Rivers and Creeks landscape character units. The subject site is also mapped as having low visibility. The subject site is visible from people using the Tweed River and from	Low	A

Impact considerations		Relevance to proposal?	Impact identification and assessment	Impact evaluation <sup>1</sup>	Mitigation actions <sup>#</sup>
			<p>vehicles crossing the Cane Road bridge. Few waterfront residential properties at Condong would also have views of the subject site.</p> <p>It is expected that post-construction and once the revegetation has matured that scenic quality would improve with the presence of native flora and fauna utilising the area.</p>		
33	Recreational areas (beaches, foreshores, parks, picnic areas, lookouts, national features, tourist areas, tourist roads/routes etc.)?	Yes	The Tweed River is used for recreational purposes, for both powered and non-powered watercraft and for fishing. The proposed works would not impact the use of the waterway for recreational purposes.	Low	A
34	Erosion prone areas?	Yes	The river banks have been subjected to historical clearing. Rain, floods and boat wash have all contributed to erosion of the banks over time. Vegetation on the banks is primarily exotic weeds and do not provide enough stabilisation to withstand flooding and boat wash. The proposed works to stabilise the bank with rock revetment then revegetation allows for immediate stabilisation through rock revetment and long-term stabilisation through vegetation once mature.	Low (improvement)	A
35	Bush regeneration areas, dune regeneration areas etc.?	No	N/A	N/A	N/A
36	Areas of high bushfire risk?	No	N/A	N/A	N/A
37	Weeds?	Yes	The subject site currently is overgrown with environmental weeds. The proposed works would not spread weeds and would improve the habitat through revegetation of native species.	Low	A
38	Urban bushland or remnant roadside vegetation?	No	N/A	N/A	N/A
39	Major pedestrian routes (e.g. foreshore walks, around sporting venues etc.)?	No	N/A	N/A	N/A
40	Schools, childcare centres, playgrounds etc.?	No	N/A	N/A	N/A
41	Works on private land?	Yes	The proposed works are entirely within private land. Land consent from the property owner would be sought prior to works being undertaken.	Low	A



<sup>1</sup> For further guidance on evaluating impacts, refer to Attachment A, Department of Planning and Environment, Guidelines for Division 5.1 assessments, June 2022.

<sup>2</sup> See the Terms of Reference for the Assessment section of this REF for explanation of low and high adverse impacts (pg 3).

#MITIGATION ACTIONS – the following actions are required as part of completing Table 4.1:

- A: Include specific environmental safeguards if required within Section 10.0 to avoid, minimise or mitigate impacts of the project.
- B: Attach a copy of the relevant approval, licence, permit or record of correspondence.
- C: If the subject site contains Matters of National Environmental Significance, and works are not considered to impact upon these species, populations, or ecological communities, then complete the Matters of NES template and append to this application. If impacts are likely, a separate referral is required to the Commonwealth Department of Agriculture, Water and the Environment (AWE) and the project is not eligible to be lodged as an REF (Type A Project) template format. Refer to Part C, Section 5 for guidance on preparing an REF (Type B Project) template assessment.
- D: If works are within the SEPP Resilience and Hazards area, and the Action Type is N/A, then comments or further assessment must be appended providing justification. There is no requirement to address matters within the SEPP Resilience and Hazards for activities under Part 5 of the EP&A Act unless required under the SEPP Transport and Infrastructure. Similarly, there are no requirements to undertake a SEPP Biodiversity and Conservation Koala assessment report for activities under Part 5 of the EP&A Act, however, clearing of koala feed trees within the Tweed Coast Comprehensive Koala Plan of Management area must be justified in accordance with Clause 5.4 of that plan.
- E: A referral to the relevant authority is required under the SEPP Transport and Infrastructure and a period of 21 days allowed for response. All responses are to be considered and included in this assessment.
- F: Undertake relevant database searches as described in Part C, Section 3.2, Section 5.0 and as identified within relevant Activity Specific Procedures in Part D of the Procedure.
- G: If the subject site contains NSW endangered or vulnerable species, populations, or ecological communities or their habitats, pursuant to the BC Act or the FM Act, but these species or populations will not use on-site habitats on occasion, or will not be influenced by off-site impacts of the proposal as per the NSW Office of Environment and Heritage (OEH) Threatened Species Test of Significance Guidelines (OEH, 2018), then the project can proceed with caution subject to standard environmental safeguards in Section 10.0.
- H: If the subject site contains NSW endangered and vulnerable species, populations, or ecological communities or their habitats, pursuant to the BC Act or the BC Act and the works are not considered to impact significantly upon these (refer to the NSW OEH Threatened Species Test of Significance Guidelines), then details must be appended providing justification. If impacts are likely and non-standard biodiversity mitigation measures are required to offset these impacts, the project is not eligible to be lodged as an REF (Type A Projects) template assessment and an REF (Type B Projects) template assessment must be used. Refer to Part C, Section 5.0, Table C5 of the Procedure for further guidance on REF template selection and to the Activity Specific Procedure – Biodiversity assessment and mitigation for guidance on offsetting approaches and requirements.
- I: Councils are exempt from Controlled Activity Approvals under the Water Management Act 2000 (WM Act).
- J: Geotechnical investigations would be undertaken prior to the commencement of works to determine the depth of groundwater and the presence of ASS. Should investigations identify that ASS would be impacted during construction, then an ASS management plan would be prepared prior to the commencement of works. Additionally, should investigations identify that groundwater is likely to be intercepted, then a dewatering management plan would be prepared prior to the commencement of works. Refer to the relevant Activity Specific Procedures in Part D of the Procedure for further guidance.
- K: A biosecurity matter and a biosecurity impact are described in Section 10 and Section 13 of the Biosecurity Act 2015. Refer to Schedule 3 of the Biosecurity Regulation and the North Coast Regional Weed Strategic Management Plan 2017 for further information on priority weeds and their management.

## 4.3 Species Impact Statements (SIS) and Biodiversity Development Assessment Report (BDAR) requirements

Section 7.8 of the BC Act states that a proposal that is regarded as an activity that significantly affects terrestrial threatened species and ecological communities, or their habitats, is taken to also significantly affect the environment.

Section 221ZX of the FM Act states that an activity is likely to significantly affect the environment if aquatic threatened species, populations or ecological communities will be affected according to the test in section 220ZZ of the FM Act.

**Table 4.3: Requirements of significant impacts**

Significant impacts	Test to identify significant impact	Significant impacts likely for this proposal?	Required outcome of tests	Required for this activity? (N/A, REF, SIS, BDAR)
Will there be significant impacts on terrestrial threatened species, ecological communities or their habitats?	<ul style="list-style-type: none"> <li>• Test of significance Section 7.3 of BC Act.</li> </ul>	No (Refer to Appendix C)	No = REF Yes = REF & SIS or REF & BDAR  If proponent elects to provide BDAR in place of SIS, then needs to consider whether proposed activity would exceed the biodiversity offset scheme threshold.	REF
Will there be significant impacts on aquatic threatened species, populations or ecological communities?	<ul style="list-style-type: none"> <li>• Test in Section 220ZZ of FM Act.</li> </ul>	No (Refer to Appendix C)	No = REF Yes = REF & SIS	REF
Will there be significant impacts on both terrestrial and aquatic threatened species, populations and/or ecological communities?	<ul style="list-style-type: none"> <li>• Test of significance Section 7.3 of BC Act and</li> <li>• Test in Section 220ZZ of FM Act.</li> </ul>	No (Refer to Appendix C)	No = REF Yes = REF & SIS & BDAR	REF

## 4.4 Tweed Shire Council's Contaminated Land Policy Assessment

**Table 4.4: Response to TSC's Contaminated Land Assessment (V1.1) items of consideration**

Item	Consideration	Response
1	Please specify all land uses to which the site has been put, including the current use.	<p>A review of available historical aerial photography from 1961 to 2024 indicates that the subject area has predominantly been utilised as a primary producing area for sugar cane. In the 1962 historical photo, the subject site appears to be cleared of native trees with very few present on the riparian edge. Sugar cane cropping was present within metres of the riverbank and the farmhouse was present in the northern end of the site. The Condong Sugar Mill was present on the eastern side of the river and residential houses were present throughout Condong. The surrounding area was predominantly cleared and sugar cane cropping present.</p> <p>A comparison of the 1970 aerial photo compared to the 1961 image indicates that one major development occurred and that was the Cane Road bridge that crosses the Tweed River, allowing for easier vehicle access from Tyngah to Condong. Further comparisons of the historical imagery shows that the subject site and surrounding area has not changed significantly from 1970.</p> <p>Refer to Figures 5 to 11 in Section 11.</p>
2	Is the proponent aware of uses to which properties adjoining the site have been put? If so, please specify.	Yes. Adjacent properties have also been used for sugar cane cropping from the 1960s evident from the historical aerial imagery and likely prior to also.
3	Do any of the uses correlate with the potentially contaminating activities from current or historical land use? Refer to Table 1 in Schedule 1 of the Contaminated Land Policy for	<p>Yes. Agricultural land use is apparent for sugar cane cropping. Knowledge of what the site was used for prior to 1961 is unknown. It is expected that chemical use has been used within the subject site including but not limited to herbicides, pesticides and fertilisers.</p> <p>No sheds, yards or structures are visible in the sequence of historical aerial photos from 1961 through to 2024. Cultivation of the soil has been undertaken for sugar cane production since at least 1961 disturbing soils.</p>

Item	Consideration	Response
	potential contaminants of concern.	The closest cattle dip site (the Tyngalah Dip) is located approximately 280 m north from the works footprint, and is removed from the subject site.
4	If the answer to 3 is yes - has there been any testing or assessment of the site and, if so, what were the results?	No testing has been undertaken of the site.  A site walkover has been undertaken to identify and assess any evidence of historical or recent surface contamination at the site such as chemical drums, odours, discoloured patches of earth etc. This investigation did not identify any such evidence within or adjacent to the proposed alignment.
5	Is the proponent aware of any contamination on the site?	No.
6	What remediation work, if any (carried out voluntarily or ordered by a government agency), has been taken in respect to contamination which is or may have been present on the site?	Nil, proceed with caution.  Works would cease immediately if any potential source of contamination (e.g. soil discolouration, odours or asbestos material) is uncovered during construction. In such instances, further site investigations would be undertaken to determine if additional investigations or remediation in accordance with a council approved Remediation Action Plan would be required.

Refer to the following document for further information: Tweed Shire Council Contaminated Land Policy Version 1.1, November 2007.

**TABLE NOTES:**

- A: Refer to the Activity Specific Procedure – Preliminary contaminated land use assessments in Part D of the Procedure for further guidance.
- B: In the event that contamination is suspected, chemical testing should be undertaken and a contamination assessment report appended to confirm that contaminated lands are not present and /or would not be impacted by the proposal.
- C: Under section 60 of the Contaminated Land Management Act 1997, a person whose activities have contaminated land or a landowner whose land has been contaminated is required to notify NSW Environment Protection Authority (EPA) when they become aware of the contamination.

## 4.5 Preliminary acid sulfate soils assessment

**Table 4.5: Preliminary acid sulfate soils assessment**

Item	Consideration	Response
1	Is the project site located within a known mapped ASS constraint area as per Table 4.4 of classes below? If yes, please specify. If no, further assessment for ASS is NOT required.	Yes. The 1:25000 ASS Planning maps indicate that the subject site occurs within a Class 4 mapped area.  The proposed works are not expected to be greater than 2 m below the natural ground surface nor are they expected to lower the water table.
2	Will the projects maximum depth of excavation impact the identified ASS class? Please specify.	No.  The proposed works involves the installation of rock revetment, where embedment of the rock would be gently pushed into the substrate and no excavation would be required. Shallow excavations for the planting of native species would occur throughout the alignment in the mapped Class 4 ASS area.  Based on the current scope of works which proposed a maximum depth of excavation of <1 m below ground level, it is unlikely that ASS would be intercepted.
3	Has soil sampling and analysis been carried out to determine if an Acid Sulfate Soils Management Plan (ASSMP) is required? Please specify.	N/A
4	Based on the above items is an ASSMP required? Please specify.	In consideration of the proposed depth of excavations an ASSMP is not required.

Refer to the following documents for further information: TSC Acid Sulfate Soil Management Plan for Minor Works and Acid Sulfate Soil Manual (published by the Acid Sulfate Soil Management Advisory Committee (ASSMAC) 1998).

**TABLE NOTES:**

- A: Refer to the Activity Specific Procedure – Preliminary contaminated land use assessments in Part D of the Procedure for further guidance.
- B: In the event that ASS is suspected, chemical testing should be undertaken and an assessment report appended to confirm that ASS lands are not present and /or would not be impacted by the proposal and therefore requiring an ASSMP.
- C: Under Part 7 Additional Local Provisions, Clause 7.1 ASS of the TLEP (2014), a person must not, without development consent, carry out works on land shown as being Class 1, 2, 3, 4 or 5 land on the series of maps held in the office of the Council and marked “Acid Sulfate Soils Map”, being the works specified for the class of land.

**Table 4.6: Classes of ASS as per ASS Maps (TLEP 2014)**

Class of land	Specified works
1	<ul style="list-style-type: none"><li>Any works.</li></ul>
2	<ul style="list-style-type: none"><li>Works below the natural ground surface.</li><li>Works by which the water table is likely to be lowered.</li></ul>
3	<ul style="list-style-type: none"><li>Works more than 1 metre below the natural ground surface.</li><li>Works by which the water table is likely to be lowered more than 1 metre below the natural ground surface.</li></ul>
4	<ul style="list-style-type: none"><li>Works more than 2 metres below the natural ground surface.</li><li>Works by which the water table is likely to be lowered more than 2 metres below the natural ground surface.</li></ul>
5	<ul style="list-style-type: none"><li>Works within 500 metres of Class 1, 2, 3 or 4 land that is below 5 metres Australian Height Datum and by which the water table is likely to be lowered below 1 metre Australian Height Datum on adjacent Class 1, 2, 3 or 4 land.</li></ul>

## 4.6 Aboriginal cultural heritage preliminary assessment

As explained within the Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales (DECC&W, 2010), the NSW Aboriginal cultural heritage due diligence assessment is a code of practice developed to assist individuals and organisations to exercise due diligence when carrying out activities that may harm Aboriginal objects and to determine whether they should apply for consent in the form of an Aboriginal Heritage Impact Permit (AHIP). The *National Parks and Wildlife Act 1974* (NPW Act) provides that a person who exercises due diligence is determining that their actions will not harm Aboriginal objects and has a defence against prosecution for the strict liability offence if they later unknowingly harm an object without an AHIP.

Tweed Shire Council has developed a Preliminary Aboriginal Cultural Heritage Assessment (PACHA) to ensure Council infrastructure projects minimise the risk of harm to Aboriginal places and objects of cultural heritage significance. The objective is to identify those projects with a significant risk of harm to Aboriginal cultural heritage and conversely, those projects for which the risk of harm is low. Projects determined to have a high risk of harm to ACH require a more detailed assessment in the form of an Aboriginal Cultural Heritage Assessment Report (ACHAR) and potentially an Aboriginal Heritage Impact Permit (AHIP). Those determined to have a low risk of harm to ACH may proceed with caution without an ACHAR or AHIP.

A PACHA is provided in Appendix D. In summary, the PACHA found that harm to Aboriginal places and objects can be avoided and an ACHAR and AHIP is not required.

## 5.0 Clause 171(2) factors

According to clause 171(2) of the Environmental Planning and Assessment Regulation 2021 (EP&A Regulation 2021), Council must take into account the following factors when consideration is being given to the likely impact of the activity on the environment.

**Table 5.1: Clause 171(2) assessment conditions**

<i>Matters for consideration</i>	<i>Likely impact (nil/positive/negative)</i>
<i>a Any environmental impact on a community</i>	The assessment of this REF has demonstrated that there would be minimal environmental impact on the community.
<i>b Any transformation of a locality</i>	The proposed activity would result in a temporary transformation of the locality during construction in association with construction machinery, equipment and materials. Following construction, the locality would be reflective of the current situation.
<i>c Any environmental impact on the ecosystems of the locality</i>	The environmental impact on local ecosystems is expected to be minimal based on the minor scope of works and short duration of construction works. However, positive impacts are expected in the longer term with maturing of revegetation.
<i>d Any reduction of the aesthetic, recreational, scientific or other environmental quality or value of a locality</i>	There would be a minor reduction in the aesthetic value of the locality due to the temporary presence of construction works and associated plant and control measures. Over time it is expected that environmental quality, aesthetic and scenic value would improve over time due to the revegetation of native flora species.
<i>e Any effect on a locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or other special value for present or future generations</i>	The proposed activity is not expected to negatively impact on any locality, place or building having aesthetic, anthropological, archaeological, architectural, or historic value. Long-term, the revegetation and increase in canopy cover and riparian vegetation is likely to have a beneficial impact on scenic quality.
<i>f Any impact on the habitat of protected animals (within the meaning of the Biodiversity Conservation Act 2016)</i>	The site is disturbed from past and current land uses. The site has minimal habitat value for fauna. Accordingly, the proposal would not have a significant impact on habitat of protected fauna species.
<i>g Any endangering of any species of animal, plant or other form of life,</i>	The site is disturbed from past and current land uses. The site has minimal habitat value for fauna. Accordingly, the proposal

<i>Matters for consideration</i>	<i>Likely impact</i>
<i>whether living on land, in water or in the air</i>	would not have a significant impact on habitat relied upon by threatened, endangered or vulnerable species.
<i>h Any long-term effects on the environment</i>	<p>Mitigation measures listed in Section 10 of this REF would be implemented during construction to ensure that there are no long-term effects on the environment.</p> <p>The proposed riverbank erosion stabilisation includes the use of vegetation and a bio-engineered design that maximises ecological and amenity values and is a key environmental sustainability principle of the Tweed Shire Council Draft Environmental Sustainability Prioritisation Strategy – Council operations and environmental programs 2015–2020. Improving ecosystem health is a key priority identified in the Tweed Shire Council Climate Change Management Policy 2020. The proposed works of stabilising the waterway bank and reducing sedimentation into the waterway will work to improve the surrounding ecosystem health.</p>
<i>i Any degradation of the quality of the environment</i>	Construction works would likely result in some minor short-term impacts on the environment. Mitigation measures as listed in Section 10 of this REF would ensure that these impacts do not degrade the quality of the environment in the longer term.
<i>j Any risk to the safety of the environment</i>	The proposed activity would have minimal risk to the safety of the environment. A range of risk management measures would be utilised during construction which are summarised in Section 10 of this REF.
<i>k Any reduction in the range of beneficial uses of the environment</i>	The proposed activity would not reduce the overall range of beneficial uses of the environment.
<i>l Any pollution of the environment</i>	Mitigation measures as listed in Section 10 of this REF would minimise the risk of pollution to the environment during works.
<i>m Any environmental problems associated with the disposal of waste</i>	There would be no environmental problems associated with the disposal of waste. There would be only a minor contribution of construction waste to landfill.
<i>n Any increased demands on resources (natural or otherwise) that are, or are likely to become, in short supply</i>	Some demand for additional materials would be generated as part of the proposed development. There would also be a minor contribution to reliance upon non-renewable fuel resources during construction.
<i>o Any cumulative environmental effect with other existing or likely future activities</i>	Construction machinery and plant relies on non-renewable fuel which contributes to atmospheric greenhouse gasses and, subsequently, anthropogenic climate change.



<i>Matters for consideration</i>	<b>Likely impact</b>
	<p>Council's operations generate greenhouse gas emissions primarily from the use of fossil-fuel powered electricity (79% at July 2019), from burning transport fuels across Council's fleet (15% at July 2019) and from nitrous oxide and methane emissions from wastewater treatment plants (6% at July 2019).</p> <p>Although there are currently limited alternative energy sources for Council's plant and machinery, Council's Renewable Energy Action Plan (REAP) have set a target of reducing its greenhouse gas emissions from electricity use by 50% by 2025.</p> <p>Although there is currently a cumulative environmental effect from the generation of greenhouse gas emissions, measures listed within Council's REAP will mitigate long-term effects.</p>
<p><i>p Any impact on coastal processes and coastal hazards, including those under projected climate change conditions</i></p>	<p>The subject site is located outside the coastal hazard zone as per the Tweed Shire Coastal Hazards Assessment completed in November 2013. Therefore, the proposal is unlikely to impact upon coastal processes or hazards.</p>
<p><i>q Any applicable local strategic planning statements, regional strategic plans or district plans made under the Act, Division 3.1</i></p>	<p>The Local Strategic Planning Statement 2020 (LSPS) themes align with 4 goals from the North Coast Regional Plan 2036 (NCRP) being:</p> <ol style="list-style-type: none"> <li>1 Natural environment</li> <li>2 Thriving economy</li> <li>3 Liveable communities</li> <li>4 Diverse housing and lifestyles.</li> </ol> <p>The planning priorities within the LSPS are broadly consistent with the NCRP and the Community Strategic Plan 2017–2027 (CSP) strategic direction.</p> <p>This project incorporates the following planning priorities of the LSPS:</p> <ul style="list-style-type: none"> <li>• Planning priority 1: Protect the Tweed's significant natural environment, resources and landscape qualities, while cultivating sustainable growth and development, which promotes the health and vitality of the community.</li> <li>• Planning priority 2: Promote, protect, conserve and enhance the Tweed's high scenic quality, biological and ecological values for future generations and ecosystem health.</li> <li>• Planning priority 3: Increase resilience and adapt to the impacts of natural hazards and climate change to ensure our future prosperity and wellbeing.</li> <li>• Planning priority 10: Ensure productive agricultural land is protected and sustainably managed while creating</li> </ul>

<i>Matters for consideration</i>	Likely impact
	<p>appropriate, sensitive and diverse economic opportunities through compatible boutique industries, rural living and recreation.</p> <ul style="list-style-type: none"> <li>• Planning priority 12: Foster enhanced partnerships and collaboration with local Aboriginal and Torres Strait Islander communities.</li> <li>• Planning priority 14: Preserve and enhance the distinctive characteristics of our centres, towns and villages that make them special and unique, into the future.</li> </ul> <p>This project incorporates the following goals from the CSP:</p> <ul style="list-style-type: none"> <li>• Goal 1.1: Protect and manage the environment and natural beauty of the Tweed for current and future generations, and ensure that ecologically sustainability and climate change consideration underpin decision making in Council.</li> <li>• Goal 1.2: Protection of people and property by managing the risk of flooding and its impacts on property owners, the environment and the broader community.</li> <li>• Goal 3.2: Provide places for people to live, work, visit, play and enjoy the Tweed.</li> </ul> <p>This project aligns with the Tweed River Bank Erosion Management Plan 2014 Management Aims:</p> <ul style="list-style-type: none"> <li>• Environmental values of the aquatic and riparian environment will be protected and enhanced.</li> <li>• High value public infrastructure and public open space will be protected.</li> <li>• The visual and recreational amenity of the river environment will be protected and enhanced.</li> <li>• Where practical, vulnerable river banks will be managed to increase their resilience to erosion through implantation of bio-engineered approaches that incorporate erosion resistant materials and enhance vegetation growth.</li> </ul> <p>The intent of protecting the visual character of the river environment is also consistent with the object of the Tweed LEP 2014 W2 zoning for the Tweed River (within which the revetment walls are sited), that being:</p> <p><i>Objectives of the zone</i></p> <ul style="list-style-type: none"> <li>• To protect the ecological, scenic and recreation values of recreational waterways.</li> </ul>
<i>r Any other relevant environmental factors</i>	No other relevant factors require consideration.

## 6.0 Publication requirements

According to clause 171(4) of the EP&A Regulation 2021, Council must publish REFs and all relevant information if identified in Table 6.1.

**Table 6.1 Clause 171(4) publication requirements**

Publication requirements <sup>1, 2</sup>	Publication requirement (yes or no)	Published <sup>4</sup> (n/a, TSC website)
A capital investment value of more than \$5 million	No	N/A
An approval or permit for activity that requires approval under:		
<ul style="list-style-type: none"> <li>FM Act sections 144, 200, 205 or 219</li> </ul>	Yes	TSC website
<ul style="list-style-type: none"> <li><i>Heritage Act 1977</i> section 57</li> </ul>	No	N/A
<ul style="list-style-type: none"> <li><i>National Parks and Wildlife Act 1974</i> section 90</li> </ul>	No	N/A
<ul style="list-style-type: none"> <li><i>Protection of the Environment Operations Act 1977</i> sections 47–49 or 122</li> </ul>	No	N/A
If the determining authority considers it to be in the public interest <sup>3</sup>	No	N/A

TABLE NOTES:

- 1 There are allowances for exceptional circumstances where publication is not required; this is at the Planning Secretary's discretion.
- 2 Where certain parts of this REF document is sensitive, such as sensitive cultural information requested to be redacted by Aboriginal parties or cyber security impacts and mitigation measures, in these instances, the REF document content can be redacted where required. The REF document (excluding sensitive information) needs to be available online.
- 3 For further guidance refer to Point 6 in Attachment A of the Department of Planning and Environment, Guidelines for Division 5.1 assessments, June 2022.
- 4 The review must be published before the activity commences; or if publishing the review before the activity commences is not practicable—as soon as practicable, and no later than 1 month, after the activity commences.

## 7.0 Supporting documentation

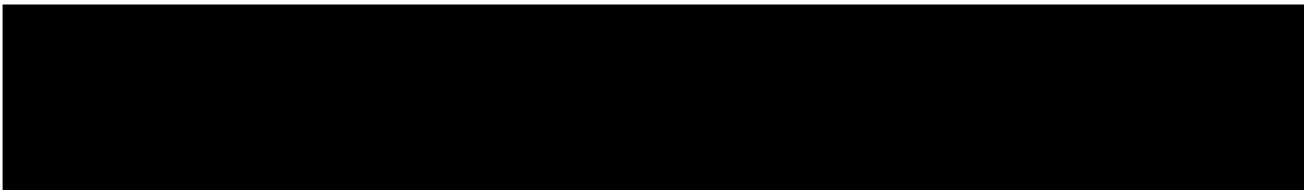
Table 7.1 below provides a summary of additional assessment, management plans, permits, licences and approvals required for the proposed activity.

**Table 7.1: Summary of additional assessments, plans and approvals**

Checklist of additional assessments, management plans, permits, licences or approvals	Required? (yes/no)	Attached? (yes/no)
<b>Data base searches</b>		
NSW Wildlife Atlas Flora and Fauna Records Search	Yes	No – Information on file and incorporated into Appendix C.
Commonwealth Protected Matters Search	Yes	No – Information on file and incorporated into Appendix B.
Aboriginal Heritage Information Management System search (AHIMS)	Yes	No – Information on file
State Heritage Inventory	Yes	No – Information on file
Maritime Heritage Database	No	N/A
<b>Assessments</b>		
Assessment of matter of National Environmental Significance	Yes	Yes. Refer to Appendix B
Contaminated Lands Assessment	No	Due diligence assessment provided in Section 4.2.
Preliminary Flora and Fauna Assessment	Yes	Yes. Refer to Appendix C
<b>Management plans</b>		
Acid Sulfate Soil Management Plan for Minor Works	No	N/A
Project-specific Acid Sulfate Soil Management Plan	No	N/A
Dewatering Management Plan	No	N/A
Landscape Management Plan	No	N/A
Vegetation Management Plan	No	N/A
Waste Management Plan	Yes	Yes. Refer to Appendix E.

Checklist of additional assessments, management plans, permits, licences or approvals	Required? (yes/no)	Attached? (yes/no)
<b>Permits/licences/approvals</b>		
A water access licence (WAL) or water supply works approval under the Water Management Act 2000.	No	N/A
NSW DPI Fisheries Permit	Yes	A NSW DPI Fisheries permit would be sought prior to works being undertaken.
NSW DPI Crown Lands – General or Short-term Licence	No	N/A
<b>Consultation</b>		
NSW Environment, Energy and Science (EES)	No	N/A
Transport for NSW	No	N/A
<b>Publishing requirements</b>		
Sensitive information required to be redacted prior to publishing online	Yes	Prior to works being undertaken this document would be published on the TSC website. Any sensitive information contained within this document would be redacted prior to publishing.

Link to information on file:



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## 8.0 Conclusions

This REF has assessed the proposed activity and any potential impacts. The activity is unlikely to significantly affect the environment, and therefore an EIS is not required.

The activity is unlikely to significantly affect threatened species, populations, ecological communities or their habitats and therefore an SIS and/or BDAR is not required.

## 9.0 Certification and determination

The determination of this REF certifies that the Project client confirms:

- the REF provides an accurate description of the project scope of works
- the mitigation measures proposed within the REF are budgeted for and forms part of the final scope of works.

The determination of this REF certifies that the Project Manager confirms:

- they have reviewed the design and construction footprint as assessed within this REF
- the mitigation measures proposed within the REF will be implemented as described during construction and operation of the works
- any changes to the project scope of works or disturbance footprint will be communicated to Council's Engineering Division Environmental Scientist, for further assessment (if required).

**Table 9.1: Certification by Environmental Scientist preparing the assessment**

Certification (person preparing the assessment)	
I certify to the best of my knowledge that:	
<ul style="list-style-type: none"> <li>a. this REF provides a true and fair review of the proposed activity in relation to its likely effects on the environment. It assesses to the fullest extent possible all matters affecting or likely to affect the environment as a result of the proposed activity</li> <li>b. this REF has established that the activity is not likely to significantly affect the environment and an Environmental Impact Statement is not required</li> <li>c. the REF has concluded that there will be no significant impacts on matters of national environmental significance or any impacts on Commonwealth land</li> <li>d. the proposal should proceed subject to the implementation of all environmental safeguards and management actions identified in the REF and compliance with all other relevant statutory approvals, licenses, permits and authorisations.</li> </ul>	
<p>Note 1: Projects with unacceptable impacts are recommended not to proceed (with reasons stated) or be subject to further investigation and assessment in accordance with an Environmental Impact Statement process.</p>	
<p>Note 2: The imposition of environmental safeguards and management actions identified in the REF are to minimise any adverse impact the activity may cause and to give effect to the objectives of Part 5 of the <i>Environmental Planning and Assessment Act, 1979</i>.</p>	
Name	
Signature	
Position	Environmental Scientist
Date	13/5/2024

**Table 9.2: Review and final determination under delegated authority**

<b>Review and final determination</b> (person with delegated authority to review and determine the assessment)	
I certify: <ul style="list-style-type: none"> <li>• to the best of my knowledge that based on the completed REF and my knowledge of the project, the assessment has been adequately completed, and the conclusion as to the likely environmental impact of the project is reasonable and the project can proceed subject to the relevant management measures and environmental safeguards and other relevant authorities described within the REF.</li> <li>• that I have reviewed and endorsed the contents of this REF document and, to the best of my knowledge, it is in accordance with the EP&amp;A Regulation and the Guidelines approved under clause 170 of the EP&amp;A Regulation, and the information it contains is neither false nor misleading.</li> </ul>	
Name	
Signature	
Position	Acting Senior Planning Applications Officer
Date	15/05/2024



## 10.0 Project mitigation measures

**Table 10.1: Project mitigation measures**

General and/or non-standard mitigation measures	Code
The activity is to be completed in general accordance with the Review of Environmental Factors.	GNS1
All work associated with this activity is to be carried out so as not to cause a nuisance to residents in the locality from noise, water or air pollution.	GNS2
All construction and/or demolition site work including the entering and leaving of vehicles is limited to the following hours, unless otherwise permitted by Council: <ul style="list-style-type: none"> <li>Monday to Saturday from 7 am to 6 pm</li> <li>No work to be carried out on Sundays or Public Holidays.</li> </ul>	GNS3
Written notice shall be given to any affected residences at least two weeks prior to any works commencing.	GNS4
All construction personnel working at the site would be inducted prior to commencement of works.	GNS5
A site specific erosion and sediment control plan would be prepared prior to works commencing.	GNS7
All required erosion and sediment control works would be installed and maintained in accordance with the Sediment and Erosion Control Plan and in accordance with the Blue Book – <i>Managing Urban Stormwater – Soils and Construction</i> .	GNS8
Prior to construction (minimum of 6 weeks), the Project Manager would liaise with the Communications Unit to identify the required community engagement or consultation required to be undertaken.	GNS10
All community engagement or consultation would be in line with the Community Engagement and Participation Plan 2019–2024.	GNS11
Native flora species present on the riverbank would be retained and protected during works.	GNS11-CRR-1
Revegetation of native species would be completed in the area between sugar cane cropping and riverbank revetment, approximately 10 m wide and 500 m long. Refer to Figure 5.	GNS11-CRR-2
Occasional trees would be planted (minimum of 4), established and maintained in the area between the house mown area and the riverbank revetment (approximately 100 m long), within 5 m of the crest of the rock revetment wall. The trees may be sited to suit the property owner, however must have a minimum distance of 5 m between stems. Species must be chosen from the below list (or alternatively approved by Council):	GNS11-CRR-3

General and/or non-standard mitigation measures	Code
<p><i>Waterhousea floribunda</i> – Weeping myrtle  <i>Callistemon viminalis</i> – Weeping bottlebrush  <i>Acmena smithii</i> – Lilly pilly  <i>Araucaria cunninghamii</i> – Hoop pine  <i>Melicope elleryana</i> – Pink euodia  <i>Grevillea robusta</i> – Silky oak  <i>Melaleuca quinquenervia</i> – Broad-leaved paperbark  <i>Flindersia schottiana</i> – Cudgerie  <i>Elaeocarpus grandis</i> – Blue quandong  <i>Brachychiton acerifolius</i> – Flame tree  <i>Hymenosporum flavum</i> – Native frangipani  <i>Backhousia citriodora</i> – Lemon myrtle</p> <p>Refer to Figure 5.</p>	

Flora and fauna	Code
<b>Pre-construction</b>	
Vegetation that is to be retained, including high conservation zones, is to be clearly identified and delineated from the construction footprint. High-visibility temporary fencing (e.g. scrim or flicker tape) identifying no-go zones is to be installed prior to the commencement of construction works.	F&F1
Where construction works or movement of materials are considered likely to damage trees (trunks, branches or roots), precautionary measures including trunk and branch protection in line with Section 4 of AS4970-2009 would be installed.	F&F2
A pre-clearing site walkover would be undertaken by a suitably qualified Ecologist/Environmental Scientist to survey for any threatened species present within the disturbance footprint which may have been overlooked during previous surveys or established since surveys were undertaken. Pre-clearing surveys would target those threatened species short-listed as most likely to occur on site.	F&F3
In the event that threatened fauna species are identified within the disturbance footprint, construction would avoid disturbance of the individuals and, if necessary, the individuals would be relocated by experienced wildlife handlers.	F&F4
If nests and/or eggs of threatened species are identified within the disturbance footprint, the construction works would be postponed until the eggs are hatched and the hatchlings have dispersed on their own accord or an experienced wildlife handler has safely relocated them.	F&F5
Logs and large branches with hollows are to be identified and their relocation away from disturbance planned prior to the commencement of site activities.	F&F6

Flora and fauna	Code
All machinery used on site is to be clean – i.e. tracks, vehicle tyres, buckets and attachments are to be visibly free of soil and plant material to minimise the risk of introduction and spread of weed propagules.	F&F9
<b>During construction</b>	
No construction materials, stockpiles, or construction equipment including heavy vehicles and machinery shall be located or parked within the drip line of trees adjacent the project.	F&F11
All works in regards to the management of vegetation (pruning of roots or branches or removal of identified trees) would be supervised by a suitably qualified arborist.	F&F12
Remove all waste containing weeds and seeds from the site and dispose of so that the spread of weeds is minimised.	F&F18
When controlling weeds, refer to measures stipulated by the <i>New South Wales Weed Control Handbook – A guide to weed control in non-crop, aquatic and bushland situations</i> .	F&F19
If aquatic snags are present within the disturbance footprint at the time of construction, they require relocation in accordance with the following guidelines: <ul style="list-style-type: none"> <li>• Snags are to be realigned and/or relocated to a zone of low velocity and at an angle of 20° to 40° to the bank facing downstream. The location is to be determined in consultation with the Project Environmental Scientist.</li> <li>• Snags with rootballs are to be aligned so that the root-ball is against the bank and at the upstream end.</li> </ul>	F&F20
<b>Post-construction</b>	
Areas which are disturbed during construction and not permanently transformed are to be revegetated.	F&F22

Erosion and sediment control	Code
<b>Pre-construction</b>	
All required erosion and sediment controls would be in place prior to the commencement of work and maintained until all works are completed.	ESC1
<b>During construction</b>	
Where practicable, construction works would be staged to minimise the area of disturbance at any one time.	ESC2
Works would be stopped if unsuitable weather conditions are predicted, such as during and after heavy rain.	ESC4

<b>Erosion and sediment control</b>	<b>Code</b>
The condition of sediment control structures would be monitored and maintained in proper working order throughout the time they are in place. They would be kept clear of debris at all times and cleared of sediment if filled >50% capacity.	ESC5
Stockpile sites would be located in existing cleared areas away from drains and surface water flows and protected with an upslope diversion bund and down slope sediment fencing (if required).	ESC6
'Clean' run-on water would be diverted around the disturbance area.	ESC7
Construction plant should be floated on-site using established access roads/tracks or areas previously cleared of vegetation.	ESC8
In the event that significant tracking of mud and soil occurs on adjacent roads, cleaning of the road will be undertaken as soon as practically possible.	ESC10
<b>Post-construction</b>	
Following completion of construction works, the site would be cleared of all debris, waste soil and foreign matter.	ESC11
All disturbed surfaces would be reinstated and stabilised as soon as possible after completion using turf and/or grass seed.	ESC12
All temporary erosion and sediment control structures would be removed once the site is stabilised.	ESC13

<b>Water quality management</b>	<b>Code</b>
<b>During construction</b>	
In-stream sediment fences are to be provided at all work sites where riparian or in-stream works are to be undertaken and sediment is to be mobilised with a potential endpoint within the waterway.	WQ1
In-stream sediment fences are to remain in place throughout the duration of works.	WQ2
In-stream sediment fencing is to cover the entire depth of the water column and is to be weighted or installed in a manner such that the bottom of the sediment fence is flush with the riverbed directly downstream of the area of works.	WQ3
In-stream sediment fencing is not to cover the full width of the stream in order to allow for fish passage.	WQ4
In-stream sediment fencing is to surround the work footprint and be installed as close as possible to the work area.	WQ5

Water quality management	Code
In-stream sediment fencing is to consist of geofabric of suitable mesh size such that the smallest anticipated sediments will be trapped within the mesh.	WQ6
In-stream sediment fences can either be supported on a floating boom or staked in place with star pickets or similar. Floating booms are appropriate in deeper channels and/or in slow moving streams. Stakes are more appropriate in shallow streams and/or where increased velocity is experienced.	WQ7
The condition of sediment control structures would be monitored and maintained in proper working order throughout the time they are in place. They would be kept clear of debris at all times and cleared of sediment if filled >50% capacity.	WQ8
There is to be no release of dirty water into drainage lines and/or waterways.	WQ9
Visual monitoring of local water quality (i.e. turbidity, hydrocarbon spills/slicks) is to be undertaken on a regular basis to identify any potential spills or deficient erosion and sediment controls.	WQ10
Water quality control measures are to be used to prevent any materials (e.g. concrete, grout, sediment etc.) entering drain inlets or waterways.	WQ11
All materials including paints, coatings and fuels used when working over a waterway are to be appropriately contained and hand held tools tethered correctly.	WQ12
During construction, sediment from silt curtains will be regularly cleared, and weather forecasts will be monitored to reduce the potential for sediment release during flood events.	WQ17
To minimise the risk of water pollution and disturbance to the streambed substrate, machinery is not to enter or work from the waterway without prior written approval.	WQ18
To avoid fines, clay and other sediments unnecessarily entering the waterway, only clean rock is to be used for construction works within the waterway.	WQ19

Acid sulfate soil management		Code
<b>During construction</b>		
<p>In the event that acid sulfate soils are expected to have been excavated stockpiles should be immediately banded and the soil material returned to excavation points and backfilled within 12 hours. Should acid sulfate soils require disposal off-site, treatment and management would be required and the site supervisor should organise the implementation of a project acid sulfate soil management plan in consultation with a Council Environmental Scientist.</p> <p>Acid sulfate soils indicators include the following:</p> <ul style="list-style-type: none"> <li>• Jarosite soil horizons including pale yellow mineral deposits within the soil</li> <li>• Iron oxide mottling of soils within excavations</li> <li>• Clear or milky blue-green surface water</li> <li>• Iron stains on water surfaces</li> <li>• Waterlogged soils including unripe muds that are soft, buttery, blue grey or dark greenish grey</li> <li>• Soil pH &lt;4 and/or strong reaction to peroxide.</li> </ul>	ASM5	

Land use and amenity		Code
<b>During construction</b>		
The proposed activity would be managed such that the development footprint is limited to the extent necessary to complete the scope of works.	LUA1	
All plant, equipment, materials and waste would be removed from the site at the completion of works.	LUA2	

Public access		Code
The works alignment would be fenced in nominated locations to restrict public access.	PA2	

Noise and vibration	Code
<b>Pre-construction</b>	
Closely affected residents would be notified accordingly of the works being performed in close proximity and informed of the process for making a complaint. For this project, complaints would be made to the constructor.	N&V1
<b>During construction</b>	
Ensure site workers are aware of the process for receiving complaints and direct complainants to the responsible site supervisor.	N&V2
The operation of plant and equipment would be restricted to standard hours of 7:00 am to 6:00 pm Monday to Saturday. No work would be undertaken on Sunday or public holidays.	N&V3
Trucks and equipment would not arrive or queue outside the site before 7 am Monday to Saturday.	N&V4
Operating periods for particularly noisy activities (i.e. rock breaking/drilling, if required) would be reduced where possible to provide respite periods.	N&V5
Machines/equipment would be turned off when not in use or throttled down to a minimum.	N&V6
Reversing of vehicles would be minimised where possible to alleviate the annoyance of beeping reverse alarms (or less tonal 'broadband' or 'quacker' type alarms would be utilised).	N&V7
<p>All reasonable steps shall be taken to muffle and acoustically baffle all plant and equipment. In the event of complaints from the neighbours, which Council deem to be reasonable, the noise from the construction site is not to exceed the following:</p> <ul style="list-style-type: none"> <li>• Short Term Period – 4 weeks. <ul style="list-style-type: none"> <li>○ LAeq, 15 min noise level measured over a period of not less than 15 minutes when the construction site is in operation, must not exceed the background level by more than 20dB(A) at the boundary of the nearest likely affected residence.</li> </ul> </li> <li>• Long term period – the duration. <ul style="list-style-type: none"> <li>○ LAeq, 15 min noise level measured over a period of not less than 15 minutes when the construction site is in operation, must not exceed the background level by more than 15dB(A) at the boundary of the nearest affected residence.</li> </ul> </li> </ul>	N&V8
All plant would be maintained in good condition, with all reasonable and feasible acoustic treatments (i.e. residential mufflers and plant enclosures) installed and maintained (refer to AS 2436 – 1981 'Guide to noise control on construction, maintenance and demolition sites').	N&V9

Noise and vibration	Code
Any stationary equipment (e.g. generators) would be located as far as possible from residential receptors.	N&V10
<p>Plant operators would be instructed to operate equipment in a manner that does not generate unnecessary noise, such as:</p> <ul style="list-style-type: none"> <li>• avoiding excessive revving</li> <li>• avoiding dragging objects or dropping objects from a height</li> <li>• minimising impact with solid objects where possible</li> <li>• using excavator bucket heads or rock claw attachment to move solid objects</li> <li>• using excavator bucket, claw or rock ripper pick in preference to rock drillers or splitters, where possible</li> <li>• turning off machines/plant equipment when not in use or throttled down to idling.</li> </ul>	N&V11
Complaint based noise monitoring would be performed throughout construction as required to confirm the effectiveness of noise management controls.	N&V12
<p>A noise complaint register would be maintained throughout construction. The register would record all complaints including:</p> <ul style="list-style-type: none"> <li>• Complainant contact details</li> <li>• Source/type of noise causing disturbance</li> <li>• Time and duration of noise causing disturbance</li> <li>• Times when the noise would cause least disruption</li> <li>• Measures taken to address the complaint</li> </ul> <p>Complaints handling is to occur in a prompt and responsive manner.</p>	N&V13
Where there are complaints about noise from an identified work activity, it would be reviewed and, where feasible and reasonable, actions additional to those in place implemented to minimise noise output and disruption to sensitive receptors (e.g. reschedule activity causing disturbance to a time which causes least disruption to the complainant and other receptors).	N&V14

Air quality management	Code
<b>During construction</b>	
All plant and machinery would be serviced at regular intervals to minimise exhaust emissions.	AQ1
The constructor would observe local meteorological conditions and predicted forecasts on a daily basis and prepare site for extreme weather events (i.e. high winds, rainfall).	AQ2
Works would be staged, where practicable, to minimise the area of disturbance at any one time.	AQ3



<b>Air quality management</b>	<b>Code</b>
All necessary precautions shall be taken to minimise impacts from dust during construction works and from construction vehicles.	AQ4
Dust dispersion would be managed via stockpile control (e.g. soil stockpiles covered during high wind conditions), erosion and sediment controls, and wetting down if required.	AQ5
Any transport trucks would be covered during journeys to and from the site.	AQ6
Vehicles would be switched off when not in use.	AQ7
All stockpiles, exposed areas, unsealed trafficable areas and compound areas will be covered where practicable (using plastic, mulch, hydromulch, etc.) or wet down as required to minimise wind-blown and traffic generated dust. Wetting down of these areas should not be done to the extent that run-off occurs.	AQ9
<b>Post-construction</b>	
Disturbed areas would be stabilised once works are complete, or progressively where appropriate.	AQ10

<b>Traffic management</b>	<b>Code</b>
<b>Pre-construction</b>	
Where a Traffic Management Plan is required it shall be submitted to Council for approval not less than 7 days prior to commencement of works.	TM2
<b>During construction</b>	
Where works would result in delays to traffic, where possible, they would be scheduled to occur outside of morning and afternoon peak traffic periods and the public would be notified in advanced.	TM3
Parking for construction workers would be accommodated within the construction footprint and existing cleared areas within the nearby road reserve.	TM4
Traffic would be managed by traffic controllers throughout construction.	TM5
Where possible, all loading and unloading operations will be conducted within the internal construction zone to alleviate the need for lifting materials from off the street.	TM6

<b>Contaminated lands</b>	<b>Code</b>
<b>During construction</b>	

<b>Contaminated lands</b>	<b>Code</b>
Works are to cease immediately if any potential source of contamination is uncovered during works (e.g. chemical drums). In such an instance remediation in accordance with a Council approved Remediation and Validation Action Plan would be required.	CLM1
All imported fill material shall be from an approved source. Prior to commencement of construction, details of the source of the fill, description of the material, and evidence that the material is free of contaminants, must be produced.	CLM2

<b>Hazard management</b>	<b>Code</b>
<b>During construction</b>	
Appropriate spill kits, advocated for use in association with fuels and chemicals are to be maintained on-site. These are to include spill booms and other methods aimed at the containment of fuels and chemicals spilled within the aquatic environment.	HAZ5
Fuels and chemicals are to be stored off-site, however, if required to be stored on-site, they are to be located in a bunded area away from drainage lines.	HAZ6
No refuelling is recommended within the subject site. If however, refuelling is required at the subject site, areas designated for the storage, refuelling and maintenance of plant are to be established where native vegetation has previously been cleared and at least 30 m from a waterway.	HAZ7
Forecast checks of the Bureau of Meteorology site would be undertaken daily. In the event that heavy rain is predicted, arrangements are to be made immediately to remove any plant and equipment from within the banks of the waterway prior to the rain event. All plant and equipment would be removed to higher ground above the 1 in 100 year flood level.	HAZ8
In the event of flooding, no workers would be directed into flood waters.	HAZ9
Any debris and spoil accumulated within the works site as a result of flooding would be removed to the designated stockpile area.	HAZ10
All environmental controls would be reinstated as soon as possible following flooding.	HAZ11

<b>Cultural heritage management</b>	<b>Code</b>
<b>During construction</b>	
If an Aboriginal object or objects, or any cultural heritage material is identified during the works, all works would stop immediately and the Manager Infrastructure Deliver, Tweed Shire Council (TSC) notified. The TSC contact is to advise the Tweed Byron	CH1

Cultural heritage management	Code
<p>Local Aboriginal Land Council (TBLALC) Aboriginal Sites Officer (on 07 553601926) and OEH. No works or development may be undertaken until the required investigations have been completed and any permits or approvals obtained, where required, in accordance with the <i>National Parks and Wildlife Act 1974</i>. It is possible that in such a case there may be a necessity to apply for an AHIP and further investigations may be required. The <i>National Parks and Wildlife Act</i> requires that, if any person finds an Aboriginal object on land and the object is not already recorded on AHIMS, they are legally bound under Section 89A of the Act to notify OEH as soon as possible of the object's location.</p>	
<p>In the event that objects suspected of being of Aboriginal Cultural Heritage significance are uncovered, the TSC ACHMP unexpected finds procedure must be followed.</p>	CH2
<p>If human remains are found during the works, then all works shall cease immediately. The area must be secured within an exclusion zone to prevent unauthorised access and the NSW Police and OEH must be informed as soon as possible.</p>	CH3
<p>If non-aboriginal heritage is discovered, work should stop and the item demarcated. An in-situ heritage assessment is required to determine whether the item is a relic. If the item is concluded to be a relic, the NSW Heritage Council are to be contacted as soon as practical. The NSW Heritage Council would advise the appropriate course of action to be taken.</p> <p>N.B. The Heritage Act 1977 defines 'Relic' as meaning any deposit, artefact, object or material evidence that:</p> <p>(a) relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement, and is of State or local heritage significance.</p>	CH4

Biosecurity management	Code
<p>Suspicious sightings of red imported fire ants or their mounds that have been identified within a site must be reported to NSW Department of Primary Industries immediately on 1800 680 244 or via their online form <a href="https://www.dpi.nsw.gov.au/biosecurity/forms/report-exotic-ants">https://www.dpi.nsw.gov.au/biosecurity/forms/report-exotic-ants</a>.</p> <p>If red imported fire ants are suspected, do not:</p> <ul style="list-style-type: none"> <li>• disturb the ants or nests</li> <li>• treat the infestation yourself.</li> </ul> <p>If red imported fire ants are suspected, do (if safe to do so):</p> <ul style="list-style-type: none"> <li>• take a photo of the suspicious ants including a scale (use coin or key) and attach it to the report</li> </ul>	BM1

Biosecurity management	Code
<ul style="list-style-type: none"> <li>keep a sample in a jar or zip lock sandwich bag in case it needs to be submitted for further investigation</li> </ul>	
<p>Red imported fire ants are regulated as prohibited matter under the <i>NSW Biosecurity Act 2015</i>. Their possible movement and spread can be in or on hay or straw bales, turf, agricultural and earth moving equipment, organic mulch including manure, soil and potted plants.</p> <ul style="list-style-type: none"> <li>To move hay, straw bales, turf agricultural and earth moving equipment into NSW from or through the fire ant <a href="#">biosecurity zones</a> in Queensland it must be accompanied by a Plant Health Certificate.</li> <li>To move soil and organic mulch including manure into NSW from or through the fire ant biosecurity zones in Queensland it must be accompanied by either a Plant Health Certificate or a Biosecurity Certificate.</li> <li>To move potted plants into NSW from or through the fire ant biosecurity zones in Queensland it must be accompanied by either a Plant Health Certificate, a Plant Health Assurance Certificate or a Biosecurity Certificate.</li> </ul>	BM2
<p>Prior to the use of materials and equipment that has travelled through or from a Queensland biosecurity zone, Project Managers are to ensure that contractors supply the necessary certificates for any of the materials and equipment.</p>	BM3
<p>Any requirements identified by the NSW Department of Primary Industries for prohibited matter must be complied with.</p>	BM4

Waste minimisation and management	Code
<b>During construction</b>	
All waste materials generated by the project should be managed in accordance with the project Waste Management Plan.	WM1
All reasonable efforts will be made to avoid and minimise waste and to reuse or recycle where possible.	WM3
Separate waste and recycling bins will be provided on site for the removal of workers and building rubbish.	WM4
All waste bins on site will have self-closing lids preventing waste from being airborne.	WM5
All general rubbish and construction waste would be removed from the site and disposed of in an appropriate bin or Council waste recovery facility.	WM6

## 11.0 Figures and plates



Figure 1: Locality (site = pink polygon)



Figure 2: Site (pink polygon)

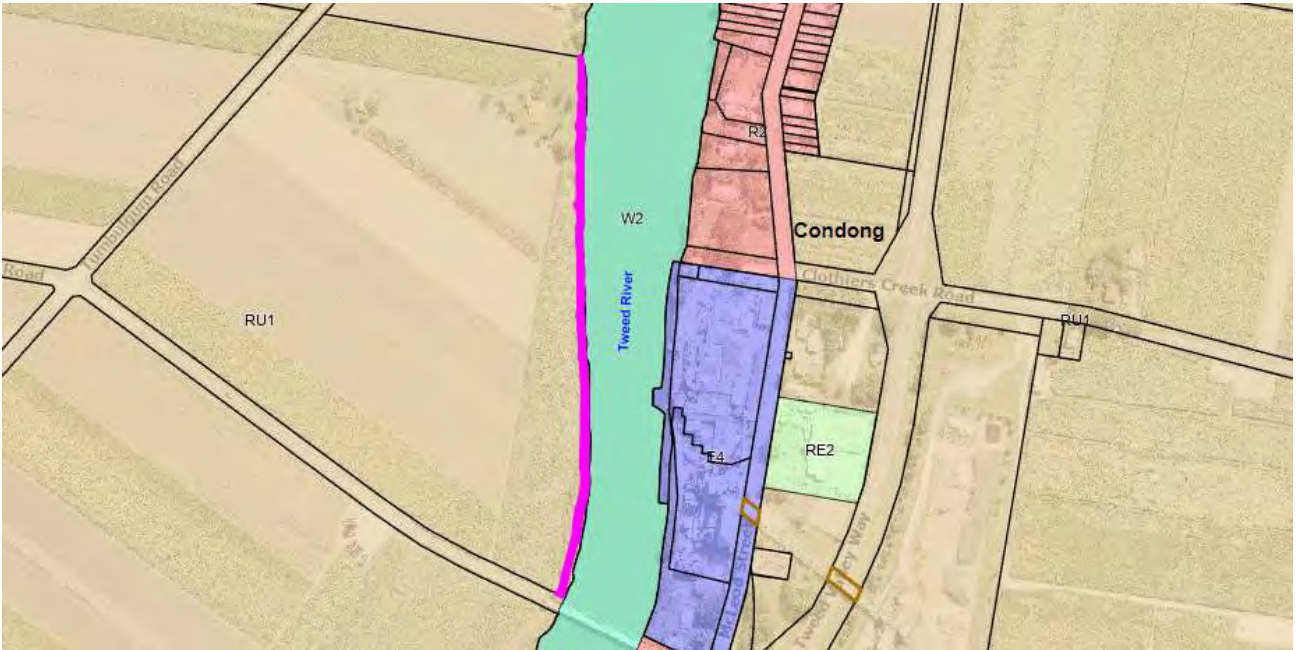


Figure 3: Land zoning as per TLEP 2014 (E4 = General Industrial; R2 = Low Density Residential; RE2 = Private Recreation; RU1 = Primary production; W2 = Recreational Waterways)

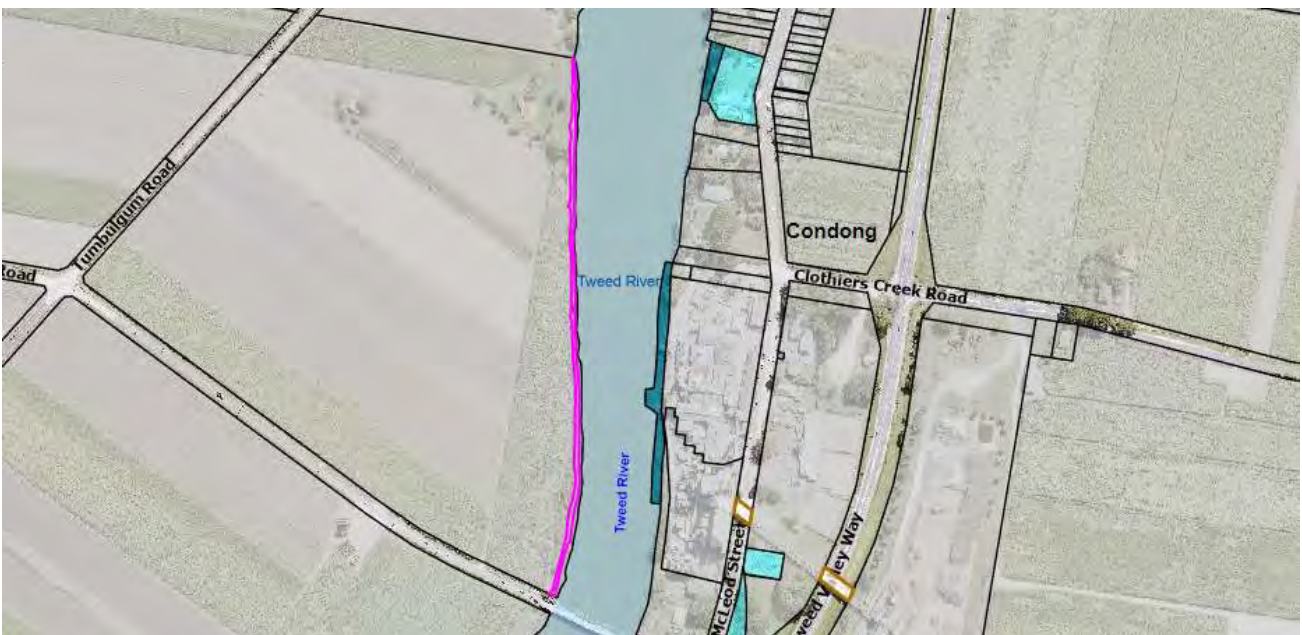


Figure 4: Land tenure (Freehold = grey shading; light blue shading = Crown waterway; teal shading = Crown – State Managed; bright blue = Government Owned Land)



Figure 5: Proposed works

Historic aerial imagery – the following images show the approximate centre of the subject site, identified by white cross hairs.





Figure 6: Image from 1961 (source: NSW Historical Imagery Viewer)



Figure 7: Image from 1970 (source: NSW Historical Imagery Viewer)



Figure 8: Image from 1978 (source: NSW Historical Imagery Viewer)



Figure 9: Image from 1996 (source: NSW Historical Imagery Viewer)



Figure 10: Image from 2007 (source: TSC Weave)



Figure 11: Image from 2015 (source: TSC Weave)



Figure 12: Image from 2024 (source: Nearmap)

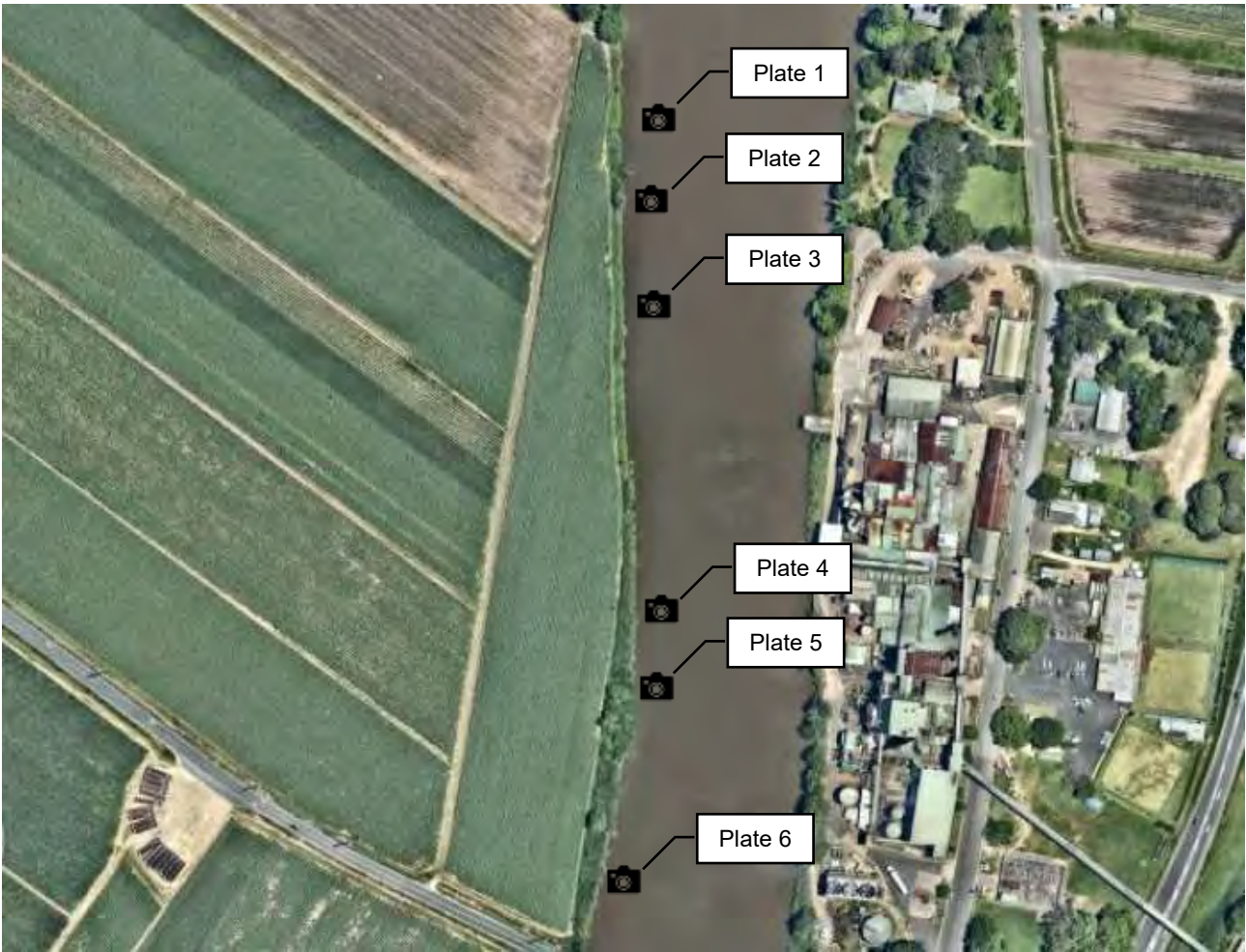


Figure 13: Image showing where site photos (plates below) were taken from approximately



Plate 1: North end of disturbance footprint looking south along western bank (yellow polygon indicates disturbance footprint)



Plate 2: Disturbance footprint looking south along western bank (yellow polygon indicates disturbance footprint)



Plate 3: Disturbance footprint looking south along western bank (yellow polygon indicates disturbance footprint)



Plate 4: Disturbance footprint looking south along western bank (yellow polygon indicates disturbance footprint)



Plate 5: Disturbance footprint looking south along western bank (yellow polygon indicates disturbance footprint)



Plate 6: Disturbance footprint at the most southern end looking south along western bank to Cane Road bridge (yellow polygon indicates disturbance footprint)

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## 12.0 References

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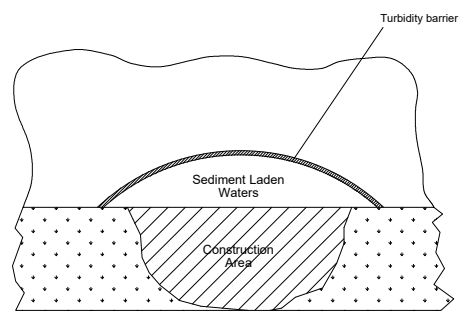
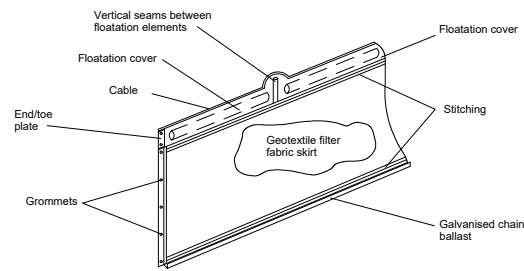
Tweed Shire Council (TSC) (2017). *Tweed Shire Council Renewable Energy Action Plan – Electricity in Council facilities*. Murwillumbah, NSW, Australia.



## 13.0 Appendices

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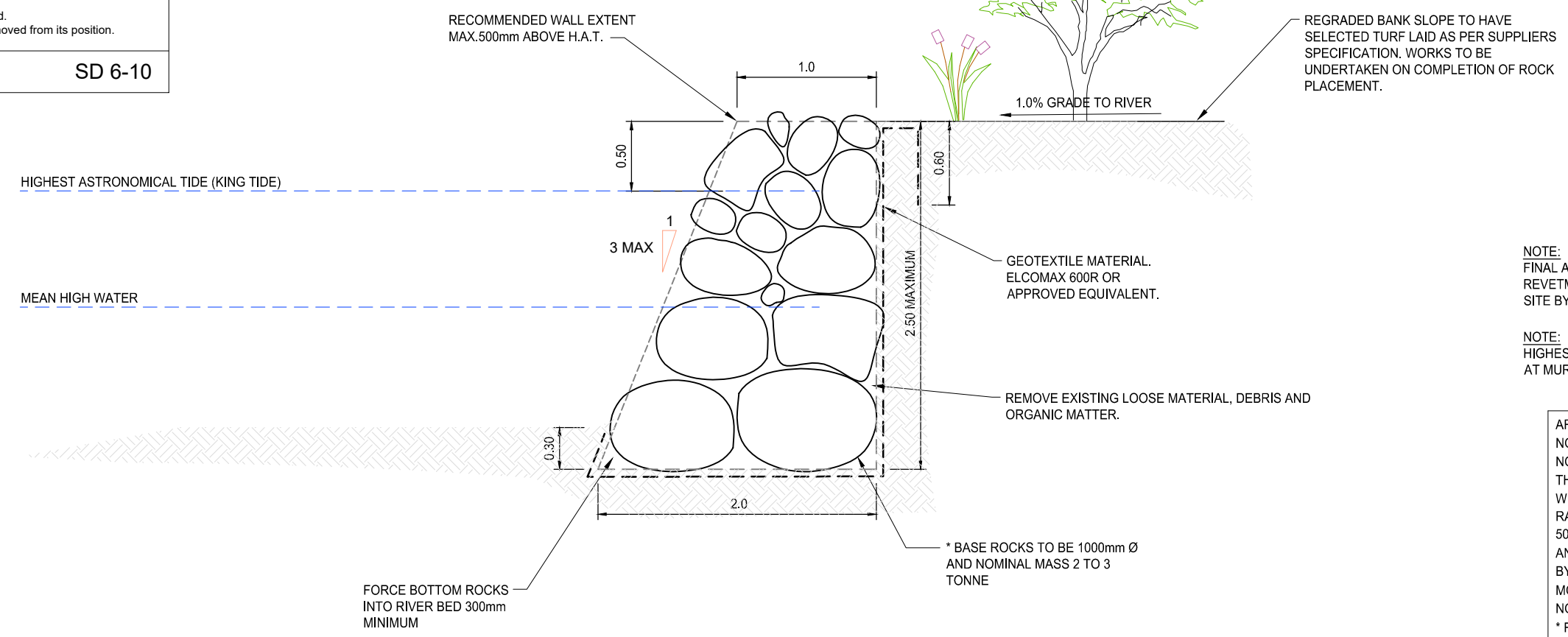
# Appendix A: Design plans



**Construction Notes**

1. Use turbidity barriers only where high flows are unlikely to remove accumulated sediment and/or move the curtain significantly.
2. Where the barrier is to remain in place for more than one month, ensure the floatation cover is a UV-resistant, durable material.
3. Use only closed cell foam or foam-filled PVC piping as floatation elements. Do not use unfilled pipes.
4. Use only woven or heat-set non woven geotextiles. Needle-punched, non woven geotextiles can become fouled with debris that fray and delaminate them as they move with the waves or currents.
5. Remove captured sediment before the barrier is decommissioned.
6. In tidal areas, ensure the barrier can rise and fall without being moved from its position.

**TURBIDITY BARRIER SD 6-10**



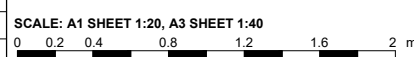
NOTE:  
FINAL ALIGNMENT AND DESIGN OF ROCK REVETMENT TO BE DETERMINED ON SITE BY SITE OVERSEER

NOTE:  
HIGHEST ASTRONOMICAL TIDE (H.A.T.) AT MURWILLUMBAH IS 1.1m AHD.

ARMOURING NOTES.  
NOM DIA. D=500mm  
NOM MASS W=220kg.  
THE ROCK SHALL LIE WITHIN THE FOLLOWING LIMITS:  
RANGE: D = 300 - 800mm WITH:  
50% > D = 500mm  
AND IN ADDITION AT LEAST 50% BY NUMBER SHALL BE MORE THAN THE SPECIFIED NOMINAL MASS.  
\* REFER NOTE RE BASE ROCK SIZE

**TYPICAL SECTION: REVETMENT**  
SCALE: 1:20 (A1)

2	WAVE BREAK WALL AND VEGETATION REMOVED	A.D.	T.A.	08.09.16
1	ORIGINAL ISSUE	A.D.		23.02.15
<b>ISSUE AMENDMENT DETAILS</b>				
<b>DRAWN</b>	<b>CHECK</b>	<b>DATE</b>	<b>#</b>	<b>USE FIGURED DIMENSIONS ONLY. DO NOT SCALE.</b>



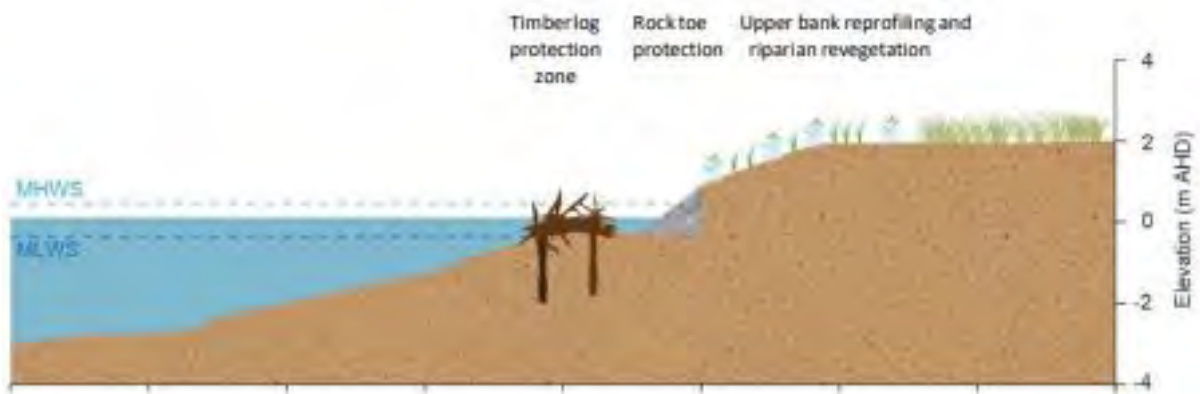
**DESIGN UNIT**  
COUNCIL OFFICES  
TUMBULGUM ROAD,  
MURWILLUMBAH NSW 2484.  
PHONE 02 66702400  
FAX 02 66727513  
WEBSITE www.tweed.nsw.gov.au



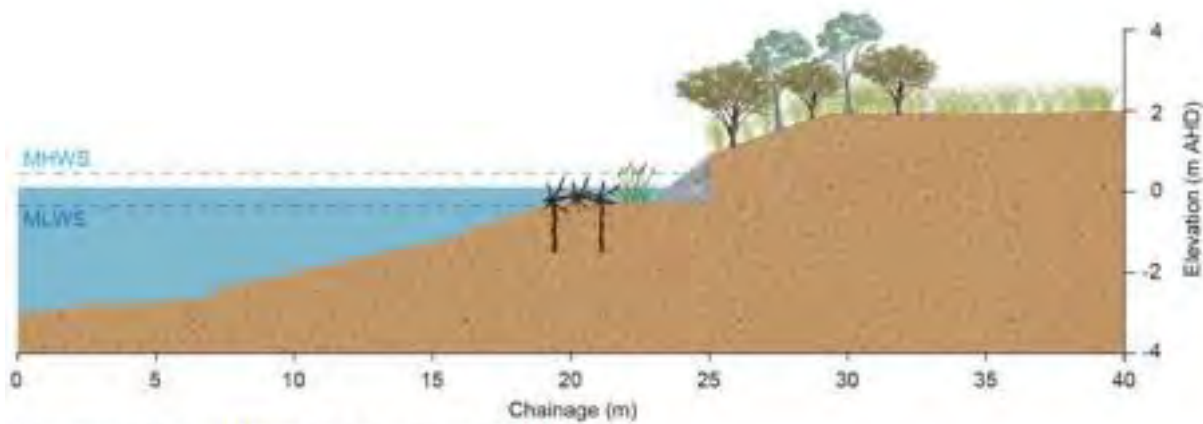
DESIGN ENGINEER	.....	DATE	.....
DESIGNED	-	-	COORDS ADOPTED
CHECKED	A.D.	13.02.15	EASTING
HORIZONTAL DATUM	MGA		NORTHING
VERTICAL DATUM	AHD		R.L.

PROJECT:  
PLAN TITLE: **TYPICAL SECTION & DESIGN SPECS. REVETMENT WALL MAIN CHANNEL TWEED RIVER**

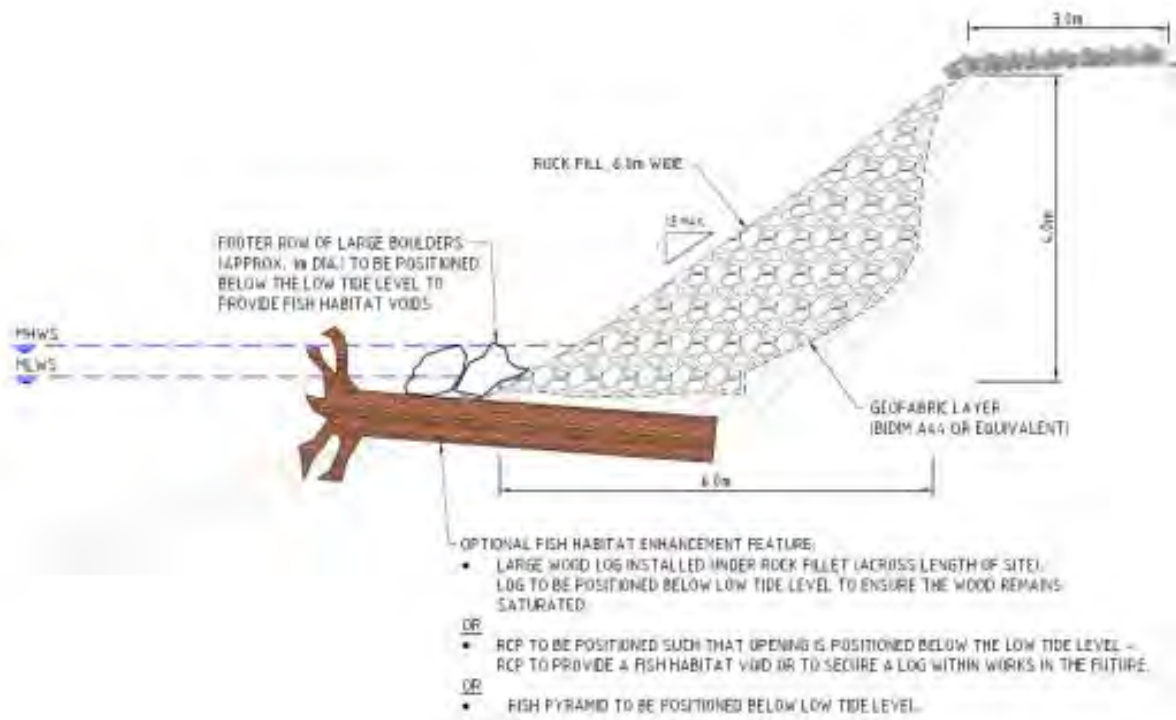
PROJECT NUMBER:  
DRAWING NUMBER:  
ISSUE: **2**



Future conditions – Immediately following construction



Future conditions – 10 years following construction





Example of completed fish habitat feature and rock revetment construction in Tweed River

## Appendix B: Commonwealth (EPBC Act 1999) Protected Matters Search assessment

Any proposed action likely to result in a significant impact on a Matter of National Environmental Significance requires assessment and approval under the EPBC Act.

The EPBC Act Protected Matters database was searched for an area incorporating a 10 km buffer centred on the site. A list of matters assessed and the relevancy to the project on these matters is provided in Table B1 below. The Protected Matters Search results are retained on file and can be provided upon request.

**Table B1:** Matters of National Environmental Significance and their relevancy to the proposed activity

Matter of National Environmental Significance	Relevancy to the proposed activity
World Heritage Properties	One identified. Gondwana Rainforests of Australia.
National Heritage Places	One identified. Gondwana Rainforests of Australia.
Wetlands of International Significance	None.
Great Barrier Reef Marine Park	None.
Commonwealth Marine Areas	None.
Listed Threatened Ecological Communities	<p>Six identified:</p> <ul style="list-style-type: none"> <li>Coastal Swamp Oak (<i>Casuarina glauca</i>) Forest of New South Wales and South East Queensland ecological community</li> <li>Coast Swamp Sclerophyll Forest of New South Wales and South East Queensland ecological community</li> <li>Dunn's white gum (<i>Eucalyptus dunnii</i>) moist forest in north-east New South Wales and south-east Queensland</li> <li>Grey box-grey gum wet forest of subtropical eastern Australia</li> <li>Lowland Rainforest of Subtropical Australia</li> <li>Subtropical eucalypt floodplain forest and woodland of the New South Wales North Coast and South East Queensland bioregions.</li> </ul> <p>None of these vegetation communities are mapped as being present at the site. Several of these communities however, are present in the broader study area, The proposed works would not impact upon any TECs.</p>
Listed Threatened Species	119 identified. The preliminary flora and fauna assessment in Appendix C confirmed Commonwealth listed threatened species and their habitats are not present within the project footprint or would not be impacted by the proposed development.
Listed Migratory Species	59 identified. Many of these are marine species (birds, cetaceans, sharks and turtles) or terrestrial or wetland birds. These species are highly mobile and the disturbance footprint represents a small area relative to their home ranges. Furthermore, the extent and

	condition of suitable habitat available for these species which would be altered as a result of the proposal is negligible. Accordingly, these species are not expected to be significantly impacted upon.
--	--

Additional matters protected under the EPBC Act identified in the EPBC Protected Matters Report is summarised and the relevancy of these matters to the project are discussed in Table B2.

**Table B2:** Additional matters protected under the EPBC Act and relevancy to the proposed activity

Additional matters protected under the EPBC Act	Relevancy to the proposed activity
Commonwealth Lands	A total of 7 identified, 4 of which are Commonwealth Land – Australian Telecommunications Commission and Corporation, 2 of which are Defence Depots and the remaining one being Commonwealth Land – Airservices Australia.  The proposed works are significantly removed from each of the identified parcels of Commonwealth land.
Commonwealth Heritage Places	None.
Listed Marine Species	67 identified. Given the distance of the proposed disturbance footprint from the marine environment and the nature of the proposed activity, marine species are unlikely to be impacted upon.
Whales and Other Cetaceans	One identified. Given the distance of the proposed disturbance footprint from the marine environment and the nature of the proposed activity, whales and other cetaceans are unlikely to be impacted upon.
Critical Habitats	None.
Commonwealth Reserves Terrestrial	None.
Australian Marine Parks	None.
State and Territory Reserves	9 identified.  The proposed works are significantly removed from these sites, and as such would not be impacted by the proposal.
Regional Forest Agreements	One identified: <ul style="list-style-type: none"> <li>North East NSW RFA.</li> </ul> <p>This RFA covers the entire Tweed LGA. The proposed works would not affect any forested areas because any environmental impacts would be localised and subject to mitigation measures, and forested area is not present within the project subject site or study area.</p>
Nationally Important Wetlands	One identified.  Stotts Island Nature Reserve is significantly removed from the subject site and as such would not be impacted by the proposed works.
Key Ecological Features (Marine)	None identified.
Biologically Important Areas	None identified.
Bioregional Assessments	None identified.

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Geological and Bioregional Assessments	None identified.
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Based on the assessment provided in Tables B1 and B2 above, matters protected under the EPBC Act would be unlikely to be significantly impacted upon by the project and the project does not require referral to the Commonwealth Minister for the Environment.



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# Appendix C: Preliminary Flora and Fauna Assessment

Preliminary Flora and Fauna Assessment

**Condong Riverbank Erosion Repair (Shoebriidge)  
– Tumbulgum Rd, Tyngalga**

May 2024

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## Introduction

The flora and fauna assessment included a review of the project brief, survey plans, and environmental planning legislation to consider the likely impacts of the proposed activity on native flora and fauna.

Reviews of Tweed Shire Council Weave GIS information including relevant environmental layers were carried out along with searches of State and Commonwealth ecological databases, followed by site visits to assess the potential impacts of the development.

For the purposes of this assessment, the following terms of reference are used:

- Disturbance footprint – refers to the direct footprint subject to development, including any disturbance associated with ancillary works (e.g. temporary access tracks or stockpile sites).
- Study area – the study area includes the disturbance footprint and any additional lands approximately 50 m either side of the disturbance footprint that could be affected directly or indirectly from the proposal. The objective of the assessment would ensure that impacts beyond the direct disturbance footprint are also considered where relevant.
- Subject site – refers to the parcel/s of land on which the development is proposed.
- Broader study area – lands within 10 km of the local study area and includes the BioNet Atlas of NSW Wildlife and Commonwealth Protected Matters database search areas.
- Bioregion – as classified by the Interim Biogeographic Regionalisation for Australia (IBRA) v 6 mapping (Thackway and Cresswell 1995). A bioregion is an area of common climate, geology, landform, native vegetation and species information. This project is located within the South East Queensland bioregion and Burringbar-Conondale sub-region.

Direct and indirect impacts are defined in accordance with OEH (2018) as follows:

- Direct impacts are those that directly affect the habitat of species and ecological communities and of individuals using the study area. They include, but are not limited to, death through predation, trampling, poisoning of the animal/plant itself and the removal of suitable habitat.
- Indirect impacts occur when project-related activities affect species or ecological communities in a manner other than direct loss within the subject site. Indirect impacts may sterilise or reduce the habitability of adjacent or connected habitats. Indirect impacts can include loss of individuals through starvation, exposure, predation by domestic and/or feral animals, loss of breeding opportunities, loss of shade/shelter, reduction in viability of adjacent habitat due to edge effects, deleterious hydrological changes, increased soil salinity, erosion, inhibition of nitrogen fixation, weed invasion, noise, light spill, fertiliser drift, or increased human activity within or directly adjacent to sensitive habitat areas.

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## Assessment aims

The principal aim of the assessment was to determine the potential impact of the proposed activity on significant flora, fauna and ecological communities using the following legislation and planning and management policies:

- NSW [Environmental Planning and Assessment Act 1979](#) (EP&A Act)
- NSW [Biodiversity Conservation Act 2016](#) (BC Act)
- Commonwealth [Environment Protection and Biodiversity Conservation Act 1999](#) (EPBC Act)
- [Fisheries Management Act 1994](#) (FM Act)
- [Tweed Coast Comprehensive Koala Plan of Management](#)
- Threatened species recovery plans.

Specifically, the aims of the study were to:

- identify vegetation communities, flora and fauna species, and habitats within the study area
- undertake field and desktop assessments to identify the likelihood of conservation significant species and communities occurring within the study area
- assess the conservation status of the site
- identify impacts associated with the proposal pursuant to section 7.3 of the BC Act, if required
- determine whether there is a need to conduct a Species Impact Statement or make a referral to the Commonwealth Department of Agriculture, Water and the Environment (DAWE)
- provide recommendations to minimise impacts on conservation significant species and biodiversity generally.

## Desktop assessment methodology

The desktop assessment involved a review of the following information:

- BioNet Atlas of NSW Wildlife database to identify any known records of significant flora and fauna species
- DAWE EPBC Act Protected Matters online database to identify any Matters of National Environmental Significance
- NSW EES and Department of Primary Industries registers of critical habitat (also referred to as Areas of Outstanding Biodiversity Value under the BC Act)
- NSW EES regional and subregional fauna corridor and key habitat mapping
- NSW and Commonwealth lists of Key Threatening Processes
- NSW EES threatened species website for existing Recovery Plans and Threat Abatement Plans
- Atlas of Living Australia wildlife records
- [Tweed Coast Comprehensive Koala Plan of Management](#) (TSC, 2014)
- Koala habitat mapping (TSC Weave GIS)
- Tweed Shire Council vegetation mapping (OEH 2012) to identify the potential presence of any Endangered Ecological Community (EEC) or Threatened Ecological Communities (TECs) listed under the BC Act or EPBC Act, respectively
- [Tweed Shire Roadside Vegetation Management Plan](#) (Tweed RVMP) (Bushland Restoration Services Pty Ltd & Landmark Ecological Services Pty Ltd, 2013)

- Tweed Shire Council GIS layers such as the contour mapping, slope and soils
- Past fauna survey and assessment reports for the area.

Database searches were undertaken using a 10 km radius of the subject site.

## Desktop assessment results

The results of the desktop assessment are summarised in Table 1 as follows:

**Table 1: Desktop assessment results**

Attributes	Comments
Vegetation communities	<p>The Tweed Shire Council vegetation mapping identifies 2 vegetation communities as occurring within the disturbance footprint: substantially cleared of native vegetation (veg code: 1099) and open water (veg code: 903).</p> <p>Kingston et al (2004) describes the substantially cleared of native vegetation community as forming approximately half of the area of the Shire which includes areas cleared for agriculture, recreation facilities, roads and urban development. Vegetated areas occurring in this community type are generally dominated by exotic grass species. If native vegetation is present it is very sparse and highly disturbed.</p> <p>The open water community is described as expanses of open water both fresh and saline and with or without floating vegetation or vegetated edges.</p> <p>Refer to Figure 1 below.</p>
Threatened ecological communities	None of the vegetation communities identified above are analogous with any threatened ecological communities listed under the BC Act or EPBC Act.
Threatened flora records	A search of threatened flora species on the BioNet Atlas of NSW Wildlife and Commonwealth Matters of National Significance databases was undertaken based on a 10 km buffer of the subject site. A total of 61 threatened flora species were short-listed from these searches. Of these 61 short-listed threatened flora species, a likelihood of occurrence assessment concluded none were likely to occur within the study area this is due to the current disturbance and degradation of the site.
Corridor mapping	The subject site is not mapped as being within a regional or sub-regional corridor.
Osprey nests	None present within the disturbance footprint. The [REDACTED] on a [REDACTED] for ospreys, adjacent to the Tweed River.
Flying-fox camp	[REDACTED]
Marine vegetation	Extensive areas of marine vegetation such as mangrove forest and saltmarsh occur throughout the estuarine shallows within the broader study area associated with the Tweed River. However, no marine vegetation is mapped or occurs within the proposed disturbance footprint.

Attributes	Comments
Koala habitat	There is no mapped koala habitat present within the study area. None of the vegetation communities present are analogous with koala habitat.
Threatened fauna	<p>A search of threatened fauna species on the BioNet Atlas of NSW Wildlife and Commonwealth Matters of National Significance databases was undertaken based on a 10 km buffer of the subject site. A total of 94 threatened fauna species and 2 populations were short-listed from these searches (marine and pelagic species were immediately dismissed on account of the absence of such habitat in the study area). Of these 94 short-listed threatened fauna species, 2 species were considered likely to occur in the study area including:</p> <ul style="list-style-type: none"> <li>• [REDACTED]</li> <li>• [REDACTED]</li> </ul> <p>None of the short-listed populations (koala and spotted-tail quoll) were considered likely to occur within the study area.</p>



**Figure 1: Tweed Shire Council vegetation mapping, proposed disturbance footprint alignment in pink.**

## Field assessment methodology

A preliminary diurnal field assessment was undertaken on 11 and 29 January 2024. The field assessment involved traverses over the disturbance footprint and visual assessment via boat travelling in the Tweed River to validate the results of the desktop study and assess the potential impacts of the development in the study area. In summary, this involved carrying out searches for the following:

- Characterisation of vegetation communities within the development footprint.
- Identification of retained vegetation which may be impacted upon by root damage from construction works.
- Potential fauna habitat likely to be affected by the proposal such as burrows, hollow-bearing trees, flowering trees, nests, and other general signs of fauna activity such as scats, tracks, and traces.
- The impact of disturbance on fauna movement and bushland linkages.
- Potential sources of erosion and sediment loss.
- Receiving waterways and the potential impacts on these aquatic habitats.

## Field assessment results

### Flora

The site assessment confirmed that vegetation within the study area is generally consistent with that mapped by Kingston et al (2004), being substantially cleared of native vegetation with the occasional native tree occurring along the riverbank namely cottonwood hibiscus (*Hibiscus tiliaceus*). The open water community was generally devoid of any native vegetation.

Of the 61 short-listed threatened flora species, a likelihood of occurrence assessment concluded none were likely to occur within the study area. This is due to the historical clearing of the site, ongoing disturbance and overall degradation of the site. Field surveys failed to identify suitable habitat for threatened flora species. No threatened species were identified during field survey.

Overall, the vegetation within the disturbance footprint is reflective of the historic clearing and ongoing disturbances associated with sugar cane cropping flooding. No vegetation communities present within the study area are considered to be consistent with any TECs listed under the NSW BC Act or the EPBC Act.



## Fauna

Fauna habitat within the disturbance footprint was found to be limited on account of the area being highly disturbed and degraded. However, in the broader context, the Tweed River offers a diverse mosaic of native vegetation communities including marine communities such as mangrove forest and saltmarsh, riverine forest, swamp forest and riparian vegetation. Diurnal field investigations did not record any threatened species at the site.

An assessment of specific habitat attributes within the study area is provided in Table 3 below.

**Table 3: Fauna habitat attributes associated with the subject site**

Fauna habitat attributes	Comments
Rock features including cracks, sheets, shelters, outcrops	None observed within the study area. There are sections of rock revetment throughout the Tweed River waterway in the broader study area that would provide some shelter.
Autumn - winter - early spring flowering eucalypts	None observed within the study area. Present within the broader study area.
Summer flowering eucalypts	None observed within the study area. Present within the broader study area.
Acacia shrubs-trees	None observed within the study area. Present within the broader study area.
Other flowering and fruiting resources	Present within the study area are native species such as cottonwood hibiscus which provides blossom resources.
<i>Allocasuarina</i> spp. and <i>Casuarina</i> spp. resources for Glossy Black Cockatoos	None observed within the study area. Present within the broader study area.
Koala feed trees	None observed within the study area. Present within the broader study area.
Open grassy patches	Observed within the study area as mown yard, sugar cane cropping and overgrown riverbank of exotic grasses. Given the disturbance experienced by these areas and that all species are exotic, they provide limited habitat value in terms of shelter or nesting habitat, even for open land species.
Cracks, crevices, and other roosting sites (man-made or otherwise) for insectivorous bats	The nearby houses, outbuildings and sugar mill buildings may provide potential micro-bat roosting habitat in the form of roof cavities.
Ephemeral water bodies	None observed within the study area.
Permanent water bodies	The Tweed River is adjacent the subject site.
Drainage lines and/or soaks and/or man-made water bodies	None observed within the study area.

Fauna habitat attributes	Comments
Understorey cover for ground dwelling mammals	Exotic groundcover vegetation is present on the river banks within the subject site and offers cover to ground dwelling mammals such as rodents and reptiles.
Fallen fine and coarse vegetative litter	This resource was generally scarce within the study area on account of the site being overgrown with exotic groundcovers.
Hollows in live and dead trees	None observed within the study area.
Marine Vegetation	None observed within the study area. Occurs along the Tweed River in broader study area.
Riparian vegetation	Riparian vegetation occurs within the subject site, however is mostly degraded and is generally composed of exotic species.
Flying-fox camps	[REDACTED]
Osprey and/or other raptor nests	None present within the disturbance footprint. [REDACTED]
Exposed coastal fore dunes and beaches	None present within the study area.
Oceanic habitats	None present within the study area.
Areas of Outstanding Biodiversity Value pursuant to NSW legislation	None present within the study area. [REDACTED]

## Impact assessment

### Flora

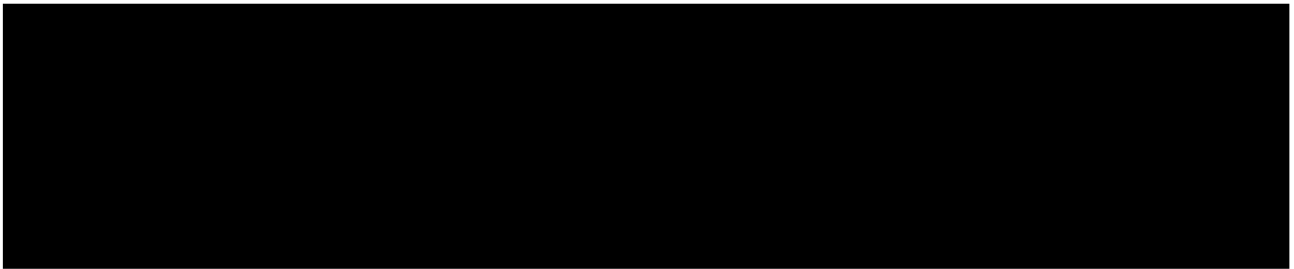
The proposed rock revetment and revegetation has been designed to avoid the need to clear existing native trees. Tree protection measures during construction are required to ensure compaction to TPZs or damage caused by machinery is avoided or minimised and accidental damage to trunks and limbs does not occur.

It is expected that negligible negative impacts to existing native flora species would occur during construction. Post-construction and once native flora species revegetation has been completed it is likely that positive impacts to existing native mature species would be positive due to reduction in and smothering by exotic species.

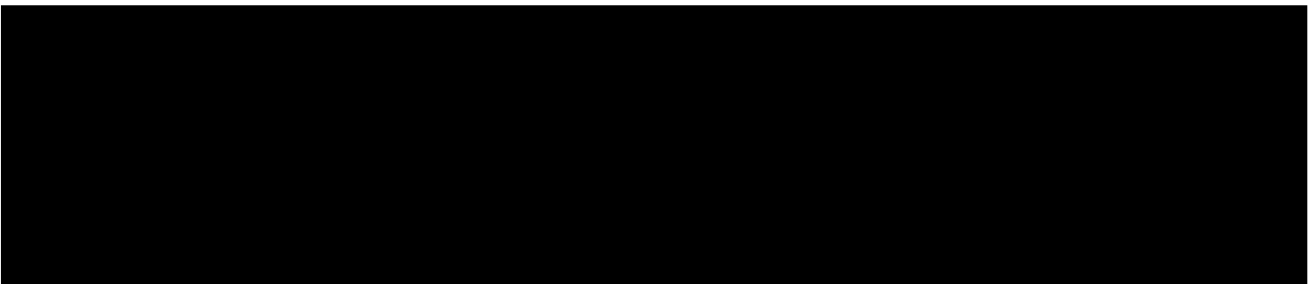
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## Fauna

As previously discussed, the habitat values within the broader study area are significant due to the diverse mosaic of ecological communities associated with the Tweed River present. However, the habitat values within the disturbance footprint itself are limited on account of the absence of native vegetation communities and the disturbance caused by cropping practices and flooding. The proposed works are relatively low impact and the design avoids direct removal of existing native trees.



Both of these species are highly mobile and their interactions with the ecological resources within the study area are expected to be limited to flyovers or occasional foraging.



Post-construction it is likely that once the revegetation has matured that foraging resources would have improved within the subject site for flying-foxes.

It is expected that the proposed works would proceed without any significant direct or indirect impact upon fauna species breeding or foraging habitat. Given the disturbed and degraded nature of the disturbance footprint and the limited habitat features, none of the species considered likely to occur within the study area are expected to rely upon the habitat contained within the footprint of direct disturbance. Accordingly, it is anticipated that there would be no impact upon threatened fauna as a result of the proposed activity.

## Requirement for Part 7 (BC Act) Assessments

Section 7.8 of the *Biodiversity Conservation Act 2016* (BC Act) outlines the biodiversity assessment requirements for Part 5 activities under the EP&A Act and notes a Part 5 activity is to be regarded as having a significant effect on the environment if it is likely to significantly affect a threatened species. Section 7.3 of the BC Act outlines the test for determining whether an activity is likely to result in a significant impact on threatened species or ecological communities (test of significance).

The Threatened Species Test of Significance Guidelines – The Assessment of Significance (OEH, 2018) explain that a species does not have to be considered as part of the assessment of significance if adequate surveys or studies have been carried out that clearly show that the species:

- does not occur in the study area
- will not use on-site habitats on occasion
- will not be influenced by off-site impacts of the proposal.

Otherwise all species likely to occur in the study area (based on general species distribution information), and known to use that type of habitat, should be considered in the rationale that determines the list of threatened species, populations and ecological communities for the assessment of significance (OEH, 2018).

With the above in mind, species considered to warrant further consideration pursuant to Section 7 of the BC Act are those that have a high likelihood of occurrence within and adjacent the study area and could be either directly or indirectly impacted by the proposal. That is, these species are considered likely to interact with those habitats directly and or indirectly impacted by the development proposed. For example, species with specific lifecycle requirements such as hollow dependent species that may be impacted through loss of hollow bearing trees would be included within the Section 7.3 assessment. In contrast, those species which have broad home ranges and do not have specific habitat elements within the study area, may not be considered further. Table 3 provides a summary of the potential impacts to threatened species considered likely to occur in the study area.

**Table 3: Summary of potential impacts on threatened species and requirement for test of significance**

Threatened flora/fauna species (identified as groups 4 or 5 species)	Potential impacts	Requirement for a test of significance under the EP&A Act (✓)
	Species would potentially fly over the site. No impact to foraging or nesting habitat. Given limited construction footprint relative to broader foraging habitat available, potential impact would be negligible.	X (Not warranted)
	Species would potentially fly over the site. No impact to foraging or roosting habitat. Given limited construction footprint relative to broader foraging habitat available, potential impact would be negligible.	X (Not warranted)

Based on the discussion provided above, further consideration by way of test of significance pursuant to Part 7 of the BC Act was not considered warranted for any of the short-listed species. This conclusion is based on the limited scale and extent of the disturbance footprint relative to the home ranges of each of the species and the limited interaction anticipated between the short-listed species and the habitat features provided within the study area. The habitat provided within the disturbance footprint is not considered to constitute critical habitat for the species and the proposed temporary disturbance is unlikely to place any species at risk of extinction.

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## Flora and fauna assessment conclusion

In summary, this preliminary flora and fauna assessment suggests that the conservation values of the disturbance footprint are low given the extent of existing disturbance and lack of native vegetation communities. High conservation values exist within the surrounding area associated with the Tweed River, however, the proposed works are unlikely to impact upon these habitats.

The assessment has determined that the proposed activity is unlikely to result in a significant impact upon threatened species, populations or communities and that the activity does not require referral to the Commonwealth DAWE for assessment under the EPBC Act.

Environmental safeguards to mitigate impacts on the receiving environment are proposed within Section 10 of the REF.

*Contact and connect*

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## **Appendix D: Preliminary Aboriginal Cultural Heritage Assessment**

Preliminary Aboriginal Cultural Heritage  
Assessment (PACHA)

**Condong Riverbank Erosion Repair (Shoebridge)  
– Tumbulgum Rd, Tyngah**

May 2024



# Version control

Version	Title	Date
1.0	Preliminary Aboriginal Cultural Heritage Assessment (PACHA)	6/5/2024

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## Definitions

<b>AAC:</b>	<b>Aboriginal Advisory Committee</b>
<b>ACH:</b>	<b>Aboriginal cultural heritage</b>
<b>ACHA:</b>	<b>Aboriginal Cultural Heritage Assessment</b>
<b>ACHAR:</b>	<b>Aboriginal Cultural Heritage Assessment Report</b>
<b>ACHMP:</b>	<b>Tweed Shire Aboriginal Cultural Heritage Management Plan 2017</b>
<b>AHIP:</b>	<b>Aboriginal Heritage Impact Permit</b> The statutory instrument that OEH issues under section 90 of the NPW Act to manage harm or potential harm to Aboriginal objects and places.
<b>AHIMS:</b>	<b>Aboriginal Heritage Management Information System</b> AHIMS is a part of OEH and maintain the NSW records database of Aboriginal objects/sites, declared Aboriginal Places and archaeological reports submitted either voluntarily or as part of compliance-related submissions.
<b>Disturbed land:</b>	Land is disturbed if it has been the subject of a human activity that has changed the land's surface, being changes that remain clear and observable. Examples include ploughing, construction of rural infrastructure (such as dams and fences), construction of roads, trails and tracks (including fire trails and tracks and walking tracks), clearing vegetation, construction of buildings and the erection of other structures, construction or installation of utilities and other similar services (such as above or below ground electrical infrastructure, water or sewerage pipelines, stormwater drainage and other similar infrastructure) and construction of earthworks. Refer also to Clause 58 of the NPW Reg.
<b>Due Diligence code:</b>	Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales (DECC&W, 2010)
<b>EIS:</b>	<b>Environmental Impact Statement</b>
<b>PACHA:</b>	<b>Preliminary Aboriginal Cultural Heritage Assessment</b> Process to assess whether Aboriginal objects will or are likely to be harmed, and whether further investigation and impact assessment is required. Determines whether an ACHA is required and, subsequently, whether an AHIP is required.
<b>DPE:</b>	<b>Department of Planning and Environment, NSW Government</b>
<b>EP&amp;A Act:</b>	<b>Environmental Planning and Assessment Act, 1979</b>
<b>NPW Act:</b>	<b>National Parks and Wildlife Act, 1974</b>
<b>NPW Reg:</b>	<b>National Parks and Wildlife Regulation, 2019</b>
<b>OEH:</b>	<b>Office of Environment and Heritage, NSW Government</b>
<b>Study area:</b>	For the purpose of this PACHA, the study area is the spatial extent in which the proposed works could potentially directly and indirectly impacts on the ACH values of the site. For this particular assessment, the study area is defined as the lands and waters within 200 m of the subject site.
<b>TBLALC:</b>	<b>Tweed Byron Local Aboriginal Land Council</b>
<b>TSC:</b>	<b>Tweed Shire Council</b>

## 1.0 Introduction

The aim of this Preliminary Aboriginal Cultural Heritage Assessment (PACHA) is to ensure Council infrastructure projects minimise the risk of harm to Aboriginal places and objects of cultural heritage significance.

The objective is to identify those projects with a significant risk of harm to Aboriginal cultural heritage (ACH) and those projects for which the risk is low.

Those projects determined to have a high risk of harm to ACH require a more detailed assessment in the form of an Aboriginal Cultural Heritage Assessment Report (ACHAR) and potentially an Aboriginal Heritage Impact Permit (AHIP).

Those determined to have a low risk of harm to ACH may proceed with caution without an ACHAR or AHIP.

The PACHA is suitable for incorporation into TSC environmental planning assessments for works deemed:

- permissible with consent
- permissible without consent
- exempt activities under the EP&A Act, with the exception of projects requiring an Environmental Impact Statement (EIS) for which the assessment requirements are directed by the Secretary's Environmental Assessment Requirements (SEARs).

## 2.0 Planning considerations under the NPW Act/Reg

The following clauses were considered to determine whether any of the exemptions or defences identified under the NPW Act/Reg apply.

Planning consideration	Response
Are the works exempt under s87A of the NPW Act (e.g. specified emergency or conservation activities)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the works exempt under s87B of the NPW Act (e.g. traditional Aboriginal cultural activities)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Is the activity a low impact one for which there is a defence under Clause 58 of the NPW Reg? (e.g. maintenance of existing infrastructure on disturbed land; 'disturbed land' is defined in the definitions section) <b>N.B.</b> If yes, there is still a responsibility to not harm or desecrate an object that a person knows is an Aboriginal object; stop works procedures still apply to any unexpected finds.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

### 3.0 Scope of work

The following questions were addressed to clarify the type and scale of works proposed.

Scope/scale of works	Response
Is the work trivial or negligible? (e.g. picking up and replacing a small stone artefact, breaking a small Aboriginal object below the surface when you are gardening, crushing a small Aboriginal object when you walk on or off a track, picnicking, camping or other similar recreational activities)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Will the works involve ground disturbance?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
What is the scale of excavation works? (refer to ACHMP page 105 for definitions of minimal, moderate and major)	<input type="checkbox"/> Minimal <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Major
Will the works impact upon any known or suspected culturally modified trees? (e.g. scar trees)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No


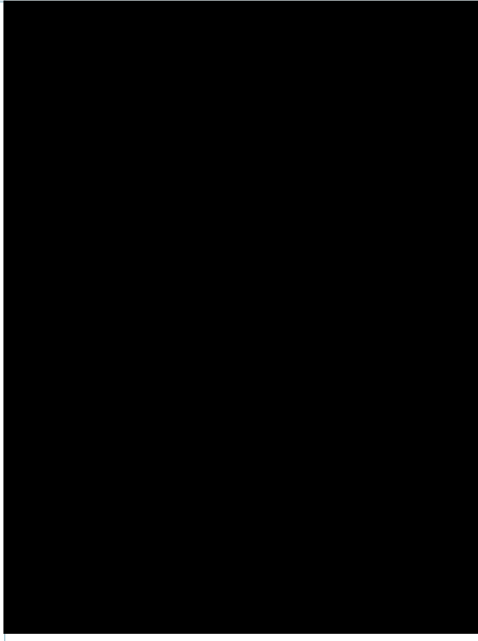
### 4.0 Assessment methodology

The following desktop and site assessments were performed and used to determine the level of community consultation required, if any.

Assessment type	Response
Desktop assessment	<input checked="" type="checkbox"/> Review ACHMP mapping GIS layer <input checked="" type="checkbox"/> <a href="#">Search AHIMS database</a> Review site cards relevant to the study area: <input type="checkbox"/> Y <input checked="" type="checkbox"/> N/A <input checked="" type="checkbox"/> <a href="#">Search NSW Heritage database for Aboriginal Places</a> <input checked="" type="checkbox"/> Review topographic GIS layers (e.g. contours) Review previous ACHARs relevant to the study area: <input type="checkbox"/> Y <input checked="" type="checkbox"/> N/A
Site assessment	<input checked="" type="checkbox"/> Walkover by TSC Environmental Scientist

## 5.0 Desktop results

The results of the desktop assessment are detailed below.

Desktop resource reviewed	Response
Does an Aboriginal Place (as declared under the NPW Act) apply to the study area?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
What ACHMP mapping designations apply to the study area? (refer to TSC GIS layer under Planning Strategies and Policies)	
Are there any registered AHIMS site records identified within the study area?	<input type="checkbox"/> Yes (specify AHIMS reference numbers) _____ _____ _____ <input checked="" type="checkbox"/> No
What ACH values apply or potentially apply to the study area? (refer to site cards, previous ACHARs and ACHMP mapping attribute data)	
Do any of the following landscape features apply to the study area?	<input type="checkbox"/> Ridgelines <input type="checkbox"/> Coastal headland <input type="checkbox"/> Sand dunes <input type="checkbox"/> Rock shelters (within 20 m) <input checked="" type="checkbox"/> Waterways (within 200 m) <input type="checkbox"/> Other (specify) _____
Are the works proposed on disturbed land? ('disturbed land' is defined in the definitions section)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Desktop resource reviewed	Response
Is the site in proximity to the Holocene high stand shore line? (refer to contours and AHD 1.5 m for indication)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

## 6.0 Site inspection findings

The results of the site inspection are detailed below.

Site inspection conditions/findings	Response
How was the ground surface visibility?	<input type="checkbox"/> Good <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Poor
Were any Aboriginal objects/values identified during the site assessment?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Were any potential ACH objects/values identified/recorded during the site visit? (e.g. artefacts, scar trees, midden material, burials, grinding grooves, charcoal deposits) Note: attach photos to plates section where appropriate – seek permission from the TBLALC for potentially sensitive matters.	<input type="checkbox"/> Yes (please specify) _____ _____ _____ <input checked="" type="checkbox"/> No
What evidence of previous ground disturbance was observed within the proposed works area?	<input type="checkbox"/> Built road <input type="checkbox"/> Fence construction <input type="checkbox"/> Imported fill <input type="checkbox"/> Construction of buildings/structures <input type="checkbox"/> Construction/installation of utilities <input checked="" type="checkbox"/> Earthworks/reformed land <input checked="" type="checkbox"/> Other (please specify) Historical clearing and ongoing farming practices for sugar cane cropping

## 7.0 Consultation outcomes

The desktop assessments and site inspections which indicate potential for harm, or a high degree of uncertainty regarding potential for harm, to ACH are required to seek further information and expertise through consultation with community members/cultural heritage experts.

Consultation outcomes	Response
Do the results of the desktop assessment and site inspection indicate potential for harm, or a high degree of uncertainty regarding potential for harm?	<input type="checkbox"/> Yes (stakeholder consultation is required, see below) <input checked="" type="checkbox"/> No (specify why and then proceed to Section 8) Justification: Historical clearing was undertaken leaving very few native trees present, most present would have regenerated since the original clearing. Ongoing farming practices for the production of sugar cane requires ongoing turning of soil. The proposed works require little excavation namely to revegetate with native flora species and to embed rock into the river bed. Given the extent of earthworks previously undertaken at the site, the likelihood of encountering ACH objects is considered low.
Stakeholders consulted	<input type="checkbox"/> TBLALC <input type="checkbox"/> AAC <input type="checkbox"/> OEH Archaeologist <input type="checkbox"/> Consultant Archaeologist <input checked="" type="checkbox"/> N/A
Did any stakeholders request additional site inspections?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Did representatives request to have site monitors present during construction?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Did representatives recommend an Archaeologist inspect the site?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Did representatives recommend an ACHAR be prepared and an AHIP be applied for?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
Did representatives request any project-specific mitigation measures?	<input type="checkbox"/> Yes (list recommendations) _____ _____  <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A



## 8.0 Recommendations and conclusion

Recommendations and conclusion	Response
Does a desktop and site assessment confirm that there are Aboriginal objects or that they are likely?	[REDACTED]
Does consultation confirm that there are Aboriginal objects or that they are likely?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Uncertain <input checked="" type="checkbox"/> N/A
Can harm to Aboriginal places and objects be avoided?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Uncertain
Are site monitors required during construction?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Is an ACHAR and AHIP required?	<input type="checkbox"/> Yes. Engage a consultant Archaeologist to undertake ACHA and, if deemed necessary, apply for an AHIP. Refer to OEH Guidelines. <input checked="" type="checkbox"/> No. The project is to proceed with caution. If any potential Aboriginal objects are found, work is to stop and the stop works procedure provided in the ACHMP – Appendix 7 is to be applied. N.B. If human remains are found, work is to stop, the site secured and the NSW Police notified. All staff and contractors on site are to be notified that it is an offence under the Coroners Act to interfere with the materials/remains.

## 9.0 Figures and plates



**Figure 1: Aerial photograph showing subject site (pink line)**

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## Appendix A – ACHMP Stop works procedure

### 7. Stop Work Procedure

It is an offence to harm an Aboriginal object or place under the NPW Act. Immediate Stop Work procedures are to be implemented when an activity or works reveal any Aboriginal object or remains so as to avoid harm (see definition of harm in Section 7). The following outlines the Stop Work Procedures:

#### Inadvertent discovery of an object

On discovery of any surface or buried sub-surface cultural material (other than human remains, which is addressed following) the following actions should occur as soon as practicable:

- All work should cease at the location and if necessary, an appropriately qualified Aboriginal sites officer or experienced archaeologist, with expertise in Aboriginal cultural heritage is to be notified, if not already present at the location. The area is to be made safe and cordoned off to prevent access and to protect the object. Construction workers and operational personnel will comply with the instructions of the qualified Aboriginal Sites Officer and/or experienced cultural professional (archaeologist).
- The TBLALC and OEH North East Region Planning Unit are to be notified.
- An Aboriginal cultural heritage assessment of the object and surrounding locality is to be undertaken. A written report of the archaeologist's findings and recommendations is to be provided to registered Aboriginal parties and the OEH for their consideration.
- No further works or development may be undertaken at the location until the required investigations have been completed and permits or approvals obtained as required by the NPW Act and receipt of written authorisation by the OEH North East Region Planning Unit. Upon further advice, construction may be able to continue at an agreed distance away from the site.
- Aboriginal cultural heritage objects are to be registered to the AHIMS.

#### Inadvertent discovery of a burial or human remains

Burials or human remains are controlled by the following legislation:

- Coroners Act 2009 (NSW)
- Crimes Act 1900 (NSW) and Federal Crimes Act 1914
- National Parks and Wildlife Act 1974 (NSW) covers Aboriginal human remains
- Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW, 2010 by OEH

Should human remains be found during the activity or works, the following procedure should be followed. On discovery of the remains the following actions should occur as soon as practicable:

- All work should cease at the location. The Police must be notified, and all personnel and contractors on site should be advised that it is an offence under the Coroners Act to interfere with the material/remains.
- If necessary, an appropriately qualified Aboriginal or experienced archaeologist, with expertise in Aboriginal cultural heritage is to be notified, if not already present at the location. The area is to be cordoned off to access and to protect the remains. Construction workers and operational personnel will comply with the instructions of the qualified Aboriginal sites officer or archaeologist.
- The TBLALC and the OEH North East Region Planning Unit are to be notified.
- No further works or development may be undertaken until the required investigations have been completed and permits or approvals obtained where required in accordance with the NPW Act. Upon further advice, construction may be able to continue at an agreed distance away from the site.
- Burial remains are to be registered to the AHIMS if found to be Aboriginal cultural remains.

**Note: A Stop Work Order or Interim Protection Order may also be directed by the Chief Executive under S91AA of the NPW Act.**



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# Appendix E: Waste Management Plan

Waste Management Plan

**Condong Riverbank Erosion Repair (Shoebriidge)  
– Tumbulgum Rd, Tygalah**

May 2024

# Version control

Version	Title	Date
1.0	Waste Management Plan	6/5/2024



## Introduction

The following pre-classification of waste streams to be generated during the construction of the proposed riverbank revetment are based on the following:

- review of the preliminary site contamination investigation
- communication with Council Design Unit Engineering and Drafting personnel
- waste classification of waste streams in accordance with the NSW Waste Classification Guidelines and relevant current NSW EPA resource recovery exemptions
- review of the [Stott's Creek Resource Recovery Centre 2023/2024 commercial fees and charges](#).

Waste streams and associated disposal options are presented in Table 1 below.

## Red imported fire ants (*Solenopsis invicta*) biosecurity

Occasionally TSC import soil/waste, equipment and plants to use on projects. Importation of materials and equipment into NSW, from or through Queensland red imported fire ant [biosecurity zones](#), must be accompanied by a certificate. Materials and equipment include: hay, straw bales, turf, agricultural and earth moving equipment, organic mulch including manure, soil and potted plants. Types of certificates required are presented in Table 2 below.

**Table 1: Waste streams and associated disposal options**

Waste stream	Likely sources within the subject site	Pre-classification	Re-use/disposal options without license	Disposal cost (Stott's waste facility)/tonne
Excavated soil material (imported soil)	Excavated material from profiling works that: <ul style="list-style-type: none"> <li>is naturally occurring rock and soil</li> <li>contains at least 98% (by weight) natural material</li> <li>does not meet the VENM definition</li> </ul>	Excavated Natural Material (ENM)	<ul style="list-style-type: none"> <li>Re-use within the project</li> <li>Re-use as ENM in accordance with resource recovery exemption (e.g. ENM, 2014)</li> <li>Dispose to licensed landfill validation testing</li> </ul>	\$253.00
Excavated native soil	Excavated material from profiling works (natural material in situ): <ul style="list-style-type: none"> <li>that are not contaminated with manufactured or process residues as a result of industrial, commercial, mining or agricultural</li> <li>does not contain sulphidic ores or soils</li> </ul>	<ul style="list-style-type: none"> <li>Material is identified as Virgin Excavated Natural Material (VENM)</li> </ul>	<ul style="list-style-type: none"> <li>Re-use on council land or private property subject to approval</li> <li>Dispose to licensed landfill</li> </ul>	\$157.50
General construction waste	Discarded offcuts, geofabric material, sediment fencing etc.	General solid waste (non-putrescible) - Building and demolition waste	<ul style="list-style-type: none"> <li>Re-use within the subject site</li> <li>Re-use on private property (less than 200 tonnes)</li> <li>Dispose to licensed landfill</li> </ul>	\$253.00

Waste stream	Likely sources within the subject site	Pre-classification	Re-use/disposal options without license	Disposal cost (Stott's waste facility)/tonne
General rubbish litter	Food scraps, paper, cardboard, plastics etc.	General solid waste (putrescible and non-putrescible)	Dispose	\$253.00
Vegetation	Removal of groundcover vegetation and trees within alignment.	<ul style="list-style-type: none"> <li>General solid waste (non-putrescible) - garden waste</li> <li>Raw mulch exemption 2016</li> </ul>	<ul style="list-style-type: none"> <li>Re-use within the project</li> <li>Re-use within the local road network</li> <li>Dispose to a licensed landfill as green waste</li> </ul>	\$112.50 (trunks or stumps under 30 cm)

**NB:** Disposal costs are current at the time of publication. Disposal costs need to be confirmed at the time of construction.

## Note the following conditions applicable to Table 1:

### Re-use on private property (soil material):

- Land holder may require development consent for filling.
- Section 143 forms required to be completed.

### Building and demolition waste

Building and demolition waste means unsegregated material (other than material containing asbestos waste or liquid waste) that results from:

- the demolition, erection, construction, refurbishment or alteration of buildings other than
  - chemical works
  - mineral processing works
  - container reconditioning works
  - waste treatment facilities
- the construction, replacement, repair or alteration of infrastructure development such as roads, tunnels, sewage, water, electricity, telecommunications and airports

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and includes materials such as:

- bricks, concrete, paper, plastics, glass and metal
- timber, including unsegregated timber, that may contain timber treated with chemicals such as copper chrome arsenate (CCA), high temperature creosote (HTC), pigmented emulsified creosote (PEC) and light organic solvent preservative (LOSP)

but does not include excavated soil (for example, soil excavated to level off a site prior to construction or to enable foundations to be laid or infrastructure to be constructed).

**Table 2: Red imported fire ant biosecurity requirements for imported waste**

Certificate required	Hay	Turf	Soil	Organic mulch	Potted plants	Agricultural and earth moving equipment
Plant Health Certificate	✓	✓	✓	✓	✓	✓
Plant Health Assurance Certificate					✓	
HACCP Biosecurity Certificate ECCPRIFA03					✓	
HACCP Biosecurity Certificate ECCPRIFA21			✓	✓		

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