Australian Government
Australian Maritime Safety Authority

Cape Sorell Lighthouse

Heritage Management Plan

2023

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The Australian Maritime Safety Authority makes this heritage management plan under section 341S of the *Environment Protection and Biodiversity Conservation Act 1999 (Cth)* for Cape Sorell Lighthouse.

5th September 2023

Mick Kinley

Chief Executive Officer

Acknowledgements

The Australian Maritime Safety Authority acknowledges the Traditional Custodians and other Aboriginal peoples of the region, their rich culture and spiritual connection to Country and Sea.

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Front cover image

Figure 1. Cape Sorell Lighthouse (© AMSA, 2012)

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Acronym List

List of acronyms utilised throughout this heritage management plan:

Acronym	Definition
AGA	Gas Accumulator Company
AMSA	Australian Maritime Safety Authority
AMSG	Australian Maritime Systems Group
AtoN	Aid to Navigation
BBT	Barbier, Benard, et Turenne
CHL	Commonwealth Heritage List
DCCEEW	Department of Climate Change, Energy, the Environment and Water
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999 (Cth)*
EPBC Regulations	*Environment Protection and Biodiversity Conservation Regulations 2000 (Cth)*
HMP	Heritage Management Plan
IALA	International Association of Marine Aids to Navigation and Lighthouse Authorities
LED	Light emitting diode
NAA	National Archives of Australia
NES	National Environmental Significance
NLA	National Library of Australia
RMS	Record Management System
RNE	Register for the National Estate (non-statutory archive)
TAS PWS	Tasmanian Parks and Wildlife Service
THR	Tasmanian Heritage Register

Executive Summary

Built in 1899, Cape Sorell Lighthouse is a historic site recognised by both the Commonwealth and the State Government of Tasmania. The place was put on the Commonwealth Heritage List in 2004 for its contribution to the development of navigational aids along the west coast of Tasmania, and for its standing as the only remaining intact structure of the Cape Sorell Lightstation complex. The Lighthouse is also recognised for its illustration of a type of late-nineteenth-century lighthouse, and its prominence within its landscape setting.

Cape Sorell Lighthouse is listed on the Tasmanian State Heritage Register for its contribution to the development of navigation aids along the west coast of Tasmania, its standing as an example of a Victorian brick lighthouse—the only remaining intact structure of the Cape Sorell Lightstation complex—, and its aesthetic prominence in its landscape setting.

The Lighthouse is situated along the western coast of Tasmania at the mouth of Macquarie Harbour, approximately 12km south-west of the township of Strahan. Once a large complex comprising of the tower, an engine room, and three keepers' cottages, the lighthouse tower remains the only intact structure onsite.

Originally fitted with a 2nd Order dioptric light with a four-wick trinity burner, the tower is now fitted with a Vega VRB beacon operating on an automated mechanism as part of AMSA's network of aids to navigation (AtoN). The equipment is serviced by AMSA's maintenance contractor who visits at least once per year. AMSA's officers visit on an ad hoc basis for auditing, project and community liaison purposes.

This heritage management plan is concerned primarily with the lighthouse; however it also addresses the management of the surrounding land. The plan is intended to guide AMSA's decisions and action. AMSA has prepared this plan to integrate the heritage values of the lighthouse in accordance with the *Environment Protection and Biodiversity Conservation Act 1999 Cth* (EPBC Act) and the *Environment Protection and Biodiversity Conservation Regulations 2000 Cth* (EPBC Regulations).

Well-built and generally well-maintained, the lighthouse is in relatively good, stable condition. The policies and management guidelines set out in this heritage management plan strive to ensure the Commonwealth heritage values of Cape Sorell Lighthouse are recognised, maintained and preserved for future generations.

1. Introduction

1. Introduction

1.1 Background and purpose

The Australian Maritime Safety Authority (AMSA) is the Commonwealth agency responsible for coastal aids to navigation (AtoN). AMSA's network includes Cape Sorell Lighthouse built in 1899.

Section 341S of the *Environment Protection and Biodiversity Conservation Act 1999 (Cth)* (EPBC Act) requires AMSA to prepare a management plan for Cape Sorell Lighthouse that addresses the matters prescribed in Schedules 7A and 7B of the *Environment Protection and Biodiversity Conservation Regulations 2000 (Cth)* (EPBC Regulations). The principal features of this management plan are:

- a description of the place, its heritage values, their condition and the method used to assess its significance
- an administrative management framework
- a description of any proposals for change
- an array of conservation policies that protect and manage the place
- an implementation plan
- ways the policies will be monitored and how the management plan will be reviewed.

AMSA has prepared this heritage management plan to guide the future conservation of the place. This plan provides the framework and basis for the conservation and best practice management of Cape Sorell Lighthouse in recognition of its heritage values. The policies in this plan indicate the objectives for identification, protection, conservation and presentation of the Commonwealth heritage values of the place. Figure 2 shows the basic planning process applied.

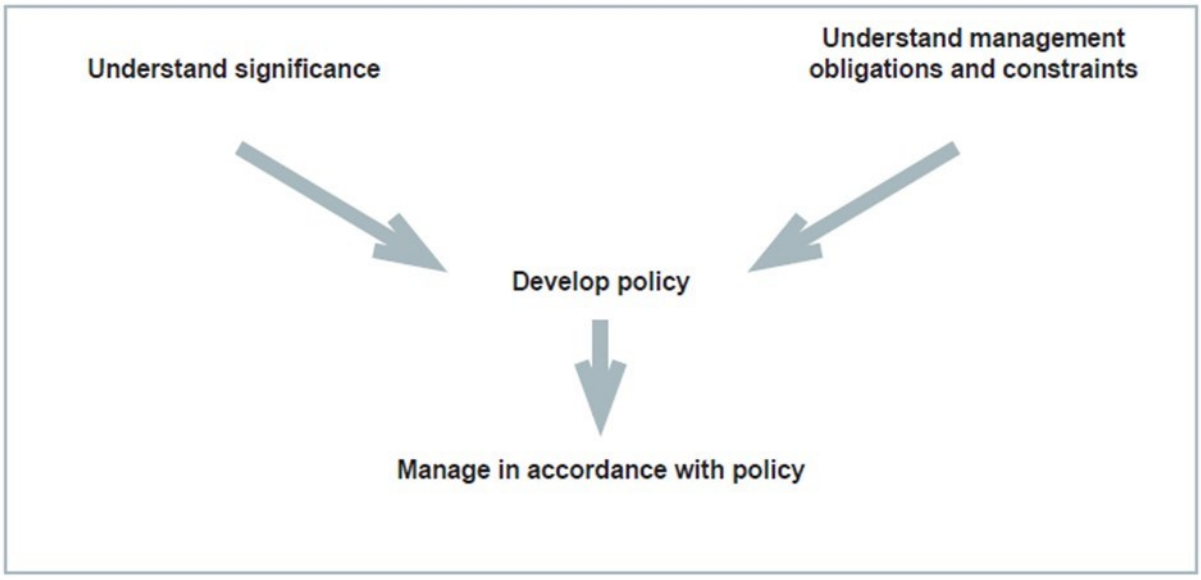


Figure 2. Planning process applied for heritage management (Source: Australia ICOMOS, 1999)

1.2 Heritage management plan objectives

The objectives of this heritage management plan are to:

- protect, conserve and manage the Commonwealth heritage values of the Cape Sorell Lighthouse.
- interpret and promote the Commonwealth heritage values of the Cape Sorell Lighthouse.
- manage use of the Lighthouse.
- use best practice standards, including ongoing technical and community input, and apply best available knowledge and expertise when considering actions likely to have a substantial impact on Commonwealth heritage values.

In undertaking these objectives, this plan aims to:

- Provide for the protection and conservation of the heritage values of the place while minimising any impacts on the environment by applying the relevant environmental management requirements in a manner consistent with Commonwealth heritage management principles.
- Take into account the significance of the region as a cultural landscape occupied by Aboriginal people over many thousands of years.
- Recognise that the site has been occupied by lease holders since the early 20th century.
- Encourage site use that is compatible with the historical fabric, infrastructure and general environment.
- Record and document maintenance works, and changes to the fabric in the Cape Sorell Lighthouse fabric register.

The organisational planning cycle and associated budgeting process is used to confirm requirements, allocate funding and manage delivery of maintenance activities. Detailed planning for the AtoN network is managed through AMSA's internal planning processes.

An interactive map showing many of AMSA's heritage sites, including Cape Sorell Lighthouse, can be found at AMSA Heritage Lighthouses Interactive Map[1].

1.3 Methodology

The methodology used in the preparation of this plan is consistent with the recommendations of The Burra Charter and with the requirements of Chapter 5, Part 15 Division 1A of the EPBC Act. In particular, the plan:

- details the history of the site based on information sourced from archival research, expert knowledge, and documentary resources,
- provides a description of the site based on information sourced from site inspection reports and fabric registers, and
- details the Commonwealth heritage criteria satisfied by Cape Sorell as set out in schedule 7A of the EPBC Regulations.

The criterion set out at Schedule 7A (h) (i-xiii) informed the development of the required policies for the management of Cape Sorell Lighthouse, in conjunction with input from the

Department of Climate Change, Energy, the Environment and Water (DEECCW) on best practice management.

Consultation

In the process of preparing the plan, AMSA engaged with the Tasmanian Parks and Wildlife Service who provided general feedback on the plan. AMSA sought engagement with the Aboriginal Land Council of Tasmania and the Tasmanian Aboriginal Centre (Burnie Office) under the direction of the Department of Primary Industries, Parks, Water and Environment Tas (Aboriginal Heritage Tasmania). A response is yet to be received, and this section will be updated to reflect progress with these consultations.

The draft management plan was advertised in accordance with the EPBC Act and EPBC Regulations. On 4 May 2022 a notice was placed in *The Australian* newspaper publication which invited the general public to review the draft plan on AMSA's website and provide feedback. Public consultation closed on 1 June 2022. No submissions were received.

A developed draft was submitted to the Federal Minister through the Heritage Branch of the Department of Climate Change, Energy, the Environment and Water (DCCEEW), and in that process the Minister's delegate sought advice from the Australian Heritage Council. The plan was endorsed on 18 July 2023.

1.4 Status

This plan has been adopted by AMSA in accordance with Schedule 7A (Management plans for Commonwealth Heritage places) and Schedule 7B (Commonwealth Heritage management principles) of the EPBC Regulations to guide the management of the place and for inclusion in the Federal Register of Legislative Instruments.

1.5 Authorship

This plan has been prepared by AMSA. At the initial time of publication, the Australian Maritime Systems Group (AMSG) is the contracted maintenance provider for the Commonwealth Government's AtoN network including Cape Sorell Lighthouse.

1.6 Acknowledgements

AMSA acknowledges the professional assistance of the Tasmanian Parks and Wildlife Service, and the Department of Primary Industries, Parks, Water and Environment (Aboriginal Heritage Tasmania).

1.7 Language

For clarity and consistency, some words in this plan such as restoration, reconstruction and preservation, are used with the meanings defined in the Burra Charter. (See Appendix 1 Glossary of heritage conservation terms).

Also see Appendix 2 Glossary of lighthouse terminology relevant to Cape Sorell which sets out the technical terminology used in this plan.

1.8 Previous reports

- A Heritage Lighthouse Report was generated by Peter Marquis-Kyle in 2006 for AMSA.[2]
- A Heritage Asset Condition Report (4th Revision) was generated by AMSG in 2021 for AMSA.[3]

1.9 Sources of information and images

This plan has used a number of sources of information. This includes the National Archives of Australia (NAA), the National Library of Australia (NLA) and AMSA's heritage collection.

2. Cape Sorell Lightstation Site

2. Cape Sorell Lightstation site

2.1 Location

Cape Sorell Lighthouse is located along the western coast of Tasmania at the mouth of Macquarie Harbour. The lighthouse tower sits at the end of an unnamed road approximately 12km south-west of the township of Strahan.

The lightstation site includes the footings of three former residences and an engine room adjacent to the lighthouse.

Coordinates: 42º 11.8740’ S, 145º 10.1620’ E

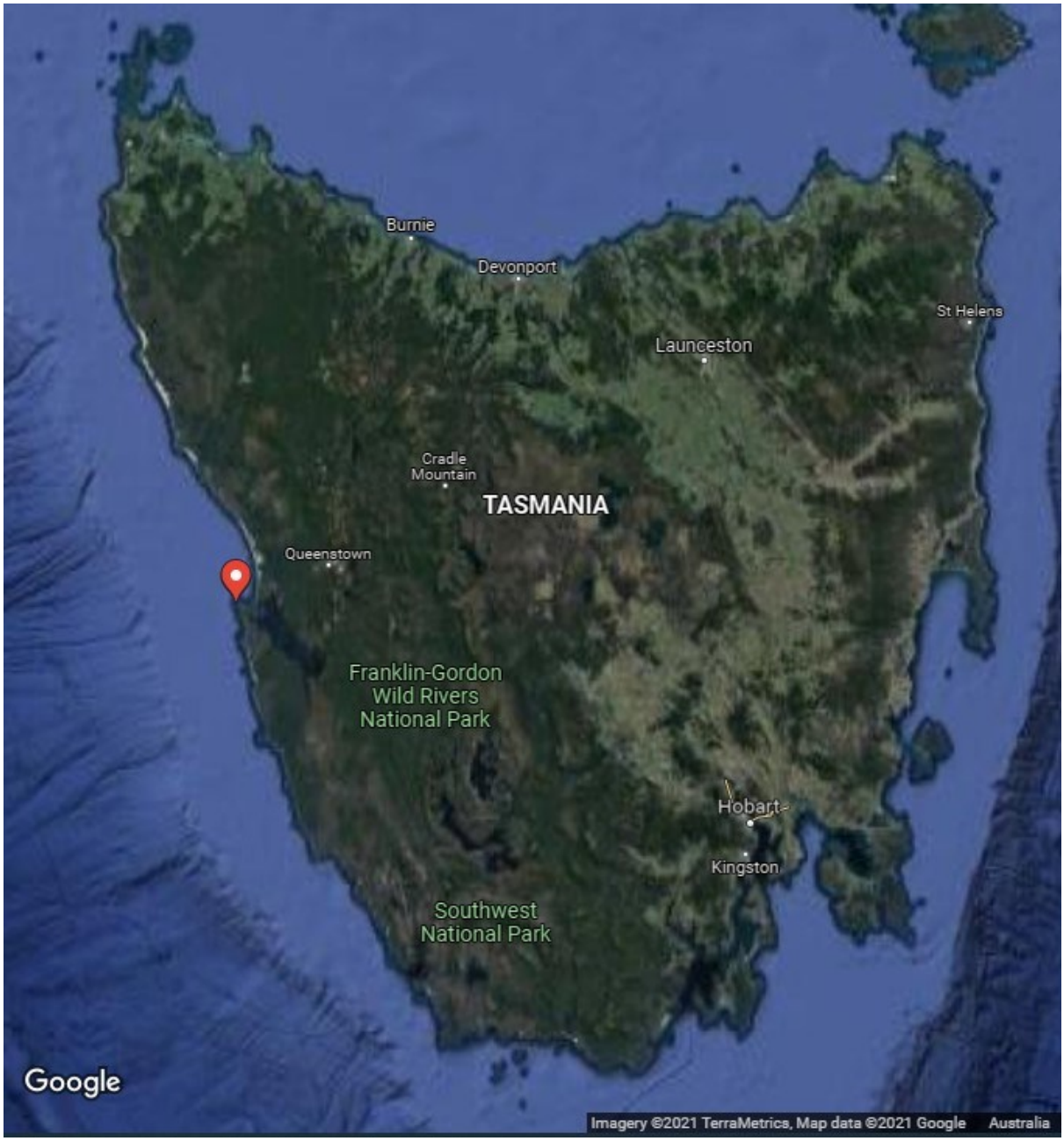


Figure 3. Location of Cape Sorell within Tasmania (Imagery 2021 TerraMetrics, Map data ©2021 Google)

2.2 Setting and landscape

Cape Sorell, framed by a rugged coastline, forms the outermost boundary of Macquarie Harbour. Owing to a lack of protection from the elements, vegetation on Cape Sorell is limited to low shrubs and ground covers. A collection of rocks extend from the cape.

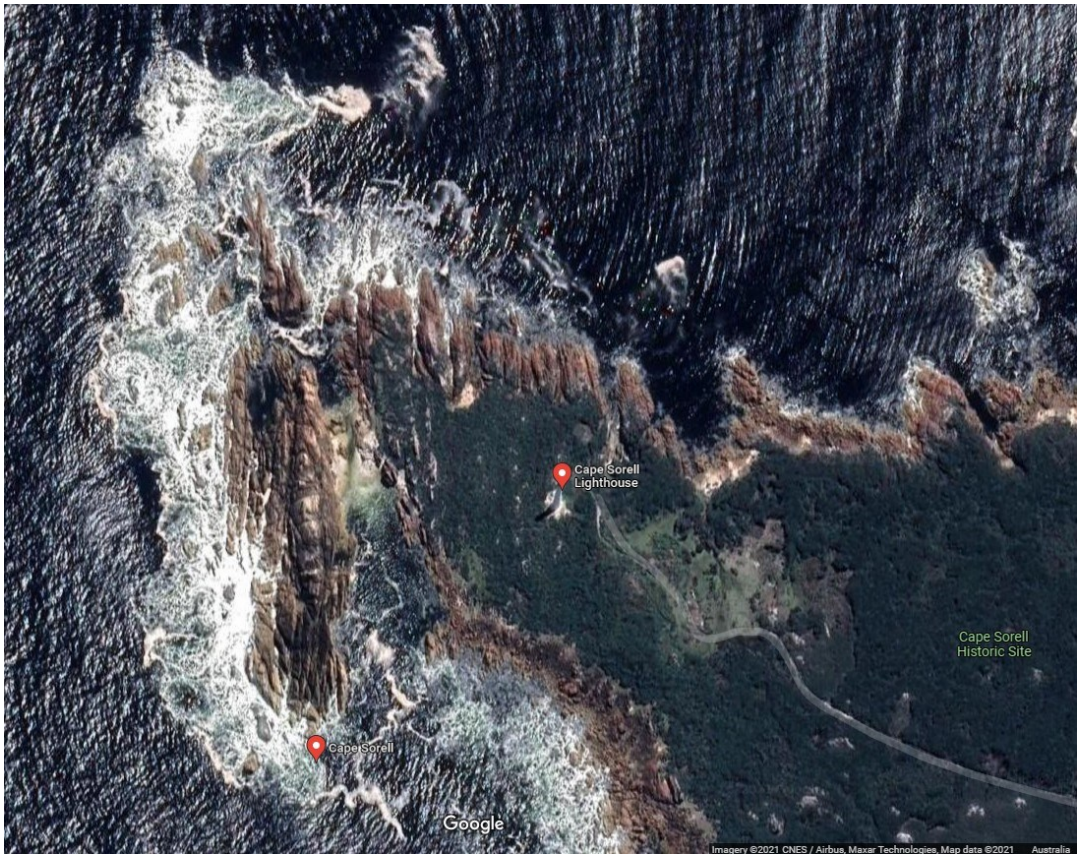


Figure 4. Lighthouse on Cape Sorell (Imagery 2021 CNES Airbus, Maxar Technologies, Map data ©2021 Google)

Figure 5. Aerial view of Cape Sorell Lighthouse (© AMSA, 2014)

Fauna and flora

The following vertebrates have been recorded within Macquarie Harbour and along the shores of Cape Sorell:

- Australian salmon
- Atlantic salmon
- cod
- flounder
- trout
- whitespotted dogfish
- barracouta
- morwong
- mullet
- bastard trumpeter
- pink ling
- silver trevally.

An *Eudyptula minor* (little penguin) colony is found on Bonnet Island at the mouth of Macquarie Habour, and the penguins are known to roam the seas around Cape Sorell most days before returning to the island at dusk.[4]

Further research on the fauna and flora prevalent on Cape Sorell will be recorded in future versions of this plan.

Figure 6. View of Cape Sorell landscape from lighthouse tower (©AMSA, 2014)

2.3 Lease and management

AMSA leases the lighthouse and land from the Minister administering the *National Parks and reserves Management Act 2002 (Tas)* (formerly the *National Parks and Wildlife Act 1970 (Tas)*.

The AMSA lease consists of two parcels of land which encompasses the lighthouse tower, and the footings of an engine room and a residential building. The current lease commenced on 1 May 1998 and there is an option to renew the lease for an additional 25 years.

Figure 7. Cape Sorell Map of Lease, 2017 (Map data: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community)

2.4 Access

Due to its isolated position, vehicular access to the lighthouse is not possible. The station can only be accessed by vessel or by helicopter. Access inside the lighthouse is restricted to authorised personnel only.

Figure 8. View of helipad from Cape Sorell Lighthouse (©AMSA, 2014)

2.5 Listings

Cape Sorell Lighthouse is included on various heritage registers, which are listed below.

Listing	ID
Commonwealth Heritage List	105597[5]
Register of the National Estate	103585[6]
Tasmanian Heritage Register	5631[7]

3. History

3. History

3.1 General history of lighthouses in Australia

The first lighthouse to be constructed on Australian soil was Macquarie Lighthouse, located at the entrance to Port Jackson, NSW. First lit in 1818, the cost of the lighthouse was recovered through the introduction of a levy on shipping. This was instigated by Governor Lachlan Macquarie, who ordered and named the light.

The following century oversaw the construction of hundreds of lighthouses around the country. Constructing and maintaining a lighthouse were costly ventures that often required the financial support of multiple colonies. However, they were deemed necessary aids in assisting the safety of mariners at sea. Lighthouses were firstly managed by the colony they lay within, with each colony developing their own style of lighthouse and operational system. Following Federation in 1901, which saw the various colonies unite under one Commonwealth government, lighthouse management was transferred from state hands to the Commonwealth Lighthouse Service.

Lamps and optics: an overview

Lighthouse technology has altered drastically over the centuries. Eighteenth century lighthouses were lit using parabolic mirrors and oil lamps. Documentation of early examples of parabolic mirrors in the United Kingdom, circa 1760, were documented as consisting of wood and lined with pieces of looking glass or plates of tin. As described by Searle, 'When light hits a shiny surface, it is reflected at an angle equal to that at which it hit. With a light source is placed in the focal point of a parabolic reflector, the light rays are reflected parallel to one another, producing a concentrated beam'.[8]

Figure 9. Incandescent oil vapour lamp by Chance Brothers (Source: AMSA)

Figure 10. Dioptric lens on display at Narooma (Source: AMSA)

In 1822, Augustin Fresnel invented the dioptric glass lens. By crafting concentric annular rings with a convex lens, Fresnel had discovered a method of reducing the amount of light absorbed by a lens. The Dioptric System was adopted quickly with Cordouran Lighthouse (France), which was fitted with the first dioptric lens in 1823. The majority of heritage-listed lighthouses in Australia house dioptric lenses made by others such as Chance Brothers (United Kingdom), Henry-LePaute (France), Barbier, Bernard & Turenne (BBT, France) and Svenska Aktiebolaget Gasaccumulator (AGA of Sweden). These lenses were made in a range of standard sizes, called orders—see 'Appendix 2. Glossary of lighthouse Terms relevant to Cape Sorell Lighthouse'.

Early Australian lighthouses were originally fuelled by whale oil and burned in Argand lamps, and multiple wicks were required in order to create a large flame that could be observed from sea. By the 1850s, whale oil had been replaced by colza oil, which was in turn replaced by kerosene, a mineral oil.

In 1900, incandescent burners were introduced. This saw the burning of fuel inside an incandescent mantle, which produced a brighter light with less fuel within a smaller volume. Light keepers were required to maintain pressure to the burner by manually pumping a handle as can be seen in Figure 9.

In 1912, Swedish engineer Gustaf Dalén, was awarded the Nobel Prize in physics for a series of inventions relating to acetylene-powered navigation lights. Dalén's system included the sun valve, the mixer, the flasher, and the cylinder containing compressed acetylene. Due to their efficiency and reliability, Dalén's inventions led to the gradual destaffing of lighthouses. Acetylene was quickly adopted by the Commonwealth Lighthouse Service from 1915 onwards.

Figure 11. Dalén's system - sunvalve, mixer and flasher (Source: AMSA)

Large dioptric lenses, such as that shown in Figure 10, gradually decreased in popularity due to cost and the move towards unmanned automatic lighthouses. By the early 1900s, Australia had stopped ordering these lenses with the last installed at Eclipse Island in Western Australia in 1927. Smaller Fresnel lenses continued to be produced and installed until the 1970s when plastic lanterns, still utilising Fresnel's technology, were favoured instead. Acetylene remained in use until it was finally phased out in the 1990s.

In the current day, Australian lighthouses are lit and extinguished automatically using mains power, diesel generators, and solar-voltaic systems.

3.2 The Commonwealth Lighthouse Service

When the Australian colonies federated in 1901, they decided that the new Commonwealth government would be responsible for coastal lighthouses—that is, major lights used by vessels travelling from port to port—but not the minor lights used for navigation within harbours and rivers. There was a delay before this new arrangement came into effect. Existing lights continued to be operated by the states.

Since 1915, various Commonwealth departments have managed lighthouses. AMSA, established under the *Australian Maritime Safety Authority Act 1990 (Cth)*, is now responsible for operating Commonwealth lighthouses and other aids to navigation, along with its other functions.

3.3 Tasmanian Lighthouse Service

The table below details the various authorities responsible for Tasmanian lighthouse management from 1915 to present.

Time Period	Administration
1915–1927:	Lighthouse District No. 3 (Victoria, New South Wales, Tasmania), Hobart Headquarters.
1927–1963:	Deputy Director of Lighthouses and Navigation, Tasmania.
1963–1972:	Department of Shipping and Transport, Regional Controller, Tasmania.
1972–1982:	Department of Transport [III], Regional Controller, Tasmania.
1982–1983:	Department of Transport and Construction. Victoria–Tasmania Region, Transport Division (Tasmania)
1983–1985	Department of Transport [IV] Victoria–Tasmania Region, Hobart Office.
1985–1987:	Department of Transport [IV] Tasmanian Region.
1987–1990:	Department of Transport and Communications, Tasmanian Region.
1991–	Australian Marine Safety Authority.

3.4 Cape Sorell: a history

Aboriginal history

The full extent of past and present Aboriginal cultural associations with Cape Sorell requires further consultation and research. New information will be included in later versions of this plan.

Early European history

Cape Sorell was named after William Sorell, Lieutenant-Governor of Tasmania (1817–1824). Sorell was renowned in the Macquarie Harbour region along the west coast of Tasmania.

Owing to its isolated position, very little European contact with the region was made early on. Macquarie Harbour, however, was recorded by European expeditions in 1815 and was later established as a penal station in 1822. Ships bringing in convicts and supplies bound for the penal station would round Cape Sorell in order to enter the harbour. The port of Strahan was established following the closure of the penal station and remained a major port of call for the timber industry until the establishment of a railway line.[9]

3.5 Building a lighthouse

Why Cape Sorell?

Cape Sorell sits as the outermost boundary of the nearby Macquarie Harbour. Its position served as a critical orientation point for shipping entering and exiting the harbour and its associated ports. Nautical merchants trading along the west Tasmanian coast strongly advocated for the construction of a light in order to assist the safe passage of goods and crew.[10] Due to the Cape's extended position and the harbour's hidden location, Cape Sorell

was a prime location for a lighthouse as it could assist ships navigating both the coastline and the entrance to the harbour.

The site chosen was approximately half a mile inland on quartzite rock and approximately 1,400 acres in size. Another site had been considered on the cape, further inland and higher in elevation. However it was decided constructing a lighthouse so far from the sea 'would impair the efficiency'.[11]

Design

Blueprints for a lighthouse were prepared by the Hobart Marine Board's architects, Huckson and Hutcheson. On 11 March 1898, these plans were submitted by the Minister for Lands and Works and were swiftly approved by the Executive Council.[12]

The designs depicted a 40-meter tall lighthouse tower constructed of brick, accompanied by keepers' quarters for a master and assistant masters.[13] The estimated cost was £6243 for the building and £2307 for the lantern and light. On 9 May 1898, *The Mercury* reported Chance Bros. & Co. Birmingham had been contacted and were to provide a light suitable for Cape Sorell.[14]

Construction

Following finalisation of the design, tenders were called and the construction of Cape Sorell Lighthouse was awarded to the Duff Bros. and their tender of £5580.[15] The project's progress was reported in the *Zeehan and Dundas Herald*:

> Mr R. Duff, of Duff Bros., Hobart, contractors for the building of the lighthouse at Cape Sorell, arrived on Zeehan yesterday. The lighthouse is situated some two miles from Macquarie entrance, and is so located that it will prove a convenience to vessels trading either from the North or South. The tower, when completed, will be 100ft high from the foundation, which is of cement built on the solid reef. Nearly 400,000 bricks will be used in the building of the tower, made at Messers Duff Bros. works, New Town. At the base the lighthouse measures 40ft, and is cemented for 30ft. The light will show for a distance of 20 miles. and will be over 200ft above water level. Two brick five-roomed cottages have been built for assistants, and an either-roomed brick residence is now in course of construction for the head keeper. The tower is completed for 70ft, and the contractors expect to finish the work some time next month.[16]

A wooden tramway was laid down from Pilot Bay to the construction site, approximately 1.5 miles (2.4 km) apart, upon which building materials were transferred to and from the site.[17] On 28 February 1899, the *Tasmanian News* reported that the *R.M.S. Papanui*, which was carrying Cape Sorell's lamp, had arrived from London and its installation was to be instantaneous.[18]

Construction was completed in May 1899 and an opening ceremony was held on 2 October the same year. This ceremony was performed by Captain J. W. Evans, M.H.A., Master Warden of the Hobart Marine Board. The ceremonial party also consisted of Strahan and Hobart Marine Board members.[19]

Equipment when built

Upon completion, the Cape Sorell Lighthouse stood as a 40-metre brick structure, fitted with a Chance Bros & Co. 2nd Order dioptric light, which was fuelled by vaporised kerosene and composed of alternating white and red flashes every 22.5 seconds. In good weather the visibility of the white flash, with an intensity of 208,000 candlepower, allegedly reached 20 miles (32km). The red flash, with an intensity of 83,000 candlepower, reached 12 miles

(19km) in distance. The light originally rotated by weights, pulleys and ropes. The lamp installed was regarded as a 'Piston Pressure Lamp' which fed a four-wick Trinity burner.[20]

The tower was accompanied by an engine room, three cottages for the assistant keepers and Superintendent stationed at the light.[21] Cape Sorell was the last lighthouse to be built by the Tasmanian Government before Commonwealth authorities assumed responsibility for coastal lights in 1915.

Figure 12. Tramline leading to Cape Sorell Light c. 1900 (Digitised item from: W.L. Crowther Library, Tasmanian Archive and Heritage Office)

3.6 Lighthouse keeping

Cape Sorell Lighthouse was originally attended by William Jacques and his assistants Carlson and Light. The keepers were required to tend to the light in shifts and maintain the cottages, tower and engine room. A supply vessel would visit each week to replenish the lighthouse's stores, and maintenance technicians could access the site via horse-drawn truck along the wooden rails leading to the lighthouse from Pilot Beach.

A total of three keepers remained stationed on site until 1962 when the lighthouse was converted to diesel-electric operation and the number of keepers reduced. In 1971, the lighthouse was converted to automatic operation. The remaining keepers were withdrawn and the keepers' cottages demolished.

Figure 13. Sorell Light, Macquarie Harbour c. 1910 (Digitised item from: W.L. Crowther Library, Tasmanian Archive and Heritage Office)

3.7 Chronology of major events

The following table details key events to have occurred at Cape Sorell Lighthouse over the course of its history.

Date	Event Details
May 1899	Construction of Cape Sorell Lighthouse completed
2 October 1899	Cape Sorell Lighthouse officially opened.[22]
5 September 1912	Lighthouse struck by lightning—tower left relatively undamaged.[23]
1971	Lighthouse de-staffed. Keepers' residences demolished.

3.8 Changes and conservation over time

The Cape Sorell Lighthouse underwent a number of changes over the decades since its construction—most significantly the conversion of the main light to solar power in the 1980s.

The Brewis Report

Commander CRW Brewis, retired naval surveyor, was commissioned in 1911 by the Commonwealth Government to report on the condition of existing lights and to recommend any additional ones. Brewis visited every lighthouse in Australia between June and December 1912, and produced a series of reports published in their final form in March 1913. These reports were the basis for future decisions made for the management of individual lighthouses.

Recommendations made by Brewis for Cape Sorell Lighthouse included alteration of the light's character, an increase to the light's intensity, and the installation of a 55mm incandescent mantle and telephone communications.[24]

CAPE SORELL LIGHT.
(78 miles from West Point.)

Lat. 42º 11' *S., Long.* 145º 10' *E., Chart No.* 1079.- Established in the year 1899.

Lloyd's Signal Station. Not connected by telephone.

Character.- One flashing white and red alternately every 22 ½ seconds. Dioptric, 2nd Order.- White, 20,000 c.p.; red, 5,000 c.p. White, visible, in clear weather, 20 nautical miles; red, 12 miles.

Brick tower, 100 feet. Height of focal plane, 186 feet above high water.

Condition and State of Efficiency.- The light-house tower, and apparatus are in good condition. The red flash in the light impairs its brilliancy. Red being the colour of danger, uniformity would be secured if the alternate red flash were discontinued.

The dwellings are in fair order, with the exception that the roofs and spouting are in need of repair. The wooden tramway also requires extensive renewals.

Communication.- The Pilot Station at Macquarie Heads is connected with Strahan by telephone. The distance from the heads to Cape Sorell by beach and tramway is about 3 miles, and in a direct line about 2.4 miles. No proposal has been considered for connecting Cape Sorell by telephone, but there are no difficulties in the way. At present messages of an urgent nature are telephoned to the heads, and conveyed to Cape Sorell by messenger.

RECOMMENDED.-

(a) The red flashes be discontinued, converting the character of the light to one white, with red sector, flashing. Flash, three seconds duration every 22 ½ seconds. Red, visible from N. 25º W. to N. over Sloop Rocks. White elsewhere.

(b) The power of the light be increased from 20,000 to 120,000 c.p., and economy effected in the consumption of oil by installing a 55 mm. incandescent mantle; illuminant, vaporized kerosene.

(c) Telephone communication be established.

Alteration to the light

The following table details alterations made to the light at Cape Sorell over the course of the lighthouse's history.

Date	Alteration
1935	Converted to diesel-electric operation.
1971	Converted to automated operation.
1988	Converted to solar power. Modular solar racks were mounted on balcony.
2019	Vega VRB25 beacon installed with 12V 35W C8 Halogen LP PR30s lightsource.

Recent conservation works

The following table details conservation works to have been carried out at Cape Sorell Lighthouse over recent years.

Date	Works Completed
2001	Corrective maintenance including: - removal, resealing and refitting of leaking windows (approx. 10) - repainting of lantern room (internal) including doors, blanking panels, door and floor - repainting of lantern room (external) including door, blanking panels, catwalk, balcony, hand rails, astragals, gutter and roof.
2016	Major repainting of: - tower (external) - front tower door - external stairs - balcony - internal lantern room blanking panels and floor.

3.9 Summary of current and former uses

From its construction in 1899, Cape Sorell Lighthouse has been used as a marine AtoN for mariners at sea. Its AtoN capability remains its primary use.

3.10 Summary of past and present community associations

Aboriginal associations

Further consultation with Traditional Custodians is required for a greater understanding of the past and present associations held across the region.

The Department of Primary Industries, Parks, Water and Environment (Aboriginal Heritage Tasmania) advised there are a number of Aboriginal heritage sites recorded nearby the lighthouse.

Local, national and international associations

The manned history of the lighthouse has resulted in familial associations with the place locally, nationally and internationally. Cape Sorell is considered a significant site of Tasmanian maritime history.

3.11 Unresolved questions or historical conflicts

Any historical conflicts or unresolved questions brought to light will be addressed here in future versions of this plan.

3.12 Recommendations for further research

Research on past lighthouse keepers of Cape Sorell Lighthouse may be beneficial in determining the full extent of the social value placed on the site within the surrounding communities.

Figure 14. Cape Sorell tower c. 1900 (Digitised item from: W.L. Crowther Library, Tasmanian Archive and Heritage Office)

4. Fabric register

4. Fabric

4.1 Fabric register

The cultural significance of the lighthouse resides in its fabric and in its intangible aspects, such as the meanings people ascribe to it, and its connections to other places and things. The survival of its cultural value depends on an understanding of what is significant and on clear thinking about the consequences of change. The Burra Charter sets out good practice for conserving places of cultural significance in Australia.
Criterion listed under 'Heritage significance' refers to the criterion satisfied within the specific Commonwealth heritage listing (see section 5.1).

(All images in sub-sections 4.1 and 4.2 - Source: AMSA)

Lighthouse feature: Lantern roof

© AMSA 2020

Description and condition

1899 Chance Bros part-spherical dome of copper sheets lapped and screwed.

- Ribs – Chance Bros cast iron radial ribs.
- Inner skin – none (removed).
- Ventilator – drum type with wind vane and direction pointers attached.
- Wind vane – intact and complete with cardinal direction indicators, spindle and gears (no internal pointer or index).
- Lightning conductor – vertical pole beside ventilator, with three spikes at top, and two braces to ventilator. Eight vertical spikes attached near the gutter.
- Gutter – polygonal fabricated gutter attached to ring of cast iron pieces bolted together.
- Handrails – one circular hand rail attached to lantern roof, another attached to top of ventilator drum.
- Ladder rail – attached to underside of gutter.
- Curtain rail – none, curtain hooks fixed to the top of each vertical astragal.

- Heat tube support – framework with six radial members of rolled ferrous T-section, attached to gutter and to central ring. Short section of heat tube still in place.

Finish	painted
Condition	intact and sound
Integrity	high
Significance	high
Maintenance	keep in service prepare and repaint at normal intervals
Rectification works	none

Heritage significance: High

The lantern room is an original part of the only remaining intact structure in a lightstation complex (criterion b).

The lantern roof is both an original and essential part of the lighthouse, exhibiting one style of 19th century lighthouses (criterion d).

The lantern room contributes to the aesthetic value of the lighthouse (criterion e).

Lighthouse feature: Lantern glazing

© AMSA 2019

Description and condition

1899 Chance Bros, cylindrical in form.

- Panes – curved rectangular glass, three tiers.
- Astragals – Chance Bros vertical and horizontal astragals of rectangular section iron, bolted to gutter ring at top, and to lantern base below.
- Downpipes – none (removed). Brackets still attached to astragals.
- Handholds – two cast metal handholds bolted to each vertical astragal, except where downpipes were fitted.

Finish	astragals and glazing strips: painted
Condition	intact and sound
Integrity	high
Significance	high
Maintenance	keep in service reglaze as necessary prepare and repaint at normal intervals
Rectification works	none

Heritage significance: High

The lantern glazing is a part of the only remaining intact structure in a lightstation complex (criterion b).

The lantern glazing is both an original and essential part of the lighthouse, exhibiting one style of 19th century lighthouses (criterion d).

The lantern glazing contributes to the aesthetic value of the lighthouse (criterion e).

Lighthouse feature: Emergency glazing panels

© AMSA 2019

Description and condition
Portable panels, intended as temporary replacements for damaged lantern panes, stored on the floor below the lantern. There are three copper alloy sashes with four glass panes in each, sized to fit between the lantern astragals, with copper alloy bolts and nuts to secure them.

Condition	glazing putty is brittle and cracked, otherwise intact and sound
Integrity	high
Significance	high
Maintenance	none
Rectification works	none

Heritage significance: high

The emergency glazing panels are an essential part of the lighthouse, exhibiting one style of 19th century lighthouses (criterion d).

Lighthouse feature: Internal catwalk


© AMSA 2019

Description and condition

1899 Chance Bros, cast iron lattice floor panels supported on solid cast iron brackets bolted to the top of the lantern base.

- Later extension – a circular piece of aluminium expanded metal mesh added in the place of the catwalk, to form a continuous floor. The mesh is supported by a ring frame attached to the inner edge of the catwalk, and by the beacon pedestal in the middle.
- Ladder – fixed ladder with cast iron treads on wrought iron strings.

Finish	painted
Condition	sound
Integrity	high
Significance	aluminium infill: low other parts: high
Maintenance	keep in service prepare and repaint at normal intervals
Rectification works	none

Heritage significance: High

The internal catwalk is an original part of the only remaining intact structure in the lightstation complex (criterion b).

The internal catwalk is both an original and essential part of the lighthouse, exhibiting one style of 19th century lighthouses (criterion d).

Lighthouse feature: External catwalk

© AMSA 2019

Description and condition

1899 Chance Bros, cast iron lattice floor panels supported on openwork cast iron brackets bolted to lantern base.

- Handrail: Rectangular section stainless steel stanchions, bolted to floor panels, with top rail (and partial mid rail) of pipe section.

Finish	cast iron: painted stainless steel: bare metal
Condition	intact and sound
Integrity	high
Significance	high
Maintenance	keep in service prepare and repaint at normal intervals
Rectification works	none

Heritage significance: high

The external catwalk is an original part of the only remaining intact structure in a lightstation complex (criterion b).

The external catwalk is both an original and essential part of the lighthouse, exhibiting one style of 19th century lighthouses (criterion d).

The external catwalk contributes to the aesthetic value of the lightstation (criterion e).

Lighthouse feature: Lantern base

© AMSA 2019

Description and condition

1899 Chance Bros, cylindrical in form. Curved panels of cast iron bolted together with flanged joints.

- Internal lining – none (removed).
- Vents – round air inlets cast as part of wall panels. These have been fitted with mesh grilles which have been filled with paint. Cast iron air trunks bolted on inside, fitted with mesh grilles on the large and small openings, from which the original brass regulators have been removed.
- Door – Chance Bros iron door from which the inner lining, frame and lock have been removed. Lock replaced by tubular strong-back, stainless steel nut and stainless steel stud. Original bronze hinges. Maker's plaque fixed to door.
- Equipment – batteries on galvanised steel racks, control equipment, cabling.

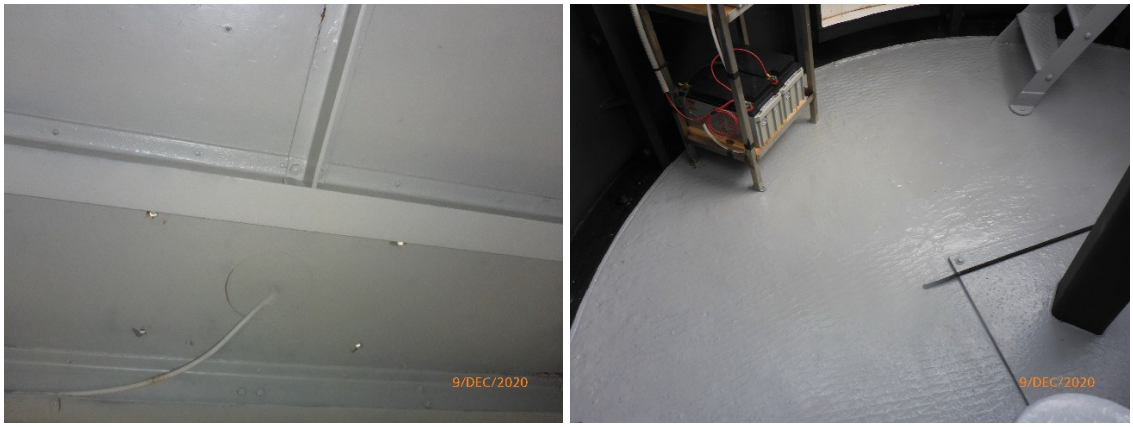
Finish	painted
Condition	intact and sound
Integrity	high
Significance	high
Maintenance	keep in service prepare and repaint at normal intervals
Rectification works	none

Heritage significance: High

The lantern base is an original part of the only remaining intact structure in a lightstation complex (criterion b).

The lantern base is both an original and essential part of the lighthouse, exhibiting one style of 19th century lighthouses (criterion d).

Lighthouse feature: Lantern floor



Description and condition

Ferrous metal checker plate on rolled steel joists, built into the tower walls.

Finish	painted
Condition	intact and sound
Integrity	high
Significance	high
Maintenance	keep in service prepare and repaint at normal intervals
Rectification works	none

Heritage significance: High

The lantern floor is an original part of the only remaining intact structure in a lightstation complex (criterion b).

The lantern floor is an essential part of a lighthouse exhibiting one style of 19th century lighthouses (criterion d).

Lighthouse feature: Beacon

© AMSA 2019

Description and condition
Vega VRB-25 self-contained rotating beacon.

Condition	intact and sound
Integrity	high
Significance	low
Maintenance	keep in service
Rectification works	none

Heritage significance: Low

Lighthouse feature: Pedestal


© AMSA 2019

Description and condition
Steel square hollow section post, with flat plates welded to top and bottom.

Condition	intact and sound
Significance	low
Integrity	high
Maintenance	keep in service, prepare and repaint pedestal at normal intervals
Rectification works	none

Heritage significance: Low

Lighthouse feature: Balcony floor

© AMSA 2020

Description and condition

1899 Chance Bros cast iron floor plates, supported on the top of the tower walls.

Finish	painted
Condition	intact and sound
Integrity	high
Significance	high
Maintenance	monitor and maintain joint seals, prepare and repaint at normal intervals
Rectification works	none

Heritage significance: High

The balcony floor is an original part of the only remaining intact structure in a lightstation complex (criterion b).

The balcony floor is both an original and essential part of the lighthouse, exhibiting one style of 19th century lighthouses (criterion d).

Lighthouse feature: Balcony balustrade

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Description and condition

1899 Chance Bros cast iron balusters with four iron pipe rails.

- Solar panels – 10 solar panels mounted on four frames made of aluminium angle and tube, attached to balcony balustrade.

Finish	painted
Condition	intact and sound
Integrity	high
Significance	solar panels and frames: low balustrade: high
Maintenance	solar panels and frames: low balustrade: high
Rectification works	none

Heritage significance: High

The balcony balustrade is an original part of the only remaining intact structure in the lightstation complex (criterion b).

The balcony balustrade is both an original and essential part of the lighthouse, exhibiting one style of late 19th century lighthouses (criterion d).

The balcony balustrade contributes to the aesthetic value of the lighthouse (criterion e).

Lighthouse feature: Walls

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Description and condition

Brick walls built in 1899 with the internal face plumb, so that the internal volume is of constant diameter. Two skins of brickwork merge into one about 12 metres above the ground.

Finish	painted inside and out, except for bottom 13 courses inside, where paint has been removed with needle gun
Condition	signs of minor water penetration at the top of the tower; signs of minor rising damp at the base of the tower; otherwise intact and sound
Integrity	medium
Significance	high
Maintenance	keep in service, monitor condition of pointing and brickwork.
Rectification works	none

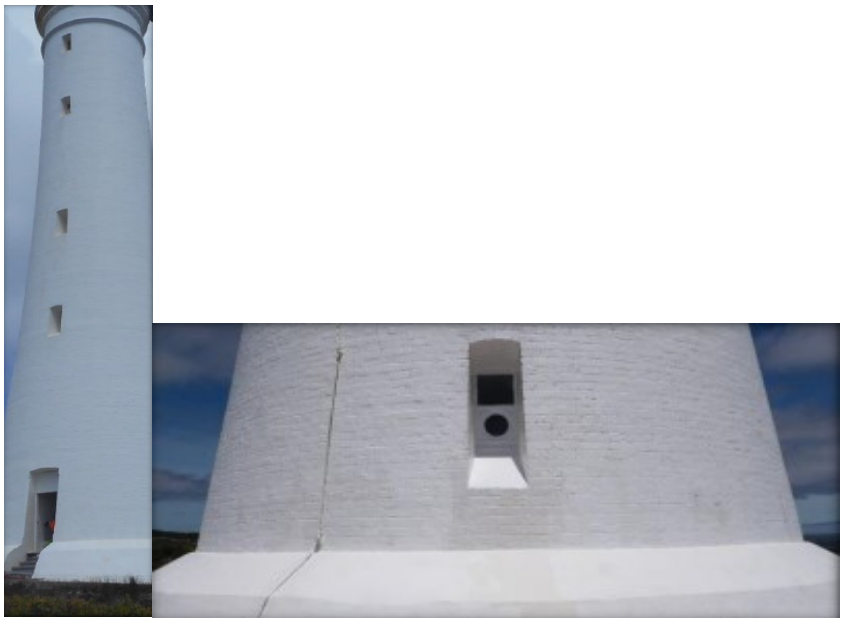
Heritage significance: High

The tower walls are an original part of the only remaining intact structure of the lightstation complex (criterion b).

The tower walls are both original and essential part of the lighthouse—exhibiting one style of late 19th century lighthouses (criterion d).

The tower walls contribute to the aesthetic value of the lightstation (criterion e).

Lighthouse feature: Windows



© AMSA 2019

Description and condition

Rectangular windows constructed in 1899, with a fixed rectangular glass pane above, and an openable round glass light below. Frame and sash constructed of cast metal.

Finish	frames and sashes: painted glass: clear
Condition	opening light is painted shut, otherwise intact and sound
Integrity	high
Significance	high
Maintenance	keep in service, prepare and repaint at normal intervals
Rectification works	none

Heritage significance: High

The tower windows are original parts of the only remaining intact structure of the lightstation complex (criterion b).

The tower windows are both original and essential parts of the lighthouse—exhibiting one style of late 19th century lighthouses (criterion d).

The openable round window contributes to the aesthetic value of the lighthouse (criterion e).

Lighthouse feature: Door

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Description and condition

1899 timber framed and sheeted door, hung in a timber door frame. Fanlight over door has been removed and a fixed panel installed. Original rimlock missing. Padbolt and padlock outside.

Finish	painted
Condition	sound
Integrity	medium
Significance	high
Maintenance	keep in service, prepare and repaint at normal intervals
Rectification works	none

Heritage sigificance: High

The tower door and frame are original parts of the only remaining intact structure of the lightstation complex (criterion b).

The tower door and frame are both original and essential parts og the lighthouse—exhibiting one style of late 19th century lighthouses (criterion d).

Lighthouse feature: Intermediate floors

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Description and condition

Four 1899 part floors form stair landings. Slate floor slabs supported on rolled steel beams, are built into the tower walls.

Finish	painted
Condition	old, stable crack in the slate floor at the foot of one stair flight. Otherwise intact and sound.
Integrity	high
Significance	high
Maintenance	keep in service, prepare and repaint at normal intervals
Rectification works	none

Heritage significance: High

The intermediate floors are original parts of the only remaining intact structure of the lightstation complex (criterion b).

The intermediate floors are both original and essential parts of the lighthouse—exhibiting one style of late 19th century lighthouses (criterion d).

Lighthouse feature: Stairs

© AMSA 2020

Description and condition

1899 geometric stair with cast iron treads/risers built into the tower wall, and wrought iron handrail and stanchions. Cast iron brackets support the centre of each flight.

Finish	painted
Condition	intact and sound
Integrity	high
Significance	high
Maintenance	keep in service, prepare and repaint at normal intervals
Rectification works	none

Heritage significance: High

The internal stairs are an original part of the only remaining intact structure of the lightstation complex (criterion b).

The internal stairs are both original and essential parts of the lighthouse—exhibiting one style of late 19th century lighthouses (criterion d).

The internal stairs contribute to the aesthetic value of the lightstation (criterion e).

Lighthouse feature: Ground floor

© AMSA 2019

Description and condition

1899 concrete floor slab.

Finish	painted
Condition	intact and sound
Integrity	high
Significance	high
Maintenance	keep in service, prepare and repaint at normal intervals
Rectification works	none

Heritage significance: high

The ground floor is an original part of the only remaining intact structure of the lightstation complex (criterion b).

The ground floor is both an original and essential part of the lighthouse—exhibiting one style of late 19th century lighthouses (criterion d).

Lighthouse feature: Plaques and inscriptions

Description and condition

Builder's plate, Chance Brothers and Commonwealth Lighthouse Service (CLS) graffiti.

Builder's plate: Brass plate screwed to tower wall inside at ground floor, engraved 'This lighthouse was erected in the year 1898–1899 by J & R Duff, contractors, Hobart'.

CLS Graffiti: Two timber boards nailed to internal door frame at ground floor, with names of crew members of *Cape Don* on service visits in 1979 and 1984.

Chance Brothers: Recently installed replica brass plate engraved 'Chance Brothers & Co, Lighthouse Engineers & Constructors, near Birmingham – 1898 –' on interior of lantern room door.

Condition	sound
Integrity	high
Significance	Builder's plate: High Chance Brothers replica: moderate CLS Graffiti: moderate
Maintenance	none
Rectification works	rectification works

Heritage significance: High

The plaques and inscriptions are historically notable features of the only remaining intact structure of the lightstation complex (criterion b).

The Builder's plate is an original feature of a lighthouse exhibiting one style of late 19th century lighthouses. The CLS graffiti inscription and Chance Brothers replica plaque are notable historic features of the lighthouse (Criterion d).

Lighthouse feature: Outbuilding remnants

© AMSA 2020

Description and condition

Concrete floor slabs and scattered broken bricks from two small buildings are located to the north of the base of the tower, within the AMSA area.

One of the slabs appears to incorporate machine bases and may have been a timber-walled engine house. The other appears to have had brick walls.

Condition	stable
Integrity	not assessed
Significance	high
Maintenance	none
Rectification works	none

Heritage significance: High

The building remnants indicate the location of the former residences on site. The Cape Sorell Lighthouse is the only remaining intact structure in its lightstation complex (Criterion b).

Lighthouse feature: Helipad

© AMSA 2020

Description and conditions

Small square concrete slab on the ground.

Condition	sound
Integrity	high
Significance	low
Maintenance	none
Rectification works	none

Heritage significance: Low

4.2 Related objects and/or associated AMSA artefacts

The following objects are associated AMSA artefacts on site at Cape Sorell Lighthouse.

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Artefact description	Storm glazings
Maximo ID	AR0733
Location in Lighthouse	Ground floor
Condition	Intact and sound

4.3 Comparative analysis

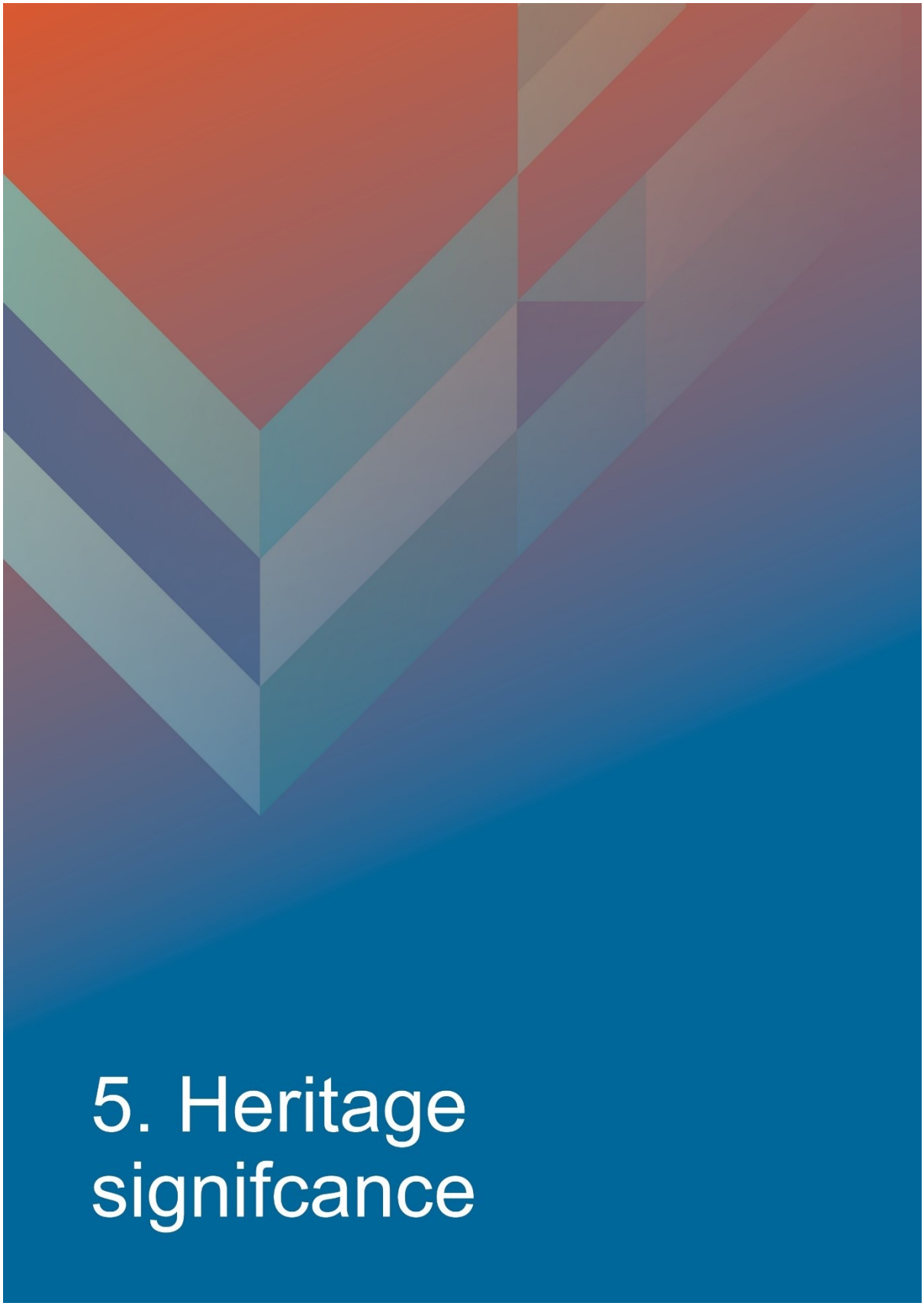
Although significantly shorter, Table Cape Lighthouse shares a number of similarities with Cape Sorell. Table Cape Lighthouse, located along the northern coast of Tasmania, was constructed in 1888 and is composed of brick and masonry. Like Cape Sorell, Table Cape was also designed by Huckson & Hutchison and similarly fitted with a 2nd Order Chance Bros. light.

Figure 15. Cape Sorell Lighthouse, first lit 1899 (© AMSA, 2014)

Figure 16. Table Cape Lighthouse, first lit 1888 (Source: AMSA)

Other Tasmanian lighthouses designed by Huckson & Hutchison include:

- Mersey Bluff Lighthouse (1889) – brick tower designed by Huckson and fitted with a 4th Order Chance Brothers lantern.
- Tasman Island Lighthouse (1906) – prefabricated cast-iron tower designed by Huckson and Hutchison and fitted with a 1st Order Chance Brothers lantern (now removed).
- Low Head Lighthouse (1888) – brick tower designed by Huckson and fitted with a Chance Brothers lantern.



5. Heritage signifcance

5. Heritage significance

5.1 Commonwealth Heritage listing – Cape Sorell Lighthouse

The following information is taken from the Cape Sorell Lighthouse listing on the Australian Heritage Database (Place ID: 105597).

Commonwealth statement of significance

> Cape Sorell Lighthouse, built in 1899, is significant for its associations with the development of navigational aids along the west coast of Tasmania, and is the only remaining intact structure in a lightstation complex that included the tower, three keepers' residences and an engine room. Remnant foundations serve to indicate the location of the former residences. (Criteria A.4 and B.2) (Themes: 3.8.1 Shipping to and from Australian ports, 3.16.1 Dealing with hazards and disasters).
>
> In its general configuration, form and massing, the tower is illustrative of one of the types of lighthouses constructed around the continent during the latter part of the 19th century. (Criterion D.2)
>
> The lighthouse, situated on the tip of the outermost boundary of Macquarie Harbour, in a rugged and lonely coastal setting, and being a very prominent structure in that landscape, has strong aesthetic values. (Criterion E.1)

Commonwealth heritage criteria

There are nine criteria for inclusion in the Commonwealth Heritage List—meeting any one of these is sufficient for listing a place. These criteria are similar to those used in other Commonwealth, state and local heritage legislation, although thresholds differ. In the following sections, the Cape Sorell Lighthouse is discussed in relation to each of the criteria as based on the site's current Commonwealth Heritage Listing (Place ID: 105597).

Criterion	Relevant Attributes Identified	Explanation
Criterion B – Rarity This criterion is satisfied by places that have significant heritage value because of [their] possession of uncommon, rare or endangered aspects of Australia's natural or cultural history.	The whole tower, its prominence within the coastal landscape plus the footings of three former residences and an engine room.	Cape Sorell Lighthouse, is the only remaining intact structure in its lightstation complex that included the tower, three keepers' residences and an engine room. Remnant foundations serve to indicate the location of the former residences.
Criterion D – Characteristic values This criterion is satisfied by places that have significant heritage values because of [their] importance in demonstrating the principal characteristics of a class of Australia's natural or cultural history.	The tower's form and massing.	In its general configuration, form and massing, the tower is illustrative of one of the types of lighthouses constructed around the continent during the latter part of the 19th century.

Criterion E – Aesthetic values This criterion is satisfied by places that have significant heritage value because of [their] importance in exhibiting particular aesthetic characteristic value by a community or cultural group.	The lighthouse's prominence within its coastal setting.	The lighthouse, situated on the tip of the outermost boundary of Macquarie Harbour, in a rugged and lonely coastal setting, and being a very prominent structure in that landscape, has strong aesthetic values.

5.2 TAS State Heritage Register – Cape Sorell Lighthouse

The following information is taken directly from the Cape Sorell Lighthouse listing on the Tasmanian Heritage Register (THR ID: 5631).

TAS heritage statement of significance

No statement is provided for places listed prior to 2007.

TAS State heritage criteria

The Heritage Council may enter a place in the Heritage Register if it meets one or more of the following criteria from the *Historic Cultural Heritage Act 1995 (Tas)*.

Criteria	Explanation/evidence
Criterion A – The place is important to the course or pattern of Tasmania's history.	Cape Sorell Lighthouse, erected in 1899, is significant for its association with the development of navigational aids along the west coast of Tasmania, and is the only remaining structure in a light station complex that included the tower and three keepers' residences.
Criterion D –The place is important in demonstrating the principal characteristics of a class of place in Tasmania's history.	Cape Sorell Lighthouse is of historic heritage significance because it represents the principal characteristics of a Victorian brick lighthouse.
Criterion F –The place has a strong or special associations with a particular community or cultural group for social or spiritual reasons.	The lighthouse, situated on the tip of the outermost boundary of Macquarie Harbour, in a rugged and lonely coastal land and seascape setting, is of historic heritage significance as a dramatic landmark feature values by the community.

These heritage values, identified and explained in the Commonwealth Heritage List and the State Heritage Register, will form the basis of the management of Cape Sorell Lighthouse. In the event of necessary works, all criteria will be consulted to inform best practice management of the values associated with the lighthouse. See 'Section 7. Conservation management principles and policies' for further information on strategies to conserve heritage values of the Cape Sorell Lighthouse.

5.3 Condition and integrity of the Commonwealth heritage values

A heritage monitoring program was implemented in 2016. Each site is visited and reviewed every two years where the heritage fabric and values of the site are evaluated. Assessment of the condition and integrity of lighthouse's values are derived from the latest available 'Heritage asset condition report' produced by AMSA's maintenance contractor.

Condition is measured on a Good – Fair – Poor scale and incorporates the current condition of the specific value. Integrity is measured on a High – Medium – Low scale which incorporates the value's intactness.

Criteria	Values (including attributes)	Condition	Integrity
b) Rarity	Cape Sorell Lighthouse, is the only remaining intact structure in its lightstation complex that included the tower, three keepers' residences and an engine room. Remnant foundations serve to indicate the location of the former residences. The whole tower, its prominence within the coastal landscape plus the footings of three former residences and an engine room.	Good	High
d) Characteristic values	In its general configuration, form and massing, the tower is illustrative of one of the types of lighthouses constructed around the continent during the latter part of the 19th century. The tower's form and massing.	Good	High
e) Aesthetic characteristics	The lighthouse, situated on the tip of the outermost boundary of Macquarie Harbour, in a rugged and lonely coastal setting, and being a very prominent structure in that landscape, has strong aesthetic values. The lighthouse's prominence within its coastal setting.	Good	High

As a whole, the heritage values of Cape Sorell Lighthouse are in good condition and considered to have high integrity. The tower remains intact with its configuration largely unchanged from its original design. It also maintains its standing as a prominent feature within the landscape.

5.4 Gain/loss of heritage values

As evidenced in Section 5.2, Cape Sorell Lighthouse's identified Commonwealth Heritage values remain intact and in good condition.

In order to capture any gained Commonwealth Heritage values, a Heritage Place Review should be undertaken. At the time this plan was prepared, AMSA is planning a review program to be undertaken over a 5-year period.

Evidence for the potential gain or loss of heritage values will be documented within this section of future versions of this heritage management plan.

6. Opportunities and constraints

6. Opportunities and constraints

6.1 Implications arising from significance

The Commonwealth statement of significance (section 5.1 above) outlines that Cape Sorell Lighthouse is a place of considerable heritage value due to its associations with the development of navigational aids along the west coast of Tasmania.

The implication arising from this assessment is that key aspects of the place should be conserved to retain this significance. The key features requiring conservation include:

- continued use of the lighthouse as an AtoN
- architectural quality of the building
- interior spaces and features, which are notable for their design, details and original lighthouse function. These include:
    - lantern room and fixtures
    - intermediate floors
    - ground floor
    - spiral staircase
- external spaces and features, which are notable for their design, details, and original lighthouse function. These include:
    - lantern roof
    - external catwalk and balcony
    - tower walls
    - windows and doors
    - outbuilding remnants.

Referral and approvals of action

The EPBC Act requires approval from the Minister for the Environment for all actions likely to have a significant impact on matters of National Environmental Significance (NES).

The Act provides that the following actions require the approval of the Minister:

- Actions on Commonwealth land which are likely to have a significant impact on the environment
- Actions outside Commonwealth land which are likely to have a significant impact on the environment on Commonwealth land
- Actions by the Australian Government or its agencies which are likely to have a significant impact on the environment anywhere.

The definition of ‘environment’ in the EPBC Act and EPBC Regulations includes the cultural heritage values of places.

Heritage strategy

If an Australian Government agency owns or controls one or more places with Commonwealth heritage values, it must prepare a heritage strategy within two years from the first time they own or control the heritage place (section 341ZA).

A heritage strategy is a written document that integrates heritage conservation and management within an agency’s overall property planning and management framework. Its

purpose is to help an agency manage and report on the steps it has taken to protect and conserve the commonwealth heritage values of the properties under its ownership or control.

The heritage strategy for AMSA's AtoN assets was completed and approved by the Commonwealth Minister for the Environment in 2018 and reviewed in 2022. The latest version of the Strategy is available online.[25]

Heritage asset condition report

A 'heritage asset condition report' is a written document that details the heritage fabric of a site with an in-depth description of each architectural and structural element. The document includes: a brief history of the site, the Commonwealth Heritage statement of significance and value criteria, a heritage significance rating for each individual element, and a catalogue of artefacts on-site. The document is also accompanied by up-to-date photos of each structural element. This document operates as a tool for heritage monitoring, and is reviewed and updated biennially.

Aboriginal heritage significance and natural values

Cape Sorell as a whole is notable for its Aboriginal heritage significance and natural values. Although these values lie outside of the Commonwealth heritage listing curtilage and AMSA's lease, the potential remains for future works at the lighthouse to impact these values. At the time this plan was written, no plans have been made for future works at Cape Sorell Lighthouse. In the event major works at the lighthouse are to be carried out, AMSA will seek to minimise impacts to the surrounding area by:

- Utilising specific access tracks to ensure no damage to surrounding vegetation,
- Ensuring project footprint is limited to the AMSA lease. In any instance that work is required outside of this footprint, approvals will be sought from the appropriate stakeholders including TAS PWS and Aboriginal Heritage Tasmania,
- Implementing an appropriate discovery plan in the instance Aboriginal cultural heritage is suspected and/or found.

6.2 Framework: sensitivity to change

Owing to the site's rarity, configuration and aesthetic qualities, Cape Sorell Lighthouse is of high significance. Therefore, work actioned by AMSA on the lighthouse's fabric harnesses the potential to reduce or eradicate the significance of the site's heritage values.

Conservation works, including restoration and reconstruction, or adaption works of the absolute minimum so as to continue the lighthouse's usefulness as an AtoN are the only works that should be actioned by AMSA on Cape Sorell Lighthouse. Some exceptions are made for health and safety requirements, however any and all work carried out must be conducted in line with heritage considerations and requirements of the EPBC Act.

The table below demonstrates the level of sensitivity attributed to the various elements of the fabric register in the face of change. These are measured on a High-Moderate-Low spectrum depending on the action's possible threat to the site's heritage values.

High sensitivity

High sensitivity to change includes instances where a change would pose a major threat to the heritage value of a specific fabric, or the lighthouse as a whole. A major threat is one that would lead to substantial or total loss of the heritage value.

Moderate sensitivity

Moderate sensitivity to change includes instances where a change would pose a moderate threat to the heritage value of a specific fabric, or to the heritage significance of a specific fabric in another part of the building. A moderate threat is one that would diminish the heritage value, or diminish the ability of an observer to appreciate the value.

Low sensitivity

Low sensitivity to change includes instances where a change would pose little or no threat to the heritage value of a specific fabric, or to the heritage significance in another part of the building.

Component	Level of sensitivity	Nature of change impacting heritage values
Cape Sorell Lighthouse structure including helipad	High	• Major changes to façade materials and design. • Reduction of all-round visibility of the structure and its setting on Cape Sorell.
	Low	• Repainting of structure in like-colours. • Removal of asbestos and lead paint or other toxic materials. • Repairs to helipad.
Ground floor	High	• Removal of original/early fabric. • Removal of Builder's plate.
	Moderate	• Removal of CLS graffiti for display elsewhere.
	Low	• Repainting of ground floor in like-colours
Stairs	High	• Removal of original/early fabric.
	Low	• Repainting of stairs in like-colours. • Corrosion repairs to stair treads and balustrades.
Walls	High	• Major changes to façade materials and design.
	Low	• Repainting of walls in like-colours.
Intermediate floors	High	• Removal of original/early fabric.
	Low	• Repainting of intermediate floors in like-colours.

		• Corrosion repairs to beams.
Windows and doors	High	• Alteration to window and door openings. • Removal of original/early fabric.
	Low	• Repainting of frames and sashes in like-colours. • Repainting of timber door in like-colours. • Replacement of fixed panel above door. • Replacement of padlock.
Balcony	High	• Major changes to façade materials and design.
	Low	• Repainting of balcony floor and balustrades in like-colours. • Corrosion repairs to floor and balustrades. • Removal/replacement of solar panels.
Internal and external catwalk	High	• Removal of internal and external catwalks.
	Low	• Repainting of internal and external catwalks. • Corrosion repairs to internal and external catwalks. • Removal/replacement of aluminium infill.
Lantern room	High	• Major changes to façade materials and design. • Removal of original lantern house. • Removal of windvane. • Removal of Chance Brothers original lantern base door.
	Low	• Reinstatement of brass regulators in base. • Repainting of lantern room in like-colours.

		• Corrosion repairs to lantern house. • Removal/replacement of batteries and battery rack. • Replacement of glazing panes. • Re-sealing of glazing panes. • Replacement of Chance Brothers plaque replica. • Replacement of emergency glazing panels. • Replacement of recent stainless steel lock.
Lens and pedestal	Low	• Removal/replacement/adjustment of VRB beacon and pedestal. • Changes to the light's character.
Outbuilding remnants	High	• Removal of building remnants.

6.3 Statutory and legislative requirements

The following table lists the Acts and codes relevant to the management of Cape Sorell Lighthouse.

Act or code	Description
Environment Protection and Biodiversity Conservation Act 1999 (Cth)	The *Environment Protection & Biodiversity Conservation Act 1999 (Cth)* requires agencies to prepare management plans that satisfy the obligations included in Schedule 7A and 7B of the EPBC Regulations.
Environment Protection and Biodiversity Conservation Regulations 2000 (Cth) Schedule 7B	The Commonwealth Department of Climate Change, Energy, the Environment and Water determined these principles as essential for guidance in managing heritage properties. • The objective in managing Commonwealth heritage places is to identify, protect, conserve, present and transmit to all generations, their Commonwealth Heritage values. • The management of Commonwealth heritage places should use the best available knowledge, skills and standards for those places, and include ongoing technical and community input to decisions and actions that may have a significant impact on their Commonwealth heritage values.

	• The management of Commonwealth heritage places should respect all heritage values of the place and seek to integrate, where appropriate, any Commonwealth, state, territory and local government responsibilities for those places. • The management of Commonwealth heritage places should ensure that their use and presentation is consistent with the conservation of their Commonwealth Heritage values. • The management of Commonwealth heritage places should make timely and appropriate provision for community involvement, especially by people who: (a) have a particular interest in–or associations—with the place; and (b) may be affected by the management of the place. • Indigenous people are the primary source of information on the value of their heritage and that the active participation of indigenous people in identification, assessment and management is integral to the effective protection of indigenous heritage values. • The management of Commonwealth heritage places should provide for regular monitoring, review and reporting on the conservation of Commonwealth heritage values.
AMSA Heritage strategy 2022-2025	As the custodian of many iconic sites, AMSA has long recognised the importance of preserving their cultural heritage. This Heritage strategy is in response to section 341ZA of the EPBC Act which obliges AMSA to prepare and maintain a heritage strategy, and to: • assist in the identification, assessment and monitoring of places of heritage value in its care • prepare and maintain a register of its places of heritage value • protect the heritage value of places when they are sold or leased • provide this heritage strategy, and any subsequent major updates, to the relevant minister. The strategy derives from the AMSA Corporate Plan and achievements are reported through the AMSA Annual Report. The 2021-2022 AMSA Annual Report can be found online.[26]
Navigation Act 2012 (Cth)	Part 5 of the Act outlines AMSA's power to establish, maintain and inspect marine aids to navigation (such as Cape Sorell

	Lighthouse). (1) AMSA may: (a) establish and maintain aids to navigation; and (b) add to, alter or remove any aid to navigation that is owned or controlled by AMSA; and (c) vary the character of any aid to navigation that is owned or controlled by AMSA. (2) AMSA, or person authorised in writing by AMSA may, at any reasonable time of the day or night: (a) inspect any aid to navigation or any lamp or light which, in the opinion of AMSA or the authorised person, may affect the safety or convenience of navigation, whether the aid to navigation of the lamp or light is the property of: (i) a state or territory; or (ii) an agency of a state or territory; or (iii) any other person; and (b) enter any property, whether public or private, for the purposes of an inspection under paragraph (a); and (c) transport, or cause to be transported, any good through any property, whether public or private, for any purpose in connection with: (i) the maintenance of an aid to navigation that is owned or controlled by AMSA; or (ii) the establishment of any aid to navigation by AMSA.
Australian Heritage Council Act 2003 (Cth)	This Act establishes the Australian Heritage Council, whose functions are: • to make assessments under Division 1A and 3A of Part 15 of the EPBC Act 1999 • to advise the Minister on conserving and protecting places included, or being considered for inclusion, in the National Heritage List or Commonwealth Heritage List • to nominate places for inclusion in the National Heritage List or Commonwealth Heritage List • to promote the identification, assessment, conservation and monitoring of heritage • to keep the Register of the National Estate • to organise and engage in research and investigations necessary for the performance of its functions • to provide advice directly to any person or body or agency either if its own initiative of at the request of the Minister, and

	• to make reports as outlined in the Act.
TAS Historic Cultural Heritage Act 1995 (Tas)	This Act establishes the Tasmanian Heritage Council. Seven general functions and powers of the Heritage Council (1) The functions of the Heritage council are: (a) to advise the Minister on matters relating to Tasmania's historic cultural heritage and the measures necessary to conserve that heritage for the benefit of the present community and future generations (b) to work within the planning system to achieve the proper protection of Tasmania's historic cultural heritage (c) to co-operate and collaborate with Federal, State and local authorities in the conservation of places of historic cultural heritage significance (d) to encourage and assist in the proper management of places of historic cultural heritage significance (e) to encourage public interest in, and understanding of, issues relevant to the conservation of Tasmania's historic cultural heritage (f) to encourage and provide public education in respect of Tasmania's historic cultural heritage (g) to assist in the promotion of tourism in respect of places of historic cultural heritage significance (h) to keep proper records, and encourage others to keep proper records, of places of historic cultural heritage significance, and (i) to perform any other function the Minister determines. (2) The Heritage Council may do anything necessary or convenient to perform its functions.
National Parks and Reserves Management Act 2002 (Tas)	Schedule 1, Section 8: Historic site The following objectives: (a) to conserve sites or areas of historic cultural significance; (b) to conserve natural biological diversity; (c) to conserve geological diversity; (d) to preserve the quality of water and protect catchments;

	(e) to encourage education based on the purposes of reservation and the natural or cultural values of the historic site, or both; (f) to encourage research, particularly that which furthers the purposes of reservation; (g) to protect the historic site against, and rehabilitate the historic site following, adverse impacts such as those of fire, introduced species, diseases and soil erosion on the historic site's natural and cultural values and on assets within and adjacent to the historic site; (h) to encourage tourism, recreational use and enjoyment consistent with the conservation of the historic site's natural and cultural values; (i) to encourage cooperative management programs with Aboriginal people in areas of significance to them in a manner consistent with the purposes of reservation and the other management objectives.
Building Code of Australia/National Construction Code	The Code is the definitive regulatory resource for building construction, providing a nationally accepted and uniform approach to technical requirements for the building industry. It specifies matters relating to building work in order to achieve a range of health and safety objectives, including fire safety. As far as possible, Commonwealth agencies aim to achieve compliance with the Code, although this may not be entirely possible because of the nature of, and constraints provided by existing circumstances, such as an existing building.
Work Health and Safety Act 2011 (Cth)	The objectives of this Act include: (1) The main object of this Act is to provide for a balanced and nationally consistent framework to secure the health and safety of workers and workplaces by: a) protecting workers and other persons against harm to their health, safety and welfare through the elimination or minimisation of risks arising from work b) providing for fair and effective workplace representation, consultation, co-operation and issue resolution in relation to work health and safety c) encouraging unions and employer organisations to take a constructive role in promoting improvements in work health and safety practices, and assisting persons conducting businesses or undertakings and workers to achieve a healthier and safer working environment d) promoting the provision of advice, information, education and training in relation to work health and safety

	e) securing compliance with this Act through effective and appropriate compliance and enforcement measures f) ensuring appropriate scrutiny and review of actions taken by persons exercising powers and performing functions under this Act g) providing a framework for continuous improvement and progressively higher standards of work health and safety, and h) maintaining and strengthening the national harmonisation of laws relating to work health and safety and to facilitate a consistent national approach to work health and safety in this jurisdiction. (2) In furthering subsection (1)(a), regard must be had to the principle that workers and other persons should be given the highest level of protection against harm to their health, safety and welfare from hazards and risks arising from work as is reasonably practicable. [Quoted from Division 2 of Act] This has implications for Cape Sorell Lighthouse of Australia as it is related to AMSA staff, contractors and visitors.

6.4 Operational requirements and occupier needs

As a working AtoN, the operational needs of Cape Sorell Lighthouse are primarily concerned with navigational requirements. Below are the operational details and requirements of Cape Sorell Lighthouse as outlined by AMSA.

Navigation requirement for AMSA's AtoN site

The following table is taken from AMSA's Asset Management Strategy for the Cape Sorell light.

1	**Objective/rationale**	An AtoN is required at Cape Sorell to mark the cape itself and to provide a landfall mark for vessels entering Macquarie Harbour and Strahan. The AtoN is also required as a mark for coastal navigation for ships transiting the west coast of Tasmania. The AtoN further helps marking a number of unsurveyed areas both to its north-east and to its south.

2	**Required type(s) of AtoN**	A fixed structure is required to act as a day mark. A distinctive light is required for use at night.
3	**Priority/significance**	An AtoN at this site is useful for the navigation of commercial ships.
4	**Required measure of performance**	The service performance of the AtoN must comply with the IALA Availability Target Category 3 (97.0%).
5	**Primary and secondary means (if any) of identification**	The day mark must be conspicuous. The existing 37-metre white masonry tower and lantern at an elevation of 51 metres meets this requirement. The light must comply with the requirements of rhythmic characters of light as per the IALA NAVGUIDE. The light must have distinct characteristics that are easy to recognise and identify. The present group flashing (2) white light every 15 seconds meets this requirement.
6	**Visual range**	During daytime, the AtoN structure should be visible from at least five nautical miles. At night, the white light must have a nominal range of at least 17 nautical miles.
7	**Radar conspicuousness**	As the Cape itself provides a good radar echo, no additional radar enhancement is required for this site.

AMSA's goals

AMSA is responsible, under the Navigation Act, for maintaining a network of marine AtoN around Australia's coastline that assist mariners to make safe and efficient passages. AMSA's present network of 500 marine AtoN includes traditional lighthouses such as Cape Sorell Lighthouse, beacons, buoys, racons, automatic identification system stations, metocean sensors including broadcasting tide gauges, current meter, directional wave rider buoys and a weather station.

Technological developments in the area of vessel traffic management have also contributed to increasing navigation safety and helped promote marine environment protection. AMSA aims to meet international standards for the reliability of lighthouses set by the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA).

At the time of preparing this management plan, the major goal for Cape Sorell Lighthouse primarily encompassed continuing its utilisation as an AtoN (for as long as necessary), while upkeeping the appropriate maintenance to conserve and preserve the heritage values of the lighthouse.

Lighthouse performance standards

AMSA aims to meet international standards for the reliability of lighthouses set by IALA. Cape Sorell's light is designated as an IALA Availability Category 3 AtoN (within a scale of

Category 1 to Category 3, Category 1 aids are most critical). Category 3 aids have an availability target of 97 per cent.

Access to the lighthouse

One practical effect of this performance standard is that the operational equipment and structure of the light need to be kept in good condition so that equipment that fails in service is tended to quickly. Routine maintenance and emergency repairs are carried out by AMSA's maintenance contractor. The contractor needs reliable access to the site for this work, and AMSA officers need access for occasional inspections of the site, including to audit the contractor's performance.

6.5 Proposals for change

Preventative maintenance works are carried out on the lighthouse to maintain its status as a working marine AtoN, and to assist in the site's conservation.

A list of scheduled preventative maintenance work is identified within the latest available site inspection report. The information provided below was taken from this report.

Maintenance	Estimated date of work
Light lantern change	2023
Lantern room paint	2024
Structure paint	2026

6.6 Potential pressures

A significant pressure that harnesses the potential to effect the Commonwealth's heritage values of the place would be the obligation to remove or replace original fabric materials from the lighthouse due to unavoidable and irreversible deterioration. At the time this plan was written, no current plans have been made to remove or replace any original fabric materials from Cape Sorell Lighthouse. In the event plans are made to modify or remove original fabric, work will be conducted in line with the heritage considerations and requirements of the EPBC Act.

6.7 Processes for decision-making

Processes for decision-making are required in the event of an incident that impacts the heritage values of the site. The following incidents are included due to their likelihood of occurrence at Cape Sorell Lighthouse.

Incident	Procedure
Major project/maintenance works proposed	• Prepare Heritage Impact Statement on proposed modifications. • Submit scope of works and Heritage Impact Statement to the DCCEEW, and the Tasmanian Heritage Council.
Damage to lighthouse's fabric (heritage significance)	• AMSA or selected contractors assess extent of damage. • Seek heritage advice on restoration of heritage fabric impacted. • Identify possible loss of heritage value (at both state and Commonwealth level). • Seek the appropriate approvals for restoration of

	heritage fabric impacted. • Implement best-practice management of restoration work in keeping with the original character of the place. • In the case of a loss of heritage value, prepare report for submission. • Update record-keeping of incident and make available to relevant personnel.
Damage to lighthouse's fabric (no heritage significance)	• AMSA or selected contractors to assess extent of damage. • Identify possible impact on heritage fabric in any work carried out to restore fabric. • Implement best-practice management of restoration work. • Update record-keeping of incident and make available to relevant personnel.
Light upgrade	• Assess possible loss of heritage value in the event of an upgrade. • If necessary, seek expert heritage advice on process of upgrade. • If necessary, seek heritage approvals for the upgrade of light. • Implement best-practice management of light upgrade work. • Update record-keeping and make available to relevant personnel.
Modification to lighthouse, such as adding of attachment	• Assess possible obstruction to light. • Seek heritage approvals for attachment to tower. • Monitor attachment and update record-keeping.
Unforeseen discovery of Aboriginal artefacts on-site	• Immediate stop-work. Create temporary 'buffer' zone and allow no entry in zone until artefacts have been assessed by appropriate personnel. • Notify appropriate Aboriginal Heritage Tasmania and Tas PWS as soon as possible. • Delay work on site until artefacts have been appropriately assessed and/or extracted and further investigations carried out in surrounding area. • Update record-keeping of unforeseen discovery and make available to relevant personnel.
Divestment of lighthouse from AMSA	• Transfer ownership or control of heritage assets to the Minister administering the *National Parks and*

	Reserves Management Act 2002 (Tas). • Terminate lease of Cape Sorell site with the Minister administering the *National Parks and Reserves Management 2002 (Tas).* • Transfer relevant records and historical information held by AMSA to the *Minister administering the National Parks and Reserves Management 2002 (Tas).*

7. Conservation management principles and policies

7. Conservation management principles and policies

Policies

Note: The management of sensitive information is not relevant to AMSA's heritage strategy and therefore bears no relevance in this management plan.

Fabric and setting

Policy 1 – Protect and conserve the significant external and internal fabric of the lightstation, including existing buildings, layout and setting.

AMSA's main purpose is to facilitate the ongoing operation of the site as a marine AtoN while preserving the site's heritage values. As part of a heritage monitoring program, Heritage Asset Condition Reports are produced for each site every two years to evaluate the condition of the heritage fabric and values. Routine servicing is also carried out by maintenance contractors. Regular written reports from these visits will be sent to AMSA Asset Management and Preparedness for review and any work requirements identified will be scheduled accordingly. Should for some unforeseen reason the site no longer be viable as a marine AtoN, ownership will be passed to an appropriate state or federal authority to ensure preservation of the heritage assets.

Implementation strategy:

- AtoN Maintenance contractor will continue scheduled periodic maintenance of the lighthouse and marine aids to navigation every 12 months to ensure condition is monitored for early warning of deterioration. Schedule must be approved by AMSA Asset Management and Preparedness.
- AMSA Asset Management and Preparedness to arrange for maintenance to be carried out on the lighthouse as required while continuing to operate as an AMSA marine aid to navigation.
- AMSA Asset Management and Preparedness to arrange for the replacement and upgrading of marine aids to navigation equipment in the lighthouse as required to meet AMSA's service commitment, in a manner that preserves the original fabric of the lighthouse.
- AMSA Asset Management and Preparedness to maintain information on the heritage fabric of the lighthouse including any and all actions, treatments and inspection outcomes within the heritage fabric register. See section 4.1 for fabric register.
- AMSA Asset Management and Preparedness to conserve all the fabric elements identified as significant in the heritage asset condition report.
- AMSA Asset Management and Preparedness to seek expert materials conservation advice when considering repair, restoration and reconstruction of historic fabric. The relevant local, state and federal heritage approvals must be sought prior to repair, restoration and reconstruction.
- AMSA Asset Management and Preparedness to assess any development proposals to surrounding area for possible impacts on the heritage values of Cape Sorell Lighthouse, and liaise with the appropriate state or federal heritage authorities.

- AMSA AtoN Heritage Coordinator to conserve the distinctive character of the lightstation by collecting photographic evidence and historical documentation of the original fabric.
- AtoN Maintenance Contractor to continue scheduled heritage monitoring visits to Cape Sorell Lighthouse and update Heritage Asset Condition Reports.

Uses

Policy 2 – Install and operate equipment in the lighthouse, so it continues to function as an effective marine AtoN, in such a way as to impose the least possible harm to the significant fabric.

Cape Sorell Lighthouse's use as a working marine AtoN is of high priority. Carrying out maintenance, including upgrades to AtoN equipment, is necessary to its function and continued marine safety along the TAS coast. In the event of the installation or upgrade to AtoN equipment, proper precaution will be taken to ensure the least possible harm is done to significant fabric.

Implementation strategy:

- AtoN Maintenance Contractor to monitor Cape Sorell's AtoN equipment every 12 months and propose maintenance in the instance of necessary installation or removal. Proposed maintenance is to be approved by AtoN Asset Management and Preparedness.
- AtoN Maintenance Contractor and AMSA Asset Management and Preparedness to outline all possible risks to significant fabric, external and internal, associated with the installation, removal and operation of equipment.
- AMSA Asset Management and Preparedness to ensure works carried out are those that ensure the least possible harm to significant fabric.
- AMSA Asset Management and Preparedness to seek expert heritage conservation advice on best practice management of the site during installation, removal and operation of equipment.

Policy 3 – Monitor possible impacts to the site resulting from tourism and control appropriate access to the lighthouse for contractors and visitors.

Cape Sorell Lighthouse is not currently open as a tourist site and access inside the lighthouse is restricted to authorised personnel, such as contractors and AMSA employees. AMSA personnel and contractors require easy access inside the lighthouse precinct and tower for periodical site visits to carry out inspections and routine maintenance.

Implementation strategy:

- AtoN Maintenance contractor to ensure control on access to all buildings within AMSA's lease area is maintained by periodically inspecting restricted access areas on the precinct during maintenance visits every 12 months.
- AtoN Maintenance contractor to inspect lighthouse for signs of wear and tear attributed to visitor intake during yearly maintenance visit, and note changes in Heritage Asset Condition Report.

- AMSA Asset Management and Preparedness to ensure access to the lightstation complies with workplace health and safety measures.
- AMSA Asset Management and Preparedness to ensure contractors are made aware of the heritage values of the lighthouse.
- AMSA Asset Management and Preparedness to ensure access to site is available for Traditional Custodians to maintain cultural traditions.

Interpretation

Policy 4 – Accurate and relevant interpretation of the history and significance of the place should be made available to site users/visitors and for offsite external research.

AMSA will continue to make information available through the maintenance of site interpretive signage and its website.

Implementation strategy:

- All relevant information concerning the history and significance of the place will be checked for accuracy and updated appropriately.
- Information will be primarily presented in online resource files accessible to both relevant personnel and the general public. On-site interpretative signage will be utilised where appropriate and possible.
- This information will be maintained and updated in accordance with changes to the history and significance of the place.

Management

Policy 5 – AMSA will continue to conserve the lighthouse in accordance with Commonwealth and TAS State heritage listing requirements.

For works requiring heritage approval, AMSA will obtain permission from any relevant state or federal authorities. Continuous and as-needed conservation works will be undertaken as required.

Implementation strategy:

- Liaise with the relevant federal and state agencies when proposing work on the site.
- Consult with the TAS PWS when proposing work on site.
- Approval in writing must be granted for any development proposals.

Policy 6 – The cultural significance of the lightstation will be the basis for deciding how to manage it.

The heritage values or cultural significance of the place must be conserved. This heritage management plan includes relevant background information to support this policy (see ‘Section 3 History’).

Implementation strategy:

- Conserve the lighthouse to protect its heritage values (cultural significance).
- When possible, strive to maintain the original fabric of the lighthouse.

- Use the Burra Charter as the primary guide for treatment of fabric.
- Engage appropriately qualified heritage consultants when making decisions regarding impact on heritage values.
- Assess impacts on the heritage values of the place when considering proposed alterations or adaptations.

Policy 7 – Monitor, review and report the Commonwealth heritage values of the lightstation every five years or sooner if major changes to the lightstation occur.

The Commonwealth heritage values of the lighthouse are to be monitored and reported on a regular basis. A Heritage Asset Condition Report is updated for Cape Sorell Lighthouse every two years. The report records historical information, condition, and maintenance requirements for fabric within the lighthouse to ensure a gain and/or loss of heritage value is identified.

Implementation strategy:

- AMSA Asset Management and Preparedness to regularly monitor the lightstation for possible impacts on the identified Commonwealth heritage values.
- AMSA Asset Management and Preparedness to review the current Commonwealth heritage values at least once every five years and assess any gain or loss of values. This review must be undertaken in the event of any major alterations to the lighthouse.
- AMSA Asset Management and Preparedness to report any changes to the Commonwealth heritage values of the lightstation to the DCCEEW (Heritage Branch).
- AMSA Asset Management and Preparedness to update AMSA's heritage strategy and this plan to reflect any changes identified.
- AtoN Maintenance Contractor to review and update Heritage Asset Condition Report biennially.

Policy 8 – Maintain historical, management and maintenance records within AMSA and make available these records.

As part of the proper process for managing change in significant places, the Burra Charter points out the importance of making records before any change, and advocates placing records in a permanent archive and making them available where this is appropriate. AMSA's collection of records, which include documents pertaining to heritage intervention, management and maintenance, are subject to this process. Heritage Asset Condition Reports are routinely generated for each heritage lighthouse and stored in AMSA's record-keeping system. AMSA will continue to practice such processes via their records management systems (RMS).

Implementation strategy:

- AMSA to maintain, review and update records through existing AMSA RMS as required.
- AMSA to ensure records are made available to the relevant personnel and parties as required.

Policy 9 – Develop and provide appropriate training and resources to all relevant AMSA staff, contractors and licensees.

In order to ensure best practice management of AMSA-operated lighthouses, all staff, contractors and licensees are required to have access to the appropriate training and resources in order to provide best practice conservation of the site.

Implementation strategy:

- Provide staff, contractors, and licensees access to up-to-date versions of the AMSA heritage strategy, heritage management plans and fabric registers.
- When funds are made available, AMSA Asset Management and Preparedness staff will undertake a relevant induction to ensure comprehension of the Commonwealth heritage and EPBC Act statutory requirements.
- For contractors engaged with heritage sites, develop and provide appropriate training to ensure comprehension of the Commonwealth heritage and EPBC Act statutory requirements.
- AMSA representatives will attend Commonwealth-run heritage workshops, programs and conferences for up-to-date information on statutory requirements and best-practice management of sites of national and state heritage significance.
- All current and incoming tour guides operating within AMSA lighthouses will be required to take the lighthouse tour guide safety induction e-learning module once every two years to stay informed on heritage values, visitor safety and lighthouse duty-of-care.

Policy 10 – Use contractors and service providers with appropriate experience.

AMSA is to ensure parties carrying out work have appropriate knowledge and use effective methods to ensure conservation of the lighthouse.

Implementation strategy:

- Engage staff and contractors with the relevant experience and expertise concerning conservation of the lighthouse.
- Develop and provide the appropriate training on heritage conservation matters for AMSA Asset Management and Preparedness staff and other relevant parties who hold responsibility for heritage management.

Policy 11 – Seek heritage advice and apply best heritage practice.

AMSA will continue to use in-house heritage expertise, external consultancy, or a combination of both as required in order to successfully apply best heritage practice. Should in-house heritage expertise be limited in responding to a requirement, external heritage expertise will be engaged to address the issue.

Implementation strategy:

- Apply in-house heritage expertise when required.
- Use tools such as the Burra Charter and *Working Together: Managing Commonwealth Heritage Places*[27] to measure the likely impact of proposals.

- Seek external heritage expertise in the event of limited in-house capability.

Policy 12 – Appropriate protocol in the event of unforeseen discoveries or disturbances of heritage within the AMSA site.

AMSA's scope of work rarely involves excavation. Should such work need be undertaken, AMSA will implement a suitable discovery plan and seek advice from suitably qualified personnel as required. In the event of any unforeseen discovery or disturbance of heritage-related items on the AMSA site, notification to the appropriate organisation will occur in accordance with the conditions of the discovery plan. This plan will also be updated accordingly.

Note: In most cases, AMSA's leases are limited to the immediate vicinity of the lighthouse and therefore this scenario is not anticipated as a likely occurrence.

Implementation strategy:

- Consult with Aboriginal Heritage Tasmania and TAS PWS in the event Aboriginal heritage is suspected.
- Seek appropriate heritage advice and apply best practice in the event of unforeseen discoveries/disturbances.

Policy 13 – Make this heritage management plan available to all persons involved in decision-making on the management of the lighthouse and its setting.

The plan will be made available to all personnel intrinsic to management of the lighthouse and its setting, for example AMSA maintenance contractors, TAS PWS as land manager, staff and other relevant parties.

Implementation strategy:

- Provide links to this plan via the AMSA publicly-accessible website.
- Provide copies to all relevant personnel and parties.

Future developments

Policy 14 – Adaptation of the place using methods or processes that minimise impact on heritage values and significance in accordance with the Burra Charter principles.

It is likely that over time the lighthouse will house new equipment as technology changes and improves. The Burra Charter principles will be used as the basis for decision-making.

Implementation strategy:

- Assess the likely impacts of changes on the heritage values and significance of the place.
- Preserve the original fabric of the place and do only what is necessary for the continued use and care of the place.
- Engage expert heritage advice and use the Burra Charter in adapting the place.

Policy 15 – When required, engage with adjacent landowners to maintain an appropriate setting for the lighthouse in its visual and natural context.

Any changes to the surrounding land, or AMSA leased area, requires careful consideration. AMSA will liaise with all adjacent landowners in the event of any proposed changes that may affect the setting and attempt to influence a positive outcome.

Implementation strategy:

- AMSA Asset Management and Preparedness to engage with adjacent landowners and TAS PWS through consultation when changes are proposed regarding the wider visual and natural context.

Policy 16 – In the event of adaptive re-use or divestment (instance(s) which would no longer place the lighthouse under AMSA control), AMSA will strive to ensure the Commonwealth and TAS State heritage values of the site are recognised and preserved.

In the event Cape Sorell Lighthouse is no longer identified as a working AtoN, AMSA will withdraw its standing as lessee and hand over all authority to the lessor. This process must be conducted in line with section 341ZE of the EPBC Act.

Implementation strategy:

- AMSA will negotiate with lessor to have site lease terminated.
- All available heritage information within AMSA's collection, including this heritage management plan, will be shared with the relevant parties to ensure the Commonwealth and TAS State heritage values of the site are recognised and preserved.

Community Involvement

Policy 17 – Consult with Traditional Custodians and the wider community in the preparation of the management plan.

AMSA will give Traditional Custodians and the general public an opportunity to review and comment on this management plan through a public consultation process.

Implementation strategy:

- Undertake community consultation when preparing the heritage management plan in accordance with EPBC Regulations.
- Seek advice from Traditional Custodians and refer to *Engage Early—Guidance for proponents on best practice Indigenous engagement for environmental assessments under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)*[28] to guide consultations.

Review

Policy 18 – Review this plan within five years of its adoption or sooner if major changes are needed.

This plan will be reviewed every five years. This review should:

- assess the content of the plan.
- determine its effectiveness in protecting the identified heritage values.

- provide any necessary recommendations for updating or re-writing of the plan. If major changes occur at the site in the interim, this plan will be reviewed and updated earlier than the specified five years.

Implementation strategy:

- AMSA Asset Management and Preparedness to review this heritage management plan at least five years after its adoption.
- AMSA Asset Management and Preparedness to review and update this heritage management plan in the event of a major change to the lightstation.
- AMSA Asset Management and Preparedness to summarise changes implemented within updated plan.
- AMSA Asset Management and Preparedness to submit revised plan for approval.

8. Policy implementation plan

8. Policy Implementation Plan

8.1 Plan and schedule

Key Issue	Management action/task	Policies	Responsibility	Priority	Timeframe
Conservation and preservation	Conserve the lighthouse.	1, 2, 3, 5, 6, 10, 11, 14	AMSA, Asset Management and Preparedness	High	On-going
	Review the heritage management plan every five years.	18	AMSA, AtoN Heritage Coordinator	Medium	2028 (5 years (minimum)
	Make this plan available to all relevant personnel.	7, 13	AMSA, AtoN Heritage Coordinator	High	Ongoing
Liaison dealings	If applicable, ensure communication is maintained with adjacent landowners.	15	AMSA, Asset Management and Preparedness	High	As required
	Consult with Traditional Custodians and wider community in preparing the management plan.	17	AMSA, AtoN Heritage Coordinator	Medium	As required
Heritage values	Review the Commonwealth heritage values every five years.	7	AMSA, AtoN Heritage Coordinator	High	2028
	Consider heritage values when proposing new planning and/or developments.	5, 6, 7, 14	AMSA, AtoN Heritage Coordinator and Project Managers	High	Ongoing
	Ensure process of re-use or divestment of the site recognises and preserves heritage values.	16	AMSA, AtoN Heritage Coordinator	High	As required
	Conduct heritage	1	AMSA, AtoN	High	Ongoing

	monitoring site visit and review Heritage Asset Condition Report every two years.		Heritage Coordinator		
Staff and community awareness	Provide relevant training and awareness for management personnel (contractors and site-users).	9	AMSA, Asset Management and Preparedness	High	As required
	Ensure the availability of accurate and relevant information on the history and significance of the lightstation for site-users and visitors.	4	AMSA, AtoN Heritage Coordinator	Medium	Ongoing
Record-keeping/access	Maintain adequate record-keeping of historical, management and maintenance documents. Make these records available.	8	AMSA, Asset Management and Preparedness	High	Ongoing
Expert heritage advice	Ensure knowledge and advice of heritage experts is used.	10, 11	AMSA, Asset Management and Preparedness	Medium	As required
Lighthouse maintenance	Schedule periodic maintenance.	1	AMSA, Asset Management and Preparedness	High	Ongoing (reoccurring once every 12 months)
	The implementation of unforeseen discovery or disturbance processes in the event of an accidental discovery.	12	AMSA, Asset Management and Preparedness	Medium	As required
Lightstation access	Secure appropriate access to lightstation for contractor and visitors.	3	AMSA, Asset Management and Preparedness	Medium	As required

8.2 Monitoring and reporting

As stipulated by Schedule 7A of the EPBC Regulations, the outlined implementation plan and associated policies listed above are required to be monitored and updated accordingly. The below review process timetable will be adhered to over the next five years:

Timeframe	Review step	Responsibility
2026	Plan's half-life internal review: • Assess strengths and weaknesses of existing plan • Address any known impact to the lighthouse's heritage values	AMSA, Asset Management and Preparedness
2028	Plan's full-life review: • Consult with internal and external stakeholders on existing plan • Prepare updated draft plan and consult with the Heritage Branch • Submit reviewed plan to the Minister	AMSA, Asset Management and Preparedness

Other key actions in monitoring and reporting include:

- ensuring the implementation plan and policies are readily available for all relevant personnel,
- delegating AMSA staff to periodically check the implementation plan is up-to-date and being utilised appropriately by the relevant personnel,
- ensuring the timeframes outlined within the plan are followed,
- delegating AMSA Response staff to review this plan and the associated policies at least every five years and determine whether its contents are relevant and effective in terms of continuing to conserve the place.

9. Appendices

Appendix 1. Glossary of heritage conservation terms

The Burra Charter, from its first version (1979) and its current version (2013), defined a set of terms that have since been widely adopted in Australian heritage conservation practice.

Where the following terms are used in this heritage management plan, the particular meanings defined in the charter are intended. The definitions are quoted from Article 1 of the Burra Charter.

Adaptation means modifying a place to suit the existing use or a proposed use.

Associations means the special connections that exist between people and a place.

Compatible use means a use which respects the cultural significance of a place. Such a use involves no, or minimal, impact on cultural significance.

Conservation means all the processes of looking after a place to retain its cultural significance.

Cultural significance means aesthetic, historic, scientific, social or spiritual value for past, present or future generations. Cultural significance is embodied in the place itself, its fabric, setting, use, associations, meanings, records, related places and related objects. Places may have a range of values for different individuals or groups.

Fabric means all the physical material of the place including components, fixtures, contents, and objects.

Interpretation means all the ways of presenting the cultural significance of a place.

Maintenance means the continuous protective care of a place and its setting. Maintenance is to be distinguished from repair which involves restoration or reconstruction.

Meanings denote what a place signifies, indicates, evokes or expresses to.

Place means a geographically defined area. It may include elements, objects, spaces and view. Place may have tangible and intangible dimensions.

Preservation means maintaining a place in its existing state and retarding deterioration.

Reconstruction means returning a place to a known earlier state and is distinguished from restoration by the introduction of new material.

Related object means an object that contributes to the cultural significance of a place but is not at the place.

Related place means a place that contributes to the cultural significance of another place.

Restoration means returning a place to a known earlier state by removing accretions or by reassembling existing elements without the introduction of new material.

Setting means the immediate and extended environment of a place that is part of or contributes to its cultural significance and distinctive character.

Use means the functions of a place, including the activities and traditional and customary practices that may occur at the place.

Appendix 2. Glossary of historic lighthouse terms relevant to Cape Sorell Lighthouse

A

Apron paving – The concrete paving surround the base of the lighthouse tower.

Astragal – the bars which support the glazing of a lantern. They may also support the roof. Simply a framing member between the glazing bars in the lantern glazing. In its true meaning an astragal is a moulding that has a rounded profile. In lanterns this is almost never the case.

B

Balcony – a walk way around the outside of the lantern, used for maintenance and (formerly, when lighthouses were manned) for observing ships. Principal parts are the balcony floor and the balcony balustrade. (Synonym: gallery deck).

Balcony floor – floor of the balcony. Cape Sorell's balcony floor is a 1899 Chance Bros. cast iron plate.

Balcony balustrade – a handrail together with its supports. The supports are called balusters. Simply a railing or wall on the outer perimeter of the balcony, to prevent people from falling off the balcony. Generally made of metal stanchions and rails. Cape Sorell's balcony balustrades are of cast iron.

Balcony door – door in the lantern base to give access to the balcony. In AMSA lanterns two doors are sometimes fitted but only one is operational. (Synonym: parapet hatch, service room door).

C

Cast iron – a mixture of iron and carbon with a relatively high carbon content and a low melting point, produced directly from a blast furnace.

Chance Bros – English manufacturer of optical apparatus, lanterns, cast iron stairs, cast iron towers, and other lighthouse components. The Chance family established a glass-making business in Smethwick, England in 1824 and is often described as 'near Birmingham'. The business was absorbed into the Pilkington group of companies in 1951 and now ceases to exist.

Character – pattern of flashes of light emitted by a lighthouse, designed to identify that particular lighthouse.

Copper – a red malleable metal of low resistivity.

E

External catwalk – a landing around the external face of the tower complete with hand rail. Cape Sorell's external catwalk is 1899 Chance Bros cast iron lattice panels.

F

Flagstaff – a structure whereby signalling flags could be attached for communication with passing vessels.

I

Intermediate floors – levels found mid-way up a building. Cape Sorell has four slate intermediate floors.

Internal catwalk – an open landing inside the tower complete with handrail. Cape Sorell's internal catwalk is 1899 Chance Bros cast iron lattice panels.

Iron – there were two common types of iron used in lighthouse construction: wrought and cast. Older lights will almost certainly contain these iron types. Wrought iron has been worked by hand and is an iron alloy with a very low carbon content in contrast to steel, it also has fibrous inclusions. Cast iron is iron which has been heated until it liquefies, and is then poured into a mould to solidify.

L

Lantern – the glazed enclosure, usually of cylindrical or polygonal shape, at the top of a lighthouse, which surrounds and protects the optical apparatus. It contains the optical apparatus, made up of the lantern roof, lantern glazing and lantern base sections.

Lantern floor – the level in a lighthouse at which the lantern is installed, and by which access may be gained to the optical system and to the inside and outside of the lantern glazing. The lantern floor is generally at or near the same level as the catwalk and can be made from steel, concrete, or timber.

Lantern glazing – the middle section of the lantern, circular or polygonal in plan, between the lantern roof above and the lantern base below, made up of glass panes held in a framework of glazing bars. On the landward side there may be blank panels in place of glass, or other opaque construction. Types of lantern glazing include: flat and curved trapezoidal panes and curved diamond/triangular panes. Cape Sorell's lantern glazings are curved, rectangular glass.

Lantern roof – the roof of the lantern. Usually made of copper sheeting over a framework of rafters.

Lens assembly – a transparent optically refracting element of glass. The surface is usually spherical in form.

Light source – electric bulbs now illuminate most lighthouses.

Lighthouse – the principal structure of a lightstation, generally made up of a lantern, balcony and tower.

Lightstation – a precinct containing a lighthouse structure and other related buildings, for example, keepers' cottages, store room and signal house.

O

Order – a shorthand expression of the size of an optical apparatus or lantern. At the time the system of orders was established, when kerosene burners were used, longer range lights

needed larger burners, and larger burners needed lens assemblies of longer focal length to ensure a sharply defined beam. Thus in turn the lantern rooms were required to be larger to house these lens assemblies. AMSA historic lantern rooms range from 1st to 4th order.

P

Pedestal – part of the optical apparatus, consisting of a metal column or base standing on the balcony floor inside the lantern and supporting the lens assembly and light source. Some later Chance documentation (such as their tariffs 1908) also refer to the lantern base as a pedestal.

T

Tower – structure to support the lantern at a sufficient height above the ground. The most common types are the masonry tower, timber-framed tower, cast iron tower and lattice tower.

Appendix 3. Table demonstrating compliance with the EPBC Regulations

Environment Protection and Biodiversity Conservation Regulations 2000 Cth **Schedule 7A – Management Plans for Commonwealth Heritage Places**	
Legislation	**Satisfied within**
A management plan must:	
(a) Establish objectives for the identification, protection, conservation, presentation and transmission of the Commonwealth Heritage values of the place; and	Section 1 – Introduction
(b) Provide a management framework that includes reference to any statutory requirements and agency mechanisms for the protection of the Commonwealth heritage values of the place; and	Section 1 – Introduction
(c) Provide a comprehensive description of the place, including information about its location, physical features, condition, historical context and current uses; and	Section 2 – Cape Sorell Lightstation site Section 3 – History Section 4 – Fabric
(d) Provide a description of the Commonwealth heritage values and any other heritage values of the place; and	Section 5 – Heritage significance
(e) Describe the condition of the Commonwealth heritage values of the place; and	Section 5 – Heritage significance
(f) Describe the method used to assess the Commonwealth heritage values of the place; and	Section 5 – Heritage significance
(g) Describe the current management requirements and goals including proposals for change and any potential pressures on the Commonwealth heritage values of the place; and	Section 6 – Opportunities and constraints
(h) Have policies to manage the Commonwealth heritage values of a place, and include in those policies, guidance in relation to the following:	
i. The management and conservation processes to be used;	Section 7 – Conservation management principles and policies (Policy 1, 2, 3, 5, 6, 10, 11, 14)
ii. The access and security arrangements, including access to the area for indigenous people to maintain cultural traditions;	Section 7 – Conservation management principles and policies (Policy 3)
iii. The stakeholder and community consultation and liaison arrangements;	Section 7 – Conservation management principles and policies (Policy 15, 17)
iv. The policies and protocols to ensure that indigenous people participate in the management	Section 7- Conservation management principles and policies (Policy 17)

process;	
v. The protocols for the management of sensitive information;	Not Applicable
vi. The planning and management of works, development, adaptive reuse and property divestment proposals;	Section 7 – Conservation management principles and policies (Policy 16)
vii. How unforeseen discoveries or disturbances of heritage are to be managed;	Section 7 – Conservation management principles and policies (Policy 12)
viii. How, and under what circumstances, heritage advice is to be obtained;	Section 7 – Conservation management principles and policies (Policy 10, 11)
ix. How the condition of Commonwealth heritage values is to be monitored and reported;	Section 7- Conservation management principles and policies (Policy 5, 6, 7, 14)
x. How records of intervention and maintenance of a heritage places register are kept;	Section 7 – Conservation management principles and policies (Policy 7, 13)
xi. The research, training and resources needed to improve management;	Section 7 – Conservation management principles and policies (Policy 9)
xii. How heritage values are to be interpreted and promoted; and	Section 7 – Conservation management principles and policies (Policy 4)
(i) Include an implementation plan; and	Section 8 – Policy implementation plan
(j) Show how the implementation of policies will be monitored; and	Section 8 – Policy implementation plan
(k) Show how the management plan will be reviewed.	Section 7 – Conservation management principles and policies (Policy 18) Section 8 – Policy implementation plan

Appendix 4. Cape Sorell current light details

IALA AVAILABILITY CATEGORY:	3
POSITION:	Latitude: 42º 11.8740' S Longitude: 145º 10.1620' E Datum: WGS 84
BA LIST OF LIGHTS:	K 3660
DAYMARK:	White stone tower and white lantern room, 37 metres high.
CHARACTER:	Flashing (2) in. 15.00 secs Flash: 0.04 secs Short Eclipse: 4.96 secs Long Eclipse: 9.96 secs
COLOUR OF LIGHT:	White
LENS SPEED:	1 revolution every 30 seconds, (2 RPM)
LIGHT SOURCE:	Lamp: 12V 35W C8 Halogen LP PR30s Lampchanger: VLC-153
LANTERN:	Vega VRB-25
INTENSITY:	35,050 cd
STRUCTURE:	Helipad and white round masonry tower 30 metres to base of lantern.
ELEVATION:	51 metres
RANGE:	Nominal: 17nmiles Geographical: 19nmiles

Endnotes

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