



Image: Ed Hurst

Palm Beach Headland

Urban Night Sky Place Application

December 2023



northern
beaches
council

Acknowledgement of Country

We acknowledge the Traditional Custodians and their Country on which we gather today. By these words we show our respect to all Aboriginal people. We acknowledge Elders past, present and emerging and the spirits and ancestors of the Clans that lived in this area.



Image: Ed Hurst

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Thank you to the two local photographers, Ed Hurst and Hamish Downes, who have captured amazing night sky photographs and kindly provided permission for them to be used to promote the UNSP project without fee.

Introduction

Palm Beach Headland is an iconic location valued enormously by its community. Surrounded by the ocean, it boasts amazing views of our starry night sky. Northern Beaches Council and National Parks and Wildlife Service (NPWS) are excited to apply for the area to be designated as Australia's first Urban Night Sky Place (UNSP) and in doing so further protect the area and present a demonstration site to Greater Sydney of good lighting practices that allow for safe public use whilst protecting our night sky.

Palm Beach Headland proposed UNSP area

This proposal applies to Governor Phillip Park and Barrenjoey Headland at Palm Beach, together referred to for the purposes of this application as Palm Beach Headland. Palm Beach Headland covers an area of approximately 62.21 hectares and is located within the Northern Beaches Council Local Government Area, in New South Wales, Australia (Figures 2 and 3).

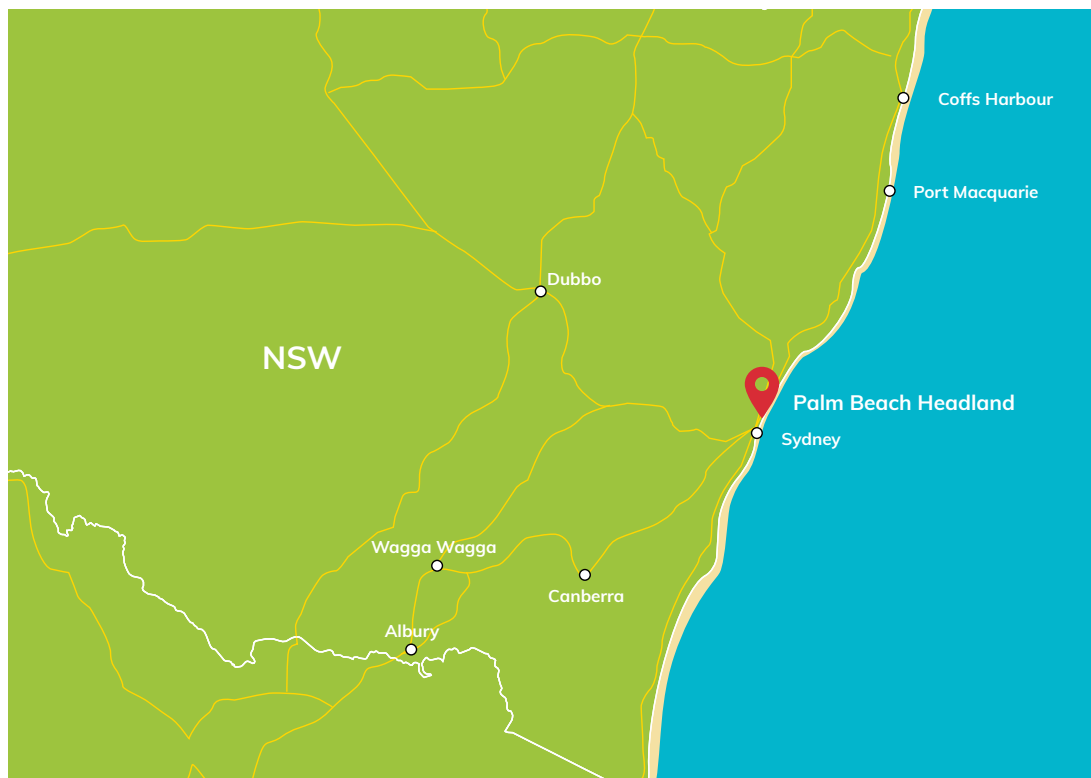
Figure 2

Location of proposed UNSP area within Australia.

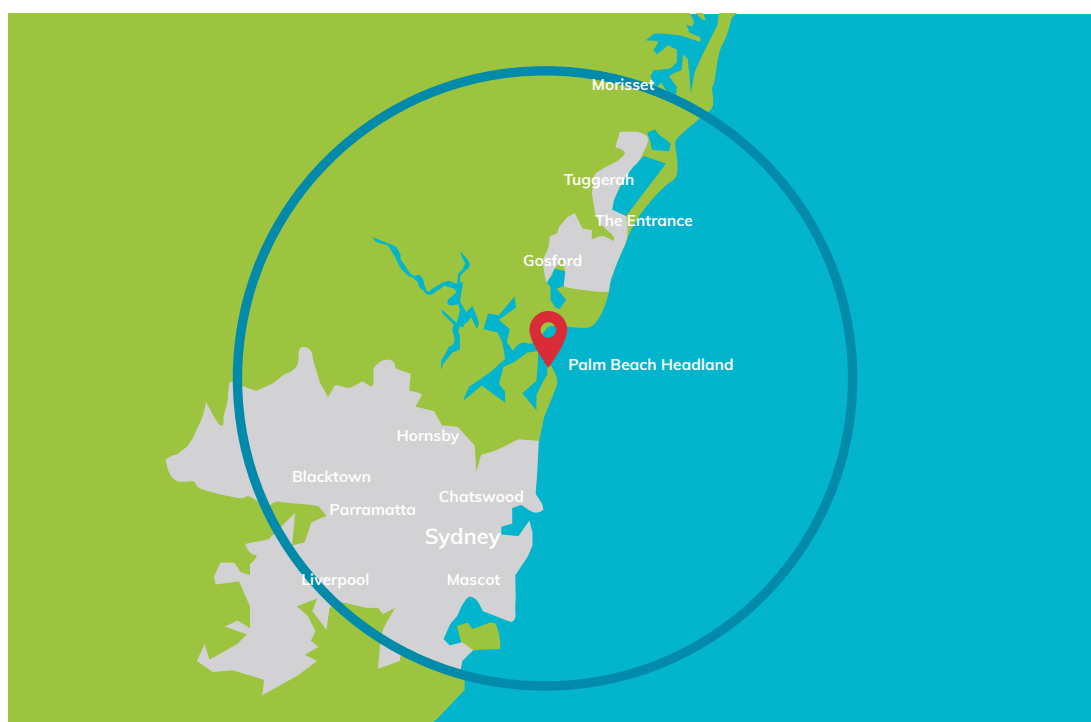


Figure 3

Location of proposed UNSP area within NSW, north of Sydney.

**Figure 4**

Location of proposed UNSP area showing the 50km radius (blue circle).



Governor Phillip Park

Governor Phillip Park is managed by Northern Beaches Council and consists of an amalgamation of three Crown Reserves, as shown in Figure 6. These reserves are designated for public recreation R. 56217, R. 61140, R.64483. Crown reserves are to be managed for the benefit of the people of New South Wales (principles of Crown Land Management Section 1.4 Crown Lands Act).

The total area of Governor Phillip Park is 24.63 hectares. Within the reserve is a looped access road that provides vehicular access to amenities within the park. The Mean High Water Marks on the Ocean Beach and the Pittwater/Station Beach shoreline define the eastern and western boundaries of the park respectively.

Lot 298 DP721522 falls outside the western boundary of Governor Phillip Park. This lot includes the Barrenjoey Boathouse, from which The Boathouse Restaurant Palm Beach operates. The lease for this area is administered by Department of Industry, falls half within the reserve, and half, being below Mean High Water Mark, on land managed by the Department of Industry.

Barrenjoey Headland

The northern area is known as Barrenjoey Headland and is managed by the National Parks and Wildlife Service (NPWS) as part of Ku-ring-gai Chase National Park. The 37.58ha headland (Lot 2, DP 540435) was transferred to Ku-ring-gai Chase National Park under the management of the National Parks and Wildlife Service on 3 March 1995 in recognition of its natural and historic value.

Figure 5

Location of proposed UNSP area showing the peninsular being surrounded mostly by water.

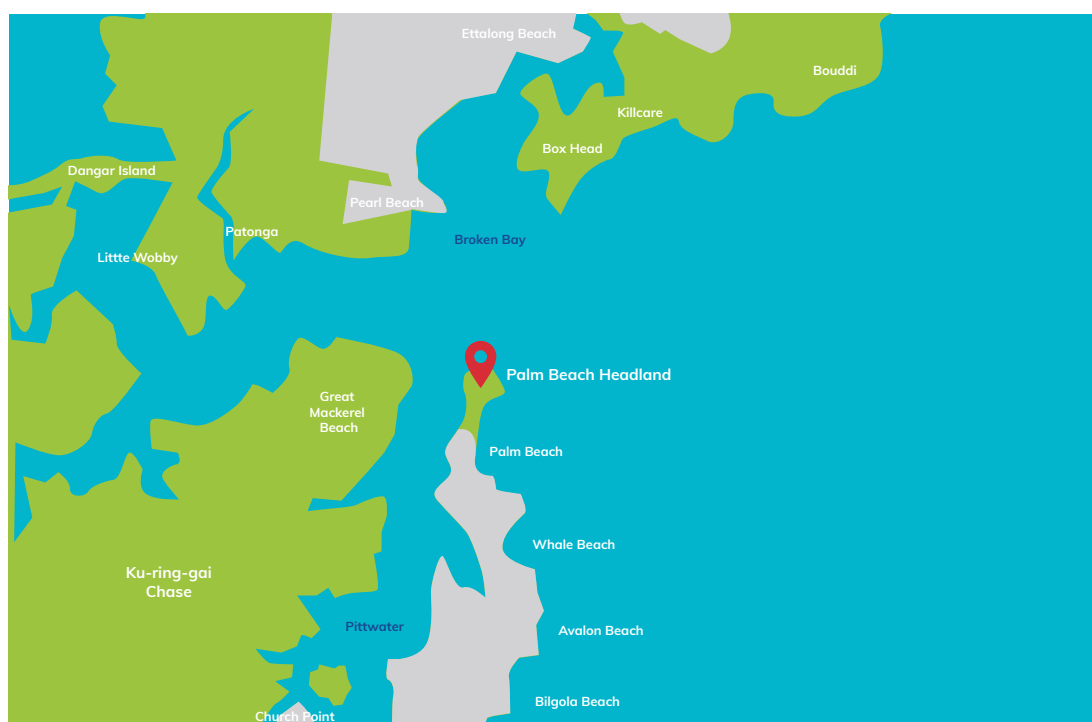


Figure 6

The proposed UNSP area boundary outlined in yellow. For detailed lot and parcel information please refer to the Governor Phillip Park POM and Ku-ring-gai POM.



Palm Beach Headland, made up of two distinct areas being Governor Phillip Park and Barrenjoey Headland, is a popular destination for visitors. Governor Phillip himself named Barrenjoey Head. People come to enjoy the beach, picnics, walks up to the Barrenjoey Lighthouse, and for small boat access to Pittwater. The area is also famously known as Summer Bay to viewers of the popular *Home and Away* television show regularly filmed in the area. The North Palm Beach Surf Life Saving Club here holds carnivals, weekly nippers training and beach patrol services. Two local restaurants operate in buildings within the area, as well as a boat hire service, and you can also hit a round of golf at the Palm Beach Golf Club.

The area at the top of Barrenjoey Head, which includes the prominent Lighthouse Keeper's cottages, is listed on the Register of the National Estate. The Barrenjoey Head Lightstation and headland, including the Customs House Precinct, has been listed on the NSW State Heritage Register. The lighthouse, cottages and roadway at Barrenjoey Head were designed by colonial architect James Barnett. This is the only lighthouse in NSW to utilise and maintain unpainted face sandstone for its tower, oil store and cottages.

Governor Phillip Park is managed in accordance with the Council-adopted [Governor Phillip Park Plan of Management \(Governor Phillip Park POM\)](#). Barrenjoey Headland is managed in accordance with the [Ku-Ring-Gai Chase National Park and Lion Island, Long Island and Spectacle Island and Nature Reserves Plan of Management \(Ku-ring-gai POM\)](#).

The Governor Phillip Park POM identifies permissible uses of the land being to:

- observe environmental protection principles in relation to the management and administration of Crown land
- conserve the natural resources of Crown land (including water, soil, flora, fauna and scenic quality) wherever possible
- encourage public use and enjoyment of appropriate Crown land
- encourage multiple use of Crown land, where appropriate
- use and manage Crown land in such a way that both the land and its resources are sustained in perpetuity, where appropriate
- occupy, use, sell, lease, licence or otherwise deal with Crown land in the best interests of the State, consistent with the above principles.

The Coastal Crown Lands Policy was issued in January 1991, and applies to all coastal Crown lands within one kilometre landward and three nautical miles seaward from low water mark. The objectives of the policy are to:

- conserve and maintain the intrinsic environmental and cultural qualities of the coastal Crown land
- retain all coastal Crown lands of an environmentally sensitive nature and/or required for a public purpose, in public ownership
- optimise public access and use of coastal Crown lands
- provide Crown lands, as appropriate, for recreation, tourism, residential and commercial coastal development with due regard to the nature and consequences of coastal processes
- encourage the rehabilitation of degraded coastal Crown lands
- continue to acquire significant coastal lands for future public use.

The Ku-ring-gai POM identifies the following general objectives for the management for national parks in New South Wales:

- the protection and preservation of scenic and natural features
- the conservation of wildlife, including the maintenance of biodiversity and populations of threatened species
- the maintenance of natural processes as far as is possible
- the preservation of Aboriginal sites
- the conservation of historic features
- the encouragement of scientific and educational enquiry into environmental features and process, Aboriginal and historic features
- the provision of appropriate recreation opportunities.

These values correlate with the Urban Night Sky designation that aims to “actively promote an authentic nighttime experience in the midst of significant artificial light”.

Figure 7

DarkSky Nominator letter of support



**DarkSky
VICTORIA**

International Dark Sky Association Victorian Inc
A Chapter of DarkSky International

A0062601X

president@darkskyvic.org

19/09/2023

<http://www.darkskyvic.org.au>

DarkSky International

Dark Sky Places Committee

Cc Kara Taylor
Senior Sustainability Officer
Environment, Resilience & Climate Change
kara.taylor@northernbeaches.nsw.gov.au
northernbeaches.nsw.gov.au

Dear Dark Sky Places Committee,

Re: Palm Beach Headland Urban Night Sky Place Application

On behalf of our DarkSky Victoria Committee I nominate Palm Beach Headland, as an UNSP.

As is pointed out in the submission, the good quality, low colour temperature lighting in the proposed UNSP provides excellent opportunities for viewing the night sky and light pollution education, despite the proximity of built-up areas.

The location, being on a narrow headland with water on both sides and facing a dark Kur-ring-gai Chase National Park.

I look forward to hearing of the Palm Beach headland's progress towards accreditation.

Kind regards,

Judith Bailey

President

DarkSky Victoria

M: 61 419 103 213

"Every Day Deserves a Night"

Landowners' support

Council as the entity responsible for care, control and management of Governor Phillip Park resolved at its meeting of 24 August 2021 to submit an application to the DarkSky International (DI) to seek designation of Palm Beach Headland as an Urban Night Sky Place. Refer to Figure 8.

National Parks and Wildlife Service serve as landowners of Barrenjoey Headland and have provided consent to include the headland in the application to the DI. Refer to Figure 9.

Figure 8

Council resolution supporting an application for Palm Beach Headland to be designated as an UNSP

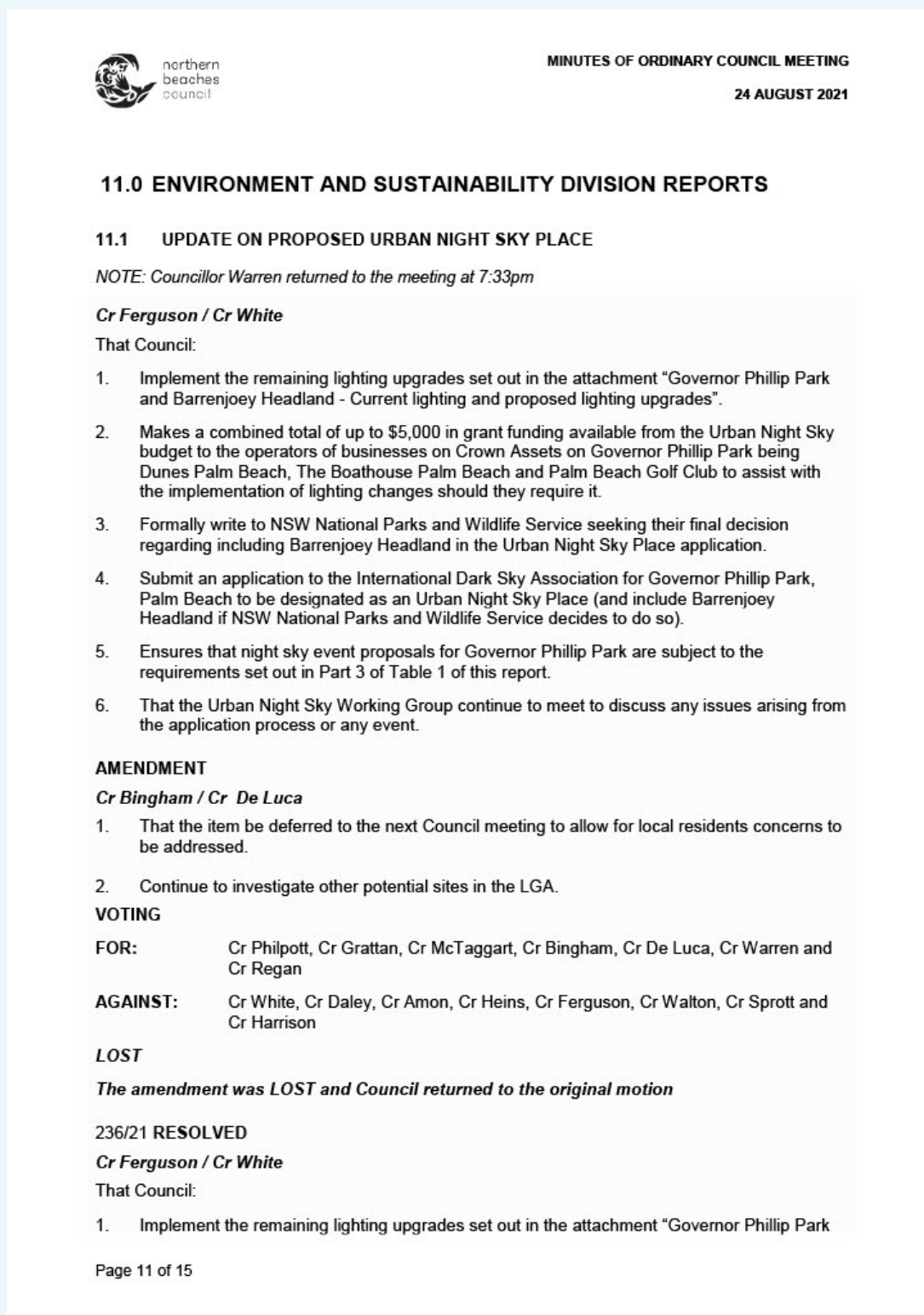
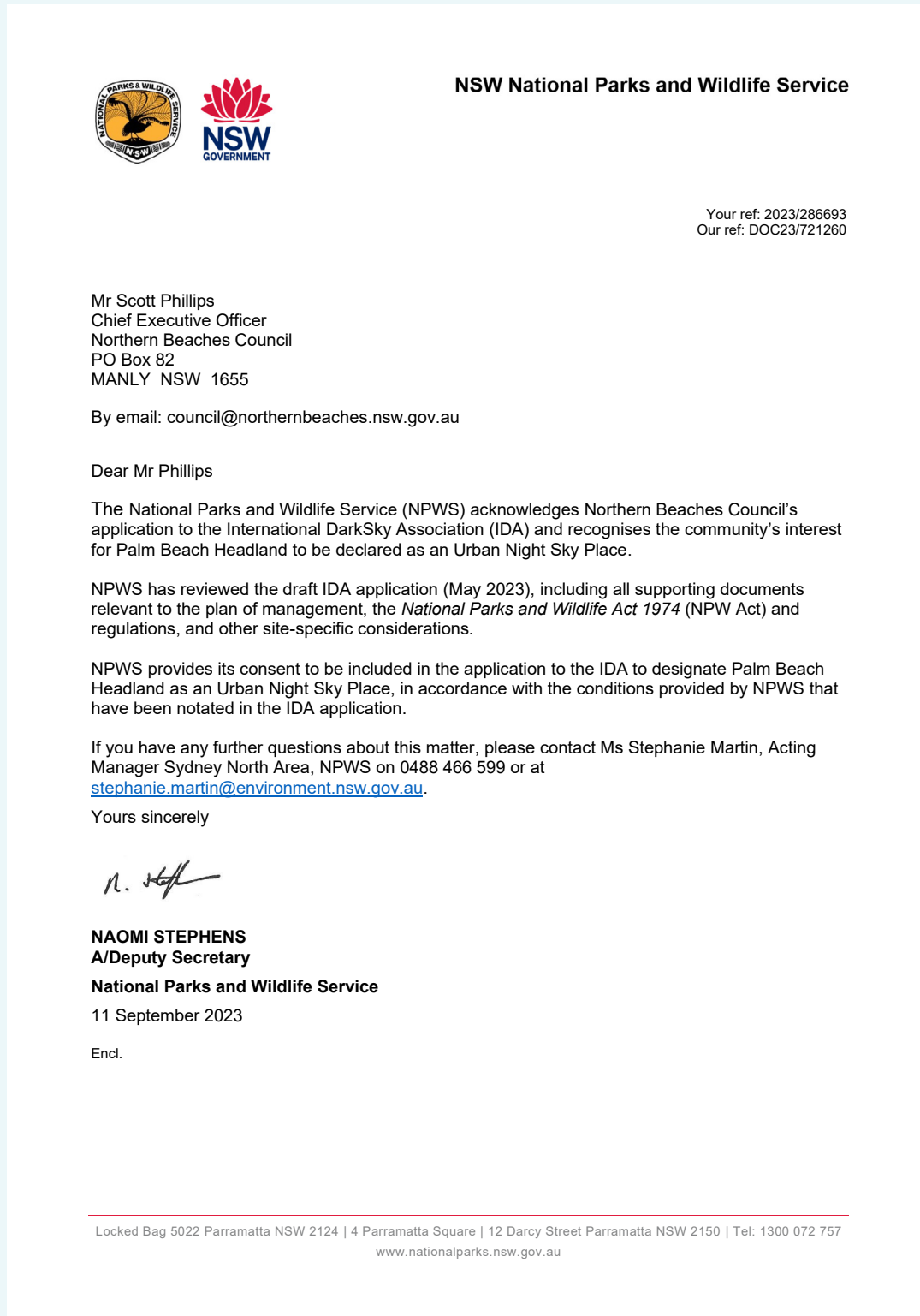


Figure 9

Letter of consent from National Parks and Wildlife Service



Governor Phillip Park access

Governor Phillip Park is accessible to visitors at all times. Peak visitation to the area occurs during the middle of the day as shown in Figure 10. Parking is provided throughout the park and in most locations is restricted on site to 12 hours. Current evening use is shown to be low and therefore conflict between competing user groups is expected to be low.

Visitors wishing to park in the area must either display a valid Northern Beaches parking permit or pay the designated parking rates. This helps to manage parking demand in the area, with demand often exceeding supply on summer weekends. As shown in Figure 10, the expected usage times for UNSP visitors is expected to be outside of peak usage times.

Barrenjoey Headland Access

Public Access to the Barrenjoey Headland area is governed by the [Ku-ring-gai Chase National Park and Lion Island, Long Island and Spectacle Island Nature Reserves Plan of Management \(Ku-ring-gai POM\)](#). As with the rest of Ku-ring-gai Chase National Park, Barrenjoey Headland is open sunrise to sunset but may have to close at other times due to poor weather or fire danger. The headland is closed overnight for biodiversity conservation and safety. The national park headland is a known habitat for seabirds, owls, eagles, bats, flying foxes, possums and bandicoots and is directly adjacent to the Barrenjoey Head Aquatic Reserve. These fauna directly benefit from improved darkness conditions as described in the National Light Pollution Guidelines for Wildlife.

The headland is also surrounded by cliff edges directly adjacent the open ocean waters, which poses a safety risk during unsupervised night-time access. Further details about access can be found on the NPWS [Barrenjoey Lighthouse webpage](#). Guided tours of the lighthouse are offered most Sundays, with additional dates available in the school holidays.

Access to the headland at night is only allowed on occasion when approved by NPWS. An example of this was the Head to the Stars event held by NPWS in October 2019 discussed in Section 11 - Education and Public Outreach.

Figure 10
Popular visitation times for Governor Phillip Park for each day of the week. Data sourced from Google.com, 19 March 2021

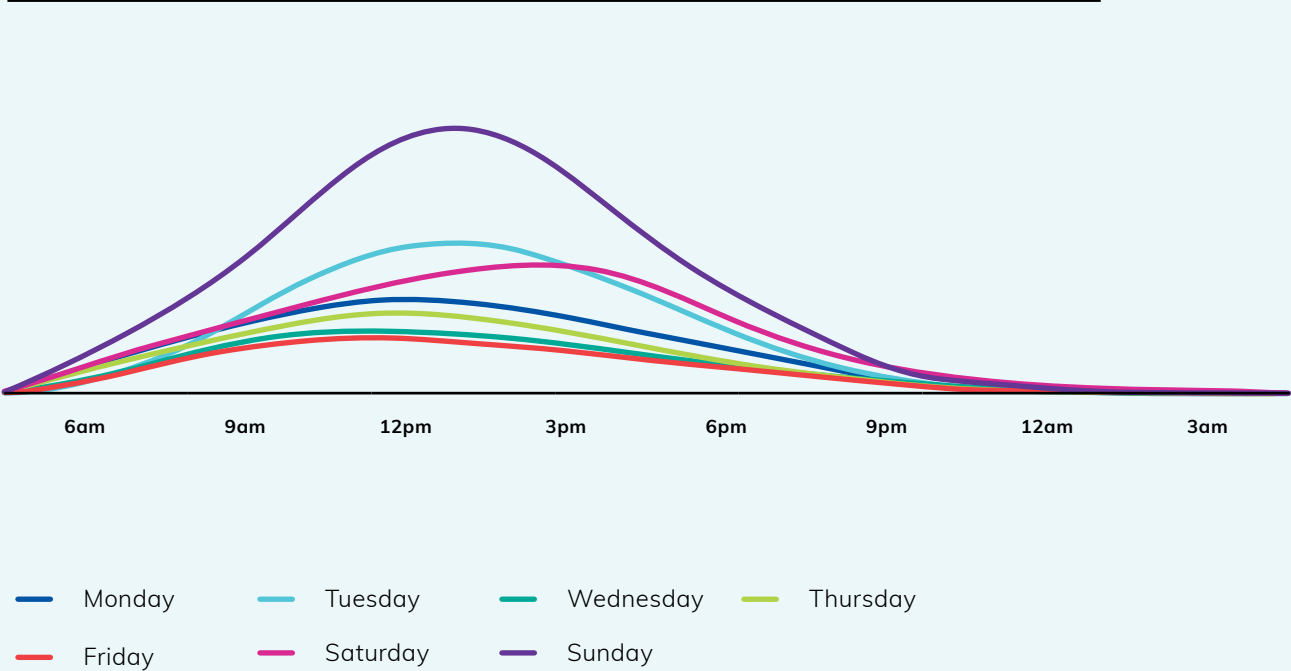


Figure 11
Powerful Owls, listed as vulnerable in NSW, have been sighted within Barrenjoey Headland.



Site photos

Figure 12

Upgraded 2,200K street lights within Governor Phillip Park





Figure 13

Northern amenities block with 2,500K lights and sensors



Figure 14

Before (left) and after (right) the street lighting upgrade showing the reduction in light spill

**Figure 15**

Before (left) and after (right) the street lighting upgrade showing the reduction in light spill



Baseline sky quality measurements

Macquarie University undergraduate students with Professor Richard McDermid, Deputy Director, Astrophysics and Space Technologies Research Centre, undertook baseline sky measurements on 18 August 2019. The measurements were recorded on maphub.net.

On 14 June 2023 Northern Beaches Council staff, Professor Richard McDermid, and Northern Sydney Astronomical Society Members David Stevenson, Greg McCall and Phil Angillely visited the site to repeat the initial measurements.

The results of both visits are presented in the table and the map of reading locations in Figure 16.

Figure 16

Sky Quality Meter measurements taken 18 August 2019 (red) and 14 June 2023 (purple).

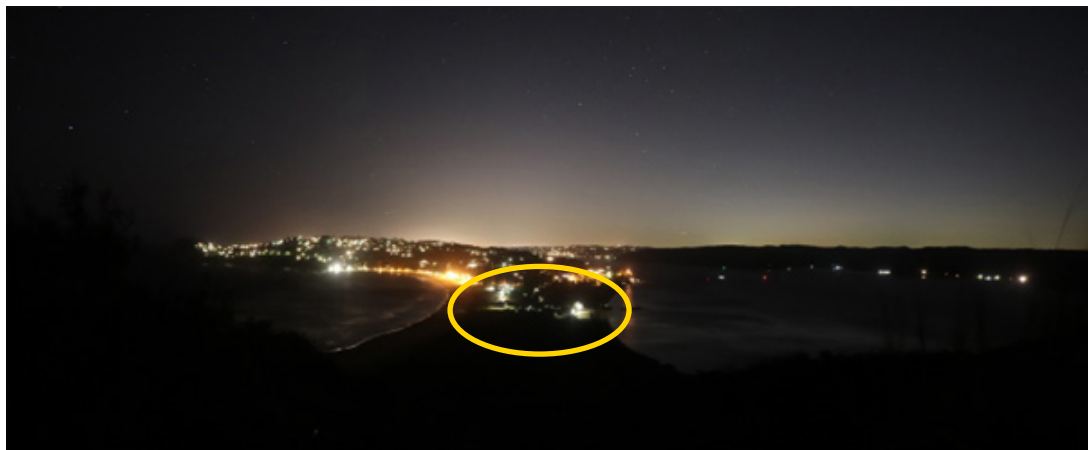


Table - Baseline sky measurements

SQM Reading	GPS Position - Latitude	GPS Position - Longitude	SQM Reading	GPS Position - Latitude	GPS Position - Longitude
18 August 2019			14 June 2023		
20.44	-33.580053	151.329641	20.37	-33.585677	151.325414
20.36	-33.58213	151.330635	20.31	-33.585639	151.325393
20.51	-33.579581	151.329009	20.35	-33.585639	151.325411
20.5	-33.57961	151.329019	20.38	-33.58513	151.325402
20.44	-33.579562	151.328538	20.41	-33.585136	151.32543
20.4	-33.580139	151.327201	20.38	-33.585102	151.325455
20.38	-33.581694	151.326349	20.24	-33.585135	151.325406
20.35	-33.581831	151.326291	20.39	-33.582021	151.326067
20.4	-33.581967	151.32601	20.38	-33.58204	151.326048
20.38	-33.583877	151.325867	20.38	-33.582069	151.32607
20.29	-33.583937	151.325818	20.57	-33.580209	151.326453
20.37	-33.584653	151.325626	20.5	-33.580234	151.326439
20.31	-33.587046	151.324235	20.41	-33.580228	151.326438
20.31	-33.585683	151.325112	20.46	-33.580228	151.326436
Summary			20.47	-33.580224	151.326435
20.38 median			20.28	-33.579611	151.327877
			20.46	-33.580043	151.329859
			20.49	-33.580032	151.329889
			20.47	-33.580056	151.329909
			20.52	-33.580077	151.32991
			20.46	-33.580273	151.32986
			20.28	-33.580264	151.329857
			20.47	-33.58025	151.329841
			Summary		
			20.41 median		

Figure 17

Mosaic photograph taken in August 2019 during night sky measurements looking south from Barrenjoey Lighthouse towards the urban environment, Macquarie University.

**Figure 18**

Photograph taken during June 2023 night sky measurements, looking south from Barrenjoey Lighthouse towards the urban environment. Note the reduced lighting from the upgraded streetlights in the proposed UNSP area, shown with the yellow circle.



Education and public outreach

Current public outreach and education activities

To date, the following activities have been undertaken which have promoted the proposed UNSP and/or dark sky preservation and good lighting practices.

Picnic in the Dark – Fred Watson Tours & Events/Travel Ogg, 30 March 2019

This activity was held to coincide with Earth Hour on Saturday 30 March 2019 with 120 visitors attending. The activity was based around North Palm Beach Surf Club in Governor Phillip Park with the Surf Club selling refreshments and snacks.

From the promotion flyer:

Switch off your lights and look at the stars

This family-friendly evening is dedicated to preserving the night sky and growing awareness of our night sky heritage. Includes:

- Fred Watson and Greg Quicke (AKA Space Gandalf)
- Stargazing
- Jazz Band
- Sky Watcher Telescopes
- Guest Speakers

Head to the Stars - NPWS – 19 October 2019

This successful, fully booked out event saw people attend a guided night walk to Barrenjoey Headland. Visitors attended in four small groups between 5pm and 10pm. The event promoted appreciation of the night sky and discussed how good lighting can reduce light pollution.



Community engagement – Northern Beaches Council, 6 November to 6 December, 2020.

Northern Beaches Council undertook broad community engagement to gauge the level of support for preparing an application for the Palm Beach Headland area to be designated as an Urban Night Sky Place. The engagement included the establishment of a project webpage, installation of temporary on-site signage, social media posts, articles in Council's email newsletter, an online information session and attending stakeholder and committee meetings. The results of this engagement were primarily positive, with 80 per cent of submissions received in support of the project. Further details on this engagement can be found on the [project webpage](#). The promotional video can be seen on [YouTube](#).

Terrey Hills Lunar Super Flower Blood Moon Event – Northern Beaches Council and NSAS, 26 May 2021

Northern Beaches Council partnered with Northern Sydney Astronomical Society (NSAS) to deliver a community night sky viewing event for the Super Flower Blood Moon. Sydney was identified as a premium location for viewing the eclipse. Attendees were invited publicly, and directly from the local Scouts groups. Volunteers from NSAS provided telescopes, and Council staff promoted the proposed UNSP and good lighting practices. The event was well attended with around 160 community attendees.

Figure 19
Advertisement for the Picnic in the Dark Event in March 2019




27 MARCH 2021

8:30-9:30PM LOCAL TIME

EventsGet Involved

Search places, events



PICNIC IN THE DARK WITH FRED WATSON AND GREG QUICKE

Switch off your lights and look at the stars

Earth Hour is the largest global movement for the environment. Join Fred Watson, Greg Quicke and Friends, in Governor Phillip Park

This family-friendly evening is dedicated to preserving the night sky and growing awareness of our night sky heritage.

Includes:

- Fred Watson and Greg Quicke (AKA Space Gandalf)
- Award-winning movie [Saving the Dark](#)
- Stargazing with Macquarie University
- Barrenjoey High Jazz Band

Figure 20
Barrenjoey Highschool Newsletter March 2019 promoting the Picnic in the Dark event

BAND NEWS

by Gerry Bates

Band has been asked to provide support for Professor Fred Watson's 'Picnic in the Dark' Earth Hour event on Saturday 30th March 2019, at Governor Phillip Park, Palm Beach.

We have arranged a BHS heavy Jazz Combo (with one or two ring-ins!) consisting of:

Lachie, Year 12 (Sax and Guitar)

Kasey, Year 12 (Vocals)

Ben, ex-BHS (Percussion)


Charlie, Conservatorium (Keyboard)

Alex, ex-Mater Maria (Bass)



To find out more about the event and purchase tickets go to <http://www.fredwatsonstours.com.au/events.html>

Figure 21
Facebook event notification for the Head to the Stars National Parks and Wildlife Service Barrenjoey Headland Tours



OCT 19

Head to the stars: Barrenjoey

Public · Hosted by [NSW National Parks and Wildlife Service](#)

Saturday, 19 October 2019 from 17:00-21:30 UTC+11

More than a year ago

Barrenjoey Head Lighthouse

Palm Beach, NSW, Australia 2108

Show map

Details

Thanks for your interest but this evening is now fully booked.

Calling all amateur astronomers to Barrenjoey Headland in Ku-ring-gai Chase National Park. Discover astrophotography, learn about the solar system and tour Barrenjoey Lighthouse at this fun event.

Join us at Palm Beach, 1 hour from Sydney's centre, as we set out to simulate a pristine dark sky landscape. We'll be transforming Barrenjoey Headland into an observatory for 1 night only. Come along and witness the sparkly wonder of the solar system under the light of the new moon.

Image: Luke Vadekar

Other

After Dark at Barrenjoey High School

On 28th May 2022 two members of the Urban Night Sky Place Project Working group attended the 'After Dark' event at Barrenjoey High School promoting the proposed UNSP at Palm Beach Headland and DA Dark Sky materials. The working group members were Edna Blanchard representing Pittwater Natural Heritage Association and Phil Angille representing Northern Sydney Astronomical Society. Approximately 200 people attended the event which had four guest speakers.

Mona Vale Headland Lunar Eclipse – Northern Beaches Council, 8 November 2022

Northern Beaches Council held a community event to promote the UNSP and good night lighting practices at Mona Vale Headland. Community members were invited to view the lunar eclipse with NSAS volunteers setting up four telescopes and providing guided viewing of the event. The event was sold out and approximately 150 people were present. Council staff handed out DI outreach brochures to attendees.

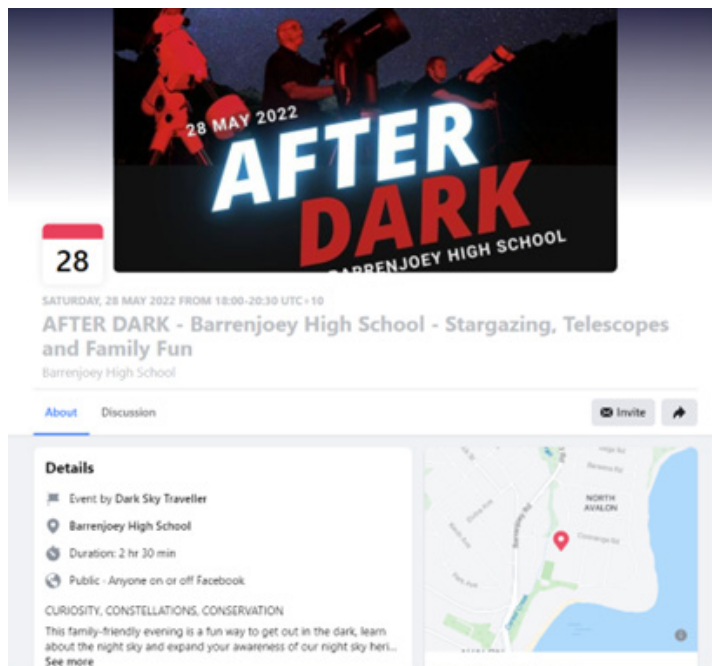
Figure 22

Attendees looking at the lunar eclipse, 26 May 2021



Figure 23

Facebook advertisement for the After Dark event at Barrenjoey High School



Feedback from attendees was very positive:

“Just a little note of thanks for organising last night’s event . It was fantastic!”

“Just a note to say thanks to those who organised this activity. My grandchildren really enjoyed the event and had a great close look at the moon. They were very excited.

The people with the scopes were just wonderful and the crowd shared the time well.

Successful activity. Well done”

Figure 24

Photo of the lunar eclipse (photo credit: Kristie King)



Figure 25

Attendees looking at the start of the lunar eclipse and outreach material stall

**Figure 26**

Lunar eclipse event held at Mona Vale Headland



Lunar eclipse library talk and activation – Northern Beaches Council, November 2021

To coincide with the lunar eclipse, Northern Beaches Council held a 9-day long activation from 1 - 10 November at Forestville Library to promote the UNSP and good night lighting practices.

This included a biodiversity and astronomy talk on Saturday 5 November 2022. Approximately 20 people attended the event.

International Dark Sky Week activation – Northern Beaches Council, May 2023

To promote International Dark Sky Week in May 2023, Council set up displays in both the Coastal Environment Centre and Manly Environment Centre. A night spotlight walk and star viewing event for the adjacent caravan park visitors had been planned but was cancelled due to poor weather.

Urban Night Sky Place Project Working Group – Northern Beaches Council, April 2019 - present

The Urban Night Sky Place Project Working Group was established in 2019 with membership including local residents, interest groups and businesses. The group meets quarterly and provides a conduit for information on the project between the community and Council. It is proposed that a working group or similar be established and administered by Council to oversee the ongoing operation of the UNSP if designation is successful.

Figure 27
Promotional poster

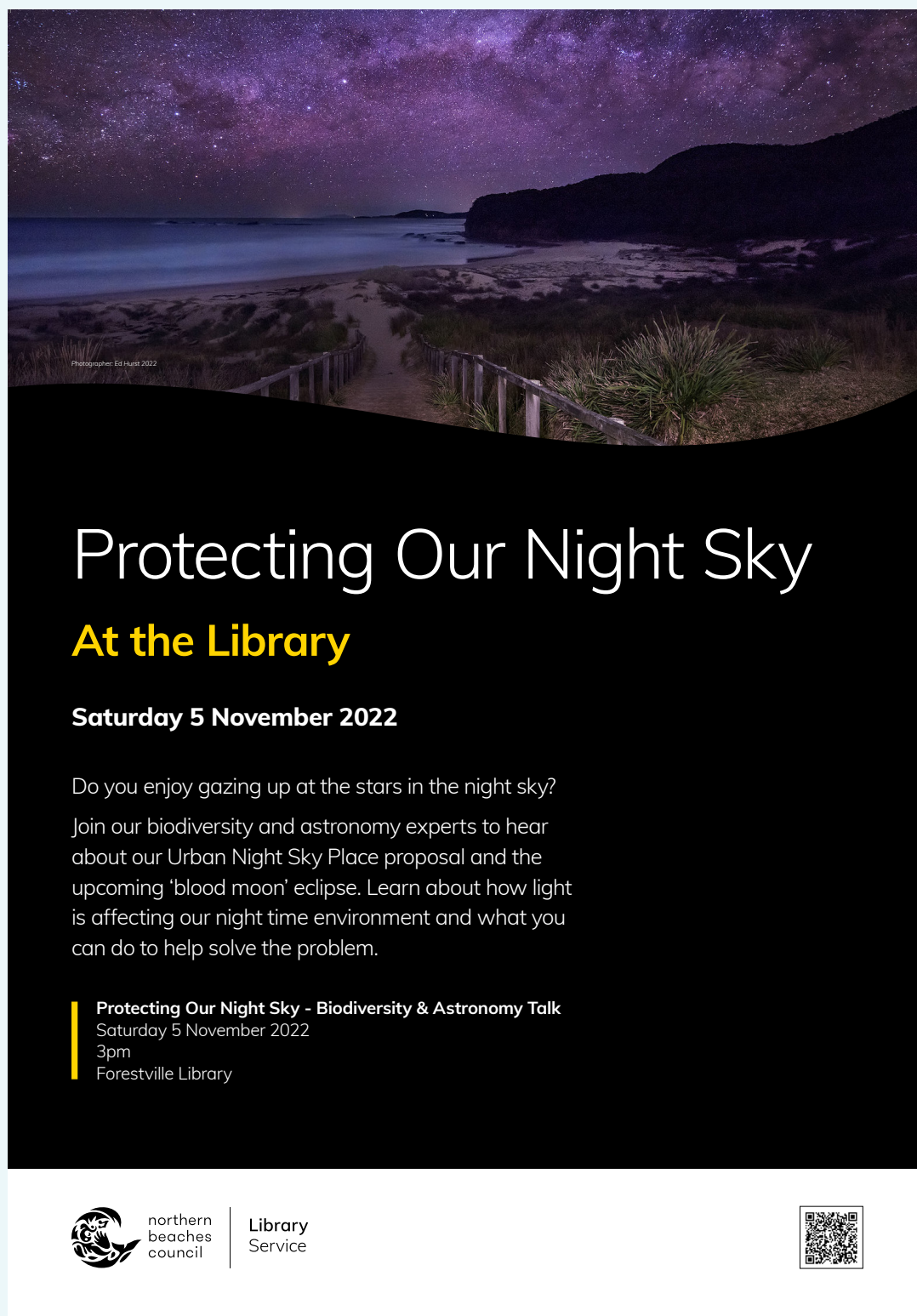


Figure 28
Forestville library activation



Figure 29
Paul Cannings and Phil Angille presented to community members to promote good night lighting practices



Figure 30

Dark Sky Week 2023 display at the
Coastal Environment Centre

**Figure 31**

Dark Sky Week 2023 display at Manly Environment Centre



Media Coverage

The Palm Beach Headland has had considerable media promotion since being investigated as a potential Urban Night Sky Place, some examples include:

- “Sydney push for Urban Night Sky Park to view the stars”- [Manly Daily](#) - 9 November 2020
- Pittwater Life
[yumpu.com](#)
- Australian Geographic
[australiangeographic.com.au](#)
- Radio Northern Beaches
[mixcloud.com](#)
- Over Sixty
[oversixty.com.au](#)
- Sydney Morning Herald
[smh.com.au](#)
- Ellaslist
[ellaslist.com.au](#)
- Macquarie University
[lighthouse.mq.edu.au](#)

Proposed plan for future UNSP public outreach and education

Council will expand dark sky awareness and promotion of good lighting design in our community environmental education program and coordinate delivery of UNSP events through our environment centres. This will include Council's school education activities as it aligns with the [Department of Planning, Industry and Environment's Dark Sky Education](#) which some of our local schools deliver.

Council will work with NPWS, the community and key stakeholders to deliver public outreach and education activities. It is proposed to hold up to four onsite and offsite public outreach and education activities each year to ensure ongoing celebration of the UNSP and education on good lighting practices.

Onsite activities will be coordinated by Council and/or NPWS, including organised activities and tours via the standard consent process. Activities will be managed to address competing priorities and access within the proposed UNSP area to ensure we are sympathetic to the night-time environment, biodiversity and the local community.

This approach for future onsite activities has been developed to comply with the requirements of the Ku-ring-gai Chase POM, Barrenjoey Headland CMP Governor Phillip Park POM and CMP. The plan for future activities will be reviewed and updated regularly, including as required to remain consistent with any future revisions of these documents.

Activities within Governor Phillip Park

To manage potential impacts, competing priorities and activities within Governor Phillip Park the following is proposed:

- a minimum of one and up to a maximum of four UNSP onsite public outreach and education activities each calendar year
- only one UNSP activity will be approved at any one time
- the maximum visitor numbers for each UNSP activity will be 50
- each UNSP activity is to be coordinated by Council and/or NPWS, including organised activities and tours via the standard consent process. They may be supported by the community and/or commercial organisations at Council's discretion
- each UNSP activity within Governor Phillip Park will require a booking through [Council's Parks Booking System](#) to ensure they are considered alongside any other proposed events within the location
- booking fees will be charged in accordance with Council's [fees and charges](#) and conditions of booking, including the requirement for public liability insurance, consideration of traffic, security and waste management (as required)
- it is expected that each UNSP activity will include education on the benefits of sustainable lighting principles and be family-friendly, fun events
- the businesses on site can continue to operate as normal under their lease/s and may opt to undertake night sky activities in addition to abovementioned four events per year.

Activities within Barrenjoey Headland

The Ku-ring-gai POM acknowledges that, “Tours and organised activities have many benefits. They increase the opportunity for public participation in nature-based activities and provide opportunities for professional instruction in the safety and minimal impact aspects of various recreational pursuits. Guided activities also have potential to interpret and promote the natural and cultural values of the park.” It further acknowledges the importance of carefully managing activities to protect the natural environment and facilities as well as reduce the potential for conflicts between different users.

To manage potential impacts, competing priorities and activities within Barrenjoey Headland, all commercial activities, and some community-organised activities with over 20 attendees, are required to have a lease, licence or consent. Activities and tours up to Barrenjoey Headland at night require supervision and a standard activity consent.

Detailed information on the various requirements can be found in section “4.2.2.10 Commercial and Organised Activities” of the Ku-ring-gai POM and on the NPWS website:

- Activity consents: environment.nsw.gov.au
- Tours: nationalparks.nsw.gov.au

Other UNSP Activities outside of the proposed area

Other activities outside of the proposed UNSP area are expected to be held each year. These may include webinars, student engagement through Council’s environment education centres or other in-person activities, and may be delivered by Council, NPWS and/or the community.

Review period

The approach to organised UNSP activities in the proposed location will be reviewed at the end of the first year of designation and adjusted as required.

Documented support for national night-time darkness

The following documents demonstrate support for the proposed Palm Beach Headland Urban Night Sky Place:

- Council Reports
 - In [April 2019](#) Council resolved to support the preparation of an Urban Night Sky Place designation application for Palm Beach Headland, including undertaking community consultation, and allocated \$50,000 towards the completion of necessary public lighting work.
 - In [August 2021](#) Council considered the outcome of the community consultation and subsequently resolved to, “Submit an application to the International Dark Sky Association for Governor Phillip Park, Palm Beach to be designated as an Urban Night Sky Place (and include Barrenjoey Headland if National Parks and Wildlife Service decides to do so)”. The community engagement report can be viewed here: [The Community Engagement Report](#)
- The [Towards 2040 – Northern Beaches Local Strategic Planning Statement](#) includes light pollution as an issue for consideration. Action 8.11 call for Council to “investigate the establishment of Australia’s first UNSP in Palm Beach, addressing public lighting, light pollution and energy consumption”.
- During public exhibition the [Northern Beaches Council Community Safety Committee Meeting](#) discussed the proposal and noted that it was a positive idea and likely to encourage a great family environment.
- [The Draft Destination Management Plan](#) refers to Council investigating the Urban Night Sky Place under its Nature Experience section.
- NPWS provided Council a letter of support for the project that states that the proposed UNSP is consistent with both the Ku-ring-gai POM and the National Parks and Wildlife Act 1974. Of note also is that NPWS manage Australia’s first ever Dark Sky Place at Warrumbungle National Park. This will expand their support for Dark Sky Places.

Figure 32



Figure 33



Figure 34

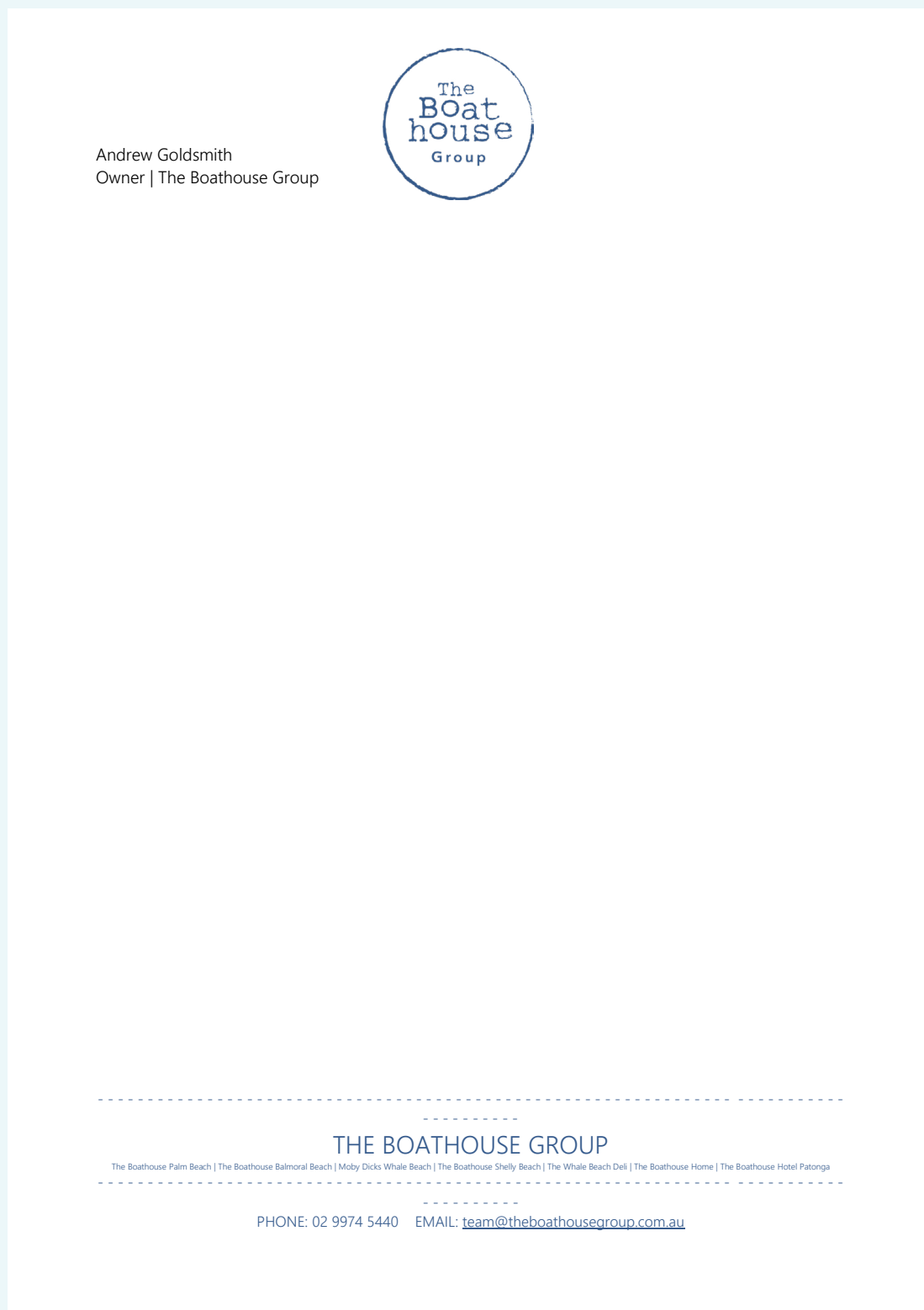



Figure 35

Scanned 11-02-2019



North Palm Beach Surf Life Saving Club Inc.

GOVERNOR PHILLIP PARK

P.O. BOX 40
PALM BEACH 2108
PHONE: 61 2 9974 1224
FAX: 61 2 9974 1425
Email: office@northpalmbeach.com.au
Website: www.northpalmbeach.com.au

ABN 59 187 371 628
No. Y11835, -34
Fundraising Authority No.
CFN11033
DGR: 591 873 716 28

6th February, 2019

Northern Beaches Council
P.O. Box 82
MANLY NSW 1655

TO WHOM IT MAY CONCERN

Dear Sir / Madam

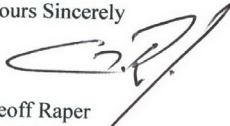
The proposal to designate an area at Palm Beach as an urban night sky park has recently come to our attention and we write to express our support of this initiative.

The North Palm Beach Surf Club has a proud tradition of patrolling excellence and the pioneering of new and more efficient ways of patrolling the beach continues. Our objective is to educate the community from adults to children to be competent and safe in the beach / surf environment. As a community organisation operating in an area greatly appreciated nationally and internationally for its natural beauty we are very aware of the importance of protecting what we have.

Just as discarded plastic bags float around the ocean causing havoc with marine life, light pollution is also having a negative impact on our night time environment - not just by hindering a view of an exceptional starry night but also on the physiology of humans, mammals, birds, fish, marine reptiles, amphibians, insects and plants.

We see this proposal as a great opportunity for the Palm Beach community to be at the vanguard of a global movement to protect what's important - the scientific, natural, educational, cultural heritage and public enjoyment for our families, future generations and all visitors.

Yours Sincerely



Geoff Raper
President
North Palm Beach SLSC

RECEIVED
NORTHERN BEACHES
COUNCIL
11 FEB 2019
MAIL ROOM

SCANNED
NORTHERN BEACHES
COUNCIL
11 FEB 2019
20__ /

Page 1 of 1

Figure 36



February 1 2019

Email to

CC to Marnie@fredwatson.com.au

Mr Ray Brownlee
General Manager
Northern Beaches Council

RE: Palm Beach Urban Night Sky Park

Dear Mr Brownlee

Pittwater Natural Heritage Association would like to add our support to the proposal for an urban night sky park at Barrenjoey Headland.

We believe that this is one of the few sites in the greater Sydney basin where light pollution is at a minimum and as such presents a wonderful opportunity for people to view and appreciate the night sky. With Council support this could become a significant educational enterprise.

Yours sincerely

Marita Macrae
President
Pittwater Natural Heritage Association

Pittwater Natural Heritage Association PO Box 187 Avalon 2107 E: pnhainfo@gmail.com
pnha.org.au

Supporting documents and references

[Barrenjoey Headland Conservation Management Plan](#)

[Governor Phillip Park Conservation Management Plan](#)

[Governor Phillip Park Plan of Management](#)

[Ku-ring-gai Chase National Park and Lion Island, Long Island
and Spectacle Island Nature Reserves Plan of Management](#)

[Urban Night Sky Place Guidelines](#)



Image: Hamish Downes



Appendix A

Lighting Management Plan for the proposed Palm Beach Headland Urban Night Sky Place

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Palm Beach Headland is located in the Northern Beaches of Sydney, Australia. It is positioned at the outer edge of the city region, on the coastal headlands, incorporating and surrounded by local National Parks. Governor Phillip Park and Barrenjoey Headland, located at the northern most tip of Palm Beach, are a unique and iconic backdrop within Sydney. The site's location and ambiance are well suited to be an excellent example of a DarkSky International (DI) (formerly International Dark-Sky Association) Urban Night Sky Place (UNSP).

Light pollution is common through urban areas and causes impacts to local ambiance, night sky visibility and alters the behaviour of local biodiversity. It is however an important aspect of safe public access. UNSP's aim to showcase how urban locations can use lighting appropriately, described as places "whereby an authentic night time experience is harboured within the midst of significant artificial light, providing education to the public on the benefits of good outdoor lighting that promotes public safety with the minimisation of potential harm to the natural environment."

This Lighting Management Plan (LMP) has been prepared to provide principles, guidelines, and standards for the use of artificial outdoor lighting installations in the Palm Beach Headland. The LMP aims to:

- preserve a dark sky experience for visitors
- provide safe access to the area for visitors during night-time hours
- showcase and promote good lighting design
- reduce impacts on local biodiversity.

The LMP was developed to comply with the existing Governor Phillip Park Palm Beach Plan of Management, Draft Governor Philip Park Conservation Management Plan, Ku-ring-gai Chase National Park and Lion Island, Long Island and Spectacle Island Nature Reserves Plan of Management, Barrenjoey Headland Conservation Management Plan and the DI's guidelines for UNSP's with the purpose of seeking and maintaining formal designation.

The LMP demonstrates that all of the lighting within the site meets the principles and guidelines for UNSP's. The LMP also aims to safeguard the future of the site as an UNSP by setting a range of dark-sky friendly guidelines for future lighting.

Background

The introduction of lighting powered by electricity has transformed the way we, as a society, can operate and interact, extending human activity into the night-time hours and advancing the production and socioeconomic networks of civilised societies. However, the increasing use of this artificial lighting also impacts the environment and wildlife.

Light pollution is generated from poor or overuse of artificial lighting, creating sky glow from reflected and spill light, causing light trespass onto neighbouring properties and the sky, and generating glare. In recent decades, light pollution has been increasing, particularly in highly populated, metropolitan areas. As a society we need to take conscious action to mitigate light pollution.

Palm Beach, located in the Northern Beaches of Sydney, Australia, is positioned on the outer cusp of the city region, with the New South Wales Central Coast region neighbouring on the northern side of the Hawkesbury River.

The benefits of a lighting management plan (LMP) to the site as well as to surrounding areas of Palm Beach include, but are not limited to, the following:

- preservation of dark night sky
- offer opportunities for night-time nature-based, low impact visitation
- education to the greater public on the benefits of proper outdoor lighting that promotes public safety with minimal impact and harm on the natural night-time environment
- set a benchmark for sites of similar nature, at a State, National and International level
- energy savings
- support astronomy
- promotion of cultural heritage
- restoration of natural night-time conditions for local flora and fauna.

The purpose of this LMP is to provide the guiding principles and requirements for artificial lighting within the area being proposed to be designated as an Urban Night Sky Place by the DI. This area includes Governor Philip Park and Barrenjoey Headland and is approximately represented in Figure 1.

The overarching aim of ensuring all new lighting is good lighting and certifying existing lighting meets the DI requirements is to protect the night sky and provide the opportunity for appreciation of darkness while maintaining the contribution lighting gives to the safety of users within the locality and protecting and supporting the local environment.

About DarkSky International (DI)

The DI is recognized globally for its work in raising awareness of the ever-growing impacts of light pollution from artificial lighting. Components of light pollution include:

- glare– excessive brightness that causes visual discomfort
- skyglow– brightening of the night sky over inhabited areas
- light trespass– light falling where it is not intended or needed
- clutter– bright, confusing and excessive groupings of light sources.

A not-for-profit organisation, the DI works closely with local governing authorities as well as lighting

designers and manufacturers to help reduce the impacts of light pollution going forward, as well as providing guidance and framework to improve existing lighting conditions. Impacts from light pollution include:

- increasing energy consumption
- disrupting the ecosystem and wildlife
- harming human health
- effecting crime and safety.

One of the many initiatives DI has developed is Urban Night Sky Places, which recognise open spaces which are located in a more urban setting but are able to promote good lighting.

Land to which the Plan applies

The land to which this plan applies includes all land within the areas defined by the Governor Phillip Park Plan of Management (Governor Phillip Park POM) and Barrenjoey Headland by the Ku-Ring-Gai Chase National Park and Lion Island, Long Island and Spectacle Island and Nature Reserves Plan of Management (Ku-ring-gai POM).

Figure 1 shows the approximate area however users must refer to the applicable Plan of Management for the precise area.

Figure 1

Proposed Palm Beach Headland Urban Night Sky Place area, including approximate areas of Governor Phillip Park (red) and Barrenjoey Headland (yellow).



[Governor Phillip Park Palm Beach Park POM](#)
[Ku-ring-gai Chase National Park and Lion Island, Long Island and Spectacle Island Nature Reserves POM](#)

Initial lighting conditions and summary of upgrades

The initial site audit of external lighting was undertaken following community consultation for the project in December 2020. The audit was repeated in April 2023 following the completion of proposed lighting upgrades.

The initial audit showed that the site consists of Ausgrid-managed street lighting to the length of the access road within Governor Phillip Park. At the time of the first audit, these streetlights were fitted with a combination of mercury vapour (MBF) and Light Emitting Diode (LED) lamps and are understood to provide lighting for safety and access achieving a PR5-PR6 category lighting level. Northern Beaches Council worked closely with Ausgrid to specify a new street lighting type for biodiversity sensitive areas. All street lighting within Governor Phillip Park has been upgraded to these new 2,200K LED lights as part of a pilot to test these lights in operation.

The site also contains North Palm Beach Surf Life Saving Club. The exterior of the SLSC building and adjacent southern amenities block were fitted with a number of LED batten lights, fixed to the underside of the exterior awnings. These have all been upgraded to new fully shielded, 2,700K fittings and additional PE Cell and motion sensors installed.

An amenities block exists in the northern area of the park and was fitted with LED battens to the underside of the awnings. These were also upgraded to new fully shielded, 2,700K fittings and the existing Photoelectric (PE) cell and motion sensors retained.

Two hospitality venues were within the area, being part of The Boathouse Café and Dunes Restaurant. Both venues were fitted with a mix of luminaires to fulfil the functional needs of the venues. During the course of the project the Boathouse has largely been demolished and they are in the process of constructing a new building. As part of their Development Application they were required to prepare a dark sky friendly lighting management plan for the new building.

A number of fittings were upgraded and new PE and motion sensors installed at the Dunes restaurant, primarily to reduce light spill and colour temperature to at or below 3,000K.

Palm Beach Golf Club has a maintenance shed within the proposed location with no outdoor operable lighting.

Within Barrenjoey Headland, there are several buildings owned and operated by National Parks and Wildlife Service (NPWS), including the Barrenjoey Lighthouse, built in 1881. Of these buildings, the lighthouse was the only observed building with operational external lighting, with the functioning of the lighthouse falling under the jurisdiction of Transport for NSW.

Consultation with the community and key stakeholders, including the onsite local businesses and the SLSC, was undertaken to understand usage requirements for both staff and visitors, as well as communicating the needs for artificial lighting. Through this process of consultation, this plan was developed to align the lighting within the site with the needs of the current users as well as the DI's Urban Night Sky Place requirements.

Lighting principals

A number of principles have been developed for the lighting located within the proposed UNSP area to ensure alignment with both the intent of the Australian Standard on limiting the obtrusive effects of outdoor lighting (AS4282) as well as the principles and vision of the DI both at present and for the future. These guiding principles are as follows:

Safety

The public lighting within the UNSP area is to consider the safety of visitors and employees within the context of the site conditions, whilst preserving the dark sky.

Restoration of night sky visibility

The experience and appreciation of the night sky has proved to be an important compass in history and over time, visibility of the night sky has been impacted by light pollution, particularly in urban areas. Through careful and considered implementation of artificial lighting, the principles can be met and maintained whilst minimising the amount of light pollution generated at the site.

Energy efficiency and maintenance

By utilising high quality, carefully selected LED luminaires within the site, energy consumption, maintenance works and costs can be minimised.

Environmental considerations

The use of artificial lighting has been documented to negatively impact wildlife. These impacts stem from factors such as such as colour temperature, brightness and duration . By providing guidelines that regulate and improve the use of artificial lighting, the negative impacts on the areas' wildlife can be reduced.

The lighting guidelines have been developed using:

- The Australian/New Zealand Standard 4282.2019 Control of the obtrusive effects of outdoor lighting
 - This provides guidance and requirements for the use and application of outdoor lighting with the intent to reduce negative impacts of outdoor lighting for possible neighbouring residents, road users, transport signalling systems and for astronomical observations.
- AS/NZS 1158.3.1 – Lighting for roads and public spaces Pedestrian area (Category P) lighting – Performance and design requirements
 - Provides guidance for lighting of roads and public spaces.

Measures from the above standards, including the use of photo electric cells, motion sensors, downward direction of luminaires, minimisation of horizontal light spill and minimisation of glare sources such as optical shields and mounting heights have been incorporated into a set of guidelines. These lighting guidelines describe the types of fixtures, locations and control methods for artificial lighting to be used in the area to meet the standards and the requirements of the DI's lighting ethics and minimum standards for UNSP's:

1. The use of artificial lighting will generally be contained to the locations deemed necessary for safe passage for visitors and staff. This includes to the access roads, and the local vicinity to on-site buildings.
2. All lighting must have a light source with a correlated colour temperature (CCT) of 3,000 Kelvin (K) or less and colour rendering index (CRI) of 80+. Where possible it is recommended to keep the CCT to 2,700K or less.
3. All light fixtures must be fully shielded with minimal upward light spill component.
4. All electric lighting must be of LED sources, with a luminous efficacy of no less than 60 lumens per watt (except for the instance of 'special use' luminaires).
5. Special use luminaires, such as festoon lighting, are fittings which emit less than 500 lumens per light source, and do not perform as functional luminaires but rather more decorative or ambient sources. The use of special luminaires will be reviewed on a case-by-case basis by the Northern Beaches Council for Governor Phillip Park and NPWS for Barrenjoey Headland.
6. Public pathway and road lighting within the park will be in accordance with AS/NZS 1158.3.1 PR5 category lighting, comprising of 0.85 lux average on the horizontal road surface.
7. A risk assessment, on a case-by-case basis will be undertaken for any proposed reductions in lighting levels below what is currently provided. These proposals will be reviewed by Northern Beaches Council for Governor Phillip Park and NPWS for Barrenjoey Headland.

8. Dunes Palm Beach and the included part of Barrenjoey Boathouse can continue to operate outdoor lighting to meet the usage requirements set out in their current lease arrangements, which include minimal lighting for safety and wayfinding.

Location	Operating hours
Café/kiosk	Summer: 8am – 7pm, 7 days Winter: 8am – 5pm, 7 days
Restaurant	All year, 8am – 12am, Tuesday to Sunday
Barrenjoey Boathouse	To be confirmed once the new building and leases are complete.

9. Pole mounted streetlights cannot exceed a mounting height of 7.5m.
10. Public roadway and area lighting within the park must operate via the use of PE to minimise the overconsumption of energy during daylight hours.
11. The northern amenities block will continue to operate all lights on PE cells and motion sensors. The southern amenities and SLSC buildings will continue to operate all external batten lighting on PE cells and motion sensors.
12. Where appropriate PE cells and motion-sensor are to be used to control lighting. Motion sensors are to be programmed for the lighting to turn on for a maximum of 5 minutes.
13. The use and maintenance of retroreflective films on posts and barriers along public roadway is encouraged for pedestrian and motorist safety throughout the site.

14. Illuminated signage is not to be used within the site between one hour after dusk and one hour before dawn. Any illuminated signage will have a luminance of no more than 100cd/m² and displays must be single-colour on a black background.

15. The use of temporary lighting (feature or otherwise) is not permitted for use within the site without permission by Northern Beaches Council for Governor Phillip Park and NPWS for Barrenjoey Headland.
16. Northern Beaches Council will conduct annual lighting audits to ensure correct functionality and operations of lighting within the site.

Exemptions for Barrenjoey Lighthouse

The use of a marine safety light in accordance with Transport for NSW requirements and selected in conjunction with the IALA (International Association of Marine Aids to Navigation and Lighthouse Authorities) standards is exempt from meeting the other requirements of this LMP. Transport for NSW will continue to manage and operate the light source between dusk and dawn via a photoelectric cell consistent with the practices of the federal Maritime body Australian Maritime Safety Authority (AMSA) who manage lighthouses around Australia.

Short term exemptions for temporary lighting

Activities that meet the description of 'temporary activities' permissible within Governor Phillip Park POM are allowable in accordance with the requirements of the POM.







All proposed exemptions will be considered through either Northern Beaches Council and/or NPWS booking/permit/lease or licence processes as appropriate.

Governor Phillip Park & Barrenjoey Headland Lighting Audit

April 2023

This lighting audit shows all outdoor lighting identified during the site audit completed 18 April 2023 within the proposed Urban Night Sky Place designation area at Palm Beach Headland. The Boathouse Restaurant has been split into two areas and only Area A falls within the proposed designation area. The Boathouse Restaurant is under redevelopment and therefore has no current fittings.

STREETLIGHTS												
ITEM	LOCATION	COORDINATES	STATUS	DESCRIPTION	OPTICS	OPERABLE	PURPOSE	APPLICATION	QTY	CONTROL	CONFORMS	IMAGE
1	Governor Phillip Park Access Rd	-33°58'63"034"S, 151°32'52"522"E	Current	LED Ausgrid Street Lamp - PB67103	Ausgrid Cat P Road Lighting - CAT PR5/PR6 2200K (Stock Code 186493)	Yes	Passage	Roadway	1	Photocell	✓	
2	Governor Phillip Park Access Rd	33°58'67"779"S, 151°32'49"059"E	Current	LED Ausgrid Street Lamp - PB67101	Ausgrid Cat P Road Lighting - CAT PR5/PR6 2200K (Stock Code 186493)	Yes	Passage	Roadway	1	Photocell	✓	
3	Governor Phillip Park Access Rd	-33°58'68"725"S, 151°32'56"168"E	Current	LED Ausgrid Street Lamp - PB67104	Ausgrid Cat P Road Lighting - CAT PR5/PR6 2200K (Stock Code 186493)	Yes	Passage	Roadway	1	Photocell	✓	
4	Governor Phillip Park Access Rd	-33°58'72"145"S, 151°32'58"336"E	Current	LED Ausgrid Street Lamp - PB67105	Ausgrid Cat P Road Lighting - CAT PR5/PR6 2200K (Stock Code 186493)	Yes	Passage	Roadway	1	Photocell	✓	
5	Governor Phillip Park Access Rd	-33°58'78"011"S, 151°32'56"203"E	Current	LED Ausgrid Street Lamp - PB67106	Ausgrid Cat P Road Lighting - CAT PR5/PR6 2200K (Stock Code 186493)	Yes	Passage	Roadway	1	Photocell	✓	
6	Governor Phillip Park Access Rd	-33°58'83"246"S, 151°32'54"284"E	Current	LED Ausgrid Street Lamp - PB67107	Ausgrid Cat P Road Lighting - CAT PR5/PR6 2200K (Stock Code 186493)	Yes	Passage	Roadway	1	Photocell	✓	
7	Governor Phillip Park Access Rd	-33°58'89"472"S, 151°32'52"368"E	Current	LED Ausgrid Street Lamp - PB67108	Ausgrid Cat P Road Lighting - CAT PR5/PR6 2200K (Stock Code 186493)	Yes	Passage	Roadway	1	Photocell	✓	
8	Governor Phillip Park Access Rd	-33°58'94"083"S, 151°32'50"498"E	Current	LED Ausgrid Street Lamp - PB67109	Ausgrid Cat P Road Lighting - CAT PR5/PR6 2200K (Stock Code 186493)	Yes	Passage	Roadway	1	Photocell	✓	
9	Governor Phillip Park Access Rd	-33°59'00"673"S, 151°32'44"545"E	Current	LED Ausgrid Street Lamp - PB67110	Ausgrid Cat P Road Lighting - CAT PR5/PR6 2200K (Stock Code 186493)	Yes	Passage	Roadway	1	Photocell	✓	
10	Governor Phillip Park Access Rd	-33°59'06"444"S, 151°32'44"567"E	Current	LED Ausgrid Street Lamp - PB02442	Ausgrid Cat P Road Lighting - CAT PR5/PR6 2200K (Stock Code 186493)	Yes	Passage	Roadway	1	Photocell	✓	
11	Governor Phillip Park Access Rd	-33°59'17"276"S, 151°32'39"544"E	Current	LED Ausgrid Street Lamp - PB15801	Ausgrid Cat P Road Lighting - CAT PR5/PR6 2200K (Stock Code 186493)	Yes	Passage	Roadway	1	Photocell	✓	
12	Governor Phillip Park Access Rd	-33°59'11"231"S, 151°32'41"137"E	Current	LED Ausgrid Street Lamp - PB67112	Ausgrid Cat P Road Lighting - CAT PR5/PR6 2200K (Stock Code 186493)	Yes	Passage	Roadway	1	Photocell	✓	
13	Governor Phillip Park Access Rd	-33°59'81"844"S, 151°32'28"194"E	Current	LED Ausgrid Street Lamp - PB95220	Ausgrid Cat P Road Lighting - CAT PR5/PR6 2200K (Stock Code 186493)	Yes	Passage	Roadway	1	Photocell	✓	

14	Governor Phillip Park Access Rd	-33°59'09"362"S, 151°32'34"931"E	Current	LED Ausgrid Street Lamp - PB95222	Ausgrid Cat P Road Lighting - CAT PR5/PR6 2200K (Stock Code 186493)	Yes	Passage	Roadway	1	Photocell	✓	
15	Governor Phillip Park Access Rd	-33°59'00"85"S, 151°32'39"51"E	Current	LED Ausgrid Street Lamp - PB95224	Ausgrid Cat P Road Lighting - CAT PR5/PR6 2200K (Stock Code 186493)	Yes	Passage	Roadway	1	Photocell	✓	
16	Governor Phillip Park Access Rd	-33°58'97"316"S, 151°32'43"353"E	Current	LED Ausgrid Street Lamp - PB95226	Ausgrid Cat P Road Lighting - CAT PR5/PR6 2200K (Stock Code 186493)	Yes	Passage	BBQ	1	Photocell	✓	
17	Governor Phillip Park Access Rd	-33°58'90"459"S, 151°32'45"093"E	Current	LED Ausgrid Street Lamp - PB95228	Ausgrid Cat P Road Lighting - CAT PR5/PR6 2200K (Stock Code 186493)	Yes	Passage	Roadway	1	Photocell	✓	
18	Governor Phillip Park Access Rd	-33°58'79"805"S, 151°32'45"731"E	Current	LED Ausgrid Street Lamp - PB95230	Ausgrid Cat P Road Lighting - CAT PR5/PR6 2200K (Stock Code 186493)	Yes	Passage	Roadway	1	Photocell	✓	
19	Governor Phillip Park Access Rd	-33°58'74"719"S, 151°32'45"332"E	Current	LED Ausgrid Street Lamp - PB95231	Ausgrid Cat P Road Lighting - CAT PR5/PR6 2200K (Stock Code 186493)	Yes	Passage	Roadway	1	Photocell	✓	
								Total	19			








THE BOATHOUSE AND WHARF



-33°58'73.44"S, 151°32'41.41"E




ITEM	LOCATION	STATUS/ ACTION	DESCRIPTION	OPTICS	OPERABLE	PURPOSE	APPLICATION	QTY	CONTROL	CONFORMS	IMAGE
PART A - Included within the proposed designation area											
22	Front seating area	No fittings - under redevelopment									
24	Façade	No fittings - under redevelopment									


GOVERNOR PHILLIP PARK RESTAURANT AKA DUNES PALM BEACH


-33°59'15.85"S 151°32'38.62"E

ITEM	LOCATION	STATUS/ ACTION	DESCRIPTION	OPTICS	OPERABLE	PURPOSE	APPLICATION	QTY	CONTROL	CONFORMS	IMAGE
30	Landscape	Current	Black bollard spike light	LED 24V 3000K 5W 400 lumens	Yes	Decorative	Accent lighting	10	Manual Control	✓	
32	Façade	Fitting disconnected from electricity	Unused bayonette lamp holder	NA	NA	NA	NA	-	NA	✗	
33	Façade	Current	Fixed Down Wall Light	Havit LED 3,000K 12W 1080 lumens	Yes	Passage	General area lighting - access oil storage at rear of restaurant	1	Motion sensor	✓	
34	Façade	Current	Fixed Down Wall Light	Havit LED 3,000K 12W 1080 lumens	Yes	Passage	General area lighting - access storage at rear of restaurant	1	Motion sensor	✓	
35	Entry Awning	Current	Ceiling recessed downlights	Havit LED 3,000K 12W 980 lumens	Yes	Passage	General area lighting	2	Manual control	✓	
36	Outdoor Seating	Current	Decorative wall lights	diffuser LED 4.6W, 2,700K, 470 lumens	Yes	Decorative	Ambient lighting	2	Manual control	✓	
37	Outdoor Seating	Current	Decorative festoon lighting	LED 24Volt 0.5W 2,000K 40 lumens	Yes	Decorative	Ambient lighting	-	Manual control	✓	

38	Outdoor Seating	Current	Decorative wall lights	LED 2,700K 4.6W 470 lumens	Yes	Decorative	Ambient lighting	3	Manual control	✓	
39	Outdoor seating	Current (retained)	Ceiling recessed downlights	Havit LED 3,000K 12W 980 lumens	Yes	Passage	General area lighting	5	Manual control	✓	
Total								24			

SURF LIFE SAVING CLUB											
-33°35'26.0"S 151°19'28.8"E											
ITEM	LOCATION	ON	DESCRIPTION	OPTICS	OPERABLE	PURPOSE	APPLICATION	QTY	CONTROL	CONFORMS	IMAGE
41	Awnings	Current	Ceiling mounted batten	XVR Steel Linear Industrial Luminaire LED 10W 2,700K, 110lm/W 620mm length	Yes	Passage	General area lighting	12	PE Cell/ Sensor	✓	
42	Entry Awnings	Current	Round ceiling light	PHL LED Downlight 10W 2,700K 650 lumens	Yes	Passage	Access to front door	2	Sensor/ Manual Control	✓	
43	Western Outdoor Seating Area	Current	Ceiling recessed downlights	Domus D'eco 20520 13W 849 lumens 3,000K	Yes	Passage	General area lighting	17	Manual control	✓	
Total								31			

SOUTHERN AMENITIES BLOCK											
-33°35'27.1"S 151°19'28.3"E											
ITEM	LOCATION	ON	DESCRIPTION	OPTICS	OPERABLE	PURPOSE	APPLICATION	QTY	CONTROL	CONFORMS	IMAGE
45	Awnings	Current	Ceiling mounted batten	XVR Steel Linear Industrial Luminaire LED 10W 2,700K, 110lm/W 620mm length	Yes	Passage	General area lighting	8	PE Cell/ Sensor	✓	
Total								8			

NORTHERN AMENITIES BLOCK											
-33°35'11.7"S 151°19'31.2"E											
ITEM	LOCATION	COORDINATES	DESCRIPTION	OPTICS	OPERABLE	PURPOSE	APPLICATION	QTY	CONTROL	CONFORMS	IMAGE
46	Entry awning	Current	Ceiling mounted batten	XVR Steel Linear Industrial Luminaire LED 10W 2,700K, 110lm/W 620mm length	Yes	Passage	General area lighting	2	PE Cell/ Sensor	✓	
Total								2			

GOLF CLUB MAINTENANCE SHED											
-33°35'27.9"S 151°19'24.0"E											
ITEM	LOCATION	COORDINATES	DESCRIPTION	OPTICS	OPERABLE	PURPOSE	APPLICATION	QTY	CONTROL	CONFORMS	IMAGE
47	All		No fittings remaining								

Grand Total Qty Lights								84			
Percent Compliance								100%			

Notes:

-renew or replace existing retroreflective films on posts and barriers along the roadway and install additional ones where required.

Lighting inventory - Barrenjoey Headland


Barrenjoey Headland forms part of Ku-ring-gai Chase National Park that is managed by NPWS. The area is governed by Ku-ring-gai Chase National Park and Lion Island, Long Island and Spectacle Island Nature Reserves Plan of Management and Barrenjoey Headland Conservation Management Plan (2013).

Barrenjoey Headland is home to the Barrenjoey lighthouse, built in 1881, which is still to this day operational and crucial for mariners in Pittwater and Hawkesbury River. At present, the light source within the lighthouse is a 240W LED source, operating at 5000K, and is used in conjunction with a photocell to ensure operation between dusk and dawn. The specification of lighting within the lighthouse is governed by Transport for NSW requirements and selected in conjunction with the IALA (International Association of Marine Aids to Navigation and Lighthouse Authorities) standards.

Transport for NSW manage and operate the light source (LED Lamp/s). The current LED light is consistent with the practices of the federal Maritime body Australian Maritime Safety Authority (AMSA) who manage lighthouses around Australia.

In addition to the lighthouse, there are a number of buildings owned and operated by NPWS within the headland, none of which currently have operational external lighting.

Table: Barrenjoey Headland lighting inventory

BARRENJOEY HEADLAND NATIONAL PARK BUILDINGS											
ITEM	LOCATION	COORDINATES	DESCRIPTION	OPTICS	OPERABLE	PURPOSE	APPLICATION	QTY	CONTROL	CONFORMS	IMAGE
49	Lighthouse	Current	Lighthouse light	Sealite, SL-LED-216, LED, 5000K	Yes	Passage	Marine Safety Navigation	1	PE Cell	✓	
50	Lighthouse Keepers Cottage	No fittings									
51	Misc. National Park Buildings	No fittings									
								Total	1		
								Grand Total Qty Lights	1		
								Percent Compliance	100%		

Notes:

-renew or replace existing retroreflective films on posts and barriers along the roadway and install additional ones where required.

Appendix 1

Site overview of lighting



DESIGNED UNDER QUALITY SYSTEM CERTIFIED AS COMPLYING WITH ISO 9001 BY AN ACCREDITED CERTIFICATION BODY

As a signatory, the client and the design team warrant the integrity of the information provided. The client warrants that the information is true and correct and that it is not misleading or deceptive. The design team warrants that the design is based on the information provided and that it is not misleading or deceptive. The client and the design team warrant that the design is not in breach of any applicable laws or regulations.

FOR INFORMATION

AMENDMENTS		
REV	DESCRIPTION	DATE
01	PROPOSED LIGHTING	12/02/21

Copenhagen 8, 9 Castlereagh St,
London Sydney, NSW, 2000, Australia
Sydney ABN 50 001 189 037
Hong Kong t : +61 / 02 9967 2200
New York e : info@steensenvarming.com

STEENSEN VARMING

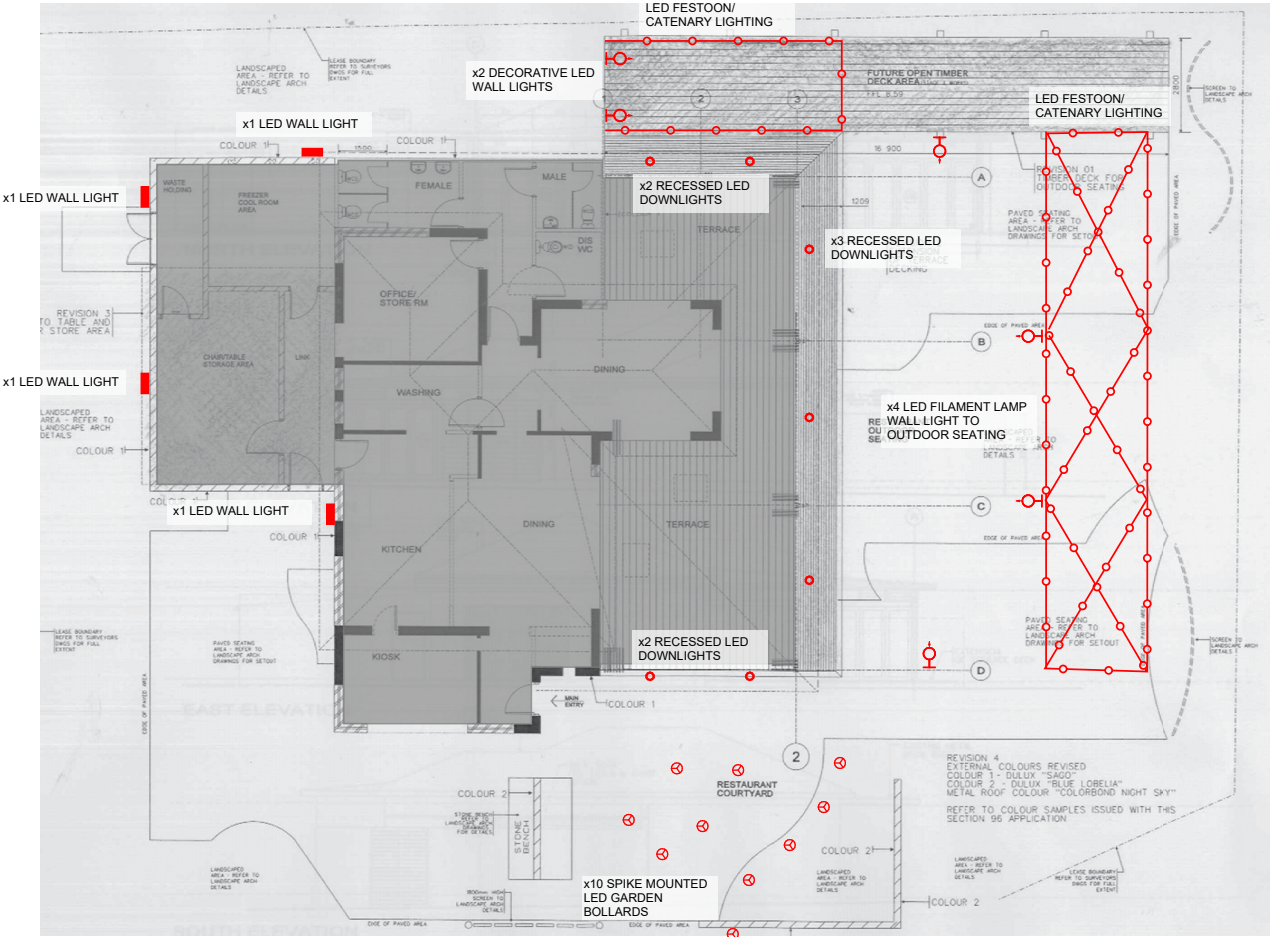
PROJECT
NORTHERN BEACHES COUNCIL
LIGHT AUDIT AND LIGHTING MANAGEMENT PLAN

DRAWING TITLE
GOVERNOR PHILLIP PARK
PROPOSED LIGHTING OVERVIEW

CREATED DRAWN DESIGN CHECKED APPROVED SCALE					
DEC20	TG	-	EBU	EBU	N/A
PROJECT No.		DRAWING No.		REVISION	
207164		L-SK02		01	

Appendix 2

Overview of lighting to Dunes Restaurant



DESIGNED UNDER QUALITY SYSTEM CERTIFIED AS COMPLYING WITH ISO 9001 BY AN ACCREDITED CERTIFICATION BODY

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FOR INFORMATION

AMENDMENTS		
REV	DESCRIPTION	DATE
01	PROPOSED LIGHTING	2021

Copenhagen
London
Sydney
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STEENSEN VARMING

PROJECT
NORTHERN BEACHES COUNCIL
LIGHT AUDIT AND LIGHTING MANAGEMENT PLAN

DRAWING TITLE
GOVERNOR PHILLIP PARK RESTAURANT AKA
DUNES PALM BEACH
PROPOSED LIGHTING

CREATED	DRAWN	DESIGN	CHECKED	APPROVED	SCALE
DEC20	TO	EBU	EBU	NA	
PROJECT No.	DRAWING No.		REVISION		
207164	L-SK07		01		

NOTE:
BACKGROUNDS USED HAVE BEEN PROVIDED BY THE COUNCIL, STEENSEN VARMING ARE NOT RESPONSIBLE FOR ANY INACCURACIES

Appendix B







Lighting inventory

Governor Phillip Park & Barrenjoey Headland Lighting Audit

April 2023

This lighting audit shows all outdoor lighting identified during the site audit completed 18 April 2023 within the proposed Urban Night Sky Place designation area at Palm Beach Headland. The Boathouse Restaurant has been split into two areas and only Area A falls within the proposed designation area. The Boathouse Restaurant is under redevelopment and therefore has no current fittings.

STREETLIGHTS												
ITEM	LOCATION	COORDINATES	STATUS	DESCRIPTION	OPTICS	OPERABLE	PURPOSE	APPLICATION	QTY	CONTROL	CONFORMS	IMAGE
1	Governor Phillip Park Access Rd	-33°58'63"034"S, 151°32'52"522"E	Current	LED Ausgrid Street Lamp - PB67103	Ausgrid Cat P Road Lighting - CAT PR5/PR6 2200K (Stock Code 186493)	Yes	Passage	Roadway	1	Photocell	✓	
2	Governor Phillip Park Access Rd	33°58'67"779"S, 151°32'49"059"E	Current	LED Ausgrid Street Lamp - PB67101	Ausgrid Cat P Road Lighting - CAT PR5/PR6 2200K (Stock Code 186493)	Yes	Passage	Roadway	1	Photocell	✓	
3	Governor Phillip Park Access Rd	-33°58'68"725"S, 151°32'56"168"E	Current	LED Ausgrid Street Lamp - PB67104	Ausgrid Cat P Road Lighting - CAT PR5/PR6 2200K (Stock Code 186493)	Yes	Passage	Roadway	1	Photocell	✓	
4	Governor Phillip Park Access Rd	-33°58'72"145"S, 151°32'58"336"E	Current	LED Ausgrid Street Lamp - PB67105	Ausgrid Cat P Road Lighting - CAT PR5/PR6 2200K (Stock Code 186493)	Yes	Passage	Roadway	1	Photocell	✓	
5	Governor Phillip Park Access Rd	-33°58'78"011"S, 151°32'56"203"E	Current	LED Ausgrid Street Lamp - PB67106	Ausgrid Cat P Road Lighting - CAT PR5/PR6 2200K (Stock Code 186493)	Yes	Passage	Roadway	1	Photocell	✓	
6	Governor Phillip Park Access Rd	-33°58'83"246"S, 151°32'54"284"E	Current	LED Ausgrid Street Lamp - PB67107	Ausgrid Cat P Road Lighting - CAT PR5/PR6 2200K (Stock Code 186493)	Yes	Passage	Roadway	1	Photocell	✓	
7	Governor Phillip Park Access Rd	-33°58'89"472"S, 151°32'52"368"E	Current	LED Ausgrid Street Lamp - PB67108	Ausgrid Cat P Road Lighting - CAT PR5/PR6 2200K (Stock Code 186493)	Yes	Passage	Roadway	1	Photocell	✓	
8	Governor Phillip Park Access Rd	-33°58'94"083"S, 151°32'50"498"E	Current	LED Ausgrid Street Lamp - PB67109	Ausgrid Cat P Road Lighting - CAT PR5/PR6 2200K (Stock Code 186493)	Yes	Passage	Roadway	1	Photocell	✓	
9	Governor Phillip Park Access Rd	-33°59'00"673"S, 151°32'44"545"E	Current	LED Ausgrid Street Lamp - PB67110	Ausgrid Cat P Road Lighting - CAT PR5/PR6 2200K (Stock Code 186493)	Yes	Passage	Roadway	1	Photocell	✓	
10	Governor Phillip Park Access Rd	-33°59'06"444"S, 151°32'44"567"E	Current	LED Ausgrid Street Lamp - PB02442	Ausgrid Cat P Road Lighting - CAT PR5/PR6 2200K (Stock Code 186493)	Yes	Passage	Roadway	1	Photocell	✓	
11	Governor Phillip Park Access Rd	-33°59'17"276"S, 151°32'39"544"E	Current	LED Ausgrid Street Lamp - PB15801	Ausgrid Cat P Road Lighting - CAT PR5/PR6 2200K (Stock Code 186493)	Yes	Passage	Roadway	1	Photocell	✓	
12	Governor Phillip Park Access Rd	-33°59'11"231"S, 151°32'41"137"E	Current	LED Ausgrid Street Lamp - PB67112	Ausgrid Cat P Road Lighting - CAT PR5/PR6 2200K (Stock Code 186493)	Yes	Passage	Roadway	1	Photocell	✓	
13	Governor Phillip Park Access Rd	-33°59'81"844"S, 151°32'28"194"E	Current	LED Ausgrid Street Lamp - PB95220	Ausgrid Cat P Road Lighting - CAT PR5/PR6 2200K (Stock Code 186493)	Yes	Passage	Roadway	1	Photocell	✓	

14	Governor Phillip Park Access Rd	-33°59'09"362"S, 151°32'34"931"E	Current	LED Ausgrid Street Lamp - PB95222	Ausgrid Cat P Road Lighting - CAT PR5/PR6 2200K (Stock Code 186493)	Yes	Passage	Roadway	1	Photocell	✓	
15	Governor Phillip Park Access Rd	-33°59'00"85"S, 151°32'39"51"E	Current	LED Ausgrid Street Lamp - PB95224	Ausgrid Cat P Road Lighting - CAT PR5/PR6 2200K (Stock Code 186493)	Yes	Passage	Roadway	1	Photocell	✓	
16	Governor Phillip Park Access Rd	-33°58'97"316"S, 151°32'43"353"E	Current	LED Ausgrid Street Lamp - PB95226	Ausgrid Cat P Road Lighting - CAT PR5/PR6 2200K (Stock Code 186493)	Yes	Passage	BBQ	1	Photocell	✓	
17	Governor Phillip Park Access Rd	-33°58'90"459"S, 151°32'43"093"E	Current	LED Ausgrid Street Lamp - PB95228	Ausgrid Cat P Road Lighting - CAT PR5/PR6 2200K (Stock Code 186493)	Yes	Passage	Roadway	1	Photocell	✓	
18	Governor Phillip Park Access Rd	-33°58'79"805"S, 151°32'45"731"E	Current	LED Ausgrid Street Lamp - PB95230	Ausgrid Cat P Road Lighting - CAT PR5/PR6 2200K (Stock Code 186493)	Yes	Passage	Roadway	1	Photocell	✓	
19	Governor Phillip Park Access Rd	-33°58'74"719"S, 151°32'45"332"E	Current	LED Ausgrid Street Lamp - PB95231	Ausgrid Cat P Road Lighting - CAT PR5/PR6 2200K (Stock Code 186493)	Yes	Passage	Roadway	1	Photocell	✓	
								Total	19			








THE BOATHOUSE AND WHARF



-33°58'73.44"S, 151°32'41.41"E




ITEM	LOCATION	STATUS/ ACTION	DESCRIPTION	OPTICS	OPERABLE	PURPOSE	APPLICATION	QTY	CONTROL	CONFORMS	IMAGE
PART A - Included within the proposed designation area											
22	Front seating area	No fittings - under redevelopment									
24	Façade	No fittings - under redevelopment									

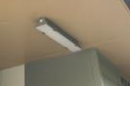
GOVERNOR PHILLIP PARK RESTAURANT AKA DUNES PALM BEACH


-33°59'15.85"S 151°32'38.62"E

ITEM	LOCATION	STATUS/ ACTION	DESCRIPTION	OPTICS	OPERABLE	PURPOSE	APPLICATION	QTY	CONTROL	CONFORMS	IMAGE
30	Landscape	Current	Black bollard spike light	LED 24V 3000K 5W 400 lumens	Yes	Decorative	Accent lighting	10	Manual Control	✓	
32	Façade	Fitting disconnected from electricity	Unused bayonette lamp holder	NA	NA	NA	NA	-	NA	✗	
33	Façade	Current	Fixed Down Wall Light	Havit LED 3,000K 12W 1080 lumens	Yes	Passage	General area lighting - access oil storage at rear of restaurant	1	Motion sensor	✓	
34	Façade	Current	Fixed Down Wall Light	Havit LED 3,000K 12W 1080 lumens	Yes	Passage	General area lighting - access storage at rear of restaurant	1	Motion sensor	✓	
35	Entry Awning	Current	Ceiling recessed downlights	Havit LED 3,000K 12W 980 lumens	Yes	Passage	General area lighting	2	Manual control	✓	
36	Outdoor Seating	Current	Decorative wall lights	diffuser LED 4.6W, 2,700K, 470 lumens	Yes	Decorative	Ambient lighting	2	Manual control	✓	
37	Outdoor Seating	Current	Decorative festoon lighting	LED 24Volt 0.5W 2,000K 40 lumens	Yes	Decorative	Ambient lighting	-	Manual control	✓	


38	Outdoor Seating	Current	Decorative wall lights	LED 2,700K 4.6W 470 lumens	Yes	Decorative	Ambient lighting	3	Manual control	✓	
39	Outdoor seating	Current (retained)	Ceiling recessed downlights	Havit LED 3,000K 12W 980 lumens	Yes	Passage	General area lighting	5	Manual control	✓	
Total								24			

SURF LIFE SAVING CLUB											
-33°35'26.0"S 151°19'28.8"E											
ITEM	LOCATION	ON	DESCRIPTION	OPTICS	OPERABLE	PURPOSE	APPLICATION	QTY	CONTROL	CONFORMS	IMAGE
41	Awnings	Current	Ceiling mounted batten	XVR Steel Linear Industrial Luminaire LED 10W 2,700K, 110lm/W 620mm length	Yes	Passage	General area lighting	12	PE Cell/ Sensor	✓	
42	Entry Awnings	Current	Round ceiling light	PHL LED Downlight 10W 2,700K 650 lumens	Yes	Passage	Access to front door	2	Sensor/ Manual Control	✓	
43	Western Outdoor Seating Area	Current	Ceiling recessed downlights	Domus D'eco 20520 13W 849 lumens 3,000K	Yes	Passage	General area lighting	17	Manual control	✓	
Total								31			

SOUTHERN AMENITIES BLOCK											
-33°35'27.1"S 151°19'28.3"E											
ITEM	LOCATION	ON	DESCRIPTION	OPTICS	OPERABLE	PURPOSE	APPLICATION	QTY	CONTROL	CONFORMS	IMAGE
45	Awnings	Current	Ceiling mounted batten	XVR Steel Linear Industrial Luminaire LED 10W 2,700K, 110lm/W 620mm length	Yes	Passage	General area lighting	8	PE Cell/ Sensor	✓	
Total								8			

NORTHERN AMENITIES BLOCK											
-33°35'11.7"S 151°19'31.2"E											
ITEM	LOCATION	COORDINATES	DESCRIPTION	OPTICS	OPERABLE	PURPOSE	APPLICATION	QTY	CONTROL	CONFORMS	IMAGE
46	Entry awning	Current	Ceiling mounted batten	XVR Steel Linear Industrial Luminaire LED 10W 2,700K, 110lm/W 620mm length	Yes	Passage	General area lighting	2	PE Cell/ Sensor	✓	
Total								2			

GOLF CLUB MAINTENANCE SHED											
-33°35'27.9"S 151°19'24.0"E											
ITEM	LOCATION	COORDINATES	DESCRIPTION	OPTICS	OPERABLE	PURPOSE	APPLICATION	QTY	CONTROL	CONFORMS	IMAGE
47	All		No fittings remaining								

BARRENJOEY HEADLAND NATIONAL PARK BUILDINGS											
ITEM	LOCATION	COORDINATES	DESCRIPTION	OPTICS	OPERABLE	PURPOSE	APPLICATION	QTY	CONTROL	CONFORMS	IMAGE
49	Lighthouse	Current	Lighthouse light	Sealite, SL-LED-216, LED, 5000K	Yes	Passage	Marine Safety Navigation	1	PE Cell	✓	
50	Lighthouse Keepers Cottage	No fittings									
51	Misc. National Park Buildings	No fittings									

							Total	1			
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							Grand Total Qty Lights	85			
							Percent Compliance	100%			

Notes:

-renew or replace existing retroreflective films on posts and barriers along the roadway and install additional ones where required.



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