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REPORT

Public Beach Access Stairs Wetherill Street, Collaroy

Review of Environmental Factors

Client:	Northern Beaches Council
Reference:	PA4039-RHD-WM-AU-RP-EN-0001
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Executive Summary

Document Purpose

This REF has been prepared in fulfilment of the requirements of sections 5.5 and 5.7 of the Environmental Planning and Assessment Act 1979 (EP&A Act) to enable Northern Beaches Council (Council) to examine to the fullest extent possible any matters related to the proposed public beach access stairs at Wetherill Street (Works) that could impact the environment, and whether any impacts of the Works are likely to significantly impact the environment such that the preparation of an Environmental Impact Statement (EIS) will be required.

Proposed Works

The Works will consist of the installation of a set of prefabricated steel pedestrian stairs to allow safe access from the road down to the beach. These works adjoin private properties at 1168 Pittwater Rd and 1172 Pittwater Rd as shown below.

The objective of the works is to provide safe, formalised public access from the road to the beach at Wetherill Street and include the following key components:

- **Construction of new public beach access stairs**:
  - a set of prefabricated steel stairs will be installed to allow safe pedestrian access from the road down to the beach;
  - the stair structure will be supported by a concrete footing at the crest and toe;
  - stair treads will consist of fibre-reinforced polymer (FRP) mesh to maximise durability and slip resistance;
  - public amenity facilities will be incorporated comprising a viewing platform, shower and seating.
- **Rock movement to enable installation and structural stability of the stairs**:
  - Rock from in the order of 50 to 60% of the total width of the road head, would be expected to be required to be moved (and then restacked) to enable installation of the stairs. The moving of rock would extend some 2 to 3m horizontally landward of the outer face.
  - Some re-stacking of rocks either side of the installation trench will be required to improve hydraulic stability and reduce risk of structural damage to the stairs.
  - Restacking will include the removal of obviously undersized rocks and some additional large rocks may be required for structural stability of the stairs.

Background
There is historic rock already present at this site and, until 2020, a set of access stairs. The access stairs were removed during the construction works for the upgrading of private coastal protection works at 1168 and 1172 Pittwater Rd. Since 2020 beach access has been achieved through beach scraping to form a sand ramp over the rocks, however, this access washes away during storms and cannot be consistently maintained. The works are required to reinstate formal beach access.

Conclusion
The Works on Wetherill Street are permissible without consent under the provisions of:

- cl 2.165 of State Environmental Planning Policy (Transport and Infrastructure) 2021 (T&I SEPP) as development for the purpose of "foreshore management activities"; and
- cl 2.109 of the T&I SEPP as development for the purpose of "road or road infrastructure facilities"

This REF has been prepared in order to address the requirements of Section 5.5(1) and Section 5.7(1) of the Environmental Planning and Assessment Act 1979 and clause 171(2) of the Environmental Planning and Assessment Regulation 2021.

It can be confirmed that:

- the objects of the EP&A Act relating to the protection and enhancement of the environment have been considered in the preparation of the REF;
- all matters affecting or likely to affect the environment by reason of the Works have been examined and taken into account to the fullest extent possible;
- the Works are not considered likely to significantly impact the environment and an EIS is therefore not considered to be necessary; and
- in reaching the conclusions above, the factors listed in clause 171(2) of the EP&A Regulations have been taken into account.

The Works would provide improved public access and amenity, improved public safety and improved stability of the public road area.

The construction of the Works is not considered to result in a significant environmental impact following the implementation of the recommended mitigation measures. The operation of the Works would have no significant environmental impact.

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1 Introduction

1.1 Overview

This Review of Environmental Factors (REF) has been prepared in fulfilment of sections 5.5 and 5.7 of the Environmental Planning and Assessment Act 1979 (EP&A Act) to enable Northern Beaches Council (Council) to examine to the fullest extent possible any matters related to the proposed works (Works) (located at Wetherill Street road end) that could impact the environment, and whether any impacts of the Works are likely to significantly impact the environment such that the preparation of an Environmental Impact Statement (EIS) would be required.

Council engaged Royal HaskoningDHV (RHDHV) to prepare this REF.

The purpose of the Works is to install new public beach access stairs at the Wetherill Street road end. To enable construction of the stairs and ensure their structural stability some rework of the existing rock slope along the immediate foreshore will be required.

1.2 Structure of the REF

In summary this REF details:

- The introduction and background to the project (**Section 1**);
- A description of the project proposal (the Works) (**Section 2)**
- Consideration of alternatives (**Section 3**);
- Planning context and legislation (**Section 4**);
- An assessment of the site conditions for each of the sensitive receptors and the potential environmental impacts (**Section 5**);
- Identification of the proposed mitigation and control measures that should be employed (**Section 6**);
- Consultation (**Section 7**);
- Environmental factors considered (**Section 8**);
- Conclusion (**Section 9**); and.
- Schedules (**Section 10**).

1.3 Level Datum

All reference to Reduced Level (RL) in this report is given to Australian Height Datum (AHD). Zero metres AHD is approximately equal to mean sea level at present.

2 Proposed Works Description (the Works)

2.1 Overview

The Works will consist of the installation of a set of prefabricated steel pedestrian stairs to allow safe access from the road down to the beach. These works adjoin private properties 1168 Pittwater Rd and 1172 Pittwater Rd as shown in **Figure 2-1**.

The Works are intended to meet the following objective:

- provide safe, formalised public access from the road to the beach at Wetherill Street.

Figure 2-1 Location of the works and adjoining private properties

The design development and discussion of the site constraints is provided in **Section 3.3**. Works are shown in plan form in **Figure 2-2** and will involve the following key components:

- **Construction of new public beach access stairs**:
    - a set of prefabricated steel stairs and viewing platform will be installed to allow safe pedestrian access from the road down to the beach;
    - the stair structure will be supported by a concrete footing at the crest and toe;
    - stair treads will consist of fibre-reinforced polymer (FRP) mesh to maximise durability and slip resistance;
    - public amenity facilities will be incorporated at road level comprising a viewing platform, shower and seating.
- **Rock movement to enable installation and structural stability of the stairs**:
    - Rock from in the order of 50 to 60% of the total width of the road head, would be expected to be required to be moved (and then restacked) to enable installation of the stairs. The moving of rock would extend some 2 to 3m horizontally landward of the outer face.

- Some re-stacking of rocks either side of the installation trench will be required to improve hydraulic stability and reduce risk of structural damage to the stairs.
- Restacking will include the removal of obviously undersized rocks and some additional large rocks may be required for stability.

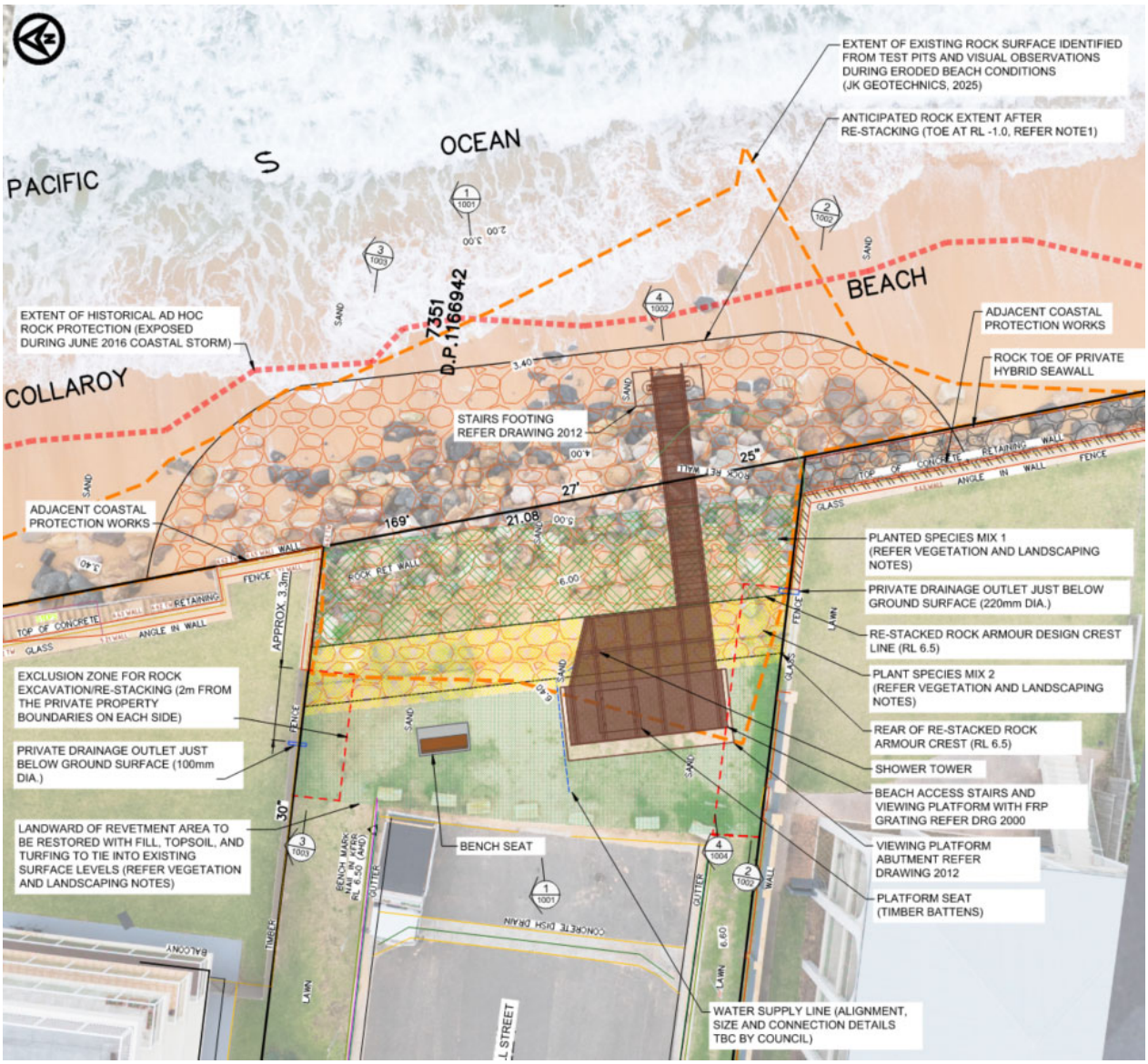


Figure 2-2 General arrangement of Works

2.2 Existing Site Description

This section describes the existing site environment at Wetherill Street road end, and the adjoining private properties. The location of the Works at Wetherill Street, and adjoining private properties, is shown in **Figure 2-3**.

Figure 2-3 Wetherill Street road end and adjoining private properties

Wetherill Street runs off Pittwater Road, providing access to private properties and public access to Collaroy-Narrabeen Beach. There is room for parking of 4 to 5 cars at the road end and a partially grassed area between the road and the beach. There is historic rock already present at this site and, until 2020, a set of access stairs. The former access stairs are shown in **Figure 2-4** and were removed during the construction works for the upgrading of private coastal protection works at 1168 and 1172 Pittwater Rd. Since 2020 beach access has been achieved through beach scraping to form a sand ramp over the rocks (refer **Figure 2-5**), however this access washes away during storms and cannot be consistently maintained. **Figure 2-3** shows an eroded beach profile where access at Wetherill, via a sand ramp, is not available.

Figure 2-4 1168 Pittwater Road with rock revetment and now removed access stairs in the foreground (2020), taken prior to commencement of upgraded private coastal protection works

Figure 2-5 Wetherill St in 2024 with beach access via a sand ramp

The existing historic rock revetment at Wetherill Street extends a considerable distance beyond the road head onto the public beach (approximately 10m); a greater distance than for adjacent properties which are now protected by vertical seawalls. As such, the Wetherill Street existing historic rock revetment forms a barrier to public access along the beach following erosion events. This is illustrated in an image of the beach taken following storm erosion in May 2025 (refer **Figure 2-6**). There is an opportunity to improve alongshore beach access during the restacking required for the access stairs.

Figure 2-6 View along Collaroy Narrabeen Beach showing existing historic rock revetment at Wetherill Street exposed following erosion event and extending onto beach

Wetherill Street sits between two private residences, 1172 Pittwater Road to the north and 1168 Pittwater Road to the south, where upgraded coastal protection works have been completed in recent years. A photo of the two private residences, with upgraded coastal protection works, is included as **Figure 2-7**.

Figure 2-7 Upgraded private coastal protection works at 1168 and 1172 Pittwater Road

2.3 Construction Activities

It is estimated the Works would take up to approximately 2 months.

Construction activities would be guided by a construction environmental management plan (CEMP) to ensure work is carried out to the relevant environmental specifications within the site. Detailed work methodologies would be determined prior to construction once a Contractor has been engaged. The proposed indicative work methodology is described below and **Figure 2.8** shows the extent of the construction activities. Section and plan view drawings are provided in the set of design drawings included in **Appendix A**.

Prior to construction:

- establish a site compound;
- conduct a services search;
- install environmental controls in accordance with the CEMP including erosion and sediment controls;
- carry out a pre-construction dilapidation survey of adjacent properties and infrastructure;
- construct a temporary sand bund seaward of the works area using native excavated beach sand, or other acceptable temporary measures listed in the specifications, to provide protection against tide and mild wave action.

During construction:

- display traffic warning signs on the relevant access roads and pedestrian access signs adjacent to the pedestrian access points to notify beach users of restricted areas;
- remove existing rock as required, stockpile suitable rock for reuse (restacking) and remove unsuitable rock off site;

- excavate to install supports (footings) for stairs including management of groundwater at the toe if required;
- import required additional rock, restack rock revetment and wash sand into voids;
- remove any temporary sand bund, screening the sand to remove any rubble, rock fragments or other foreign materials not suitable for the beach, and spread sand over the beach to form a natural profile;
- install beach access stairs and viewing platform;
- install outdoor facilities, such as beach shower and park bench;
- cover rock revetment with jute matting, sand, and native plants; and
- fill, topsoil and turf areas landward of the rock revetment crest to tie in with existing surface levels.

Truck movements would include:

- delivery of prefabricated stairs;
- delivery of reinforcement and concrete for footings;
- removal of rocks; and
- importation of rocks.

Post-construction to rehabilitate and clean up the site:

- dispose of any unused materials to an appropriate waste management facility, in accordance with the NSW Environment Protection Authority Waste Classification Guidelines (NSW EPA 2014);
- carry out a post-construction dilapidation survey of adjacent properties and infrastructure;
- restore disturbed areas, including vegetation, to pre-existing condition;
- repair road/beach surface to the pre-existing condition;
- remove all waste and tidying of construction site to pre-existing condition; and
- remove environmental controls and signage.

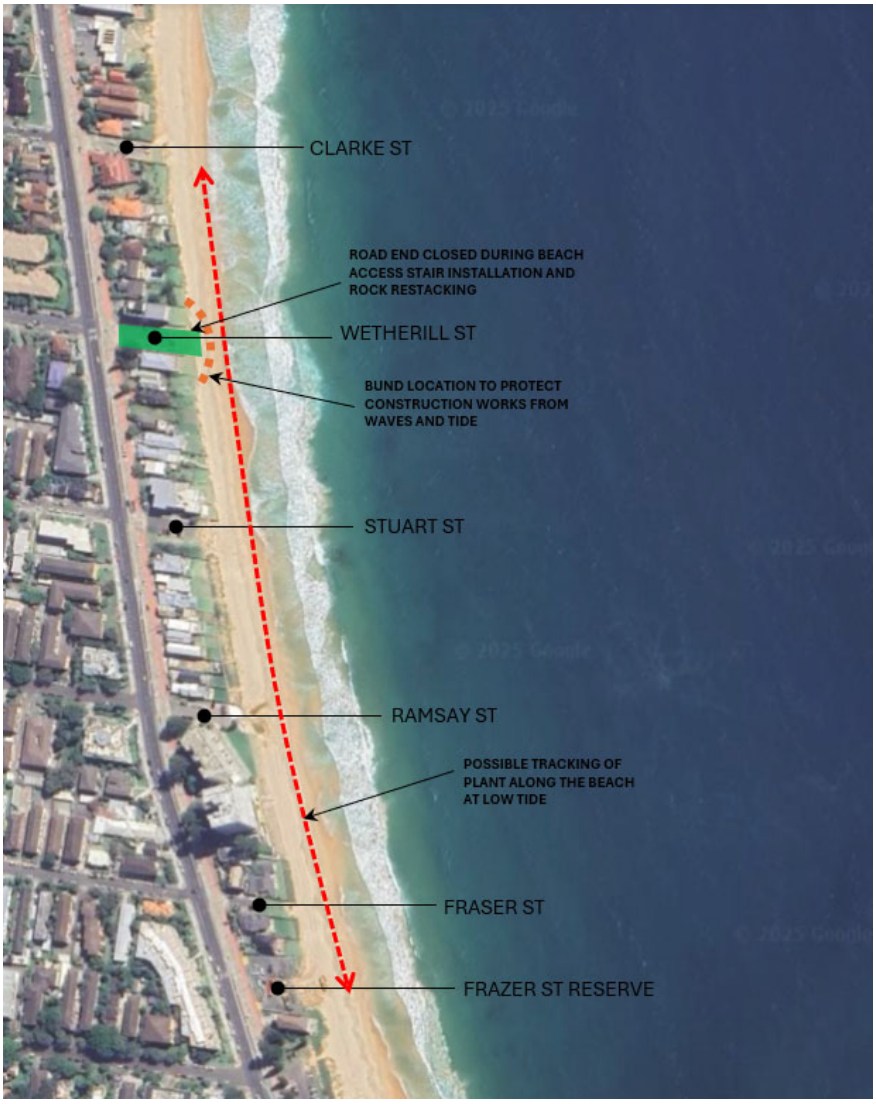


Figure 2-8 Extent of construction activities

2.3.1 Construction Materials

The majority of the materials needed for construction would be delivered to site by truck. These materials include:

- formwork;
- reinforcement;
- concrete (stair footings);
- steel stairs with FRP treads;
- FRP stair landing;
- viewing platform framing;
- viewing platform FRP decking;
- rock for restacking of rock revetment, as required;
- backfill material as required; and
- landscaping supplies (topsoil, turf, jute mesh, plants).

Reuse of existing rock

Rocks recovered from the existing historic revetment that are considered suitable for restacking would be reused. Unsuitable rock would be removed from site and stockpiled for reuse in other projects.

2.3.2 Plant and Equipment

A range of plant and equipment would be utilised on the project, including but not limited to:

- excavators for removal of sand and temporary rock protection, creation of temporary sand and rock bunds further seaward for protection against tides and waves, removal of any rock and concrete block obstructions, temporary stockpiling of rock, restacking of rock and placement of sand to restore the beach;
- crane or excavator for installation of the beach access stairs and viewing platform;
- transit mixers for concrete supply;
- trucks for delivery of materials such as reinforcement, framed steel and minimesh panels and treads, handrails, backfill material, topsoil, turf, jute mesh, plants, geotextile fabric, rock armour and underlayer, and for removal of unsuitable rock; and
- vibratory machinery for compaction of material behind the rock revetment.

2.3.3 Contractors Working Area

The Contractor's works compound for the Works is likely to be at Frazer Street Reserve and would be fenced off and closed to the public during all construction activities (refer **Figure 2-8**).

2.3.4 Duration of Works and Working Hours

The Works are each estimated to take approximately 2 months.

Works would be undertaken during the standard construction hours where practicable (i.e. 7 am to 5 pm Monday to Friday and 8 am to 1 pm Saturday). No works would be completed on Sundays or public holidays. However, on occasions works may be required outside of the standard hours to optimise availability of daylight hours and suitable tide/wave conditions. Where works are proposed to take place outside of the standard hours, approval would be sought from Council and notification would be provided to local residents by Council.

2.3.5 Restoration

At the completion of the Works, the site would be cleared of all surplus materials, temporary fences and the like and restored to not less than the pre-construction condition. A pre-construction dilapidation survey would be used as a basis of assessing the pre-construction condition of the site.

A post-construction dilapidation survey would be undertaken to ensure satisfactory restoration of the site. Any damage to the car park, roads, foreshore reserves, and other site features due to the Works would be remediated by the Contractor.

2.4 Operational Management

Following the construction of the Works, Council would be responsible for the ongoing management and maintenance of the Works. The Works will be identified in the appropriate asset management plan and managed in accordance with that plan. Key operational management actions to ensure the ongoing performance of the Works as well as maintenance of amenity and public safety will include:

- Inspection of the Works following erosion events
- Beach scraping to facilitate sand accretion at the back of the beach following erosion events

- Maintenance and replacement of dune vegetation as required
- Periodic placement of sand from Narrabeen Lagoon entrance clearance works at the base of the stairs or in front of the restacked rock.

Additionally, Council will procure a performance review report from a suitably qualified independent coastal engineer at a minimum frequency of every 5 years or following significant erosion in order to assess whether the Works still provide the necessary safe public access to the beach and stability of Council's road asset. The report will consider whether the Works are satisfactory in their current state, whether upgrades of the Works are required, whether removal and replacement of the Works with an alternative design is required, or whether demolition and removal of the Works is required.

In the event that upgrades, or removal and replacement are required, such activities would be subject to the planning laws at that time.

3 Consideration of alternatives

In accordance with best practice environmental assessment principles, this section considers feasible alternatives to the proposed beach access stairs at Wetherill Street, including the “do-nothing” scenario. While the Works are relatively minor in scale, the assessment considers their necessity, functionality, and environmental justification.

3.1 Do-Nothing Option

The do-nothing option would involve leaving the site in its current condition without installing formal beach access infrastructure. This option is not preferred as it would:

- Continue existing poor public access arrangement, with no formalised means of beach access resulting in ongoing liability for Council due to informal access;
- Result in ongoing cost and resources to monitor and re-scrape a sand access ramp after storms
- Result in periods of no beach access during times of low sand levels.

Given the beach's popularity and strategic location of Wetherill Street as a public access point, the do-nothing option is considered unsatisfactory.

3.2 Alternative Designs for Beach Access

Alternative stair configurations and construction methods were considered as part of preliminary engineering assessments, including:

- Timber stair construction: discounted due to lower durability and higher maintenance requirements in a harsh coastal environment.
- Concrete stairs integrated into the revetment: discounted due to greater construction complexity, permanence, and impact on rock alignment.
- Access ramps: not feasible due to space constraints and steep grade of the site.

The selected option, prefabricated steel stairs with FRP treads is considered the most appropriate solution, balancing durability, safety, and constructability while minimising environmental impact. This form of beach access has been successfully installed at numerous other beach and foreshore locations.

Methodologies to design beach access without the need to move rocks were also considered. This would require acceptance of a reduced design life, accepting damage from small rocks (projectiles) moved during a storm and accepting damage to the stairs from slope instability. The level of monitoring, maintenance, repair and replacement of the stairs required is considered unsatisfactory. The stairs would also have to extend further onto the beach, which is considered an unsatisfactory impact on alongshore beach access. Therefore, the selected option includes moving and restacking rock to allow installation of the stairs on the designed alignment and for structural stability. This is detailed further in Section 3.3.

3.3 Works

General design philosophy and site constraints

It is recognised that Wetherill Street is a ‘pinch point’ for access along Collaroy-Narrabeen Beach. Accordingly, beach access stairs need to be positioned as far landward as possible to minimise encroachment onto the sandy beach berm. This will be achieved by ensuring the profile of the stairs ‘hugs’

the rock protection as close as practicable and the lower-most tread is not unnecessarily low (proposed level of the lower-most tread is approximately 1.25m AHD).

Due to the existence of submarine fibre optic cables at Wetherill Street it is not feasible from a risk perspective to install piling to support the bottom of the stairs, which is the typical arrangement adopted at other locations where beach access stairs are installed. As such, the base of the stairs at Wetherill Street is proposed to be supported on a concrete footing excluding piles.

To prevent undermining of the footing and collapse of the stairs, the underside of the footing will be installed at either a suitably low level in unconsolidated sand or on cemented sand, whichever is the higher level. A design level of -1m AHD for the base of the footing has been adopted based on site investigations.

A further factor at Wetherill Street is the risk of undermining adjacent private property (landward of the private seawall returns) during any rock movement required to install the stairs. This would generally rule out locating the stairs close to private property. An offset in the order of 2m from the adjacent private properties will be necessary prior to commencement of any excavation, subject to any surcharge considerations on the private property which could increase the necessary distance of the offset. For this reason, the stairs are proposed to be located, generally speaking, in the central zone of the road head.

Rock movement required to enable installation of the stairs

The rock movement required to enable installation of the stairs is dictated by:

1. The required depth of excavation of the existing historic rock profile to install the footings, in particular the footing at the base of the stairs;
2. The width of the footing measured along the beach including allowance for formwork installation; and
3. The required stable side slopes of the rock excavation to ensure a safe work place.

Taking into account the above, the width of the ‘trench’ or ‘slot’ that would potentially need to be excavated up the existing historic rock face to install the stairs would be in the order of 10m to 12m compared to the overall width of the road head of approximately 20m.

Rock movement to ensure structural stability of the stairs

The structural stability of the stairs may be affected by the existing rock where the existing rock is undersized for the incident storm wave climate and could either shift or be dislodged and become projectiles, in either case causing structural damage to the stairs.

The risk of structural damage to the stairs due to the above mechanisms can be assessed based on an understanding of the size (mass) of the rocks in the existing face of the rock protection. JK Geotechnics carried out a measurement survey of the sandstone and basaltic rocks in the face of the rock protection on behalf of RHDHV on 4/4/2025 when the rocks were exposed following an erosion event. The outcome of the measurements and analysis indicated that the individual mass of the sandstone rocks and the basaltic rocks do not meet the design requirements for hydraulic stability in the design storm. The distribution of rock sizes would also not meet accepted grading criteria. In addition, sections of the existing rock protection were considered to be overly steep and potentially unstable, being steeper than the recommended maximum rock placement slope of 1V:1.5H (vertical to horizontal). Structural damage to the stairs could be expected in the design storm and in lesser storms.

Summary

Rock from in the order of 50 to 60% of the total width of the road head, would be expected to be required to be moved to enable installation of the stairs. The moving of rock would extend some 2 to 3m horizontally landward of the outer face. This movement and judicious re-stacking of the rock would provide the opportunity to mitigate the hydraulic stability issue and the risk of structural damage to the stairs but would not completely remove the risk.

The risk of structural damage to the stairs would be further mitigated, although not fully removed, by judicious re-stacking of rocks either side of the installation trench. This would include removal of any obviously small rocks at the rock surface in offset areas to private properties.

4 Planning Context and Legislation

4.1 Planning legislation, instruments and policies

4.1.1 Environmental Planning and Assessment Act 1979 and Environmental Planning and Assessment Regulation 2021

Section 5.5 of the EP&A Act imposes a duty on determining authorities to take into account, to the fullest extent possible, all matters affecting or likely to affect the environment by reason of an activity. If, in attending to this duty, the determining authority assesses that the activity is likely to significantly affect the environment, the determining authority must obtain an environmental impact statement (EIS) in respect of the activity (s 5.7).

The definition of 'activity' includes 'the carrying out of a work', but does not include 'any act, matter or thing for which development consent under Part 4 is required or has been obtained' (s 5.1(1)). As set out in sections **4.1.2** to **4.1.3** below, the Works are permissible without consent.

The definition of 'determining authority' includes: 'the Minister or public authority by or on whose behalf the activity is or is to be carried out…' 'Public authority' is defined in s 1.4 of the EP&A Act as '(a) a public or local authority constituted by or under an Act'. Councils are a public or local authority constituted by the *Local Government Act 1993* (see s 219) and are therefore a 'public authority' for the purposes of the EP&A Act. As the Works will be carried out by Council, and Council is a 'public authority' Council is a determining authority for the Works.

In assessing the Works, Council and any other determining authorities must take into account the factors set out in the *Guidelines for Division 5.1 assessments* (Department of Planning and Environment, June 2022) promulgated under reg 170 of the EP&A Regulations (**Division 5.1 Guidelines**), which mirror the factors set out in reg 171(2) of the EP&A Regulations. These factors are:

(a) the environmental impact on the community,
(b) the transformation of the locality,
(c) the environmental impact on the ecosystems of the locality,
(d) reduction of the aesthetic, recreational, scientific or other environmental quality or value of the locality
(e) the effects on any locality, place or building that has—
    (i) aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance, or
    (ii) other special value for present or future generations,
(f) the impact on the habitat of protected animals, within the meaning of the *Biodiversity Conservation Act 2016*,
(g) the endangering of a species of animal, plant or other form of life, whether living on land, in water or in the air,
(h) long-term effects on the environment,
(i) degradation of the quality of the environment,
(j) risk to the safety of the environment,
(k) reduction in the range of beneficial uses of the environment,
(l) pollution of the environment,
(m) environmental problems associated with the disposal of waste,
(n) increased demands on natural or other resources that are, or are likely to become, in short supply,
(o) the cumulative environmental effect with other existing or likely future activities,

(p) the impact on coastal processes and coastal hazards, including those under projected climate change conditions,
(q) applicable local strategic planning statements, regional strategic plans or district strategic plans made under the Act, Division 3.1,
(r) other relevant environmental factors.

These factors are each addressed in **Section 5** and summarised in **Section 8.1.** The Division 5.1 Guidelines also impose an obligation on Council and any other determining authorities to consider whether the activity is likely to significantly affect threatened species under the *Biodiversity Conservation Act 2016* and the *Fisheries Management Act 1994*, which is addressed at **Section 4.2** and **Section 5.6** below.

The Division 5.1 Guidelines require determining authorities to identify, analyse, and evaluate the activity's likely environmental impacts. This includes the direct, indirect and cumulative impacts of the activity to determine whether the activity is likely to have a significant impact on the environment. Each impact should be assessed individually for its level of significance.

Our assessment is that the Works, subject to the control measures set out in **Section 5** and **Section 6** are unlikely to cause a significant impact to the environment or threatened species, and therefore an EIS under Section 5.7 of the EP&A Act is not required.

4.1.2 Warringah Local Environmental Plan 2011

The Works are located within the current Northern Beaches Council local government area (LGA), and within the former Warringah Council local government area. Development within the former Warringah Council local government area is controlled through the Warringah Local Environmental Plan (LEP) 2011 (WLEP 2011).

In land tenure terms, Collaroy-Narrabeen Beach is a Crown Reserve with Northern Beaches Council being the appointed Trustee. The reserve is zoned as Open Space and is reserved for the purposes of public recreation and coastal protection.

The land for the Works is zoned RE1 under the provisions of the WLEP 2011. The objectives of this zone are:

- To enable land to be used for public open space or recreational purposes
- To provide a range of recreational settings and activities and compatible land uses
- To protect and enhance the natural environment for recreational purposes
- To protect, manage and restore public land that is of ecological, scientific, cultural or aesthetic value
- To prevent development that could destroy, damage or otherwise have an adverse effect on those values.

Environmental facilities are permitted without consent for zone RE1 and are defined in the WLEP 2011 dictionary as 'a building or place that provides for the recreational use or scientific study of natural systems, and includes walking tracks, seating, shelters, board walks, observation decks, bird hides or the like, and associated display structures.'

Clause 1.9(1) provides that the WLEP 2011 is subject to the provisions of any State environmental planning policy (SEPP) that prevails over the WLEP 2011 as provided by s 3.28 of the EP&A Act. Section

3.28 of the EP&A Act provides that in the event of an inconsistency between environmental planning instruments, there is a general presumption that a SEPP prevails over a LEP.

On 1 March 2022, 43 SEPPs were repealed and consolidated into 11 new SEPPs. The key SEPP relevant to the Works is the SEPP (Transport and Infrastructure) 2021 (T&I SEPP).

4.1.3 State Environmental Planning Policy (Transport and Infrastructure) 2021 (waterway or foreshore management activities)

Clause 2.165(1) of the T&I SEPP provides that "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."

Clause 2.164 defines "waterway or foreshore management activities" as meaning (emphasis added):

> *(a) riparian corridor and bank management, including erosion control, bank stabilisation, resnagging, weed management, revegetation and the creation of **foreshore access ways**, and*
> *(b) instream management or dredging to rehabilitate aquatic habitat or to maintain or restore environmental flows or tidal flows for ecological purposes, and*
> *(c) **coastal management** and beach nourishment, **including erosion control, dune or foreshore stabilisation works**, headland management, weed management, revegetation activities and foreshore access ways, and*
> *(d) salt interception schemes to improve water quality in surface freshwater systems, and*
> *(e) installation or upgrade of waterway gauging stations for water accounting purposes.*

The Works are intended to provide a foreshore access way. The rock movement required for installation of the public beach access stairs will also reduce the risk of erosion and recession affecting road infrastructure. It follows that the Works fall within limb (a) of the definition of "waterway or foreshore management activities" and would therefore be permissible without consent when undertaken by or on behalf of Council.

Clause 2.109(1) of the T&I SEPP provides that development for the purposes of a road or road infrastructure facilities may be carried out by or on behalf of a public authority without consent on any land (with the exception of certain land reserved under the *National Parks and Wildlife Act 1974* (NSW)).

"Road infrastructure facilities" is defined in clause 2.108 as including (emphasis added):

> *(a) tunnels, ventilation shafts, emergency accessways, vehicle or pedestrian bridges, causeways, road-ferries, retaining walls, toll plazas, toll booths, security systems, bus lanes, transit lanes, transitways, transitway stations, rest areas and **road related areas** (within the meaning of the Road Transport Act 2013), and*
> *(b) associated public transport facilities for roads used to convey passengers by means of regular bus services, and*
> *(c) bus layovers that are integrated or associated with roads (whether or not the roads are used to convey passengers by means of regular bus services), and*
> *(d) bus depots, and*
> *(e) bus stops and bus shelters, and*
> *(f) traffic control facilities (within the meaning of Part 6 of the Transport Administration Act 1988), TfNSW road safety training facilities and safety works, and*

(g) premises used for the purposes of testing and inspecting heavy vehicles (within the meaning of the Road Transport Act 2013) under the TfNSW Heavy Vehicle Authorised Inspection Scheme.

Clause 2.109(3) also provides additional guidance on works included in the definition of "road infrastructure facilities". Clause 2.109(3) relevantly provides that (emphasis added):

(3) In this section [2.109] and section 2.112, a reference to development for the purpose of road infrastructure facilities includes a reference to development for any of the following purposes if the development is in connection with a road or road infrastructure facilities-
(a) construction works (whether or not in a heritage conservation area), including-
(i) temporary buildings or facilities for the management of construction, if they are in or adjacent to a road corridor, and
(ii) creation of embankments, and
(iii) extraction of extractive materials and stockpiling of those materials, if-
(A) the extraction and stockpiling are ancillary to road construction, or
(B) the materials are used solely for road construction and the extraction and stockpiling take place in or adjacent to a road corridor, and
(iv) temporary crushing or concrete batching plants, if they are used solely for road construction and are on or adjacent to a road corridor, and
(v) temporary roads that are used solely during road construction,
(b) emergency works or routine maintenance works,
(c) alterations or additions to an existing road (such as widening, narrowing, duplication or reconstruction of lanes, changing the alignment or strengthening of the road),
(d) environmental management works, if the works are in or adjacent to a road corridor.

Road related areas in section 2.108(a), as defined by Part 1.2 section 4 the Road Transport Act 2013, includes:

(a) an area that divides a road, or
(b) a footpath or nature strip adjacent to a road, or
(c) an area that is open to the public and is designated for use by cyclists or animals, or
(d) an area that is not a road and that is open to or used by the public for driving, riding or parking vehicles, or
(e) a shoulder of a road, or
(f) any other area that is open to or used by the public and that has been declared under section 18 to be an area to which specified provisions of this Act or the statutory rules apply.

It follows that the Works would also be permissible without consent under the T&I SEPP, if defined as road related or road infrastructure, if carried out by or on behalf of Council.

4.1.4 State Environmental Planning Policy (Resilience and Hazards) 2021

Based on the SEPP (Resilience and Hazards) 2021 (RH SEPP) and its associated mapping, the Works are within a "Coastal Environment Area" and "Coastal Use Area". Currently no Coastal Vulnerability Area Map has been identified in the SEPP. However, it is known that the site is subject to coastal hazards, and would be mapped as Coastal Vulnerability Area, should such a map exist. Therefore, it is considered appropriate and good practice to also consider the site as within a Coastal Vulnerability Area. The objectives of each Area are discussed in **Section 4.2.12**.

4.2 Other Relevant Legislation

4.2.1 Telecommunications Act 1997

The proposed works at Wetherill Street are adjacent to the Submarine Cable (Northern Sydney Protection Zone) which extends from Collaroy-Narrabeen Beach to 40 nautical miles (74 kilometres) off-shore, as declared in 2007 by the Australian Communications and Media Authority (ACMA) under subclause 4 (1) of Schedule 3A to the Telecommunications Act 1997. Consideration of the Telecommunications Act 1997 is therefore required.

Schedule 3A of the Telecommunications Act 1997 allows the Australian Communications and Media Authority (ACMA) to declare protection zones in Australian waters over submarine cables of national significance. Within the protection zone, activities that could damage submarine cables are prohibited or restricted. This includes:

- the use of trawl gear that is designed to work on or near the seabed;
- a net anchored to the seabed and kept upright by floats;
- lowering or raising an anchor from a ship;
- sand mining;
- exploring for or exploiting resources;
- mining and the use of mining techniques; and
- any activity that involves a serious risk that an object will connect with the seabed.

According to the Submarine Cable (Northern Sydney Protection Zone) Declaration 2007, the Zone commences at mean low water mark. As the proposed beach access stairs at Wetherill Street are located at the back of the beach above mean low water mark, the proposed works are outside the Protection Zone and hence the various prohibitions and restrictions are not a relevant consideration.

However, submarine cables pass under Wetherill Street to a landing point west of Pittwater Road and it is a criminal offence to damage or sever a submarine cable. The existence of the cables has therefore influenced the Works at Wetherill Street, in particular how deep footings can extend, as discussed further within the REF.

4.2.2 Environment Protection and Biodiversity Conservation Act 1999

The Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places defined in the Act as Matters of National Environmental Significance (MNES).

The objects of the act are to:

- Provide for the protection of the environment, especially matters of national environmental significance
- Conserve Australian biodiversity
- Provide a streamlined national environmental assessment and approvals process
- Enhance the protection and management of important natural and cultural places
- Control the international movement of plants and animals (wildlife), wildlife specimens and products made or derived from wildlife
- Promote ecologically sustainable development through the conservation and ecologically sustainable use of natural resources.

No MNES were identified as occurring in the locality of the Works during the search using the Commonwealth Protected Matters Search Tool undertaken on 9 May 2024.

Discussion on the presence and likely impacts of the Works on ecology and biodiversity is provided in **Section 5.6**.

4.2.3 Biodiversity Conservation Act 2016 NSW

The purpose of the Biodiversity Conservation Act 2016 (BC Act) "is to maintain a healthy, productive and resilient environment for the greatest well-being of the community, now and into the future, consistent with the principles of ecologically sustainable development" (section 1.3).

Part 7 of the BC Act sets out a process of assessment for an 'activity' as defined in Part 5 of the EP&A Act. As provided in **Section 4.1.1** of this REF above, the Works are such an activity. Section 7.8(2) of the BC Act provides that:

> For the purposes of Part 5 of the Environmental Planning and Assessment Act 1979, an activity is to be regarded as an activity likely to significantly affect the environment if it is likely to significantly affect threatened species.

Sections 7.2 and 7.3 of the BC Act sets out the test for determining whether an activity is likely to significantly affect threatened species. Section 7.2(1) provides that:

> (1) For the purposes of this Part, development or an activity is likely to significantly affect threatened species if-
>
> (a) it is likely to significantly affect threatened species or ecological communities, or their habitats, according to the test in section 7.3,
>
> (c) it is carried out in a declared area of outstanding biodiversity value.

Section 7.3 provides that:

> (1) The following is to be taken into account for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats-
>
> (a) in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction,
>
> (b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity-
>
> (i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or
>
> (ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction,
>
> (c) in relation to the habitat of a threatened species or ecological community-
>
> (i) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and

(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and

(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality,

(d) whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly),

(e) whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.

If an activity is likely to significantly impact upon threatened species, an EIS, Species Impact Statement (SIS), or Biodiversity Development Assessment Report (BDAR) may be required.

Discussion on the presence of threatened species and likely impacts of the Works on ecology and biodiversity is provided in **Section 5.6**. Our assessment concludes that the construction and operation of the Works are unlikely to have a significant impact upon threatened species, and therefore an EIS, SIS or BDAR is not required for the Works under the BC Act.

4.2.4 Fisheries Management Act 1994 NSW

The objects of the Fisheries Management Act 1994 are to conserve, develop and share the fishery resources of the State for the benefit of present and future generations. Under Section 200 of the Act a local government authority must not carry out dredging or reclamation work except under the authority of a permit issued by the Minister of the Department of Primary Industries and Regional Development (Fisheries).

The Works will not involve any work in the marine environment, including dredging and reclamation, therefore such a permit will not be required.

Furthermore, sections 221ZX and 221ZZ of the FM Act require an EIS and/or SIS to be prepared, and concurrence from the Fisheries Agency Head to be obtained, if an activity under Part 5 of the EP&A Act is likely to significantly affect threatened species, populations or ecological communities. Threatened species, populations, and ecological communities are set out in Schedules 4, 4A, and 5 to the FM Act: s FM Act s 220B.

Discussion on the presence of threatened species, populations or ecological communities and likely impacts of the Works on biodiversity within the scope of the FM Act is provided in **Section 5.6**. Our assessment concludes that the Works are unlikely to have a significant impact upon threatened species, populations or ecological communities and therefore an EIS, SIS, or BDAR is not required for the Works under the BC Act.

4.2.5 Crown Land Management Act 2016 NSW

Northern Beaches Council is responsible for managing Crown Land in accordance with the Crown Land Management Act 2016 (CM Act). The relevant objects of the CM Act require environmental, social, cultural heritage and economic considerations to be taken into account in decision-making about Crown Land. While around half of the footprint of the Works are located within a road reserve and are located at the end of a Council road some encroachment onto Crown Reserve No. 79606 is required to align the Works with adjoining private coastal protections that have been recently constructed.

In assessing the consistency of the proposal with the CM Act the existing use of the site and declared purposes of the land are important matters for consideration. Historic rock revetment works are present on the site and public recreation and are declared purposes for reserve No. 79606. Therefore, the Works are considered to be consistent with the relevant objects of the CM Act as they will not negatively impact the environmental, social, cultural heritage and economic of the reserve and are consistent with a dedicated purpose of reserve No. 79606.

Northern Beaches Council has been appointed as the Crown land manager over reserve No. 79606. Division 3.4 of the Act sets out the function of the Council as a land manager. Under the CM Act a council manager is authorised to classify and manage its dedicated or reserved Crown land as if it were public land within the meaning of the Local Government Act 1993. This is to include the preparation and adoption of Plans of Management consistent with the provisions of Division 2 of Part 2 of Chapter 6 of the Local Government Act 1993.

The Coastal Lands Plan of Management is to be replaced by a Plan of Management prepared in accordance with the CM Act. This Plan of Management is yet to be finalised. However, section 44 of the Local Government Act 1993 provides that while a Plan of Management is pending, there is to be no change in land use. As there are historic works present on the reserve the proposed works do not represent a change in use. Therefore, a Crown Lands licence is not required for the Works.

4.2.6 Heritage Act 1977

The objects of the Heritage Act 1977 are to conserve the environmental heritage, including buildings, works or places which are of historic, scientific, cultural, social, archaeological, architectural, natural or aesthetic significance, to NSW. The act restricts activities that would impact heritage listed on the State Heritage Register without approval from the NSW Heritage Council.

Discussion on the presence and likely impacts of the Works on environmental heritage is included in **Section 5.9**.

4.2.7 Native Title Act 1993

The Native Title Act 1993 (NTA) provides for the recognition and protection of native title for Aboriginal peoples and Torres Strait Islanders. The NTA recognises native title for land over which native title has not been extinguished and where persons can prove continuous use, occupation or other classes of behaviour and actions consistent with the traditional cultural possession of those lands. It also makes provision for Indigenous Land Use Agreements to be formed as a framework for notification of Native Title Stakeholders for certain future acts on land where native title has not been extinguished.

Searches of the National Native Title Register, Register of Native Title Claims and Register of Indigenous Land Use Agreements were undertaken and no relevant native title determinations, claims or land use agreements were found.

4.2.8 National Parks and Wildlife Act 1974

The objects of the National Parks and Wildlife Act 1974 (NPWS Act) are to conserve nature and cultural heritage. Aboriginal objects and protected fauna are afforded statutory protection under the NPWS Act

No Aboriginal heritage items are known to be within or near the extent of the construction activities (refer **Section 5.9**). It is not expected that any items of Aboriginal significance will be impacted, however should

any Aboriginal objects be uncovered during the works, an Aboriginal Heritage Impact Permit under section 90 of the Act will need to be obtained if the object cannot be avoided.

Discussion on the presence and likely impacts of the Works on ecology and biodiversity is included in **Section 5.6**.

4.2.9 Contaminated Land Management Act 1997

The general object of the Contaminated Land Management Act 1997 (CLM Act) is to establish a process for investigating and (where appropriate) remediation of land where contamination presents a significant risk of harm to human health or some other aspect of the environment. Contaminated land has not been identified at the work site.

The Environment Protection Authority (EPA) online contaminated land records were searched on 09 May 2025 to determine whether any notices had been issued under the CLM Act for sites within Warringah. No records were found within or surrounding the land where the Works will be undertaken.

Contaminated land has not been identified at this site and therefore the CLM Act has not been considered further. In the event that previously unidentified contaminated land is uncovered during construction of the works, Council would assess the contamination in accordance with the CLM Act.

4.2.10 Protection of the Environment Operations Act 1997

The Protection of the Environmental Operations Act 1997 aims to protect, enhance and restore the quality of the environment in NSW, to reduce risk to human health and promote mechanisms that minimise environmental degradation through a strong set of provisions and offences. A licence is required from EPA if any of the activities associated with the proposed works are determined to be a 'scheduled activity' under Schedule 1 of the Act.

The Works are not a scheduled activity and therefore a licence from EPA is not required.

4.2.11 Water Management Act 2000

A controlled activity approval is required under Chapter 3, Part 3 of the Water Management Act 2000 (WM Act) for any works that take place within 40m of a prescribed watercourse for all groups. Public authorities are exempt from this requirement under Clause 38 of the Water Management (General) Regulation 2011.

'Public authority' is defined in the Dictionary to the WM Act as including 'a council or county council with the meaning of the Local Government Act 1993'.

As Council is a public authority, it is therefore exempt from the need to obtain a controlled activity approval. However, the requirement to undertake the Works in accordance with the Act remains.

4.2.12 Coastal Management Act 2016

Section 4(1) of the Coastal Management Act 2016 (CM Act) defines coastal protection works to mean:

- Beach nourishment activities or works; and
- Activities or works to reduce the impact of coastal hazards on land adjacent to tidal waters, including (but not limited to) seawalls, revetments and groynes.

The objects of the CM Act are to manage the coastal environment of New South Wales in a manner consistent with the principles of ecologically sustainable development for the social, cultural and economic well-being of the people of the State, and in particular:

- To protect and enhance natural coastal processes and coastal environmental values including natural character, scenic value, biological diversity and ecosystem integrity and resilience
- To support the social and cultural values of the coastal zone and maintain public access, amenity, use and safety
- To acknowledge Aboriginal peoples' spiritual, social, customary and economic use of the coastal zone
- To recognise the coastal zone as a vital economic zone and to support sustainable coastal economies
- To facilitate ecologically sustainable development in the coastal zone and promote sustainable land use planning decision-making
- To mitigate current and future risks from coastal hazards, taking into account the effects of climate change
- To recognise that the local and regional scale effects of coastal processes, and the inherently ambulatory and dynamic nature of the shoreline, may result in the loss of coastal land to the sea (including estuaries and other arms of the sea), and to manage coastal use and development accordingly
- To promote integrated and coordinated coastal planning, management and reporting
- To encourage and promote plans and strategies to improve the resilience of coastal assets to the impacts of an uncertain climate future including impacts of extreme storm events
- To ensure co-ordination of the policies and activities of government and public authorities relating to the coastal zone and to facilitate the proper integration of their management activities
- To support public participation in coastal management and planning and greater public awareness, education and understanding of coastal processes and management actions
- To facilitate the identification of land in the coastal zone for acquisition by public or local authorities in order to promote the protection, enhancement, maintenance and restoration of the environment of the coastal zone
- To support the objects of the *Marine Estate Management Act* 2014 (NSW).

As noted in **Section 4.1.4**, based on SEPP (Resilience and Hazards) 2021 and its associated mapping, the Works are within a "Coastal Environment Area" and "Coastal Use Area". Currently no "Coastal Vulnerability Area" Map has been identified in the SEPP. However, it is known that the site is subject to coastal hazards and would be mapped as "Coastal Vulnerability Area", should such a map exist. Therefore, it is considered appropriate and good practice to also consider the site as within a Coastal Vulnerability Area. Management objectives for these three coastal areas have been considered. Following the hierarchy for the coastal management areas, the management objectives of the "Coastal Environment Area" prevail to the extent of any inconsistency ("Coastal Vulnerability Area" would prevail, if such mapping existed).

Following the hierarchy for the coastal management areas, the management objectives of the Coastal Environment Area prevail over an overlapping Coastal Use Area (CM Act s 10).

The management objectives for the Coastal Vulnerability Area are as follows:

- To ensure public safety and prevent risks to human life,
- To mitigate current and future risk from coastal hazards by taking into account the effects of coastal processes and climate change,
- To maintain the presence of beaches, dunes and the natural features of foreshores, taking into account the beach system operating at the relevant place,

- To maintain public access, amenity and use of beaches and foreshores,
- To encourage land use that reduces exposure to risks from coastal hazards, including through siting, design, construction and operational decisions,
- To adopt coastal management strategies that reduce exposure to coastal hazards:
  i. in the first instance and wherever possible, by restoring or enhancing natural defences including coastal dunes, vegetation and wetlands, and
  ii. if that is not sufficient, by taking other action to reduce exposure to those coastal hazards,
- If taking that other action to reduce exposure to coastal hazards:
  i. to avoid significant degradation of biological diversity and ecosystem integrity, and
  ii. to avoid significant degradation of or disruption to ecological, biophysical, geological and geomorphological coastal processes, and
  iii. to avoid significant degradation of or disruption to beach and foreshore amenity and social and cultural values, and
  iv. to avoid adverse impacts on adjoining land, resources or assets, and
  v. to provide for the restoration of a beach, or land adjacent to the beach, if any increased erosion of the beach or adjacent land is caused by actions to reduce exposure to coastal hazards,
- To prioritise actions that support the continued functionality of essential infrastructure during and immediately after a coastal hazard emergency,
- To improve the resilience of coastal development and communities by improving adaptive capacity and reducing reliance on emergency responses.

The management objects for the Coastal Environment Area are as follows:

- To protect and enhance the coastal environmental values and natural processes of coastal waters, estuaries, coastal lakes and coastal lagoons, and enhance natural character, scenic value, biological diversity and ecosystem integrity,
- To reduce threats to and improve the resilience of coastal waters, estuaries, coastal lakes and coastal lagoons, including in response to climate change,
- To maintain and improve water quality and estuary health,
- To support the social and cultural values of coastal waters, estuaries, coastal lakes and coastal lagoons,
- To maintain the presence of beaches, dunes and the natural features of foreshores, taking into account the beach system operating at the relevant place,
- To maintain and, where practicable, improve public access, amenity and use of beaches, foreshores, headlands and rock platforms.

The management objects for the Coastal Use Area are as follows:

- to protect and enhance the scenic, social and cultural values of the coast by ensuring that—
  - the type, bulk, scale and size of development is appropriate for the location and natural scenic quality of the coast, and
  - adverse impacts of development on cultural and built environment heritage are avoided or mitigated, and
  - urban design, including water sensitive urban design, is supported and incorporated into development activities, and
  - adequate public open space is provided, including for recreational activities and associated infrastructure, and
  - the use of the surf zone is considered,
- to accommodate both urbanised and natural stretches of coastline.

The Works meet the objectives of each zone in particular relating to public safety and maintaining public access, amenity and use of beaches and foreshores. In conclusion, the Works have been considered

within the strategic context of the relevant legislation and policy. Not providing access stairs will continue to result in unmanageable impacts to public access and public safety.

4.3 Summary of Licences/Permits Required

Table 1 contains a list of common approvals for work in the coastal zone. No requirements for permits or licences have been identified for the Works.

Table 1: Summary of Approvals

Act	Authority	Type	Licence Required
Biodiversity Conservation Act 2016	NSW Department of Climate Change, Energy, the Environment and Water (DCCEEW)	Division 3 - Licence to pick or harm threatened species, populations or ecological communities or damage habitat	No
Crown Land Management Act 2016	Department of Planning, Housing and Infrastructure (Crown Lands)	Crown Lands Licence	No
Protection of the Environment Operations Act 1997	NSW Environment Protection Authority	Environmental Protection Licence to undertake a 'scheduled activity'.	No
Environment Protection and Biodiversity Conservation Act 1999	Commonwealth Department of Climate Change, Energy, the Environment and Water	Referral and approval of impact of proposed actions on matters of national environmental significance.	No
Fisheries Management Act 1994	Department of Primary Industries and Regional Development (Fisheries)	Section 200 - Circumstances in which a local government authority may carry out dredging or reclamation	No
		Section 205 - Marine vegetation —regulation of harm	No
		Section 219 - Passage of fish not to be blocked	No
		Section 220ZW - Licence to harm threatened species, population or ecological community or damage habitat	No
Heritage Act 1977	DCCEEW	Section 60 - Approval within reserved land to carry out activities to an item listed on the State Heritage Register or to which an interim heritage order applies	No
		Section 141 - Excavation permit within reserved land	No
National Parks	DCCEEW	Section 90 - Aboriginal heritage impact permits	No

Act	Authority	Type	Licence Required
and Wildlife Act 1974			
Water Management Act 2000	WaterNSW	Section 89 - Water use approvals	No
		Section 90 - Water management work approvals	No
		Section 91 - Activity approvals	No
Water Act 1912	WaterNSW	Section 112 – Bore to be licensed.	No

5 Description of the existing environment and environmental impact assessment

This section considers the existing conditions at the Wetherill Street site and identifies, analyses, and evaluates the potential environmental impacts for relevant environmental sensitivities.

5.1 Geology and Soils

5.1.1 Existing Environment

Numerous geotechnical investigations have been undertaken along Collaroy-Narrabeen Beach including the following:

- boreholes drilled by Coffey Partners in 1990;
- test pits excavated by Coffey Partners in 1998;
- borehole and test pit investigations by Jeffery and Katauskas in 2000;
- borehole and test pit investigations by JK Geotechnics in 2018;
- various additional investigations undertaken by private property owners and submitted with Development Applications; and
- test pits and rock survey by Jeffery and Katauskas at Wetherill Street in May 2025.

The geology of the Collaroy-Narrabeen Beach embayment is characterised by Quaternary wind blown, fine to medium grained sand, well sorted marine quartz sand with a relatively thin Holocene sediment layer overlying older Pleistocene sediments (KBR 2002).

A cemented sand layer exists along Collaroy Narrabeen Beach, typically at a level of approximately 0m AHD. This layer serves as an erosion resistant layer and hence is a control on scour level and the magnitude of wave heights during storms, which are depth-limited.

The Sharing and Enabling Environmental Data (SEED) database identifies all land within 100m of the site as having low probability of acid sulfate soil (ASS) occurrence. An Acid Sulfate Soils Management Plan is therefore not required for the construction work. Narrabeen Lagoon Estuary, approximately 500m to the north west of Wetherill Street, is considered to have high probability of ASS occurrence.

There are no records of contamination at the site. A walkover of the site by RHDHV personnel and the recent geotechnical investigation did not observe the presence of any surface contamination, however an exhaustive or invasive survey was not carried out.

5.1.2 Potential Impacts During Construction

Potential impacts during construction include loss of sand from the beach system, damage to the cemented sand layer and uncovering of unknown buried contaminated material.

The unconsolidated sands that will be disturbed during the Works are all uncontaminated natural material. In accordance with the principles of waste minimisation and to reduce the volume of materials required to be imported to site, any sand recovered during the Works should be reused on site. Existing beach sands should not be removed from site and should not be placed landward of the Works where they would no longer be part of the active beach system. Rocks recovered from the existing rock revetment not able to be reused in the restacking on site would be removed from site and reused in other projects.

There is the potential for excavation to damage the integrity of the cemented sand layer. The construction methodology should adopt an excavation depth to preserve the integrity of the cemented sand layer as this would otherwise increase the risk of greater scour levels and increased wave heights impacting the site during storms.

There is also the potential for excavation to uncover unknown buried contaminated material. An Unexpected Finds Protocol (UFP) should be prepared and implemented as part of the CEMP to facilitate effective management of any contaminated material found during excavation works including immediately ceasing work and notifying Council staff.

5.1.3 Potential Impacts During Operation

No significant impacts are considered likely during operation of the Works, however it is possible restacked rocks may still shift or be dislodged during storms. The site should be inspected after storms and restoration works carried out where required to the pre-existing condition to ensure acceptable public access and public safety, and to minimise the risk of structural instability of the stairs.

5.1.4 Recommended Control Measures

The following control measures are recommended:

- rock recovered during the Works should be reused where possible with approval from Council;
- any excess excavated sands should be placed seaward of the Works to nourish the beach;
- excavation depths should be limited to the surface of the cemented sand or to a higher level;
- an Unexpected Finds Protocol (UFP) should be prepared and implemented as part of the CEMP; and
- inspection of the site should be undertaken after storms and works carried out where required to restore the site to pre-existing condition.

5.1.5 Conclusion on Impacts

The nature, scale and extent of potential impacts to the geology and soils at the site has been assessed and evaluated and it is concluded that the Works are unlikely to have a significant impact on the environment. The potential construction impacts are short term and localised to the work site. The works should be subject to a post-storm inspection during the operational phase, following storms, and restoration works if required. The level of significance of each identified impact with the adoption of the proposed control measures is summarised in **Table 2** below.

Table 2 Impact Level Summary - Geology and Soils

Potential Impacts	Impact Level (with control measures undertaken)			
	Negligible	Minor	Moderate or greater	Positive
loss of sand from the beach system,	☒	☐	☐	☐
damage to the cemented sand layer	☒	☐	☐	☐
uncovering of unknown buried	☒	☐	☐	☐

contaminated material				
shifting or dislodgment of rock during storms	☒	☐	☐	☐

5.2 Coastal processes and coastal hazards, including those under projected climate change

5.2.1 Existing Environment

The Wetherill Street site is exposed to ocean swell and elevated still water levels (due to tides, storm surge and wave set up), which give rise to coastal hazards such as beach erosion and coastal inundation. Damage due to coastal storms has been documented along this stretch of coastline. A summary of the coastal processes and coastal hazards, including those under projected climate change, is provided in the following sections.

5.2.2 Coastal processes, including those under projected climate change

The Coastal Management Glossary (NSW Government 2018) defines coastal processes as *marine, physical, meteorological and biological activities that interact with geology and sediments to produce a particular coastal system*. A detailed assessment of coastal processes at Collaroy-Narrabeen Beach, relevant to the Wetherill Street site, is provided in MHL (2016) and the 2017 Collaroy-Narrabeen Beach and Fishermans Beach Coastal Zone Management Plan (CZMP), with a summary included below.

Waves

Most storm waves offshore of Sydney come from the south (48%), with about 26% coming from the south-south-east and 10% from the south-east. The peak significant wave height during a 100-year Average Recurrence Interval (ARI) event is predicted to be 8.8m for storm waves coming from the south and 9.3m for storm waves coming from the south-south-east.

Long Reef headland provides some sheltering to Fishermans Beach and the southern end of Collaroy Beach from offshore storm waves coming from the dominant south to south east directions. Narrabeen and North Narrabeen are generally fully exposed to the offshore wave climate, but it is recognised that various offshore reefs cause complexities in wave transformation in this area.

Elevated Still Water Levels

Contributors to elevated still water levels along the NSW coast include:

- Astronomical tide;
- Storm surge (barometric and wind setup);
- Wave setup (caused by wave breaking).

Considering these factors, the CZMP determined that a 100-year Average Recurrence Interval (ARI) still water level at fully exposed shorelines landward of wave breaking would be about 2.7m AHD. The southern end of Collaroy Beach is less exposed and the equivalent elevated water level would be reduced, due to a lower wave setup component, to about 2.4m AHD. These values remain a reasonable

estimate for the present day. However, elevated still water levels would increase over the life of the Works due to climate change sea level rise (refer below).

Climate Change

The possibility of global climate change accelerated by increasing concentrations of greenhouse gases, the so-called Greenhouse Effect, is widely accepted by the scientific and engineering communities. This is predicted to cause globally averaged surface air temperatures and sea levels to rise.

The CZMP adopted the NSW Sea Level Rise Policy Statement (DECCW 2009b) as advised by Council, which included sea level rise planning benchmarks of 0.4m at 2050 and 0.9m at 2100 (both relative to 1990). The Design Specifications suggest adopting these benchmarks or a variation to this supported by a report prepared by a suitably qualified engineer. Note that DECCW (2009b) is no longer NSW government policy.

The most authoritative source of predictions of climate change and associated sea level rise is considered to be the reports published from time to time by the Intergovernmental Panel on Climate Change (IPCC). The contributions to the latest IPCC Assessment Report, the Sixth Assessment Report (AR6), were published over the period 2021 – 2023. Based on AR6, a reasonable estimate of sea level rise over the life of the Works, would be approximately 0.4m to 0.5m.

Another potential outcome of climate change is an increase in the frequency and intensity of storm events, however this potential impact is currently not fully understood.

Wave Run-up and Overtopping

Wave run-up is site specific but typically reaches a maximum level of about 8m AHD at beaches on the NSW open coast at present.

The CZMP considered a reasonable 100-year ARI wave run-up level of 8m AHD for exposed areas of Collaroy-Narrabeen Beach at present. At the southern, more protected, end of Collaroy Beach (south of Fielding Street), equivalent run-up levels would be lower (WorleyParsons 2009) and a level of 6m AHD was adopted.

Wave run-up levels of 6m to 8m AHD are above the foreshore crest levels in the area of the Works. Therefore, there is the potential for waves to overtop onto the road ends, which has occurred in past severe storms. The magnitude of wave overtopping in severe storms would increase over the life of the Works due to sea level rise.

Coastal Storms

The NSW coastline is subject to intense tropical and non-tropical storms at irregular intervals. The most significant event in terms of erosion damage along the coast were the May – June 1974 storms, this event was particularly severe as it was accompanied by the highest elevated water level ever recorded along the NSW coast.

Damaging storms have generally occurred as a closely linked series of storms, rather than being particularly severe storms in isolation. In this way the beach may already be in a depleted state at the time of arrival of the second and subsequent storms. A key factor governing the extent of erosion in a storm, besides the storm energy, is the water level occurring during the storm. This is because a higher water level allows larger waves to impact on the beach (waves being depth-limited as noted above), and since the waves also reach further landward due to the higher water level.

Collaroy-Narrabeen Beach has been subject to damaging coastal storms in the past and is likely to be exposed to such storms at irregular intervals in the future.

Sediment Transport and Sediment Budget

Sediment transport is defined as the process whereby sediment is moved offshore, onshore or alongshore by wave, current or wind action.

The main sediment transport processes are summarised in the Quantitative Coastal Processes Model included as **Figure 5-1** (MHL, 2016) and comprise:

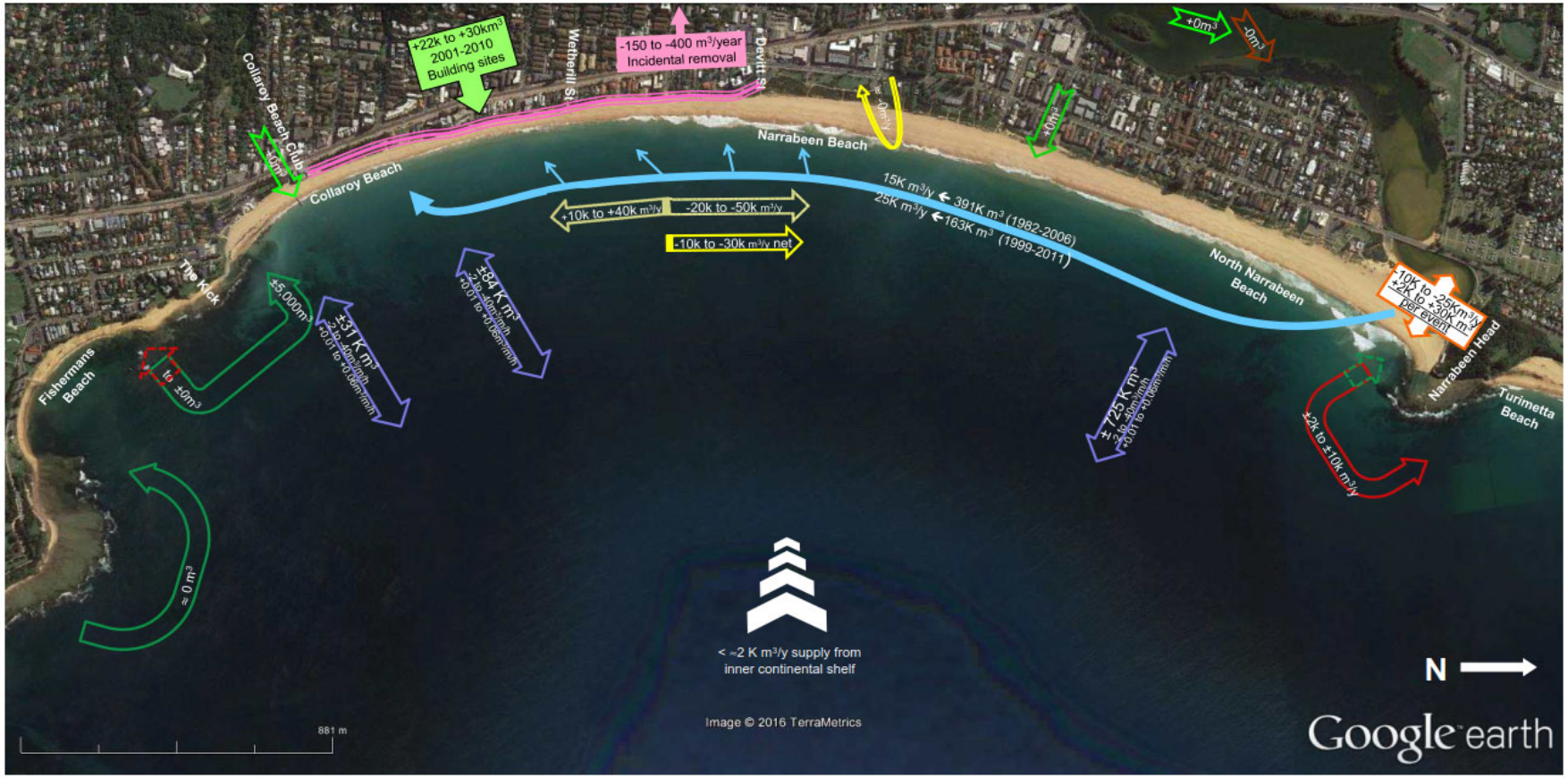
- Inner Continental Shelf interaction
- Longshore sediment transport
- Lagoon entrance dynamics
- Cross-shore sediment transport
- Headland bypassing
- Fluvial sediment inputs and fluvial deposition
- Aeolian transport
- Anthropogenic influences
- Sand grain size abrasion and headland weathering.

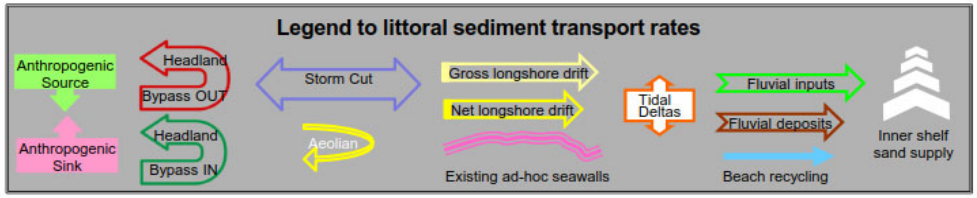
MHL (2016) concluded that Collaroy-Narrabeen Beach is essentially a stable closed embayment. The most significant processes in terms of beach fluctuations and shoreline alignment are cross-shore and longshore sediment transport. This includes the alongshore variability in onshore and offshore sand movements and the time for beach recovery following major storms.

Rapid rates of offshore sand transport (erosion) are experienced during storms, ranging from -2 m^3/m/h to -40 m^3/m/h. Beach recovery rates are much slower, typically ranging from +0.01 m^3/m/hr, up to +0.06 m^3/m/hr (equivalent to approximately 0.2 m^3/m/day up to 1.5 m^3/m/day). These rates correspond to complete beach erosion taking place over a matter of hours or days and beach recovery typically taking place over 3 months to two or more years.

Despite its significant effects, it is noteworthy that the June 2016 storm event was characterised by a total erosion volume (400,000 m^3) of less than half of the estimated upper bound limit of storm erosion demand that could occur for a series of successive multi-directional storms. For such an event, the eroded beach is expected to recover in no less than 90 days and over as much as about 640 days based on historically recorded beach recovery rates (MHL 2016).

MHL (2016) stated that the quantitative review of the Collaroy-Narrabeen Beach coastal processes validates the contemporary understanding that the main cause of the existing coastal hazards is that development has taken place too close to the beach, within the active coastal zone.





NOTE – The coastline between Long Reef Point and Turimetta Head, including Fishermans Beach and Turimetta Beach (see **Figure 2**), form part of the Collaroy-Narrabeen Coastal Sediment Sub-Compartment. The complete sub-compartment has been omitted from **Figure 4** only for simplicity, noting primary interconnections are low and infrequent (north and southbound) between Fishermans Beach and Collaroy Beach and between Turimetta Beach and North Narrabeen (less than approx. ±2 to ±30,000 m³ pa on inter-annual/inter-decadal cycles; see Headland Bypassing arrows), with nil/negligible Headland Bypassing of Long Reef Point from the Dee Why – Long Reef Coastal Sediment Sub-Compartment.

Figure 5-1 Quantitative Coastal Processes Model Collaroy – Narrabeen Beach (from MHL, 2016)

5.2.3 Coastal hazards, including those under projected climate change

The relevant coastal hazards applicable to the Works are beach erosion, shoreline recession, coastal inundation, coastal cliff or slope instability and tidal inundation. These hazards are detailed in the CZMP and summarised below.

Beach erosion refers to the landward movement of the shoreline and/or a reduction in beach sand volume, usually associated with individual storm events or a series of events, which occurs within the beach fluctuation zone. Beach erosion is a significant hazard along Collaroy-Narrabeen Beach since the existing development along much of the beach, south of Devitt Street, has been constructed within the active coastal zone, or beach fluctuation zone, as noted above. At times of severe storms, the beach is eroded back to the existing coastal protection works along this section of the beach.

Shoreline recession is the continuing landward movement of the shoreline over time. It may be due to two factors, a net loss of sand from the beach system due to physical processes (so-called underlying recession), and/or a re-adjustment of the beach profile due to sea level rise. As noted above, studies have shown that Collaroy-Narrabeen Beach is essentially a stable closed system, with no significant net loss of sand. Accordingly, shoreline recession due to a net sand loss is not an issue for Collaroy-Narrabeen Beach. However, shoreline recession is predicted to occur in the future over the life of the Works due to sea level rise.

Coastal inundation of landward areas along Collaroy-Narrabeen Beach currently occurs due to wave overtopping in severe storms as a result of elevated still water levels and wave runup. As noted above, the coastal inundation (wave overtopping) hazard is expected to increase in the future over the life of the Works due to sea level rise.

5.2.4 Potential Impacts During Construction

There are a number of possible factors which could affect coastal processes during construction, in particular temporary works and excavations.

Earthworks will be required in the Works, including excavation to move existing rock to allow construction of the stair footings and installation of the stairs. Sand may also be required to be formed into bunds as temporary works for wave and tide protection during storms. These earthworks will temporarily locally change beach profiles. It may be necessary to periodically replenish any temporary sand bund during the Works subject to wave activity during a storm but any sand that is ‘lost’ from the bund would remain nearshore in the active beach system, i.e., not lead to any net sand loss. Overall, effects on coastal processes are considered to be generally minor in scale and duration.

In the event the Contractor proposes use of rock or other materials within the temporary protection works, in addition to sand, it should be a requirement that these materials be sized to be hydraulically stable during storms which may be reasonably expected to be experienced (with appropriate safety margin) during the construction period, so as to avoid any non-sand temporary bund materials being strewn on the beach. Otherwise, there is the potential for adverse impacts on beach amenity and safety.

The creation of a temporary bund would assist with management of the beach erosion hazard at the road end during the construction period. Sand used to form the temporary bund should not be taken in any significant quantities from adjacent beach areas unless Council is satisfied that the beach erosion hazard in these adjacent areas during the construction period is not increased, for example since competent coastal protection works exist in these adjacent areas.

Shoreline recession due to sea level rise is not an issue during construction due to the relatively short period of construction of the Works (two months) compared to the time frame required for shoreline recession due to sea level to materialise. The construction works themselves would have no impact on the magnitude or rate of sea level rise.

Coastal inundation would be a risk to the Works during construction but would be mitigated by the existence of the temporary bund acting to protect the work site and trip the waves. The Works themselves would not lead to any increase in the inundation hazard to adjacent areas during construction on the basis the bund would be aligned parallel to the beach, hence significant wave reflections towards adjacent areas would not be expected.

Weather and tide forecasts should be checked regularly during construction. If a significant storm event is predicted, all equipment and materials should be removed from the beach construction zone.

Following completion of the works the beach would be restored to a natural profile.

It is also noted that mechanical movement of beach sand, as would occur during the construction phase, is common along Collaroy-Narrabeen Beach including regular beach scraping and the placement of sand on the beach from Narrabeen Lagoon entrance clearance operations, both carried out by Council.

5.2.5 Potential Impacts During Operation

MHL (2020)
In an Addendum to MHL (2016), MHL considered the impacts of a range of coastal protection works designs on beach width (MHL, 2020). The recommendations from this impact assessment were that new works should be aligned:

- as far landward as is practical while maintaining uniformity of alignment within constraints of adjacent properties/road ends; and
- with preference for the alignment of any vertical structure to be closer to the crest than to the toe of existing rock protection (particularly in regions of Wetherill Street to Stuart Street and Ramsay Street to Frazer Street).

It was also recommended that existing rock protection located seaward of new or upgraded coastal protection works be removed from the beach wherever possible, to improve beach amenity, access and safety.

The restacking of the historic rock revetment at Wetherill Street will be aligned as far landward as practicable. In addition, existing rock beyond the limits of the Works will be removed. Accordingly, the Works comply with the recommendations in MHL (2020).

Observations of actual beach behaviour

It is widely accepted that the Collaroy-Narrabeen Beach embayment is essentially a stable closed system, as illustrated in the quantitative coastal processes model of Collaroy-Narrabeen Beach included in the Collaroy-Narrabeen Beach Coastal Protection Assessment (MHL, 2016).

WRL (2019) also noted based on 43 years of beach measurements over the period 1976-2019 that there are no identifiable long-term trends in sand volume at Collaroy-Narrabeen Beach. Sand volume changes along the beach are instead dominated by:

- cycles of erosion and accretion along the entire beach related to wave conditions (referred to as 'beach oscillation'); and
- cycles of erosion and accretion at opposite ends of the beach (referred to as 'beach rotation')[1].

Historically, during significant storms, the beach has been eroded back to the protection works comprising largely historic rock protection and some vertical seawalls[2]. Following the storms, the sand eroded off the subaerial beach and contained within nearshore sand bars reworks onshore to re-form the dry sandy beach.

The recovery behaviour of Collaroy-Narrabeen Beach observed historically would be expected to continue in front of the proposed Works.

Additional comments in relation to coastal hazards.

As noted earlier, the shoreline recession hazard is a consequence of sea level rise due to climate change. Shoreline recession would lead to narrowing of the beach over time, creating beach amenity impacts and more frequent exposure of the Works to wave action. The shoreline recession hazard due to sea level rise would be managed by Council and the NSW Government via beach nourishment. The Works themselves would not affect the magnitude or rate of sea level rise.

In the case of the coastal inundation (wave overtopping) hazard, it is not feasible, or common practice, to provide a crest level for the Works that would eliminate this hazard over the life of the Works. To do so, the crest level would have to be much higher than the existing land level, which would create issues for beach access, visual impact, integration with the adjacent coastal protection works, and cost.

The Works would not be likely to cause increased risk of coastal hazards on other land, as the Works are not expected to cause a discernible adverse impact on existing coastal processes (the restacked rock being located as far landward as possible and generally further landward than the historic rock protection), and the Works are aligned appropriately with existing coastal protection works on the adjacent lands.

5.2.6 Recommended Control Measures

The following control measures are recommended:

- use of a temporary bund on the seaward side of the Works during construction using sand excavated from the beach and/or other approved materials, to provide a level of protection to the works area against storms;
- weather and tide forecasts should be checked regularly during construction. If a significant storm event is predicted, all equipment and materials should be removed from the beach construction zone; and
- continued management of the beach should be carried out in accordance with the Northern Beaches Coastal Erosion Policy.

[1] The cyclic erosion and accretion at opposite ends of the beach is controlled by the irregular 2 to 7 year cycles of the El Nino-Southern Oscillation climate oscillation, or ENSO.
[2] Vertical seawalls exist at the Collaroy Beach Club, at 1096 Pittwater Road ('The Breakers') immediately south of Frazer Reserve, between Stuart Street and Wetherill Street, and over the majority of the length of beach between Wetherill Street and Clarke Street.

5.2.7 Conclusion on Impacts

The nature, scale and extent of potential impacts to coastal processes and coastal hazards have been assessed and evaluated and it is concluded that the Works are unlikely to have a significant impact on the environment. The level of significance of each identified impact with the adoption of the proposed mitigation measures is summarised in **Table 3** below.

There is no evidence to suggest that the prevailing coastal processes will be changed significantly within the embayment through the construction of the Works. Therefore, the volume of sand removed during coastal storms and the capacity for the embayment to recover from erosion events will not be significantly altered as a result of the Works or the cumulative outcome of adjoining public and private works.

Long-term shoreline recession resulting from sea level rise is forecast to occur at beaches around Australia. The impacts of this recession are not altered or increased as a result of the proposed works. In response to this forecast recession, *The Northern Beaches Coastal Erosion Policy* states that Council will work with the State Government and other coastal councils in NSW to facilitate the importation of sufficient quantities of sand to enable beach width and surf quality to be maintained.

The Works would not be likely to cause increased risk of coastal hazards on other land, as the Works are not expected to cause a discernible adverse impact on existing coastal processes, and the Works are aligned appropriately with coastal protection works on the adjacent lands (recently been upgraded north and south of Wetherill Street).

The materials required for the construction of the Works are available without impacting their availability for use for other similar projects. Therefore, the proposed works will not cause increased demand on resources (natural or otherwise) that are, or are likely to, become in short supply.

It can be concluded:

- The Works will not have a significant impact on coastal processes and coastal hazards, including those under projected climate change conditions.
- The Works will not have significant long term effects on the environment in terms of coastal processes and hazards.
- The Works will not cause increased demand on resources (natural or otherwise) that are or are likely to become in short supply.

Table 3: Impact Level Summary - Coastal Processes and Coastal Hazards

Potential Impacts	Impact Level (with control measures undertaken)			
	Negligible	Minor	Moderate or greater	Positive
Loss of sand from temporary works such as bunds due to wave activity	☒	☐	☐	☐

Loss or damage to equipment or material during a storm event	☒	☐	☐	☐
Disruption to existing Collaroy-Narrabeen Beach sand management practices	☒	☐	☐	☐
Uniformity of alignment within constraints of adjacent properties/road ends	☒	☐	☐	☐
Recovery behaviour of Collaroy-Narrabeen Beach from erosion events	☒	☐	☐	☐

5.3 Water Quality and Stormwater

5.3.1 Existing Environment

The NSW Department of Climate Change, Energy, the Environment and Water (DCCEEW) administers the Beachwatch program, which includes water quality (faecal contamination) monitoring at Collaroy Beach and North Narrabeen Beach.

According to the most recent State of the Beaches 2022–2023 report, Collaroy Beach was graded as "Good". This grade means microbial water quality is suitable for swimming most of the time, but may be susceptible to pollution after rain, with several potential sources of faecal contamination, including stormwater runoff.

Adjoining land private stormwater will not be impacted by the Works.

In addition, Council does not have stormwater infrastructure in the vicinity of the Works and the Works pose no risk to blockage or damage of stormwater infrastructure.

5.3.2 Potential Impacts During Construction

Potential impacts to water quality during construction at the Wetherill Street site include the release of turbid water to the sea, the escape of contaminants such as fuel and oils, and the importation or disturbance of contaminated materials.

The Contractor may need to undertake dewatering of construction areas as part of the proposed work method, providing such dewatering would not impact adversely on the stability of existing structures. It would be a requirement of the construction contract that no turbid water would be permitted to flow directly into the sea from dewatering operations. This can be satisfactorily achieved by pumping any water from dewatering activities to a sandy sump, as was employed successively for construction of the coastal protection works at the Stuart Street and Ramsay Street road ends.

The Works have the potential to impact water quality through the escape of contaminants including fuel and oils from equipment involved in the construction. It would be a requirement of the construction contract that the construction equipment is in good condition, and that the Contractor maintain onsite environmental safeguards such as an emergency spill kit and procedures to contain and collect potential leakage and spillage of fuels, oils and greases from plant and equipment.

The importation or disturbance of contaminated material could also impact water quality. Imported materials must satisfy a Technical Specification and would be subject to inspection by Council's Superintendent on site. The Specification would not permit importation of contaminated material; accordingly, such importation would not be expected to be a significant risk. Any disturbance of contaminated material, which is not anticipated, must be immediately brought to the attention of the Superintendent. Direction would be given for its appropriate removal and lawful disposal, accordingly water quality issues from this potential source would not be expected.

Any potential water quality issues would be short term and confined to the construction phase only. It is anticipated that the majority of these impacts could be mitigated or avoided through standard construction site management practices. As such, potential impacts on water quality have been assessed as being limited and of low risk.

Adjoining land private stormwater will not be impacted by the Works. In addition, Council does not have stormwater infrastructure in the vicinity of the works and the works pose no risk to blockage or damage of Council stormwater infrastructure.

5.3.3 Potential Impacts During Operation

No impacts to water quality or stormwater infrastructure are expected during the operational phase of the Works.

The works involve the installation of new, public access stairs and the ancillary restacking of rocks which will remove loose or damaged historic materials that might otherwise become marine debris during storms. This may contribute to a minor improvement in local water quality.

The Works are not expected to cause any degradation of water quality or stormwater infrastructure in the surrounding environment.

5.3.4 Recommended Control Measures

Impacts on water quality and stormwater would not be significant if managed through the implementation of the following mitigation measures:

- any temporary bund shall be free of any deleterious materials that could impact on water quality;
- any water from dewatering operations should be pumped to a sandy soakage system (sump) at the back of the beach to allow any fine material to settle out;
- all equipment and vehicles should be maintained in good working order. Daily inspections should be performed to identify any leaks. Any worn or damaged hoses, joints or connections identified during inspections need should be replaced prior to their use;
- the Contractor should maintain onsite environmental safeguards such as an emergency spill kit and procedures to contain, collect and remove potential leakage and spillage of fuels, oils and greases from plant and equipment;

- all imported or reused material should be assessed for classification as virgin excavated natural material (VENM) (as defined in the Protection of the Environment Operations Act 1997) or excavated natural material (ENM) (as defined by the Protection of the Environment Operations (Waste) Regulation 2014) prior to use on site. Evidence of classification would be maintained on site;
- where possible, refuelling should be done off site. However, if refuelling on site is required, due care shall be taken to avoid spilling fuel and a tray should be used to catch any accidentally spilt fuel. Plant refuelling/servicing activities should be completed on-land and away from the ocean;
- weather and tide forecasts need to be checked regularly during construction. Where storms or inundation is forecast to any work area, all equipment and materials need to be removed from the beach construction zone or appropriately secured above expected water levels in the area;
- tracking of soil from the construction site via construction equipment onto the road shall be minimised. The Contractor shall be required to clean any machinery in a designated washdown area to prevent tracking of soil off site. A road sweeper shall be employed if required;
- appropriate controls should be used when working near the beach to capture any materials that may be produced by the construction works and to prevent them entering the marine environment;
- if storage on-site of hazardous substances is required, then effective bunding should be used in construction areas; and
- appropriate site and project inductions/training detailing potential water quality impacts and relevant construction measures and spill and emergency response procedures should be used.

5.3.5 Conclusion on Impacts

The nature, scale and extent of potential impacts to water quality at the Wetherill Street site have been assessed. It is concluded that the Works are unlikely to have a significant impact on the environment. The potential impacts are short-term and localised. With the implementation of appropriate mitigation measures, the risks are considered to be low. The impacts are summarised below in **Table 4.**

Table 4: Impact Level Summary - Water Quality and Stormwater

Potential Impacts	Impact Level (with control measures undertaken)			
	Negligible	Minor	Moderate or greater	Positive
Release of turbid water to the sea	☒	☐	☐	☐
Escape of contaminants such as fuel and oils	☒	☐	☐	☐
Importation or disturbance of contaminated material	☒	☐	☐	☐
Reduction of debris and waste material associated with historic protection being washed into the ocean	☐	☐	☐	☒

Blockage of stormwater infrastructure	☒	☐	☐	☐

5.4 Air Quality

5.4.1 Existing Environment

Pittwater Road (also known as Regional Main Road A8) is the primary traffic route through Collaroy and Narrabeen and is the closest significant source of background air pollutants to the Wetherill Street site, primarily from vehicle emissions. This arterial road has a speed limit of 60 km/h and comprises six lanes running through a predominantly residential setting. Localised congestion can occur at key junctions such as Collaroy Street, Mactier Street, and Ocean Street, potentially contributing to elevated air pollution levels due to idling vehicles.

No ambient air quality monitoring has been undertaken specifically for the Wetherill Street Works. Furthermore, there are no NSW DCCEEW air quality monitoring stations in close proximity to the site.

The key sensitive receptors for the Wetherill Street Works are nearby residential properties, including:

- 1168 Pittwater Road; and
- 1172 Pittwater Road

Properties to the west of Pittwater Road are considered to be sufficiently separated from the Works and therefore would not be sensitive to any localised impacts to air quality generated during construction.

5.4.2 Potential Impacts During Construction

Earthworks carried out during the construction phase have the potential to generate dust or windblown sand particularly during windy conditions. There would also be exhaust emissions generated from plant during construction that could potentially cause local degradation in air quality, particularly during still conditions. Any potential air quality issues would be localised to the work site, the proposed construction site compound at Frazer Street Reserve and the transport routes for machinery traversing from the construction site compound to the work site. Impacts would be short term and confined to the construction phase only.

5.4.3 Potential Impacts During Operation

The operation of the Works at Wetherill Street are passive in nature and do not involve any ongoing operation of plant or machinery. Therefore, no operational impacts on air quality are anticipated.

The Works will not cause any degradation of air quality in the surrounding environment.

5.4.4 Recommended Control Measures

The impact on nearby receptors would not be significant if managed through the implementation of the following mitigation measures:

- all plant used by the Contractor should be in good operating condition and free of excessive emissions;
- all equipment would be required to meet emission control compliance regulations;

- all plant, equipment and vehicles should not idle for extended periods of time; they should be switched off if not in operation;
- weather and tide forecasts should be checked regularly during construction. Works should not be carried out during strong winds or in weather conditions where high levels of dust or airborne particulates are likely;
- adjacent sensitive receivers would be advised to shut windows prior to the start of works that would potentially generate dust emissions;
- uncovered or stockpiled materials that may lead to the generation of dust or windblown sand should be covered or watered down; and
- public roads and sealed areas should be kept free of soil/dust through sweeping.

5.4.5 Conclusion on Impacts

The nature, scale and extent of potential impacts to air quality at the site has been assessed and evaluated and it is concluded that the Works are unlikely to have a significant impact on the environment. The potential impacts are short term and localised to the work site. The level of significance of each identified impact with the adoption of the proposed mitigation measures is summarised in **Table 5** below.

Table 5: Impact Level Summary - Air Quality

Potential Impacts	Impact Level (with control measures undertaken)			
	Negligible	Minor	Moderate or greater	Positive
Generation of dust or windblown sand due to earthworks	☒	☐	☐	☐
Generation of exhaust emissions from plant and equipment	☒	☐	☐	☐

5.5 Noise and Vibration

5.5.1 Existing Environment

The existing noise environment is typical of a coastal residential suburb with scattered commercial units. The proximity (<100m) of Pittwater Road to the site would mean traffic noise would dominate, particularly during peak daytime hours, over and above the noise generated by the surf, pedestrians and birdsong.

The acoustic environment surrounding the site is therefore influenced by road traffic on Pittwater Road, recreational users of the beach, and waves breaking along the beach.

No ambient noise sampling has been undertaken for this report.

Specific sensitive receptors are considered to be buildings within 100m of the work area to the north and south of the Wetherill Street. Pittwater Road is considered the dominant noise source for these properties.

5.5.2 Potential Impacts During Construction

Construction activity on site has the potential to impact on the closest sensitive receptors.

Construction activity at Wetherill Street would be undertaken during the following normal working hours, in accordance with the Interim Construction Noise Guideline (DECC, 2009):

- Monday to Friday: 7:00 am to 5:00 pm
- Saturday: 8:00 am to 1:00 pm
- No work on Sundays or Public Holidays

Any variation to the above hours would require the approval of Council, which would only be considered having regard to any potential for noise impacts on the surrounding residential amenity.

The proposed construction activities at Wetherill Street would involve excavation, concreting, rock removal and rock placement. Excavation would be undertaken in sand only and there would be no excavation into bedrock involving use of rock hammers for example.

Other construction activities would be consistent with those commonly encountered on residential and commercial building sites.

Any potential noise issues would be localised to the work site, the proposed construction site compound at Frazer Street Reserve and the transport routes for machinery traversing from the construction site compound to the work site. Impacts would be short term and confined to the construction phase only. Having regard to the above and given the background noise at the site from the surf and road traffic on Pittwater Road, no significant noise impacts would be expected.

5.5.3 Potential Impacts During Operation

There would be no noise impacts during operation of the Works.

5.5.4 Recommended Control Measures

In order to minimise any potential for noise impacts on beach users and the surrounding community, the following control measures should be taken:

- beach users and surrounding residences and businesses should be notified of the Works and hours of operation;
- a Council contact should be provided for the Works in the event of any complaints;
- instructions should be issued to the Contractor that appropriate silencers are to be fitted on all plant and equipment;
- works should be undertaken during the standard construction hours where practicable (i.e. 7.00 am to 5.00 pm Monday to Friday and 8.00 am to 1.00 pm Saturdays, with no work to be undertaken on Sundays and Public Holidays). However, on occasion works may be required outside of the standard hours to take advantage of available daylight hours and suitable tide conditions. Where works are required outside of the standard hours, approval shall be obtained from Council and notification will need to be provided to local residents by Council;

- works should be undertaken in the non-peak visitor and recreation periods if possible (i.e. during winter months) but this is not considered essential if control measures are in place;
- plant should be turned off when not in use (i.e. not left idling);
- the use of horns and alarms should be minimised to the extent possible while satisfying legislative requirements; and
- high vibration methods should be substituted with lower vibration methods particularly in relation to ground compaction.

5.5.5 Conclusion on Impacts

The nature, scale and extent of potential impacts from noise and vibration at the site has been assessed and evaluated and it is concluded that the Works are unlikely to have a significant impact on the environment. The level of significance of each identified impact with the adoption of the proposed mitigation measures is summarised in **Table 6** below.

Table 6: Impact Level Summary - Noise and Vibration

Potential Impacts	Impact Level (with control measures undertaken)			
	Negligible	Minor	Moderate or greater	Positive
Construction noise impacts on closest receptors	☐	☒	☐	☐

5.6 Ecology and Biodiversity

5.6.1 Existing Environment

Much of the dune system along the Collaroy-Narrabeen Beach has been lost through development, with only a small number of vegetated sections remaining, generally around beach accessways.

Vegetation at the Wetherill Street site is limited to some grass and coastal ground cover, with no trees or shrubs within the immediate footprint of the Works. Vegetation present seaward of the road reserve will be removed during the Works but re-established upon completion.

No declared Critical Habitat (listed under the FM Act 1994 or EPBC Act 1999) or Areas of Outstanding Biodiversity Value (listed under the BC Act 2016) occur within the extent of the Works.

The intertidal beach in front of the Wetherill Street road end has limited ecological value and importance due to the low biodiversity it hosts and the abundance of similar habitat in the area. It could, however, be used as foraging habitat for shorebirds.

The Works will be undertaken in the dry therefore there would not be direct impact on the marine environment.

Records and potential occurrences of threatened species, populations and endangered ecological communities were extracted from the following databases for the locality of the Wetherill Street site and the proposed construction site compound:

- The Commonwealth Protected Matters Search Tool (PMST), for all Matters of National Environmental Significance (MNES) online database selected for a 1km radius of the site;
- NSW DPIRD Fisheries Threatened species lists;
- DCCEEW BioNet Atlas data for records of threatened species, populations and endangered ecological communities listed under the BC Act that have been recorded within the locality (within 500m).

No MNES, such as Wetlands of International Importance or Commonwealth Marine Areas were identified as potentially occurring in the locality of the Wetherill Street site during the search undertaken on 9 May 2025 (refer **Appendix B**). The search yielded 7 Listed Threatened Ecological Communities, 109 Listed Threatened Species and 58 Listed Migratory Species. The seven Listed Threatened Ecological Communities in the MNES report that may occur within the locality included:

- Coastal Swamp Oak (Casuarina glauca) Forest of NSW and South East Queensland ecological community
- Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland
- Coastal Upland Swamps in the Sydney Basin Bioregion
- Eastern Suburbs Banksia Scrub of the Sydney Region
- River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria
- Subtropical and Temperate Coastal Saltmarsh
- Western Sydney Dry Rainforest and Moist Woodland on Shale

Although there are threatened species and communities identified in the locality of the Works, the site of the Works and the extent of the wider environment reasonably affected by the Works do not include the habitats of any such communities or species.

A search of the BioNet Atlas database on 9 May 2025 for records from the last 10 years identified six threatened (Schedule 1) fauna species under the BC Act within a 500m radius of the Works and the extent of the wider environment reasonably affected by the Works (refer **Table 7**). None of the protected species identified by the BioNet Atlas database as being recorded in the area are likely to use the habitat in the footprint of the Works.

Table 7: Threatened fauna species recorded in the vicinity of the Works.

Common Name	Flora/Fauna	Protection Status (NPWS Act 1974)	Conservation Status (BC Act 2016)	Date of record/sighting
White-bellied sea-eagle	Fauna	Protected	Vulnerable	30-06-15
Little eagle	Fauna	Protected	Vulnerable	30-03-15
White-bellied sea-eagle	Fauna	Protected	Vulnerable	29-03-17
Loggerhead Turtle	Fauna	Protected	Endangered	29-04-17
Grey Headed Flying-fox	Fauna	Protected	Vulnerable	19-12-14

Large Bent-winged Bat	Fauna	Protected	Vulnerable	23-06-18

5.6.2 Potential Impacts During Construction

Existing grasses and ground cover will be removed during the Works but revegetation of the area immediately landward of the Works would be undertaken at the completion of construction involving turfing. Equipment brought to site during construction works has the potential to introduce weeds. To assist with controlling weeds, all equipment should be washed down, with soil and debris removed prior to entering the site.

The construction works will not impact on habitat of protected fauna (within the meaning of the National Parks and Wildlife Act 1974) nor will the Works result in the endangering of any species of animal, plant or other form of life whether living on land, in water or in the air. Any shorebirds that use the site for foraging are expected to avoid the area during construction activities and impacts are anticipated to be minimal due to the abundance of similar habitat in the area and the short duration of the Works.

Although there are threatened species and communities identified in the locality of the Works, the site of the Works and the extent of the wider environment reasonably affected by the Works do not include the habitats of any such communities or species and therefore the impacts on them are not likely to be significant.

The matters in **Table 8** have been taken into account to determine that construction of the Works will not have a significant impact on threatened species or ecological communities, or their habitats. Therefore, further investigation through a BDAR or SIS is not required.

Table 8: Impact on Threatened Species or Ecological Communities, or their Habitats During Construction

Matter	Response	Comment
In the case of a **threatened species**, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction	Negligible	None of the threatened species recorded within the area of the Works maintain a consistent presence at the site or utilise the vegetation present as habitat. Therefore, the construction of the Works will not have an adverse impact on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.
In the case of an **endangered ecological community** or critically endangered ecological community, whether the proposed development or activity—(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or (ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction	NA	No endangered ecological communities have been identified within the area of the Works.

In relation to the **habitat of a threatened species or ecological community**—(i) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and (ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and (iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality	Negligible	None of the threatened species recorded within the area of the Works maintain a consistent presence at the site or utilise the vegetation present as habitat. Therefore, the habitat of these species will not be modified, fragmented or isolated to the extent that the long-term survival of these species is affected as a result of the construction of the Works.
Whether the proposed development or activity is likely to have an adverse effect on **any declared area of outstanding biodiversity value** (either directly or indirectly)	NA	No declared areas of outstanding biodiversity value have been identified within the area of the Works.
Whether the proposed development or activity is or is part of **a key threatening process** or is likely to increase the impact of a key threatening process	NA	The construction of the Works is not a key threatening process or part of a key threatening process and is not likely to increase the impact of a key threatening process.

The project's impact on flora and fauna during construction is considered negligible. Due to the limited extent and quality of existing vegetation, additional mitigation measures are not considered necessary. Measures recommended to mitigate impacts on water quality (**Section 5.3**) and waste (**Section 5.10**) will also mitigate potential indirect impacts on the adjacent marine environment.

5.6.3 Potential Impacts During Operation

There would be no significant environmental impact on the ecosystems of the locality or the habitat of protected fauna (within the meaning of the National Parks and Wildlife Act 1974). The Works will not endanger any species of animal, plant or other form of life whether living on land, in water or in the air.

Although there are threatened species and communities identified in the locality of the Works, the site of the Works and the extent of the wider environment reasonably affected by the Works do not include the habitats of any such communities or species and therefore the impacts on them are not likely to be significant.

The matters in **Table 9** have been taken into account to determine that the operation of the Works will not have a significant impact on threatened species or ecological communities, or their habitats. Therefore, further investigation through a BDAR or SIS is not required.

Table 9: Impact on Threatened Species or Ecological Communities, or their Habitats During Operation

Matter	Response	Comment
In the case of a **threatened species**, whether the proposed development or	Negligible	None of the threatened species recorded within the area of the Works maintain a

activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction		consistent presence at the site or utilise the vegetation present as habitat. Therefore, the operation of the Works will not have an adverse impact on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.
In the case of an **endangered ecological** community or critically endangered ecological community, whether the proposed development or activity—(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or (ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction	NA	No endangered ecological communities have been identified within the area of the Works.
In relation to the **habitat of a threatened species or ecological community**—(i) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and (ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and (iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality	Negligible	None of the threatened species recorded within the area of the Works maintain a consistent presence at the site or utilise the vegetation present as habitat. Therefore, the habitat of these species will not be modified, fragmented or isolated to the extent that the long-term survival of these species is affected as a result of the operation of the Works.
Whether the proposed development or activity is likely to have an adverse effect on **any declared area of outstanding biodiversity value** (either directly or indirectly)	NA	No declared areas of outstanding biodiversity value have been identified within the area of the Works.
Whether the proposed development or activity is or is part of a **key threatening process** or is likely to increase the impact of a key threatening process	NA	The operation of the Works is not a key threatening process or part of a key threatening process and is not likely to increase the impact of a key threatening process.

5.6.4 Recommended Control Measures

In order to minimise any potential for impacts on coastal ecology, the following control measure should be taken:

- Replanting should be as per species nominated by Council.

5.6.5 Conclusion on Impacts

The nature, scale and extent of potential impacts to ecology and biodiversity at the site have been assessed and evaluated and it is concluded that the Works are unlikely to have a significant impact on the environment. All possible likely impacts to aquatic and terrestrial species, populations and communities listed as threatened under the BC Act, FM Act and MNES listed under the EPBC Act have been considered. The level of significance of each identified impact with the adoption of the proposed mitigation measures is summarised in **Table 10** below.

Table 10: Impact Level Summary – Ecology and Biodiversity

Potential Impacts	Impact Level (with control measures undertaken)			
	Negligible	Minor	Moderate or greater	Positive
Construction impacts on aquatic and terrestrial species, populations and communities	☒	☐	☐	☐

5.7 Amenity, Access and Recreational Usage

5.7.1 Existing Environment

Collaroy-Narrabeen Beach is a popular space for public recreation. In annual community surveys of residents undertaken by Council, surfing, beach fishing, Surf Life Saving Clubs (SLSCs) and general beach activities consistently rank highly as popular activities.

At Wetherill Street, no formal access to the beach is currently provided. The historic rock protection detracts from the overall amenity and safety of the area. No seating or park infrastructure is currently present at the road end.

The shape and relatively undeveloped nature of the Collaroy-Narrabeen Beach zone provides long uninterrupted views of the coastline. The back-beach area has been developed with residential properties, including low-rise apartment blocks along most of the beach, detracting from the natural quality of the views. Pockets of dune vegetation and amenity landscape planting soften the view, providing a limited natural feel to the beach. Coastal protection works are evident along the majority of the length of the beach in the vicinity of Wetherill Street reducing the natural quality of the views.

5.7.2 Potential Impacts During Construction

The construction works will involve the temporary fencing of the work site for safety reasons, which would prevent access to the beach from Wetherill Street.

Appropriate signage would be installed. The work site would also include a section of the beach which would become unusable by the public for the period of the Works. Alongshore beach access would be retained seaward of the Works where safe to do so and be controlled by the Contractor's staff. Beach access from adjoining private properties would be maintained via their respective access stairs.

The open nature of the beach and the long-reaching views afforded would mean the construction work site would be highly visible by people using the beach, detracting from the visual amenity of the nearby area during the period of construction.

Given the temporary nature of the construction works, and the visual environment already created by the existing coastal protection structures, some of which are in a state of disrepair, the construction impact of the Works is not considered significant on access and amenity.

5.7.3 Potential Impacts During Operation

There would be a positive impact on public access and safety during the operational phase of the Works. The Works would eliminate the current unsafe access conditions.

New beach access stairs would be installed, and fencing would be installed at the crest of the Works either side of the new access stairs to address safety. Once constructed, the Wetherill Street site would have improved safe access to the beach, and access along the beach would be significantly improved due to removal of rocks that extend well onto the beach. The Works would not negatively impact existing land use, and the recreational use of the beach would be enhanced, in compliance with the objectives of the Coastal Management Act 2016 and the Warringah Local Environmental Plan 2011.

The Works would be a visual improvement to the existing historic rock protection works mixed with rubble and debris, particularly at times of lower sand levels, as well as the existing situation of debris and deleterious materials being scattered on the beach after storms.

The Works will not change or transform the natural function, use and appearance of the site. When completed, the Works will result in the creation of formalised access and removal of historic informal rock protection from the beach. This will significantly improve public safety and amenity at the site as well as the overall appearance.

5.7.4 Recommended Control Measures

The impact on users of the area should be managed through the implementation of the following mitigation measures:

- prior to commencement of works, boundaries of the construction area and access points should be marked with temporary barrier fencing and signage. The fencing should be monitored daily by the site supervisor, be immediately repaired or replaced if necessary and should be removed when construction is completed;
- machinery should only access the defined work site via clearly defined routes;
- pedestrian access near to, or within, the Works area should not be permitted over the duration of the Works. Where normal construction fencing cannot be practically used (e.g. on the beach) then star pickets and parawebbing, or similar, and clear and obvious signage should be employed;
- the community should be notified of construction activities and provided with a mechanism (e.g. phone number) for any complaints to be submitted;
- signage should inform community of the construction activities (locations, working hours, duration of works);
- workers and plant drivers should always maintain awareness of beach users and control pedestrian access adjacent to the site; and

- sand should be thoroughly washed into the voids of the restacked rocks at the completion of the Works, to avoid formation of sink holes.

5.7.5 Conclusion on Impacts

The nature, scale and extent of potential impacts on amenity, access and recreational usage at the site have been assessed and evaluated and it is concluded that the Works are unlikely to have a significant impact on the environment. The potential impacts are short term and localised to the work site. It can be concluded that:

- the Works will not cause significant reduction of the aesthetic, recreational, scientific or other environmental quality or value of a locality;
- the Works will not have any significant environmental impact on the community;
- the Works will not cause significant reduction in the range of beneficial uses of the environment;
- the Works will not cause significant transformation of a locality; and
- the Works will not cause significant risk to the safety of the environment, in regard to public safety.

The level of significance of each identified impact with the adoption of the proposed mitigation measures is summarised in **Table 11** below.

Table 11: Impact Level Summary - Amenity, Access and Recreational Usage

Potential Impacts	Impact Level (with control measures undertaken)			
	Negligible	Minor	Moderate or greater	Positive
Loss of beach access from the road end during construction	☐	☒	☐	☐
Loss of use of beach directly adjacent to construction works	☐	☒	☐	☐
Interruption to alongshore beach access	☐	☒	☐	☐
Visibility of construction works	☐	☒	☐	☐
New access to beach following construction	☐	☐	☐	☒
Removal of historic rock on the beach, rubble and debris	☐	☐	☐	☒

5.8 Services

5.8.1 Existing Environment

The Works are also adjacent to the Submarine Cable (Northern Sydney Protection Zone) which extends from Collaroy-Narrabeen Beach to 40 nautical miles off-shore, as declared in 2007 by the Australian Communications and Media Authority under subclause 4 (1) of Schedule 3A to the *Telecommunications Act 1997.* There are three conduits containing submarine cables located near Wetherill Street:

- Australian-Japan Cable (AJC), installed in around 2001;
- APNG2 Cable, installed in around 2006; and
- Tasman Global Access Cable (TGA cable), installed in 2015.

A single 150mm steel conduit was installed by Underground Envirotech Australia (UEA) for the TGA project by horizontal directional drilling and is situated approximately 25m below the road surface level at the seaward end of Wetherill Street. Drawings showing the as-built location and elevation of the TGA cable were provided by UEA Pty Ltd. These drawings also show the position in plan of the AJC and the APNG2 cables.

Stormwater drainage lines for the adjoining private properties at 1168 and 1172 Pittwater Road are shown on **Figure 2.2** and comprise:

- The 1168 drainage line which exits the property adjacent to the western end of the private seawall return, just below the ground surface, and then turns to the east.
- The 1172 drainage line which exits the property 3.3m landward of the western end of the private seawall return, just below the ground surface, and then turns and extends 2.7m to the east.

No existing public stormwater infrastructure is present at the Wetherill Street road end. Most of Wetherill St road end drains back to Pittwater road. A very small area on the seaward edge of the road drains through the rock revetment. Some private inter-allotment drainage may discharge from private properties landward of the private vertical returns.

5.8.2 Potential Impacts During Construction

There would be no impacts to the submarine cables during construction of the Works. No Works will be undertaken below the safe excavation level of -6mAHD advised by Telstra. Excavation for the works will be no deeper than the general surface of the cemented sand layer at around 0 m to -0.5 m AHD. All restacked rock will be placed on or above cemented sand which is well above the advised safe level. The concrete footing at the base of the stairs will be founded approximately 100mm into cemented sand which will be carefully hand excavated. Accordingly, there would be no expected impacts to the submarine cables during construction.

Installation of the outdoor shower on the viewing platform will require water supply reticulation and connection to the closest water main, running under the footpath alongside Pittwater Road.

To avoid impacts to private stormwater infrastructure, care would be taken not to damage private drainage lines during the restack works, or to block the drainage lines during rock restacking (i.e. restacking works would avoid placement of face of rocks across the drainage opening and provide void space for water flow).

Construction activities may affect site drainage, potentially disrupting overland and private drainage systems. To mitigate these impacts, the contractor will implement appropriate flow management measures, as outlined in the Construction Environmental Management Plan (CEMP). These measures will ensure that drainage is maintained throughout the works, with consideration given to weather conditions such as rainfall, tidal movements, wave action, and the resulting erosion or accretion of the beach (which could block or alter flow).

5.8.3 Potential Impacts During Operation

There would be no impacts to services during operation of the Works.

5.8.4 Recommended Control Measures

The following control measures are recommended:

- consultation with utilities companies should be undertaken to confirm the presence of any possible unidentified services and if required, a Level A assessment in accordance with the Australian Standard for utilities should be undertaken.
- contractors should be made aware of the submarine cables as part of the contract documents and induction/training.
- the design drawings will be shared with Telstra to confirm no risk of impact to cables. Telstra will be notified of the construction dates, to monitor the cables.
- all water flows affected by the construction works, including stormwater and overland flow, must be effectively managed to ensure continuity. This includes implementing appropriate measures during storm events to account for rainfall, tidal influences, wave conditions, and resulting changes in beach morphology such as erosion or accretion.
- care should be taken not to damage the drainage lines from the adjacent private properties during the restack works, or to block the drainage lines during rock restacking. The placement of the face of rocks across the drainage opening should be avoided and void space for water flow near the drainage lines should be provided.

5.8.5 Conclusion on Impacts

The nature, scale and extent of potential impacts on services at the site have been assessed and evaluated and it is concluded that the Works are unlikely to have a significant impact on the environment. The level of significance of each identified impact with the adoption of the proposed mitigation measures is summarised in **Table 12** below.

Table 12: Impact Level Summary - Services

Potential Impacts	Impact Level (with control measures undertaken)			
	Negligible	Minor	Moderate or greater	Positive
Excavation near submarine cable	☒	☐	☐	☐

5.9 Heritage

5.9.1 Existing Environment

A search of the Aboriginal Heritage Information Management System (AHIMS) conducted on 9 May 2025 has shown there to be no known sites or places of Aboriginal significance nearby to the Wetherill Street site (**Appendix C**).

A search using the Protected Matters Search Tool on 9 May 2025 identified that there are no World Heritage Properties, Commonwealth Heritage Places or National Heritage Places within 1km of the proposed works area.

A search of the State Heritage Register was undertaken on 9 May 2025, which showed no results within 1km of the Works. The Warringah LEP (2011) identifies heritage items that should be conserved. The nearest heritage item to the works site is the former house at 1184–1186 Pittwater Road (located well to the north of the site).

5.9.2 Potential Impacts During Construction

The Works are located within 200m of water, and within a sand dune system. Due to the absence of recorded Aboriginal heritage sites, it is unlikely that an Aboriginal feature will be harmed, destroyed, defaced or damaged during construction of the Works. However, there is always the potential for unknown sites or items.

The Works would not impact on the heritage aspects of the property to the north of the site at 1184–1186 Pittwater Road, as it is located more than 100m from the site.

5.9.3 Potential Impacts During Operation

There would be no heritage impacts during operation of the Works.

5.9.4 Recommended Control Measures

The following mitigation measures would be implemented to manage and mitigate potential impacts to Aboriginal and European heritage:

- the Contractor's staff should be provided training on their responsibilities in relation to Aboriginal cultural heritage;
- if any suspected Aboriginal objects or sites are uncovered during construction, works in the vicinity of the find should cease immediately and Council's Environment Officer, the Aboriginal Heritage Office and DCCEEW would be notified for advice on how to proceed;
- should non-aboriginal heritage items be uncovered during the construction, works in the vicinity of the find should cease immediately and Council's Environment Officer should be notified for advice on how to proceed; and
- should any skeletal material be uncovered during construction, works in the vicinity should cease immediately and the Contractor should contact Council's Superintendent, DCCEEW and NSW Police.

5.9.5 Conclusion on Impacts

The nature, scale and extent of potential impacts on heritage at the site have been assessed and evaluated and it is concluded that the Works are unlikely to have a significant impact on the environment. The level of significance of the identified potential impact with the adoption of the proposed mitigation measures is summarised in **Table 13** below.

Table 13: Impact Level Summary - Heritage

Potential Impacts	Impact Level (with control measures undertaken)			
	Negligible	Minor	Moderate or greater	Positive
Unexpected finds	☒	☐	☐	☐

5.10 Waste Management

5.10.1 Existing Environment

Limited garbage or other forms of waste are generally present at the Wetherill Street site. Outside of storm events which may mobilise historic smaller rocks, the site is clean and free of waste issues.

Waste inputs would most likely be confined to that left by recreational users and any flotsam/jetsam deposited by incoming tides/waves.

5.10.2 Potential Impacts During Construction

The proposed Works may generate general waste during construction. Materials that could be reused or recycled would be separately identified, stockpiled, and transported by road to a recycling facility. Materials not suitable for recycling would be transported by road to a licensed waste facility.

The removal of general construction waste from site is a normal construction contract requirement, carried out progressively during the Works and at completion.

Excavated material is likely to comprise clean sand that could be used in bunds during the Works to temporarily protect the Works. At the completion of the Works any excess sand should be placed seaward of the Works to meet future storm erosion demand. The sand should be screened for rubble, rock fragments and other foreign material which should not be left seaward of the Works.

The existing rock on the beach from historical works seaward of the restacking works would be removed for reuse offsite in other projects. Following construction, sand should be thoroughly washed into the restacked rock revetment to avoid formation of sink holes.

The *Northern Beaches Coastal Erosion Policy* states that:

> "Material that will not enter the beach currently or in the future (e.g. behind a terminal revetment) can be different to adjacent beach material, but as a minimum must be crushed into an aggregate that will enable safe future development of the subject land and not pose an impediment to future protection works and/or maintenance of such works."

Accordingly, subject to waste classification and if approved by a geotechnical engineer and coastal engineer, rubble and other granular materials may be buried within the restacked rock.

All potential waste issues would be short term, localised to the work site and confined to the construction phase only.

5.10.3 Potential Impacts During Operation

The Works once constructed would not generate waste at the site. As per the current situation, general waste would only be produced by users of the area.

5.10.4 Recommended Control Measures

The following control measures should be implemented for the management of waste:

- all waste generated during the construction activities should be contained appropriately before removal and disposal off-site to prevent it from entering the marine environment;
- excavated materials should be reused on site where suitable or disposed of to a licensed waste facility; and
- any sand bund employed during construction should, at completion of the Works, be screened for rubble, rock fragments and other foreign material which should not be left seaward of the Works. Sand should be spread over the beach to achieve a natural beach profile.

5.10.5 Conclusion on Impacts

The nature, scale and extent of potential impacts due to waste management at the site have been assessed and evaluated and it is concluded that the Works are unlikely to have a significant impact on the environment. The potential impacts are short term and localised to the work site. The level of significance of each identified impact with the adoption of the proposed mitigation measures is summarised in **Table 14** below.

Table 14: Impact Level Summary – Waste

Potential Impacts	Impact Level (with control measures undertaken)			
	Negligible	Minor	Moderate or greater	Positive
generation of construction waste	☒	☐	☐	☐
disposal of excavated material unsuitable for reuse	☒	☐	☐	☐
redistribution of sand following completion of the Works	☒	☐	☐	☐

5.11 Traffic Management

5.11.1 Existing Environment

Pittwater Road is the main transport route for Collaroy and Narrabeen. It is a 60kmph, six lane urban main road in a predominantly residential area and experiences some congestion around its key junctions with Collaroy Street, Mactier Street and Ocean Street.

The site of the proposed Works is readily accessible from Pittwater Road. Wetherill Street is a cul-de-sac and provides vehicle access to residential properties.

The is room for public parking of about 4 to 5 cars at the road end. The cul-de-sac provides a turning area for vehicles and access to off street parking for the residential properties.

5.11.2 Potential Impacts During Construction

The construction works have the potential to disrupt the flow of traffic on Pittwater Road and impact local traffic on Wetherill Street.

The Contractor's works compound and beach access will be at Frazer Street Reserve. During construction, the site would be accessed via the beach with some truck and smaller vehicle movements required at Wetherill Street. The Contractor's working area would be agreed with Council and fenced off and closed to the public during all construction activities. Due to occupation of public land, and use of public roads, the Contractor would need to provide a traffic management plan to Council for approval.

Supply or removal of material is not expected to disrupt traffic flow on Pittwater Road due to the relatively low number of construction vehicle movements and the ability to regulate these movements to avoid traffic peaks. According to the Transport for NSW (TfNSW) Traffic Volume Viewer, the 2020 average northbound and southbound heavy vehicle weekday traffic volumes were approximately 1,900/day and 1,700/day respectively for Pittwater Road at Collaroy (Station ID: 55049, 20m north of Jenkins Street).

Movement of construction traffic along the beach would be controlled by the contractor in accordance with the approved traffic management plan.

5.11.3 Potential Impacts During Operation

There would be no traffic impacts during operation of the Works.

5.11.4 Recommended Control Measures

The following control measures should be implemented for the management of traffic:

- beach users and surrounding residences and businesses should be notified of the proposed Works and hours of operation;
- the Contractor should prepare for approval a Traffic Management Plan for the proposed Works;
- the Contractor should take all precautions to ensure that roads and thoroughfares used are not damaged as a result of the Works; and
- the Contractor should utilise materials sourced locally wherever possible to limit the use of public roads for long distance hauling of bulk construction materials.

5.11.5 Conclusion on Impacts

The nature, scale and extent of potential impacts due to traffic management at the site has been assessed and evaluated and it is concluded that the Works are unlikely to have a significant impact on the environment. The potential impacts are short term and localised to the work site. The level of significance of each identified impact with the adoption of the proposed mitigation measures is summarised in **Table 15** below.

Table 15: Impact Level Summary – Traffic

Potential Impacts	Impact Level (with mitigation measures undertaken)			
	Negligible	Minor	Moderate or greater	Positive
occupation of public land and use of public roads and the beach	☒	☐	☐	☐

5.12 Pollution of the Environment

5.12.1 Potential Impacts During Construction

The proposed activity may pose a minor risk of pollution to the environment during construction if fuels, oils and greases required for the construction plant and machinery are not stored properly and are discharged into the stormwater system or ocean. This risk, and the risk of air pollution from exhaust fumes from machinery, is considered negligible if the control measures outlined earlier are adopted.

There is the risk of construction material washing into the ocean during storm events. This will be mitigated by construction of suitable temporary works to protect the site and monitoring and preparation for storm events.

5.12.2 Potential Impacts During Operation

No potential for pollution of the environment exists due to operation of the Works.

5.12.3 Recommended Control Measures

- use of a temporary bund on the seaward side of the Works during construction using sand excavated from the beach or similar, to provide a level of protection to the Works area against storms; and
- weather and tide forecasts should be checked regularly during construction. If a significant storm event is predicted, all equipment and materials should be removed from the beach construction zone;
- refuelling should be completed offsite where possible or over spill trays with appropriate bunding;
- spill kits should be present at all refuelling and plant storage locations and their use included in environmental induction;
- emergency response procedures for pollution should be documented in the Contractor's CEMP and regularly reviewed with site staff.

5.12.4 Conclusion on Impacts

The nature, scale and extent of potential impacts due to pollution at the site have been assessed and evaluated and it is concluded that the Works are unlikely to have a significant impact on the environment. The potential impacts are short term and localised to the work site. The level of significance of each identified impact with the adoption of the proposed mitigation measures is summarised in **Table 16** below.

Table 16: Impact Level Summary – Pollution

Potential Impacts	Negligible	Minor	Moderate or greater	Positive
spills of oils and fuel	☒	☐	☐	☐
generation of exhaust emissions	☒	☐	☐	☐
generation of construction waste	☒	☐	☐	☐

5.13 Cumulative Environmental Effects with other existing or likely future activities

5.13.1 Background

Clause 171 of the EP&A Regulation requires the cumulative environmental impacts of the activity to be considered with other existing or likely future activities.

This cumulative impact assessment includes consideration of the specific impacts of the proposed Works at Wetherill Street on the existing conditions combined with an assessment of the impacts associated with other relevant public and private works.

Coastal protection works at Stuart and Ramsay Streets which include improvements to public access are nearing completion. Future coastal protection works that will include improvements to public access are proposed at seven sites including road ends and South Narrabeen Surf Life Saving Club. Private future coastal protection works comprise approved development applications for rock revetments for properties at 1104 and 1106 Pittwater Road and a vertical seawall at 1 Mactier Street, 1992, 1194, 1196 and 1204 Pittwater Road. However, none of these approved works are expected to take place concurrently with the Wetherill Street Works.

5.13.2 Potential Impacts During Construction

Other works along Collaroy Beach and potentially housing development may occur concurrently with the Wetherill Street Works.

At the construction phase, a minor cumulative increase in traffic, noise, and dust may occur due to concurrent activities. However, with the adoption of mitigation measures identified in this REF, cumulative impacts are expected to be minor.

Although there are threatened species and communities identified in the locality, the Work site and surrounding environment do not include the habitats of such communities or species, so no cumulative ecological impacts are expected.

5.13.3 Potential Impacts During Operation

As described in **Section 5.2** to **Section 5.12,** there are no operational impacts due to the Works to geology and soils, water quality, air quality, noise and vibration, ecology and biodiversity, services, heritage, waste, traffic and pollution. It follows that there will be no cumulative negative environmental impacts of the Works with other existing or likely future activities during the operational phase.

The works involve the installation of new, public access stairs and the associated restacking of rocks which will remove loose or damaged historic materials that might otherwise become marine debris during storms. This may contribute to a minor improvement in local water quality during the operation of the Works. There would also be a positive impact on public access and safety during the operational phase of the Works. Once constructed, the Wetherill Street site would have improved, safe access to the beach, and access along the beach would be significantly improved. The Works would enhance the recreational use of the beach, in compliance with the objectives of the Coastal Management Act 2016 and the Warringah Local Environmental Plan 2011.

The Works will contribute to positive cumulative environmental impacts with other existing or likely future activities due to improvement to public safety and amenity at the site as well as the overall appearance.

5.13.4 Conclusion on Impacts

Review of cumulative environmental effects indicates the Works will not result in significant environmental impacts. Positive outcomes include improved public access and safety.

The activity is not likely to have a significant effect on the environment. All environmental factors listed under Clause 171 of the EP&A Regulation and relevant Commonwealth matters have been addressed. The impact level summary is below in **Table 17.**

Table 17: Impact Level Summary – Cumulative

Potential Impacts	Negligible	Minor	Moderate or greater	Positive
Dust emissions	☐	☒	☐	☐
Construction noise impacts on closest receptors	☐	☒	☐	☐
Occupation of public land and use of public roads and beach	☒	☐	☐	☐
Ecology	☒	☐	☐	☐
New access to beach following construction	☐	☐	☐	☒
Removal of historic rock on the beach,rubble and debris	☐	☐	☐	☒

6 Control Measures

A site-specific Construction Environmental Management Plan (CEMP) will be prepared by the construction Contractor and approved by Council prior to commencement of construction. The Contractor will implement the CEMP during construction and would be responsible for selecting appropriate control measures for the potential impacts identified in this REF. All mitigation measures listed in **Table 18** shall be included in the CEMP.

The following **Table 18** summarises the recommended mitigation and control measures that should be put in place for Wetherill Street to avoid or ameliorate the potential impacts of the Works, as discussed in **Section 5**.

In addition, the key mitigation measure during operation is the continued management of the beach in accordance with the Northern Beaches Coastal Erosion Policy.

Table 18: Proposed Environmental Safeguards and Mitigation Measures During Construction to be included in CEMP

Environmental Safeguard and/or Mitigation Measure
Geology and Soils
1. Rock recovered during the Works should be reused where possible.
2. Any excess excavated sands should be placed in front of the Works to nourish the beach.
3. Excavation depths should be limited to the surface of the cemented sand layer; the integrity of the cemented sand should not be damaged.
4. Inspection of the site should be undertaken after storms and works carried out where required to restore the site to pre-existing condition.
Coastal Processes and Hazards
5. A temporary bund should be constructed on the seaward side of the Works during construction using sand excavated from the beach, and/or other approved materials measures, to provide a level of protection to the Works area against storms. Temporary works should not impact adversely on the beach.
6. Weather and tide forecasts should be checked regularly during construction. If a significant storm event is predicted, all equipment and materials should be removed from the beach construction zone.
Water Quality and Stormwater
7. Any temporary bund should be free of any deleterious materials that could impact on water quality or stormwater flows.
8. Any water from dewatering operations should be pumped to a soakage system at the back of the beach to allow any fine material to settle out.
9. All equipment and vehicles should be maintained in good working order. Daily inspections should be performed to identify any leaks. Any worn or damaged hoses, joints or connections identified during inspections need to be replaced prior to their use.

Environmental Safeguard and/or Mitigation Measure
10. The Contractor should maintain onsite environmental safeguards such as an emergency spill kit and procedures to contain and collect potential leakage and spillage of fuels, oils and greases from plant and equipment.
11. All imported or reused material should be assessed for classification as virgin excavated natural material (as defined in the Protection of the Environment Operations Act 1997) or excavated natural material (as defined by the Protection of the Environment Operations (Waste) Regulation 2014) prior to use on site. Evidence of classification would be maintained on site.
12. Where possible, refuelling should be done off site. However, if refuelling on site is required, due care shall be taken to avoid spilling fuel and a tray should be used to catch any accidentally spilt fuel. Plant refuelling/servicing activities to be completed on-land and away from the ocean.
13. Weather and tide forecasts need to be checked regularly during construction and the site checked daily during any storm event. Where storms or inundation is forecast to the any work area, all equipment and materials need to be removed from the beach construction zone or appropriately secured above expected water levels in the area. Sand, rock and bund material are also to be monitored during storms including to ensure stormwater flows are maintained.
14. Tracking of soil/sand from the construction site via construction equipment onto the road should be minimised. The Contractor shall be required to clean any machinery in a designated washdown area to prevent tracking of soil/sand off site. A road sweeper shall be employed if required.
15. Appropriate controls should be used when working near the beach to capture any materials that may be produced by the construction works and to prevent them entering the marine environment.
16. If storage on-site of hazardous substances is required, then effective bunding should be used in construction areas.
17. Appropriate site and project inductions/training detailing potential water quality impacts and relevant construction measures and spill and emergency response procedures should be used.
Air Quality
18. All plant used by the Contractor should be in good operating condition and free of excessive emissions.
19. All equipment would be required to meet emission control compliance regulations.
20. All plant, equipment and vehicles should not idle for extended periods of time; they should be switched off if not in operation.
21. Weather and tide forecasts should be checked regularly during construction. Works should not be carried out during strong winds or in weather conditions where high levels of dust or airborne particulates are likely;
22. Adjacent sensitive receivers should be advised to shut windows prior to the start of works that would potentially generate dust emissions.
23. Uncovered or stockpiled materials that may lead to the generation of dust or windblown should be covered or watered down.
24. Public roads and sealed areas should be kept free of soil/dust through sweeping.

Environmental Safeguard and/or Mitigation Measure
Noise and Vibration
25. Beach users and surrounding residences and businesses should be notified of the Works and hours of operation.
26. A Council contact should be provided for the Works in the event of any complaints.
27. Instructions should be issued to the Contractor that appropriate silencers are to be fitted on all plant and equipment.
28. Works should be undertaken during the standard construction hours where practicable (i.e. 7.00 am to 6.00 pm Monday to Friday and 8.00 am to 1.00 pm Saturdays, with no work to be undertaken on Sundays and Public Holidays). However, on occasion, works may be required outside of the standard hours to take advantage of available daylight hours and suitable tide conditions. Where works are required outside of the standard hours, approval shall be obtained from Council and notification will need to be provided to local residents by Council.
29. Works should be undertaken in the non-peak visitor and recreation periods if possible (i.e. during winter months) but this is not considered essential if control measures are in place.
30. Plant should be turned off when not in use (e.g. not left idling).
31. The use of horns and alarms should be minimised to the extent possible while satisfying legislative requirements.
32. High vibration methods should be substituted with lower vibration methods particularly in relation to ground compaction.
Coastal Ecology
33. To assist with controlling weeds, all equipment should be washed down, with soil and debris removed prior to entering the site.
34. Replanting should be as per species nominated by Council
Amenity, Public Access and Safety
35. Prior to commencement of the Works, boundaries of the construction area and access points should be marked with temporary barrier fencing. The fencing should be monitored daily by the site supervisor, be immediately repaired or replaced if necessary and should be removed when construction is completed.
36. Machinery should only access the defined work site via clearly defined routes.
37. Pedestrian access near to or within the Works area should not be permitted over the duration of the Works. Where normal construction fencing cannot be practically used (i.e. on the beach) then star pickets and parawebbing, or similar, and clear and obvious signage should be employed.
38. The community should be notified of construction activities and provided with a mechanism (e.g. phone number) for any noise complaints to be submitted.
39. Signage should be used to inform community of the construction activities (locations, working hours, duration of works).
40. Workers and plant drivers should always maintain awareness of beach users.

Environmental Safeguard and/or Mitigation Measure
41. Sand should be thoroughly washed into the voids of the Works (restacked rock) to avoid formation of sink holes.
Services
42. Consultation with utilities companies should be undertaken to confirm the presence of any unidentified services and if required, a Level A assessment in accordance with the Australian standard for utilities should be undertaken.
43. No excavation is to be undertaken below cemented sand, except 100mm for the footing at the base of the stairs which shall be undertaken by hand.
44. Telstra shall be supplied with the design drawings and informed of the construction dates.
45. Care should be taken not to damage the drainage lines from the adjacent private properties during the restack works, or to block the drainage lines during rock restacking. The placement of the face of rocks across the drainage opening should be avoided and void space for water flow near the drainage lines should be provided.
46. All water flows affected by the construction works, including stormwater and overland flow, should be effectively managed to ensure continuity. This includes implementing appropriate measures during storm events to account for rainfall, tidal influences, wave conditions, and resulting changes in beach morphology such as erosion or accretion.
Heritage
47. The Contractor's staff should be provided training on their responsibilities in relation to Aboriginal cultural heritage.
48. If any suspected Aboriginal objects or sites are uncovered during construction, works in the vicinity of the find should cease immediately and Council's Environment Officer, the Aboriginal Heritage Office and DCCEEW would be notified for advice on how to proceed.
49. If non-aboriginal heritage items are uncovered during the construction, works in the vicinity of the find should cease immediately and Council's Environment Officer should be notified for advice on how to proceed
50. Should any skeletal material be uncovered during construction, works in the vicinity should cease immediately and the Contractor would contact Council's Superintendent, DCCEEW and NSW Police.
Waste Management
51. All waste generated during the construction activities should be contained appropriately before removal and disposal off-site to prevent it from entering the marine environment.
52. Excavated materials should be reused on site where suitable or disposed of to a licensed waste facility.
53. Any sand bund employed during construction should, at completion of the Works, be screened for rubble, rock fragments and other foreign material which should not be left seaward of the Works. Sand should be spread to achieve a natural beach profile.
Traffic Management
54. Beach users and surrounding residences and businesses should be notified of the proposed works and hours of operation;

Environmental Safeguard and/or Mitigation Measure
55. The Contractor should prepare a Traffic Management Plan for the proposed Works.
56. The Contractor should take all precautions to ensure that roads and thoroughfares used by it are not damaged as a result of the Works. If damage to roads and thoroughfares occurs, the Contractor will rectify to previous standards.
57. The Contractor should utilise materials sourced locally wherever possible to limit the use of public roads for long distance hauling of bulk construction materials.
Pollution of the Environment
58. The use of a temporary bund on the seaward side of the Works during construction, using sand excavated from the beach and/or other approved materials, should be adopted to provide a level of protection to the Works area against storms
59. The weather and tide forecasts should be checked regularly during construction. If a significant storm event is predicted, all equipment and materials should be removed from the beach construction zone

7 Consultation

Northern Beaches Council has undertaken preliminary internal consultation regarding the Works, including engagement with coastal engineers, environmental officers, and the project delivery team. The scope of works was also discussed in the context of broader beach access upgrades along Collaroy-Narrabeen Beach.

External consultation shall be undertaken during the public exhibition period and documented in the Final REF document.

7.1 Public Exhibition

This REF document will be placed on public exhibition in June. The engagement will be planned, implemented and reported in accordance with Council's Community Engagement Strategy (2022). This section will be updated with the outcomes of the consultation in the Final REF document.

7.2 Department of Planning, Housing and Infrastructure - Crown Lands

A significant proportion of the Works extend onto Crown Land. Therefore, the Department of Planning, Housing and Infrastructure (Crown Lands) (DPHI–CL) will be provided with the Draft REF to review with consideration to the Objects and Principles of the Crown Land Management Act 2016 and the Coastal Crown Land Guidelines 2023. This section will be updated with the outcomes of the consultation in the Final REF document.

8 Environmental Factors Considered

8.1 Consideration of Factors in Clause 171(2) of the EP&A Regulation

Clause 171(2) of the *EP&A Regulation 2021* provides a list of factors that must be considered in determining the likely impacts of an activity on the natural and built environment and therefore the necessity for an Environmental Impact Statement (EIS).

Following review of the Clause 171(2) factors outlined below, the proposed works are not considered to result in significant detrimental environmental impacts. Therefore, it is concluded that an EIS is not required, and this REF is considered an appropriate environmental assessment.

	Factor	Significant Impact	Section in this report
a.	**Any environmental impact on a community?**	**No**	**5.7**
b.	**Any transformation of a locality?**	**No**	**5.7**
c.	**Any environmental impact on the ecosystems of the locality?**	**No**	**5.6**
d.	**Any reduction of the aesthetic, recreational, scientific or other environmental quality or value of a locality?**	**No**	**5.7**
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?**	**No**	**5.9**
f.	**Any impact on the habitat of protected fauna (within the meaning of the *National Parks and Wildlife Act 1974*)?**	**No**	**5.6**
g.	**Any endangering of any species of animal, plant or other form of life whether living on land, in water or in the air?**	**No**	**5.6**
h.	**Any long term effects on the environment?**	**No**	**5.2 & 5.13**
i.	**Any degradation of the quality of the environment?**	**No**	**5.3, 5.4 and 5.12**
j.	**Any risk to the safety of the environment?**	**No**	**5.7**
k.	**Any reduction in the range of beneficial uses of the environment?**	**No**	**5.7**
l.	**Any pollution of the environment?**	**No**	**5.12**
m.	**Any environmental problems associated with the disposal of waste?**	**No**	**5.10**
n.	**Any increased demands on resources (natural or otherwise) that are or are likely to become in short supply?**	**No**	**5.2**
o.	**Any cumulative environmental effect with other existing or likely future activities?**	**No**	**6.13**

p.	**Any impact on coastal processes and coastal hazards, including those under projected climate change conditions?**	**No**	**5.2**

8.2 Consideration of Matters of National Environmental Significance

Matters of National Environmental Significance must be considered under the environmental assessment provisions of the Environment Protection and Biodiversity Conservation Act (EPBC Act). No matters of National Environmental Significance would be impacted by the proposed works, as set out below.

Factor		Impact	Section in this report
a.	**Any environmental impact on a world heritage property?**	**No**	**5.9**
b.	**Any Environmental Impact on a National Heritage place?**	**No**	**5.9**
c.	**Any Environmental Impact on Ramsar Wetlands of international importance?**	**No**	**5.6**
d.	**Any environmental impact on Commonwealth listed threatened species and ecological communities?**	**No**	**5.6**
e.	**Any environmental impact on Commonwealth listed migratory species?**	**No**	**5.6**
f.	**Does any part of the project involve a nuclear action?**	**No**	**4.2**
g.	**Any environmental impact on the Commonwealth marine environment?**	**No**	**5.6**
h.	**Any impact on Commonwealth land?**	**No**	**5.2.4**

9 Conclusion

The Works on Wetherill Street are permissible without consent under the provisions of:

- cl 2.165 of State Environmental Planning Policy (Transport and Infrastructure) 2021 (T&I SEPP) as development for the purpose of “foreshore management activities”; and
- cl 2.109 of the T&I SEPP as development for the purpose of “road or road infrastructure facilities”

This REF has been prepared in order to address the requirements of Section 5.5(1) and Section 5.7(1) of the Environmental Planning and Assessment Act 1979 and clause 171(2) of the Environmental Planning and Assessment Regulation 2021.

It can be confirmed that:

- the objects of the EP&A Act relating to the protection and enhancement of the environment have been considered in the preparation of the REF;
- all matters affecting or likely to affect the environment by reason of the Works have been examined and taken into account to the fullest extent possible;
- the Works are not considered likely to significantly impact the environment and an EIS is therefore not considered to be necessary; and
- in reaching the conclusions above, the factors listed in clause 171(2) of the EP&A Regulations have been taken into account.

The Works would provide improved public access and amenity, improved public safety and improved stability of the public road area.

The construction of the Works is not considered to result in a significant environmental impact following the implementation of the recommended mitigation measures. The operation of the Works would have no significant environmental impact.

10 Schedules

10.1 Declaration

This Review of Environmental Factors (REF) has been prepared by RHDHV on behalf of Northern Beaches Council to take into account all matters affecting, or likely to affect the environment as a result of the proposed Works at Wetherill Street road end.

The REF has been prepared in accordance with the Environmental Planning and Assessment Act 1979, Environmental Planning and Assessment Regulation 2021.

The information contained in this REF is neither false or misleading and contains all available information that is relevant to the environmental assessment of the proposed activity.

It is concluded that by adopting mitigation measures identified in this assessment to avoid, minimise or manage environmental impacts, the proposed Activity:

a. is not likely to have a significant impact on the environment, therefore an Environmental Impact Statement is not required;
b. will not be carried out in a declared area of outstanding biodiversity value
c. is not likely to significantly impact threatened species, populations, ecological communities or their habitats or impact biodiversity values, therefore a Species Impact Statement is not required under the Biodiversity Conservation Act 2016 or Fisheries Management Act 1994;
d. is not likely to affect any Commonwealth land, or significantly affect any matters of National Environmental Significance, therefore a referral to the Commonwealth Environment Minister to determine if the activity is controlled under the Environment Protection and Biodiversity Conservation Act 1999 is not required.

Subject to implementation of the mitigation measures identified in **Section 6** of this assessment the proposed activity is recommended for approval.

Prepared by:

Ali Watters

Date:

10.2 Certification

I …… ……certify 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&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.

Reviewing Officer: ……
Position: ……

Signature ……
Date: …..……

10.3 Determination under Division 5.1 of the EPA Act 1979 and Part 8, Div 1 of the EPA Regulation 2021

I accept this REF on behalf of Northern Beaches Council, as the determining authority, and determine that the proposed activity is approved subject to mitigation measures in Section 6.0 (and the declaration above) being implemented and may proceed.

I can confirm that I have reviewed the Conflict of Interest Statements of all Council officers involved in this project and am satisfied that the REF has been undertaken in a transparent and satisfactory manner.

Northern Beaches Council Authorised Delegated Officer: ……. ….
Address: …..……..
Position: ……..

Signature ……
Date: …..……

10.4 Publication for activities assessed under Part 5, Division 5.1 of the Environmental Planning and Assessment Act 1979

This Review of Environmental Factors will be published on:

X Northern Beaches Council's website and/or

.. Department of Planning and Environment Planning Portal

prior to the commencement of works in accordance with clause 171(4) of the Environmental Planning and Assessment Regulations 2021 as

.. the activity has a capital investment value of more than $5 million

¨the activity requires an approval or permit as referred to in any of the following provisions before it may be carried out—

(i) Fisheries Management Act 1994, sections 144, 200, 205 or 219,
(ii) Heritage Act 1977, section 57,
(iii) National Parks and Wildlife Act 1974, section 90,
(iv) Protection of the Environment Operations Act 1997, sections 47–49 or 122, or

Xthe determining authority considers that it is in the public interest to publish the review.

.. none of the above apply

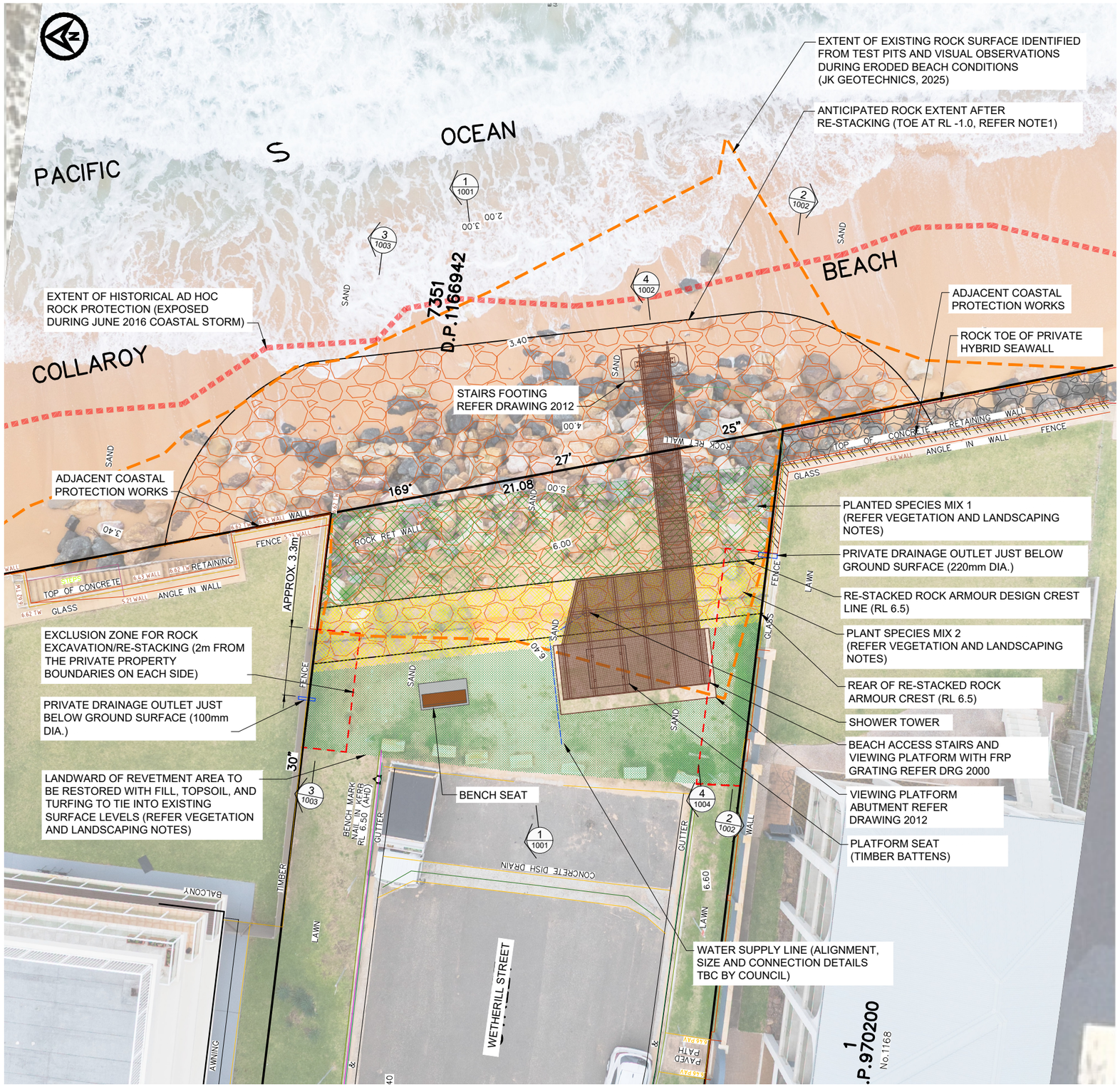
Northern Beaches Council Delegated Officer: …….
Address: ……..
Position: ……..

Signature ……
Date: …..……

Appendix A – Drawings of the Works

DRAWING No.
PA4039-RHD-04-ME-DR-1000

DO NOT SCALE



NOTES

1. ROCK TOE SHALL BE FOUNDED ON CEMENTED SAND OR LEVEL OF RL -1.0, WHICHEVER IS HIGHER. THE PRESENCE OF CEMENTED SAND SHALL BE VERIFIED ONSITE BY A SUITABLY QUALIFIED ENGINEER
2. STABILITY OF TEMPORARY BATTER SLOPES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
3. ALL SAND TO BE SIEVED PRIOR TO REINSTATEMENT, SAND TO BE WASHED INTO ROCKS TO FILL THE VOIDS. EXCESS SAND TO BE PLACED SEAWARD OF ROCK WORK.

S2 FOR INFORMATION

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REV	DATE	DESCRIPTION	BY	CHK	APP
P02	30.05.2025	ISSUED FOR COUNCIL INFORMATION	BB	MP	
P01	15.05.2025	ISSUED FOR COUNCIL INFORMATION	BB	MP	

REVISIONS

CLIENT
northern beaches council

PROJECT
WETHERILL ST
PUBLIC BEACH ACCESS STAIRS

TITLE
GENERAL ARRANGEMENT PLAN

Royal HaskoningDHV
Enhancing Society Together
Level 15, 99 Mount Street
North Sydney NSW 2060
Australia
Tel +61 2 85545000
Fax +61 2 95200960
Email: project.admin.australia@rhdhv.com
Website: www.royalhaskoningdhv.com

DRAWN	COORD SYSTEM	DATUM	DATE
BB	MGA 56 GDA2020	AHD	15.05.2025
SCALE	REF.		
AS SHOWN	PA4039-RHD-0456-M3-ME-MODEL_WETHERILL_ST		

DRAWING No.	SUITABILITY	REVISION
PA4039-RHD-04-ME-DR-1000	S2	P01

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DRAWING No.
PA4039-RHD-05-ME-DR-1001

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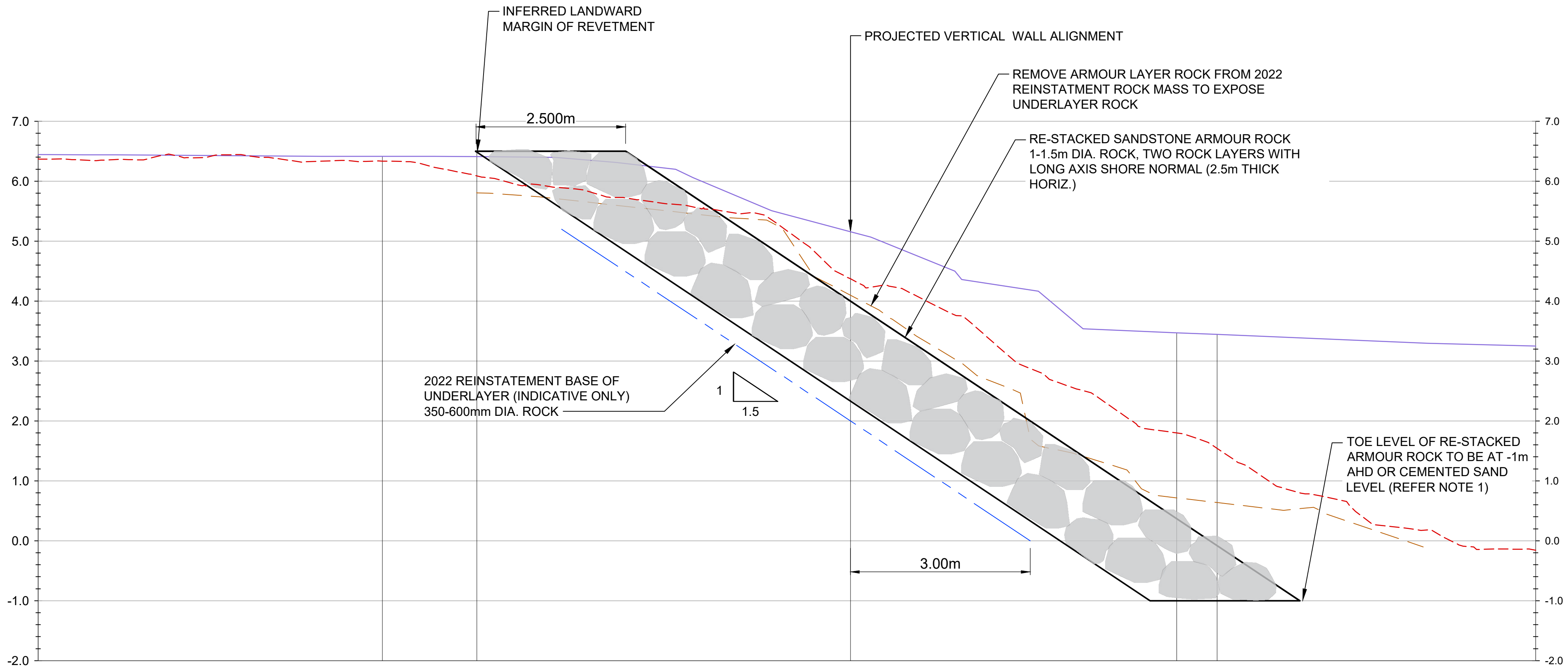

PROPOSED LEVELS	
SEPT 2023 BEACH LEVEL SURVEY	6.351, 6.359, 6.393, 6.332, 6.335, 6.232, 6.088, 5.896, 5.728, 5.611, 5.356, 4.370, 3.766, 2.821, 2.506, 1.800, 1.542, 0.181, -0.159
JUNE 2016 SURVEY OF ERODED BEACH PROFILE AND ROCK	6.359, 6.364, 6.454, 6.396, 6.444, 6.313, 6.345, 6.337, 6.326, 6.119, 5.934, 5.900, 5.852, 5.728, 5.625, 5.539, 5.463, 4.904, 4.370, 4.264, 3.796, 2.965, 2.693, 2.471, 1.951, 1.800, 1.639, 1.296, 0.967, 0.784, 0.657, 0.203, 0.080, -0.102, -0.140
MAR-APR 2025 JK SURVEYED ROCK PROFILE FROM TEST PITS	5.803, 5.766, 5.742, 5.670, 5.559, 5.448, 5.389, 5.361, 5.352, 4.410, 4.385, 4.097, 3.870, 3.722, 3.213, 2.954, 2.629, 2.579, 1.582, 1.520, 1.461, 1.238, 1.183, 0.716, 0.715, 0.638, 0.600, 0.509, 0.529, 0.558, 0.277, -0.061, -0.102
2022 REINSTATEMENT BASE OF UNDERLAYER (INDICATIVE ONLY)	5.200, 5.027, 4.363, 3.699, 3.283, 3.035, 2.371, 2.001, 1.707, 1.040, 0.720, 0.373, 0.000
CHAINAGE	0.000, 1.000, 2.000, 3.000, 4.000, 5.000, 5.746, 6.000, 7.000, 7.321, 8.000, 8.351, 9.000, 10.000, 11.000, 11.536, 12.000, 12.163, 12.952, 13.000, 13.559, 14.000, 14.205, 15.000, 15.433, 16.000, 16.128, 16.700, 17.000, 17.282, 18.000, 18.176, 19.000, 19.008, 19.680, 20.000, 20.789, 21.000, 21.291, 22.000, 23.000, 23.121, 24.000, 25.000, 25.000

SECTION 1

NOTES

1. ROCK TOE SHALL BE FOUNDED ON CEMENTED SAND OR LEVEL OF RL -1.0, WHICHEVER IS HIGHER. THE PRESENCE OF CEMENTED SAND SHALL BE VERIFIED ONSITE BY A SUITABLY QUALIFIED ENGINEER
2. STABILITY OF TEMPORARY BATTER SLOPES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
3. ALL SAND TO BE SIEVED PRIOR TO REINSTATEMENT, SAND TO BE WASHED INTO ROCKS TO FILL THE VOIDS. EXCESS SAND TO BE PLACED SEAWARD OF ROCK WORK.
4. SURVEY DATA SHOWN WAS OBTAINED FROM THE FOLLOWING SOURCES:

- 2023 BEACH LEVEL FROM DETAILED SURVEY OF WETHERILL ST ROADHEAD UNDETAKEN BY CMS SURVEYORS ON 20 SEPT 2023
- JUNE 2016 PROFILE FROM POST-STORM AIRBORNE LIDAR SURVEY UNDERTAKEN BY WATER RESEARCH LABORATORY
- 2025 ROCK PROFILE FROM SURVEY UNDERTAKEN IN TEST PITS ON 12-13 MAR 2025 AND POST-STORM ROCK FACE SURVEY ON 4 APR 2025 BY JK GEOTECHNICS
- 2022 REINSTATEMENT BASE OF UNDERLAYER PROFILE WAS DERIVED FROM "INSTRUCTIONS FOR REINSTATEMENT OF ROCK REVETMENT COASTAL PROTECTION WORKS AT WETHERILL ST AND 1172 PITTWATER ROAD NARRABEEN", LETTER REPORT DATED 16 MAR 2022, PREPARED BY HORTON COASTAL ENGINEERING

REV	DATE	DESCRIPTION	BY	CHK	APP
P02	30.05.2025	ISSUED FOR COUNCIL INFORMATION	BB	MP	
P01	15.05.2025	ISSUED FOR COUNCIL INFORMATION	BB	MP	

REVISIONS

CLIENT

northern beaches council

PROJECT

WETHERILL ST
PUBLIC BEACH ACCESS STAIRS

TITLE

GENERAL ARRANGEMENT
SECTIONS SHEET 1

Royal HaskoningDHV
Enhancing Society Together
Level 15, 99 Mount Street
North Sydney NSW 2060
Australia
Tel +61 2 88545000
Fax +61 2 99290960
Email: project.admin.australia@rhdhv.com
Website: www.royalhaskoningdhv.com

DRAWN	COORD. SYSTEM	DATUM	DATE
BB	MGA 56 GDA2020	AHD	15.05.2025
SCALE: AS SHOWN	REF.: PA4039-RHD-0456-M3-ME-MODEL_WETHERILL_ST		

DRAWING No.	SUITABILITY	REVISION
PA4039-RHD-04-ME-DR-1001	S2	P01

S2 FOR INFORMATION

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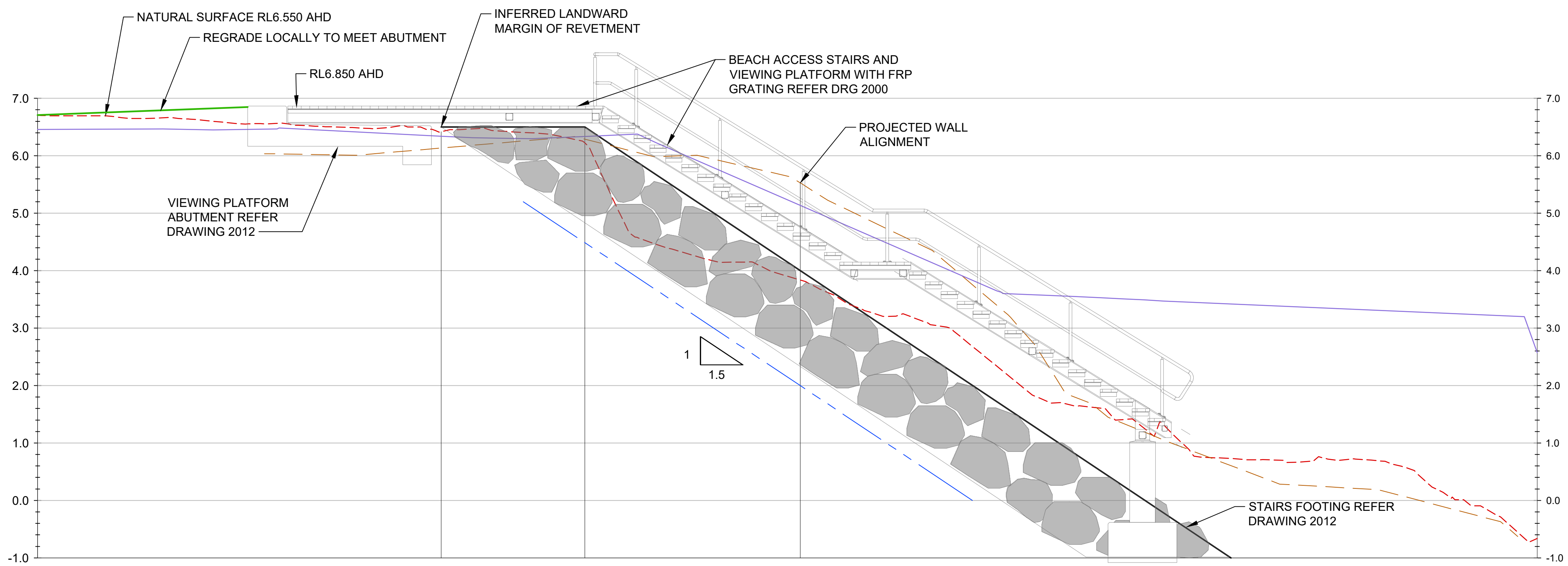
PA4039-RHD-05-ME-DR-1004

DO NOT SCALE



PROPOSED LEVELS	6.500, 6.500, 6.500, 6.500, 6.183, 5.960, 5.517, 4.850, 4.183, 4.000, 3.517, 2.850, 2.183, 1.517, 0.850, 0.183, 0.076, -0.483, -1.000
SEPT 2023 BEACH LEVEL SURVEY	6.660, 6.601, 6.566, 6.421, 6.467, 6.400, 6.224, 4.576, 3.837, 2.338, 1.741, 1.610, 1.250, -0.659
JUNE 2016 SURVEY OF ERODED BEACH PROFILE AND ROCK	6.696, 6.674, 6.652, 6.641, 6.556, 6.563, 6.515, 6.492, 6.499, 6.501, 6.453, 6.481, 6.402, 6.271, 5.323, 4.469, 4.203, 4.151, 3.837, 3.572, 3.306, 3.206, 3.085, 1.835, 1.643, 1.600, 1.114, 0.884, 0.729, 0.710, 0.668, 0.721, 0.702, 0.592, 0.231, 0.011, -0.255, -0.709
MAR-APR 2025 JK SURVEYED ROCK PROFILE FROM TEST PITS	6.037, 6.036, 6.019, 6.009, 6.048, 6.138 / 6.139, 6.219, 6.304, 6.334, 6.169, 5.984, 5.992, 6.007, 5.888, 5.658, 5.641, 5.225, 5.107, 4.627, 4.556, 3.988, 3.233, 3.117, 1.861, 1.821, 1.447, 1.298, 0.988, 0.899, 0.520, 0.285, 0.263, 0.207, 0.188, 0.014, -0.247, -0.369
2022 REINSTATEMENT BASE OF UNDERLAYER (INDICATIVE ONLY)	5.200, 4.837, 4.538, 4.173, 3.510, 2.846, 2.182, 2.000, 1.517 / 1.484, 0.850, 0.183, 0.000
CHAINAGE	0.000, 1.000, 2.000, 3.000, 3.948, 4.000, 5.000, 5.550, 6.000, 7.000, 7.029, 8.000, 9.000, 9.350, 10.000, 10.729, 11.000, 11.480, 12.000, 13.000, 13.075, 13.755, 14.000, 15.000, 15.148, 16.000, 16.891, 17.000, 17.897, 18.000, 18.633, 19.000, 19.765, 20.000, 21.000, 21.621, 22.000, 23.000, 23.334, 24.000, 25.000, 25.467, 26.000, 26.107

SECTION 4

NOTES

1. ROCK TOE SHALL BE FOUNDED ON CEMENTED SAND OR LEVEL OF RL -1.0, WHICHEVER IS HIGHER. THE PRESENCE OF CEMENTED SAND SHALL BE VERIFIED ONSITE BY A SUITABLY QUALIFIED ENGINEER
2. STABILITY OF TEMPORARY BATTER SLOPES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
3. ALL SAND TO BE SIEVED PRIOR TO REINSTATEMENT, SAND TO BE WASHED INTO ROCKS TO FILL THE VOIDS. EXCESS SAND TO BE PLACED SEAWARD OF ROCK WORK.
4. SURVEY DATA SHOWN WAS OBTAINED FROM THE FOLLOWING SOURCES:

- 2023 BEACH LEVEL FROM DETAILED SURVEY OF WETHERILL ST ROADHEAD UNDETAKEN BY CMS SURVEYORS ON 20 SEPT 2023
- JUNE 2016 PROFILE FROM POST-STORM AIRBORNE LIDAR SURVEY UNDERTAKEN BY WATER RESEARCH LABORATORY
- 2025 ROCK PROFILE FROM SURVEY UNDERTAKEN IN TEST PITS ON 12-13 MAR 2025 AND POST-STORM ROCK FACE SURVEY ON 4 APR 2025 BY JK GEOTECHNICS
- 2022 REINSTATEMENT BASE OF UNDERLAYER PROFILE WAS DERIVED FROM "INSTRUCTIONS FOR REINSTATEMENT OF ROCK REVETMENT COASTAL PROTECTION WORKS AT WETHERILL ST AND 1172 PITTWATER ROAD NARRABEEN", LETTER REPORT DATED 16 MAR 2022, PREPARED BY HORTON COASTAL ENGINEERING

REV	DATE	DESCRIPTION	BY	CHK	APP
P02	30.05.2025	ISSUED FOR COUNCIL INFORMATION	BB	MP	
P01	15.05.2025	ISSUED FOR COUNCIL INFORMATION	BB	MP	

REVISIONS

CLIENT

northern beaches council

PROJECT

WETHERILL ST
PUBLIC BEACH ACCESS STAIRS

TITLE

GENERAL ARRANGEMENT
SECTIONS SHEET 4

Level 15, 99 Mount Street
North Sydney NSW 2060
Australia
Tel +61 2 88545000
Fax +61 2 99290960
Email: project.admin.australia@rhdhv.com
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Royal HaskoningDHV
Enhancing Society Together

DRAWN	COORD. SYSTEM	DATUM	DATE
BB	MGA 56 GDA2020	AHD	15.05.2025
SCALE AS SHOWN	REF. PA4039-RHD-0456-M3-ME-MODEL_WETHERILL_ST		

DRAWING No.	SUITABILITY	REVISION
PA4039-RHD-04-ME-DR-1004	S2	P01

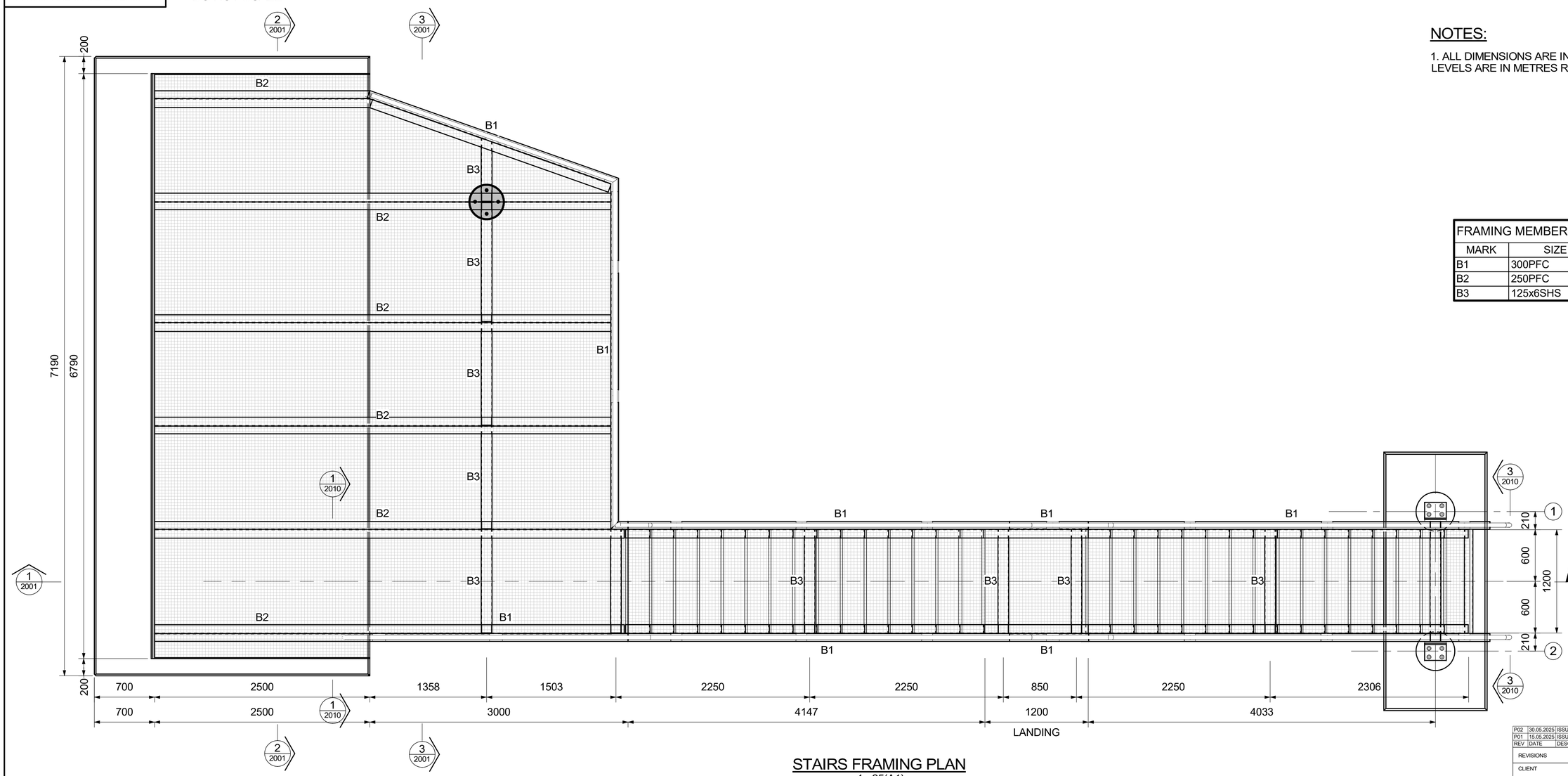
S2 FOR INFORMATION

1000 0 1000 2000 3000 4000 5000mm
1:100 (A3) 1:50 (A1)

D:\ROYAL HASKONINGDHV\P-PA4039-COLLAROY-BEACH-SEAWALLS - TEAM\WIP\02_CAD\PA4039-RHD-0456-M3-ME-MODEL_WETHERILL_ST

DRAWING No.
PA4039-RHD-04-ME-DR-2000

DO NOT SCALE



STAIRS FRAMING PLAN
1 : 25(A1)

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES AND ALL LEVELS ARE IN METRES RELATIVE TO AHD.

FRAMING MEMBER SCHEDULE	
MARK	SIZE - TYPE
B1	300PFC
B2	250PFC
B3	125x6SHS

500 0 500 1000 1500 2000 2500mm
1:25 (A1) 1:50 (A3)

S2 FOR INFORMATION

REV	DATE	DESCRIPTION	BY	CHK	APR
P02	30.05.2025	ISSUED FOR COUNCIL REVIEW	BB	MP	
P01	15.05.2025	ISSUED FOR COUNCIL REVIEW	BB	MP	

REVISIONS

CLIENT

northern beaches council

PROJECT
WETHERILL STREET
PUBLIC BEACH ACCESS STAIRS

TITLE
BEACH ACCESS STAIRS AND PLATFROM GENERAL ARRANGEMENT - PLAN

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Royal HaskoningDHV
Enhancing Society Together

DRAWN	COORD. SYSTEM	DATUM
BB	MGA GDA 2020	AHD
DATE	SCALE AT A1	REF.
07.05.2025	As indicated	

DRAWING No.	SUITABILITY	REVISION
PA4039-RHD-04-ME-DR-2000	S2	P02

D:\Royal Haskoning\DHV\P-PA4039-Collaroy-Beach-Seawalls - Team\WIP\02_CAD\PA2407-RHD-Wetherill_St beach access stairs(V2)_r1

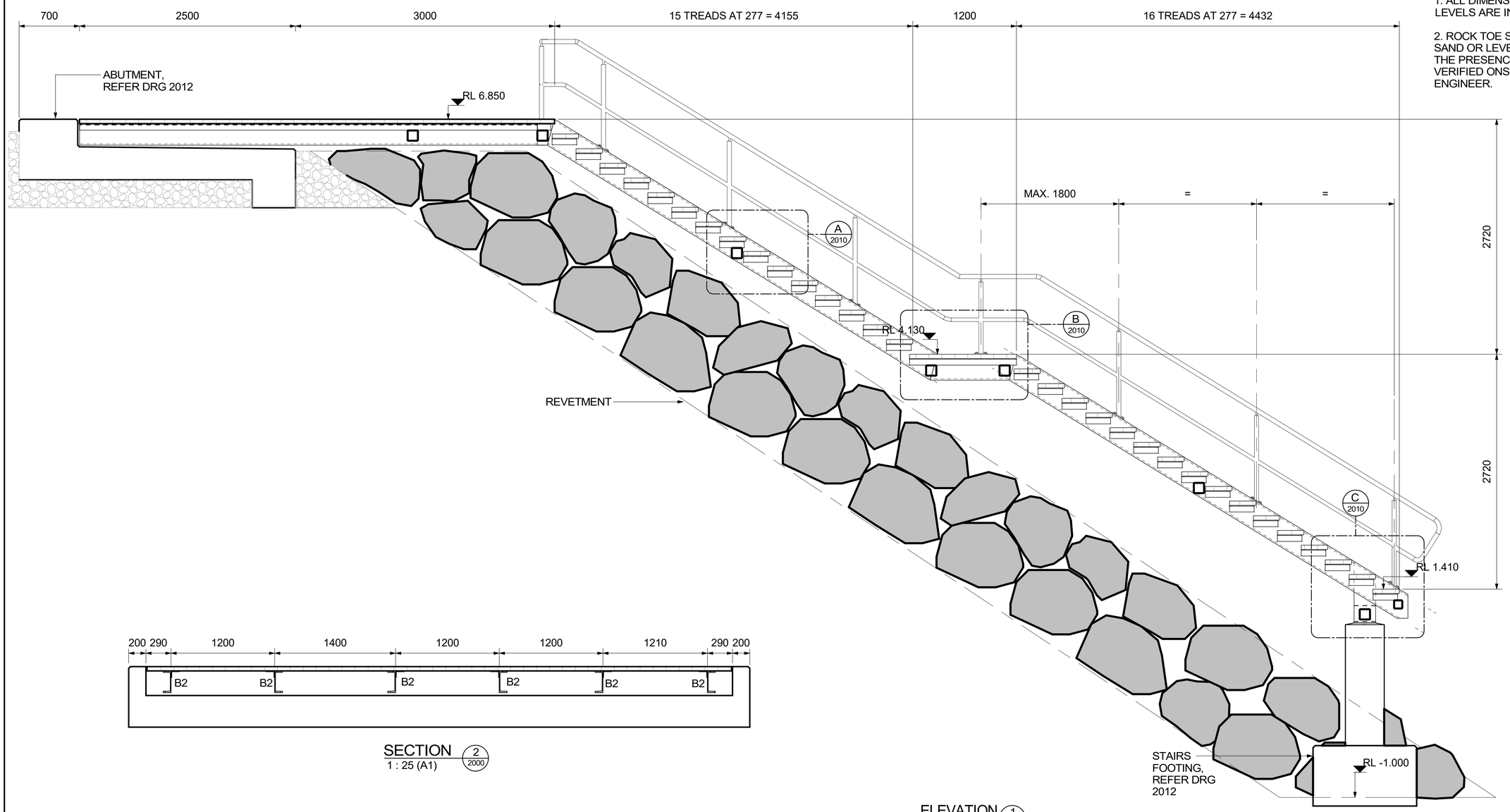
DRAWING No.
PA4039-RHD-04-ME-DR-2001

DO NOT SCALE

NOTES:

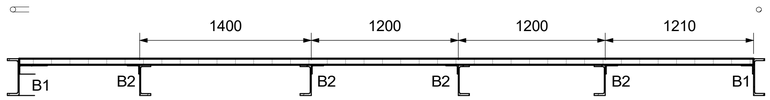
1. ALL DIMENSIONS ARE IN MILLIMETRES AND ALL LEVELS ARE IN METRES RELATIVE TO AHD.

2. ROCK TOE SHALL BE FOUNDED ON CEMENTED SAND OR LEVEL OF RL-1.0, WHICHEVER IS HIGHER. THE PRESENCE OF CEMENTED SAND SHALL BE VERIFIED ONSITE BY A SUITABLY QUALIFIED ENGINEER.



ELEVATION 1 / 1 : 25 (A1)

SECTION 2 / 2000
1 : 25 (A1)



SECTION 3 / 2000
1 : 25 (A1)

500 0 500 1000 1500 2000 2500mm
1:25 (A1) 1:50 (A3)

S2 FOR INFORMATION

REV	DATE	DESCRIPTION	BY	CHK	APR
P02	30.05.2025	ISSUED FOR COUNCIL REVIEW	BB	MP	
P01	15.05.2025	ISSUED FOR COUNCIL REVIEW	BB	MP	

REVISIONS

CLIENT

northern beaches council

PROJECT
WETHERILL STREET
PUBLIC BEACH ACCESS STAIRS

TITLE
BEACH ACCESS STAIRS
GENERAL ARRANGEMENT-
ELEVATION AND SECTIONS

Level 15, 99 Mount Street
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Royal HaskoningDHV
Enhancing Society Together

DRAWN	COORD. SYSTEM	DATUM
BB	MGA GDA 2020	AHD
DATE	SCALE AT A1	REF.
07.05.2025	As indicated	

DRAWING No.	SUITABILITY	REVISION
PA4039-RHD-04-ME-DR-2001	S2	P02

D:\Royal Haskoning\DHV\P-PA4039-Collaroy-Beach-Seawalls - Team\WIP\ZZ_CAD\PA2407-RHD-Wetherill_St beach access.dwg(A1)(1:1)

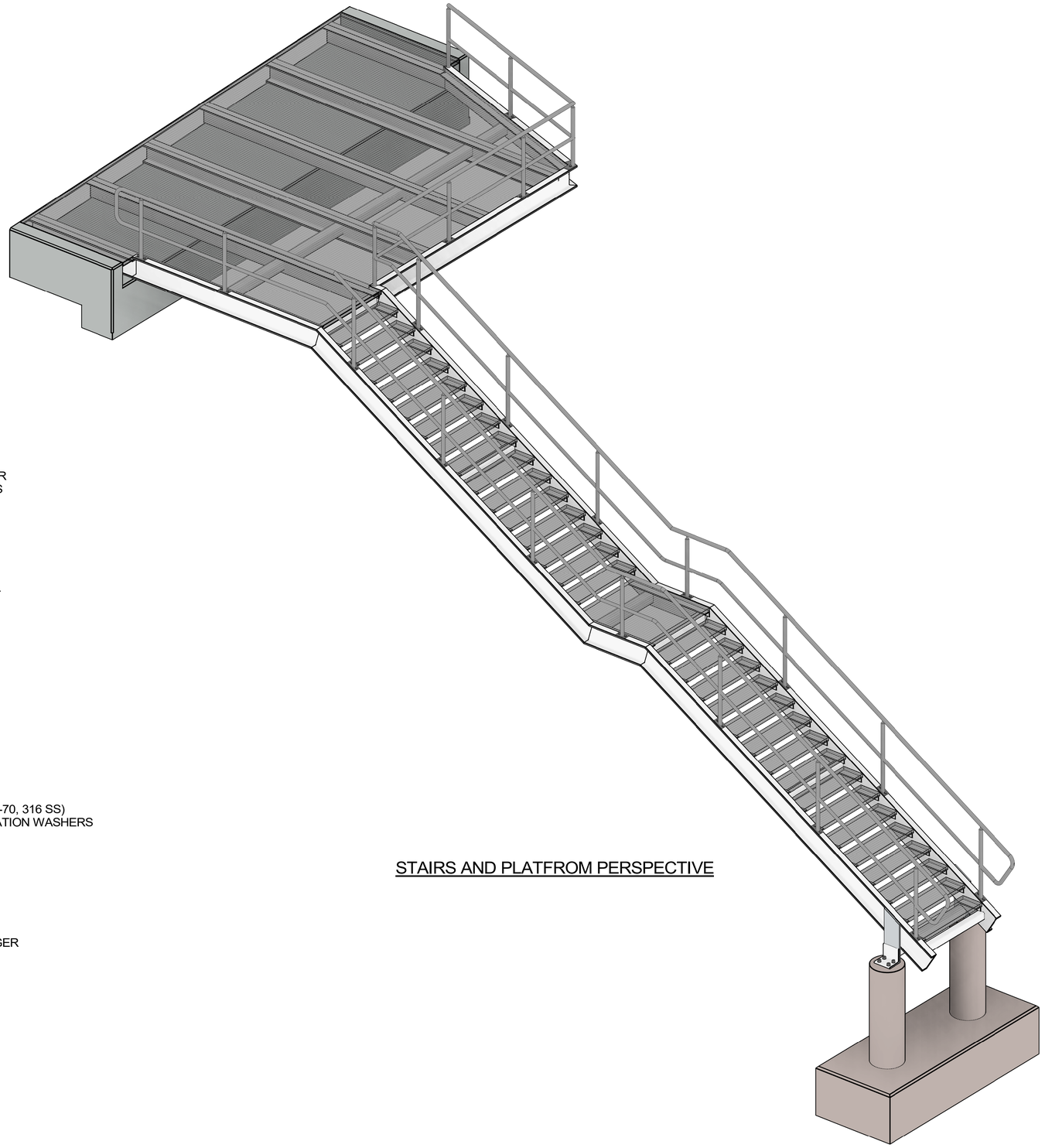
DRAWING No.
PA4039-RHD-04-ME-DR-2011

DO NOT SCALE

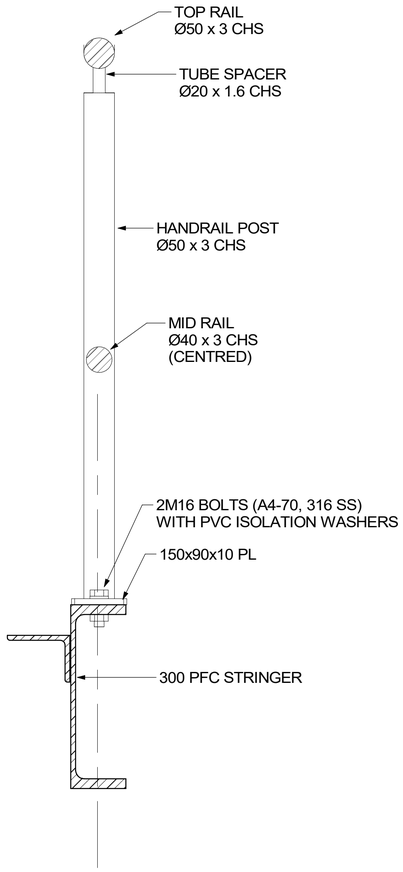
NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.

2. FOOTING TO BE FOUNDED MINIMUM 100mm INTO CEMENTED SAND. EXCAVATION OF CEMENTED SAND TO BE CARRIED OUT CAREFULLY BY HAND TO LIMIT DISTURBANCE OF CEMENTED SAND. IF CEMENTED SAND IS BELOW RL-1.00 AHD REFER TO ENGINEER.



STAIRS AND PLATFROM PERSPECTIVE



BALUSTRADE DETAIL
1 : 5(A1)

NOTE: ALL BALUSTRADE COMPONENTS TO BE FULLY WELDED STAINLESS STEEL GRADE 316L / 600 GRIT BRIGHT POLISHED FULLY WELDED

S2 FOR INFORMATION

200 0 200 400 600 800 1000mm
1:10 (A1) 1:20 (A3)

100 0 100 200 300 400 500mm
1:5 (A1) 1:10 (A3)

REV	DATE	DESCRIPTION	BY	CHK	APR
P02	30.05.2025	ISSUED FOR COUNCIL REVIEW	BB	MP	
P01	15.05.2025	ISSUED FOR COUNCIL REVIEW	BB	MP	

REVISIONS

CLIENT

northern beaches council

PROJECT
WETHERILL STREET
PUBLIC BEACH ACCESS STAIRS

TITLE
BEACH ACCESS STAIRS
DETAILS - SHEET 2

Level 15, 99 Mount Street
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Email: project.admin.australia@rhdhv.com
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Royal HaskoningDHV
Enhancing Society Together

DRAWN	COORD. SYSTEM	DATUM
BB	MGA GDA 2020	AHD
DATE 07.05.2025	SCALE AT A1 As indicated	REF.

DRAWING No.	SUITABILITY	REVISION
PA4039-RHD-04-ME-DR-2011	S2	P02

D:\Royal Haskoning\DHV\P-PA4039-Collaroy-Beach-Seawalls - Team\WIP\02_CAD\PA2407-RHD-Wetherill_St beach access stairs(V2).dwg

Appendix B – EPBC Act Protected Matter Report

EPBC Act Protected Matters Report

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

Report created: 09-May-2025

Summary

Matters of National Environment Significance

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

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	7
Listed Threatened Species:	109
Listed Migratory Species:	58

Other Matters Protected by the EPBC Act

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

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

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

Commonwealth Lands:	32
Commonwealth Heritage Places:	None
Listed Marine Species:	83
Whales and Other Cetaceans:	13
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

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

State and Territory Reserves:	3
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	12
Key Ecological Features (Marine):	None
Biologically Important Areas:	4
Bioregional Assessments:	1
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Listed Threatened Ecological Communities [Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.
Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text	Buffer Status
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	Endangered	Community likely to occur within area	In feature area
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	Endangered	Community likely to occur within area	In feature area
Coastal Upland Swamps in the Sydney Basin Bioregion	Endangered	Community likely to occur within area	In feature area
Eastern Suburbs Banksia Scrub of the Sydney Region	Critically Endangered	Community may occur within area	In feature area
River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria	Critically Endangered	Community likely to occur within area	In feature area
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to occur within area	In buffer area only
Western Sydney Dry Rainforest and Moist Woodland on Shale	Critically Endangered	Community may occur within area	In buffer area only

Listed Threatened Species [Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

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

Scientific Name	Threatened Category	Presence Text	Buffer Status
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Callocephalon fimbriatum Gang-gang Cockatoo [768]	Endangered	Species or species habitat known to occur within area	In feature area
Calyptorhynchus lathami lathami South-eastern Glossy Black-Cockatoo [67036]	Vulnerable	Species or species habitat known to occur within area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In feature area
Climacteris picumnus victoriae Brown Treecreeper (south-eastern) [67062]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Dasyornis brachypterus Eastern Bristlebird [533]	Endangered	Species or species habitat may occur within area	In feature area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Diomedea antipodensis gibsoni Gibson's Albatross [82270]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area	In feature area
Erythrotriorchis radiatus Red Goshawk [942]	Endangered	Species or species habitat may occur within area	In feature area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat may occur within area	In feature area
Fregetta grallaria grallaria White-bellied Storm-Petrel (Tasman Sea), White-bellied Storm-Petrel (Australasian) [64438]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area	In feature area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Limosa lapponica baueri Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380]	Endangered	Species or species habitat known to occur within area	In feature area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In feature area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Melanodryas cucullata cucullata South-eastern Hooded Robin, Hooded Robin (south-eastern) [67093]	Endangered	Species or species habitat may occur within area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat may occur within area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat known to occur within area	In feature area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Pterodroma leucoptera leucoptera Gould's Petrel, Australian Gould's Petrel [26033]	Endangered	Species or species habitat may occur within area	In feature area
Pterodroma neglecta neglecta Kermadec Petrel (western) [64450]	Vulnerable	Foraging, feeding or related behaviour may occur within area	In feature area
Pycnoptilus floccosus Pilotbird [525]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area	In feature area
Stagonopleura guttata Diamond Firetail [59398]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Sternula albifrons Little Tern [82849]	Vulnerable	Species or species habitat may occur within area	In feature area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Breeding likely to occur within area	In feature area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche bulleri platei Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour may occur within area	In feature area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area	In feature area
FISH			
Epinephelus daemelii Black Rockcod, Black Cod, Saddled Rockcod [68449]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Hippocampus whitei White's Seahorse, Crowned Seahorse, Sydney Seahorse [66240]	Endangered	Species or species habitat likely to occur within area	In feature area
Macquaria australasica Macquarie Perch [66632]	Endangered	Species or species habitat may occur within area	In feature area
Prototroctes maraena Australian Grayling [26179]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Seriolella brama Blue Warehou [69374]	Conservation Dependent	Species or species habitat known to occur within area	In feature area
FROG			
Heleioporus australiacus australiacus Giant Burrowing Frog, Eastern Owl Frog [92013]	Endangered	Species or species habitat known to occur within area	In feature area
Litoria aurea Green and Golden Bell Frog [1870]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Mixophyes balbus			
Stuttering Frog, Southern Barred Frog (in Victoria) [1942]	Vulnerable	Species or species habitat likely to occur within area	In feature area
MAMMAL			
Balaenoptera musculus			
Blue Whale [36]	Endangered	Species or species habitat may occur within area	In feature area
Chalinolobus dwyeri			
Large-eared Pied Bat, Large Pied Bat [183]	Endangered	Species or species habitat known to occur within area	In feature area
Dasyurus maculatus maculatus (SE mainland population)			
Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat known to occur within area	In feature area
Eubalaena australis			
Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area	In feature area
Isoodon obesulus obesulus			
Southern Brown Bandicoot (eastern), Southern Brown Bandicoot (south-eastern) [68050]	Endangered	Species or species habitat known to occur within area	In feature area
Notamacropus parma			
Parma Wallaby [89289]	Vulnerable	Species or species habitat may occur within area	In feature area
Petauroides volans			
Greater Glider (southern and central) [254]	Endangered	Species or species habitat likely to occur within area	In feature area
Petaurus australis australis			
Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Petrogale penicillata			
Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)			
Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Pseudomys novaehollandiae New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat known to occur within area	In feature area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Roosting known to occur within area	In feature area
PLANT			
Acacia bynoeana Bynoe's Wattle, Tiny Wattle [8575]	Vulnerable	Species or species habitat may occur within area	In feature area
Acacia terminalis subsp. Eastern Sydney (G.P.Phillips 126) listed as Acacia terminalis subsp. terminalis MS Sunshine Wattle (Sydney region) [91564]	Endangered	Species or species habitat known to occur within area	In feature area
Asterolasia elegans [56780]	Endangered	Species or species habitat likely to occur within area	In feature area
Caladenia tessellata Thick-lipped Spider-orchid, Daddy Long-legs [2119]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Cryptostylis hunteriana Leafless Tongue-orchid [19533]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Cynanchum elegans White-flowered Wax Plant [12533]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Darwinia biflora [14619]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Eucalyptus camfieldii Camfield's Stringybark [15460]	Vulnerable	Species or species habitat known to occur within area	In feature area
Genoplesium baueri Yellow Gnat-orchid, Bauer's Midge Orchid, Brittle Midge Orchid [7528]	Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Grevillea caleyi Caley's Grevillea [9683]	Critically Endangered	Species or species habitat known to occur within area	In buffer area only
Haloragodendron lucasii Hal [6480]	Endangered	Species or species habitat may occur within area	In buffer area only
Kunzea rupestris [8798]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Lasiopetalum joyceae [20311]	Vulnerable	Species or species habitat known to occur within area	In feature area
Leptospermum deanei Deane's Tea-tree [21777]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Leucopogon exolasius Woronora Beard-heath [14251]	Vulnerable	Species or species habitat may occur within area	In feature area
Melaleuca biconvexa Biconvex Paperbark [5583]	Vulnerable	Species or species habitat may occur within area	In feature area
Melaleuca deanei Deane's Melaleuca [5818]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Microtis angusii Angus's Onion Orchid [64530]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Persicaria elatior Knotweed, Tall Knotweed [5831]	Vulnerable	Species or species habitat may occur within area	In feature area
Persoonia hirsuta Hairy Geebung, Hairy Persoonia [19006]	Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Pimelea curviflora var. curviflora [4182]	Vulnerable	Species or species habitat known to occur within area	In feature area
Prostanthera densa Villous Mintbush [12233]	Vulnerable	Species or species habitat known to occur within area	In feature area
Prostanthera junonis Somersby Mintbush [64960]	Endangered	Species or species habitat may occur within area	In buffer area only
Prostanthera marifolia Seaforth Mintbush [7555]	Critically Endangered	Species or species habitat may occur within area	In buffer area only
Rhizanthella slateri Eastern Underground Orchid [11768]	Endangered	Species or species habitat may occur within area	In feature area
Rhodamnia rubescens Scrub Turpentine, Brown Malletwood [15763]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
Rhodomyrtus psidioides Native Guava [19162]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
Syzygium paniculatum Magenta Lilly Pilly, Magenta Cherry, Daguba, Scrub Cherry, Creek Lilly Pilly, Brush Cherry [20307]	Vulnerable	Species or species habitat known to occur within area	In feature area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat may occur within area	In feature area
REPTILE			
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area	In feature area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area	In feature area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area	In feature area
Hoplocephalus bungaroides Broad-headed Snake [1182]	Endangered	Species or species habitat may occur within area	In feature area
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
SHARK			
Carcharias taurus (east coast population) Grey Nurse Shark (east coast population) [68751]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area	In feature area
Galeorhinus galeus School Shark, Eastern School Shark, Snapper Shark, Tope, Soupfin Shark [68453]	Conservation Dependent	Species or species habitat may occur within area	In feature area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area	In feature area
Sphyrna lewini Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area	In feature area
SNAIL			
Meridolum maryae Maroubra Woodland Snail, Maroubra Land Snail [89884]	Endangered	Species or species habitat known to occur within area	In feature area

Listed Migratory Species [Resource Information]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area	In feature area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area	In feature area
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat known to occur within area	In feature area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area	In feature area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat may occur within area	In feature area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In feature area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area	In feature area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Sternula albifrons Little Tern [82849]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour may occur within area	In feature area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
Migratory Marine Species			
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area	In feature area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area	In feature area
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour may occur within area	In feature area
Carcharhinus longimanus Oceanic Whitetip Shark [84108]		Species or species habitat may occur within area	In feature area
Carcharias taurus Grey Nurse Shark [64469]		Species or species habitat known to occur within area	In feature area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area	In feature area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area	In feature area
Dugong dugon Dugong [28]		Species or species habitat may occur within area	In feature area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area	In feature area
Eubalaena australis as Balaena glacialis australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area	In feature area
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat may occur within area	In feature area
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat likely to occur within area	In feature area
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat known to occur within area	In feature area
Mobula alfredi as Manta alfredi Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat may occur within area	In feature area
Mobula birostris as Manta birostris Giant Manta Ray [90034]		Species or species habitat may occur within area	In feature area
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area	In feature area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area	In feature area
Migratory Terrestrial Species			
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat likely to occur within area	In feature area
Migratory Wetlands Species			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area	In feature area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area	In feature area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area	In feature area

Other Matters Protected by the EPBC Act

Commonwealth Lands [Resource Information]

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Commonwealth Land Name	State	Buffer Status
Communications, Information Technology and the Arts - Australian Postal Corporation		
Commonwealth Land - Australian Postal Commission [13228]	NSW	In buffer area only
Commonwealth Land - Australian Postal Commission [13192]	NSW	In buffer area only
Commonwealth Land - Australian Postal Commission [13193]	NSW	In buffer area only
Commonwealth Land - Australian Postal Commission [13239]	NSW	In buffer area only
Commonwealth Land - Australian Postal Corporation [16525]	NSW	In buffer area only
Communications, Information Technology and the Arts - Telstra Corporation Limited		
Commonwealth Land - Australian Telecommunications Commission [13240]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [13225]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [13226]	NSW	In buffer area only

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - Australian Telecommunications Commission [13241]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [13231]	NSW	In buffer area only
Defence		
Defence - DEE WHY DEPOT [11095]	NSW	In buffer area only
Defence - Defence Housing Authority		
Commonwealth Land - Defence Housing Authority [13206]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13207]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13204]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13205]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13200]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13201]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13235]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13236]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13234]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13197]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13198]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13199]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13238]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13232]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13233]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13202]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13203]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [13237]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [13230]	NSW	In buffer area only
Unknown		
Commonwealth Land - [13229]	NSW	In buffer area only
Commonwealth Land - [13227]	NSW	In buffer area only

Listed Marine Species			[Resource Information]
Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area	In feature area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Ardenna carneipes as Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area	In feature area
Ardenna grisea as Puffinus griseus Sooty Shearwater [82651]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat known to occur within area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In feature area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea antipodensis gibsoni as Diomedea gibsoni Gibson's Albatross [82270]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area	In feature area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area	In feature area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat may occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area	In feature area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In feature area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area overfly marine area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat likely to occur within area overfly marine area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat may occur within area overfly marine area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Pachyptila turtur Fairy Prion [1066]		Species or species habitat known to occur within area	In feature area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area	In feature area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area	In feature area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Pterodroma cervicalis White-necked Petrel [59642]		Species or species habitat may occur within area	In feature area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area overfly marine area	In feature area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Stercorarius antarcticus as Catharacta skua Brown Skua [85039]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Sterna striata White-fronted Tern [799]		Foraging, feeding or related behaviour likely to occur within area	In feature area
Sternula albifrons as Sterna albifrons Little Tern [82849]	Vulnerable	Species or species habitat may occur within area	In feature area
Symposiachrus trivirgatus as Monarcha trivirgatus Spectacled Monarch [83946]		Species or species habitat may occur within area overfly marine area	In feature area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche bulleri platei as Thalassarche sp. nov. Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour may occur within area	In feature area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area
Fish			
Acentronura tentaculata Shortpouch Pygmy Pipehorse [66187]		Species or species habitat may occur within area	In feature area
Festucalex cinctus Girdled Pipefish [66214]		Species or species habitat may occur within area	In feature area
Filicampus tigris Tiger Pipefish [66217]		Species or species habitat may occur within area	In feature area
Heraldia nocturna Upside-down Pipefish, Eastern Upside-down Pipefish, Eastern Upside-down Pipefish [66227]		Species or species habitat may occur within area	In feature area
Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area	In feature area
Hippocampus abdominalis Big-belly Seahorse, Eastern Potbelly Seahorse, New Zealand Potbelly Seahorse [66233]		Species or species habitat may occur within area	In feature area
Hippocampus whitei White's Seahorse, Crowned Seahorse, Sydney Seahorse [66240]	Endangered	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Histiogamphelus briggsii Crested Pipefish, Briggs' Crested Pipefish, Briggs' Pipefish [66242]		Species or species habitat may occur within area	In feature area
Lissocampus runa Javelin Pipefish [66251]		Species or species habitat may occur within area	In feature area
Maroubra perserrata Sawtooth Pipefish [66252]		Species or species habitat may occur within area	In feature area
Notiocampus ruber Red Pipefish [66265]		Species or species habitat may occur within area	In feature area
Phyllopteryx taeniolatus Common Seadragon, Weedy Seadragon [66268]		Species or species habitat may occur within area	In feature area
Solegnathus spinosissimus Spiny Pipehorse, Australian Spiny Pipehorse [66275]		Species or species habitat may occur within area	In feature area
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area	In feature area
Solenostomus paradoxus Ornate Ghostpipefish, Harlequin Ghost Pipefish, Ornate Ghost Pipefish [66184]		Species or species habitat may occur within area	In feature area
Stigmatopora argus Spotted Pipefish, Gulf Pipefish, Peacock Pipefish [66276]		Species or species habitat may occur within area	In feature area
Stigmatopora nigra Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area	In feature area
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Trachyrhamphus bicoarctatus Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area	In feature area
Urocampus carinirostris Hairy Pipefish [66282]		Species or species habitat may occur within area	In feature area
Vanacampus margaritifer Mother-of-pearl Pipefish [66283]		Species or species habitat may occur within area	In feature area
Mammal			
Arctocephalus forsteri Long-nosed Fur-seal, New Zealand Fur-seal [20]		Species or species habitat may occur within area	In feature area
Arctocephalus pusillus Australian Fur-seal, Australo-African Fur-seal [21]		Species or species habitat may occur within area	In feature area
Dugong dugon Dugong [28]		Species or species habitat may occur within area	In feature area
Reptile			
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area	In feature area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area	In feature area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Hydrophis platura as Pelamis platurus Yellow-bellied Sea Snake [93746]		Species or species habitat may occur within area	In feature area
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area

Whales and Other Cetaceans [Resource Information]

Current Scientific Name	Status	Type of Presence	Buffer Status
Mammal			
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area	In feature area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area	In feature area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area	In feature area
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour may occur within area	In feature area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area	In feature area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area	In feature area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area	In feature area
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat may occur within area	In feature area

Current Scientific Name	Status	Type of Presence	Buffer Status
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat known to occur within area	In feature area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area	In feature area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area	In feature area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area	In feature area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area	In feature area

Extra Information

State and Territory Reserves [Resource Information]

Protected Area Name	Reserve Type	State	Buffer Status
Garigal	National Park	NSW	In buffer area only
Long Reef	Aquatic Reserve	NSW	In buffer area only
Narrabeen	Aquatic Reserve	NSW	In buffer area only

EPBC Act Referrals [Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
Construction of a high-capacity fibre optic submarine cable	2006/2914	Not Controlled Action	Completed	In feature area
Demolition of Ablutions Block, Snapper Island, NSW	2018/8303	Not Controlled Action	Completed	In buffer area only
Fuel Reduction Proposal Redfield Road, East Killara	2003/1238	Not Controlled Action	Completed	In buffer area only
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
Installation of Sydney-Guam Submarine Cable	2007/3848	Not Controlled Action	Completed	In feature area
Japan-Guam-Australia Sunshine Coast Branch Marine Cable Route Survey (JGA) QLD	2018/8373	Not Controlled Action	Completed	In feature area
sewage treatmemt plant process and reliability renewals project	2005/2186	Not Controlled Action	Completed	In feature area
Subdivision of Precincts 3 and 12, St Patricks Estate	2004/1925	Not Controlled Action	Completed	In buffer area only
Not controlled action (particular manner)				
Construction and operation of a subsea telecommunications cable, between Sydney and New Zealand	2015/7480	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
Japan-Guam-Australia (JGA) Fibre Optic Cable project	2016/7795	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Tasman Global Access submarine cable marine route survey, Narrabeen, NSW	2015/7442	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Referral decision				
Breeding program for Grey Nurse Sharks	2007/3245	Referral Decision	Completed	In feature area

Biologically Important Areas

[Resource Information]

Scientific Name	Behaviour	Presence	Buffer Status
Dolphins			
Tursiops aduncus			
Indo-Pacific/Spotted Bottlenose Dolphin [68418]	Breeding	Likely to occur	In feature area
Seabirds			
Ardenna pacifica			
Wedge-tailed Shearwater [84292]	Foraging	Likely to occur	In buffer area only
Sharks			
Carcharias taurus			
Grey Nurse Shark [64469]	Foraging	Known to occur	In feature area
Whales			
Megaptera novaeangliae			
Humpback Whale [38]	Migration (north and south)	Known to occur	In buffer area only

Bioregional Assessments			[Resource Information]
SubRegion	BioRegion	Website	Buffer Status
Sydney	Sydney Basin	BA website	In feature area

Caveat

1 PURPOSE

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

The report contains the mapped locations of:

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

2 DISCLAIMER

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

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

3 DATA SOURCES

Threatened ecological communities

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

Threatened, migratory and marine species

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

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

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

4 LIMITATIONS

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

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

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

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

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

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

Acknowledgements

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

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

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

Appendix C – Aboriginal Heritage Information Management System Report

AHIMS Web Services (AWS)
Search Result

Your Ref/PO Number : Collaroy

Client Service ID : 1002541

Royal HaskoningDHV

333 Ann Street, Level 10
Brisbane City Queensland 4000

Attention: Jessica Gartrell

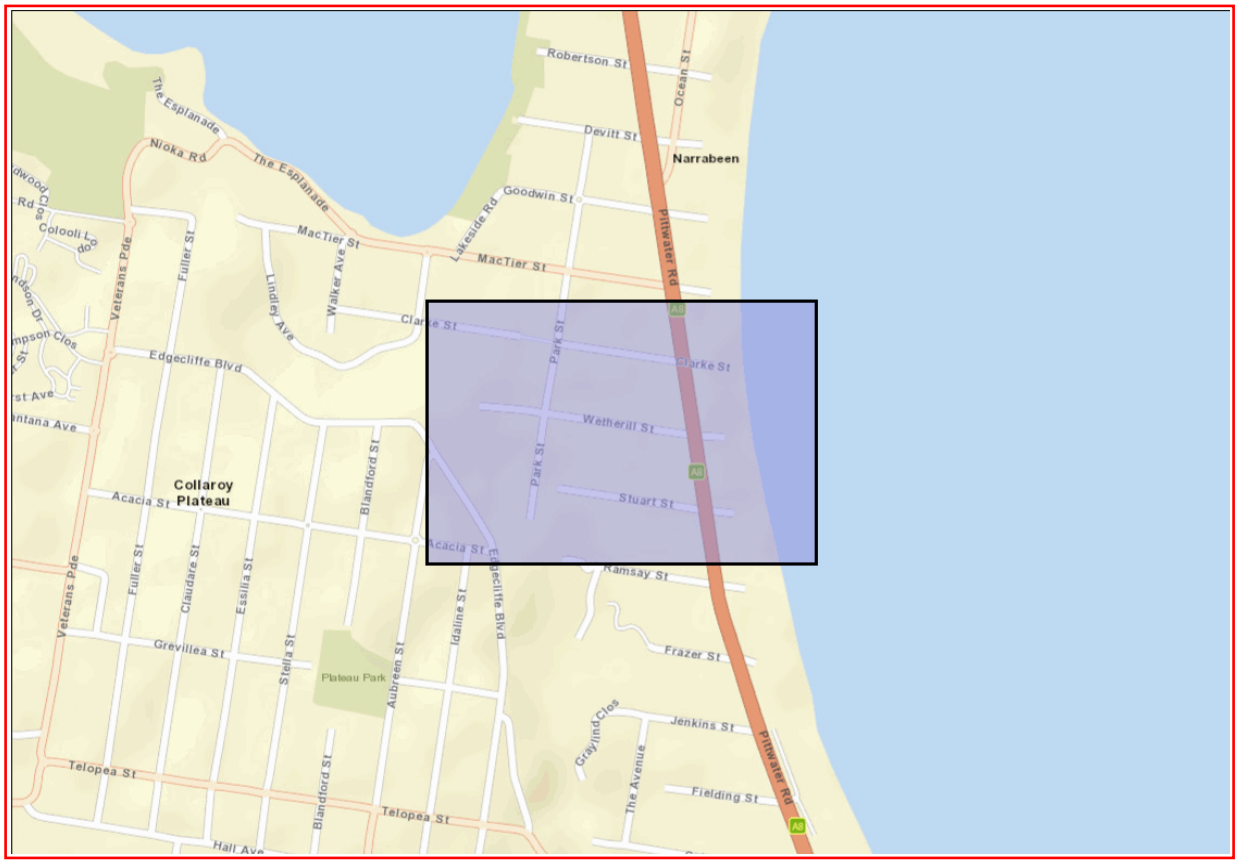
Email: jessica.gartrell@rhdhv.com

Date: 09 May 2025

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lat, Long From : -33.7269, 151.2936 - Lat, Long To : -33.7225, 151.3013, conducted by Jessica Gartrell on 09 May 2025.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.



A search of Heritage NSW AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

0	**Aboriginal sites are recorded in or near the above location.**
0	**Aboriginal places have been declared in or near the above location. ***

If your search shows Aboriginal sites or places what should you do?

- You must do an extensive search if AHIMS has shown that there are Aboriginal sites or places recorded in the search area.
- If you are checking AHIMS as a part of your due diligence, refer to the next steps of the Due Diligence Code of practice.
- You can get further information about Aboriginal places by looking at the gazettal notice that declared it. Aboriginal places gazetted after 2001 are available on the NSW Government Gazette (https://www.legislation.nsw.gov.au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Heritage NSW upon request

Important information about your AHIMS search

- The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not be made available to the public.
- AHIMS records information about Aboriginal sites that have been provided to Heritage NSW and Aboriginal places that have been declared by the Minister;
- Information recorded on AHIMS may vary in its accuracy and may not be up to date. Location details are recorded as grid references and it is important to note that there may be errors or omissions in these recordings,
- Some parts of New South Wales have not been investigated in detail and there may be fewer records of Aboriginal sites in those areas. These areas may contain Aboriginal sites which are not recorded on AHIMS.
- Aboriginal objects are protected under the National Parks and Wildlife Act 1974 even if they are not recorded as a site on AHIMS.
- This search can form part of your due diligence and remains valid for 12 months.

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