




# Environmental Assessment Level 2

SECTION 1

WORK DETAILS			
Project / Activity Name	Nelson Bay Beach Sand Management (E012) and Dune Rehabilitation (RA034)	Section undertaking Project / Activity (Proponent)	Public Domain & Services
Project Manager / Works Supervisor	Roadside and Drainage Coordinator	Timing and Duration	Maintenance activities ongoing.
Environmental Risk Level	Determined during the Initiation Phase through an Enterprise Risk Assessment. See Project Management Framework. (Low, Medium, High or Extreme)	Project / Job Number	
		EDRMS	25/132978
ACTIVITY DESCRIPTION			
Description	<p>Proposed works are identified as actions RA034 and E012 in the adopted Coastal Management Program.</p> <p>RA034: Undertake works to manage access and rehabilitate the dunes. This action involves renewal of dune fencing and dune re-vegetation (including sediment controls), with a provision for ongoing annual maintenance (e.g. weeding and replanting as required).</p> <p>E012: Undertake an ongoing program of sand management and dune rehabilitation works for all coastal foreshore land managed by Council. This includes managing public access ways, fencing, weeding and replanting with locally endemic species.</p>		
Justification and Objectives	<p>Sand management is a key issue for the project site and requires ongoing management by Council. Ongoing erosion at this location requires the placement of sand to protect assets and amenity. Beach accessways can become unsafe at times due to erosion (e.g., undermining) and regularly require repairs or replacement. Hence there is a need for ongoing active management.</p> <p>Dune re-vegetation and management of accessways supports dune stability and reduces impacts from public access. While Council has a regular program of maintenance of dunes, this location requires a more extensive fencing and re-vegetation works.</p>		
Scope of Works	<p>The proposed activities may include:</p> <ul style="list-style-type: none"><li>• Temporary installation of site controls for erosion and sediment, traffic control and pedestrian signage</li><li>• Rehabilitation of dunes including fencing, weed control, sediment control and revegetation.</li><li>• Tree maintenance – pruning, hazard reduction</li><li>• Beach clean-up of debris including dead animals and beach wrack.</li><li>• Mowing of turf ed areas.</li><li>• Sand management- Minor scale sand carting or beach scraping to address accretion of sand and/or erosion in areas identified in the site map:</li></ul> <div></div>		

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		<ul style="list-style-type: none"> <li>All activities to occur above the mean high watermark. Activity initiation is based on observation.</li> </ul> <p>This is an ongoing maintenance scale activity that is only undertaken to:</p> <ul style="list-style-type: none"> <li>make safe public access ways</li> <li>address minor erosion to protect the integrity of the dunes, protect for landward assets</li> <li>address the inundation of recreation areas.</li> </ul> <p>Machinery that may be used includes:</p> <ul style="list-style-type: none"> <li>Pozi-track</li> <li>Small excavators</li> <li>Long reach excavators</li> <li>Backhoe</li> <li>Heavy haulage trucks only if required and if only used to deliver fill for sand placement</li> <li>Ride on lawn mower</li> <li>Edger</li> <li>Auger</li> <li>Chainsaws</li> </ul> <p>Key processes:</p> <ul style="list-style-type: none"> <li>Revegetation works – digging small scale planting holes, native planting and erosion control</li> <li>Delivery of materials – small tipper truck and/or work ute deliveries of materials. Heavy haulage vehicles may be required on occasion.</li> <li>Demolition – limited to removal of old and/ or damaged fencing as part of maintenance activities and any failed plantings.</li> <li>New/ replacement fencing - Post hole digging to a typical depth of approx. 800mm. May also include staked fencing driven into existing ground; primarily wind blown sands. Timber, shade cloth, wire.</li> <li>Stockpiling – Mostly existing materials on site, or sand from within the system. imported material such as gravel for access</li> <li>Machinery, Vehicles and tools – typically small trucks/utes and earth moving equipment, auger, ditch witch.</li> <li>Weeding – low impact, hand removal expected. Use of herbicides may be required.</li> <li>Irrigation – utilisation of existing irrigation systems where feasible. Establishment irrigation by hand or vehicle mounted equipment may be required</li> </ul>		
	<b>Consideration of Alternatives</b>	<p>A do nothing approach was considered however it was identified that this would result in excessive erosion of the foreshore and have adverse impacts to public amenity and the natural environment.</p> <p>Foreshore protection works such as seawalls and groynes were also considered however these were deemed to be economically unfeasible and risk unacceptably high negative impacts to public amenity and the natural environment.</p>		
	<b>LOCATION</b>			
	<b>Address (including Lot and DP)</b>	62 Victoria Pde LOT 560 DP 1033413 58 Victoria Pde LOT 559 DP 1033413 56 Victoria Pde LOT 550 DP 1033413 30 Victoria Pde LOT 7011 DP 1068905 98 Shoal Bay Rd LOT 101 DP 1175980	<b>Land Zoning</b>	E1 – Local Centre RE1 – Public Recreation
	<b>Landowner</b>	<input type="checkbox"/> Port Stephens Council <input checked="" type="checkbox"/> Other-( <b>Crown Land</b> and Crown Trustee)	<b>Date of Site Inspection</b>	29 May 2025
<b>Existing Environment</b>	The site is a mix of modified and natural foreshore adjacent to the site is formalised park land. The section situated between D'Albora Mariner and the eastern groyne contains sand pillows and concrete barriers providing the park protection from coastal erosion.			
REFER TO APPENDIX 3				

## APPROVAL PATHWAY

**SEC** These Environmental Assessment forms are for Pathway 3: Part 5 Environmental Assessment under SEPP (Transport and Infrastructure) only.  
See Environmental Assessment Guide - Planning Pathway Overview Chapter (and Flowcharts) for support in this Section.

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<b>Pathway 1: Local Development (Part 4) → if YES, commence a Development Application</b>		
Are the works <u>Permitted with Consent</u> under <u>SEPP (Transport and Infrastructure)</u> ? <i>See Environmental Assessment Guide : Planning Pathway Overview Chapter : Flowcharts Planning Pathway</i>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Do the works trigger the <u>SEPP (Resilience and Hazards)</u> ? <i>See Environmental Assessment Guide : Planning Pathway Overview Chapter : Flowcharts SEPP (Resilience and Hazards)</i>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
<b>Pathway 2: Tree / Vegetation Removal → if YES commence an Environmental Assessment : Trees &amp; Vegetation</b>		
Is this activity solely involving vegetation and/or tree removal? <i>See Environmental Assessment Guide : Planning Pathway Overview Chapter : Flowcharts tree removals</i>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
<b>Pathway 3: Transport and Infrastructure SEPP (Part 5)</b>		
a) Is the activity permissible under the <u>LEP</u> ? (i.e. not listed as Prohibited in the Land Use Table?) If NO, rethink the proposed activity and its location. If YES move to (b).  CI 2.165 of the Transport and Infrastructure SEPP states that environmental management works form part of waterway and foreshore management activities. Environmental management activities are permitted without consent under Zone E1 and RE1 provisions in the PSLEP.	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
b) Are the works permitted as <u>Exempt</u> under <u>SEPP (Transport and Infrastructure)</u> but assessed as greater than negligible in Section 3 Environmental Impact Triggers in the Environmental Assessment Level 1 Form?  <u>Or</u>	Yes <input type="checkbox"/> Clause:	No <input checked="" type="checkbox"/>
c) Are the works <u>Permitted without Consent</u> under <u>SEPP (Transport and Infrastructure)</u> ?  <u>If YES to either of these questions, move to Section 3: Environmental Impact Triggers of this Form.</u>	Yes <input checked="" type="checkbox"/> Clause: CI 2.165 (1)	No <input type="checkbox"/>

<b>ENVIRONMENTAL IMPACT TRIGGERS</b>			
<i>See Environmental Assessment Guide – Technical Specialists &amp; Impact Assessments Chapters for support in this Section.</i>			
<b>SECTION 3</b>	<b>BIODIVERSITY</b> <ul style="list-style-type: none"> <li>Known impact to Threatened Species or Ecological Communities (including clearing of habitat)</li> <li>Known impact on SEPP (Koala Habitat Protection)</li> <li>Known impact to areas mapped on the Biodiversity Values map</li> <li>Working within a declared area of <u>outstanding biodiversity value (AOBV)</u></li> </ul>	Koala, Green Turtle, Pied Oystercatcher, White Bellied Sea Eagle, Eastern Curlew sited. Mainly cleared land. No impact to BDV or AOBV. No known impact.	No
	<b>COASTAL</b> <ul style="list-style-type: none"> <li>Known impact to SEPP (Resilience and Hazards) mapped areas (including proximity) of Coastal Wetland and/or Littoral Rainforest while undertaking exempt works?</li> </ul> <i>See Environmental Assessment Guide : Planning Pathway Overview Chapter : Flowcharts SEPP (Resilience and Hazards)</i>	No Coastal Wetland or Littoral Rainforest within site.	No
	<b>HERITAGE</b> Known impact to Aboriginal and / or non-indigenous heritage?	AHIMS search conducted 29 May 2025. No recorded sites or places identified.	No
	<b>NATIONALLY SIGNIFICANT</b> Potential impact to Matters of National Environmental Significance? <i>Environment Protection and Biodiversity Conservation Act 1999</i>	Crested Tern and short-tailed Shearwater recorded near site. No impact expected.	No
	<b>If all of the above are NO, continue with this Level 2 Environmental Assessment.</b>		
<b>STOP: If you've said YES to any of the above criteria, move to a Level 3 Environmental Assessment and / or talk to the relevant technical specialist. See Environmental Assessment Guide – Technical Specialists &amp; Impact Assessments Chapters.</b>			



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## SECTION 4 : Approvals, Concurrence, Licences, Permits and Notification

See *Environmental Assessment Guide: External Agency Consultation* for support in this Section.

Specifically refer to **Flowchart: Publishing EAs on Council's Website** to determine if this assessment requires publication on Council's website.

The permits/licences highlighted below will trigger publication onto Council's Website

Trigger		Type	Authority	Applicability
Land Owner	Working on land not owned or controlled by PSC	Land owner consent Land access licence	Marine Parks, Hunter Water, Forestry, National Parks, Australian Government	Yes
	Working on Crown Land and disturbing the ground	Native Title Referral	Port Stephens Council- refer to Strategic Property	Yes
	All works on Crown Land	Land Claim Search and Assessment	NTS Corp Port Stephens Council- refer to Strategic Property	Yes
National Parks	Working adjacent to a national park, nature reserve or other area reserved under NPW Act 1974	Written notice of intention to carry our works and scope of works to NPWS	National Parks and Wildlife Service (NPWS)	No
Roads	Working on a classified road not under PSC control or agreement	Concurrence	Transport for New South Wales	No
Water	Natural water usage (dewatering or ground water use)	<a href="#">Water Access Licences and work/use approvals</a>	NSW Department of Climate Change, Energy, the Environment and Water	No
	Discharging to sewer	<a href="#">Trade Waste Agreement</a>	Hunter Water	No
Utilities	Earthworks near services (gas, telecommunications, electricity, water)	<a href="#">Before you Dig check</a>	Before you dig Australia	Yes
	Working in a mine subsidence area	<a href="#">Approval</a>	Subsidence Advisory NSW Government	No
Heritage	<a href="#">Working near items on the State Heritage Register</a>	Heritage Act: <ul style="list-style-type: none"> <li><a href="#">S57(2) exempt notification</a></li> <li><a href="#">S60 approval</a></li> <li><a href="#">S140 excavation approval</a></li> </ul>	NSW Department of Climate Change, Energy, the Environment and Water	No
	<a href="#">Harm or potential harm to Aboriginal objects and places</a>	<a href="#">Aboriginal Heritage Impact Permit (AHIP)</a> S90 NPW Act	NSW Department of Climate Change, Energy, the Environment and Water	No
	<a href="#">Local heritage item</a>	Concurrence	Port Stephens Council	No
Waterways/ Marine	Working near or in a Marine Park	<a href="#">Marine Park Permit</a>	Department of Primary Industries (Marine Parks)	Yes
	Constructing a fixed or floating structure in or over navigable waters (e.g. new boat ramp)	Written notice of intention to carry our works and scope of works to Transport for NSW	Transport for NSW	No
	<a href="#">Dredging or reclaiming of waterways</a>	Land owner consent <ol style="list-style-type: none"> <li><a href="#">Fisheries Permit</a> S201</li> <li><a href="#">Marine Park Permit</a></li> <li><a href="#">Crown Land License</a></li> </ol>	Land owner: <ol style="list-style-type: none"> <li>DPI (Fisheries)</li> <li>DPI (Marine Parks)</li> <li>DPE (Crown Lands)</li> </ol>	No
		<a href="#">Environmental Protection Licence (EPL)</a>	NSW Environmental Protection Authority (EPA)	No
	Controlled activity in, on or under waterfront land	<a href="#">Controlled Activity Approval</a>	NSW Department of Climate Change, Energy, the Environment and Water	No
	Use explosives or electrical devices in a waterway	<a href="#">Fisheries Permit</a>	DPI (Fisheries)	No
Flora and Fauna	Working near aquatic reserves, habitat or marine vegetation	<a href="#">Fisheries Permit</a> S205	DPI (Fisheries)	Yes - Assessment requires publication on PSC Website

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	Obstructing fish passage	<a href="#">Fisheries Permit</a> S219	DPI (Fisheries)	<b>No</b>
	Taking or possessing fish or marine vegetation Undertaking Aquaculture	<a href="#">Fisheries Permit</a> S37 /S144	DPI (Fisheries)	<b>No</b>
	Working near or with threatened species or part of an ecological community.	<a href="#">Threatened Species Licence</a>	NSW Department of Climate Change, Energy, the Environment and Water	<b>No</b>
	Research, education or conservation activities involving protected, threatened and/or endangered species.	<a href="#">Scientific Licence</a>	NSW Department of Climate Change, Energy, the Environment and Water	<b>No</b>
	Harm of native fauna	<a href="#">Licence</a>	National Parks and Wildlife Service (NPWS)	<b>No</b>
<b>Pollution and hazards</b>	Noise	Showing inconsistency with <a href="#">Construction Noise Guidelines</a>	NSW EPA	<b>No</b>
	Pollution / Scheduled Activity	<a href="#">Environmental Protection Licence (EPL)</a>	NSW EPA	<b>No</b>
	Asbestos removal	<a href="#">Licenced removalist</a>	SafeWork NSW	<b>No</b>
	Storage of hazardous chemicals	<a href="#">Hazardous chemical notification</a>	SafeWork NSW	<b>No</b>
<b>Flooding</b>	Carry out development that may be permitted without consent under a relevant provision (see s2.13 SEPP T&I) on flood liable land	Written notice of intention to carry our works and scope of works to State Emergency Service	State Emergency Service (SES)	<b>No</b>
<b>Mine Subsidence</b>	Development on land in a mine subsidence district	Written notice of intention to carry our works and scope of works to Mine Subsidence Board	Mine Subsidence Board	<b>No</b>
<b>National</b>	<a href="#">Matters of National Environmental Significance</a>	<a href="#">Concurrence and permit EPBC Act</a>	Australian Government (Department of Climate Change, Energy, the Environment and Water)	<b>No</b>



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## SECTION 5 : Environmental Impact Assessment

**Aspect:** If the aspect is applicable to your activity undertake the impact assessment. If the aspect is not applicable to your activity, the impact assessment is not required but you may provide evidence as to why it is not applicable eg. dates and outcomes of GIS searches and communication with technical specialists.

**Impact Description:** If the aspect is applicable, you must identify and describe the specific impacts from the activity. Descriptions can include the cause, extent, severity and duration; identification of any source and receivers; if the impact is current, occurs only during works or continues post works.

**Impact Without Control:** Consider the level of impact from what you've described without any environmental controls identified.

**Environmental Controls:** If impact without control is greater than negligible, identify appropriate environmental controls to reduce impact. Hierarchy of environmental controls include Elimination, Substitution, Engineering, Administration, Safeguards. Refer to the standard bank of controls document for further guidance.

**Impact With Control:** Considering the initial impact of the activity and your identified environmental controls, determine the final impact on the environment from the activity.

Aspect		Impact Description	Impact Without Control	Environmental Controls	Impact With Control
AIR	Dust <i>Applicable</i>	Potential for dust generation during the activities outlined in the scope of works due to vehicle movements and plant operations.  Dust emissions are expected to be negligible due to the large particle size of the sand and unlikely disturbance to other soils.  Air quality is unlikely to be significantly affected and dust generation is expected to be minimal.	<i>Negligible: Minimal to no dust generated.</i>	<ul style="list-style-type: none"> <li>Dust generation to be visually monitored and controlled if required.</li> <li>Dust complaints will be dealt with in accordance with Council's complaints handling procedures and the source eliminated or reduced where practical.</li> <li>Access to work sites and around work areas will be via boat ramps and existing vehicle access ways to reduce disturbance.</li> <li>No disturbance to sand to be made during high wind events, monitor conditions.</li> </ul>	<b>Negligible: Minimal to no dust generated.</b>
	Odours <i>Applicable</i>	Potential for odours from fumes generated from plant and equipment exhaust. Plant and equipment likely to generate odorous includes vehicles and excavators. This will be only short term. The air quality is unlikely to be significantly affected.	<i>Negligible: Minimal to no odours detectable.</i>	<ul style="list-style-type: none"> <li>Plant, equipment and materials will be maintained and stored in accordance with industry standards and procedures.</li> <li>Complaints will be dealt with in accordance with Council's complaints handling procedures and the source eliminated or reduced where practical.</li> </ul>	<b>Negligible: Minimal to no odours detectable.</b>

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	<b>Emissions</b> <i>Applicable</i>	Potential for emissions generated from heavy machinery and plant exhaust. This will be limited and short term. The air quality is unlikely to be significantly affected.	<i>Negligible: Minimal to no emissions emitted.</i>	<ul style="list-style-type: none"><li>• All vehicles and machinery will be maintained to industry standards to maintain exhaust emissions within manufacturer's specifications.</li><li>• Machinery and vehicles will not be left running or idling for long periods when not in use.</li><li>• Complaints will be dealt with in accordance with Council's complaints handling procedures and the source eliminated or reduced where practical</li></ul>	<b>Negligible: Minimal to no emissions emitted.</b>
<b>Aspect</b>		<b>Impact Description</b>	<b>Impact Without Control</b>	<b>Environmental Controls</b>	<b>Impact With Control</b>
<b>NOISE</b>	<b>Noise</b> <i>Applicable</i>	Noise is expected from the following sources during works:  1. Personnel 2. Plant and equipment 3. Vehicles  Sensitive receivers in the area include the commercial operators within the marina (+75m from works), the Dolphin Watch Café (+35m from works) and residences along Victoria Parade (+20m from works),  Noise is not expected to be loud enough to cause disruption, but some noise generation is unavoidable and restricted to the works period only.	<i>Minor: Minor noise detectable during works with complaints unlikely.</i>	<ul style="list-style-type: none"><li>• Plant and machinery will only be utilized during ordinary maintenance working hours. Works will not be undertaken outside of 7:00am – 5:00pm Monday to Friday and 8:00am – 2pm Saturdays. No maintenance work or deliveries will occur on Sundays or public holidays or at night.</li><li>• Plant, equipment and materials will be maintained in accordance with all relevant standards and procedures to reduce noise created.</li><li>• All equipment used will comply with the Australian Standards.</li><li>• Plant and equipment which is used intermittently will be either shut down in intervening periods or throttled down to a minimum.</li><li>• Machinery and vehicles will not be left running or idling for long periods when not in use.</li><li>• Noisy plant and equipment where possible will be positioned and orientated so as to minimise impact to nearby public and residents.</li><li>• Any noise complaints would be addressed immediately in accordance with Council's complaints handling procedures and resolved where possible.</li></ul>	<b>Minor: Minor noise detectable during works with complaints unlikely.</b>
	<b>Vibration</b> <i>Applicable</i>	Minimal localised vibration may occur from heavy machinery.	<i>Negligible: Minimal to no vibration generated.</i>	<ul style="list-style-type: none"><li>• Plant and machinery will only be utilized during ordinary maintenance working hours. Works will not be undertaken outside of 7:00am – 5:00pm Monday to Friday and 8:00am – 2pm Saturdays. No maintenance work or deliveries will occur on Sundays or public holidays or at night.</li><li>• Any complaints would be addressed immediately in accordance with Council's relevant codes and policies.</li></ul>	<b>Negligible: Minimal to no vibration generated.</b>

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Aspect		Impact Description	Impact Without Control	Environmental Controls	Impact With Control
WATER	Stormwater	Stormwater quality or flow is highly unlikely to be affected or disturbed during works. Works would occur within proximity to stormwater infrastructure however no impact is anticipated.	<i>Negligible: Minimal to no change to stormwater quality or flows.</i>	<ul style="list-style-type: none"> <li>Existing stormwater swales and pits will remain operational during the maintenance works, but will have erosion and sedimentation controls (blue book) to prevent pollutants entering stormwater system.</li> <li>Installation of erosion and sedimentation controls around stormwater swales and pits.</li> <li>Re-fuelling of plant to be performed offsite where possible or in a bunded area.</li> <li>Drainage systems will be checked and maintained regularly to ensure they are operating at capacity e.g. removal of debris.</li> <li>All staff will be trained in spill response procedures and all spills will be cleaned up immediately.</li> <li>An emergency spill kit is to be kept on site at all times. All staff are to be made aware of the location of the spill kit and trained in its use.</li> <li>All chemicals onsite (within work truck) to be stored securely without being opened.</li> <li>Any chemical handling activities will be carried out in a bunded area.</li> <li>All chemicals, fuels and oils will be stored in suitable bunded areas with the capacity of the bund at least 120 per cent of the volume of the largest container stored within the bunded area.</li> <li>Equipment will not be used if there are any signs of fuel, oil, or hydraulic leaks. Leaks would be repaired immediately or the equipment will be removed from site and replaced.</li> <li>No equipment, machinery or works vehicles would be washed on site.</li> <li>All storage and handling of chemicals and fuels on site will be kept in accordance with the relevant legislative and regulatory requirements.</li> <li>Use of chemicals on site will be minimised.</li> <li>Stockpiles are to comply with blue book and be contained.</li> <li>No work to be carried out in extreme weather events such as storms and flooding.</li> <li>Remove all excess and loose materials from gutters immediately on finishing.</li> </ul>	<b>Negligible: Minimal to no change to stormwater quality or flows.</b>
	Applicable	There is minimal potential for chemicals such as fuel or oil from plant and equipment to enter stormwater systems in the event of a spill or leak. Chemicals will not be stored on site and the risk of a chemical spill is low.			

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				<ul style="list-style-type: none"> <li>Erosion and sedimentation controls are to be implemented until grass in swale is established.</li> </ul>	
	Groundwater <i>Applicable</i>	Groundwater may be present at the site however is not expected to be intercepted as a result of the works.	<i>Negligible: No disturbance of groundwater.</i>	<ul style="list-style-type: none"> <li>Refer to chemicals and hazardous materials controls.</li> <li>Implement the procedure documented in the Unexpected Finds Field Guide Handbook.</li> </ul>	<b>Negligible: No disturbance of groundwater.</b>
	Water Bodies <i>Applicable</i>	Works will be concentrated in the natural dune area and above the mean high water mark. Activities are considered low impact and there are no anticipated impacts to the adjacent Port. Despite activities including the importing of sand and gravel, the risk of contamination and sedimentation is low.	<i>Negligible: Works may be carried out adjacent to a water body but will cause minimal to no change.</i>	<ul style="list-style-type: none"> <li>Ensure minimisation and mitigation measures for storm water have been correctly implemented to ensure minimal impact to water bodies.</li> <li>Herbicide use shall not be permitted within 10 metres of any riparian areas.</li> </ul>	<b>Negligible: Works may be carried out adjacent to a water body but will cause minimal to no change.</b>
Aspect		Impact Description	Impact Without Control	Environmental Controls	Impact With Control
SOIL	Erosion and Sediment <i>Applicable</i>	Works are primarily focussed on stabilisation and replenishment of areas subject to coastal erosion. Therefore there may be a positive impact on coastal erosion post works. Some localised stockpiling during construction activities may occur however this is expected to be minimal. Sand placed on the beach is likely to be eroded over time however the placement of sand will be placed above the mean high water mark and limit volumes to ensure aquatic vegetation is not smothered. The placement of gravel for access may cause minor localised sedimentation.	<i>Negligible: Minimal to no erosion disturbance or release of sediment.</i>	<ul style="list-style-type: none"> <li>Appropriate Erosion and Sediment controls will be installed and maintained in accordance with the "Blue Book". An accurate record of these controls and their maintenance is to be kept and provided upon request. Including silt fences and barriers around drains</li> <li>All erosion and sediment controls will be put in place prior to excavation activities and remain in place until maintenance is completed and re-established.</li> <li>Erosion and sediment control measures will be routinely inspected and maintained. This includes before and after expected heavy rainfall, with any issues corrected promptly.</li> <li>Disturbed areas will be stabilised as soon as practically possible. Site disturbance will be minimised by containing machinery access to the maintenance site only and only when required.</li> </ul>	<b>Negligible: Minimal to no erosion disturbance or release of sediment.</b>

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				<ul style="list-style-type: none"> <li>• Works exposing soils would be only undertaken when heavy rain is not predicted within the following 24 hours, unless emergency works are required.</li> <li>• Access to work sites and around work areas (where appropriate) would be planned and managed to reduce disturbance.</li> <li>• Run-off shall be diverted around the work site and erosion sediment control devices shall be installed immediately downslope of disturbed areas.</li> <li>• Vehicle and machinery movements would be minimised during and immediately following wet weather to avoid/minimise disturbance to ground cover.</li> <li>• Erosion and sediment controls are to be checked and maintained on a regular basis and records kept and provided on request.</li> </ul>	
	<b>Acid Sulphate Soils</b>  <i>Applicable</i>	<p>Class 5, Class 3 and 1 ASS are mapped within the works area. Soil testing conducted in 2019 by RCA Australia tested 14 locations within the marina (refer Appendix 6). The report notes that there are Potential ASS present and if acidification or soils occurs to treat soil with 3kg of lime per tonne of excavated soil.</p> <p>Works involving ground disturbance will be primarily within the dunes and therefore unlikely to encounter ASS.</p>	<i>Negligible: No Acid Sulphate Soils present or disturbed.</i>	<ul style="list-style-type: none"> <li>• If Acid Sulphate Soils disturbance occurs during the proposed maintenance works, refer to the Unexpected Finds Field Guide Handbook.</li> </ul>	<b>Negligible: No Acid Sulphate Soils present or disturbed.</b>
	<b>Contamination</b>  <i>Applicable</i>	<p>There is minimal potential for chemicals such as fuel or oil from plant and equipment to enter waterways in the event of a spill or leak. Chemicals will not be stored on site and the risk of a chemical spill is low.</p> <p>Contamination may be present within the marina from leakage and effluent from vessels. No disturbance of sand is proposed below the mean high water mark and therefore will not disturbed potentially contaminated areas.</p> <p>Contamination may also occur from the use of pesticides and importing of fill.</p>	<i>Minor: Contamination is known within the site but won't be disturbed: or contaminants are used but will not be released.</i>	<ul style="list-style-type: none"> <li>• All Plant and equipment to be serviced in accordance with manufacturer specifications and regimes.</li> <li>• Potential risks to be minimised by keeping plant in good working order, refuelling in controlled/ appropriately bunded areas and having spill kits onsite with appropriate emergency spill response procedures in place.</li> <li>• Plant, equipment and materials used during the programmed maintenance will be maintained and stored in accordance with all relevant standards and procedures.</li> <li>• All staff will be trained in spill response procedures and all spills will be cleaned up immediately</li> <li>• Equipment will not be used if there are any signs of fuel, oil or hydraulic leaks. Leaks will be repaired immediately or the equipment will be removed from site and replaced.</li> </ul>	<b>Minor: Contamination is known within the site but won't be disturbed: or contaminants are used but will not be released.</b>

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				<ul style="list-style-type: none"><li>• If contamination occurs during the proposed maintenance works, refer to the Unexpected Finds Field Guide Handbook ...</li><li>• Erosion and sediment controls are to be checked and maintained on a regular basis and records kept and provided on request.</li><li>• All imported materials are to be tested and classified prior to placement.</li><li>• Refer to controls in <i>Hazardous and Dangerous Goods</i> to manage impacts from pesticide use.</li></ul>	
Aspect		Impact Description	Impact Without Control	Environmental Controls	Impact With Control
FLORA & FAUNA	<p>Native Fauna (Animals)</p> <p>Applicable</p>	<p>Potential minor disturbance to beach dwelling fauna where beach areas are used for site access from movements of machinery.</p> <p>No fauna habitat will be modified or removed as part of the proposed works.</p> <p>There is potential for fauna to traverse the site during maintenance operations.</p>	<p><i>Negligible: Native fauna and its habitat may be present on-site but not impacted.</i></p>	<ul style="list-style-type: none"><li>• The works area must be inspected visually at the commencement of work each day for any fauna, nests or dreys.</li><li>• If fauna is passing through the site, cease works within 100 m of the fauna and allow fauna to move through the site without undue duress or harassment.</li><li>• If the fauna is not passing through the site, the Project Manager must contact the relevant internal environmental officer. Follow the Unexpected Finds Field Guide.</li><li>• If any injured fauna are present, the Unexpected Finds Field Guide process must be followed.</li><li>• To minimise impact of habitat loss from weed removal- if nests/dreys are found within weed areas, segmented systematic control of prolific vegetation must occur to allow for migration and mitigation of habitat destruction. The Project Manager must contact Council internal environmental officer for advice.</li><li>• Where practicable, work vehicle access and parking is to be restricted to designated work areas and existing formed access tracks and pathways to prevent any damage to habitat.</li><li>• If harm occurs to fauna or their habitat, works must cease and the incident immediately reported through to the Environmental Risk Manager. The Environmental Incident Procedure must be followed.</li><li>• Materials, plant and equipment will not be placed in a manner that could result in damage to surrounding vegetation.</li></ul>	<p><b>Negligible: Native fauna and its habitat may be present on-site but not impacted.</b></p>

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				<ul style="list-style-type: none"> <li>Pesticide application will be undertaken by suitably qualified personnel and in accordance with the NSW Weed Control Handbook to prevent impact to habitat.</li> <li>Chemical/Pesticide to be managed as per Section "Hazardous Materials".</li> <li>Vegetation to be inspected prior to pruning to ensure there are no tree hollows, nests that will be impacted. If fauna or hollows/nests are discovered, the Project Manager is to contact internal environmental specialist for further advice.</li> </ul>	
	<p>Native Flora (Vegetation including trees)</p> <p><i>Applicable</i></p>	<p>Works aim to rehabilitate dune areas with native vegetation. Works will result in an improved state of native flora.</p>	<p><i>Positive: Not applicable.</i></p>	<ul style="list-style-type: none"> <li>All workers to be experienced in Plant ID skills to ensure correct identification of native flora, invasive species and threatened species.</li> <li>If threatened flora is unexpectedly identified onsite, the area is not to be disturbed and the Project Manager must notify the relevant internal staff with environmental technical expertise. See the Unexpected Finds Field Guide.</li> <li>Materials, plant and equipment will not be placed in a manner that could result in damage to surrounding vegetation.</li> <li>Where practicable work vehicle access and parking is to be restricted to designated work areas and existing formed access tracks, pathways and hard stand areas like car parks to prevent any damage to habitat.</li> <li>If harm to flora occurs, works must cease and the incident immediately reported through to the Environmental Risk Manager. The Environmental Incident Procedure must be followed.</li> <li>Vegetation to be inspected prior to pruning or removal to ensure there are no tree hollows, nests, fauna such as koalas sighted or scat on the ground below. If hollows/nests or evidence of fauna are discovered, the Project Manager is to contact Council's internal environmental specialist for further advice.</li> <li>Pesticide application will be undertaken by suitably qualified personnel and in accordance with the NSW Weed Control Handbook to prevent impact to habitat.</li> <li>Chemical/pesticide to be managed as per Section "Hazardous Materials".</li> <li>Vegetation pruning or removal must follow Council's Tree removal process.</li> </ul>	<p><b>Positive: Native flora will be restored or enhanced.</b></p>

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				<ul style="list-style-type: none"><li>Tree Protection Zones to be installed for trees which are not being removed.</li></ul>	
<b>Aquatic Flora &amp; Fauna</b>  <i>Applicable</i>	<p>Posidonia and Zostera is mapped adjacent to where works would occur.</p> <p>There is potential for indirect impacts to aquatic flora and fauna including the unintentional smothering/sand covering of adjacent seagrass.</p> <p>Although the proposed works are in close proximity to the areas of seagrass, the works will mainly occur above the MHW and any excavation required below the MHW will be less frequent and only occur during low tide.</p> <p>Sedimentation of the seagrass is therefore unlikely to occur as the dominant substrate is sand which isn't prone to being suspended in water and being carried long distances.</p> <p>Provided that appropriate management of sand occurs and the control measures are implemented, these indirect impacts to seagrass are likely to be very small or negligible.</p> <p>Benthic infauna may be present within the sand profile and localised direct impact.</p>	<i>Moderate: Aquatic flora and fauna are known within the locality and could be impacted.</i>	<ul style="list-style-type: none"><li>See Environmental Controls for <i>Native Fauna and Native Fauna</i>.</li><li>All staff are to be inducted on the location of aquatic flora and the potential for encountering aquatic fauna onsite.</li><li>Access to beach is to be limited to the required works only. No parking of vehicles is to occur on the beach.</li><li>Collection of seaweed/drift wood/removal of dead aquatic fauna may require a Marine Park Permit (to follow up during permit process).</li><li>Minimise movement of sand where possible.</li></ul>	<b>Minor: Aquatic flora and fauna are known within the locality but won't be impacted.</b>	
<b>Threatened Species &amp; Endangered Ecological Communities</b>  <i>Applicable</i>	<p>Koala, Green Turtle, Pied Oystercatcher, White Bellied Sea Eagle, Eastern Curlew have been recorded at the site. Threatened fauna species are likely to continue to visit the area however are considered unlikely to be impacted by the proposed works.</p> <p>No fauna habitat is anticipated to be modified or removed as part of the proposed works.</p>	<i>Minor: Species, populations or communities are known within the locality but won't be impacted.</i>	<ul style="list-style-type: none"><li>See Environmental Controls for <i>Native Fauna and Native Fauna</i>.</li><li>All staff are to be inducted of the locations of threatened flora species, experienced in plant ID skills and notified of the potential for encountering threatened fauna onsite.</li><li>If harm to Threatened Species and EECs occurs, works must cease and the incident immediately reported through to the Environmental Risk Manager. The Environmental Incident Procedure must be followed.</li></ul>	<b>Minor: Species, populations or communities are known within the locality but won't be impacted.</b>	

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	<b>Sensitive Areas</b> <i>Applicable</i>	The site is mapped as a local link corridor. Impacts to local links may be impacted during works however once works are complete there is expected to be improved links for wildlife.	<i>Minor: Sensitive areas are known within the locality but won't be impacted.</i>	<ul style="list-style-type: none"> <li>Project staff to liaise with Council Officer Vegetation Management Supervisor to co-ordinate revegetation/weeding works alongside volunteer activities.</li> <li>See Environmental Controls for <i>Native Fauna and Native Fauna</i>.</li> </ul>	<b>Minor: Sensitive areas are known within the locality but won't be impacted.</b>
	<b>Priority Weeds, Feral Animals and Pathogens (Biosecurity)</b> <i>Applicable</i>	<p>Spiny Burr Grass is mapped within the site. Invasive species referral was submitted on 30 May 2025 and a response was received on 5 August 2025 (see attached).</p> <p>Works aim to make the natural environment more resilient to environmental threats and likely to result in a positive impact.</p>	<i>Minor: Noxious weeds, feral animals and pathogens are known within the locality and controlled in accordance with a permit or order.</i>	<ul style="list-style-type: none"> <li>The site has been identified as being affected by a biosecurity matter (Spiny Grass)</li> <li>All works will be undertaken in accordance with the conditions listed in the Invasive Species Referral and Biosecurity Permit (if applicable).</li> </ul>	<b>Minor: Noxious weeds, feral animals and pathogens are known within the locality and controlled in accordance with a permit or order.</b>
Aspect		Impact Description	Impact Without Control	Environmental Controls	Impact With Control
<b>HERITAGE</b>	<b>Aboriginal</b> <i>Applicable</i>	<p>An AHIMS search was conducted on 29 May 2025. No aboriginal places or items were identified within or adjacent to the site.</p> <p>Worimi LALC has been notified of the maintenance program and requires further information on activities prior to works occurring.</p> <p>Coastal areas have a higher likelihood of containing Aboriginal items and therefore unexpected finds may occur during works.</p>	<i>Negligible: Aboriginal artefact, object or places are not known within the locality.</i>	<ul style="list-style-type: none"> <li>If suspected Aboriginal objects are located, works must immediately cease, the item protected (no-go zone with tape) and the incident immediately reported through to the Environmental Risk Manager. The Unexpected Finds Field Guide must be followed.</li> <li>If human remain are found, works must immediately cease, the item protected (no-go zone with tape) and the incident immediately reported to NSW Police then the Environmental Risk Manager. The Unexpected Finds Field Guide must be followed.</li> </ul>	<b>Negligible: Aboriginal artefact, object or places are not known within the locality.</b>

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				<ul style="list-style-type: none"> <li>Engage with Worimi Cultural Officers to discuss scope of works prior to any works occurring. If additional environmental controls are raised by Worimi LALC to protect aboriginal heritage, they are to be documented and issued as part of project initiation documentation.</li> </ul>	
	<b>Non-Indigenous</b>  <i>Applicable</i>	No items of non-indigenous heritage significance are located within the site.	<i>Negligible: Non-Indigenous heritage items are not known within the locality.</i>	<ul style="list-style-type: none"> <li>If suspected non-indigenous objects are located, works must immediately cease, the item protected (no-go zone with tape) and the incident immediately reported through to the Environmental Risk Manager. The Unexpected Finds Field Guide must be followed.</li> </ul>	<b>Negligible: Non-Indigenous heritage items are not known within the locality.</b>
Aspect		Impact Description	Impact Without Control	Environmental Controls	Impact With Control
SOCIAL	<b>Amenity &amp; Community Disturbance</b>  <i>Applicable</i>	Minor impacts to amenity may occur relating to visual and noise however these impacts are anticipated to be minor and temporary in nature.	<i>Negligible: Minimal to no disturbance.</i>	<ul style="list-style-type: none"> <li>Access to work sites and around work areas will be planned and managed to reduce disturbance.</li> <li>Any complaints would be addressed immediately in accordance with Council's relevant codes and policies.</li> <li>Activities that may impact public amenity should avoid peak visitation periods such as school holidays and weekends.</li> </ul>	<b>Negligible: Minimal to no disturbance.</b>
	<b>Public Access &amp; Safety</b>  <i>Applicable</i>	Parts of sites will be closed off to the public whilst undertaking works to maintain safety however main access points will be kept open where possible to minimise impact.	<i>Minor: Public access and safety will be disturbed during works but is managed in accordance with standard operating procedures.</i>	<ul style="list-style-type: none"> <li>See Environmental Controls for <i>Amenity &amp; Community Disturbance</i>.</li> </ul>	<b>Negligible: Minimal to no disruption.</b>
	<b>Traffic</b>  <i>Applicable</i>	Traffic will likely not be effected as all proposed works will be conducted in foreshore and reserve areas.	<i>Negligible: Minimal to no disruption.</i>	<ul style="list-style-type: none"> <li>See Environmental Controls for <i>Amenity &amp; Community Disturbance</i>.</li> </ul>	<b>Negligible: Minimal to no disruption.</b>

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	<b>Aesthetics (visual)</b> <i>Applicable</i>	Whilst the aesthetics of the proposed site may be negatively impacted during works, the final outcome of the project will enhance the aesthetics and reduce degradation. Visual impacts will be temporary in nature confined to the works period.	<i>Negligible: Minimal to no impact.</i>	<ul style="list-style-type: none"> <li>See Environmental Controls for <i>Amenity &amp; Community Disturbance</i>.</li> </ul>	<b>Negligible: Minimal to no impact.</b>
	<b>Land Use</b> <i>Applicable</i>	Works are low impact in nature and will have a positive impact on the use and function of the land.	<i>Negligible: Improvements / maintenance of existing land use.</i>	<ul style="list-style-type: none"> <li>See Environmental Controls for <i>Amenity &amp; Community Disturbance</i>.</li> </ul>	<b>Negligible: Improvements / maintenance of existing land use.</b>
	<b>Asset Maintenance</b> <i>Applicable</i>	There is not expected to be a notable change in asset maintenance requirements as a result of the works. If successful, the project will result in a reduced need for maintenance.	<i>Positive: Not applicable.</i>	<ul style="list-style-type: none"> <li>Ensure asset is retained on Council's asset register and maintenance schedules.</li> </ul>	<b>Positive: The activity will improve existing asset maintenance issues.</b>
<b>Aspect</b>		<b>Impact Description</b>	<b>Impact Without Control</b>	<b>Environmental Controls</b>	<b>Impact With Control</b>
<b>WASTE</b>	<b>Waste</b> <i>Applicable</i>	Waste is likely to be limited to removed plants, demolished dune fencing, beach debris, litter and minor amounts of spoil.	<i>Negligible: Minimal to no waste generated.</i>	<ul style="list-style-type: none"> <li>Wastes will be classified in accordance with the NSW Environment Protection Authority (EPA) Waste Classification Guidelines – Part 1: classifying waste (2014) and addendum (2016), and disposed of lawfully at a licensed waste facility.</li> <li>Waste generated by the proposed works will be recycled as a first preference and the remainder will be disposed of appropriately.</li> <li>Mulched or cut trees are to be reused onsite as much as possible.</li> <li>The work site will be left clean and free of debris and other rubbish at the end of works.</li> </ul>	<b>Negligible: Minimal to no waste generated.</b>
	<b>Stockpiles</b> <i>Applicable</i>	Stockpiling may be required when placing sand, gravel or mulch. Stock piling would be of minimal volumes and short term.	<i>Minor: Temporary stockpiling required.</i>	<ul style="list-style-type: none"> <li>Port Stephens Council has a stockpile management process. It requires the drivers to record the location from where the material is from, where it is going and how much. This is passed on to the Team Leader who records the information and passes it onto the cost controller for recording.</li> <li>For any excess spoil classified as contaminated, disposal of this material will be at an appropriately</li> </ul>	<b>Minor: Temporary stockpiling required.</b>

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				licensed landfill in accordance with the EPA (2014) Waste Classification Guidelines.	
Aspect		Impact Description	Impact Without Control	Environmental Controls	Impact With Control
HAZARDOUS MATERIALS	Hazardous & Dangerous Goods  Applicable	Some chemicals (oils and fuels) will be brought to site only when required. Pesticides may be used for weed control.	Minor: Hazardous and dangerous goods are present or used but are managed in accordance with a Licence / standard operating procedures and are unlikely to pose a threat to environmental pollution and human health.	<ul style="list-style-type: none"><li>All staff will be trained in spill response procedures and all spills will be cleaned up immediately.</li><li>Appropriate emergency spill response procedures will be put in place and a spill kit will be kept onsite.</li><li>Equipment will not be used if there are any signs of fuel, oil or hydraulic leaks. Leaks will be repaired immediately or the equipment will be removed from site and replaced.</li><li>If any hazardous materials are identified onsite, they will be removed and disposed of in accordance with the state and national regulations and guidelines and best practice for the removal of these materials.</li><li>Potential risks to be minimised by keeping plant in good working order, refuelling in controlled/ bundled areas (offsite) and having spill kits on site.</li><li>If unknown hazardous materials or dangerous goods are encountered, cease works immediately and contact your supervisor.</li><li>In the unlikely event of a pollution incident, the relevant authorities will be notified in accordance with Clause 148 of the NSW Protection of the Environment Operations Act 1997.</li></ul>	Minor: Hazardous and dangerous goods are present or used but are managed in accordance with a Licence / standard operating procedures and are unlikely to pose a threat to environmental pollution and human health.
	Asbestos  Applicable	No asbestos is known to be present at the site.	Negligible: No disturbance of asbestos or less than 10 square meters of non-friable asbestos to be removed.	<ul style="list-style-type: none"><li>If suspected asbestos material is uncovered onsite, cease works within the vicinity, cordon off the area and follow the Unexpected Finds Field Guide Handbook.</li></ul>	Negligible: No disturbance of asbestos or less than 10 square meters of non-friable asbestos to be removed.

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	<b>Chemicals</b> <i>Applicable</i>	Some chemicals (oils and fuels) will be brought to site only when required. Pesticides may be used for weed control.	<i>Minor: Chemicals used but are managed in accordance with a Licence / standard operating procedures and are unlikely to pose a threat to environmental pollution and human health.</i>	Refer to controls in <i>Hazardous and Dangerous Goods</i> .	<b>Minor: Chemicals used but are managed in accordance with a Licence / standard operating procedures and are unlikely to pose a threat to environmental pollution and human health.</b>
Aspect		Impact Description	Impact Without Control	Environmental Controls	Impact With Control
NATURAL HAZARDS	<b>Bushfire</b> <i>Applicable</i>	The proposed works create no greater risk to bushfire and works will be rescheduled in the event that a bushfire is in the area.	<i>Negligible: Bushfire risk at the asset or location is Low to High.</i>	<ul style="list-style-type: none"> <li>Apply reasonable bushfire mitigation measures in accordance with the Planning for Bushfire Protection Guidelines maintained by the NSW Rural Fire Service.</li> </ul>	<b>Negligible: Bushfire risk at the asset or location is Low to High.</b>
	<b>Flooding</b> <i>Applicable</i>	The proposed works are unlikely to impact local flood events.	<i>Minor: Location is mapped as Flood Prone Land but the activity/asset will not contribute to flooding or will not be more affected by flooding than existing conditions</i>	<ul style="list-style-type: none"> <li>Ensure all stormwater outlets are kept clear during and after works.</li> </ul>	<b>Minor: Location is mapped as Flood Prone Land but the activity/asset will not contribute to flooding or will not be more affected by flooding than existing conditions</b>
	<b>Coastal Processes</b> <i>Applicable</i>	Works will be undertaken within the coastal area however aim to improve the resilience of the foreshore against coastal erosion.	<i>Positive: Not applicable.</i>	Nil.	<b>Positive: The activity will mitigate current impacts from coastal process at the location.</b>

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	<b>Extreme Weather Events</b> <i>Applicable</i>	Works are proposed in a location that is exposed to the elements and may be subjected to extreme weather events.	<i>Negligible: The activity/asset could be affected by extreme weather events but is managed in accordance with plans and procedures.</i>	<ul style="list-style-type: none"> <li>If an extreme weather event occurs and damage occurs the site will be reinstated and any damage rectified as soon as practically possible; where required in consultation with relevant authorities.</li> <li>In the event of extreme weather events the site will be shut down and staff removed from the site eliminating any health and safety risk.</li> </ul>	<b>Negligible: The activity/asset could be affected by extreme weather events but is managed in accordance with plans and procedures.</b>
	<b>Aspect</b>	<b>Impact Description</b>	<b>Impact Without Control</b>	<b>Environmental Controls</b>	<b>Impact With Control</b>
<b>ENVIRONMENTAL SUSTAINABILITY</b>	<b>Natural Resources</b> <i>Applicable</i>	Energy and water use will increase during works but will be temporary in nature. Due to the reduction in maintenance requirements as a result of the works it is expected that the project will have a net benefit on energy consumption.	<i>Positive: The activity will have a net reduction in the ongoing consumption of natural resources.</i>	Nil.	<b>Positive: The activity will have a net reduction in the ongoing consumption of natural resources.</b>
	<b>Ecological Sustainability</b> <i>Applicable</i>	The works aim to improve the resilience of the foreshore environment from coastal erosion and enhance the quality of dune vegetation to support local ecological populations.	<i>Positive: Not applicable.</i>	Nil.	<b>Positive: The activity will improve ecological processes at the site.</b>
	<b>Aspect</b>	<b>Impact Description</b>	<b>Impact Without Control</b>	<b>Environmental Controls</b>	<b>Impact With Control</b>
<b>ONGOING EFFECT</b>	<b>Cumulative, Accumulative, Degrading</b> <i>Applicable</i>	The works aim to improve the resilience of the foreshore environment from coastal erosion, enhance the quality of dune vegetation to support local ecological populations and reduce ongoing maintenance requirements.	<i>Positive: The activity will have a positive effect on the environment.</i>	Nil.	<b>Positive: The activity will have a positive effect on the environment.</b>

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	<b>Transformative, Long-Term</b>  <i>Applicable</i>	The works aim to improve the resilience of the foreshore environment from coastal erosion, enhance the quality of dune vegetation to support local ecological populations and reduce ongoing maintenance requirements.	<i>Positive: The activity will have a positive long-term or transformative impact on the environment.</i>	Nil.	<b>Positive: The activity will have a positive long-term or transformative impact on the environment.</b>
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OVERALL ENVIRONMENTAL IMPACT

The highest outcome in the impact with control column is the overall impact of the activity

☐ Positive    ☐ Negligible    ☒ Minor    ☐ Moderate    ☐ Potentially Significant

*If all final impacts are negligible or minor, complete Section 6: Declaration and Section 7: Determination.*

*If any final impact is moderate or potentially significant, reconsider Environmental Controls (refer to the Environmental Assessment Guide – Standard Environmental Control Chapter), reconsider design, or move to a Level 3 Environmental Assessment.*

*This Form is a report for the consideration and control of potential negative impacts on the environment to determine if the activity should be undertaken. It does not constitute permission to undertake works. Refer to EMS 3.0 Environmental Assessment Procedure for appropriate delegations and training requirements for the Assessing and Authorising Officer.*

SECTION 6: DECLARATION


See Appendix 1 for a checklist to ensure the document is fully complete before signing

As the Assessing Officer preparing the assessment, I certify to the best of my knowledge that:



# Environmental Assessment Level 2

- This assessment provides a true and accurate review of the activity in relation to its likely impacts on the environment. It contains neither false nor misleading information.
- The activity has been assessed to have a minor, negligible or positive overall environmental impact
- The environmental impacts of the activity are NOT likely to be significant and therefore an EIS is NOT required
- The activity will not be undertaken in a declared area of outstanding biodiversity value and is NOT likely to significantly impact threatened species, threatened ecological communities or their habitat. Therefore a SIS and/or BDAR is NOT required.
- I am delegated to undertake this assessment.
- I have assessed the activity in accordance with Council's EMS 3.0 Environmental Assessment Procedure and the Environmental Assessment: Level 2 Form

Name	Position/Title	Service Unit	Signature	Date
Paul Burton	Community Assets Planning Team Leader	Assets		18/08/2025

## SECTION 7: DETERMINATION

*See Appendix 2 for a Determination checklist to ensure the document is compliant before signing*

As the Authorised Officer on behalf of Council as the determining authority, I certify that:

- I have reviewed and endorse the contents of this EA document and, to the best of my knowledge, it is in accordance with the EP&A Act, the EP&A Regulation and the Guidelines approved under clause 170 of the EP&A Regulation, and the information it contains is neither false nor misleading.
- The environmental impacts of the activity are NOT likely to be significant, therefore no EIS or SIS and/or BDAR is required, and the activity may proceed subject to the implementation of all mitigation measures set out in Section 5 of the EA document.
- I am delegated to authorise this assessment on behalf of Council as the determining authority
- The activity has been adequately assessed in accordance with Council's EMS 3.0 Environmental Assessment Procedure and the Environmental Assessment: Level 2 Form.

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# Environmental Assessment Level 2

Name	Position/Title	Service Unit	Signature	Date

SECTION 8: APPENDICIES	
Item	CEMP Inclusion
1. Appendix 1 - Declaration Checklist	
2. Appendix 2 - Determination Checklist	
3. Appendix 3 - Maps	
4. Appendix 4 - AHIMS Basic Search Report	

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## Environmental Assessment Level 2

5. Appendix 5 - Invasive Species Referral	
6. Appendix 6 - RCA Australia Contamination Assessment Nelson Bay Marina (May 2019)	
<a href="#">Port Stephens Council EMS 3.0 Environmental Fact Sheets</a>	

Appendix 1: Declaration Checklist - Assessing Officer		
Before signing the declaration in section 6 as the person undertaking the assessment, please check the following-		
Section	Items to check	Completed?
Section 1	Does the description of the works contain sufficient detail? (photos, details of scope, depth of excavation etc)	<input type="checkbox"/>
	Consideration of alternatives completed?	<input checked="" type="checkbox"/>
	Are all location details completed? (land zoning, land owner, site map)	<input checked="" type="checkbox"/>
	Are all boxes in section 2 ticked Yes or No?	<input type="checkbox"/>

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## Environmental Assessment Level 2

Section 2	Are the two boxes in <b>Pathway 1: Local Development (Part 4)</b> ticked No? <i>(If Yes, you have selected that a DA is needed. This form cannot be used if a DA is required).</i>	<input type="checkbox"/>
	Is the correct clause/s listed for the approval pathway in <b>Pathway 3</b> ?	<input type="checkbox"/>
Section 3	Are all responses 'No'? <i>(If not, a higher level of assessment is likely required).</i>	<input type="checkbox"/>
	Does each response have a justification in the form of a sentence or paragraph? Are searches and checks referenced (e.g. AHIMS search ID number)?	<input type="checkbox"/>
Section 4	Is there a Yes or No response for each of the approvals/permits in the applicability column (right hand column)?	<input type="checkbox"/>
Section 5	Is applicable or non-applicable selected in the applicability drop down for each aspect?	<input type="checkbox"/>
	Are all selected 'impacts after controls' assessed as minor, negligible or positive? <i>(If not, a higher level of assessment is required)</i>	<input type="checkbox"/>
All items in this list must be completed before the declaration in Section 6 is signed by the assessing officer		

### Appendix 2: Determination Checklist- Authorising Officer

Before signing the Determination in section 7 as the delegated person on behalf of Council, please check the following

Section	Items to check	True?
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## Environmental Assessment Level 2

Section 3	Are none of the environmental impact triggers in Section 3 triggered by the activity?	<input type="checkbox"/>
Section 5	Is every impact after controls in the far right column of section 5 <u>minor or below</u> ? (If moderate, potentially significant or significant, a <i>higher level of assessment is needed or more effective controls are required</i> ).	<input type="checkbox"/>
	Is the overall environmental impact at the end of Section 5 <u>minor or below</u> ? (If above Minor, a <i>higher level of assessment is needed or more effective controls are required</i> ).	<input type="checkbox"/>
	That the activity has been assessed in accordance with the EMS3.0 Procedure	<input type="checkbox"/>
<b>If all these items are true, the assessment has found that the activity will not significantly impact the environment. An Environmental Impact Statement (EIS), a Species Impact Statement (SIS) and/or a Biodiversity Development Assessment Report (BDAR) is therefore not required.</b>		

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# Environmental Assessment Level 2

## Appendix 3 - Maps

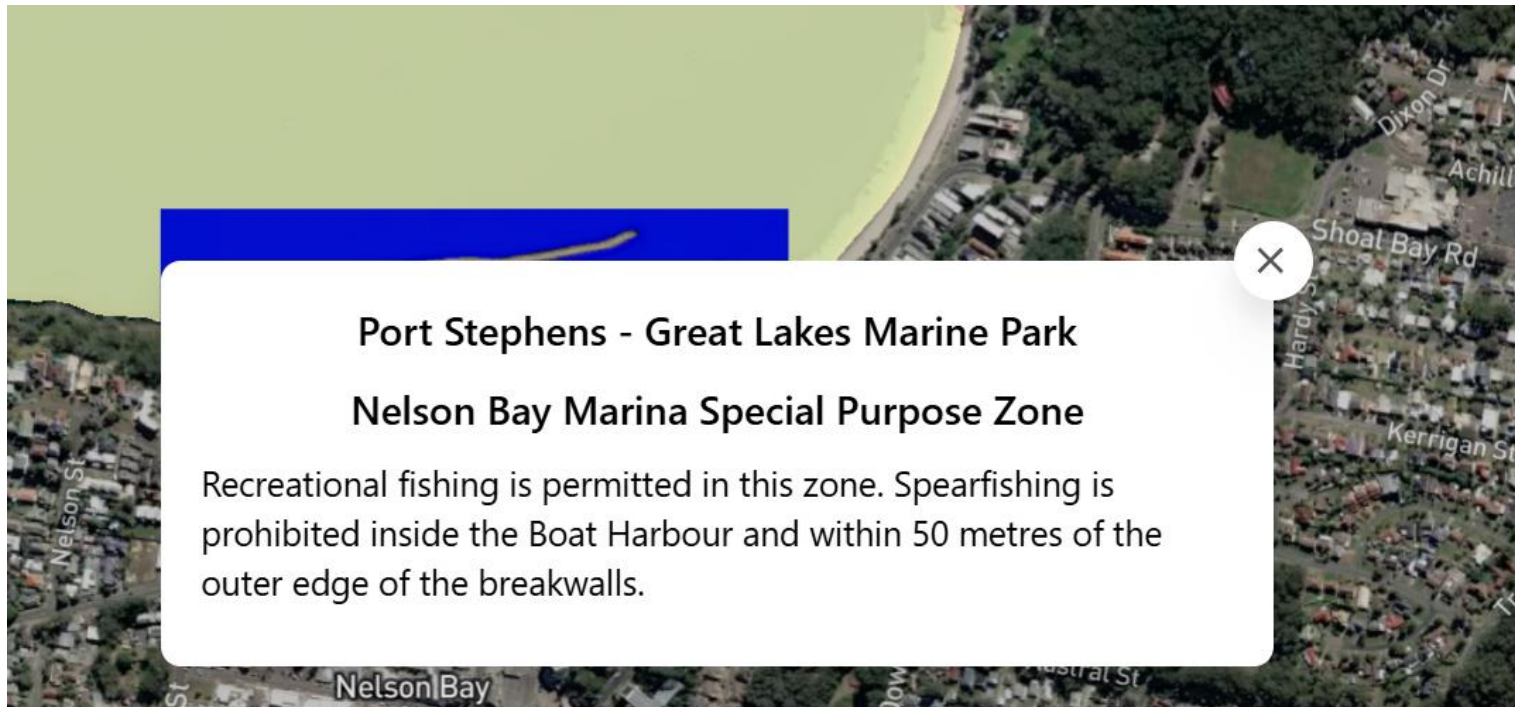
*Port Stephens – Great Lakes Marine Park (Blue – Special Purpose Zone; Yellow Habitat Protection Zone)*



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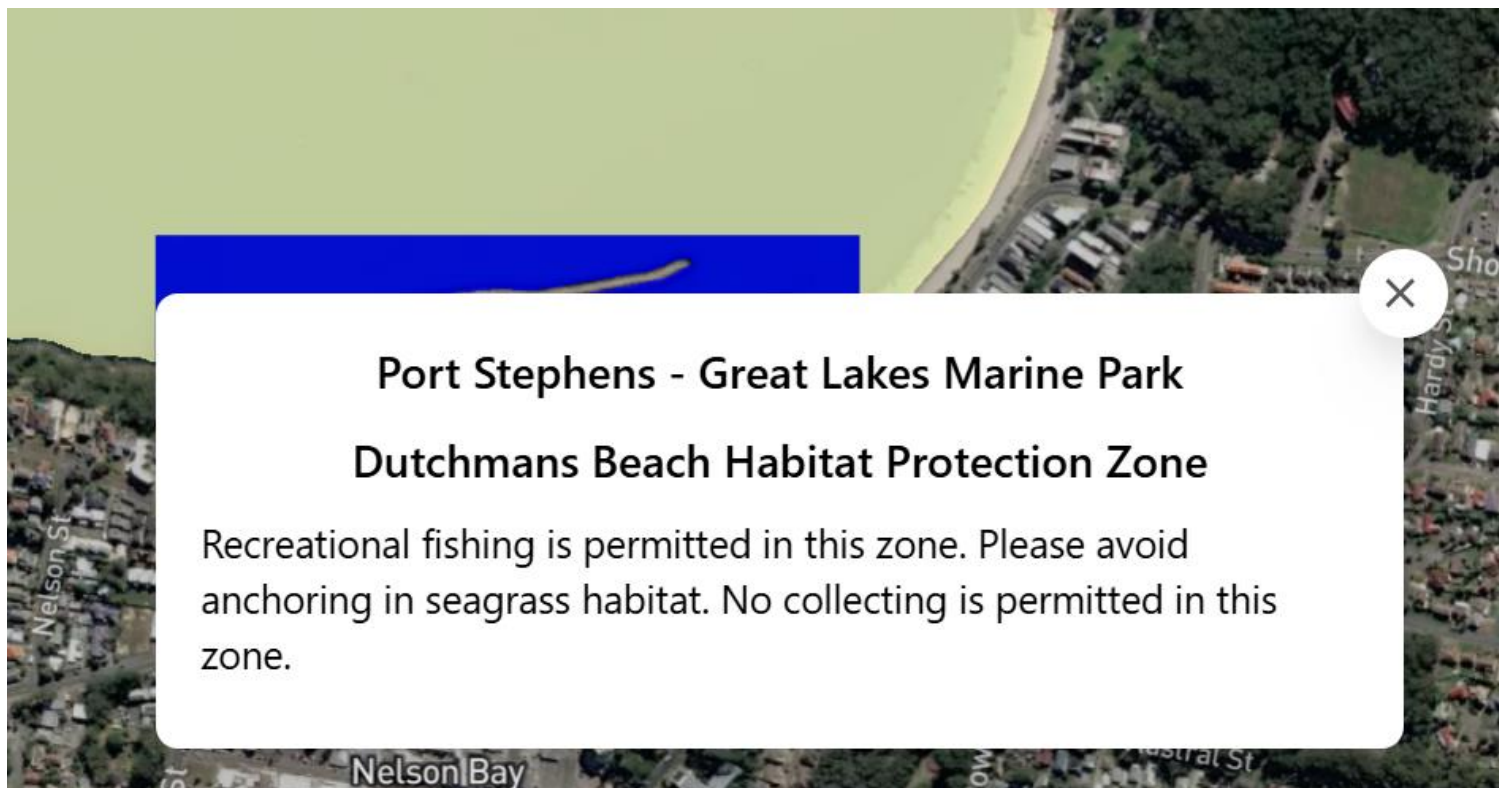
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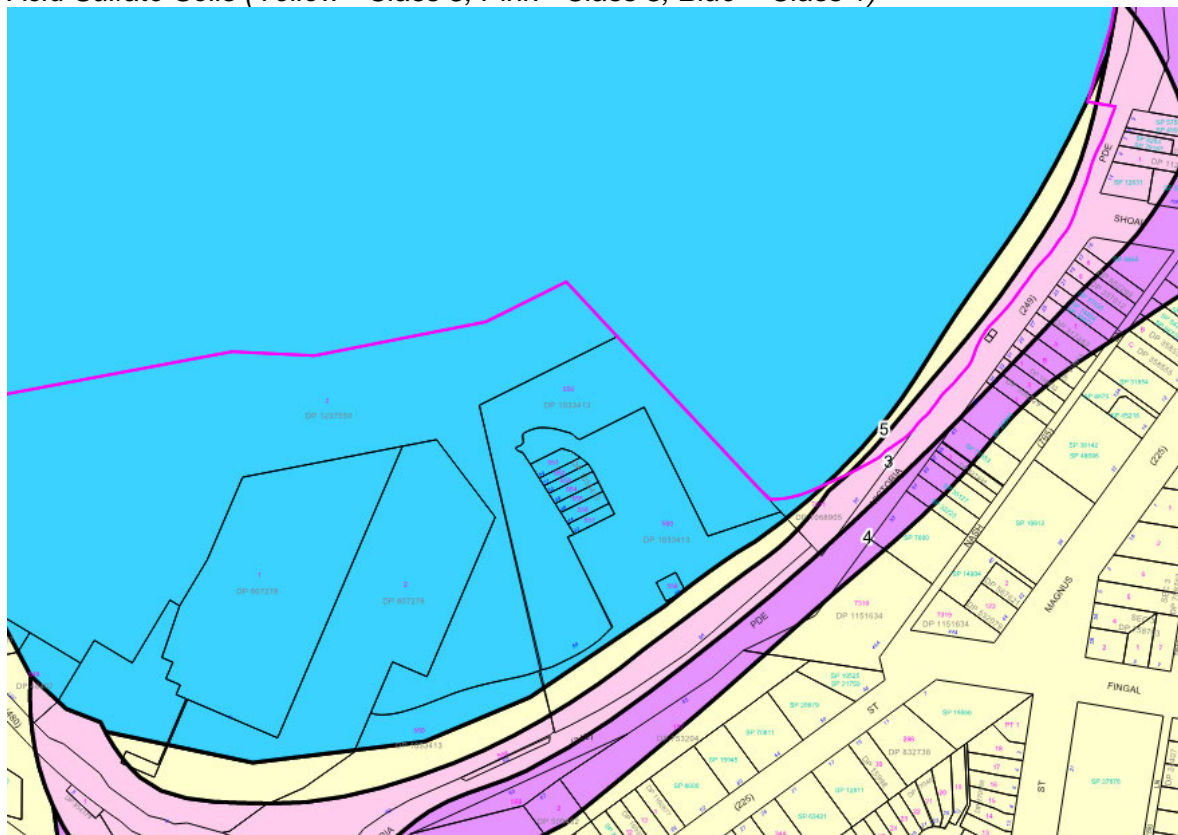
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*Acid Sulfate Soils (Yellow - Class 5; Pink - Class 3; Blue – Class 1)*

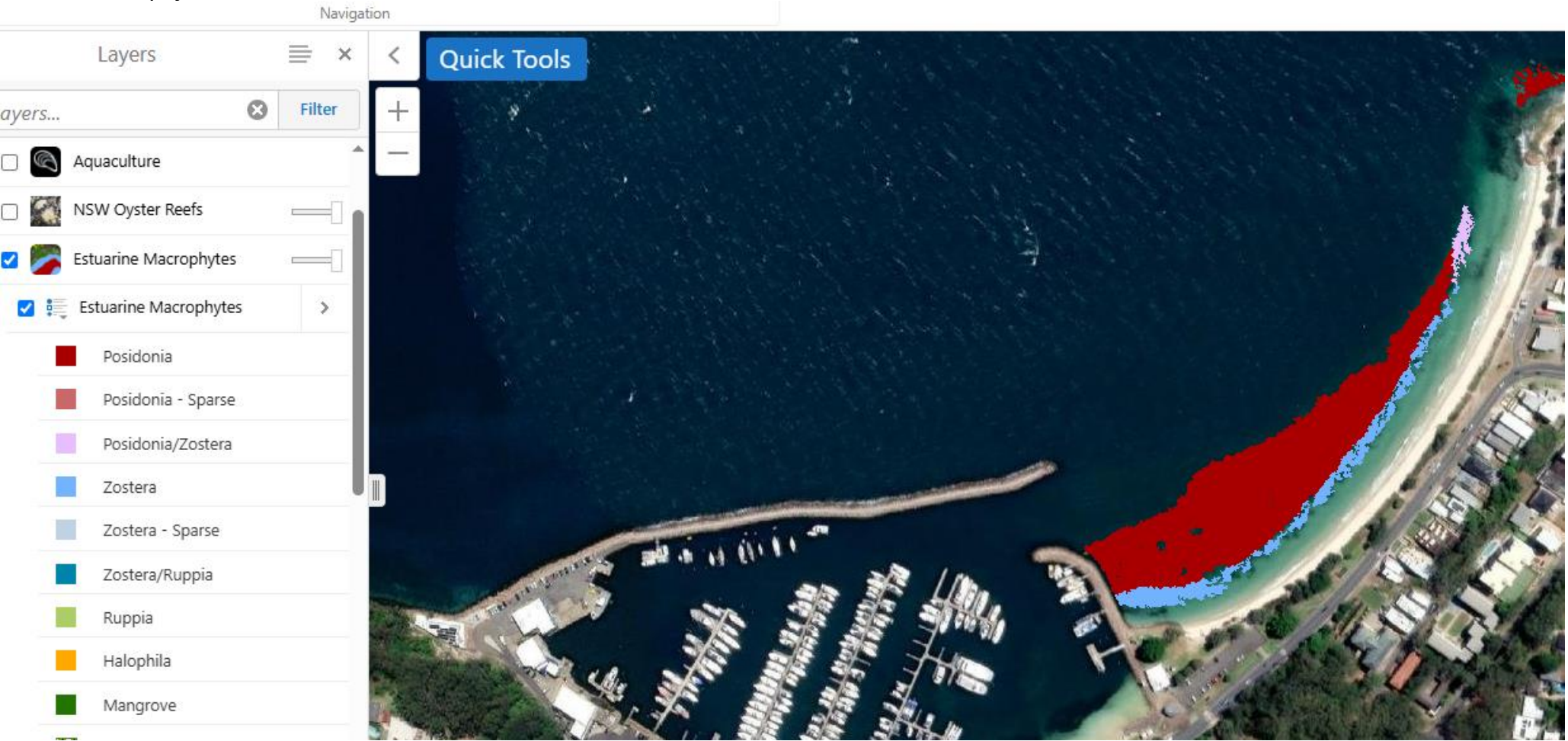


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## Estuarine Macrophytes



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# Environmental Assessment Level 2

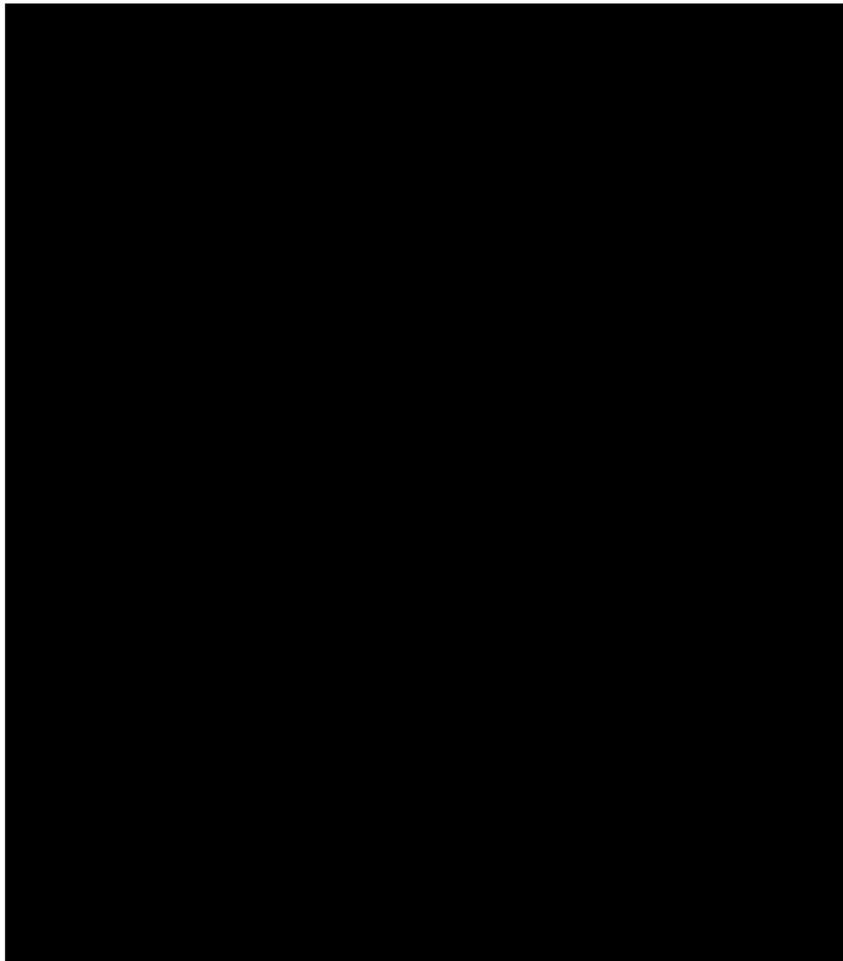
## Appendix 4 – AHIMS Basic Search Report

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# Environmental Assessment Level 2



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# Environmental Assessment Level 2

## Appendix 5 – Invasive Species Referral

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# Environmental Assessment Level 2

## Appendix 6 – RCA Australia Contamination Investigation – Proposed sand removal, Nelson Bay Marina (15 May 2019)

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## NELSON BAY FORESHORE SITE PLAN

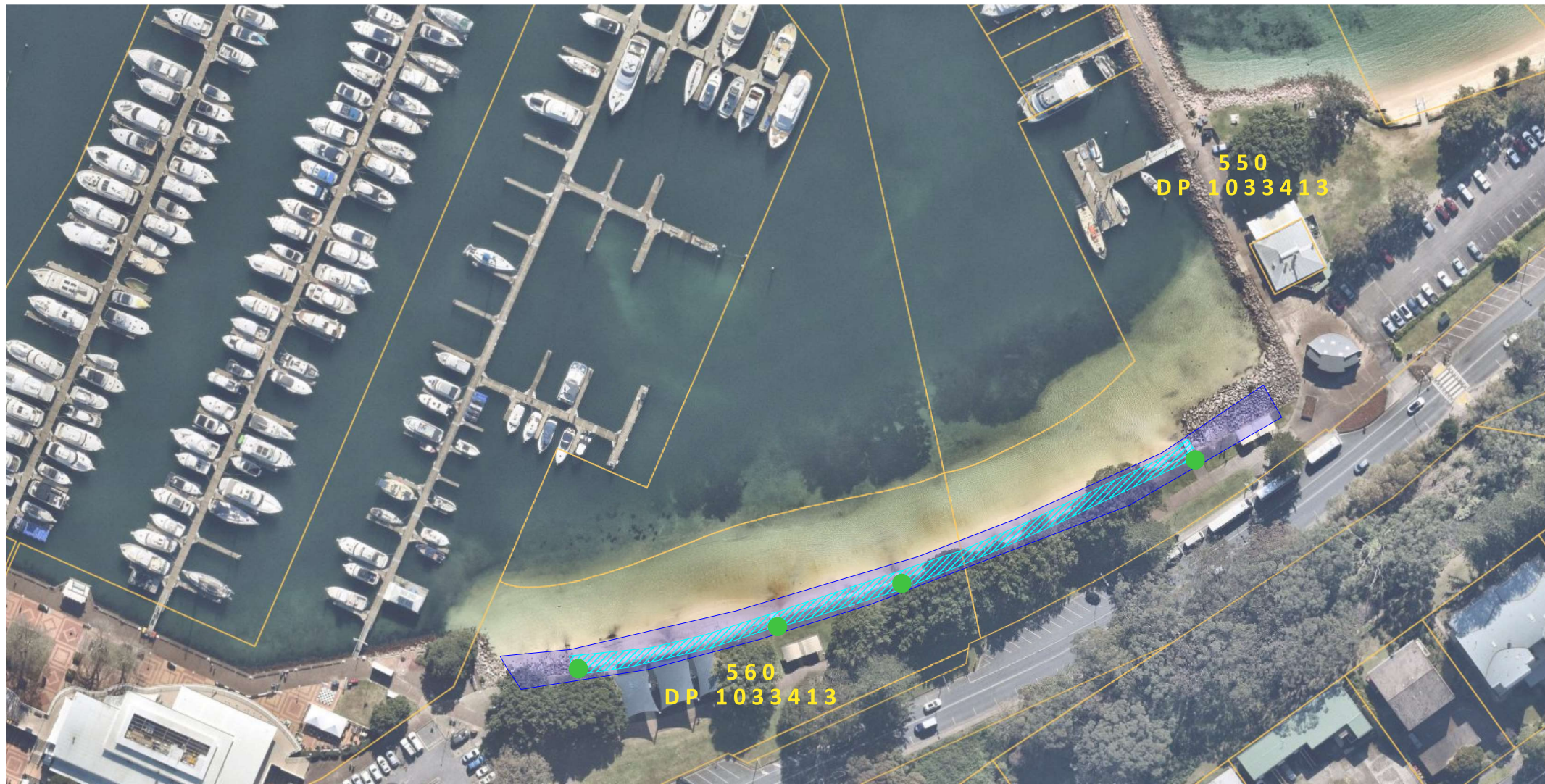


SCALE 1:2000 ON A1

- ACCESS WAYS/POINTS
- SAND MANAGEMENT AREA
- DUNE REHABILITATION AREA
- TOTAL PROJECT AREA



NELSON BAY FORESHORE SITE PLAN-SECTION 1



SCALE 1:500 ON A1

- ACCESS WAYS/POINTS
- SAND MANAGEMENT AREA
- TOTAL PROJECT AREA



NELSON BAY FORESHORE SITE PLAN-SECTION 2



SCALE 1:500 ON A1

- ACCESS WAYS/POINTS
- SAND MANAGEMENT AREA
- DUNE REHABILITATION AREA
- TOTAL PROJECT AREA



# NELSON BAY FORESHORE SITE PLAN-SECTION 3



SCALE 1:500 ON A1

- ACCESS WAYS/POINTS
- ▨ DUNE REHABILITATION AREA
- ▭ TOTAL PROJECT AREA

# Invasive Species Referral

## Capital Works Projects

F&I Capital Works Section  
Form Reference: QF-ENV-006

Revision: 0  
Date: 07/06/2024

Activity Procedure		Invasive Species Referral		
Procedure No.	Invasive Species Referral	Revision	0	01/07/2024
Prepared by	Natalie Nowlan – Project Support Environmental Officer			
Valid to	01/07/2026 or applicable statutory/ guideline updates			
Approved by	Barry Gentle – Project Support Team Leader			
Next Review Date	1 July 2026 (subject to relevant legislative changes)			
<b>1. Notification</b>				
Trigger	An Environmental Assessment has been prepared to support the works. As part of the environmental impact assessment the potential for the works to cause further environmental harm due to invasive species is assessed. Port Stephens Council has a team of invasive species technical experts able to provide advice on invasive species impacts and potential environmental controls and mitigation measures to help avoid or minimise potential impacts. Advice is sought for all Capital Works projects with an emphasis on those projects within 200m of a known mapped weed infestation.			
Purpose	The purpose of this procedure is to provide a formal template for seeking advice on the potential for works to cause environmental harm in relation to invasive species management and provisions of the NSW Biosecurity Act 2015 with The Port Stephens Council Natural Systems – Environmental Operations Team.			
Scope	This procedure only applies where works involve ground disturbance or have the potential to exacerbate the potential impacts of invasive species.			
Action	Initiate request for advice	Project Support Environment Officer		
Action	Conduct site visit (if required)	Invasive Species Officer		
Action	Provision of advice	Invasive Species Officer		
Action	Include impacts identified in the Environmental Assessment and any environmental mitigation measures in the list contained within QF-ENV-DRAFT – EA Mitigation Measures (CAP WORKS)	Project Support Environment Officer		
Guidance	N/A			
Check	N/A			
<b>2. Project</b>				
RA034 E012 – Nelson Bay Beach Sand Management and Dune Rehabilitation				
<b>3. Description of works</b>				
Description of works	<p>RA034: Undertake works to manage access and rehabilitate the dunes. This action involves renewal of dune fencing and dune re-vegetation (including sediment controls), with a provision for ongoing annual maintenance (e.g. weeding and replanting as required).</p> <p>E012: Undertake an ongoing program of sand management and dune rehabilitation works for all coastal foreshore land managed by Council. This includes managing public access ways, fencing, weeding and replanting with locally endemic species.</p>			



# Invasive Species Referral

## Capital Works Projects

F&I Capital Works Section  
Form Reference: QF-ENV-006

Revision: 0  
Date: 07/06/2024

<p>Locality / Works map</p>	 <p><b>PORT STEPHENS COUNCIL</b> RG-00-11-E Port Stephens Coastal Management Program CMP Actions Nelson Bay</p> <p><b>Legend</b> Coastal Use Area Coastal Environmental Area <b>Coastal Threat Category</b> Coastal Hazard Threat Recreational Activity Threat</p> <p>0 0.05 0.1 0.15 km</p> <p>Job Number: 31702 Scale: 1:4000@A3 Date: 31/05/2024 Revision: 04 Created by: SJW Coordinate System: GDA2020 / MGA zone 56</p> <p>Note: For Clarity the CWLRAs that are the subject of actions E020 and E021 are indicated in a separate figure set, RG-00-11-N to RG-0-11-U</p> <p><b>R h e i m</b></p>
<p>Material being removed from site</p>	<p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>



#### 4. Weeds Infestations (map)

Spiny Burr Grass



#### 5. Site Visit

Date	5.8.25
Findings	No priority weeds identified within the worksite.
Date referral advice is valid to	

#### 6. Environmental controls and mitigation measures – standard controls

Prior to works commencing	
Weed control requirements included in induction	<input type="checkbox"/>
During works	
For invasive weed species:	<input checked="" type="checkbox"/>
<ul style="list-style-type: none"> <li>If priority weeds not previously identified are observed, cease works in the vicinity and follow the Unexpected Finds Procedure.</li> <li>Minimise work during excessively wet or muddy conditions where possible.</li> <li>Restrict vehicles and personnel to designated tracks, trails and parking areas. Where possible park and turn-around on hard, well drained surfaces.</li> <li>Only hard well-drained surfaces will be used for parking and as turn-around points.</li> </ul>	

# Invasive Species Referral

## Capital Works Projects

F&I Capital Works Section  
Form Reference: QF-ENV-006

Revision: 0  
Date: 07/06/2024

<ul style="list-style-type: none"> <li>All machinery, plant, equipment, vehicles and boots should be clean prior to entry to the site.</li> <li>Any fill, soil, mulch or plants bought onto site for landscaping purposes must be free of priority weeds and/ or weed seeds, cane toads, pathogens or any of the imported pest ant species.</li> </ul>	
<b>Upon completion of works &amp; operation and maintenance</b>	
A hydro mulch mix of local provenance seed or sterile cover crop that is free from weeds certified by the supplier would be used.	<input type="checkbox"/>
<b>7. Environmental controls and mitigation measures – non-standard controls</b>	
<b>Prior to works commencing</b>	<input type="checkbox"/>
Removal, treatment and/ or suppression must be undertaken of [Biosecurity matter]:	<input type="checkbox"/>
<ul style="list-style-type: none"> <li>Using approved bush regeneration techniques.</li> <li>Under the supervision of a suitably qualified and experienced bush regenerator.</li> <li>In accordance with the requirements of the <i>NSW Biosecurity Act 2015</i>, associated Regulations and NSW Weed Control Handbook.</li> </ul>	
Biosecurity Permit issued by Council in accordance with Section 333 of the <i>NSW Biosecurity Act 2015</i> .	<input type="checkbox"/>
Inspection by a representative of Council's Invasive Species team one week prior to works commencing.	<input type="checkbox"/>
Installation of exclusion fencing that includes to temporary fencing, bunting tape or similar and signage that is clearly visible from a distance of at least 20m that is general in nature e.g. 'Exclusion Zone' to protect or avoid priority weed infestations.	<input type="checkbox"/>
Comments/ other, specify:	<input type="checkbox"/>
<b>During works</b>	
<p>The site has been identified as being affected by a biosecurity matter [Biosecurity matter].</p> <p>All soil or vegetation being transported offsite must be disposed of at an appropriately licenced waste facility. Failure to do so may constitute an offence under Section 23 of the <i>NSW Biosecurity Act 2015</i>.</p> <p>Works must be undertaken in accordance with the Biosecurity Permit for the activity.</p>	<input type="checkbox"/>
<p>The site has been identified as being affected by Biosecurity Matter, [Biosecurity matter].</p> <p>Soil under the road pavement and not within 0.5m of the edge of road may be transported offsite for use at another site or to a temporary stockpile site in accordance with the Excavated Public Road Material Order 2014.</p> <p>Soil or vegetation within 0.5m of the edge of the road and within the road shoulders must be disposed of at an appropriately licenced waste facility. Failure to do so may constitute an offence under Section 23 of the <i>NSW Biosecurity Act 2015</i>.</p> <p>Works must be undertaken in accordance with the Biosecurity Permit for the activity.</p>	<input type="checkbox"/>
Works should move from uninfected areas to infected areas with priority weeds.	<input type="checkbox"/>
Clean all machinery, plant, equipment and vehicles that have operated onsite thoroughly. Establish a wash down area and monitor the presence of Biosecurity Matter, biosecurity matter. Cleaning would include the removal of all mud and plant matter, followed by washing with high pressure water.	<input checked="" type="checkbox"/>
Provide a boot wash down facility. Remove all mud and plant matter, followed by washing with high pressure water.	<input type="checkbox"/>
A designated area for storage of contaminated spoil will be separate to the area for storage of clean fill material.	<input type="checkbox"/>
Shower and wash clothes prior to moving to another site due to the site being infected by Myrtle rust. Clean footwear and equipment of soil and mud and then sprayed with 70 per cent methylated spirits in 30 per cent water.	<input type="checkbox"/>

# Invasive Species Referral

## Capital Works Projects

F&I Capital Works Section  
Form Reference: QF-ENV-006

Revision: 0  
Date: 07/06/2024

Comments/ other, specify:	Practice machine hygiene	<input checked="" type="checkbox"/>
<b>Upon completion of works &amp; operation and maintenance</b>		
Removal, treatment and/ or suppression of priority weed must be undertaken: <ul style="list-style-type: none"> <li>In accordance with any advice of Council's Invasive Species Planner.</li> <li>Using approved bush regeneration techniques.</li> <li>Under the supervision of a suitably qualified and experienced bush regenerator.</li> <li>In accordance with the requirements of the NSW Biosecurity Act 2015, associated Regulations and NSW Weed Control Handbook.</li> </ul>		<input type="checkbox"/>
Comments/ other, specify:		<input type="checkbox"/>
<b>8. Completion Date</b>		
Date	05.08.2025	
<b>9. Completed By</b>		
Name	Chloe Smithers	
Position	Invasive Weeds Officer	

RCA ref 14163-501/0

15 May 2019

Port Stephens Council  
PO Box 42  
Raymond Terrace NSW 2324

Attention: Jeremy Tomlinson

Geotechnical Engineering

Engineering Geology

Environmental Engineering

Hydrogeology

Construction Materials Testing

Environmental Monitoring

Sound & Vibration

Occupational Hygiene

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## **CONTAMINATION INVESTIGATION PROPOSED SAND REMOVAL, NELSON BAY MARINA**

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### **1 INTRODUCTION**

This report details the findings of a contamination assessment undertaken at Nelson Bay Marina, Nelson Bay NSW at the request of Jeremy Tomlinson of Port Stephens Council.

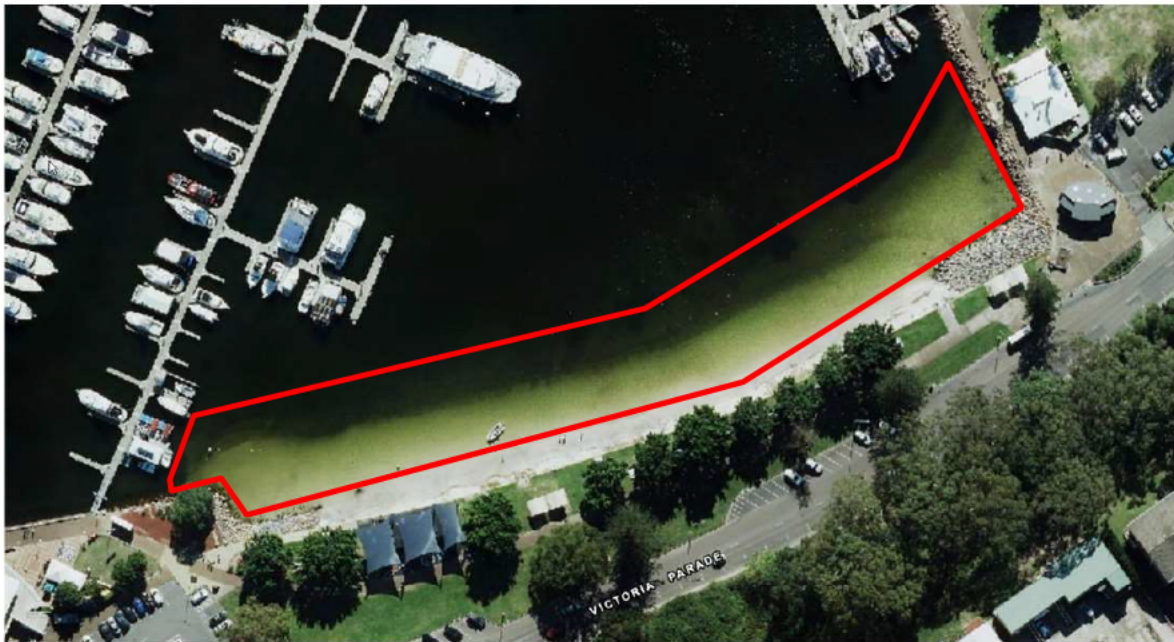
It is understood that Council plans to undertake sand clearing in Nelson Bay Marina as part of ongoing maintenance of the wharves and beach area and are evaluating various options for the removal and/or disposal of sand from the Marina. It is understood that placement of sand on a nearby beach / recreational area is one of the options being considered.

It is understood that the investigation is required to assess the makeup of marine soil material and presence of any contaminants in the area where sand clearing is proposed.

### **2 SITE IDENTIFICATION**

The material which has been characterised for this investigation is located at Nelson Bay Marina located north of Victoria Parade within the Nelson Bay Foreshore Reserve presented in **Figure 1**.





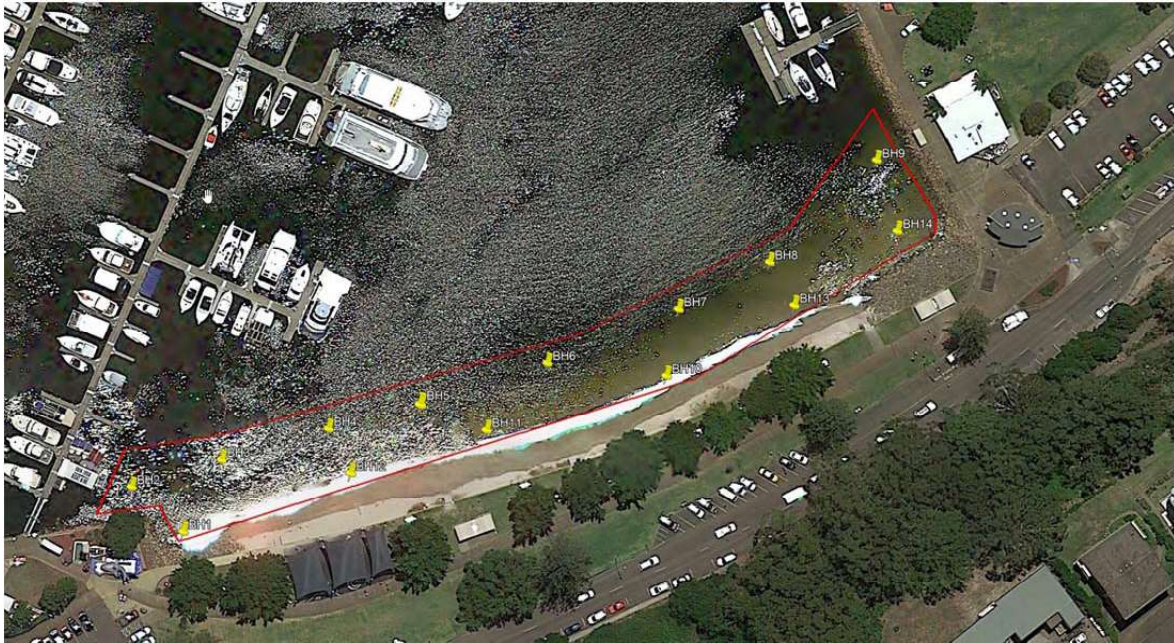
**Figure 1**      *Approximate Investigation Area*

### 3 FIELDWORK

Two (2) environmental scientists/engineers experienced in the handling of potentially contaminated materials undertook fieldwork on the 16 and 17 April 2019. The scope of work included:

- A site inspection.
- The collection of forty one (41) soil/sediment samples from fourteen (14) locations on the site, with locations located both above the existing sea level and below as presented in **Figure 2**. The number of sampling locations is in accordance with the minimum fourteen (14) sampling locations as recommended by NSW EPA guidelines (Ref [1]) for a site of about 0.55ha for contamination purposes and is also in accordance with the Acid Sulfate Soils Guidelines (Ref [2]) for an area of 0.55ha:
  - Samples were collected from natural material as it was encountered up to 2.0m below sea level, with samples taken at various depths through the strata.
  - Samples were collected utilising a sediment sampler and hand auger. The sediment sampler had a designated plastic sleeve that was replaced between sampling locations.
- Re-instatement of all excavations.

- Analysis of eighteen (18) samples at varying depths across the site for a variety of contaminants including total recoverable hydrocarbons (TRH), benzene, toluene, ethylbenzene, xylene (BTEX), polycyclic aromatic hydrocarbons (PAH), metals (arsenic, cadmium, chromium, copper, nickel, lead, zinc, mercury), pesticides (OCP and OPP) and herbicides.
- Thirteen (13) samples collected were screened by oxidation for potential acid sulfate soil (ASS) properties. Of those fourteen (14) samples, four (4) were laboratory analysed for chromium reducible sulfur.



**Figure 2**      *Approximate Sample Locations*

No gross contamination issues were identified on the site during fieldwork.

Material encountered was sand, clayey sand and silty sand with some gravel.

Of the fourteen (14) boreholes six (6) locations were unable to be excavated to the maximum depth of 2.0m below sea level due to refusal within dense sand or borehole collapse.



### 4.3.1 ASSESSMENT CRITERIA

The Acid Sulfate Soils Management Advisory Committee's "Acid Sulfate Soils Planning Guidelines" (Ref [2]) provides action criteria for ASS according to their texture and the combined existing and potential acidity of the material. The action criteria also consider the volume of soil to be disturbed, as shown on **Table 1**.

**Table 1** *Texture Based Acid Sulfate Action Criteria*

Type of Material		Action Criteria if 1 to 1000 Tonnes of material is Disturbed		Action Criteria > 1000 Tonnes of material is Disturbed	
Soil Texture	Approx. Clay Content (%)	Equivalent Sulphur (%S)	Equivalent Acidity (mol H <sup>+</sup> /tonne)	Equivalent Sulphur (%S)	Equivalent Acidity (mol H <sup>+</sup> /tonne)
Coarse (silty sand to sands)	≤5	0.03	18	0.03	18
Medium (sandy loam-light clay)	5-40	0.06	36	0.03	18
Fine (Medium to heavy clays and silty clays)	≥40	0.1	62	0.03	18

Based on the subsurface conditions encountered in the boreholes as discussed in Section 3, the action criteria for the soils of coarse texture would be considered appropriate.

## 5 QUALITY ASSURANCE/QUALITY CONTROL

RCA has assessed the quality assurance and control in **Attachment A** and found it to be acceptable for the purpose of site assessment or otherwise.

## 6 RESULTS

### 6.1 SOIL

All results are compared to the relevant guidelines in **Attachment A** with laboratory reports in **Attachment B**.

In summary, all results were non detected or at low concentrations below the relevant criteria (refer **Section 4.1**).

### 6.2 ACID SULFATE SOIL

As a part of the investigation thirteen (13) soils were screened to assess the presence of acid sulfate soils. The screening results are summarised in **Table 1**.

**Table 2**      *Summary of Acid Sulfate Soil Screening Test Results*

Borehole	Depth Below Ground Level (m)	Soil Type/Origin	pH <sub>F</sub>	pH <sub>FOX</sub>	pH <sub>F</sub> – pH <sub>FOX</sub>	Reaction Rate
BH1B	0.5	SAND	5.81	4.63	1.18	1
BH2C	2.0	SAND	5.26	4.86	0.40	1
BH3C	2.0	Silty SAND	7.85	4.52	3.33	2
BH4C	2.0	SAND	7.80	5.78	2.02	1
BH5C	2.0	SAND	7.69	5.71	1.98	1
BH6C	2.0	SAND	6.65	5.36	1.29	1
BH7C	2.0	SAND	8.04	4.54	3.50	2
BH8C	2.0	SAND	7.80	5.58	2.22	1
BH9C	2.0	SAND	7.69	3.78	3.91	2
BH11D	1.6	SAND	7.45	5.15	2.30	1
BH12D	1.2	SAND	6.19	5.41	0.78	1
BH13C	1.0	SAND	5.65	5.12	0.53	1
BH14C	1.3	SAND	6.32	5.63	0.69	1

1 Reaction rates: 1=slight, 2=moderate, 3=high, 4=very vigorous

None of the samples are considered to be representative of actual acid sulfate soils (AASS) since all samples have a pH greater than 4. Four (4) samples were submitted for further laboratory analysis (chromium reducible sulfur) based on the drop in pH.



**Table 3**      *Acid Sulfate Soil Analysis*

	<b>BH1B (0.5m)</b>	<b>BH3C (2.0m)</b>	<b>BH7C (2.0m)</b>	<b>BH9C (2.0m)</b>
pH KCl	6.3	8.4	9.1	9.0
Chromium Reducible Sulphur (% S) <b>Guideline (Ref [2]) 0.03</b>	0.012	<b>0.054</b>	<b>0.06</b>	<b>0.034</b>
Acidity - Chromium Reducible Sulphur (mole H <sup>+</sup> /t) <b>Guideline (Ref [2]) 18</b>	<10	<b>34</b>	<b>38</b>	<b>21</b>
Sulfidic - Acid Neutralising Capacity (ANC) (% pyrite S)	--	0.29	0.09	0.02
Liming Rate with ANC / without ANC (kg CaCO <sub>3</sub> /t)	<1/<1	<1/2	<1/3	<1/2

--retained acidity not required due to analysed value of pH KCl

Based on the results of laboratory testing, RCA considers the soils at the site are representative of potential acid sulfate soil. If these soils are excavated the management of the potential acidification will be required with the application of lime of up to 3kg / tonne of material excavated.

## 7 CONCLUSIONS

RCA undertook sampling at Nelson Bay Marina site for Council's plan to undertake sand clearing to assess the potential contamination and acid sulfate soil constraints associated with the final fate of the material.

The assessment consisted of a site inspection and onsite sampling and analysis of eighteen (18) soil/sediment samples from fourteen (14) locations on site for the analysis of potential contaminants of concern (TRH, BTEX, PAH, metals OCP, OPP and herbicides) along with thirteen (13) samples selected from the deepest sample depth for acid sulfate soils screening.

No soil/sediment contamination was found in excess of the urban residential areas and public open space human health and ecological criteria relevant to current and future usage. Therefore it is considered that, subject to acid sulfate management, the sand is suitable for use on land being used for recreational use subject to provision of an exemption with the waste legislation. It is noted that augmentation of the material may be required to provide a growing medium for plants.

All sample results were below those permitted for general solid waste in accordance with the Tier 1 criteria (Ref [4]). Therefore material may be removed to a licensed waste facility under this classification following acid sulfate soil management.

Yours faithfully  
**RCA AUSTRALIA**



Richie Lamont  
Environmental Scientist



Fiona Brooker  
Environmental Services Manager

## REFERENCES

- [1] NSW EPA, *Sampling Design Guidelines*, September 1995.
- [2] ASSMAC, *Acid Sulfate Soils, Assessment and Management Guidelines*, August 1998.
- [3] NEPC, *National Environment Protection (Assessment of Site Contamination) Measure*, 1999 as amended 2013.
- [4] NSW EPA, *Waste Classification Guidelines, Part 1; Classifying Waste*, November 2014.
- [5] Department of Land and Water Conservation Sydney, *Port Stephens Acid Sulfate Risk Map* – Edition 2, 1997

## ATTACHMENTS

Summary of results and Quality Assurance and Control

Laboratory report sheets