Review of Environmental Factors

Proposed Reinstatement of Green Cape Lighthouse Project

A report for the Australian Maritime Safety Authority | July 2024

Report No. 24.REF-004

Citation

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Disclaimer

The scope of work for this report was defined by time and budgetary constraints and the availability of other reports and data.

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Definitions & Acronyms used within this REF

BVSC	Bega Valley Shire Council
EEC	Endangered Ecological Community
EP&A Act	NSW Environmental Planning and Assessment Act 1979
EPBC Act	Commonwealth Environment Protection and Biodiversity Conservation Act 1999
FM Act	NSW Fisheries Management Act 1994
ESD	Ecologically Sustainable Development
HBT	Hollow-bearing tree
LEP	Local Environmental Plan
LGA	Local Government Area
Likely	Taken to be a real chance or possibility
Locality	The area within a 5 km radius of the proposal
Local population (migratory or nomadic fauna)	The population comprises those individuals that are likely to occur in the study area from time to time.
Local population (resident fauna)	The population comprises those individuals known or likely to occur in the study area, as well as any individuals occurring in adjoining areas (contiguous or otherwise) that are known or likely to use habitats in the study area.
Local population (threatened flora)	The population comprises those individuals occurring in the study area or the cluster of individuals that extend into habitat adjoining and contiguous with the study area that could reasonably be expected to be cross-pollinating with those in the study area.
Migratory species	A species specified in the schedules of the EPBC Act
NES	National Environmental Significance
NP	National Park
NP&W Act	NSW National Parks and Wildlife Act 1974
NPWS	National Parks and Wildlife Service
OEH	NSW Office of Environment & Heritage
PCT	Plant Community Type
PoM	Plan of Management
Proposal	The area to be directly affected by the proposal. That is, the footprint of the proposal.
REF	Review of Environmental Factors
Region	A biogeographical region that has been recognised and documented such as the Interim Biogeographical Regions of Australia (IBRA) (Thackway and Creswell, 1995). The study area is located within the South East Corner Bioregion.
SEPP	State Environmental Planning Policy
Subject site	The area to be directly affected by the proposal; that is, the footprint of the proposal.
Study area	The study area includes the subject site and any additional areas that are likely to be affected by the proposal, either directly or indirectly.

TEC	Threatened ecological community (includes those communities listed as vulnerable, endangered, or critically endangered).
Threatened biota	Those threatened species, endangered populations or endangered ecological communities considered known or likely to occur in the study area.
Threatened species	A species specified in the schedules of the BC Act, FM Act or the EPBC Act.

Declaration

This Review of Environmental Factors provides a true and fair review of the proposed activity in relation to its potential effects on the environment. It addresses to the fullest extent possible, all of the factors listed in Clause 171 of the Environmental Planning and Assessment Regulation 2021.

As the person responsible for the preparation of the REF, I certify that, to the best of my knowledge, this REF is in accordance with the EP&A Act, the EP&A Regs and the Guidelines approved under section 170 of the EP&A Regs, and the information it contains is neither false nor misleading.

Signed: [redacted]

Name: [redacted]

Delegation: Director / Principal Ecologist, EnviroKey Pty. Ltd.

Date: 04 July 2024

By endorsing the REF, the proponent confirms that the information in the REF is accurate and adequate to ensure that all potential impacts of the activity can be identified.

Signed [redacted]

Name [redacted]

Position Senior Advisor AtoN Project Engineering

Date 05 July 2024

Table of Contents

1 INTRODUCTION

EnviroKey were engaged by the Australian Maritime Safety Authority (AMSA) to prepare a Review of Environmental Factors (REF) to assess the environmental impacts associated with the reinstatement of the Green Cape Lighthouse Project (the project) in the Bega Valley local government area.

Green Cape Lighthouse was the first cast concrete lighthouse tower in Australia and is situated on Green Cape in Beowa National Park. The original revolving lantern was fuelled by kerosene and mantle and was electrified in 1962. The tower has since been replaced by an automated solar powered light on a steel lattice skeleton tower.

AMSA proposes to reinstate the traditional lighthouse as a functional aid to navigation for mariners, as well as demolish the deteriorating steel lattice tower. The project looks to install a new power efficient lens drive motor, replace the existing tungsten filament lamp with a high-powered LED lantern including control equipment, and install a new enclosure within the lantern room to house the control equipment. In addition to the existing power supply, the proposal would also install an inverter/charger and lithium battery system within the powerhouse battery room and replace the existing solar panels and aluminium mounting rack with new solar panels and racking, utilising the existing solar array frame.

The general location for this proposal is shown in **Figure 1.1.**

Accordingly, this REF:

- Describes the existing environment;
- Identifies the environmental impacts associated with the proposed activity; and
- Recommends safeguards designed to mitigate potential impacts associated with the proposed activity.

This REF has been prepared in accordance with the requirements of Section 111 of the *Environmental Planning and Assessment Act* 1979 and Section 171 of the *Environmental Planning and Assessment Regulation* 2021 specifying a “duty to consider environmental impact” and in accordance with *Guidelines for preparing a Review of Environmental Factors* (February 2022).

This REF was prepared by suitably qualified personnel with full details of these provided (**Appendix 1**).

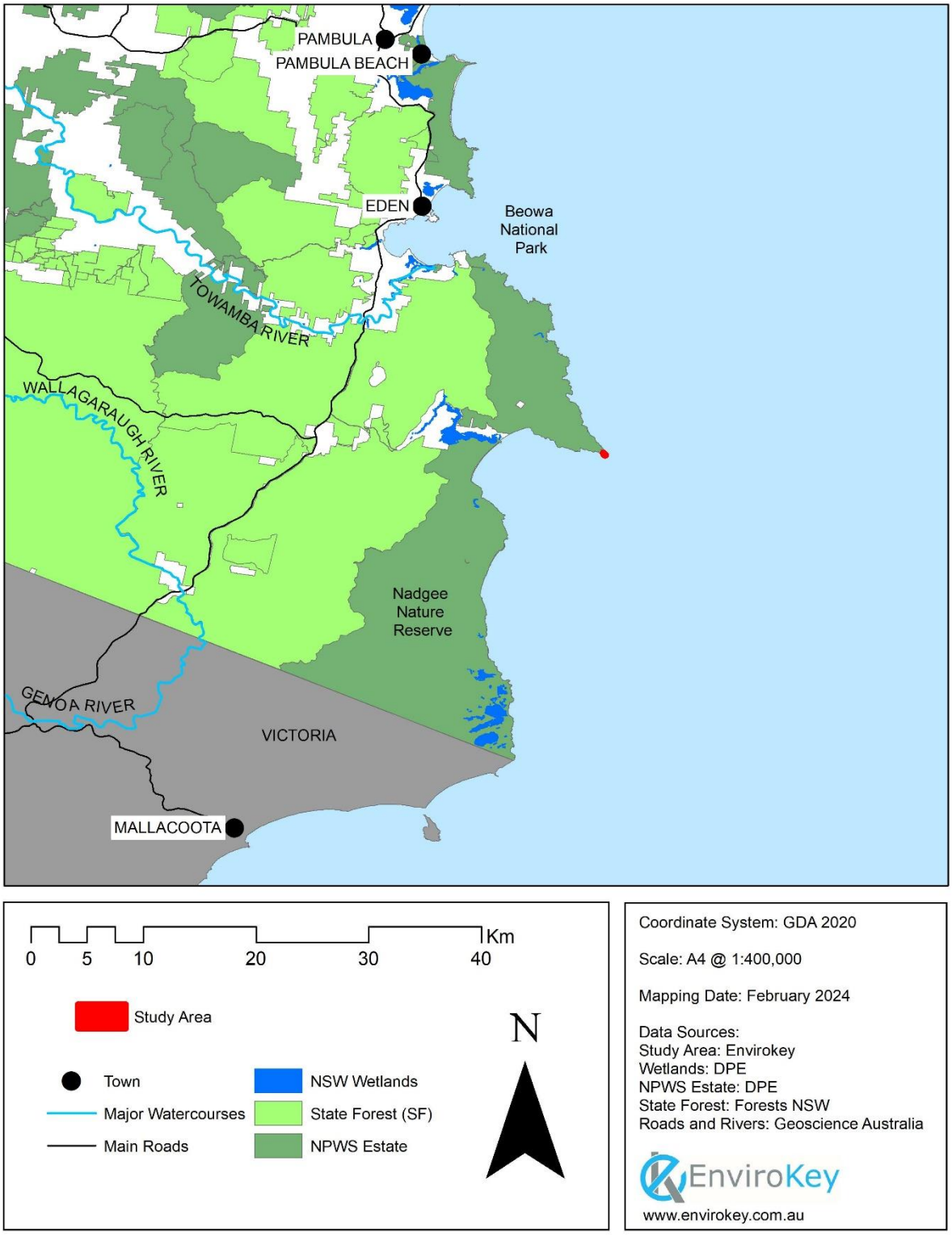

Figure 1-1: General location of the proposal

2 DESCRIPTION OF THE PROPOSED ACTIVITY

Proposal name and brief description	Proposed reinstatement of the Green Cape Lighthouse and the removal of the existing steel lattice tower.
Location of activity	Green Cape Lighthouse, Green Cape Lighthouse Road, Green Cape (see **Figure 6-1**).
Name of NPWS park or reserve	Beowa National Park
Description of any unreserved land	N/A
NPWS Area	South Coast
Council	Bega Valley Shire Council
NSW State electorate	Bega
Estimate capital cost of project*	$650,000.00 Incl GST
Estimated duration of project	12 Months
Proposed commencement date	1 July 2024
Proposed completion date	30 June 2025

3 PROPONENTS DETAILS

Contact name	[redacted]
Position	[redacted]
Street address	[redacted]
Postal address (if different to above)	[redacted]
Contact numbers (both office and mobile numbers)	[redacted]
Email	[redacted]

Proponent external to NPWS or DPE Environment and Heritage Group (EHG)

Organisation	Australian Maritime Safety Authority
ACN/ABN	ABN 65 377 938 320

Area Manager or Unit Manager	[redacted]

4 PERMISSIBILITY AND ASSESSMENT PATHWAY

4.1 PERMISSIBILITY UNDER NSW LEGISLATION

4.1.1 NSW National Parks and Wildlife Act 1974 and NPW Regulation

The NSW *National Parks and Wildlife Act 1974* (NP&W Act) is administered by DPE and provides the basis for the legal protection of flora and fauna in NSW. Unless a licence is obtained under the Act (or the BC Act), it is an offence to harm any animal that is protected or is a threatened species, population or ecological community. It is also an offence to pick any plant that is protected or is a threatened species, population or ecological community. In addition, a person must not, by act or omission, damage any critical habitat. Activities in accordance with a Part 5 Assessment do not require a licence under the Act. The NP&W Act also protects Aboriginal heritage values.

The following matters have been considered when assessing permissibility under the Act:

Objects of the Act (s.2A)

The proposal is broadly consistent with the objects of the Act. More specifically, the proposal is consistent with the following:

- Clause 1, sub-clause (b) (i) - places of social value to the people of NSW
- Clause 1, sub-clause (b) (ii) – places of historical significance
- Clause 1, sub-clause (c) – fostering public appreciation, understanding and enjoyment of nature and cultural heritage and their conservation.

The proposal is consistent with the Act and aforementioned sub-clauses by:

- Assisting with the conservation of nature. The proposal would allow for the removal of the existing lattice tower that would assist with conservation by not impacting any new areas of Green Cape.
- Assisting with the conservation of objects, places or features by returning the lighthouse to its original working condition, with minimal to negligible impacts to the existing lighthouse material and features.
- Assisting with fostering public appreciation, understanding and enjoyment of nature and cultural heritage by relighting the lighthouse. This may attract more visitors to Green Cape, which then fosters a public appreciation for the area, and
- Not impacting on the management of land reserved under the Act as it is an existing facility.

Objects – Reserve management principles (s.30E, 30F & 30K)

The proposal is broadly consistent with management principles for OEH estate for national parks as it would provide provision for sustainable use (including adaptive reuse) of the existing Green Cape Lighthouse, and the removal of the existing steel skeleton tower which is having a negative visual impact on the surrounding amenity. The proposal would also conserve the biodiversity and cultural heritage of Green Cape by not disturbing any natural habitat or soil that has not previously been disturbed.

Relevant section of a plan of management

The proposal is consistent with the Ben Boyd National Park and Bell Bird Creek Nature Reserve Plan of Management (OEH 2021) (Section 6: Recreation, Education and Research and Section 7: Management Operations) as the reinstatement of the lighthouse would continue to be a focal point for tourism and provide an automated maritime light in the Green Cape Marine Precinct.

Leasing, licensing and easement provisions

A new lease between AMSA and NPWS is required and will be applied for with NPWS. The new lease would need to be specific in terms of the lighthouse reuse. The proposal would not conflict with any of these provisions of the Act as the new lease would be provided to AMSA.

Management powers and responsibilities of NPWS

The proposal is consistent with the management powers and responsibilities specified within the Act.

4.1.2 NSW Heritage Act 1977

The NSW *Heritage Act 1977* defines 'environmental heritage' and can include places, buildings, works, relics, moveable objects, and precincts. A property is a heritage item if it is:

- listed in the heritage schedule of the Bega Valley Local Environmental Plan (LEP);
- listed on the State Heritage Register, a register of places and items of particular importance to the people of NSW; or
- listed in the National Heritage Database.

The activity is located on land that contains the Green Cape Maritime Precinct listed on the State Heritage Register. This is also listed on the heritage schedule of the Bega Valley LEP under Green Cape Lighthouse and residences group (I053). Heritage items are considered in Section 9.3 of this REF.

A Section 60 Heritage Approval has been granted by NSW Heritage under the NSW Heritage Act 1977. The approval and associated conditions are within **Appendix 10.**

4.1.3 NSW Biodiversity Conservation Act 2016

The *Biodiversity Conservation Act 2016* (BC Act) specifies that a Test of Significance (ToS) must be considered by decision-makers regarding the effect of a proposed development or activity on threatened species or ecological communities, or their habitats (OEH, 2018). These factors form part of the threatened species assessment process under the *Environmental Planning and Assessment Act 1979* (*EP&A Act*) and are collectively referred to as the ToS.

Determining authorities have a statutory obligation, under Division 5.1 of the *EP&A Act*, to consider whether a proposal is likely to significantly affect threatened species, populations or ecological communities, or their habitats by applying the ToS. In application of the ToS, a determining authority may opt in to the Biodiversity Offset Scheme (BOS) should a significant impact on threatened species or ecological communities, or their habitats be likely, or that the proposal is impacting an Area of Outstanding Biodiversity Value (AOBV). The application of the ToS within **Appendix 5** concludes that the proposal is unlikely to have a significant impact, and that the proposal is not located within an AOBV, AMSA is not required to considered biodiversity offsets, nor are any warranted.

4.1.4 NSW Fisheries Management Act 1994

The NSW *Fisheries Management Act 1994* (FM Act) aims to conserve fish stocks, key habitats, threatened species, populations and ecological communities of fish and marine vegetation. It also aims to promote viable commercial fishing, aquaculture industries and recreational fishing.

As a public authority, the NPWS does not require a permit for dredging and reclamation works within ‘water land’ under Clause 200 (1) of the FM Act. Under this act, ‘water land’ means land submerged by water, whether permanently or intermittently or whether forming an artificial or natural body of water. The proposal would not be carried out within any areas that fit within the definition of ‘water land’, therefore there are no restrictions or approvals required under this Act.

4.1.5 NSW Wilderness Act 1987

The objectives of the NSW *Wilderness Act 1987 are*:

- To provide for the permanent protection of wilderness areas.
- To provide for the proper management of wilderness areas.
- To promote the education of the public in the appreciation, protection and management of wilderness.

There are no areas listed as wilderness under NSW *Wilderness Act 1987* in the locality of this proposal.

Therefore, no areas listed under the NSW *Wilderness Act 1987* would be directly or indirectly impacted as a result of the proposal.

4.2 NSW ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

The NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) forms the legal and policy platform for development assessment and approval in NSW and aims to, inter alia, 'encourage the proper management, development and conservation of natural and artificial resources'.

The proposal will be determined by NSW National Parks and Wildlife Service (NPWS) under Division 5.1 of the Act. The NPWS, as the 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 that activity' pursuant to Section 111 of the Act. Clause 171 of the *Environmental Planning & Assessment Regulation 2021* (EP&A Regulation) identifies matters that 'must be taken into account concerning the impact of an activity on the environment'.

Section 5A of the EP&A Act contains five factors to be considered by determining authorities when considering the significance of impacts on threatened biota associated with activities under Part 5 of the Act (the '5-part test'). Should the 5-part test determine that a '*significant effect*' on any threatened biota listed under the BC Act is likely, then the authority must prepare a Species Impact Statement. Species which occur or have the potential to occur in the study area have been considered in **Appendix 4.**

The EP&A Act provides the framework for environmental planning in NSW and includes provisions to ensure that proposals which have the potential to significantly affect the environment are subject to detailed assessment.

It is confirmed that a REF is the applicable assessment pathway if each of the following apply:

☒ The activity may be undertaken without development consent under the provisions of s 2.73(1)(a) of the Transport and Infrastructure SEPP (T&ISEPP) as it is:

> ☒ on land reserved under the NPW Act or acquired under Part 11 of the NPW Act, **and**
>
> ☒ for a purpose authorised under the NPW Act.

☒ The activity may be undertaken without development consent under the provisions of s.2.80(4) of the T&ISEPP provided that NPWS authorise the activity under the NPW Act

☒ The activity is not designated development under Schedule 3 of the Environmental Planning and Assessment Regulation 2021

☒ The activity is not state significant infrastructure under Schedule 3(7) of the Planning Systems SEPP.

☒ The activity is not designated development under the s 2.7(2) of the Resilience and Hazards SEPP as:

- ☒ it is not on land mapped as littoral rainforest or coastal wetland, **or**
- ☐ it is on land mapped as littoral rainforest or coastal wetland, **and** that land is reserved (not acquired) under the NPW Act, **and** the activity is consistent with the adopted plan of management (s 2.7(6) of the Resilience and Hazards SEPP), **or**
- ☐ it is on land mapped as littoral rainforest or coastal wetland, **and** the activity is routine maintenance with adverse effects restricted to the minimum possible (s 2.7(4) of Transport and Infrastructure SEPP), **or**
- ☐ it is coastal protection works by a public authority and is either identified in a coastal management program, or is beach nourishment, temporary placement of sandbags or routine maintenance and repair of existing coastal protection works (s 2.16(2)(a) of Resilience and Hazards SEPP).

☒ The activity is not declared to be exempt development under an environmental planning instrument or fails to fully meet the requirements for exempt development.

4.3 COMMONWEALTH ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999

The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) enables the Australian Government to join with the states and territories in providing a national scheme of environment and heritage protection and biodiversity conservation to ensure that actions likely to cause a '*significant impact*' on matters of national environmental significance (NES) undergo an assessment and approval process. Under the Act, an action includes a project, undertaking, development, or activity.

Under the EPBC Act, actions that have, or are likely to have a significant impact on a matter of national environmental significance (NES) require approval from the Australian Government Minister for the Department of the Environment (DotE) (DoCCEE&W, 2022).

The nine matters of NES that are protected under the EPBC Act are:

- Listed threatened species and ecological communities
- Listed migratory species
- Wetlands of international importance
- Commonwealth marine environment
- World heritage properties
- National heritage places

- The Great Barrier Reef Marine Park
- Nuclear actions
- A water resource, in relation to coal seam gas development and large coal mining development.

The Significant Impact Guidelines for the EPBC Act (DoCCEE&W, 2022) set out criteria to assist in determining whether an action requires approval and in particular, whether a proposed action is likely to have a 'significant impact' on a matter of NES.

If a proposed action is likely to have a significant impact on a matter of NES, referral of the proposal to the Department of the Environment and Energy is required to confirm whether the Commonwealth considers the proposal a 'controlled action' and subsequently requiring Minister approval under the EPBC Act.

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) applies as the activity is on land that contains the following, or the activity may affect:

- world heritage or national heritage values of a place on the World Heritage List or National Heritage List
- the ecology of a Ramsar wetland
- nationally listed threatened species and ecological communities or listed migratory species.

This REF provides an assessment to ascertain whether the proposal will require referral to the Commonwealth. This assessment is provided within **Appendix 6.**

4.4 ECOLOGICALLY SUSTAINABLE DEVELOPMENT

Ecologically sustainable development (ESD) involves the effective integration of social, economic and environmental considerations in decision-making processes. In 1992, the Commonwealth and all state and territory governments endorsed the *National Strategy for Ecologically Sustainable Development*. In NSW, the concept has been incorporated in legislation such as the EP&A Act and Regulation.

For the purposes of the EP&A Act and other NSW legislation, the Intergovernmental Agreement on the Environment (1992) and the *Protection of the Environment Administration Act* 1991 outline the following principles which can be used to achieve ESD.

(a) The precautionary principle: that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.

In the application of the precautionary principle, public and private decisions can be guided by:

(i) careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment, and

(ii) an assessment of the risk-weighted consequences of various options,

(b) Inter-generational equity: that the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations,

(c) Conservation of biological diversity and ecological integrity: that conservation of biological diversity and ecological integrity should be a fundamental consideration,

The aims, structure and content of this REF are guided by these principles. The precautionary principle has been adopted in the assessment of impact; all potential impacts have been considered and mitigated where a risk is present. Where uncertainty exists, measures have been suggested to address it.

4.5 CONSISTENCY WITH NPWS POLICY

4.5.1 Ben Boyd National Park Plan of Management

Under the NPWS Act, national parks must be managed to protect and conserve areas containing outstanding or representative ecosystems, natural or cultural features, or landscapes that provide opportunities for public appreciation and inspiration and sustainable visitor use.

A part of the Plan of Management (PoM), the proposal would be considered consistent with NPWS policy to provide an area for an automated light within the Green Cape Marine Precinct given the existing use, and the administration of an existing lease between NPWS and AMSA.

The proposal addressed in this REF would see the removal of the existing automated marine light from the stand-alone structure, the demolition of that structure, and the light reinstated within the historic Green Cape Lighthouse. The lighthouse features prominently within the PoM (Sections 3.1, 3.2, 3.3, 4.5, 6.1, 6.2, 7 and 8), and the current proposal would result in the lighthouse becoming functionally operational again.

4.6 SUMMARY OF APPROVALS SOUGHT

4.6.1 Approval under the NP&W Act

AMSA is seeking approval to carry out the proposal as described within this REF. This would also result in a new lease being negotiated between NPWS and AMSA.

4.6.2 Other approvals

AMSA is not seeking any additional approvals at this time.

4.6.3 Publication triggers

There are no triggers for publication of this REF relevant to the proposal.

5 CONSULTATION - GENERAL

5.1 STATE ENVIRONMENTAL PLANNING POLICY (T&ISEPP) 2021

Part 2 of the T&ISEPP contains provisions for public authorities to consult with local councils and other public authorities prior to the commencement of certain types of development. This is detailed below.

Is consultation with Council required under sections 2.10-2.12 and 2.4 of the SEPP (Transport and infrastructure)?

Are the works likely to have a substantial impact on the stormwater management services which are provided by council?	☐ **Yes**	☒ **No**
Are the works likely to generate traffic to an extent that will strain the capacity of the existing road system in a local government area?	☐ Yes	☒ No
Will the works involve connection to a council owned sewerage system? If so, will this connection have a substantial impact on the capacity of the system?	☐ Yes	☒ No
Will the works involve connection to a council owned water supply system? If so, will this require the use of a substantial volume of water?	☐ Yes	☒ No
Will the works involve the installation of a temporary structure on, or the enclosing of, a public place which is under local council management or control? If so, will this cause more than a minor or inconsequential disruption to pedestrian or vehicular flow?	☐ Yes	☒ No
Will the works involve more than a minor or inconsequential excavation of a road or adjacent footpath for which council is the roads authority and responsible for maintenance?	☐ Yes	☒ No

Are the works likely to have a substantial impact on the stormwater management services which are provided by council?	☐ **Yes**	☒ **No**
Is there a local heritage item (that is not also a state heritage item) or a heritage conservation area in the study area for the works? If yes, does a heritage assessment indicate that the potential impacts to the heritage significance of the item/area are more than minor or inconsequential? A Statement of Heritage Impact for the proposal confirms that the impacts of the proposal are minor and inconsequential.	☐ Yes	☒ No
Is the proposal within the coastal vulnerability area and is inconsistent with a certified coastal management program applying to that land?	☐ Yes	☒ No
Are the works located on flood liable land? If so, will the works change flooding patterns to more than a minor extent?	☐ Yes	☒ No

Is consultation with a public authority (other than Council) required under sections 2.13, 2.15 and 2.16 of the SEPP (Transport and Infrastructure)?

Are the works located on flood liable land? (to any extent) (s2.13 SEPP (Transport & Infrastructure)) If so, do the works comprise more than minor alterations or additions to, or the demolition of, a building, emergency works or routine maintenance?	☐ **Yes**	☒ **No**
Are the works adjacent to a national park, nature reserve or other area reserved under the *National Parks and Wildlife Act 1974*, or on land acquired under that Act*?*	☐ Yes	☒ No
Are the works on land in Zone C1 National Parks and Nature Reserves or in a land use zone equivalent to that zone? Yes, and NPWS is the land manager.	☒ Yes	☐ No
Are the works adjacent to an aquatic reserve or a marine park declared under the *Marine Estate Management Act 2014*?	☐ Yes	☒ No

Are the works located on flood liable land? (to any extent) (s2.13 SEPP (Transport & Infrastructure)) If so, do the works comprise more than minor alterations or additions to, or the demolition of, a building, emergency works or routine maintenance?	☐ **Yes**	☒ **No**
Is the proposal in the Sydney Harbour Foreshore Area as defined by the *Sydney Harbour Foreshore Authority Act 1998*?	☐ Yes	☒ No
Are the works for the purpose of residential development, an educational establishment, a health services facility, a correctional facility or group home in bush fire prone land?	☐ Yes	☒ No
Would the works increase the amount of artificial light in the night sky and that is on land within the dark sky region as identified on the dark sky region map? (Note: the dark sky region is within 200 kilometres of the Siding Spring Observatory)	☐ Yes	☒ No
Are the works on buffer land around the defence communications facility near Morundah? (Note: refer to Defence Communications Facility Buffer Map referred to in clause 5.15 of Lockhart LEP 2012, Narrandera LEP 2013, and Urana LEP 2011).	☐ Yes	☒ No
Are the works on land in a mine subsidence district within the meaning of the *Mine Subsidence Compensation Act 1961*?	☐ Yes	☒ No

5.2 PUBLIC CONSULTATION

Public exhibition of the REF is considered to be unnecessary because of the relatively small scale of the project and the safety requirement for a maritime lantern in this location.

5.3 STAKEHOLDERS AND GOVERNMENT AGENCIES

Extensive consultation has also been undertaken with relevant parties within NPWS and the NSW State Heritage Office (see **Appendix 2**).

6 THE PROPOSAL

6.1 LOCATION OF ACTIVITY

Description of location	Green Cape Lighthouse, Green Cape Lighthouse Road, Green Cape		
Site commonly known as If applicable	Green Cape Lighthouse		
Park name Lands reserved under NPW Act	Beowa National Park		
Other tenures Include lands acquired under Part 11 of the NPW Act	N/A		
Lot/DP If available	N/A		
Street address If available	Green Cape Lighthouse Rd		
Site reference	Easting: 237377.63	Northing: 5872740.85	MGA zone: 56

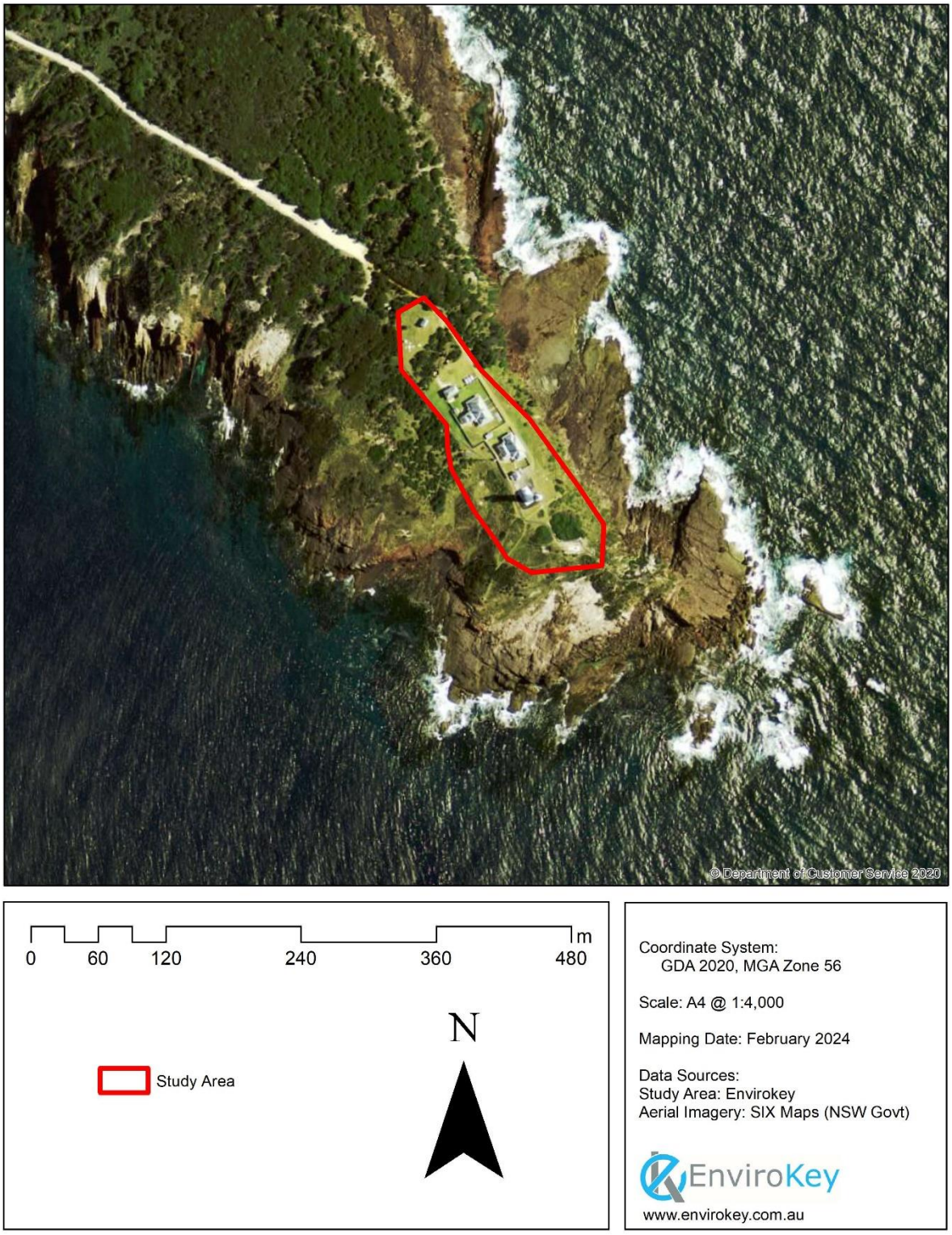

Figure 6-1: Location of the study area used for this REF.

6.2 DESCRIPTION OF THE PROPOSED ACTIVITY

The Australian Maritime Safety Authority (AMSA) is proposing to reinstate the traditional Green Cape Lighthouse managed by NSW National Parks & Wildlife Service (NPWS) as a functional aid to navigation for mariners. This includes the demolition of the steel lattice tower, with its foundational concrete slab remaining in situ. A description of the proposal is detailed within **Appendix 3**.

6.2.1 The proposed activity: pre-construction, construction, operation and remediation

- The existing lease between AMSA and NPWS would be renegotiated prior to works commencing
- Dismantle the steel lattice tower, transfer the materials off site and dispose of at an appropriately approved waste facility
- Replacement of the existing solar array, utilising the existing solar frame footings
- Utilise the existing conduits, cable trays and cabling routes (where appropriate)
- Various asbestos penetrations during the proposed work. Any asbestos work would be conducted in line with workplace health and safety guidelines for asbestos handling.
- Install a dedicated AMSA inverter charger and lithium battery system in a free-standing enclosure within the NPWS powerhouse battery room
- Install a high-power LED light source in the traditional lens
- Install a power efficient lens drive motor system
- Install a free-standing enclosure in the lantern room to house the LED light source and lens drive motor control equipment
- Servicing of the existing mercury-float pedestal
- Removal of rubbish and construction equipment at the completion of the proposed works.

6.2.2 The activity footprint (size of the area of impact)

The study area of the proposed works is approximately 1.9 hectares. This includes the steel lattice tower, the traditional lighthouse and its cottages, the solar array, and the existing NPWS parking area (Figure 6-1). However, no native vegetation is proposed for removal. Impacts are confined to the existing built structures.

6.2.3 Proposed construction methods, materials and equipment

- Removal of the steel lattice tower

The steel lattice tower would be dismantled by ground crew, the tower materials would then be removed and transported via helicopter to a truck on standby located north west of the study area on an existing hard stand location.

Photo 6-1: Steel lattice tower

- Reinstatement of the traditional lighthouse

The installation of the aid to navigational equipment will require the addition of new power efficient lens drive motors, replacement of the existing tungsten filament lamp with a high-powered LED lantern including control equipment, and the installation of a new enclosure within the lantern room to house the control equipment. In addition to the existing NPWS power supply, installation of an AMSA owned inverter/charger and lithium battery system providing an additional four days autonomy for the operation of the lighthouse in the event the NPWS power supply fails, or maintenance tasks are being undertaken. A failsafe of an emergency generator would also be installed.

Photo 6-2: Green Cape Lighthouse (with lattice tower in the background)

6.2.4 Receival, storage and on-site management for materials used in construction

Parking for ASMA and ground crew vehicles would be located adjacent to the keeper's cottage in the existing dedicated NPWS parking area, or in the visitor carpark. Materials used to reinstate the traditional lighthouse and installation of the electrical system would be received and then installed by a contractor. A helicopter would be operating for the removal of the steel lattice tower and the existing helipad may be utilised during this process. The tower materials would then be transferred to a truck parked in an NPWS approved existing hard stand area adjacent to Green Cape Road, north of the study area.

Photo 6-3: Dedicated NPWS parking area

Photo 6-4: Steel lattice tower and helipad

6.2.5 Earthworks or site clearing including extent of vegetation to be removed

No earthworks or vegetation removal is required by the proposed works. The concrete foundation slab that the existing tower is built upon would be left undisturbed, and no excavation would be undertaken. The helipad, which is currently maintained by AMSA, will be handed back to NPWS and will remain in situ.

6.2.6 Environmental safeguards and mitigation measures

Environmental safeguards are listed section 9 of this REF.

6.2.7 Sustainability measures – including choice of materials and water/energy efficiency

To reinstate the traditional lighthouse, the NPWS off grid power supply system would be utilised. An inverter charger and lithium battery system would be installed within the NPWS powerhouse battery room to incorporate enough capacity to run the lighthouse load for four days. By utilising the off-grid power supply system as a supply grid and replacing the existing solar panels, it provides the opportunity to solar charge the ASMA lithium batteries during the day. The existing incandescent lamp would be replaced with a more efficient high-powered LED light source.

The concrete foundation slab that the existing tower is built upon would be left undisturbed, and no excavation would be undertaken. Furthermore, the helipad, which is currently maintained by AMSA, will be handed back to NPWS and will remain in situ.

Photo 6-5: NPWS off grid power supply

6.2.8 Construction timetable and staging and hours of operation

The proposed lattice tower removal and reinstatement of the traditional lighthouse would be carried out within the 2023/2024 and 2024/2025 financial years. Standard working hours would be implemented for the duration of the proposed works.

Standard working hours:

- Monday-Friday: 7:00am to 6.00pm
- Saturday: 8.00am to 1.00pm
- Sunday and Public Holidays: no work
- No work during NSW school holidays.

7 REASONS FOR THE ACTIVITY AND CONSIDERATION OF ALTERNATIVES

7.1 OBJECTIVES AND REASONS FOR THE PROPOSAL

The objectives of the proposal are:

- Reinstate the traditional Green Cape Lighthouse as a functional aid to maritime navigation
- Demolish the existing steel lattice tower
- Improve the visual amenity of the Green Cape Maritime Precinct.

7.2 CONSIDERATION OF ALTERNATIVES

7.2.1 Option 1: Do Nothing

The “do nothing” option is an option that AMSA and NPWS are legally obliged to consider under the EP&A Act. With consideration of the ‘do nothing’ option, the traditional lighthouse would not be reinstated, and the lattice tower would continue to deteriorate to a point of not functioning. However, there would be no discernible impact to the environment, unless a resulting maritime disaster (as a result of no maritime beacon) occurred.

Advantages

- Native vegetation remains undisturbed
- No capital expense.

Disadvantages

- The lattice tower would continue to deteriorate
- If the lattice tower fails, there would be no functioning navigation aid
- The traditional lighthouse would not be reinstated
- No improvement to the visual landscape.

7.2.2 Option 2: Rebuild a new tower

Option 2 would aim to remove the existing steel lattice tower and build a new one.

Advantages

- The existing deteriorating lattice tower would be removed and replaced
- A replacement tower would improve the aesthetics of the area.

Disadvantages

- Disturbance to native flora and fauna
- No improvements to the visual landscape
- Substantial capital expense.

7.2.3 Option 3: Green Cape Lighthouse reinstatement

Option 3 aims to reinstate Green Cape Lighthouse as a functional aid to navigation for mariners and the steel lattice tower would be dismantled, removed and disposed of.

Advantages

- The traditional state heritage listed lighthouse would be reinstated
- The deteriorating steel lattice tower would be removed
- Removal of the lattice tower would significantly improve the aesthetics of the area.

Disadvantages

- Minor threatened species disturbance as a result of the operation of a helicopter
- Moderate capital expense.

7.3 JUSTIFICATION OF PREFERRED OPTION

AMSA as the proponent, have determined that the preferred option is Option 3, Green Cape Lighthouse reinstatement.

Option 3 meets the objectives of the proposal, maintains core environmental values, and maintains navigational aid for mariners.

For the purpose of this REF, Option 3 is the preferred option for the proposal.

7.4 SITE SUITABILITY

Site character	Rocky peninsular
Landscape context	Sea-carved landscape with folded rock formations and heath vegetation that contrasts against the Pacific Ocean
Application of site suitability matrix	The proposed work is part of the existing site
Strategic site assessment (if required by the matrix)	N/A

8 DESCRIPTION OF THE EXISTING ENVIRONMENT

8.1 OVERVIEW OF THE PROJECT AREA

Green Cape Lighthouse is located on the Green Cape rocky peninsula within Beowa National Park. The Green Cape area is the southern section of the park where the lighthouse accommodation and the 32 km light to light walk is situated. Visitors are attracted to Green Cape for its views of the coastline, the array of wildlife, walking tracks, and the whale watching season.

8.2 NATURAL VALUES

8.2.1 Geology, geomorphology and topography

According to the 1:250,000 Bega - Mallacoota Geology Map, the geology of the area is largely “massive, mudrock, coarse sandstone”.

To gain a more detailed understanding of the landscapes within the study area, information was taken from the NSW Mitchell Landscapes (Mitchell, 2002). These provide a geological description of the landscapes of each bioregion within NSW. The study area is within the Bodalla – Nadgee Coastal Sands (CSB) landscape in the South East Corner (SEC) Region (**Figure 8-1**). This landscape consists of beach, dune and lagoon complex of Quaternary quartz sands, with an elevation of 0 to 20m.

Beowa National Park lies on red, brown and green shales, sandstones, siltstones and quartzites. The park is divided into two geological zones: sedimentary basement rock in the north and much older metamorphic rock in the south. Generally, the topography for this coastal region consists of an undulating landform, with an elevation of below 50 metres above sea level.

8.2.2 Soil types and properties

The Bodalla – Nadgee Coastal Sands landscape consists of beach, dune and lagoon complex of Quaternary quartz sands. Beowa National Parks soils are shallow, sandy and contain large amounts of humus. They are relatively unstable and erodible when disturbed. Soils formed on the tertiary deposits are sandy or gravely and of low fertility. These soils are also easily eroded.

8.2.3 Watercourses, waterbodies and wetlands and their catchment values

There are no major waterways in close proximity to the study area. The closet catchments of Green Cape are Bittangabee Creek and Wonboyn River, located more than five kilometres north and west of the proposal.

Green Cape is adjacent to the South Pacific Ocean and the zone of water from the coastline to approximately six kilometres out to sea is mapped as Key Fish Habitat (Southern Rivers) by the Department of Primary Industries (Fisheries NSW) (**Figure 8-2**).

8.2.4 Coasts and estuaries

The project area is located on the Green Cape peninsula, adjacent to the Pacific Ocean. Green Cape has a rocky coastline and the lighthouse, and its residence group is set on grassy terrain with surrounding coastal heathland.

8.2.5 Biodiversity

Desktop Analysis

A desktop analysis of threatened and migratory biota was completed to source information on threatened and migratory biota that might use the resources of the site. Information was sought from BioNET - the Atlas of NSW Wildlife (which includes flora) for records of threatened flora and fauna within the vicinity of the proposal. These records are detailed in **Figure 8-3** and **Figure 8-4** at a scale permissible by DPE data licence agreement (1:250,000). Similarly, information on threatened and migratory species listed under the EPBC Act that could occur in the locality was sourced using the Protected Matters Search Tool by applying a 5-kilometre buffer around the study area (**Appendix 11**). A 5-kilometre buffer was chosen to encompass a wide range of habitats and biota. However, it is acknowledged that this area contains habitats not found within the study area and may be of no relevance to this REF. Nonetheless, further assessment is provided within this REF in **Appendix 4, 5 & 6**.

Field Surveys

General flora and fauna surveys were completed in January 2024 (**Figure 8-5**).

Plant Community Types

The flora survey revealed the presence of one plant community type (PCT) in varying conditions (**Figure 8-5**). This being:

- PCT 3816: Far Southeast Coastal Lowland Heath.

Areas of Outstanding Biodiversity Value

There are no areas of outstanding biodiversity value within the Bega Valley LGA.

Environmental Assets of Intergenerational Significance (AIS)

There are no Assets of Intergenerational Significance within the vicinity of the study area.

Threatened Ecological Communities

The PCT recorded is not classified as a threatened ecological community (TEC).

Threatened Species and Populations

One threatened species was recorded during the January 2024 field survey, this being White-bellied Sea Eagle. There are also a number of threatened species considered to have the potential to occur within the study area. The potential for these species and other threatened and migratory species to occur onsite, or to be impacted by the proposal have been assessed in the threatened and migratory biota evaluation (**Appendix 4, 5 & 6**).

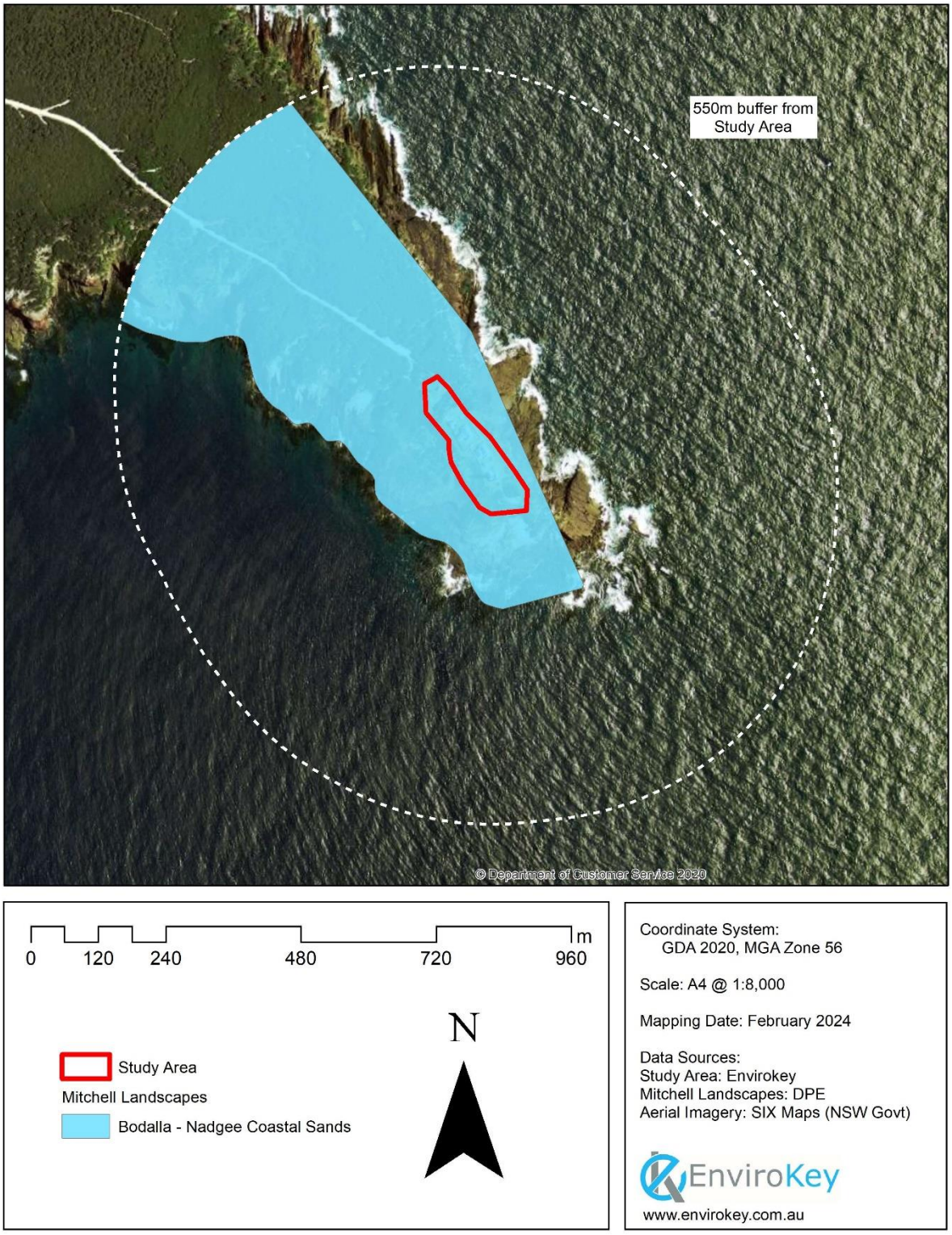

Figure 8-1: Mitchell landscapes of the locality

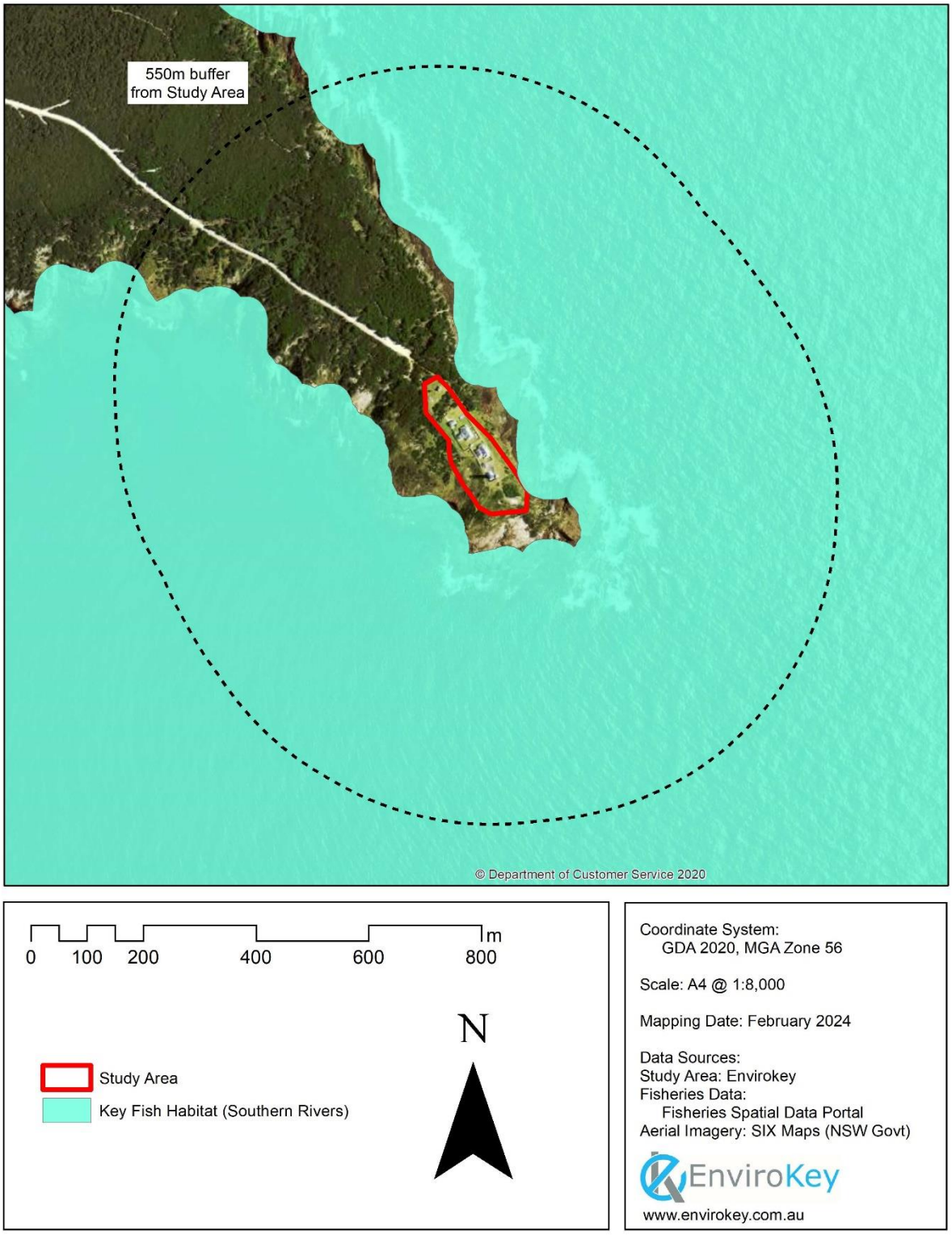

Figure 8-2: Key Fish Habitat of the locality

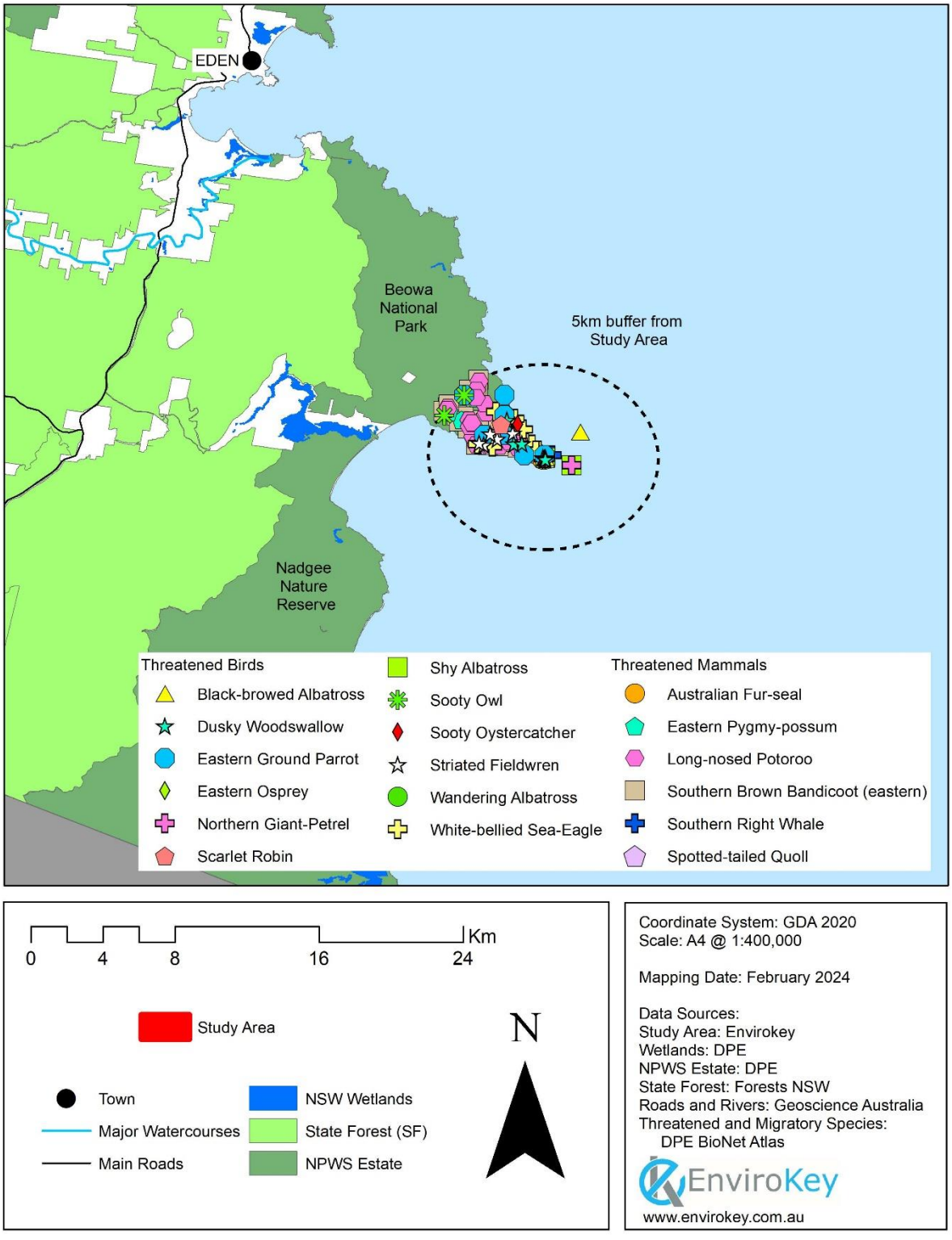

Figure 8-3: Existing threatened species records in the locality

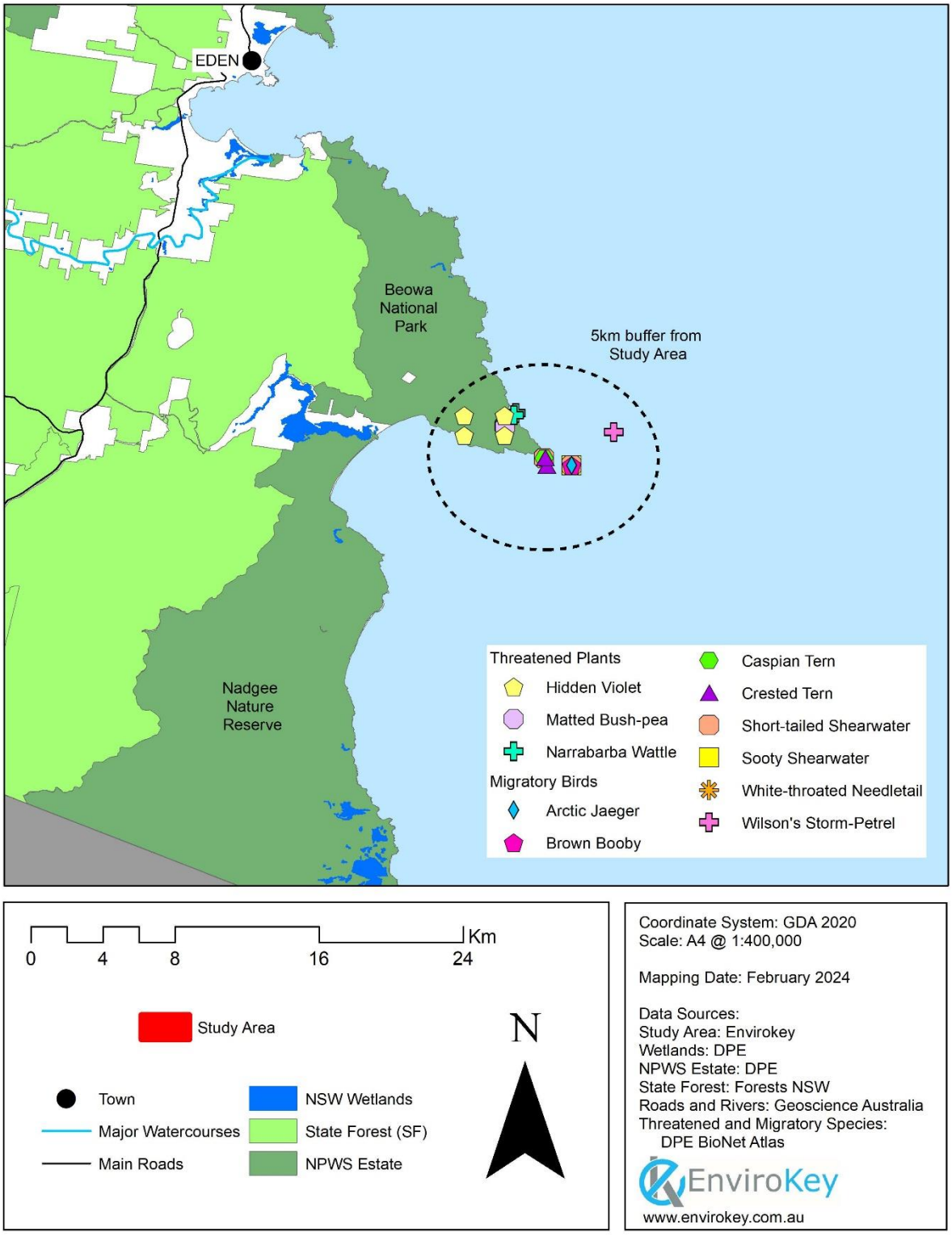

Figure 8-4: Existing threatened species records in the locality

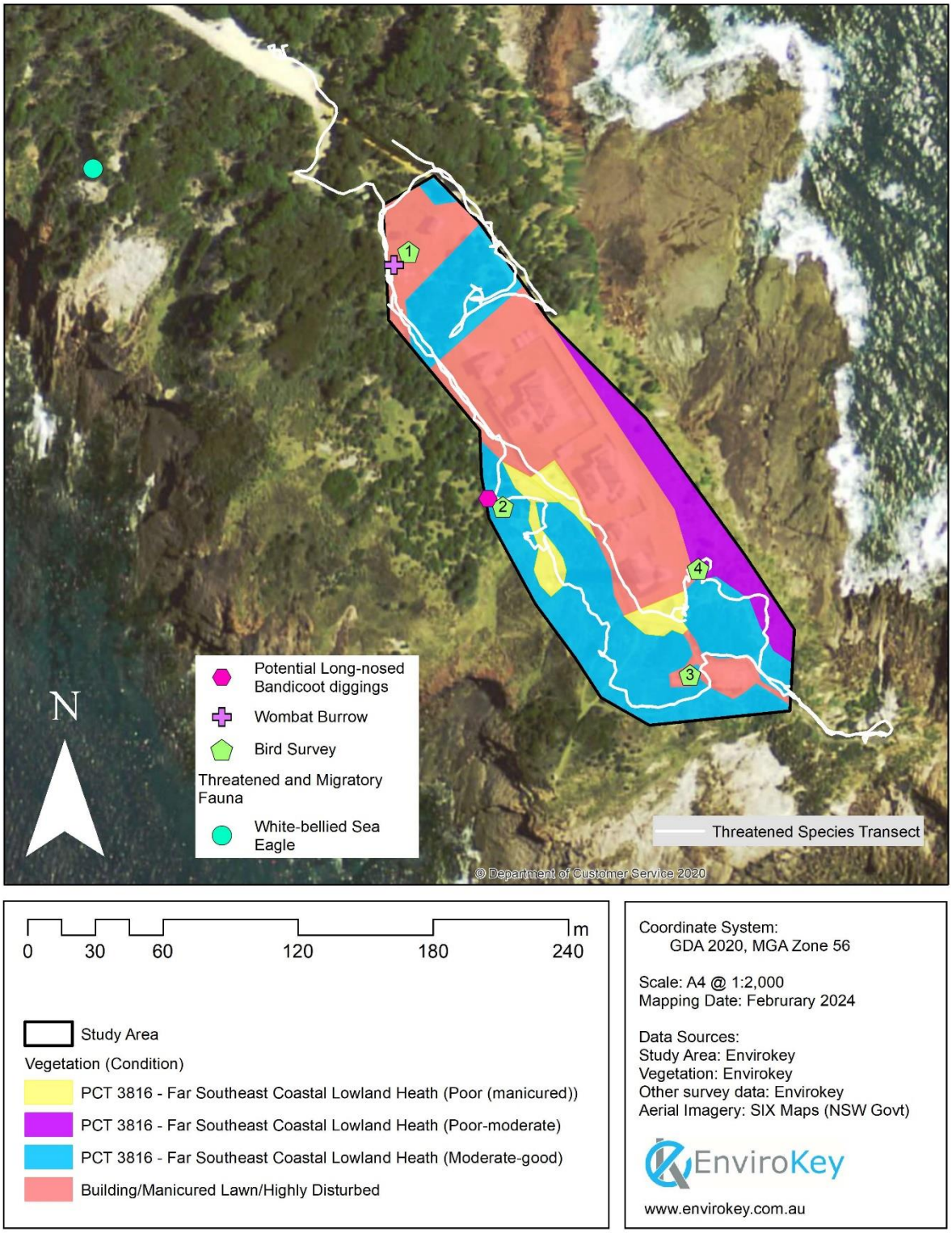

Figure 8-5: Flora and fauna survey locations and results

8.3 CULTURAL VALUES

8.3.1 Aboriginal cultural heritage

To consider whether there are any Aboriginal heritage items within the vicinity of the proposed work, a search of the Aboriginal Heritage Information Management Systems (AHIMS) maintained by NSW Heritage was conducted (**Appendix 7**). An assessment with consideration of the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* was also conducted.

The AHIMS search revealed there is one Aboriginal site located within the study area (**Appendix 7**). [redacted]

[redacted]

[redacted]

8.3.2 Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales

The purpose of the code of practice is to assist individuals and organisations (such as AMSA) to exercise due diligence when carrying out activities that may harm Aboriginal objects and to determine whether they should apply for consent in the form of an Aboriginal Heritage Impact Permit (AHIP) (DECCW, 2010). In the context of protecting Aboriginal cultural heritage, due

diligence involves taking reasonable and practical measures to determine if an action will harm an Aboriginal object and if so, what measures can be taken to avoid that harm.

The Green Cape Aboriginal site is of high significance; therefore, ground disturbance or excavations would not be covered under this code of practice. If any ground disturbance or excavation is required for the proposal, an Aboriginal Cultural Heritage Assessment would be required in accordance with the OEH *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW* and the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* and an Aboriginal Heritage Impact Permit (AHIP) applied for.

8.3.3 Historic heritage values

A search of the NSW Heritage Register and Bega Valley LEP revealed there is one heritage item in the vicinity of the proposal. This being Green Cape Lighthouse and Residence Group. The heritage database searches (from ESpatial Planner) conducted for this REF are provided in **Appendix 8**.

The Green Cape Lighthouse is the southernmost lighthouse in New South Wales and Australia's first lighthouse built in concrete. At 29 metres (95 ft) it is also the second tallest lighthouse in New South Wales. It marks Green Cape on the northerly shore-hugging sailing course. The lighthouse was designed by James Barnet and built from 1881 to 1883 by Albert Wood Aspinall. It was added to the New South Wales State Heritage Register on 1 February 2013.

The lightstation is a complex of buildings that comprises the original lighthouse; the 1994 light tower; the Head Keepers Quarters; duplex quarters for the two Assistant Keepers; stables; telegraph station; ancillary buildings; communication tower; solar panels; and remnant foundations of various structures. At the eastern end of the main precinct, the Green Cape Lighthouse stands 23 metres above sea level. An octagonal concrete tower on a square base, the lighthouse is built of locally quarried rock aggregate and was finished with a Chance Bros lantern house. A small domed building, formerly used as an oil store, adjoins the lighthouse.

The Australian Maritime Safety Authority (AMSA) has prepared a Statement of Heritage Impact (SOHI), this is provided in **Appendix 9**.

8.4 SOCIAL VALUES

8.4.1 Recreation values

Recreational and tourism use of Beowa National Park is concentrated on the coastal fringe and consists primarily of beach-oriented activities, scenery viewing, fishing, snorkelling, scuba diving, camping, picnicking, walking and horse riding. The pattern of use was established prior to gazettal and NPWS has progressively developed high quality facilities at popular locations.

8.4.2 Scenic and visually significant areas

Beowa National Park and Green Cape offer many scenic panoramic views with great vantage points for whale watching. The natural beauty and open vistas with extensive heathland and forests, all contribute to the scenic and visual significance of the area.

The site is not visible to any local or main roads. Large areas of native vegetation would remain unaffected, and it is considered that the benefits of reinstating the traditional lighthouse would outweigh the minimal impact.

8.4.3 Education and scientific values

Only a small amount of research has been carried out in Beowa National Park, related to fauna surveys, Devonian fossils, Aboriginal sites and fungi eaten by Long-nosed Potoroos. The availability of the Green Cape Light Station for accommodation may encourage researchers to undertake projects in the park.

Research priorities identified under the Regional Forest Agreement (RFA) will be pursued along with topics identified in the Beowa National Park Plan of Management. Key areas of research include ecological fire requirements for the plant communities and significant species of the area; Ground Parrot, Striated Fieldwren and Eastern Bristlebird surveys and their fire management needs; Aboriginal site surveys; the historical background of historic places and buildings; and monitoring visitor use and impact. Therefore, the park and peninsular offers high value in terms of education and scientific values and this proposal contributes to the historical value of the park.

8.5 MATTERS OF NATIONAL ENVIRONMENTAL SIGNIFICANCE

The Protected Matters Search Tool (EPBC Act) was utilised to provide a summary of Matters of National Environmental Significance (NES) for the study area and a 5-kilometre buffer of the study area. The Protected Matters Search Tool returned the following results:

- No World Heritage Properties
- No National Heritage Places
- No Wetlands of International Importance
- Great Barrier Reef Marine Park (not applicable)
- One Commonwealth Marine Park
- Four Listed Threatened Ecological Communities
- 85 Listed Threatened Species
- 50 Listed Migratory Species.

The entities listed within the Protected Matters Report relate to flora and fauna. This REF includes extensive analysis and assessment of threatened ecological communities and listed threatened and migratory species. The assessments identified that some biota listed under the EPBC Act have the potential to be impacted by the proposal (**Appendix 4**). For these

biota, significance assessments under the BC Act and under the EPBC Act (if both applicable) are provided in **Appendix 5 & 6.**

No other matters of NES are relevant to the proposal. The Protected Matters Report is provided in full in **Appendix 11**.

9 IMPACT ASSESSMENT

9.1 PHYSICAL AND CHEMICAL IMPACTS DURING ALL STAGES OF THE ACTIVITY

Is the proposed activity likely to…	**Applicable? ***	**Impact level** (negligible; or low, medium or high adverse; or positive; or NA)	**Reasons** (describe the type, nature and extent of impact, taking into account the receiving environment and proposed safeguards which will limit the impact)	**Safeguards/mitigation measures**
1. impact on soil quality or land stability?	☒	Negligible, negative	Impacts to soil quality and land stability are not anticipated during the proposal given the relatively minor nature of the proposed work.	Sediment controls are not considered necessary for the proposal given the lack of ground disturbance. No safeguards are proposed.
2. affect a waterbody, watercourse, wetland or natural drainage system – either physically or chemically (e.g. due to runoff or pollution)?	☐	N/A		
3. change flood or tidal regimes, or be affected by flooding?	☐	N/A		
4. affect or be affected by coastal processes and coastal hazards, including those under climate change projections (e.g. sea level rise)?	☐	N/A		

Is the proposed activity likely to…	Applicable? *	Impact level (negligible; or low, medium or high adverse; or positive; or NA)	Reasons (describe the type, nature and extent of impact, taking into account the receiving environment and proposed safeguards which will limit the impact)	Safeguards/mitigation measures
5. involve the use, storage or transport of hazardous substances, or use or generate chemicals which may build up residues in the environment?	☒	N/A	The interior of the lighthouse is highly intact with changes associated with technology. The roller pedestal was replaced with a mercury-float pedestal in 1926 and remains in place today. The mercury-float would not be removed and therefore does not pose a risk to the environment. The proposed work would also involve a number of asbestos penetrations.	The contractor, through inductions, would make all personnel aware of risks and responsibilities related to working around the mercury-float. The work team would carry and be fully conversant in the use of a mercury spill kit. Any asbestos penetrations would also be completed in accordance with an Asbestos Plan. Any asbestos work will be conducted in line with workplace health and safety guidelines for asbestos handling.
6. involve the generation or disposal of gaseous, liquid or solid wastes or emissions?	☒	Negligible, Negative	Minor negative impacts to air quality may result by the generation of exhaust fumes from vehicles. Emissions would also be generated during the operation of the helicopter used to transport the lattice tower materials. Small amounts of rubbish are also likely to be generated by personnel including human waste. These impacts would be restricted to the period of the proposal. With appropriate safeguards, these potential impacts are expected to be minimised and managed to an appropriate level.	All machinery (including vehicles) should be periodically inspected and maintained to ensure minimum levels of emissions. Rubbish generated during works would be minimised and where generated, would be disposed of in an appropriate manner.
7. involve the emission of dust, odours, noise, vibration or radiation?	☒	Negligible, Negative	Some dust and noise may be generated during construction. However, these would be minor given the distances from potential receivers.	Construction hours limited to between 7am and 6pm and the proposed work would be outside of NSW school holidays.

9.2 BIODIVERSITY IMPACTS DURING ALL STAGES OF THE ACTIVITY

Is the proposed activity likely to…	**Applicable? ***	**Impact level** (negligible; or low, medium or high adverse; or positive; or NA)	**Reasons** (describe the type, nature and extent of impact, taking into account the receiving environment and proposed safeguards which will limit the impact)	**Safeguards/mitigation measures**
1. affect any declared area of outstanding biodiversity value or critical habitat or environmental asset of intergenerational significance?	☒	N/A	There are no outstanding areas of biodiversity value or critical habitat or environmental asset of intergenerational significance within the vicinity of the proposal.	No safeguards are proposed.
2. result in the clearing or modification of vegetation, including ecological communities and plant community types of conservation significance?	☒	N/A	No vegetation removal is required for the proposed works.	No safeguards are proposed.
3. endanger, displace or disturb terrestrial or aquatic fauna, including fauna of conservation significance, or create a	☒	Low, Negative	The potential impacts to fauna resulting from the proposal include: Short term disturbance during the works to noise-sensitive species (minimal as no heavy machinery to be used and helicopter operation of approximately two full days (weather dependent).	Helicopter operation would occur for approximately two days (weather dependent) and during daylight hours only. It would also avoid key breeding periods of threatened and migratory species recorded during the field survey, or those known to occur within the vicinity of the proposal.

Is the proposed activity likely to…	**Applicable? ***	**Impact level** (negligible; or low, medium or high adverse; or positive; or NA)	**Reasons** (describe the type, nature and extent of impact, taking into account the receiving environment and proposed safeguards which will limit the impact)	**Safeguards/mitigation measures**
barrier to their movement?			The proposal would not involve any direct impact to native vegetation. Additional assessment for species listed under the BC Act and EPBC Act that have the potential to be impacted by the proposal is provided in Appendix 5 and 6.	Key breeding periods for those threatened species recorded or known to occur within the vicinity of the proposal are between July and January inclusive.
4. result in the removal of protected flora or plants or fungi of conservation significance?	☒	N/A	No vegetation removal is required for the proposed works.	Native vegetation surrounding the steel lattice tower would be clearly demarcated for the duration of the tower removal process. No additional safeguards are proposed.
6. contribute to a key threatening process (KTP) to biodiversity or ecological integrity?	☒	N/A	The clearing of native vegetation is a KTP, however, no vegetation removal is required for the proposed works.	No safeguards are proposed.
7. introduce weeds, pathogens, pest animals or genetically modified organisms into an area?	☒	Low, Negative	Weeds have the potential to be become established or increase in abundance. No weeds of concern were identified within the site; however, disturbance often allows seeds that may have blown into the area to sprout. Weeds could also be transported in on boots and vehicles. With appropriate safeguards, these potential	All tools and clothing of contractors would be free of vegetation, mud and seeds before accessing the site.

Is the proposed activity likely to…	Applicable? *	Impact level (negligible; or low, medium or high adverse; or positive; or NA)	Reasons (describe the type, nature and extent of impact, taking into account the receiving environment and proposed safeguards which will limit the impact)	Safeguards/mitigation measures
			impacts are expected to be minimised and managed to an appropriate level.	

9.3 COMMUNITY IMPACTS DURING ALL STAGES OF THE ACTIVITY

Is the proposed activity likely to…	Applicable? *	Impact level (negligible; or low, medium or high adverse; or positive; or NA)	Reasons (describe the type, nature and extent of impact, taking into account the receiving environment and proposed safeguards which will limit the impact)	Safeguards/mitigation measures
1. affect community services or infrastructure?	☒	low Positive	There is unlikely to be any negative impact to community services or infrastructure. The proposal is to reinstate the traditional Green Cape Lighthouse as a functional aid to navigation which may have a positive impact on the community as an additional attractant to the area.	No safeguards are considered necessary.
2. affect sites important to the local or broader community for their recreational or other values or access to these sites?	☒	Negligible, negative	During the removal of the steel lattice tower, public access to the lookout points beyond the lighthouse would be closed. However, this closure would occur for approximately two days (weather dependent).	During the tower removal and operation of the helicopter, public no-go zones would be installed at the limit of works. For tours of the lighthouse to continue, no work would be carried out during the NSW school holidays.

Is the proposed activity likely to…	**Applicable? ***	**Impact level** (negligible; or low, medium or high adverse; or positive; or NA)	**Reasons** (describe the type, nature and extent of impact, taking into account the receiving environment and proposed safeguards which will limit the impact)	**Safeguards/mitigation measures**
3. affect economic factors, including employment, industry and property value?	☒	Low, positive	The proposal may have a positive impact on the economy in the local area. Post construction works would potentially boost tourism with the reinstatement of the traditional lighthouse and removal of the steel lattice tower.	No safeguards are considered necessary.
4. have an impact on the safety of the community?	☒	Low, positive	The proposal is not expected to impact on community safety. The proposal is to reinstate the traditional Green Cape Lighthouse as a functional aid to navigation which will ensure the continuation of the safety of mariners.	During the tower removal and operation of the helicopter, public no-go zones would be installed at the limit of works.
5. cause a bushfire risk?	☒	Negligible, adverse	There is a very low potential for the proposal to create a bushfire. With appropriate safeguards, potential impacts are expected to be minimised and managed to an appropriate level.	Machinery used for the removal of the lattice tower is not to be placed on the ground after use where grass is long. No campfires of any kind are permitted onsite during the high fire danger periods. There will be no smoking whilst in Beowa National Park. The proponent will include appropriate measures in the conditions of contract for construction to ensure that fire risk is appropriately managed.
6. affect the visual or scenic landscape?	☒	High, positive	The proposed works does not require the removal of native vegetation. However, it does involve the removal of the steel lattice tower. The condition of the tower is dilapidated and deteriorating. The removal of the lattice tower would therefore significantly increase the visual and scenic	No safeguards are considered necessary.

Is the proposed activity likely to…	Applicable? *	Impact level (negligible; or low, medium or high adverse; or positive; or NA)	Reasons (describe the type, nature and extent of impact, taking into account the receiving environment and proposed safeguards which will limit the impact)	Safeguards/mitigation measures
			landscape of Green Cape. The replacement of the existing solar panels is required, however this would not affect the visual landscape as the replacement panels are of a similar footprint.	

9.4 NATURAL RESOURCE IMPACTS DURING ALL STAGES OF THE ACTIVITY

Is the proposed activity likely to…	Applicable? *	Impact level (negligible; or low, medium or high adverse; or positive; or NA)	Reasons (describe the type, nature and extent of impact, taking into account the receiving environment and proposed safeguards which will limit the impact)	Safeguards/mitigation measures
1. result in the degradation of the park or any other area reserved for conservation purposes?	☒	Low, negative	The proposal does not require the removal of native vegetation. Weed invasion however is a potential impact as a result of the proposal.	All tools and clothing of contractors would be free of vegetation, mud and seeds before accessing the site.
2. affect the use of, or the community's ability to use natural resources?	☐	N/A	The proposal would not affect the community's ability to use natural resources.	

Is the proposed activity likely to…	**Applicable? ***	**Impact level** (negligible; or low, medium or high adverse; or positive; or NA)	**Reasons** (describe the type, nature and extent of impact, taking into account the receiving environment and proposed safeguards which will limit the impact)	**Safeguards/mitigation measures**
3. involve the use, wastage, destruction or depletion of natural resources including water, fuels, timber or extractive materials?	☐	N/A	The proposal would not require the use, wastage, destruction, or depletion of natural resources.	
4. provide for the sustainable and efficient use of water and energy?	☐	Low, positive	To reinstate the traditional lighthouse, the NPWS off grid power supply system would be upgraded. With modern solar panels fitted to the array, the renewable input into the system would increase, allowing both NPWS to maintain the existing solar input, and sufficient solar input for AMSA needs utilised including the increased solar output capacity. An inverter charger and lithium battery system would be installed within the NPWS powerhouse battery room to incorporate enough capacity to run the lighthouse load for four days. The existing incandescent lamp would be replaced with a more efficient high-powered LED light source.	No safeguards are considered necessary.

9.5 ABORIGINAL CULTURAL HERITAGE IMPACTS DURING ALL STAGES OF THE ACTIVITY

Is the proposed activity likely to…	**Applicable? ***	**Impact level** (negligible; or low, medium or high adverse; or positive; or NA)	**Reasons** (describe the type, nature and extent of impact, taking into account the receiving environment and proposed safeguards which will limit the impact)	**Safeguards/mitigation measures**
1. disturb the ground surface or any vegetation likely to contain culturally modified trees?	☒	N/A	The proposal would not require any ground excavations or digging of any kind. The cabling required to feed the AMSA equipment in the lighthouse would utilise the existing conduits between the Powerhouse and lighthouse.	No ground excavations or digging of any kind are permitted. Access to the lattice tower and solar array would be restricted to existing walkways and manicured grass areas. The helicopter in operation for the removal of the lattice tower if required to land, would only do so on the existing helipad located adjacent to the lattice tower. If refuelling is required, the helicopter may also land at the NPWS approved existing hard stand area adjacent to Green Cape Road, north of the study area.
2. affect or occur near known Aboriginal objects, Aboriginal places or an Aboriginal cultural asset of intergenerational significance? If so, can impacts be avoided? How?	☒	N/A	The proposal is located on Green Cape. One known Aboriginal site is located at Green Cape, [redacted] However, there is no ground excavations or digging of any kind, proposed.	As above.

Is the proposed activity likely to…	**Applicable? ***	**Impact level** (negligible; or low, medium or high adverse; or positive; or NA)	**Reasons** (describe the type, nature and extent of impact, taking into account the receiving environment and proposed safeguards which will limit the impact)	**Safeguards/mitigation measures**
3. affect areas: - within 200 m of waters - within a sand dune system - on a ridge top, ridge line or headland - within 200 m below or above a cliff face - in or within 20 m of a cave, rock shelter or a cave mouth? If so, can impacts be avoided? How?	☒	N/A	The proposal is located on the headland of Green Cape, adjacent to the South Pacific Ocean. There is no ground excavating or digging of any kind, required for this proposal.	As above.
4. affect wild resources which are used or valued by the Aboriginal community or affect access to these resources?	☐	N/A		
5. affect access to culturally important locations?	☐	N/A		

9.6 OTHER CULTURAL HERITAGE IMPACTS DURING ALL STAGES OF THE ACTIVITY

Is the proposed activity likely to…	**Applicable?** *	**Impact level** (negligible; or low, medium or high adverse; or positive; or NA)	**Reasons** (describe the type, nature and extent of impact, taking into account the receiving environment and proposed safeguards which will limit the impact)	**Safeguards/mitigation measures**
1. affect or occur near places, buildings or landscapes of heritage significance?	☒	Low, positive	The Green Cape Lighthouse and Residence Group is a state listed heritage item. The potential impacts to the heritage items are listed within the SOHI (see **Appendix 9**).	Safeguards detailed in the SOHI must be fully implemented (see **Appendix 9**).
2. impact on relics or moveable heritage items, or an area with a high likelihood of containing relics?	☒	Low, positive	Any redundant equipment (of heritage significance) that is removed as part of the works (e.g. incandescent light source and stem, motor gear box, drive motor), would be provided to NSW NPWS for their potential interpretative display.	
3. impact on vegetation of cultural landscape value (e.g. gardens and settings, introduced exotic species, or evidence of broader remnant land uses)?	☒	N/A	The relatively minor nature of the proposal and the full adoption and implementation of safeguards within section 9 of this REF, strongly suggests that there will be no change in landscape value. The removal of the exiting lattice tower would be a positive visual impact on this cultural landscape.	No additional safeguards are considered necessary.

9.7 IMPACTS ON MATTERS OF NATIONAL ENVIRONMENTAL SIGNIFICANCE DURING ALL STAGES OF THE ACTIVITY

Is the proposal likely to affect MNES, including:	**Applicable? ***	**Likely impact** (negligible, low, medium or high adverse; or positive; or N/A)	**Reasons** (describe the type, nature and extent of impact, taking into account the receiving environment and proposed safeguards which will limit the impact)	**Safeguards/mitigation measures**
1. listed threatened species or ecological communities)?	☒	Negligible, negative	The proposal does not require the removal of native vegetation. However, weed invasion is a potential impact as a result of the proposal. Disturbance during the operation of the helicopter is also a potential impact. However, this would occur for approximately two days (weather dependent) and restricted to daylight hours for the removal of the lattice tower.	No additional safeguards are considered necessary than already stated within this REF.
2. listed migratory species?	☒	Negligible, negative	The proposal does not require the removal of native vegetation. However, weed invasion is a potential impact as a result of the proposal. Disturbance during the operation of the helicopter is also a potential impact. However, this would occur for approximately two days (weather dependent) and restricted to daylight hours for the removal of the lattice tower.	No additional safeguards are considered necessary than already stated within this REF.
3. the ecology of Ramsar wetlands?	☐	N/A		

Is the proposal likely to affect MNES, including:	Applicable? *	Likely impact (negligible, low, medium or high adverse; or positive; or N/A)	Reasons (describe the type, nature and extent of impact, taking into account the receiving environment and proposed safeguards which will limit the impact)	Safeguards/mitigation measures
4. world heritage values of World Heritage properties?	☐	N/A		
5. the national heritage values of national heritage places?	☐	N/A		

9.8 CUMULATIVE IMPACTS DURING ALL STAGES OF THE ACTIVITY

When considered with other projects, is the proposed activity likely to affect…	Applicable? *	Impact level (negligible; or low, medium or high adverse; or positive; or NA)	Reasons (describe the type, nature and extent of impact, taking into account the receiving environment and proposed safeguards which will limit the impact)	Safeguards/mitigation measures
1. natural landscape or biodiversity values through cumulative impacts?	☒	Low, positive	The work proposed is of a relatively minor nature and does not involve the Light to Light Walking Track. The proposal would have some minor positive cumulative impacts on the natural landscape by removing the existing steel tower.	No additional safeguards are considered necessary than already stated within this REF.
2. cultural (Aboriginal, shared and historic	☐	N/A		

When considered with other projects, is the proposed activity likely to affect…	**Applicable? ***	**Impact level** (negligible; or low, medium or high adverse; or positive; or NA)	**Reasons** (describe the type, nature and extent of impact, taking into account the receiving environment and proposed safeguards which will limit the impact)	**Safeguards/mitigation measures**
heritage) values through cumulative impacts?				
3. social (amenity, recreation, education) values through cumulative impacts?	☐	N/A		
4. the community through cumulative impacts on any other part of environment (e.g. due to traffic, waste generation or perceived over-development?	☐	N/A		

10 CLAUSE 171 CHECKLIST

A checklist of factors that should be considered in the assessment of impacts prior to its determination is included within Clause 171 of the *Environmental Planning and Assessment Regulation 2021*. This clause identifies seventeen issues that need to be addressed. The following text provides summary details of each of the issues, the majority of which have been addressed within the body of this document.

a) any environmental impact on the community;

There is the possibility of impacts associated with the proposal such as noise, vehicle emissions, and dust during the construction phase only. In the long-term, the removal of the deteriorating steel lattice tower would provide for a positive environmental impact.

b) any transformation of a locality;

There would be a positive impact on the visual environment of the locality by removing the deteriorating steel lattice tower.

c) any environmental impact on the ecosystem of the locality;

No. The proposal does not require the removal of any vegetation or habitat.

d) any reduction of the aesthetic, recreational, scientific or other environmental quality or value of a locality;

Overall, the proposed activity is unlikely to have a notable long-term negative impact on any aesthetic, recreational, scientific, or other environmental quality or value of the locality. The potential impacts of the proposal are positive.

e) any effect on a locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or other special value for present or future generations;

The proposal, based on the SOHI, would not have any effect on any locality, place or building having aesthetic, anthropological, archaeological or any other significance or special value. The relatively minor work proposed, and that no ground excavations or digging, suggests that impacts to existing Aboriginal cultural heritage are also unlikely.

f) any impact on the habitat of protected or endangered fauna (within the meaning of the National Parks and Wildlife Act 1974);

A number of threatened biota have been previously recorded in the locality (**Figure 8-3** and **Figure 8-4**). As such, an assessment of impacts was undertaken (**Appendix 5 & 6**). Risks to threatened biota are considered to be low if proposed safeguards are effectively implemented.

g) any endangering of any species of animal, plant or other form of life, whether living on land, in water or in the air;

The proposed activity is unlikely to endanger any species of animal, plant or any other form of life or offer any significant long-term disturbance locally, given the relatively minor nature of the proposal and the full implementation of the safeguards proposed within this REF.

h) any long-term effects on the environment;

Negative long-term effects on the environment would be unlikely if the proposed safeguards discussed in **section 9** are fully implemented.

i) any degradation of the quality of the environment;

No negative long-term environmental impacts are expected.

j) any risk to the safety of the environment;

The proposed activity is unlikely to cause any risk to the environment given safeguards listed in **section 9** are followed.

k) any reduction in the range of beneficial uses of the environment;

The proposed activity would not result in a significant reduction in the range of beneficial uses of the environment in the locality, given the existing environment and the relatively minor nature of the activity proposed. Minor disruptions may occur during the construction period.

l) any pollution of the environment;

There is a risk that pollution of the local environment would occur as a result of contaminants, including paint from the steel lattice tower entering the local environment during the dismantling of the tower. The existing tower would be disposed of at an appropriately licensed waste facility. The risk would be minimised as a result of the environmental safeguards described in **section 9**.

m) any environmental problems associated with the disposal of waste;

Disposal of waste would be managed during the proposal, with any going to licensed waste facilities.

n) any increased demands on resources (natural or otherwise) that are, or likely to become in short supply;

This REF has identified that the proposed activity would not create a significant increase in the demands on resources that are likely to become in short supply in the near future.

o) any cumulative environmental effect with other existing or likely future activities;

Assessment of the cumulative environmental effects of the proposed activity identifies both negative and positive environmental impacts that would occur. Generally, negative environmental impacts are confined to the work period, while the removal of the steel lattice tower is a significant positive environmental impact.

p) Any impact on coastal processes and coastal hazards, including those under projected climate change conditions;

There would be no impact to coastal processes or hazards.

q) Applicable local strategic planning statements, regional strategic plans or district strategic plans made under the Act, Division 3.1

While there are no applicable statements or plans, the proposed work is considered strategic for the reinstatement of the traditional lighthouse.

r) Other relevant environmental factors

In considering the potential impacts of this proposal, all relevant environmental factors have been considered, refer to section 8 of this REF.

11 CONCLUSION AND SUMMARY OF IMPACTS

This REF provides a true and fair review of the proposed activity in relation to its potential effects on the environment. It addresses to the fullest extent possible, all of the factors listed in Clause 171 of the Environmental Planning and Assessment Regulation 2021.

The potential impacts of the proposed activity identified within section 9 of this REF can be mitigated through appropriate safeguards to reduce these to acceptable levels. Accordingly, an Environmental Impact Statement (EIS) is not required.

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 proposed work is relatively minor. Potential impacts to heritage are low and manageable. No ground excavations or digging would be required. Minor impacts to biodiversity are considered low, and manageable. Safeguards proposed ensure potential impacts are manageable during construction and operation.

- 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): The assessment of significance provided in Appendix 4 and 5 confirm that a significant effect is unlikely.

- The activity is likely to have a significant impact on matters of national environmental significance listed under the Commonwealth Environment Protection and Biodiversity Conservation Act

☒ No
☐ Yes

Reason(s): The assessment of significance provided in Appendix 4 and 5 confirm that a significant effect is unlikely.

- The activity will require certification to the Building Code of Australia, Disability (Access to Premises – Buildings) Standards 2010 or Australian Standards in accordance with the NPWS Construction Assessment Procedures.

☒ No

☐ Yes

Environmental factor	Consideration	Significance of impact*
(a) the environmental impact on the community	Social, economic and cultural impacts as described in sections 9.3, 9.5 and 9.6.	Not significant
(b) the transformation of the locality	Human and non-human environment as described in sections 9.1, 9.2 and 9.4	Not significant
(c) the environmental impact on the ecosystems of the locality	Amount of clearing, loss of ecological integrity, habitat connectivity/ fragmentation and changes to hydrology (both surface and groundwater) as described in sections 9.1, 9.2 and 9.4 and, for nationally listed threatened ecological communities, in section 9.7.	Not significant
(d) reduction of the aesthetic, recreational, scientific or other environmental quality or value of the locality	Visual, recreational, scientific and other impacts as described in section 9.3.	Not significant
(e) the effects on any locality, place or building that has— (i) aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance, or (ii) other special value for present or future generations	Impacts to Aboriginal and historic heritage associated with a locality (including intangible cultural significance), architectural heritage, social/community values and identity, scenic values and others, as described in sections 9.3, 9.5 and 9.6 and (for MNES heritage places), section 9.7.	Not significant

Environmental factor	Consideration	Significance of impact*
(f) the impact on the habitat of protected animals, within the meaning of the Biodiversity Conservation Act	Impacts to all native terrestrial species, including but not limited to threatened species, and their habitat requirements, as described in section 9.2.	Not significant
(g) the endangering of a species of animal, plant or other form of life, whether living on land, in water or in the air	Impacts to all listed terrestrial and aquatic species, and whether the proposal increases the impact of key threatening processes, as described in section 9.2	Not significant
(h) long-term effects on the environment	Long-term residual impacts to ecological, social and economic values as described in all parts of section 9.	Not significant
(i) degradation of the quality of the environment	Ongoing residual impacts to ecological, social and economic as described in section 9.4.	Not significant
(j) risk to the safety of the environment	Impacts to public and work health and safety, from contamination, bushfires, sea level rise, flood, storm surge, wind speeds, extreme heat, rockfall and landslip, and other risks likely to increase due to climate change as described in sections 9.1, 9.3 and 9.4.	Not significant
(k) reduction in the range of beneficial uses of the environment	Impacts to natural resources, community resources and existing uses as described in sections 9.3 and 9.4.	Not significant
(l) pollution of the environment	Impacts due to air pollution (including odours and greenhouse gases); water pollution (water quality health); soil contamination;	Not significant

Environmental factor	Consideration	Significance of impact*
	noise and vibration (including consideration of sensitive receptors); or light pollution, as described in sections 9.1 and 9.3.	
(m) environmental problems associated with the disposal of waste	Transportation, disposal and contamination impacts as described in section 9.3.	Not significant
(n) increased demands on natural or other resources that are, or are likely to become, in short supply	Impacts to land, soil, water, gravel, minerals and energy supply as described in section 9.4.	Not significant
(o) the cumulative environmental effect with other existing or likely future activities	The negative synergisms with existing development or future activities as considered in section 9.8.	Not significant
(p) the impact on coastal processes and coastal hazards, including those under projected climate change conditions	Impacts arising from the proposed activity on coastal processes and impacts on the proposed activity from those coastal processes and hazards, both current and future, as considered in section 9.1.	Not significant
(q) applicable local strategic planning statements, regional strategic plans or district strategic plans made under the Act, Division 3.1	Inconsistency with the objectives, policies and actions identified in local, district and regional plans, as considered in section 3.2.2.	Not significant
(r) other relevant environmental factors.	Any other factors relevant in assessing impacts on the environment to the fullest extent, such as native title.	Not significant

12 REFERENCES

APPENDIX 1 – QUALIFICATIONS AND EXPERIENCE OF PERSONNEL

APPENDIX 2 – COPIES OF CONSULTATION

APPENDIX 3 – SCOPE OF WORKS

APPENDIX 4 – THREATENED AND MIGRATORY BIOTA EVALUATION

APPENDIX 5 – TEST OF SIGNIFICANCE (BC AND FM ACT)

APPENDIX 6 – ASSESSMENT OF SIGNIFICANCE (EPBC ACT)

APPENDIX 7 – ABORIGINAL CULTURAL HERITAGE SEARCHES

APPENDIX 8 – NON-ABORIGINAL HERITAGE SEARCHES

APPENDIX 9 – STATEMENT OF HERITAGE IMPACT

APPENDIX 10 – SECTION 60 APPROVAL

APPENDIX 11 – PROTECTED MATTERS SEARCH TOOL RESULTS