total earth care

Review of Environmental Factors:

McKillop Park Boardwalk, Freshwater

Northern Beaches Council

Total Earth Care Pty Ltd

November 2022

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McKillop Park Boardwalk, Freshwater
NSW 2096

Northern Beaches Council

Quality Control		
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Revision/Version No.	**Date of revision**	**Summary**
Draft rev 1	2/11/2022	Draft for client review
Final	1/11/2022	Final with client comments and updates

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Executive Summary

Total Earth Care (TEC) has been commissioned by the Northern Beaches Council to produce this Review of Environmental Factors (REF) for the proposed construction of a boardwalk and associated viewing platforms at McKillop Park, Freshwater NSW 2096. The site is within the Northern Beaches Local Government Area (LGA) and zoned as RE1 “Public Recreation” as outlined by Warringah Local Environment Plan 2011 (WLEP 2011).

The site of the proposal is to become Zone 1 of the Freshwater Headland & Beach Boardwalks (Northern Beaches Council 2019) located within McKillop Park and is set within the coastal fringe between urban environment and the South Pacific Ocean. The proposal consists of the construction of an elevated boardwalk (with associated, handrails, balustrades, footings and viewing platforms) and is expected to include the following scope of works:

Pre-construction:

- Site preparation including the clearing of vegetation.
- Installation of ancillary facilities and stockpile areas.

Construction:

- Boardwalk installation including minor excavation works, rock grinding and drilling for the installation of footings, cementing and substrate compaction.

Post-construction:

- Remediation of disturbed areas.
- Removal of ancillary facilities and stockpile areas.

The key environmental impacts identified as a result of the proposal include:

- The clearing of approximately 0.03ha of Plant Community Type (PCT) 3812 - *Sydney Coastal Sandstone Heath* across all strata layers (upper, mid and ground stratum).
- Minor alterations to surface hydrology and disturbances to the soil profile.

Key mitigation measures that would reduce the severity of key impacts include the following:

- Establish sediment controls in accordance with the Blue Book (Landcom 2004).
- Identify areas suitable to revegetate within the site utlising plant species respective of PCT 3812.

The results of the initial Flora and Fauna Impact Assessment outlined in Appendix E determined no significant impact to threatened flora and fauna and their habitat nor significant impacts to threatened ecological communities as a result of the proposal. The findings outlined in this REF further detail that the proposal will not have a significant impact on the Environment, MNES and Natural Resources, Aboriginal and European Heritage, Visual Amenity and the broader Community.

1 Introduction and Background

Total Earth Care (TEC) has been commissioned by Northern Beaches Council (the Council) to produce this Review of Environmental Factors (REF) for the proposed construction of an elevated boardwalk at McKillop Park in Freshwater (hereafter referred to as 'the proposal').

McKillop Park is located adjacent to Lumsdaine Drive within the suburb of Freshwater and is set in the coastal fringe between urban environment, Freshwater and Curl-Curl beach, and the South Pacific Ocean. The proposal broadly aims to:

- Construct an elevated platform as a part of Councils Zone 1 Freshwater Headland & Beach Boardwalks.
- Improve public access across the headland and McKillop Park area.
- Enhance and facilitate scenic amenity.

The current proposal covers Zone 1 of Council's Freshwater Headland & Beach Boardwalks (the site) as outlined in Council's *Concept Design Plan – McKillop Park Boardwalk* (2019) the *Freshwater Coastal Open Space Masterplan* Council adopted in 2022. The site consists of the area assessed under the scope of the proposal and is comprised of the area of land to be directly impacted by the proposal. The 'study area' comprises the site in addition to the surrounding land that may be potentially indirectly affected by or affect the proposal. The 'locality' encompasses a larger area that includes more distant environmental features (i.e., receiving air and water, mobile native biodiversity).

The primary function of the site is to offer recreation opportunities for the public and provide ecological values that further support local and endemic biodiversity. This is through the provision of habitat for native flora and fauna, connectivity across the landscape and provision of ecosystem functions.

The site currently consists of a dense heath vegetation supported by sandstone soils and interspersed rock outcroppings and soaks within a coastal environment.

This Review of Environmental Factors (REF) has been prepared to fulfil the requirements of Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

1.1 Brief Description of the Proposed Activity

Description of proposed activity	Construction of an elevated boardwalk at McKillop Park
Name of Location	McKillop Park, Freshwater NSW 2096
Location of activity	The activity is proposed to take place within the registered lot boundary of Lot 7108, DP1074767 located in the north-eastern section of McKillop Park at 145 Evans Street, Freshwater NSW 2096.

1.2 Proponent's Details

Organisation	Northern Beaches Council
ABN	57 284 295 198
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Position	Senior Project Officer - Park Assets - Planning, Design & Delivery
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2 Legal Framework & Permissibility

2.1 Commonwealth Legislation

2.1.1 Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)

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). Under the EPBC Act, approval is required for actions that have, will have, or are likely to have a significant impact on MNES.

The following MNES were deemed to have a high likelihood of occurring on site:

Fauna:

- Large-eared Pied Bat (*Chalinolobus dwyeri*) – Vulnerable
- Grey-headed Flying-fox (*Pteropus poliocephalus*)– Vulnerable

Assessments of Significance for species deemed highly likely to occur on site are provided in Appendix E. The proposal will not significantly impact these species, nor their habitat as such, no referral to the Minister is required.

2.2 NSW Legislation and Policies

2.2.1 Environmental Planning and Assessment Act 1979

The *Environmental Planning and Assessment Act 1979* (EP&A Act) establishes the system of environmental planning and assessment in NSW. This proposal is subject to the environmental impact assessment and planning approval requirements of Division 5.1 of the EP&A Act. Division 5.1 of the EP&A Act specifies the environmental impact assessment requirements for activities undertaken by public authorities which do not require development consent under Division 4.1 of the EP&A Act.

In accordance with Section 5.5 of the EP&A Act, Northern Beaches Council, as both the proponent and determining authority, must examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of the proposal. Section 171 within Division 1 of Part 8 of *the Environmental Planning and Assessment Regulation 2021* (EP&A Regulation) defines the factors which must be considered when determining if an activity assessed under Division 5.1 of the EP&A Act would have a significant impact on the environment.

2.2.2 Biodiversity Conservation Act 2016

The *Biodiversity Conservation Act 2016* (BC Act) seeks to conserve biological diversity and promote ecologically sustainable development, to prevent extinction and promote recovery of threatened species, populations, and ecological communities and to protect areas of outstanding biodiversity value.

The following threatened species listed under the BC Act were deemed to have a high likelihood of occurring on site:

Fauna:

- Eastern Pygmy-possum (*Cercartetus nanus*) – Vulnerable
- Long-nosed Bandicoot, North Head (*Perameles nasuta*) – Endangered Population
- Large Bent-winged Bat (*Miniopterus orianae oceanensis*) – Vulnerable
- Large-eared Pied Bat (*Chalinolobus dwyeri*) – Vulnerable
- Little Bent-winged Bat (*Miniopterus australis*) – Vulnerable
- Grey-headed Flying-fox (*Pteropus poliocephalus*) – Vulnerable
- Red-crowned Toadlet (*Pseudophryne australis*) – Vulnerable
- White-bellied Sea-Eagle (*Haliaeetus leucogaster*) – Vulnerable
- Eastern Osprey (*Pandion cristatus*) – Vulnerable

One (1) Eastern Osprey (*Pandion cristatus*) was identified within the study area. Assessments of Significance for species deemed highly likely to occur on site or observed on site are provided in Appendix E. The proposal will not result in a significant impact to these species.

The proposal will not impact areas of outstanding biodiversity value.

2.2.3 Coastal Management Act 2016

The Coastal Management Act 2016 (CM Act) promotes strategic and integrated management, use and development of the coastal environment in an ecologically sustainable way. The CM Act defines the coastal zone as comprised of four coastal management areas including:

- coastal wetlands and littoral rainforests area
- coastal vulnerability area
- coastal environment area and
- the coastal use area

Two coastal management areas identified under Part 2 of the CM Act were identified under the State Environmental Planning Policy (Resilience and Hazards) 2021 (Resilience and Hazards SEPP 2021), these include the coastal environment area and the coastal use area.

2.2.3.1 Coastal environment area

Part 2 section 8 of the CM Act defines land identified as the coastal environment area under the Resilience and Hazards SEPP 2021 to consist of *land containing coastal features such as the coastal waters of the State, estuaries, coastal lakes, coastal lagoons and land adjoining those features, including headlands and rock platforms.*

The proposal is located on a headland within the coastal environment area and will there for incur the following management objectives:

- *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* and
- *to maintain and, where practicable, improve public access, amenity and use of beaches, foreshores, headlands and rock platforms.*

2.2.3.2 Coastal use area

Part 2 section 8 of the CM Act defines land identified as the coastal use area under the Resilience and Hazards SEPP 2021 to consist of *land adjacent to coastal waters, estuaries, coastal lakes and lagoons where development is or may be carried out (at present or in the future).*

The proposal is located on a headland adjacent to the South Pacific Ocean and within the coastal use area and will there for incur the following management objectives:

a) *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*
b) *to accommodate both urbanised and natural stretches of coastline.*

Within consideration for the impact assessment and the safeguards and mitigation measures outlined in this REF, the proposal is consistent with the management objectives outlined under the two coastal management areas identified under Part 2 of the CM Act.

2.2.4 Biosecurity Act 2015

The Biosecurity Act 2015 identifies priority weeds and Pest Animal Species and assigns strategies for their containment, removal or management. Occupiers of land have responsibility under the Act for taking appropriate action for priority weeds on the land they occupy.

Twenty-five (25) weed species identified on site. Five species, *Lantana camara* (Lantana), *Ipomoea indica* (Morning Glory), *Ageratina riparia* (Mistflower), *Acetosa sagittate* (Rambling dock), and *Holcus lanatus* (Yorkshire Fog), are listed under the Greater Sydney Regional Strategic Weed Management Plan 2017-2022 (LLS 2021). *Lantana camara* (Lantana) and *Asparagus aethiopicus* (Asparagus Fern) are listed Weeds of National Environmental Significance (WoNS). Appendix EFlora and Fauna Impact Assessment identifies weed species identified within the site listed as a Biosecurity Risk and outlines the weed species, category of management and recommended treatment methods.

2.3 State Environmental Planning Policies

2.3.1 State Environmental Planning Policy (Biodiversity and Conservation) 2021

2.3.1.1 Chapter 2 – Vegetation in Non-rural Areas

Chapter 2 Vegetation in non-rural areas of the State Environmental Planning Policy (Biodiversity and Conservation) 2021 (Biodiversity and Conservation SEPP) aims to:

- Protect the biodiversity values of trees and other vegetation in non-rural areas of the State, and
- To preserve the amenity of non-rural areas of the State through the preservation of trees and other vegetation.

This chapter of the Biodiversity and Conservation SEPP applies to the proposal as the site occurs within the Northern Beaches Local Government Area (LGA) and is zoned RE1: Public Recreation, as listed in the SEPP.

The proposal is justified under this SEPP as the removal of approximately 0.03ha of PCT 3812 across all strata layers and will result in a minor reduction in the biodiversity values across the study area. The area of this PCT required to be remove will not result in a reduction in the amenity of the site nor result in any significant removal of signification vegetative growth forms such as trees.

2.3.1.2 Chapter 6 – Bushland in Urban Area

Chapter 6 *Bushland in urban areas* of the *State Environmental Planning Policy (Biodiversity and Conservation) 2021* (Biodiversity and Conservation SEPP) specifically aims to:

- To protect the remnants of plant communities which were once characteristic of land now within an urban area,
- To retain bushland in parcels of a size and configuration which will enable the existing plant and animal communities to survive in the long term,
- To protect rare and endangered flora and fauna species,
- To protect habitats for native flora and fauna,
- To protect wildlife corridors and vegetation links with other nearby bushland,
- To protect bushland as a natural stabiliser of the soil surface,
- To protect bushland for its scenic values, and to retain the unique visual identity of the landscape,
- To protect significant geological features,
- To protect existing landforms, such as natural drainage lines, watercourses and foreshores,
- To protect archaeological relics,
- To protect the recreational potential of bushland,
- To protect the educational potential of bushland,
- To maintain bushland in locations which are readily accessible to the community, and
- To promote the management of bushland in a manner which protects and enhances the quality of the bushland and facilitates public enjoyment of the bushland compatible with its conservation.

This chapter of the Biodiversity and Conservation SEPP applies to the proposal as the site occurs within the Northern Beaches LGA (listed in Schedule 5 of the SEPP) and it is zoned RE1: Public Recreation, therefore it is land reserved for public open spaces.

Section 6.6 *Public authorities* details that:

A public authority shall not disturb bushland for a purpose referred to in section 6.5(2) unless it has first had regard to the aims of this Chapter.

The proposal is justified under the Biodiversity and Conservation SEPP if the public authority considers the impacts and mitigation measures outlined in Appendix E.

2.3.2 *State Environmental Planning Policy (Resilience and Hazards) 2021*

2.3.2.1 Chapter 2 – Coastal Management

Chapter 2 Coastal management of the State Environmental Planning Policy (Resilience and Hazards) 2021 (Resilience and Hazards SEPP 2021) aims to:

- Promote an integrated and co-ordinated approach to land use planning in the coastal zone in a manner consistent with the objects of the Coastal Management Act 2016, including the management objectives for each coastal management area, by
    - Managing development in the coastal zone and protecting the environmental assets of the coast, and
    - Establishing a framework for land use planning to guide decision-making in the coastal zone.

The site is mapped under Division 3 Coastal environment area as outlined in Figure 3-3, indicating that development consent must not be granted to development on land that is within the coastal environment area unless the consent authority has considered whether the proposed development is likely to cause an adverse impact on the following:

- The integrity and resilience of the biophysical, hydrological (surface and groundwater) and ecological environment,
- Coastal environmental values and natural coastal processes,
- The water quality of the marine estate (within the meaning of the Marine Estate Management Act 2014), in particular, the cumulative impacts of the proposed development on any of the sensitive coastal lakes identified in Schedule 1,
- Marine vegetation, native vegetation and fauna and their habitats, undeveloped headlands and rock platforms,
- Existing public open space and safe access to and along the foreshore, beach, headland or rock platform for members of the public, including persons with a disability,
- Aboriginal cultural heritage, practices and places and
- The use of the surf zone.

Development consent must not be granted to development on land to which this section applies unless the consent authority is satisfied that:

- The development is designed, sited and will be managed to avoid an adverse impact referred to in subsection (1), or
- If that impact cannot be reasonably avoided—the development is designed, sited and will be managed to minimise that impact, or
- If that impact cannot be minimised—the development will be managed to mitigate that impact.

The proposal is justified under Division 3 of the Resilience and Hazards SEPP 2021 as it is unlikely to have an adverse effect on the coastal environment if the impacts and mitigation measures outlined in this REF and Appendix E are implemented.

The site is also mapped under Division 4 Coastal use area (Figure 3-3) indicating that development consent must not be granted to development on land that is within the coastal use area unless the consent authority has considered whether the proposed development is likely to cause an adverse impact on the following

- Existing, safe access to and along the foreshore, beach, headland or rock platform for members of the public, including persons with a disability,
- Overshadowing, wind funnelling and the loss of views from public places to foreshores,
- The visual amenity and scenic qualities of the coast, including coastal headlands,
- Aboriginal cultural heritage, practices and places,
- Cultural and built environment heritage, and

and is satisfied that:

- The development is designed, sited and will be managed to avoid an adverse impact referred to in paragraph (a), or
- If that impact cannot be reasonably avoided—the development is designed, sited and will be managed to minimise that impact, or
- If that impact cannot be minimised—the development will be managed to mitigate that impact, and
- Has taken into account the surrounding coastal and built environment, and the bulk, scale and size of the proposed development.

The proposal is justified under Division 4 of the Resilience and Hazards SEPP 2021 as it is unlikely to have an adverse effect on the coastal environment if the impacts and mitigation measures outlined in this REF and Appendix E are implemented.

2.3.3 State Environmental Planning Policy (Transport and Infrastructure) 2021

Division 12 Parks and other public reserves of the State Environmental Planning Policy (Transport and Infrastructure) 2021 (Transport and Infrastructure SEPP 2021) specifically outlines:

- Any of the following development may be carried out by or on behalf of a council without consent on a public reserve under the control of or vested in the council:
  - Roads, pedestrian pathways, cycleways, single storey car parks, ticketing facilities, viewing platforms and pedestrian bridges and recreation areas and recreation facilities (outdoor), but not including grandstands

The proposal is justified under the Transport and Infrastructure SEPP 2021 as it will involve the construction of a pedestrian pathway through the means of Council providing a publicly accessible boardwalk.

2.4 Local Legislation and Frameworks

2.4.1 Warringah Local Environmental Plan 2011

The Warringah Local Environment Plan 2011 (WLEP 2011) is the primary environmental planning instrument (EPI) for the site. In relation to this REF, the site and scope of works, the WLEP 2011 aims to:

- In relation to environmental quality, to
  - Protect, conserve and manage biodiversity and the natural environment, and
  - Manage environmental constraints to development including acid sulfate soils, land slip risk, flood and tidal inundation, coastal erosion and biodiversity

The proposal will result in the clearing of approximately 0.03ha of PCT 3812 across all strata layers and will result in a minor reduction in the biodiversity values across the study area. The impacts and mitigation measures outlined in this REF and Appendix E aim to work in alignment with the WLEP 2011 and will result in minimal impacts to ecology and the environment.

2.4.1.1 Part 6 Additional local provisions

The objectives of this clause are as follows:

- To avoid significant adverse impacts on development and on properties in the vicinity of development sites resulting from landslides originating either on or near sloping land,
- To ensure the impacts of storm water runoff from development on or near sloping land are minimised so as to not adversely affect the stability of the subject and surrounding land and
- To ensure subsurface flows are not adversely affected by development so as to not impact on the stability of existing or adjoining land.

The site is mapped under 'Area B – Flanking Slopes 5° to 25°' on the WLEP Landslip Risk Map (Figure 2-1).

Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that:

- The application for development has been assessed for the risk associated with landslides in relation to both property and life, and
- The development will not cause significant detrimental impacts because of stormwater discharge from the development site, and
- The development will not impact on or affect the existing subsurface flow conditions.

The proposal in consistent with this clause as Geotechnical consultation has identified an appropriate location for the proposal that is geotechnically sound and therefore unlikely to result in a risk of landslide. The proposal is unlikely to cause significant discharge of stormwater from the site as it consists of a

boardwalk and due to it being situated on bedrock with a shallow layer of topsoil it is unlikely significantly impact subsurface flow conditions.

2.4.2 Warringah Development Control Plan 2011

The Warringah Development Control Plan 2011 (WDCP 2011) contains aims, objectives, and rules to achieve satisfactory development outcomes outlined in the land application map for the WDCP. The WDCP 2011 supplements the controls in the WLEP 2011 and establishes the standards, information requirements, aims, objectives and rules under which all development is to be assessed.

In relation to this REF, the site and scope of works Part E – The Natural Environment, of the WDCP 2011 aims to:

2.4.2.1 E3: Threatened species, populations, ecological communities listed under State or Commonwealth legislation, or High Conservation Habitat

- To protect and promote the recovery of threatened species, populations and endangered ecological communities.
- To protect and enhance the habitat of plants, animals and vegetation communities with high conservation significance.
- To preserve and enhance the area's amenity, whilst protecting human life and property.
- To improve air quality, prevent soil erosion, assist in improving water quality, carbon sequestration, storm water retention, energy conservation and noise reduction.
- To provide natural habitat for local wildlife, maintain natural shade profiles and provide psychological & social benefits.

2.4.2.2 E4: Wildlife Corridors

- To preserve and enhance the area's amenity, whilst protecting human life and property.
- To improve air quality, prevent soil erosion, assist in improving water quality, carbon sequestration, storm water retention, energy conservation and noise reduction.
- To provide natural habitat for local wildlife, maintain natural shade profiles and provide psychological & social benefits.
- To retain and enhance native vegetation and the ecological functions of wildlife corridors.

2.4.2.3 E5 Native Vegetation

- To preserve and enhance the area's amenity, whilst protecting human life and property.
- To improve air quality, prevent soil erosion, assist in improving water quality, carbon sequestration, storm water retention, energy conservation and noise reduction.
- To provide natural habitat for local wildlife, maintain natural shade profiles and provide psychological & social benefits.
- Promote the retention of native vegetation in parcels of a size, condition and configuration which will as far as possible enable local plant and animal communities to survive in the long term.
- To maintain the amount, local occurrence and diversity of native vegetation in the area

2.4.2.4 E9 Coastal hazards

- To ensure that development does not adversely impact on the coastal processes affecting adjacent land.
- To retain the area's regional role for public recreation and amenity.

The proposal will result in the clearing of approximately 0.03ha of PCT 3812 across all strata layers and will result in a minor reduction in the biodiversity values across the study area. The impacts and mitigation measure outlined in this REF and Appendix E aim to work in alignment with the WDCP 2011 and will result in minimal impacts to ecology and the environment and therefore justify the proposal.

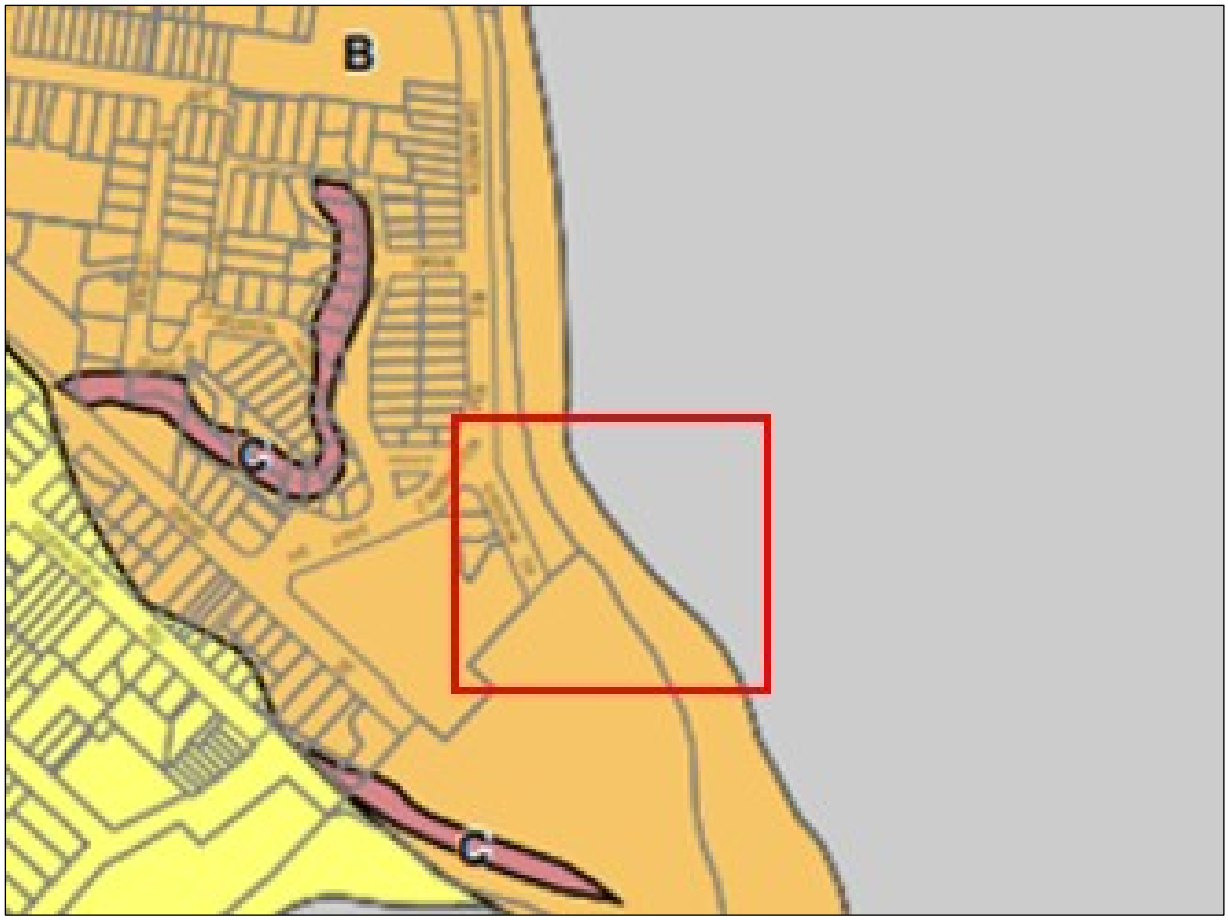


Figure 2-1 WLEP 2011 Landslip Risk Map (*Note the red rectangle approximately denotes the site location)

Table 2-1. Licences/Permit that may be applicable to the proposed activity

Act	Authority	Type	Licence Required?
Biodiversity Conservation Act 2016	Office of Environment & Heritage	2.11 - Licence to pick or harm threatened species, populations or ecological communities or damage habitat	No
Water Management Act 2000	NSW Office of Water	Section 89 - Water use approvals	No
		Section 90 - Water management work approvals	No
		Section 91 - Activity approvals	No

3 The Site and Surrounding Environment

3.1 Location of Activity

Site Name	McKillop Park, Freshwater
Street address	McKillop Park, 142 Evans Street, Freshwater, NSW 2102. The work will be conducted in Lot 7108, DP1074767
Site Co-ordinates	--33° 46' 49", 151° 17' 42"
Council (Local Government Area)	Northern Beaches Council
Site Description	The site comprises the area of land likely to be directly impacted by the proposal. The study area comprises the subject site and the surrounding land which may be indirectly affected by the proposal or affect the proposal. The locality encompasses a larger area that includes neighbouring properties and areas of native biodiversity values nearby. The site consists of one major work area which is approximately 0.04ha located at the North-Eastern extent of McKillop Park, Freshwater, NSW 2102 (Figure 3-1). The site is located within the suburb of Freshwater, encompassed by the Northern Beaches Council LGA. The site is zoned as RE1 – 'Public Recreation'. The soil landscape on site is a mapped as 'Lambert' in its entirety which broadly consists of Hawkesbury Sandstone, undulating to rolling low hills and vegetation consisting of predominantly uncleared open-heathlands, closed-heathlands and scrublands, with patches of low eucalypt woodland. The heathlands and scrublands are often exposed to strong winds. Their shallow, poorly drained soils fluctuate between being saturated or dry. The vegetation on site consists of PCT 3812 - *Sydney Coastal Sandstone Heath* that can broadly be described as a mid-high to tall, closed heathland found on rocky Hawkesbury sandstone ocean and harbour headlands along the metropolitan Sydney coastline. Sites are typically windblown and emergent eucalypts are rare. The upper stratum is almost always dominated by *Banksia ericifolia* and *Allocasuarina distyla*. *Kunzea ambigua* or *K. capitata* may also be locally abundant, and sites where these species dominate appear to have been disturbed in the past. The site survey identified five locally dependent fauna, including one threatened species Eastern Osprey (*Pandion cristatus*) and 63 Flora species of which 38 were native and 25 exotic/weed species. These species are further detailed in Appendix E. Twenty-five weed species were identified across the site. These species and associated management and control methods are outlined in Appendix E. No Aboriginal or European heritage items were identified during the site survey. The site offers scenic and visual amenity attracting recreational opportunities for the surrounding community.

Figure 3-1 Proposed Boardwalk Site

3.2 Description of the Existing Environment

3.2.1 Meteorological Data

The nearest weather station (Sydney Harbour – 7.9km) records an average monthly rainfall of 61.9mm. The average daily maximum temperature for August ranged from 11.9°C-18.2 although in summer the temperature can sometimes exceed 40°C (BOM, 2022).

3.2.2 Topography

The site consists of minor undulations in terrain across varying terrain such as exposed rock, sand, and soil to complete vegetative cover. The site has an elevation of approximately 30m above sea level with an easterly aspect.

3.2.3 Surrounding Land Uses

The site is situated on the coastline within a public recreational zone and is surrounded by residential zones, Curl Curl and Freshwater beach and the South Pacific Ocean. The surrounding area is zoned R2 '*Low Density Residential'.*

3.2.4 Geology/geomorphology

The site's topography consists of undulating to rolling low hills with a local relief of 20–120 m and slopes <20%. Broad convex crests and plateau surfaces are prevalent with gently to moderately inclined side slopes, often associated with small hanging valleys. Characteristic sandstone bedrock that outcrops as wide benches (10–100 m), with broken scarps 1–4 m high. Small, poorly drained seepage areas are common (DPE, 2022i).

3.2.5 Soil types and properties

The entire site has been mapped as 'Lambert' as outlined in Figure 3-2. This soil landscape typically consists of Hawkesbury Sandstone, which is comprised of medium to coarse-grained quartz sandstone with minor shale and laminite lenses.

Figure 3-2 Soil Landscape Mapping

3.2.6 Waterways Including Wild and Scenic Rivers

No waterways including wild and scenic rivers are mapped on or in proximity to the site or the study area.

3.2.7 Coastal Risk Areas

The site is not mapped in a coastal risk area as outlined in the WLEP 2011.

3.2.8 Resilience and Hazards SEPP 2021 Mapping - Coastal Wetlands and Littoral Rainforests

The site is not mapped as containing Coastal wetlands or Littoral rainforests under the Resilience and Hazards SEPP 2021.

3.2.9 Resilience and Hazards SEPP 2021 Mapping - Coastal Environment Area and Coastal Use Area

The site is mapped under Division 3 Coastal Environment Area and Division 4 Coastal Use Area under the Resilience and Hazards SEPP 2021 as outlined in Figure 3-3. The proposal is set to satisfy the objectives for flora and fauna following the implementation of the mitigation measures outlined within Appendix E. This REF further details potential impacts to cultural and recreation values by the proposal in alignment with the Division 3 and 4 of this SEPP.

3.2.10 Ecological Communities (Threatened Ecological Communities and Regionally Significant Communities)

The entire site has historically been mapped as PCT 3812 – *Sydney Coastal Sandstone Heath*, as outlined in Figure 3-4. Ground truthing of this PCT concluded that the site's flora species and vegetation structure conforms to PCT 3812. Further justification of this conclusion is outlined in Appendix E.

Threatened Ecological Communities

No Threatened Ecological Communities are associated with PCT 3812.

Figure 3-3 State Environmental Planning Policy (Resilience and Hazards) 2021 Mapping

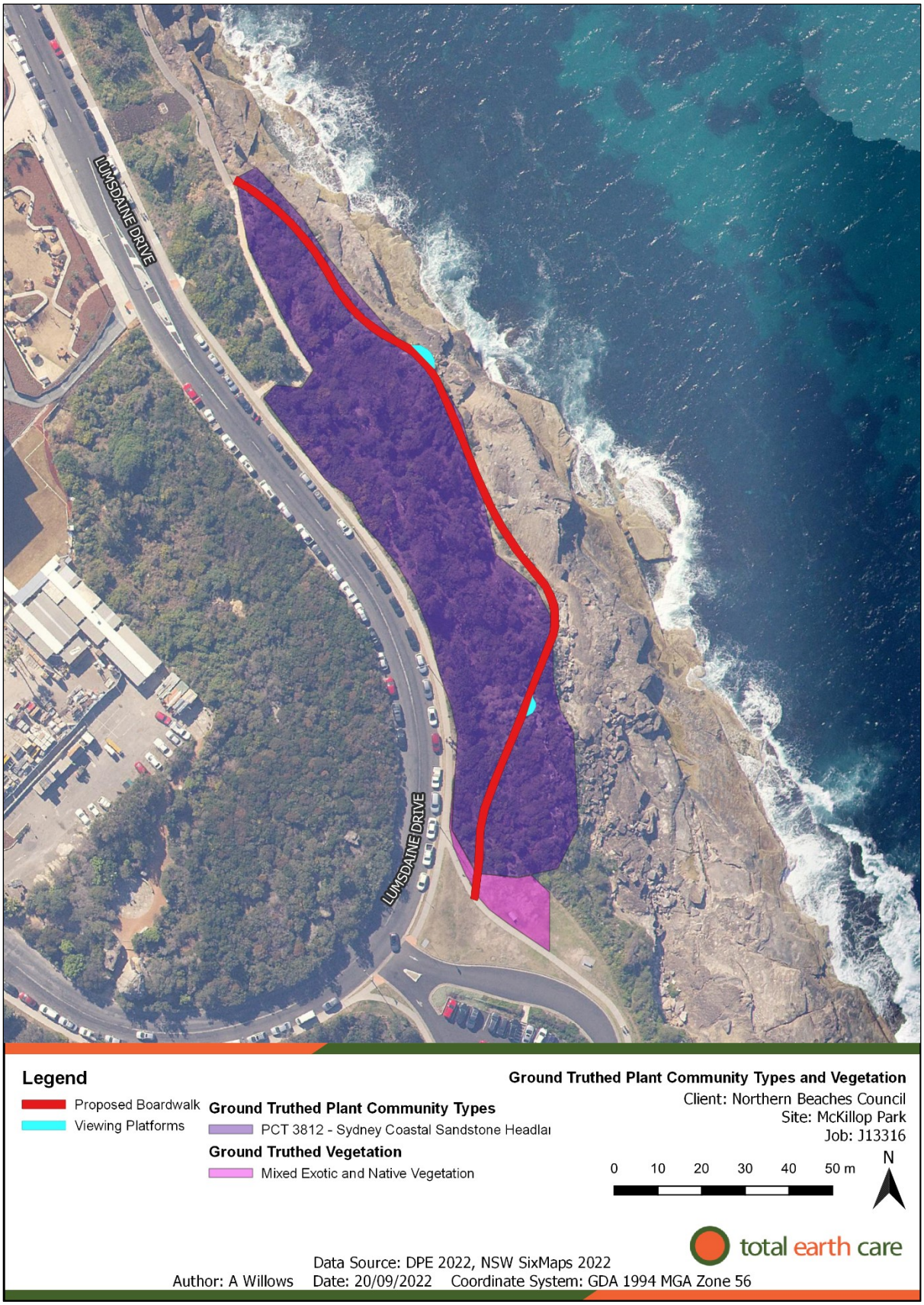


Figure 3-4 Ground Truthed Plant Community Types

3.2.11 Flora (Including Flora of Conservational Significance)

A total of sixty-three (63) plant species were recorded during the site survey. Of these, thirty-eight (38) are native twenty-five (25) are exotic. All flora species recorded during the current survey conducted on the 24th of August 2022 and are listed in Appendix E.

Weeds and Weed Management under the Biosecurity Act 2015

Of the twenty-five (25) exotic species identified on site, five species, *Lantana camara* (Lantana), *Ipomoea indica* (Morning Glory), *Ageratina riparia* (Mistflower), *Acetosa sagittate* (Rambling dock), and *Holcus lanatus* (Yorkshire Fog), are listed under the Greater Sydney Regional Strategic Weed Management Plan 2017-2022 (LLS 2021). *Lantana camara* (Lantana) and *Asparagus aethiopicus (*Asparagus Fern) are listed Weeds of National Environmental Significance (WoNS). The land holders obligations under this Act and all weed species which require management under the NSW Biosecurity Act are listed in Appendix E.

Threatened Flora

No threatened flora species were identified during the current survey. The BioNet Wildlife Atlas identified seven (7) threatened flora species previously recorded as occurring within a 5km radius of the site, and the EPBC Protected Matter Search Tool (PMST) identified an additional seven (7) threatened flora species likely to have habitat on the site or nearby. Appendix E outlined that no threatened flora species are highly likely to occur on site and therefore no assessment of significant is required. This was confirmed during the site assessment conducted on the 24th of August 2022.

3.2.12 Fauna (Including Fauna of Conservation Significance)

A total of five (5) native fauna species and one (1) introduced species were recorded during the site survey. All fauna species recorded during the current survey conducted on the 24th of August 2022 are listed in Appendix E.

Threatened Fauna

One threatened fauna species was identified within the study area during the current survey. The Eastern Osprey (*Pandion cristatus*) was observed surrounding the site, within the study area. The assessment of significance outlined in Appendix E concluded that the Proposal would have no significant impact to this species. The BioNet Atlas (DPE 2022b) identified sixty-seven (67) threatened fauna species and the EPBC Protected Matter Search Tool (DCCEEW 2022) identified an additional fifty-six (56) threatened fauna species which have previously been recorded within a 5km radius of the site.

Nine (9) threatened fauna species were found to have a high likelihood of occurring on site (refer to Appendix E for this assessment). These are:

- Eastern Pygmy-possum (*Cercartetus nanus*) – Vulnerable under the BC Act
- Eastern Osprey (*Pandion cristatus*) – Vulnerable under the BC Act
- Long-nosed Bandicoot, North Head (*Perameles nasuta*) – Endangered Population under the BC Act
- Large-eared Pied Bat (*Chalinolobus dwyeri*) – Vulnerable under the BC Act and EPBC Act
- Little Bent-winged Bat (*Miniopterus australis*) – Vulnerable under the BC Act
- Grey-headed Flying-fox (*Pteropus poliocephalus*) – Vulnerable under the BC Act and Vulnerable under the EPBC Act
- Red-crowned Toadlet (*Pseudophryne australis*) – Vulnerable under the BC Act
- White-bellied Sea-Eagle (*Haliaeetus leucogaster*) – Vulnerable under the BC Act

Assessments of significance for species with a high likelihood of occurring on site are provided in Appendix E.

3.2.13 Areas of Outstanding Biodiversity Value Declared under the BC Act

The site does not contain Areas of Outstanding Biodiversity Value.

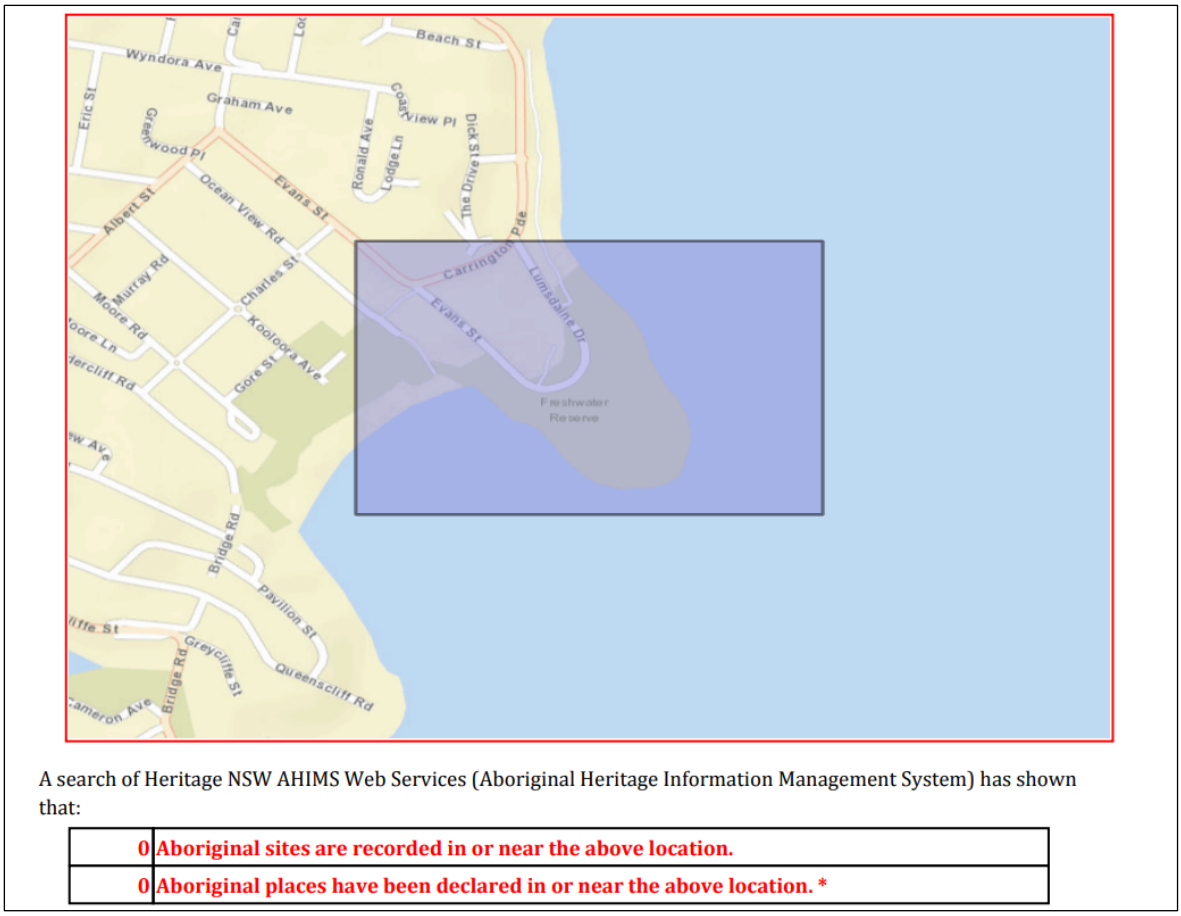
3.2.14 Wilderness (Either Nominated or Declared)

There are no areas nominated or declared as “wilderness” on the site or within the study area.

3.2.15 Aboriginal Cultural Heritage

An extensive search was conducted using the DPE Aboriginal Heritage Information Management System (AHIMS) Aboriginal Sites Register, which indicated that there are no known or previously registered Aboriginal sites located within or surrounding site (Figure 3-5).

Should any items of possible Aboriginal Heritage be unearthed during the proposed works, the contractor will cease works and contact Council or DPE immediately for further investigation.



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. *

Figure 3-5 Results of the AHIMS search

3.2.16 National/State/Local Natural or Cultural Heritage Values

The site is mapped within the Coastal Cliffs Conservation Area which extends between South Curl Curl Beach and Freshwater Beach. The Conservation Areas statement of significance consists of:

The South Curl Curl-Freshwater Coal Cliffs have significant existence value, demonstrating the underlying Hawkesbury Sandstone geological formation of the eastern edge of the Sydney Basin. They provide a raised dramatic profile to the coastline and high viewing platforms, while their rock platforms provide valued opportunities for fishing and marine life. Their aesthetic and recreational values have been much valued by the community since the early 1920s, with ocean swimming baths established on their rock platforms at the southern and northern ends of the cliff line in the mid-1920s (DPE 2022k).

3.2.17 Vegetation of Cultural Landscape Value

There is no vegetation of cultural landscape value within the Site.

3.2.18 Other Cultural Heritage Values

There are no other cultural heritage values within the site.

3.2.19 Recreational Values

The site is within a public recreation area with walking tracks and viewing areas accessible throughout the study area. As such, McKillop Park provides recreational values to public users.

3.2.20 Interests of External Stakeholders (e.g. Adjoining Landowners, Leaseholders)

The adjoining landowners and leaseholders are medium density residential lots. There is informal public access to the site, with members of the public frequenting and accessing the site and its surrounds through deviations from the existing walking track.

3.2.21 Matter of National Environmental Significance

The EPBC Protected Matter Search Tool (PMST) (DCCEW 2022) outlined in Appendix B identified that the following Matters of National Environmental Significance (MNES) may occur within 5km of the site:

- National Heritage Places – 1
- Listed Threatened Ecological Communities – 9
- Listed Threatened Species – 99
- Listed Migratory Species – 64

The proposal is not located within *North Head – Sydney* the national heritage place identified by the PMST. The site is located within in its buffer area only, as the proposal is located approximately 8km away it is unlikely that the Proposal will significantly impact this MNES.

Of all the TEC's listed in the PMST report, four were located within the feature area (5km radius) of the site. These TECs include:

- Coastal Swamp Oak (*Casuarina glauca*) Forest of New South Wales and Southeast Queensland listed as Endangered.
- Coastal Upland Swamps in the Sydney Basin Bioregion, listed as Endangered.
- Eastern Suburbs Banksia Scrub of the Sydney Region, listed as Critically Endangered.
- River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria, listed as Critically Endangered.

Plant Community Type 3812 was identified across the entirety of the site as part of the site survey. No TECs listed above are associated with this PCT and therefore will not be affected by the works.

Of the threatened and migratory species, two (2) species listed under the EPBC Act have a high likelihood of occurring on site as outlined in Appendix E. These include:

- Large-eared Pied Bat (*Chalinolobus dwyeri*) – listed as Vulnerable
- Grey-headed Flying-fox (*Pteropus poliocephalus*) – listed as Vulnerable

Assessments of Significance for these species are provided in Appendix E. These assessments concluded that the proposal will have no significant impact to these species. Therefore, no Species Impact Statement (SIS) is required.

4 Proposed Activity

4.1 Description of the Proposed Activity

The below description of the proposal is based on the following sources:

- Developed Concept Design – Zone 1 Northern Beaches Council (DioDrone 2018)
- Concept Design Plan: Zone 1 Freshwater Headland & Beach Boardwalks (Northern Beaches Council 2019)
- Adopted Freshwater Coastal Open Space Masterplan (Northern Beaches Council 2018) *Note the master plan provides an indicative boardwalk alignment only as the final alignment will be subject to site surveys and levels. The concept design plan for the zone 1 boardwalk alignment boarders on to a local Bushcare group revegetation project that is likely to be sensitive to disturbances. It is recommended that the final design consider the locations the revegetation projects with consultation with the Bushcare group managing the site. See section 5.2 for a discussion on current and alternative designs for the proposal.

Pre-construction

- Notification of works to precede as part of the proposal to relevant stakeholders.
- Notification of works to precede as part of the proposal to park users through appropriate channel (i.e., council website).
- Erecting temporary signage to inform the public of the works and any closures to access roads or trails as part of the proposal.
- Establish stockpile locations.
- Demarcate site construction area.
- Install relevant environment management and protection measures (refer to the mitigation measures outlined in the Impact Assessment).
- Clearing of 0.03ha of PCT 3812 across all strata layers.

Construction

- Minor earthworks and rock grinding and boring to facilitate the installation of the boardwalk posts and footings.
- Setting of boardwalk posts and footings i.e., cemented into rock.
- Installation of boardwalk sections, stair accesses, balustrades and handrails and lookout areas.

Operation

- Provide an elevated boardwalk with two small lookouts.
- Increase the recreational values of the site and support public safety.

Remediation

- Remediation of all associated impact areas including:
    - Restoration of the sites soil profile to the current or improved condition.
    - Re-establish surface hydrology.
    - Facilitation or native regeneration or revegetation where possible.

4.2 Proposed Construction Methods, Materials, and Equipment

4.2.1 The Size of the Proposed Activity Footprint

The current proposal will directly impact approximately 0.04ha and clear approximately 0.03ha of PCT 3812 across all strata layers (upper, mid and ground stratum). Minor impacts to soil via stockpiling, minor earthworks and increased foot traffic from construction contractors', alterations to surface hydrology and drainage across the entire site are likely to result as a part of the proposed activity. These impacts are predicted to be limited to the site and immediate surrounds, predominantly encapsulated within the study area.

4.2.2 Ancillary Activities

Ancillary activities would generally comprise the establishment of stockpile locations and erection of temporary signage notifying users of the works. These stockpiles will occur on previously cleared areas

and not on any native vegetation nor areas likely to cause alterations to erosive actions or surface hydrology No other ancillary activities are expected.

4.2.3 Receival, Storage and On-site Management for Materials Used in construction

All stockpile locations will be on flat topography and previously cleared areas. All materials will be appropriately stored and bunded, with appropriate fencing and signage around stockpile locations to restrict public access. Soil suspected to contain weed and exotic species propagules must not be utilised during construction.

4.2.4 Earthworks or Site Clearing Including Extent of Vegetation to be Removed

Approximately 0.03ha of PCT 3812 across all strata layers (upper, mid and ground stratum) will be removed as a part of the proposal. Minor earthworks will be required in conjunction with the installation of the footings. The approximate extent of these earthworks is unknown.

4.2.5 Environmental Safeguards and Mitigation Measures

All environmental safeguards and mitigation measures for the proposal are provided in the Impact Assessment section of this REF and Appendix E.

4.2.6 Sustainability Measures

Multiple materials will be used through the construction process including boardwalk materials. As the proposal will construct a boardwalk exposed to adverse environmental conditions on the coastline, all materials will be required to provide a lasting resistance to the natural environment. The materials therefore will consist of painted stainless steel with Fiberglass Replacement Panels (FRP) decking on concrete pads (client email dated 7/09/2022).

All supplementary fill and materials required by the proposal during Pre-Construction, Construction and Remediation should consist of primarily, crushed virgin sandstone as it naturally filters water assisting in minimising impacts to water quality, has a relatively low carbon footprint and does not contain harmful chemicals and toxins. Where sediment controls are required, coir logs, and jute matting should be used. Coir logs are made from 100% natural coconut fibre compacted into an outer mesh of bristle coir twine and are fully biodegradable.

4.2.7 Construction Timetable and Staging and Hours of Operation

Construction works are expected to start in March 2023 and be completed by September 2023.

Work will be scheduled to occur during standard daytime hours during the working week which are:

- 7am to 6pm, Monday to Friday
- 8am to 1pm on Saturday
- No work on Sundays or public holidays.

4.3 Objectives of the Proposal

The proposal aims to improve recreational facilities and visual amenity at McKillop Park through the provision of an elevated boardwalk with viewing platforms. The outcome of this proposal will result in increased recreational access and visual amenity for the public, increased public safety and reduced impacts to the site's ecology from the current informal tracks utilised by the public.

5 Reasons for the Activity and Consideration of Alternatives

5.1 Reasons for Activity

The proposal will result in increased recreational access and visual amenity for the public, increased public safety and reduce impacts to the site's ecology from the current informal tracks utilised by the public. The proposal will also become a part of councils adopted masterplan for the suburb of Freshwater.

5.2 Alternatives

No alternative designs were considered for the proposal during the site survey. The adopted Freshwater Coastal Open Space Masterplan (Northern Beaches Council 2018) indicates an alternative alignment to the concept plan utilised to inform the sites FFIA and this REF. However as previously stated the master plan provides an indicative boardwalk alignment only as the final alignment will be subject to site surveys and levels. The concept design plan for the zone 1 boardwalk alignment boarders on to a local Bushcare group revegetation project that is likely to be sensitive to disturbances. It is recommended that the final design consider the locations the revegetation projects with consultation with the Bushcare group managing the site. If alternative designs are proposed, the design must be consistent with the impact assessment, mitigation measure and recommendations outlined in the site FFIA (TEC 2022) and this REF.

An alternative to the proposal is the "do nothing" approach, however, this will result in the continued risk to public health through potential slips and falls near a cliff face, and degradation to the sites vegetation and the soil profile through increased informal track use resulting in a reduction in visual amenity of the site and park.

5.3 Justification for preferred option

The proposal is set within McKillop Park and therefore guided by the *Adopted Freshwater Coastal Open Space Masterplan* (Northern Beaches Council 2018). This plan and subsequently the proposal works in alignment with the overarching Transport and Infrastructure SEPP 2021 as it will involve the construction of a pedestrian pathway through the means of council providing a publicly accessible boardwalk. Further justification by the proposal will be determined by the consent authorities' consideration of the impacts and mitigation measures outlined in Appendix E.

6 Impact Assessment

6.1 Physical and Chemical Impacts During Construction and Operation

	Applicable? *	Impact level (negligible, low, medium or high; negative or positive; or NA)	Reasons (describe the type, nature and extent of impact, taking into account the receiving environment & proposed safeguards which will limit the impact)	Safeguards/mitigation measures
1. Is the proposal likely to impact on soil quality or land stability?	☒	**Pre-construction** Low, Negative	Prior to construction, approximately 0.03ha of PCT 3812 across all strata layers (upper, mid and ground stratum) will be removed, to facilitate the construction phase. This will lead to a reduction in soil stability provided by plant roots and is likely to result in minor increases in soil erosion. Stockpiling of any plant (machinery), materials and tools that occurs on or in proximity to the site presents a risk of soil contamination through run off of hazardous chemicals and fuels. Mitigation measures will significantly reduce the risk of contamination on site and aid in maintaining the soil stability of the site. Following the implementation of mitigation measures, the impacts of these activities prior to construction is expected to be low.	• Stockpile areas will be located on level ground and be appropriately covered and secured • Water flow will be diverted to ensure that minimal amount of sediment is mobilised. • Strict and effective erosion and sediment controls must be installed and maintained on site at all times during construction. This must be done following the managing Urban Stormwater – Soil and Construction (3rd Edition 1998). • Conduct vehicle and machinery pre starts to check for any fluid leaks • All vehicle and truck loads must be covered at all times while in motion • Stop work during heavy rainfall or in waterlogged conditions when there is a risk of sediment loss off site

Applicable?*	Impact level (negligible, low, medium or high; negative or positive; or NA)	Reasons (describe the type, nature and extent of impact, taking into account the receiving environment & proposed safeguards which will limit the impact)	Safeguards/mitigation measures
	Construction Low, Negative	During construction, minor earthworks are predicted to occur to facilitate the construction of the boardwalk. These minor earthworks will be conducted in order to support the footings and create level areas to situate the boardwalk. This is likely to result in minor impacts to the soil profile and stability through soil compaction from machinery, laydown areas and increase foot traffic. Stock piling of any plant (machinery), materials and tools that occurs on or in proximity to the site presents a risk of soil contamination through run off of hazardous chemicals and fuels. Due to the minor extent of these earthworks, it is unlikely that the construction activities will result in an increased risk of land slip. Further to this, Geotechnical inferences into the site have indicated that the site is on bedrock (JKGeotechnics 2019). Mitigation measures will significantly reduce the risk of contamination on site and aid in maintaining the soil stability of the site during the construction stage of the proposal.	• Stockpile areas should be located on level ground and be appropriately covered and secured • Water flow will be diverted to ensure that minimal amount of sediment is mobilised. • Strict and effective erosion and sediment controls must be installed and maintained on site at all times during construction. This must be done following the managing Urban Stormwater – Soil and Construction (3rd Edition 1998). • Conduct vehicle and machinery pre starts to check for any fluid leaks • All vehicle and truck loads must be covered at all times while in motion • Stop work during heavy rainfall or in waterlogged conditions when there is a risk of sediment loss off site • Continually monitor dust emission, implement appropriate dust suppression measures including water spraying of disturbed areas. Do not perform dust generating activities during periods of high wind.

	Applicable? *	Impact level (negligible, low, medium or high; negative or positive; or NA)	Reasons (describe the type, nature and extent of impact, taking into account the receiving environment & proposed safeguards which will limit the impact)	Safeguards/mitigation measures
		Operation Low, Negative	The operation of the boardwalk is likely to result in a minor impact to the sites soil quality and stability. As the footings are likely to be secured into bedrock (JKGeotechnics 2019), it is unlikely that this will result in a significant impact to the site's land stability. There will be minor reductions in the soil profile area at the locations of these footings. Due to the extent of the works, it is unlikely that this will result in continued disturbance to the soil profile nor result in increased instances of contamination caused by the proposal. Mitigation measures will significantly aid in maintaining the soil stability and minimise any reduction to soil quality of the site during the operational stage of the proposal.	• Areas that are cleared of vegetation following the works will have jute matting installed and/or endemic species planted to minimise future erosion. • Maintain effective Erosion and Sediment controls on site following the *managing Urban Stormwater – Soil and Construction (3rd Edition 1998)*
2. Is the activity likely to affect a waterbody, watercourse, wetland or natural drainage system?	☒	**Pre-Construction** Low, Negative	Prior to construction, approximately 0.03ha of PCT 3812 across all strata layers (upper, mid and ground stratum) will be removed, to facilitate the construction phase. This activity is likely to result in minor increases in sediment-laden runoff from the reduction in root stabilisation. There is likely to also be alterations to surface hydrology through a reduction in plant root uptake of this hydrology. This runoff has the potential to enter waterways and cause turbidity and enhanced sedimentation resulting in minor impacts the surrounding terrestrial and aquatic environment.	• Position site facilities and equipment laydown at a high location or in vehicles to avoid potential flood water risks • Keep functioning spill kit on site for clean-up of accidental chemical or fuel spills. Keep the spill kits stocked and located for easy access • Sticked and effective erosion and sediment controls must be installed and maintained on site at all times during construction. This must be done following the managing Urban

	Applicable?*	Impact level (negligible, low, medium or high; negative or positive; or NA)	Reasons (describe the type, nature and extent of impact, taking into account the receiving environment & proposed safeguards which will limit the impact)	Safeguards/mitigation measures
			Mitigation measures will significantly reduce the impacts to the sites natural drainage systems and any water bodies in proximity to the site during the pre-construction phase.	Stormwater – Soil and Construction (3rd Edition 1998). • Check weather forecast frequently to avoid construction during potential wet weather and implement a contingency plan for flash flooding. • Store all chemicals and fuels in accordance with relevant Australian Standards and Safety Data Sheets. Record stored chemicals on site register. Bunded areas to have 110% capacity of stored liquid volume. Chemicals and fuels in vehicles must be tightly secured.
		Construction: Low, Negative	The construction works are likely to have a minor impact of the sites surface hydrology. This is likely through the establishment an increased hard surface capturing rain throughout this stage and footings altering natural flows of surface hydrology. This is likely to be an unavoidable impact as a result of the proposal. Mitigation measures will significantly reduce the impacts to the sites natural drainage systems and any water bodies in proximity to the site during the construction phase.	• Keep functioning spill kit on site for clean-up of accidental chemical or fuel spills. Keep the spill kits stocked and located for easy access • Strict and effective erosion and sediment controls must be installed and maintained on site at all times during construction. This must be done following the managing Urban Stormwater – Soil and Construction (3rd Edition 1998). • Further sediment controls may be installed where machinery enter/exit the site to prevent erosion/sedimentation in these areas.

	Applicable? *	Impact level (negligible, low, medium or high; negative or positive; or NA)	Reasons (describe the type, nature and extent of impact, taking into account the receiving environment & proposed safeguards which will limit the impact)	Safeguards/mitigation measures
				• In the event of any spillages during the proposed activity, Council will be contacted immediately. Contaminants would be contained immediately, removed, treated (if necessary) and disposed of satisfactorily according to EPA regulations. • Position site facilities and equipment laydown at a high location or in vehicles to avoid potential flood water risks • Check weather forecast frequently to avoid construction during potential wet weather and implement a contingency plan for flash flooding. • Store all chemicals and fuels in accordance with relevant Australian Standards and Safety Data Sheets. Record stored chemicals on site register. Bunded areas to have 110% capacity of stored liquid volume. Chemicals and fuels in vehicles must be tightly secured.

	Applicable? *	Impact level (negligible, low, medium or high; negative or positive; or NA)	Reasons (describe the type, nature and extent of impact, taking into account the receiving environment & proposed safeguards which will limit the impact)	Safeguards/mitigation measures
		Operation: Low, Negative	The proposal is likely to have a minor impact of the sites surface hydrology. This is likely through the establishment an increased hard surface capturing rain and footings altering natural flows of surface hydrology. This is likely to be an unavoidable impact as a result of the proposal.	NA
3. Is the activity likely to change flood or tidal regimes, or be affected by flooding?	☐	NA	The proposal is not located within flood prone land nor likely to affect tidal regimes.	NA
4. Is the activity likely to affect coastal processes and coastal hazards, including those projected by climate change (e.g. sea level rise)?	☒	**Pre-Construction** Low, Negative	Prior to construction, approximately 0.03ha of PCT 3812 across all strata layers (upper, mid and ground stratum) will be removed, to facilitate the construction phase. This activity is likely to result in minor increases in sediment-laden runoff from the reduction in root stabilisation. There is likely to also be alterations to surface hydrology through a reduction in plant root uptake of this hydrology. This runoff has the potential to enter waterways and cause turbidity and enhanced sedimentation resulting in minor impacts the surrounding terrestrial and aquatic environment within the Coastal environment area.	• Keep functioning spill kit on site for clean-up of accidental chemical or fuel spills. Keep the spill kits stocked and located for easy access • Strict and effective erosion and sediment controls must be installed and maintained on site at all times during construction. This must be done following the managing Urban Stormwater – Soil and Construction (3rd Edition 1998). • In the event of any spillages during the proposed activity, Council will be contacted immediately. Contaminants would be contained immediately, removed, treated (if

Applicable?*	Impact level (negligible, low, medium or high; negative or positive; or NA)	Reasons (describe the type, nature and extent of impact, taking into account the receiving environment & proposed safeguards which will limit the impact)	Safeguards/mitigation measures
		Mitigation measures will significantly reduce the impacts of the proposal on the surrounding coastal environment and its processes sites including natural drainage and sediment systems and any water bodies in proximity to the site during the construction phase.	necessary) and disposed of satisfactorily according to EPA regulations. • Position site facilities and equipment laydown at a high location or in vehicles to avoid potential flood water risks • Check weather forecast frequently to avoid construction during potential wet weather and implement a contingency plan for flash flooding. • Store all chemicals and fuels in accordance with relevant Australian Standards and Safety Data Sheets. Record stored chemicals on site register. Bunded areas to have 110% capacity of stored liquid volume. Chemicals and fuels in vehicles must be tightly secured.
	Construction: Low, Negative	The construction works are likely to have a minor impact of the sites surface hydrology. This is likely through the establishment an increased hard surface capturing rain throughout this stage and footings altering natural flows of surface hydrology. The activity is likely to result in minor increases in sediment-laden runoff from the reduction in root stabilisation and minor earthworks. Mitigation measures will significantly reduce the impacts of the proposal on the surrounding coastal environment and its processes including	• Keep functioning spill kit on site for clean-up of accidental chemical or fuel spills. Keep the spill kits stocked and located for easy access • Strict and effective erosion and sediment controls must be installed and maintained on site at all times during construction. This must be done following the managing Urban Stormwater – Soil and Construction (3rd Edition 1998). • Further sediment controls may be installed where machinery enter/exit the site to

Applicable?*	Impact level (negligible, low, medium or high; negative or positive; or NA)	Reasons (describe the type, nature and extent of impact, taking into account the receiving environment & proposed safeguards which will limit the impact)	Safeguards/mitigation measures
		natural drainage and sediment systems and any water bodies in proximity to the site during the construction phase.	prevent erosion/sedimentation in these areas. • In the event of any spillages during the proposed activity, Council will be contacted immediately. Contaminants would be contained immediately, removed, treated (if necessary) and disposed of satisfactorily according to EPA regulations. • Position site facilities and equipment laydown at a high location or in vehicles to avoid potential flood water risks • Check weather forecast frequently to avoid construction during potential wet weather and implement a contingency plan for flash flooding. • Store all chemicals and fuels in accordance with relevant Australian Standards and Safety Data Sheets. Record stored chemicals on site register. Bunded areas to have 110% capacity of stored liquid volume. Chemicals and fuels in vehicles must be tightly secured.
	Operation: Low, Negative	The proposal is likely to have a minor impact of the sites surface hydrology. This is through an increased in hard surfaces capturing rain and footings altering natural flows of surface hydrology.	NA

	Applicable?*	Impact level (negligible, low, medium or high; negative or positive; or NA)	Reasons (describe the type, nature and extent of impact, taking into account the receiving environment & proposed safeguards which will limit the impact)	Safeguards/mitigation measures
			The proposal is also predicted to have positive impacts on the surrounding coastal environment through a reduction in erosive action caused by unregulated foot traffic across the site. The negative impacts are likely to be an unavoidable impact as a result of the proposal.	
5. Does the activity involve the use, storage, or transport of hazardous substances or the use or generation of chemicals, which may build up residues in the environment?	☒	**Pre-construction** Low, Negative	Prior to construction, approximately 0.03ha of PCT 3812 across all strata layers (upper, mid and ground stratum) will be removed, to facilitate the construction phase. This likely to be mechanically removed resulting in the use hydrocarbons i.e., petrol, diesel and oil. This activity and the use of these chemicals have the potential to infiltrate and build up in the surrounding environment. Mitigation measures will significantly reduce the impacts of the proposal's use of hazardous substances and chemicals to the environment and assist in reducing any build-up of residuals in the surrounding environment.	• Keep functioning spill kit on site for clean-up of accidental chemical or fuel spills. Keep the spill kits stocked and located for easy access • Strict and effective erosion and sediment controls must be installed and maintained on site at all times during construction. This must be done following the managing Urban Stormwater – Soil and Construction (3rd Edition 1998). • Further sediment controls may be installed where machinery enter/exit the site to prevent erosion/sedimentation in these areas. • In the event of any spillages during the proposed activity, Council will be contacted immediately. Contaminants would be contained immediately, removed, treated (if necessary) and disposed of satisfactorily according to EPA regulations.

	Applicable?*	Impact level (negligible, low, medium or high; negative or positive; or NA)	Reasons (describe the type, nature and extent of impact, taking into account the receiving environment & proposed safeguards which will limit the impact)	Safeguards/mitigation measures
				• Position site facilities and equipment laydown at a high location or in vehicles to avoid potential flood water risks • Check weather forecast frequently to avoid construction during potential wet weather and implement a contingency plan for flash flooding. • Store all chemicals and fuels in accordance with relevant Australian Standards and Safety Data Sheets. Record stored chemicals on site register. Bunded areas to have 110% capacity of stored liquid volume. Chemicals and fuels in vehicles must be tightly secured.
		Construction: Low, Negative	The construction of the boardwalk is likely to result in the use of machinery such as plant, transportation vehicles and small cranes. This will infer the use of hydrocarbons i.e., petrol, diesel and oil and other chemicals. This activity and the use of these chemicals have the potential to infiltrate and build up in the surrounding environment. This can result in minor instances of localised pollution events within and in proximity to the site. Mitigation measures implemented during the construction stage will significantly reduce the impacts of the proposal's use of hazardous	• Keep functioning spill kit on site for clean-up of accidental chemical or fuel spills. Keep the spill kits stocked and located for easy access • Strict and effective erosion and sediment controls must be installed and maintained on site at all times during construction. This must be done following the managing Urban Stormwater – Soil and Construction (3rd Edition 1998). • Further sediment controls may be installed where machinery enter/exit the site to

	Applicable?*	Impact level (negligible, low, medium or high; negative or positive; or NA)	Reasons (describe the type, nature and extent of impact, taking into account the receiving environment & proposed safeguards which will limit the impact)	Safeguards/mitigation measures
			substances and chemicals to the environment. This will further assist in reducing any build-up of residuals in the surrounding environment.	prevent erosion/sedimentation in these areas. • In the event of any spillages during the proposed activity, Council will be contacted immediately. Contaminants would be contained immediately, removed, treated (if necessary) and disposed of satisfactorily according to EPA regulations. • Position site facilities and equipment laydown at a high location or in vehicles to avoid potential flood water risks • Check weather forecast frequently to avoid construction during potential wet weather and implement a contingency plan for flash flooding. • Store all chemicals and fuels in accordance with relevant Australian Standards and Safety Data Sheets. Record stored chemicals on site register. Bunded areas to have 110% capacity of stored liquid volume. Chemicals and fuels in vehicles must be tightly secured
		Operation NA	During the operation of the proposal, it is predicted that the use of hazardous substances and chemicals and materials will cease and as a result properly stored, packed away and remediation actions ensued if required.	• In the event of any spillages during the proposed activity, Council will be contacted immediately. Contaminants would be contained immediately, removed, treated (if

	Applicable? *	Impact level (negligible, low, medium or high; negative or positive; or NA)	Reasons (describe the type, nature and extent of impact, taking into account the receiving environment & proposed safeguards which will limit the impact)	Safeguards/mitigation measures
				necessary) and disposed of satisfactorily according to EPA regulations. • Store all chemicals and fuels in accordance with relevant Australian Standards and Safety Data Sheets. Record stored chemicals on site register.
6. Does the activity involve the generation or disposal of gaseous, liquid or solid wastes or emissions?	☒	**Pre-construction** Low, Negative	Prior to construction, approximately 0.03ha of PCT 3812 across all strata layers (upper, mid and ground stratum) will be removed, to facilitate the construction phase. This likely to be mechanically removed resulting in the use hydrocarbons i.e., petrol, diesel and oil. As a result of this it is predicted that the activity will generate emissions. Mitigation measures implemented during the construction stage will reduce the generation of emissions.	• Covering materials transported to and from the site to reduce dust generated in transit. • All work vehicles/machinery must be maintained to a standard such that particulates in exhaust emissions are not visible for a continuous period of more than 10 seconds. • Work vehicles, plant or machinery are not to be left running or idling when not in use. • All plant to be used on site must be inspected for oil, hydraulic fluid, fuel and coolant leaks etc. prior to entering the site. All refuelling is to be undertaken off site at a designated refuelling area. • Keep functioning spill kit on site for clean-up of accidental chemical or fuel spills. Keep the spill kits stocked and located for easy access • Strict and effective erosion and sediment controls must be installed and maintained on site at all times during construction. This must be done following the managing Urban

	Applicable?*	Impact level (negligible, low, medium or high; negative or positive; or NA)	Reasons (describe the type, nature and extent of impact, taking into account the receiving environment & proposed safeguards which will limit the impact)	Safeguards/mitigation measures
				Stormwater – Soil and Construction (3rd Edition 1998). • Further sediment controls may be installed where machinery enter/exit the site to prevent erosion/sedimentation in these areas. • In the event of any spillages during the proposed activity, Council will be contacted immediately. Contaminants would be contained immediately, removed, treated (if necessary) and disposed of satisfactorily according to EPA regulations. • Position site facilities and equipment laydown at a high location or in vehicles to avoid potential flood water risks • Check weather forecast frequently to avoid construction during potential wet weather and implement a contingency plan for flash flooding. • Store all chemicals and fuels in accordance with relevant Australian Standards and Safety Data Sheets. Record stored chemicals on site register. Bunded areas to have 110% capacity of stored liquid volume. Chemicals and fuels in vehicles must be tightly secured

Applicable?*	Impact level (negligible, low, medium or high; negative or positive; or NA)	Reasons (describe the type, nature and extent of impact, taking into account the receiving environment & proposed safeguards which will limit the impact)	Safeguards/mitigation measures
	Construction Low, Negative	The construction of the boardwalk is likely to result in the use of machinery such as plant, transportation vehicles and small cranes. This will infer the use of hydrocarbons i.e., petrol, diesel and oil and other chemicals. This activity and the use of these chemicals have the potential to result in the generation or disposal of gaseous, liquid or solid wastes or emissions. This can result in minor instances of increases in localised emissions within and in proximity to the site. The proposal also has the potential to result and the build-up of chemical waste leading to localised pollution events. Mitigation measures implemented during the construction stage will significantly reduce the impacts of the proposal's generation of emissions and potential for localised pollution events. This will further assist in reducing any build-up of residuals in the surrounding environment	• Covering materials transported to and from the site to reduce dust generated in transit. • All work vehicles/machinery must be maintained to a standard such that particulates in exhaust emissions are not visible for a continuous period of more than 10 seconds. • Work vehicles, plant or machinery are not to be left running or idling when not in use. • All plant to be used on site must be inspected for oil, hydraulic fluid, fuel and coolant leaks etc. prior to entering the site. All refuelling is to be undertaken off site at a designated refuelling area. • Keep functioning spill kit on site for clean-up of accidental chemical or fuel spills. Keep the spill kits stocked and located for easy access • Strict and effective erosion and sediment controls must be installed and maintained on site at all times during construction. This must be done following the managing Urban Stormwater – Soil and Construction (3rd Edition 1998). • Further sediment controls may be installed where machinery enter/exit the site to prevent erosion/sedimentation in these areas.

	Applicable?*	Impact level (negligible, low, medium or high; negative or positive; or NA)	Reasons (describe the type, nature and extent of impact, taking into account the receiving environment & proposed safeguards which will limit the impact)	Safeguards/mitigation measures
				• In the event of any spillages during the proposed activity, Council will be contacted immediately. Contaminants would be contained immediately, removed, treated (if necessary) and disposed of satisfactorily according to EPA regulations. • Position site facilities and equipment laydown at a high location or in vehicles to avoid potential flood water risks • Check weather forecast frequently to avoid construction during potential wet weather and implement a contingency plan for flash flooding. • Store all chemicals and fuels in accordance with relevant Australian Standards and Safety Data Sheets. Record stored chemicals on site register. Bunded areas to have 110% capacity of stored liquid volume. Chemicals and fuels in vehicles must be tightly secured
	Operation NA	During operation, no generation or disposal of gaseous, liquid or solid wastes or emissions is predicted.		NA

	Applicable?*	Impact level (negligible, low, medium or high; negative or positive; or NA)	Reasons (describe the type, nature and extent of impact, taking into account the receiving environment & proposed safeguards which will limit the impact)	Safeguards/mitigation measures
7. Will the activity involve the emission of dust, odours, noise, vibration or radiation in the proximity of residential or urban areas or other sensitive locations?	☒	**Pre-construction** Low, Negative	The adjoining landowners and leaseholders consist of R2 'Low Density' residential lots and Council land. Prior to construction, the emissions from site will occur in the form of noise and potentially odours due to the use of machinery to clear vegetation. This is considered to be minor and not likely to have any direct impacts. It is likely that no increases in radiation are to occur.	• Construction plant and vehicles must be switched off when not in use. • Construction plant must be maintained to minimise noise and exhaust emissions. • Works will only occur between 7am and 5pm Monday to Friday.
		Construction Low, Negative	During the construction phase, there will be a minor increase in noise and dust emissions between 7am to 5pm Monday to Friday. Exhaust emissions will result due to diesel and petrol powered plant use. However, provided that normal working hours are adhered to, this is considered to be minor and not likely to have any direct impacts on the surrounding residents. It is likely that no increases in radiation are to occur	• Construction plant and vehicles must be switched off when not in use. • Construction plant must be maintained to minimise noise and exhaust emissions. • Works will only occur between 7am and 5pm Monday to Friday.
		Operation	No emission of dust, odours, noise, vibration or radiation in the proximity of residential or urban areas or other sensitive locations once the proposal is in operation.	NA

6.2 Biological Impacts During Construction and Operation

	Applicable? *	Likely impact (negligible, low, medium or high; negative or positive; or NA)	Reasons (describe the type, nature and extent of the impact, the nature of the receiving environment and any proposed safeguards which will limit the impact)	Safeguards/mitigation measures
1. Is any vegetation to be cleared or modified? (includes vegetation of conservation significance or cultural landscape value)	☒	**Pre-construction** Low, negative	Prior to construction, approximately 0.03ha of PCT 3812 across all strata layers (upper, mid and ground stratum) will be removed, to facilitate the construction phase. This will reduce the amount of foraging, roosting and shelter habitat for a number of native fauna species and reduce the available flora and fauna habitat across the site. The removal of this vegetation will likely result in a minor impact to this PCT across the landscape and the locally dependent flora and fauna species that rely on this habitat. Mitigation measures will significantly reduce this impact and likely result in a low impact especially if disturbed areas are revegetated.	• Areas determined not to be worked in must be marked and flagged off as no-go zones prior to and during construction. • If machinery will be used near trees that are to be retained, tree protection must be installed. • The machinery entry/exit point has been chosen where there are existing pathways previously constructed to reduce the impact to native and planted vegetation. • Revegetation will occur in areas that have been disturbed. • Strict and effective erosion and sediment controls must be installed and maintained on site at all times during construction. This must be done following the managing Urban Stormwater – Soil and Construction (3rd Edition 1998).
		Construction Negligible, negative	The construction stage is predicted to not involve any further direct removal of vegetation. There are potential indirect impacts to vegetation through impacts from plant and vehicles, contractors, alterations to the environment and pollutants.	• Areas determined not to be worked in must be marked and flagged off as no-go zones prior to and during construction. • If machinery will be used near trees that are to be retained, tree protection must be installed.

	Applicable? *	Likely impact (negligible, low, medium or high; negative or positive; or NA)	Reasons (describe the type, nature and extent of the impact, the nature of the receiving environment and any proposed safeguards which will limit the impact)	Safeguards/mitigation measures
			Mitigation measures will significantly reduce this impact, especially if disturbed areas are revegetated.	• The machinery entry/exit point has been chosen where there are existing pathways previously constructed to reduce the impact to native and planted vegetation. • Facilitate vegetation regeneration in areas that have been disturbed including entry and exit points through fencing off areas from the public.
		Operation NA	No further impact is expected to occur to vegetation during this phase.	• Engage local Bushcare groups managing the site to implement best practices bush regeneration techniques to facilitate vegetation regeneration in areas that have been disturbed including entry and exit points utilised by the public. This should include ongoing maintenance and resource allocation to implement any bush regeneration activities required.
2. Is the activity likely to have a significant effect on threatened flora species, populations, or their habitats, or area of outstanding biodiversity value (refer to Threatened Species Test of	☒	**Pre-construction** Low, Negligible	The site is not mapped as an Area of Outstanding Biodiversity (AOBV), nor will the work impact on an AOBV. Threatened species tests of significance are outlined in Appendix E and concluded that the proposal will not result in a significant impact to threatened species or their habitat. Mitigation measures will significantly reduce any potential impacts, especially if disturbed areas are revegetated.	• Areas determined not to be worked in must be marked and flagged off as no-go zones prior to and during construction. • If machinery will be used near trees that are to be retained, tree protection must be installed. • If a threatened species is identified as present on-site works must be cease

	Applicable? *	Likely impact (negligible, low, medium or high; negative or positive; or NA)	Reasons (describe the type, nature and extent of the impact, the nature of the receiving environment and any proposed safeguards which will limit the impact)	Safeguards/mitigation measures
Significance (5 part test))?				immediately and an Ecologist must be contacted. • Facilitate vegetation regeneration in areas that have been disturbed including entry and exit points through fencing off areas from the public.
		Construction Negligible, negative	The construction stage is predicted to not involve any further direct removal of vegetation. There are potential indirect impacts to vegetation from machinery and vehicles, contractors, alterations to the environment such as sediment and hydrology and pollutants. Mitigation measures will significantly reduce this impact especially if disturbed areas are revegetated.	• Areas determined not to be worked in must be marked and flagged off as no-go zones prior to and during construction. • If machinery will be used near trees that are to be retained, tree protection must be installed. • If a threatened species is identified as present on-site works must be cease immediately and an Ecologist must be contacted. • Facilitate vegetation regeneration in areas that have been disturbed including entry and exit points through fencing off areas from the public.

	Applicable? *	Likely impact (negligible, low, medium or high; negative or positive; or NA)	Reasons (describe the type, nature and extent of the impact, the nature of the receiving environment and any proposed safeguards which will limit the impact)	Safeguards/mitigation measures
		Operation NA	During operation of the proposal, it is unlikely to have a significant effect or any further impact to threatened flora species, populations, or their habitats, or an area of outstanding biodiversity value	• Engage local Bushcare groups managing the site to implement best practices bush regeneration techniques to facilitate vegetation regeneration in areas that have been disturbed including entry and exit points through fencing off areas from the public. This should include ongoing maintenance and resource allocation to implement any bush regeneration activities required as a result of the proposal.
3. Does the activity have the potential to endanger, displace or disturb fauna (including fauna of conservation significance) or create a barrier to their movement?	☒	**Pre-construction** Low, Negative	Prior to construction, approximately 0.03ha of PCT 3812 across all strata layers (upper, mid and ground stratum) will be removed, to facilitate the construction phase. This will result in a reduction in habitat for locally dependent fauna and threatened fauna species likely to use the site. The assessments of significance for these species are outlined in Appendix E, concluding no significant impact to these species as a result of the proposal. Mitigation measures will significantly reduce this impact to protected and threatened fauna species on or likely to utilise the site.	• Inspect vegetation for potential fauna prior to clearing or trimming. Undertake a two staged approach or removing vegetation to enable fauna to move way. Engage an ecologist if assistance is required to move fauna. • If any fauna is identified during works and require rescue, a qualified Ecologist, or fauna rescue volunteer, is to be notified. Works should not continue until the animal have been relocated. Call either Sydney Metro Wildlife on 9413 4300 or WIRES on 1300 094 737.
		Construction Low, Negative	The construction stage of the proposal is likely to result in minor disturbance and endangerment to fauna. This is due to a minor increase in direct impacts to fauna cause by vehicle and machinery	• Inspect vegetation for potential fauna prior to clearing or trimming. Undertake a two staged approach or removing vegetation to enable

	Applicable? *	Likely impact (negligible, low, medium or high; negative or positive; or NA)	Reasons (describe the type, nature and extent of the impact, the nature of the receiving environment and any proposed safeguards which will limit the impact)	Safeguards/mitigation measures
			strikes. The construction is likely to also cause a hard barrier during the construction stage. Due to the minor extent of the construction footprint, and no fragmentation occurring, it is unlikely to cause a significant impact to fauna movements. Mitigation measures will significantly reduce this impact to protected and threatened fauna species on or likely to utilise the site.	fauna to move way. Engage an ecologist if assistance is required to move fauna. • Inspect laydown areas, vehicles and equipment for fauna species prior to use • If any fauna is identified during works and require rescue, a qualified Ecologist, or fauna rescue volunteer, is to be notified. Works should not continue until the animal have been relocated. Call either Sydney Metro Wildlife on 9413 4300 or WIRES on 1300 094 737.
		Operation Negligible	During operation of the proposal, it is unlikely to endanger, displace or disturb fauna (including fauna of conservation significance). The proposal will result in a barrier to their movement, however as this is an elevated boardwalk it is unlikely to significantly impact fauna movements.	NA
4. Is the activity likely to have a significant effect on threatened fauna species, or their habitats, or areas of outstanding biodiversity value (refer to Threatened Species Test of	☒	**Pre-construction** Medium, Negative	Prior to construction, approximately 0.03ha of PCT 3812 across all strata layers (upper, mid and ground stratum) will be removed, to facilitate the construction phase. This will result in a reduction in habitat for threatened fauna species likely to use the site and broadly include a reduction in roosting/sheltering, foraging and breeding habitat. The assessments of significance for these species are outlined in Appendix E and	• Inspect vegetation for potential fauna prior to clearing or trimming. Undertake a two staged approach or removing vegetation to enable fauna to move way. Engage an ecologist if assistance is required to move fauna. • If any fauna is identified during works and require rescue, a qualified Ecologist, or fauna rescue volunteer, is to be notified. Works should not continue until the animal have been relocated. Call either Sydney Metro

	Applicable? *	Likely impact (negligible, low, medium or high; negative or positive; or NA)	Reasons (describe the type, nature and extent of the impact, the nature of the receiving environment and any proposed safeguards which will limit the impact)	Safeguards/mitigation measures
Significance (5 part test))?			concluded no significant impact to threatened fauna species. Mitigation measures will significantly reduce any further impact to threatened fauna species on or likely to utilise the site.	Wildlife on 9413 4300 or WIRES on 1300 094 737.
		Construction Low, Negative	The construction stage of the proposal is likely to result in minor disturbance and endangerment to threatened fauna. This is due to a minor increase in direct impacts to fauna cause by vehicle and machinery strikes and increased likelihood of pollution events. The proposal is likely to also cause a hard barrier during the construction stage. Mitigation measures will significantly reduce this impact to protected and threatened fauna species on or likely to utilise the site.	• Inspect vegetation for potential fauna prior to clearing or trimming. Undertake a two staged approach or removing vegetation to enable fauna to move way. Engage an ecologist if assistance is required to move fauna. • Inspect laydown areas, vehicles and equipment for fauna species prior to use If any fauna is identified during works and require rescue, a qualified Ecologist, or fauna rescue volunteer, is to be notified. Works should not continue until the animal have been relocated. Call either Sydney Metro Wildlife on 9413 4300 or WIRES on 1300 094 737.
		Operation Negligible	During operation of the proposal, it is unlikely to potentially endanger, displace or disturb fauna (including fauna of conservation significance). The proposal will result in minor a barrier to their movement, however as this is an elevated	NA

	Applicable? *	Likely impact (negligible, low, medium or high; negative or positive; or NA)	Reasons (describe the type, nature and extent of the impact, the nature of the receiving environment and any proposed safeguards which will limit the impact)	Safeguards/mitigation measures
			boardwalk it is unlikely to significantly impact fauna movements.	
5. Is the activity likely to impact on an ecological community of conservation significance?	☐	NA	No Threatened Ecological Communities were identified on site or within the study area.	NA
6. Is the activity likely to have a significant effect on an endangered ecological community or its habitat (refer to Threatened Species Test of Significance (5 part test))?	☐	NA	No Threatened Ecological Communities were identified on site or within the study area.	NA
7. Is the activity likely to cause a threat to the biological diversity or ecological integrity of an ecological community?	☒	**Pre-construction and Construction** Low, Negligible	Prior to construction, approximately 0.03ha of PCT 3812 across all strata layers (upper, mid and ground stratum) will be removed, to facilitate the construction phase. This will result in a reduction in habitat for threatened fauna species likely to use the site and broadly include a reduction in roosting/sheltering, foraging and breeding	• Inspect vegetation for potential fauna prior to clearing or trimming. Undertake a two staged approach or removing vegetation to enable fauna to move way. Engage an ecologist if assistance is required to move fauna. • If any fauna are identified during works and require rescue, a qualified Ecologist, or fauna

Applicable? *	Likely impact (negligible, low, medium or high; negative or positive; or NA)	Reasons (describe the type, nature and extent of the impact, the nature of the receiving environment and any proposed safeguards which will limit the impact)	Safeguards/mitigation measures
		habitat. Due to the minor extent of this PCT being removed, and no significant habitat features being removed i.e., hollow bearing trees it is unlikely that the proposal will affect the lifecycle of protected and threatened flora and fauna species. The minor extent of the PCT being removed from the locality is unlikely to result in a reduction in the ecological integrity of the community and result in a loss of biodiversity. A low and negligible impact is expected to occur to the biological diversity and ecological integrity of an ecological community.	rescue volunteer, is to be notified. Works should not continue until the animal have been relocated. Call either Sydney Metro Wildlife on 9413 4300 or WIRES on 1300 094 737. • Areas determined not to be worked in must be marked and flagged off as no-go zones prior to and during construction. • If machinery will be used near trees that are to be retained, tree protection must be installed. • The machinery entry/exit point has been chosen where there is an existing pathway reduce the impact to surrounding environment. • Facilitate vegetation regeneration in areas that have been disturbed including entry and exit points through fencing off areas from the public. • Sediment and erosion controls such as hay bales must be installed prior to the commencement of works.
	Operation NA	The operation of the proposal will not cause a threat to the biological diversity or ecological integrity of an ecological community.	NA

	Applicable? *	Likely impact (negligible, low, medium or high; negative or positive; or NA)	Reasons (describe the type, nature and extent of the impact, the nature of the receiving environment and any proposed safeguards which will limit the impact)	Safeguards/mitigation measures
8. Is the activity likely to introduce noxious weeds, vermin, feral species or genetically modified organisms into an area?	☒	**Pre-construction and Construction** Low, Negative	Prior to construction, approximately 0.03ha of PCT 3812 across all strata layers (upper, mid and ground stratum) will be removed to facilitate the construction phase. This has the potential to result in an increase in weed species identified on the site and if proper hygiene and biosecurity controls aren't in place, new incursions of weed species are possible. The construction phase will incur a similar potential to increase the already known weed presence across the site and potentially increase new weed species. With the implementation of strict hygiene, biosecurity practices and mitigation measures, the potential is considered low. There is potential for the introduction of pathogens such as *Phytophthora* and Chytrid Fungus from the movement of plant to the site and importation of construction materials. Strict hygiene protocols and the mitigation measures are to be implemented.	• Areas determined not to be worked in must be marked and flagged off as no-go zones prior to and during construction. • Implement appropriate equipment hygiene practices and inspections to prevent the spread of weeds and pathogens. • Ensure that equipment entering site is clean and free of dirt and weeds. • Strict Phytophthora hygiene protocols, hygiene protocols for the control of diseases in Australian Frogs, and vegetation removal protocols, detailed in Appendix E.
		Operation Negligible	No impact is expected during the operation phase.	NA
9. Is the activity likely to affect any declared area of outstanding biodiversity value?	☐	N/A	The works are not in or in proximity to any declared areas of outstanding biodiversity value.	N/A

	Applicable? *	Likely impact (negligible, low, medium or high; negative or positive; or NA)	Reasons (describe the type, nature and extent of the impact, the nature of the receiving environment and any proposed safeguards which will limit the impact)	Safeguards/mitigation measures
11. Is the activity likely to affect any joint management agreement under the BC Act?	☐	N/A	N/A	N/A

6.3 Community Impacts During Construction and Operation

	Applicable? *	Likely impact (negligible, low, medium or high; negative or positive; or N/A)	Reasons (describe the type, nature and extent of the impact, the nature of the receiving environment and any proposed safeguards which will limit the impact)	Safeguards/mitigation measures
1. Is the activity likely to affect community services or infrastructure?	☐	N/A	The proposal is unlikely to affect community services or infrastructure. The predominant impact will be limited to natural resources.	NA

2. Does the activity affect sites of importance to local or the broader community for their recreational or other values or access to these sites?	☒	**Pre-construction and Construction** Low, Negligible **Operation** Medium, Positive	The site has been observed as an access point for the public to traverse the cliff edge. The significance of this access point and recreational value is unknown, however the Pre-Construction and Construction will result in restricted public access. Machinery, stockpiles, storage, and access will all be from the carpark located on the south-eastern side of McKillop Park and likely result in minor restrictions to car spaces and inhibit vehicle movements. The proposal will improve public recreational access across McKillop Park and significantly improve public safety through reduction in the risk of slips, trips and falls.	• The contractor will install temporary signage and will appropriately fence of the work site to exclude members of the public. • Construction plant must minimise noise and exhaust emissions where possible. • Works will only occur between 7am and 5pm Monday to Friday. • Nearby residents and businesses will be notified in advance of the timing of the works. NA
3. Is the activity likely to affect economic factors, including employment, industry and property value?	☒	**Construction and Operation** Medium, positive	The proposal is likely to increase the recreational and visual amenity of McKillop Park. This is likely to have a positive impact on the LGA's tourism industry and local economy with aesthetic improvements in the locality. In the short-term, the proposal will also provide employment for contractors and council staff.	NA
4. Is the activity likely to have an impact on the safety of the community?	☒	**Pre-construction and Construction** Low, Negative **Operation** Medium, Positive	The Pre- construction and Construction stages of the proposal are likely to result in a minor increase in the risk to community safety. This is due to the proximity of the proposal to a public walking track that exhibits a high amount of foot traffic. The mitigation measure will significantly reduce this risk and likely impact. The operation stage of the proposal is likely to have a positive impact on the safety of the community by providing a formalised walking	• Areas determined not to be worked in must be marked and flagged off as no-go zones prior to and during construction. • The contractor will install temporary signage and will appropriately fence of the work site to exclude members of the public. • Works will only occur between 7am and 5pm Monday to Friday.

			track resulting in a reduction to slips trips and falls near a cliff edge.	• Nearby residents and businesses will be notified in advance of the timing of the works.
5. Is the activity likely to cause a bushfire risk?	☐	N/A	The proposal is not mapped as bushfire prone land.	NA
6. Will the activity affect the visual or scenic landscape? This should include consideration of any permanent or temporary signage (e.g. signs advertising an event and related sponsorship).	☒	**Pre-construction and construction** Low, Negative	The Pre- construction and Construction stages of the proposal are likely to result in a minor reduction in visual amenity. This is due to the incursion of construction materials, machinery and laydown areas. The site will also clear approximately 0.03ha of PCT 3812 across all strata layers further resulting in impacts to visual amenity. It is understood that mitigation measures are not likely to resolve this impact, however due to the nature and extent of the proposal this is likely to be a temporary and low impact.	• The contractor will install temporary signage and will appropriately fence of the work site to exclude members of the public. • Construction plant must be moderated to minimise noise and exhaust emissions. • Works will only occur between 7am and 5pm Monday to Friday.
		Operation Low, Positive	The proposal will likely result in a minor improvement the visual and scenic landscape with increased opportunities for the public to experience and enjoy the coastline's visual amenity, whilst reducing negative impacts to the natural amenity such as increased erosion.	NA
7. Is the activity likely to cause noise, pollution, visual impact, loss of privacy, glare or overshadowing to members of the	☒	**Pre-construction and Construction** Low, Negative	The adjoining landowners and leaseholders are low density residential lots. There will be an increase in noise between 7am to 5pm Monday to Friday. During this time noise and visual pollution will occur on site, causing a minor indirect impact to residents. The site will not be accessible to the public during this time either.	• The contractor will install temporary signage and will appropriately fence of the work site to exclude members of the public. • Construction plant must be moderated to minimise noise and exhaust emissions. • Works will only occur between 7am and 5pm Monday to Friday.

community, particularly adjoining landowners?	**Operation** Low, Negligible	The proposal is likely to result in a minor visual impact. As the boardwalk is low-lying, it will be predominantly obstructed from view by the surrounding vegetation.	• Engage local Bushcare groups managing the site to implement best practices bush regeneration techniques to facilitate vegetation regeneration in areas that have been disturbed including entry and exit points through fencing off areas from the public. This should include ongoing maintenance and resource allocation to implement any bush regeneration activities required as a result of the proposal.

6.4 Natural Resource Impacts During Construction and Operation

	Applicable? *	Likely impact (negligible, low, medium or high; negative or positive; or N/A)	Reasons (describe the type, nature and extent of the impact, the nature of the receiving environment and any proposed safeguards which will limit the impact)	Safeguards/mitigation measures
1. Is the activity likely to result in the degradation of a national park or any other area reserved for conservation purposes?	☐	N/A	The proposal is not located within or in proximity to a national park nor a public reserve.	NA
2. Is the activity likely to affect the use of, or the community's ability to use, natural resources?	☒	**Pre-Construction and Construction** Low, Negative	Prior to construction, approximately 0.03ha of PCT 3812 across all strata layers (upper, mid and ground stratum) will be removed to facilitate the construction phase. This will result in a minor loss of the natural resources available to the community. The construction stage of the proposal will also result in restricted access across the coastline.	NA

	Applicable? *	Likely impact (negligible, low, medium or high; negative or positive; or N/A)	Reasons (describe the type, nature and extent of the impact, the nature of the receiving environment and any proposed safeguards which will limit the impact)	Safeguards/mitigation measures
3. Is the activity likely to involve the use, wastage, destruction or depletion of natural resources including water, fuels, timber or extractive materials? This should include opportunities to utilise recycled or alternative products.	☒	**Pre-Construction and Construction** Low, Negative	Prior to construction, approximately 0.03ha of PCT 3812 across all strata layers (upper, mid and ground stratum) will be removed, to facilitate the construction phase. This will result in a minor destruction to natural resources It is predicted that the proposal will require the use of natural resources such as water, fuel and timber. However, due to the minor extent of the proposal it is unlikely that this will result in a significant reduction in natural resources.	• Construction plant and vehicles must be switched off when not in use. • Vehicles and machinery used in the project will be serviced regularly and vehicle/machine pre starts conducted to ensure they are not leaking fuel and are operating efficiently. • Natural resources such as vegetation utilised as erosion control and brush matting to facilitate regeneration where required i.e., increased areas of erosion and trampled vegetation.
4. Does the activity provide for the sustainable and efficient use of water and energy? Where relevant to the proposal, this should include consideration of high efficiency fittings, appliances, insulation, lighting, rainwater tanks, hot water and electricity supply.	☒	**Construction** Low, Negative	As machinery will be used to carry out this work, fuel will be required to be used. Due to the extent of the works this will result in a minor increase in energy use. It is predicted that the proposal will utilise water for cleaning purposed i.e. vehicle and site wash down etc. Due to the extent of the works, this will result in a minor increase in water use in the short term.	• Construction plant and vehicles must be switched off when not in use. • Vehicles and machinery used in the project will be serviced regularly to ensure they are not leaking fuel and are operating efficiently. • Water supply equipment and facilities must have high water efficiency fittings

6.5 Aboriginal Cultural Heritage Impacts During Construction and Operation

	Applicable? *	**Likely impact** (negligible, low, medium or high; negative or positive; or N/A)	**Reasons** (describe the type, nature and extent of the impact, the nature of the receiving environment and any proposed safeguards which will limit the impact)	**Safeguards/mitigation measures**
1. Will the activity disturb the ground surface or any culturally modified trees?	☒	**Pre-Construction and Construction** Low, Negative	Prior to construction, approximately 0.03ha of PCT 3812 across all strata layers (upper, mid and ground stratum) will be removed, to facilitate the construction phase. This will incur disturbances to the ground surface. No culturally modified trees were identified in the vegetation proposed to be removed. The mitigation measures will significantly reduce any potential impacts to unidentified culturally modified trees of cultural artifacts located within/on the ground surface.	• All Personnel will undertake a Site Induction to ensure all are aware of their responsibilities in the event of discovery of an item of European or Aboriginal Heritage. • If any skeletal material is uncovered, works must cease immediately and DPE and the NSW Police must be notified.
2. Does the activity affect known Aboriginal objects or Aboriginal places? Include all known sources of information on the likely presence of Aboriginal objects or places, including AHIMS search results.	☒	**Pre-Construction, Construction and Operation** Low, Negative	A basic search was conducted using the DPE Aboriginal Heritage Information Management System (AHIMS) Aboriginal Sites Register identified no Aboriginal sites were recorded within 100m of the study area. Based off this, it is unlikely that Aboriginal Heritage items will be discovered. No impact is likely to occur during the operation phase.	• All Personnel will undertake a Site Induction to ensure all are aware of their responsibilities in the event of discovery of an item of European or Aboriginal Heritage. • If any skeletal material is uncovered, works must cease immediately and DPE and the NSW Police must be notified.
3. Is the activity located within, or will it affect, areas: - within 200m of waters*	☒	**Pre-Construction, Construction and Operation** Low,	The site is situated approx. 40m from the South Pacific Ocean on a headland, within 200m of a cliff face and within 20m of a sandstone cliff face that has the potential to offer rock shelters. A basic search was conducted using the DPE	• All Personnel will undertake a Site Induction to ensure all are aware of their responsibilities in the event of discovery of an item of European or Aboriginal Heritage.

	Applicable? *	Likely impact (negligible, low, medium or high; negative or positive; or N/A)	Reasons (describe the type, nature and extent of the impact, the nature of the receiving environment and any proposed safeguards which will limit the impact)	Safeguards/mitigation measures
- within a sand dune system* - on a ridge top, ridge line or headland - within 200m below or above a cliff face - within 20m of or in a cave, rock shelter or a cave mouth?		Negative	Aboriginal Heritage Information Management System (AHIMS) Aboriginal Sites Register identified no Aboriginal sites were recorded within 100m of the study area. Based off this, it is unlikely that Aboriginal Heritage items will be discovered.	• If any skeletal material is uncovered, works must cease immediately and DPE and the NSW Police must be notified. • Water flow will be diverted to ensure that minimal amount of sediment is mobilised. • Sediment and erosion controls such as hay bales must be installed prior to the commencement of works.
4. If Aboriginal objects or landscape features are present, can impacts be avoided?	☐	N/A	No known Aboriginal objects or landscape features within the study area	NA
5. If the above steps indicate that there remains a risk of harm or disturbance, has a desktop assessment and visual inspection^ been undertaken (refer to the Due Diligence Code)?	☒	N/A	A basic search was conducted using the DPE Aboriginal Heritage Information Management System (AHIMS) Aboriginal Sites Register identified no Aboriginal sites were recorded within 100m of the study area. Based off this, it is unlikely that Aboriginal Heritage items will be discovered.	• All Personnel will undertake a Site Induction to ensure all are aware of their responsibilities in the event of discovery of an item of European or Aboriginal Heritage. • If any skeletal material is uncovered, works must cease immediately and DPE and the NSW Police must be notified
6. Is the activity likely to affect wild resources or access to these resources, which are used or valued by the Aboriginal community?	☐	N/A	N/A	NA

6.6 Other Cultural Heritage Impacts During Construction or Operation

	Applicable? *	Likely impact (negligible, maintenance, minor, major, contentious; or NA)	Reasons (describe the type, nature and extent of impact, taking into account the receiving environment & proposed safeguards which will limit the impact)	Safeguards/mitigation measures
1. What is the impact on places, buildings, landscapes or moveable heritage items? Attach relevant supporting information where required, such as a heritage impact statement.	☒	Negligible or Minor	The proposal is located within the Coastal Cliffs Conservation Area as outlined in the State Heritage Inventory (SHR) (DPE 2022k) and mapped and listed under the WLEP (2011) (Listing number C14). The proposal is set to construct a boardwalk across the coastal cliff area likely resulting to alterations to the following SHR Assessment of Significance criteria: • Aesthetic Significance: The proposal is likely to result in a minor reduction in the visual amenity of this SHR landscape during the pre-construction and construction phase. The operation phase is likely to result in a minor positive increase in aesthetic significance through a reduction in impacts to the cliff face from informal public track use. • Social Significance: The proposal is likely to result in a positive increase in the social qualities of the SHR landscape. • Integrity/Intactness: The proposal is likely to result in a minor reduction in the Integrity/Intactness of this SHR landscape during the pre-	NA

	Applicable? *	Likely impact (negligible, maintenance, minor, major, contentious; or NA)	Reasons (describe the type, nature and extent of impact, taking into account the receiving environment & proposed safeguards which will limit the impact)	Safeguards/mitigation measures
			construction and construction phase through increased human activity and further degradation to the vegetation.	
2. Is any vegetation of cultural landscape value likely to be affected (e.g. gardens and settings, introduced exotic species, or evidence of broader remnant land uses)?	☐	N/A	No vegetation of cultural landscape value is located within the vicinity of the site.	NA

6.7 Matters of National Environmental Significance under the EPBC Act

	Applicable? *	Impact level (negligible, low, medium or high; negative or positive; or NA)	Reasons (describe the type, nature and extent of impact, taking into account the receiving environment & proposed safeguards which will limit the impact)	Safeguards/mitigation measures
Is the proposal likely to impact on matters of national environmental significance as follows:				
- listed threatened species or ecological communities	☒	**Pre-construction and Construction** Low, Negative	The EPBC Protected Matter Search Tool (DAWE 2022; Refer to Appendix B), identified that the following MNES may occur within 5km of the proposal: • National Heritage Places – 1 • Listed Threatened Ecological Communities – 9 • Listed Threatened Species – 99 • Listed Migratory Species – 64 The site is not located within the national heritage place, the historic North Head – Sydney and is in its buffer area only. Of all the listed TEC's listed in this report, none were deemed as highly likely to occur on site, associated with the previously mapped PCT nor identified on site. Of the threatened and migratory species, two MNES were deemed to have a high likelihood of occurring on site. See Appendix E for Assessments of Significance Impact Criteria under the EPBC Act for these	• If any threatened flora or fauna species are identified in the vicinity of the works during the construction period works must cease immediately and a qualified Ecologist must be consulted. • During construction works, if any fauna are identified and require rescue, a qualified Ecologist, or fauna rescue volunteer, is to be notified. Works should not continue until the animal has been rescued. Call either Sydney Metro Wildlife on 9413 4300 or WIRES on 1300 094 737.

	Applicable? *	Impact level (negligible, low, medium or high; negative or positive; or NA)	Reasons (describe the type, nature and extent of impact, taking into account the receiving environment & proposed safeguards which will limit the impact)	Safeguards/mitigation measures
			species. No significant impact is expected to occur for any of these species and as such, no referral to the Minister is required.	
		Operation Negligible	No impact is expected to occur during the operation phase.	N/A
- listed migratory species	☐	N/A	Discussed above.	N/A
- the ecology of Ramsar wetlands	☐	N/A	N/A	N/A
- Commonwealth marine environment	☐	N/A	N/A	N/A
- world heritage values of world heritage properties	☐	N/A	N/A	N/A
- the national heritage values of national heritage places	☐	N/A	N/A	N/A

7 Summary of Impacts

Category of impact	Significance of impacts		
	Extent of impact	**Nature of impact**	**Environmentally sensitive features**
Physical and chemical	**Pre-construction** Low, Negative	Prior to construction, approximately 0.03ha of PCT 3812 across all strata layers (upper, mid and ground stratum) will be removed to facilitate the construction phase. This will lower soil stability through a reduction in soil stability provided by plant roots and is likely to result in minor increases in soil erosion. There is likely to also be alterations to surface hydrology through a reduction in plant root uptake of this hydrology. This runoff has the potential to enter waterways and cause turbidity and enhanced sedimentation resulting in minor impacts to the surrounding terrestrial and aquatic environment.	**Soil profile and existing instances of erosion and soil compaction.** **Alterations to Surface Hydrology**
	Construction Low, Negative	During construction, minor earthworks are predicted to occur to facilitate the construction of the boardwalk. These minor earthworks will be conducted in order to support the footings and create level areas to situate the boardwalk. This is likely to result in minor impacts to the soil profile and stability through soil compaction from machinery, laydown areas and increased foot traffic from contractors. The construction works are likely to have a minor impact to the site's surface hydrology. This is likely through the establishment an increased hard surface capturing rain throughout this stage and footings altering natural flows of surface hydrology. This is likely to be an unavoidable impact as a result of the proposal	**Soil profile and existing instances of erosion and soil compaction.** **Alterations to Surface Hydrology**

Category of impact	Significance of impacts		
	Extent of impact	Nature of impact	Environmentally sensitive features
	Operation Low, Positive	The operation of the boardwalk is likely to result in a minor impact to the sites soil quality and stability. As the footings are likely to be secured into bedrock (JKGeotechnics 2019), it is unlikely that this will result in a significant impact to the site's land stability. There will be minor reductions in the soil profile area at the locations of these footings. Due to the extent of the works, it is unlikely that this will result in continued disturbance to the soil profile nor result in increased instances of contamination caused by the proposal.	**Soil compaction** **Alterations to Surface Hydrology**
Biological	**Pre-construction** Low, Negative	Prior to construction, approximately 0.03ha of PCT 3812 across all strata layers (upper, mid, and ground stratum) will be removed, to facilitate the construction phase. This will result in a reduction in habitat for threatened fauna species likely to use the site and broadly include a reduction in roosting / sheltering, foraging and breeding habitat. The assessments of significance for these species are outlined in Appendix E and concluded no significant impact to threatened fauna species is expected as a result of the proposal	**Locally dependent fauna species and threatened species likely to utilise the site.**
	Construction Medium, Negative	The construction stage is predicted to not involve any further direct removal of vegetation. There are potential indirect impacts to vegetation through impacts from plant and vehicles, contractors, alterations to the environment and pollutants.	**Locally dependent fauna species and threatened species likely to utilise the site.**
	Operation Negligible	No impact is expected to occur during this phase	**N/A**
Community	**Pre-construction and Construction** Low, Negligible	During pre-construction and construction, the proposal is likely to restrict access to walking tracks in the area. This will be minor and temporary in nature.	**Any walking tracks that lead onto or connect with the proposal site likely to restrict public access.**
	Operation Medium, Positive	The proposal will improve public recreational access across McKillop Park and significantly improve public safety through reduction in the risk of slips, trips and falls.	**N/A**

Category of impact	Significance of impacts		
	Extent of impact	**Nature of impact**	**Environmentally sensitive features**
Natural resources	**Pre-construction** Low, Negative **Construction** Low, Negative	Prior to construction, approximately 0.03ha of PCT 3812 across all strata layers (upper, mid and ground stratum) will be removed, to facilitate the construction phase. This will result in a minor destruction to natural resources It is predicted that the proposal will require the use of natural resources such as water, fuel and timber. However due to the minor extent of the proposal it is unlikely that this will result in a significant reduction in natural resources.	**Natural resources such as vegetation**
	Operation Negligible		
Cultural heritage	**Pre-construction** Negligible or minor **Construction** Negligible or minor **Operation** Negligible	The proposal is located within the Coastal Cliffs Conservation Area as outlined in the State Heritage Inventory (DPE 2022). The proposal is set to construct a boardwalk across the coastal cliff area likely resulting to alterations to the following SHR Assessment of Significance criteria: • Aesthetic Significance: The proposal is likely to result in a minor reduction in the visual amenity of this SHR landscape during the pre-construction and construction phase. The operation phase is likely to result in a minor positive increase in aesthetic significance through a reduction in impacts to the cliff face from informal public track use. • Social Significance The proposal is likely to result in a positive increase in the aesthetic qualities of the SHR landscape. • Integrity/Intactness The proposal is likely to result in a minor reduction in the Integrity/Intactness of this SHR landscape during the pre-construction and construction phase through increase in human activity and further degradation to the vegetation.	**Coastal Cliffs Conservation Area**

8 Conclusions

In conclusion indicate if:

- there is likely to be a significant effect on the environment and an environmental impact statement is required
  - ☒ No
  - ☐ Yes

  Reason(s):

The proposal will not have a significant impact on any items of heritage or ecological significance. The site is not currently mapped within an area of Biodiversity Value on the Biodiversity Values Map. Prior to construction, approximately 0.03ha of PCT 3812 across all strata layers (upper, mid and ground stratum) will be removed to facilitate the construction phase. No threatened flora and fauna or TEC's were identified on site. Assessments of Significance have been conducted for threated species likely to occur on or in proximity to the site as outlined in Appendix E, concluding that the proposal will not have a significant impact on these species. Other environmental impacts such as alterations to the soil profile and surface hydrology are considered minor and manageable given the implementation of the mitigation measures outlined within this report.

- there is likely to be a significant effect on threatened species, populations, ecological communities or their habitats and a species impact statement is required
  - ☒ No
  - ☐ Yes

  Reason(s):

Assessments of significance have been undertaken for all threatened species highly likely to occur within the site (Appendix E), concluding that the proposal will not have a significant impact on these species.

- the activity is in respect of land that is, or is part of, an area of outstanding biodiversity value and a species impact statement is required
  - ☒ No
  - ☐ Yes

- the activity is likely to significantly impact matters of national environmental significance listed under the Commonwealth Environment Protection and Biodiversity Conservation Act
  - ☒ No
  - ☐ Yes

  Reason(s):

The EPBC Protected Matter Search Tool (DAWE 2022; refer to Appendix B), identified that the following MNES may occur within 5km of the site:

- National Heritage Places – 1
- Listed Threatened Ecological Communities – 4
- Listed Threatened Species – 99
- Listed Migratory Species – 64

Of these, two (2) fauna species were deemed to have a high likelihood of occurring on site. An assessment of significance was undertaken for these species (Appendix E), concluding that the proposal will not have a significant impact on these species. No other MNES were identified within or surrounding the site.

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Appendix A. Proposed Plans

Appendix B. EPBC Protected Matters Search

Please see Appendix H of the FFIA.

Appendix C. Aboriginal Heritage Information Management System Search

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. *

Figure 0-1 Results of the AHIMS search

Appendix D. Site Photographs

Appendix E. Flora and Fauna Impact Assessment

Please see the final FFIA for the site.