Sunshine Coast COUNCIL

Attachment Folder

Item 8.2

Ordinary Meeting

Thursday, 26 March 2026

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Sunshine Coast Council

Sunshine Coast Dark Sky Reserve Lighting Management Plan 2026

Sunshine Coast COUNCIL

Edition February 2026

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Acknowledgements

Council wishes to thank all contributors and stakeholders involved in the development of this document.

Reference document

This document should be cited as follows: Sunshine Coast Dark Sky Reserve Lighting Management Plan. 2026.

Disclaimer

To the extent this document contains future plans, activities, policies and strategies, these matters are aspirational and subject to change at any time without notice.

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Traditional acknowledgement

Sunshine Coast Council acknowledges the Sunshine Coast Country, home of the Kabi Kabi peoples and the Jinibara peoples, the Traditional Custodians, whose lands and waters we all now share.

We recognise that these have always been places of cultural, spiritual, social and economic significance. The Traditional Custodians' unique values, and ancient and enduring cultures, deepen and enrich the life of our community.

We commit to working in partnership with the Traditional Custodians and the broader First Nations (Aboriginal and Torres Strait Islander) communities to support self-determination through economic and community development.

Truth telling is a significant part of our journey. We are committed to better understanding the collective histories of the Sunshine Coast and the experiences of First Nations peoples. Legacy issues resulting from colonisation are still experienced by Traditional Custodians and First Nations peoples.

We recognise our shared history and will continue to work in partnership to provide a foundation for building a shared future with the Kabi Kabi peoples and the Jinibara peoples.

We wish to pay respect to their Elders – past, present and emerging, and acknowledge the important role First Nations peoples continue to play within the Sunshine Coast community.

Together, we are all stronger.

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1.0 Introduction

1.1 Background

The Sunshine Coast is widely acknowledged as a highly desirable place to live, work and play. It has a strong reputation as a lifestyle region defined by its subtropical climate, picturesque coastline and beaches, extensive waterways and wetlands, and the hinterland mountain ranges. The natural environment and distinct landscapes are the foundations of the Sunshine Coast way of life.

Since first formed in 2008, Sunshine Coast Council (Council) has been working towards a vision of being Australia's most sustainable region. Council recognises that the region's valued natural assets underpin and enhance liveability for the community, and that living sustainably within the environment is key to achieving this corporate vision. This commitment has been reinforced through the adoption of Council's Environment and Liveability Strategy, which is based on three key pillars as shown in Figure 1.

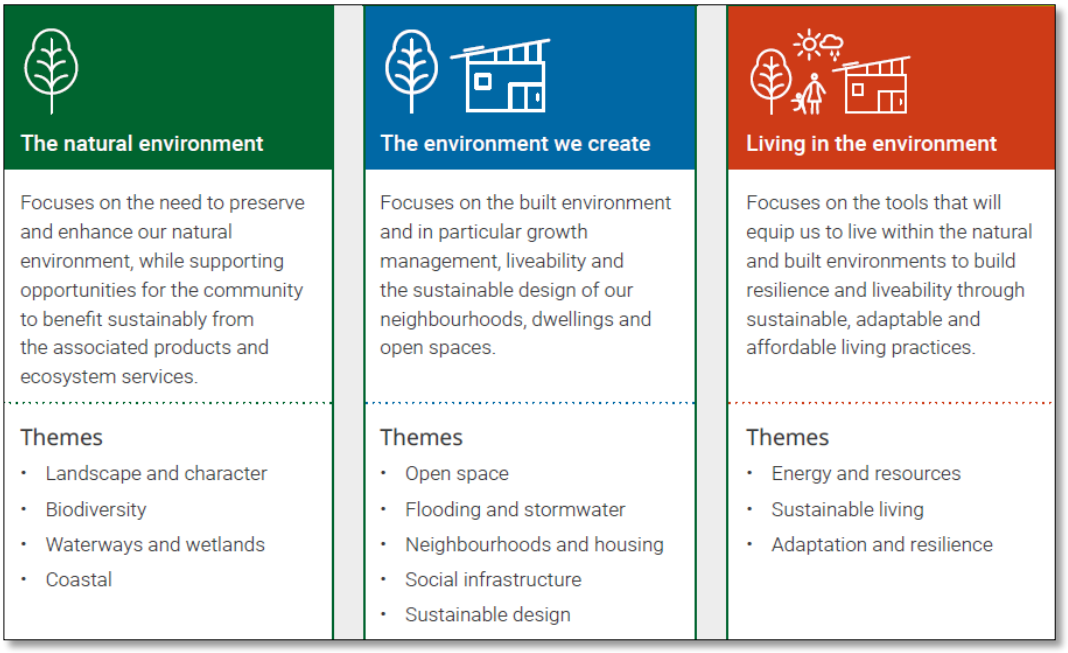


Figure 1: Sunshine Coast Environment and Liveability Strategy sections and themes.

To complement our region's recognition in 2022 by UNESCO as an international site of excellence – the Sunshine Coast Biosphere, Council has been considering potential mechanisms to recognise the values associated with our night skies.

Our night sky is an important aspect of our valued Sunshine Coast landscape and character and the recognition, protection and celebration of dark skies forms part of our strategic directions to preserve our distinctive and diverse landscapes. A dark sky is the natural occurrence of the sky at night free from human-caused light pollution.

Light pollution is the excessive use of artificial light. The amount of light pollution on the Sunshine Coast could be expected to increase as our population increases across the next 20 years and beyond. Responding to such a challenge and planning for the management of our night skies (by reducing light pollution) can deliver many benefits to the community and our natural environment including health and wellbeing, emissions reduction and wildlife sensitive habitat outcomes.

Aligning with this philosophy, sustainable lighting practices have been at the heart of Council's public lighting framework since 2016. The adoption of the Urban Lighting Master Plan (ULMP) saw a shift away from traditional approaches to public lighting, with increased focus on the environmental implications of light at night.

Formalised accreditation of an International Dark Sky Reserve on the Sunshine Coast provides further long-term protection of the region's natural assets. Recognition as an International Dark Sky Reserve has a number of benefits to the Sunshine Coast region including:

- Reducing light pollution.
- Supporting our overall aspirations for a sustainable Sunshine Coast and enhancing our national and international recognition.
- Helping to preserve the hinterland landscape and character of the reserve area through protection of its dark sky environment.
- Supporting the health and wellbeing of Sunshine Coast residents and visitors.
- Promoting wildlife sensitive environments.
- Recognising community efforts being made to protect the night skies of the designated area.
- Enhancing both local and regional public education on the importance of dark sky environments and how community can contribute.
- Astronomical science opportunities.
- Attracting visitors to the area and bringing economic benefits to surrounding communities associated with astrotourism.

1.2 Purpose

This Lighting Management Plan (LMP) has been prepared to provide strategic direction, and shape the selection, placement, installation and operation of outdoor lighting for the Sunshine Coast Dark Sky Reserve. The LMP has been developed in accordance with DarkSky International (DSI) guidelines for a Dark Sky Reserve designation to align with the objectives of the DSI International Dark Sky Places Program.

The implementation of the LMP is to be undertaken in conjunction with associated Council policies and planning tools for the following applications:

- **Council controlled outdoor lighting**

  Provide direction for provisioning of new, and upgrade of existing Council-controlled outdoor lighting installations in public open spaces and other public outdoor lighting where appropriate within the Sunshine Coast Dark Sky Reserve.

- **Outdoor lighting controlled by other key stakeholders**

  Establish a common set of principles to guide light provisioning by other key stakeholders within the Sunshine Coast Dark Sky Reserve including Energex, Department of Transport and Mains Roads (TMR), Queensland Rail (QR), Queensland Parks and Wildlife Service and Partnerships (QPWS&P) and the community.

- **New developments**

  Provide direction for the application of good practice lighting principles for outdoor lighting associated with new developments within the Sunshine Coast Dark Sky Reserve, to inform the Sunshine Coast Planning Scheme.

- **Community awareness**

  Raise community awareness of the Sunshine Coast Dark Sky Reserve and provide education as to how the community can support dark sky aspirations through the application of good practice outdoor lighting principles.

The principles and control measures established under the LMP are intended to shape the use of artificial light at night (ALAN) by prescribing when, where and how much is needed for a specific task.

While the Lighting Management Plan is specifically for the Dark Sky Reserve, it is encouraged that good practice outdoor lighting principles be adopted more broadly across the Sunshine Coast region to help reduce light pollution both within and beyond the Dark Sky Reserve.

Where deemed to be required, the LMP supports planning and decision making to ensure artificial lighting prioritises community safety while minimising the impact of such light on protected outdoor spaces, viewsheds and wildlife.

1.3 Policy and planning context

The directions outlined in this LMP have been informed and guided by applicable international, Commonwealth and state legislation, policies, standards and guidelines. The LMP has also been prepared in line with existing Council documents, policies, plans, strategies, and manuals. These key planning documents and policies are highlighted below in Figure 2 and show the relationship between each.

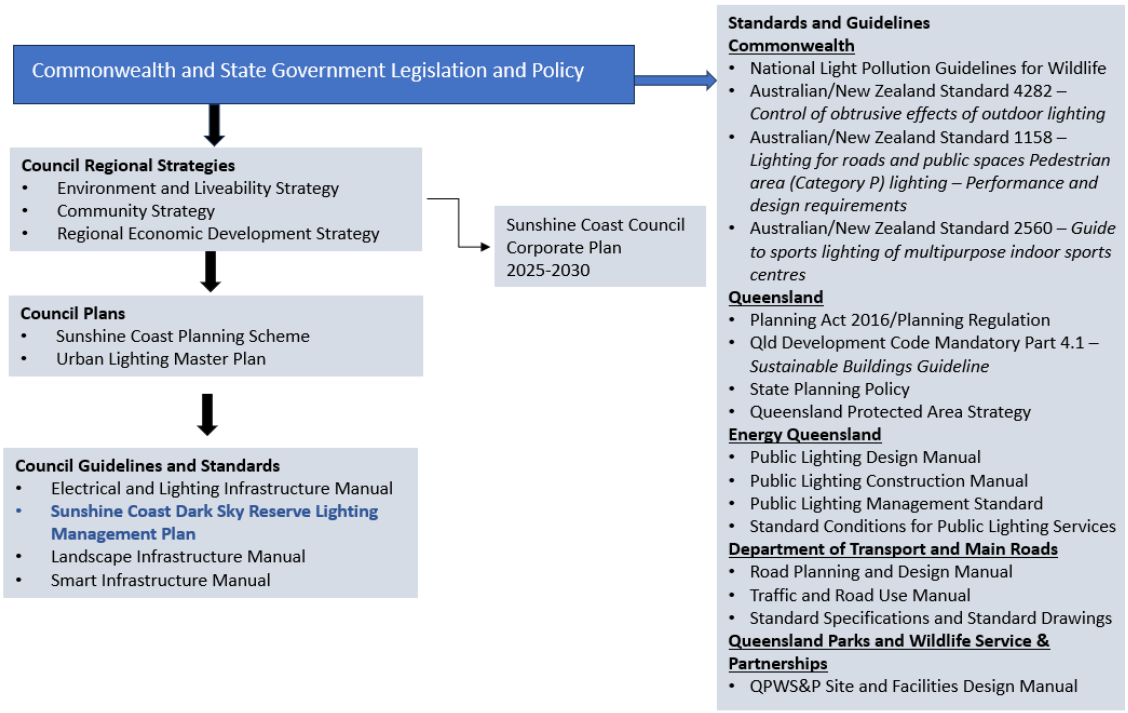


Figure 2: Planning context – lighting management.

1.4 Geographic context

The Sunshine Coast Dark Sky Reserve is located in the western region of the local government area (LGA) in the vicinity of Obi Obi, Maleny, Conondale, Mapleton and Kenilworth (Figure 3). The area is approximately 873km^2 in size and is primarily bounded by the Mary River Catchment within the Sunshine Coast Local Government Area.

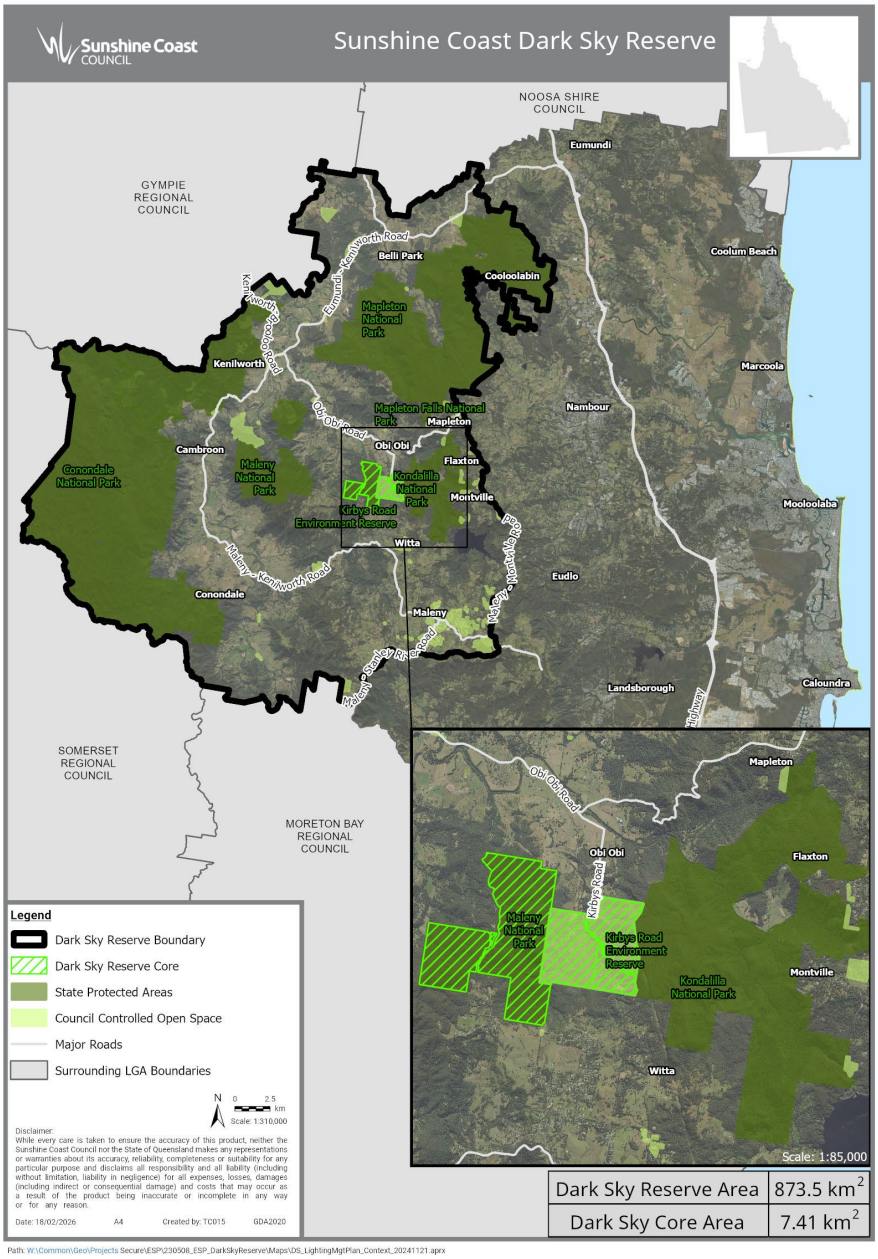


Figure 3: Sunshine Coast Dark Sky Reserve area.

This Sunshine Coast Dark Sky Reserve is characterised by the following features:

- Approximately 40% of the area is government land, with the majority being State Protected Areas.
- Comprises a population of approximately 13,000 residents which includes the townships of (but not limited to) Maleny, Mapleton, Montville, Witta, Flaxton and Conondale.
- Includes two functioning observatories:
  - The Mapleton Observatory, located at the Mapleton School and has been operating since 2002.
  - Maleny Observatory, designated as an observatory in 2021 by the Brisbane Astronomical Society.
- Includes active community groups such as the local chapter of the Brisbane Astronomical Society.

The Sunshine Coast Dark Sky Reserve consists of two key areas as defined by Dark Sky International (DSI) program guidelines. These are summarised in Table 1.

Table 1: Geographic components of the Sunshine Coast Dark Sky Reserve.

Area	Description	
CORE	Kirbys Road Environment Reserve and Maleny National Park (Lot 728 NPW787) is the core of the Dark Sky Reserve due to: ● Pre-existing dark sky qualities ● Protected in the conservation estate ● Surrounded by National Parks and rural areas ● Management and planning aligns to dark sky places program objectives i.e. sustainable nature-based activities.	
	Land area:	Approximately 7.14km^2
	Land manager:	Sunshine Coast Regional Council Queensland Parks and Wildlife Service and Partnerships
PERIPHERAL	The peripheral zone surrounds the core. The area follows the Mary River Catchment boundary within the western portion of the Sunshine Coast local government area with the addition of Mapleton National Park and Mapleton Forest Reserves in their entirety. The Mary River is one of the most environmentally and economically diverse catchments in Queensland (Sunshine Coast Biodiversity Report, 2024). Its headwaters are in the Conondale and Blackall Ranges (within the Sunshine Coast local government area) with flows heading north for hundreds of kilometres, influencing the coastal environment of Hervey Bay and ultimately the Coral Sea and Great Barrier Reef. Large areas of the catchment are protected natural areas and support several iconic threatened wildlife species. Within the Sunshine Coast, native vegetation covers 68% of the catchment area and contributes to approximately 65% of the local government area's native vegetation.	

Area	Description	
	The peripheral zone encompasses a number of State Protected Areas including the Conondale, Mapleton, Maleny and Kondalilla National Parks. The area comprises small townships including (but not limited to) Maleny, Mapleton, Montville and Conondale.	
	Land area:	Approximately 870km^2
	Land manager:	Multiple interests
	Key partners:	Energy Queensland (Energex)
		Queensland Department of Transport and Main Roads
		Queensland Parks and Wildlife Service and Partnerships
		Sunshine Coast community

1.5 Application of the lighting management plan

1.5.1 Document structure and interpretation

The LMP is intended to provide both technical and non-technical support to guide the installation or upgrade of a variety of different possible outdoor lighting types within the Sunshine Coast Dark Sky Reserve. The LMP has been developed in the following sections:

1. **Purpose:** Establishes the strategic context of the Sunshine Coast Dark Sky Reserve and provides an overview of how the LMP is intended to be used to help protect the integrity of the night sky environment. This section also includes a summary of mandatory versus encouraged application of the LMP. Where an application is considered encouraged, the LMP is intended to be used for education purposes to encourage community participants to follow dark sky friendly practices wherever possible.
2. **General requirements**: Highlights the fundamental principles that must be considered for all artificial lighting installations within the Sunshine Coast Dark Sky Reserve in order to fulfil the objectives of the LMP.
3. **Lighting performance criteria**: Provides specific guidance to be applied where necessary to various lighting installations in order to meet the fundamental principles established in Section 2.
4. **Operational requirements:** Outlines additional operational control measures to be applied where necessary to the Sunshine Coast Dark Sky Reserve.
5. **Glossary of terms**: Provides a summary of key terms used throughout the LMP.

1.5.2 Lighting typology

Within the Sunshine Coast Dark Sky Reserve, there is expected to be a number of different outdoor lighting types, dependent on the location and function of the outdoor space. These lighting installations may be applicable to public areas as well as privately owned and operated businesses and residences. Lighting typologies in the context of their application to Sunshine Coast Dark Sky Reserve areas are summarised in Table 2.

Table 2: Expected lighting typology and relevance to Sunshine Coast Dark Sky Reserve areas.

Lighting Type	CORE	PERIPHERAL
Street lighting (including pedestrian crossings)	✗	✓
Pathway lighting	✓	✓
Public activity area lighting	✗	✓
Carpark lighting	✓	✓
Sports field lighting	✗	✓
Building mounted security / flood lighting	✓	✓
Decorative / feature lighting	✗	✓

1.6 Partnering for dark skies

Achieving dark skies in our Dark Sky Reserve requires strong partnerships and collaboration to ensure the successful delivery of the LMP. Sunshine Coast Regional Council (Council) is the local government authority which governs the Sunshine Coast local government area and the location of the Dark Sky Reserve. Council manages and maintains a number of public lighting assets across the region including street lighting, public open space lighting, sport field lighting, pathway lighting etc.

There are a number of other stakeholders, such as Queensland Government Departments, and community (residents, businesses etc), who install, manage and maintain public and private outdoor lighting in the Sunshine Coast Dark Sky Reserve area. These include:

- **Energy Queensland – Energex**

  Energy Queensland is a government-owned electricity company who service customers and communities through their distribution businesses such as Energex. Energex provides energy services to Queenslanders and manages and owns many of the region's street lights.

- **Department of Transport and Main Roads**

  The Department of Transport and Main Roads (DTMR) plan, manage and deliver Queensland transport environment including road, rails, air and sea, DTMR own lighting assets on controlled roads and bikeways.

- **Queensland Parks and Wildlife Service and Partnerships**

  Queensland Parks and Wildlife Services and Partnerships (QPWS&P) is a division of the Department of Environment Tourism, Science and Innovation (DETSI) in the Queensland Government. QPWS&P manage and maintain State Protected Areas within Queensland including National Parks, State Forests etc. A large portion of the Dark Sky Reserve area is State Protected Areas and some areas include carparking, picnic areas, camping areas, amenities etc. QPWS&P are committed to implementing the LMP within its parks and forests across the Dark

Sky Reserve area and are land manager of Maleny National Park (Lot 728 NPW787) located within the core.

- **Community**

  Sunshine Coast community is a key partner of the LMP. There is a population of approximately 13,000 residents within the area including townships of (but not limited to) Maleny, Mapleton, Witta, Flaxton and Conondale.

In Australia, the Commonwealth Government has the highest authority and sets broad national laws and standards. Below that, the Queensland State Government has more power than local councils and controls state legislation, policies, and standards. Energy Queensland Ltd is owned by the Queensland State Government and is the parent company of Energex, which operates the electricity distribution network in South East Queensland, including the Sunshine Coast. Councils and state departments work with Energex to install, maintain, and upgrade lights in line with Commonwealth and State requirements.

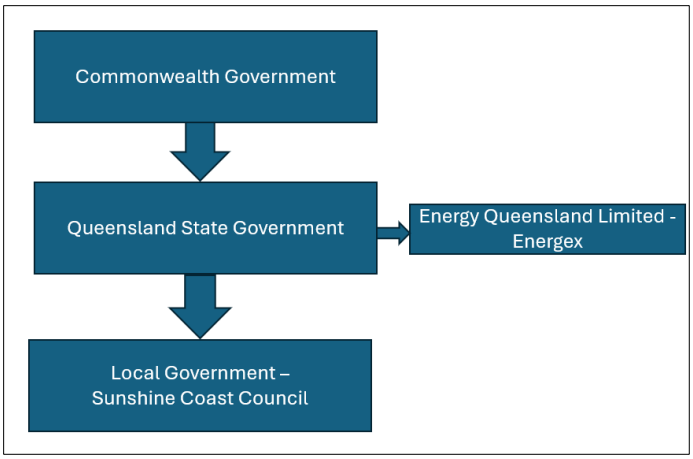


Figure 4: Australian context of authority

As outlined on page 6 of the Dark Sky Reserve Guidelines, lighting required by law under the authority of any entity having higher legal jurisdiction over either the core or peripheral zones may be formally exempted from the requirements of this section. From a Sunshine Coast context, if Commonwealth Government or Queensland Government requires specific lighting, Council's own standards are exempt to comply with that higher obligation.

The implementation of the Dark Sky Reserve aims to strengthen existing partnerships and foster new collaborations, supporting the sustained collective effort required to reduce light pollution and to recognise, protect, and celebrate the region's dark skies.

1.7 Lighting management plan application

The LMP is intended to be applied in conjunction with other Council guidelines and specifications, notably the Urban Lighting Master Plan (ULMP) and Electrical and Lighting Infrastructure Manual (ELIM). These two associated guidelines apply to the whole of the Sunshine Coast Local Government Area, while the LMP has been developed for application specifically within the Sunshine Coast Dark Sky Reserve. The lighting requirements established in the LMP have been

developed to complement or exceed whole-of-region expectations as clarified in the ULMP and ELIM.

The LMP is intended to be applied through the following mechanisms:

- **Mandatory application:**

  Mandatory application relates to how Council can lead and improve new or upgraded outdoor lighting in the Reserve through management of its own network and planning provisions.

  - **Council owned and operated outdoor lighting**: All new or upgraded outdoor lighting provided within the Sunshine Coast Dark Sky Reserve that is owned and operated by Council must comply with the LMP. This generally includes street and roadway lighting, lighting in parks and gardens spaces (including public pathways), Council controlled sports lighting, lighting associated with Council buildings and facilities, etc.
  - **New development**: The requirements of the LMP will inform new outdoor lighting provisions in the Sunshine Coast Planning Scheme which would apply to all new assessable development as directed through development conditions, as well as some new accepted development. Existing development would not be affected.

- **Encouraged application:**
  - **Existing private development**: While the application of provisions of the LMP are not mandatory to existing lawful private development, principles established in the LMP (refer to Section 2.1) are strongly encouraged for all new or upgraded lighting installations.
  - **Energex unmetered public lighting**: Lighting infrastructure provisioned under Rate 1, Rate 2 and Rate 4 tariff arrangements are governed by Energex standard requirements and equipment selections. While the requirements of the LMP are not directly enforceable to these installations, Council's ELIM recognises the collaborative approach with Energex and potential opportunities to further contribute to dark skies.
  - **Other public body (non-Council) unmetered public lighting**: Other public bodies such as the Department of Transport and Main Roads or Queensland Rail may control lighting installations under a Rate 3* tariff arrangement in spaces such as state-controlled roads or rail precincts. Lighting within these areas is governed by the standards and requirements of the relevant public body and are not enforceable under this LMP. It is strongly encouraged that equipment selections and installation factors take guidance from this LMP.

The LMP does not apply to the following installation types:

- Lighting installations required temporarily for the safe performance of nighttime tasks (such as construction works). Refer to Section 4.2 for additional considerations.
- Outdoor lighting controlled with motion-activated switches limiting the duration of illumination to less than five (5) minutes after activation.

** Rate 3 - Unmetered public lighting supplied, installed, owned and maintained by the public body.*

2.0 General requirements

2.1 Fundamental principles

The technical parameters established under this LMP are derived to satisfy overarching responsible lighting principles established by DSI. These principles are summarised in Table 3.

Table 3: Responsible lighting principles (Source: *DarkSky International*).

Principle	Description and Application
Useful *All light should have a clear purpose*	Outdoor lighting should only be provided to fulfill a defined purpose, enhancing the safety, usability or amenity of a night-time space. Prior to installation or replacement of any lighting within the Sunshine Coast Dark Sky Reserve, consideration must be given to: ● Whether the light is required and what purpose it will fulfill. ● How the light may impact the surrounding area including neighbouring properties, wildlife and the environment. ● Whether there are alternatives to permanently installed lighting that may fulfill the same purpose (such as reflective paints or self-luminous markers).
Targeted *Light should be directed only to where it's needed*	Where fixed lighting is deemed to be required, it must be directed in such a way as to fulfill its intended purpose without causing unnecessary spill or other obtrusive effects to surrounding areas. The following strategies should be utilised to ensure any lighting installed within the Sunshine Coast Dark Sky Reserve is appropriately targeted to fulfill its intended function: ● Application of appropriate standards such as *AS/NZS 4282 - Control of the obtrusive effects of outdoor lighting*. ● Undertaking design activities by qualified lighting professionals/RPEQ-Electrical engineers. ● Use of appropriate luminaire distribution profiles. ● Use of shielding (factory-fitted to the luminaire, or external built elements). **Refer to Sections 3.2 and 3.3**
Low Light Levels *Illumination should be no higher than necessary*	In conjunction with control strategies, when planning for a lighting installation within the Sunshine Coast Dark Sky Reserve, ensure operational factors are carefully considered and well understood to ensure lighting levels adopted are appropriate for the task and any associated risk factors. Within the Sunshine Coast Dark Sky Reserve, the lowest light levels are recommended. Consideration should also be given to surface conditions, as some surfaces may reflect more light into the night sky than was intended. **Refer to Section 3.4**

Principle	Description and Application
Controlled *Light should be used only when it is useful*	Lighting installations must utilise controls such as timers or motion sensors to ensure that light is available when it is needed, dimmed when possible, and switched off when not needed. **Refer to Section 3.5**
Colour *Use warmer-colour lights where possible*	Lighting installations within the Sunshine Coast Dark Sky Reserve must limit the amount of shorter wavelength light to the least amount needed. "Short wavelength" is generally regarded as blue and violet light whose wavelengths are below 500 nanometres (nm). **Refer to Section 3.6**

2.2 Design advice

While the LMP is intended to provide standalone guidance for general application to all types of outdoor lighting installations within the Sunshine Coast Dark Sky Reserve, it is recommended that design services or advice be sought when provisioning or upgrading outdoor lighting. Design and documentation services are required for all Council owned / operated lighting installations and as required through planning scheme provisions (refer to Council's ELIM standard for further guidance). Minimum qualifications for design advice are typically defined as:

- RPEQ Electrical Engineer, or
- Member of Illuminating Engineering Society (MIES).

2.3 Obtrusive lighting compliance considerations

The LMP is intended to work in conjunction with broader compliance requirements and recommendations outlined in AS/NZS 4282. AS/NZS 4282 outlines the process for assessment of the impacts of obtrusive effects of outdoor lighting. Compliance with AS/NZS 4282 is mandatory for all Council-controlled public outdoor lighting installations as established in Council's ELIM standard. Compliance for private installations assessable under the Planning Scheme will be mandated through development conditions (to suit the nature of the development). Compliance is encouraged for all private lighting installations located within the Sunshine Coast Dark Sky Reserve whether or not the planning scheme applies.

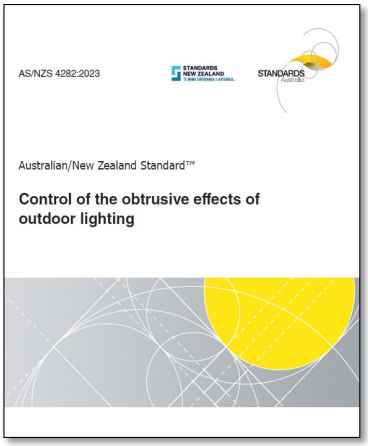
The following points provide guidance for the application of AS/NZS 4282 within the Sunshine Coast Dark Sky Reserve:

- **Environmental zones:** With reference to AS/NZS 4282 Table 3.1, the following environmental zones should be applied within the Sunshine Coast Dark Sky Reserve:
  - Sunshine Coast Dark Sky Reserve core: Zone A0 – Intrinsically Dark
  - Town centres within Sunshine Coast Dark Sky Reserve peripheral: Zone A3 – Medium district brightness
  - Suburban areas within Sunshine Coast Dark Sky Reserve peripheral: Zone A2 – Low district brightness

  - All other areas within Sunshine Coast Dark Sky Reserve peripheral: Zone A1 - Dark

- **Public lighting zones**: Selected in accordance with AS/NZS 4282 Table 4.1 and Council's ELIM standard.
- **Curfew:** Unless otherwise established through formalised development conditions, the curfew within the Sunshine Coast Dark Sky Reserve should be interpreted as between the hours of 11:00PM and 6:00AM.

AS/NZS 4282 assessment results and certification must be provided as part of design submissions. This must include a summary of relevant assessment parameters utilised.



3.0 Lighting performance criteria

3.1 General

The following subsections contain specific guidance and performance criteria that should be achieved for all lighting installations located within the Sunshine Coast Dark Sky Reserve as identified under 'Mandatory application'. As introduced in Section 2.0, prior to installation of lighting elements consideration must be given to justifying the overarching need for lighting in the first instance. The guidance contained within the following subsections assumes that this need has been justified and the required extent of lighting has been confirmed.

Note that whilst this guidance applies across both core and peripheral zones, Core requirements may be more stringent than that required in the peripheral. This will be quantified where applicable.

3.2 Shielding

Shielding of light sources is a key mechanism to protect the integrity of the night sky environment. Shielding helps to fulfill two of the fundamental principles of good practice lighting introduced in Section 2.2; ensuring lighting *targeted* towards a specific area and is therefore *useful* in fulfilling its intended purpose.

Shielding within the Sunshine Coast Dark Sky Reserve is considered in two layers:

- All outdoor lighting fixtures emitting greater than 500 initial lumens must be fully shielded.
- Shielding of incidental light emissions from indoor spaces: To the greatest possible extent, light emissions from indoor spaces into the outdoor environment must be limited through consideration of the following:
    - The use of appropriate building materials, reducing transparency and translucency where possible.
    - The use of window coverings such as curtains, blinds or shutters. This should extend to considerations for minimising artificial light transmission through skylights.
    - The installation of physical barriers such as walls or screens.
    - Appropriate control strategies such as timers or occupancy sensors.
    - Other measures as deemed appropriate.

Fully shielded outdoor luminaires permit zero upward waste light (or light beyond the 90^{o} plane tangential to the light source) as highlighted by the reference image in Figure 5.

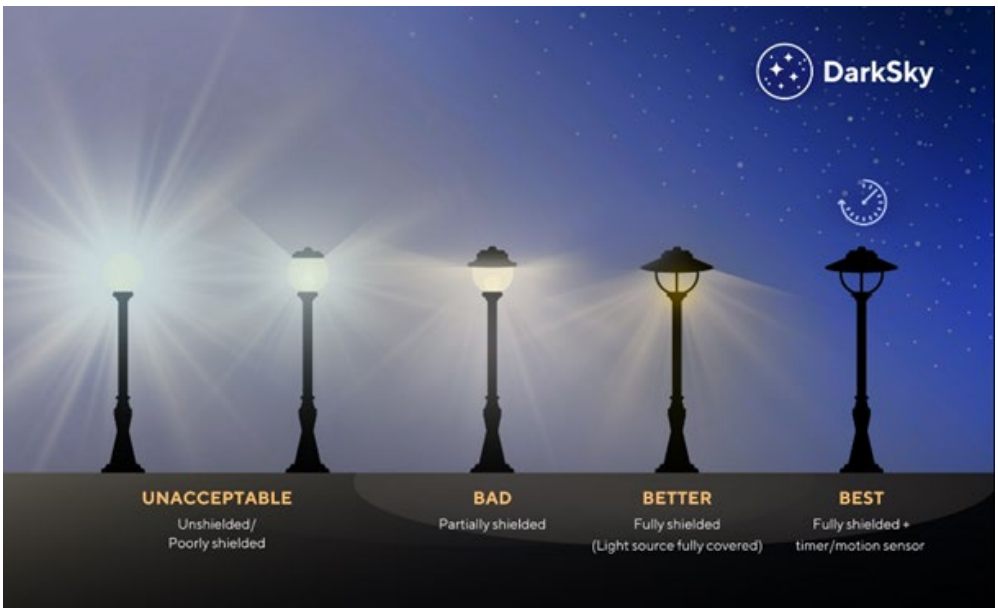


Figure 5: Shielding concepts – reference images (Source: DarkSky International)

Shielding requirements are typically satisfied through the selection of appropriate luminaires that have been manufactured to prevent upward waste light. Examples of these are shown in Figure 6.

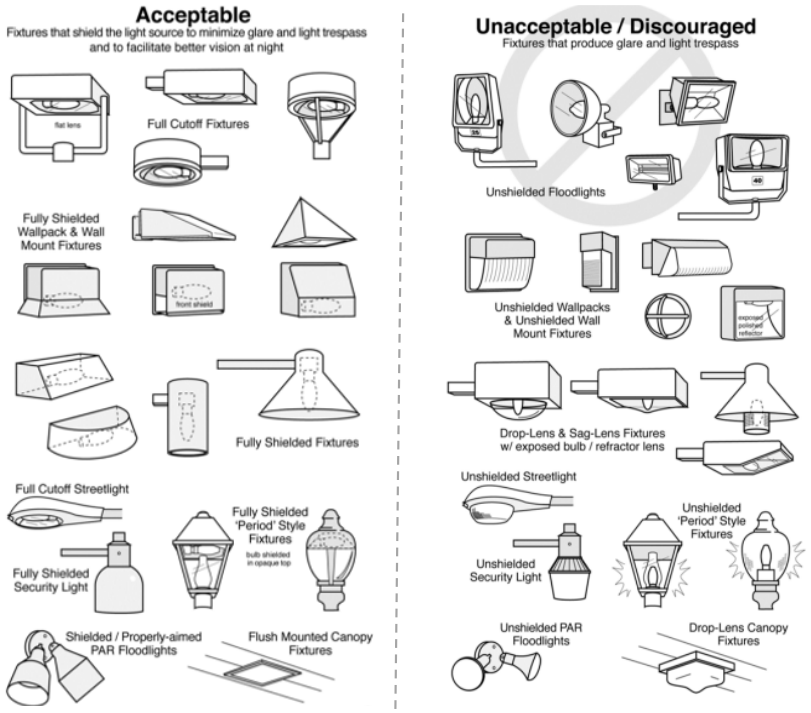


Figure 6: Acceptable/Unacceptable lighting fixtures in relation to glare and light trespass.
Source: DarkSky International.

To simplify the selection process for luminaires to be installed within the Sunshine Coast Dark Sky Reserve, it is strongly encouraged that selections be made from either one of the following approved product listings:

- DarkSky International – Dark Sky Approved product program. https://darksky.org/what-we-do/darksky-approved/products-companies/
- Australasian Dark Sky Association (ADSA) – Approved Light Fitting program https://www.australasiandarkskyalliance.org/certified-luminaires

Where luminaires to be installed within the Sunshine Coast Dark Sky Reserve are not chosen from these certification programs, there should be sufficient technical data to demonstrate compliance with the requirements of this LMP.

In conjunction with shielding properties of the luminaire itself, consideration may also be given to the fitting of shielding elements or installation of the luminaire in a location that provides the same limitations for light emissions above 90°. This may include one or more of the following strategies:

- Internal shields or baffles, including clip on components that may be provided as an option or accessory from the luminaire manufacturer to assist with minimisation of obtrusive light.
- External shields custom fitted to the luminaire body (note – this may impact on product warranties and should be confirmed with the luminaire supplier prior to fitment).
- Recessed installation in lieu of wall-mounted lighting.
- The use of vertical screening elements or the like to remove upward waste light components.

3.3 Light distribution

Distribution and directionality of light is an important factor to consider in conjunction with shielding. Appropriate consideration of light distribution ensures that lighting is *targeted* to fulfill its intended purpose whilst minimising spill light into surrounding areas (as highlighted by Figure 7).

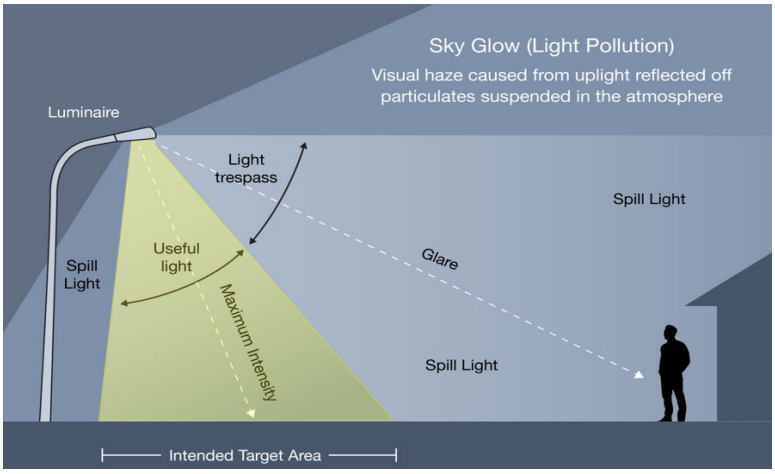


Figure 7: Targeted light distribution. Adapted from: Evluma: https://evluma.com/dark-sky-friendly-lighting/

Similar to shielding concepts outlined in Section 3.3, targeted distributions can typically be achieved through careful selection of luminaire products with distribution profiles to suit the required extent of illumination.

Targeted distribution can also be achieved through aiming of adjustable luminaires. However great care must be taken if utilising adjustable luminaires to ensure that:

- Upward waste light requirements are not compromised.
- Aiming does not create issues with direct glare.

3.4 Lighting levels

In order to protect the integrity of the night sky environment and fulfill the overarching requirements of classification as a Sunshine Coast Dark Sky Reserve, lighting levels within the Sunshine Coast Dark Sky Reserve must be carefully considered. "Appropriate" illuminance within the Sunshine Coast Dark Sky Reserve would be defined as the minimum illuminance required to fulfill the intended lighting purpose, taking into consideration the relevant operational and risk profile of the area to be illuminated.

The guidance presented in Table 4 should be adopted to suit the nature of the proposed lighting installation, where relevant in the core or peripheral zone.

Table 4: Guidance for selection of appropriate lighting levels.

Installation Type	Lighting Level Guidance
Street / roadway lighting	Standard: To AS/NZS 1158.1.1 (Category V) or AS/NZS 1158.3.1 (Category PR) Street lighting levels should comply with AS/NZS 1158 based on the sub-category of the roadway (as nominated by the appropriate Road Controlling Authority) to suit operational characteristics. However, consideration must be given to the following: ● Selection of the lowest possible lighting sub-category that meets the minimum operational requirements of the roadway. ● Options for dual classification of roadways, with control strategies to switch/dim to lower levels during low usage times. Refer to Section 3.6 for additional information regarding lighting control options. ● The use of luminaires with the lowest possible output that meet the compliance requirements of the standard.

Installation Type	Lighting Level Guidance
Pedestrian crossing lighting	Standard: To AS/NZS 1158.4 (Category PX) While pedestrian crossing lighting categories should be chosen in accordance with the guidance in AS/NZS 1158.4, consideration should be given to limiting sub-category classification to PX2 wherever possible. Assessment should take into account broader road safety risk mitigation factors such as: ● Raised crossings to limit vehicle speeds. ● Reflective line markings or other visual indicators to enhance crossing visibility. ● Limited approach lighting to enhance awareness and visibility.
Pathway lighting	Standard: To AS/NZS 1158.3.1 (Category PP) Pathway lighting levels should comply with AS/NZS 1158.3.1 based on the sub-category of the pathway (as nominated by the appropriate Controlling Authority) to suit operational characteristics. However, consideration must be given to the following: ● Selection of the lowest possible lighting sub-category that meets the minimum operational requirements of the pathway. ● Options for dual classification of pathways, with control strategies to switch/dim to lower levels during low usage times. Refer to Section 3.6 for additional information regarding lighting control options. ● The use of luminaires with the lowest possible output and restrictive glare controls at specific angles that meet the compliance requirements of the standard. ● Relaxation of AS/NZS 1158.3.1 compliance requirements such as vertical illuminance and/or surround zone illuminance to suit the risk assessed operational profile of the installation and maintain lower lighting levels with less spill light.
Public activity area lighting	Standard: To AS/NZS 1158.3.1 (Category PA) Lighting of public activity areas is not recommended within the Sunshine Coast Dark Sky Reserve. Where lighting is being considered for a public activity area, it is recommended that risk assessment be undertaken to determine the application and extent of lighting required to suit intended operational and/or safety considerations. If absolutely required, consideration should be given to relaxation of vertical illuminance requirements to minimise overall lighting levels within the area.

Installation Type	Lighting Level Guidance
Carpark lighting	Standard: To AS/NZS 1158.3.1 (Category PC) Carpark lighting levels should comply with AS/NZS 1158.3.1 based on the sub-category of the carpark. Sub-categories should be adopted to suit the operational characteristics of the carpark. However, consideration must be given to the following: ● Selection of the lowest possible lighting sub-category that meets the minimum operational requirements of the carpark. ● Options for dual classification of carparks, with control strategies to switch/dim to lower levels during low usage times. Refer to Section 3.6 for additional information regarding lighting control options. ● The use of luminaires with the lowest possible output that meet the compliance requirements of the standard. ● Relaxation of AS/NZS 1158.3.1 compliance requirements such as vertical illuminance and reduction or omission of higher compliance levels for disability parking spaces and pedestrian walkways (where justified).
Sports field lighting	Standard: To AS 2560 and relevant sporting body guidelines Lighting levels for sports fields should be considered based on the anticipated level of play as outlined in AS 2560.2 (including any relevant sporting body requirements). In addition to standard guidelines, all sports lighting installations within the Sunshine Coast Dark Sky Reserve should include the following considerations with regards to lighting levels: ● The installation should include control mechanisms to facilitate dimming and/or switching of lighting elements to achieve lower levels to suit the on-site operational intent. Refer to Section 3.6 for additional information regarding lighting control options. ● The average illuminance on the field of play should be no more than 10% above the average target illuminance levels defined by AS 2560.2 or the sporting body. ● No High Intensity Discharge (HID) luminaires are to be utilised. All sports lighting to be Solid-State Lighting (SSL) installed with zero-degree tilt (or as close as practicable).
Building mounted lighting	Building mounted lighting could be installed for a number of reasons and (where deemed required) must take into account the following considerations: ● Operational/task lighting: Lighting levels adopted should reflect the nature of the required task and be located directly over the area of operation. ● Security lighting: ensure security lighting is considered in conjunction with other security measures (that may facilitate a reduction in lighting levels) based on a formalised security risk assessment. Additional guidance is provided in Section 3.7 with regards to illuminated signage and façade lighting.

Installation Type	Lighting Level Guidance
Decorative / feature lighting	Where deemed to be required, decorative lighting elements should be used sparingly, with low light levels adopted to compliment surrounding features. Lighting intensity should provide suitable visibility only from the intended viewing angle and distance. The use of uplighting is discouraged. Colour temperature of decorative lighting elements should be 3000K or lower. RGBW (colour changing) lighting should minimise the use of the blue spectrum.

3.5 Lighting controls

Lighting control strategies will vary depending on the nature of the lighting installation. All lighting installed within the Sunshine Coast Dark Sky Reserve must utilise an appropriate control strategy to ensure lighting is used only when required and is not inadvertently left on overnight when not needed to fulfill its purpose.

The guidance presented in Table 5 should be adopted to suit the nature of the proposed lighting installation, where relevant in the core or peripheral zone.

Table 5: Guidance for selection of appropriate lighting controls.

Installation Type	Lighting Control Guidance
Street / roadway lighting	**Council controlled:** Switching and dimming control via Council Central Management System. Refer to Council's ELIM standards for specific requirements.
Pedestrian crossing lighting	**Council controlled:** Switching and dimming control via Council Central Management System. Refer to Council's ELIM standards for specific requirements.
Pathway lighting	**Council controlled:** Switching and dimming control via Council Central Management System. Refer to Council's ELIM standards for specific requirements. **Private installation:** ● Recommended: PE cell and presence detection to facilitate occupancy-based switching and/or dimming modes when in use. ● Minimum required: PE cell and time clock to facilitate scheduled switching.
Public activity area lighting	**Council controlled:** Switching and dimming control via Council Central Management System or equivalent communication protocol. Refer to Council's ELIM standards for specific requirements.

Installation Type	Lighting Control Guidance
Carpark lighting	**Council controlled:** Switching and dimming control via Council CMS. Refer to Council's ELIM standards for specific requirements. **Private installation:** ● Recommended: PE cell and presence detection to facilitate occupancy-based switching and/or dimming modes. ● Minimum required: PE cell and time clock to facilitate scheduled switching.
Sports field lighting	Sports field lighting controls must comply with the following requirements (as outlined in *DSI Outdoor Sports Lighting Guidelines*): 1. Automatic Controls: Automatic control system with remote control capability via smartphone apps or direct remote communication (eg. SMS messaging) is required to enforce shut-off at the pre-defined curfew time. 2. Manual Controls: The automatic control system may include onsite manual and/or remote-control capability to allow for the lights to be turned on or off at will (between dusk and curfew) to ensure that only active sports fields are lit. Manual controls should be accessible to authorized personnel only. 3. Dimming Controls: The control system should include automatic and manual dimming capability to implement uniform and variable illumination levels to adapt to different on-field applications (such as level of play to AS 2560). Dimming for the different uses should be programmed as presets for each of the uses. 4. Separate Control Zones: Lighting controls are required to separate fields of play into different zones to ensure only fields / playing areas in operation are utilised. Field lighting should be controlled separately from other site lighting elements such as carparks, pathways etc.
Building mounted lighting	Recommended: PE cell and presence detection to facilitate occupancy-based switching and/or dimming modes. Minimum required: PE cell and time clock to facilitate time-scheduled switching.
Decorative / feature lighting	Recommended: Dimmable control system or equivalent communication protocol to facilitate adjustment of lighting levels to achieve minimum requirements for decorative purpose. Minimum required: PE cell and time clock to facilitate time-scheduled switching.

3.6 Spectral composition

Lighting to be installed within the Sunshine Coast Dark Sky Reserve must be chosen to minimise the amount of short-wavelength light emitted into the nighttime environment. To achieve this, all

lighting should comply with one or more of the following requirements (note: these metrics can be sourced from manufacturer data sheets for lighting products):

1. The correlated colour temperature (CCT) of the light source must not exceed 3000K.

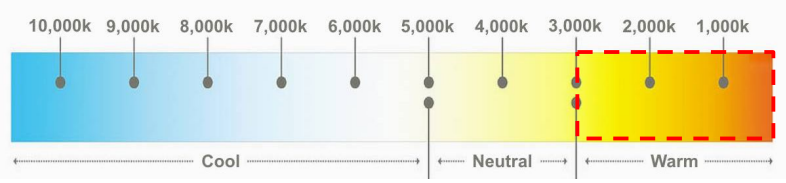
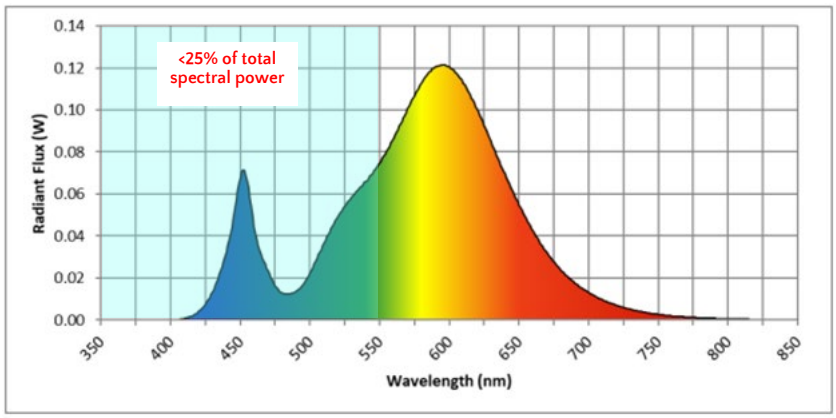


Figure 8: CCT scale.

2. Lighting must not emit more than 25% of its total spectral power at wavelengths shorter than 550nm



3. The scotopic-to-photopic (S/P) ratio of lighting must not exceed 1.3.

3.7 Lit surfaces and signage

Lit surfaces are defined as surfaces that may produce obtrusive light either by emitted or reflected light. Examples include internally and externally illuminated signage, façade lighting and other objects such as flag poles. Lit surfaces could also include ground surfaces, walls and/or other general structures located directly adjacent a permanent lighting installation. While there are no specific performance targets for reflectances from incidental surfaces, consideration should be given to the use of darker, less reflective surface finishes to minimise the adverse effects of reflected light.

Sign illumination is permitted only while the associated activity is taking place or sign illumination is switched off from one hour after sunset and one hour before sunrise and minimises sky glow and light spill. For existing business signage within the Reserve, extinguishing sign illumination outside the hours the business is strongly encouraged. Lit surfaces used for Illuminated signage within the Sunshine Coast Dark Sky Reserve must comply with the following requirements:

- Sunshine Coast Planning Scheme - Advertising Devices Code and relevant local plan, as applicable
- AS/NZS 4282 Section 3.3.3
- The maximum average luminance of a lit surface must not exceed 100 nits (100 cd/m^2). Note: lower values are required for AS/NZS 4282 Zones A0 and A1 as defined in AS/NZS 4282 Table 3.4.
- Displays must be single-color on a black background.
- The luminous/illuminated surface area of an individual sign must not exceed 18.6m^2.

4.0 Operational requirements

4.1 Visitor activities

The following requirements must be observed by all persons visiting the Dark Sky Reserve core:

Kirbys Road Environment Reserve

- A permit must be obtained for vehicle access overnight to the core.
- As a condition of the permit any lighting brought into the core is to be minimal and only used where necessary to prioritise preservation of natural darkness and minimise disruption to wildlife.
- Lighting of vehicle exteriors, and other personal property of visitors is minimsed to ensure natural darkness and character of the environment reserve is maintained and to avoid any potential nuisance for other visitors.
- Appropriate illumination for visitor safety is acceptable - use of low wattage, amber colour lights is recommended (i.e. red-filtered flashlights).
- Subject to permit conditions campfires must be extinguished no later than the curfew of 10pm.
- Inappropriate “light painting,” the use of searchlights, and similar activities is prohibited in the core.
- Lighting required in emergency situations is exempt from compliance.

Night-time access is not permitted at Maleny National Park (Lot 728 NPW787).

4.2 Temporary lighting installations

Temporary lighting for night-time tasks is permitted in the core however must be limited and controlled to reduce light pollution by adhering to the Lighting Management Plan as far as practical.

All temporary lighting within the core is to be removed as soon as nighttime task is completed.

Glossary of terms

Table 6: Key terms.

Term	Description
AS 2560	*Sports lighting* Australian standard providing requirements for sports lighting applications.
AS/NZS 1158.1	*Lighting for roads and public spaces Vehicular traffic (Category V) lighting* Australian standard providing requirements for lighting of arterial road types where the requirement of the motorist is dominant.
AS/NZS 1158.3.1	*Lighting for roads and public spaces Pedestrian area (Category P) lighting* Australian standard providing requirements for lighting of local road types and other outdoor spaces where the requirement of the pedestrian is dominant.
AS/NZS 1158.4	*Lighting for roads and public spaces Lighting of pedestrian crossings* Australian standard providing requirements for lighting of pedestrian crossings.
AS/NZS 4282	*Control of the obtrusive effects of outdoor lighting* Australian standard outlining guidelines for minimising obtrusive light for exterior lighting installations.
Dark Sky Reserve peripheral	The peripheral zone is the remaining area within the Dark Sky Reserve boundary which surrounds the core zone.
Dark Sky Reserve core	The core zone of the Dark Sky Reserve is Kirbys Road Environment Reserve and Maleny National Park (Lot 728 NPW787).
Correlated Colour Temperature (CCT)	A measure of the "colour" of a light source, expressed in kelvins (K). It corresponds to the temperature of an ideal black body that would emit light of a similar "colour." Measured on a scale from 1,000 to 10,000 K.
ELIM	Electrical and Lighting Infrastructure Manual Council standard outlining requirements for electrical and public lighting infrastructure delivered for Council-controlled open spaces.
Glare	The reduction of visual performance or the disturbance of perception, as caused by high luminances or contrasts in luminance within a visual environment.
LED	Light Emitting Diode. Semiconductor device that emits visible light when an electrical current passes through it.
Luminaire	A complete lighting fixture that includes a light source (such as an LED) as well as any necessary components such as a housing, reflectors, lenses, diffusers, etc.
Obtrusive light	Spill light which, because of quantitative, directional or spectral attributes in a given context, gives rise to annoyance, discomfort, distraction or a reduction in the ability to see essential information. This includes general impacts on humans and the environment.
Rate 1 Lighting	Unmetered public lighting supplied, installed, owned and maintained by Energex.

Term	Description
Rate 2 Lighting	Unmetered public lighting for which all supply and installation costs are funded by the Public Body (or Developer) and then ownership is vested in Energex on completion of the installation. Energex then assumes responsibility for maintenance of the installation.
Rate 3 Lighting	Unmetered public lighting supplied, installed, owned and maintained by the public body.
Rate 4 Lighting	Public Body funds the replacement of Rate 1 luminaire with an LED luminaire and gifts the LED luminaire to Energex. The associated pole and cabling remain owned, operated and maintained by the Energex.
RPEQ	Registered Professional Engineer of Queensland.
Scotopic-to-photopic (S/P) ratio	A method to indicate how good a light source will be under photopic, mesopic and scotopic conditions, which is the scotopic lamp lumens divided by the photopic lamp lumens.
Spectral power density	Specifies the amount of power a light source contains at each wavelength in the visible spectrum.
Spill light	Unwanted light falls outside the target area of illumination. Spill light can be a source of obtrusive light and light pollution.
Tilt	The angle at which a luminaire is tilted above the horizontal (zero degree) plane.
UNESCO	United Nations Educational, Scientific and Cultural Organization
Upward waste light	The proportion of the luminous flux emitted by the luminaire above the horizontal, in the installed position.

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Sunshine Coast Dark Sky Reserve

Application for designation to DarkSky International

Sunshine Coast COUNCIL

Edition February 2026

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Traditional acknowledgement

Sunshine Coast Council acknowledges the Sunshine Coast Country, home of the Kabi Kabi peoples and the Jinibara peoples, the Traditional Custodians, whose lands and waters we all now share.

We recognise that these have always been places of cultural, spiritual, social and economic significance. The Traditional Custodians' unique values, and ancient and enduring cultures, deepen and enrich the life of our community.

We commit to working in partnership with the Traditional Custodians and the broader First Nations (Aboriginal and Torres Strait Islander) communities to support self-determination through economic and community development.

Truth telling is a significant part of our journey. We are committed to better understanding the collective histories of the Sunshine Coast and the experiences of First Nations peoples. Legacy issues resulting from colonisation are still experienced by Traditional Custodians and First Nations peoples.

We recognise our shared history and will continue to work in partnership to provide a foundation for building a shared future with the Kabi Kabi peoples and the Jinibara peoples.

We wish to pay respect to their Elders – past, present and emerging, and acknowledge the important role First Nations peoples continue to play within the Sunshine Coast community.

Together, we are all stronger.

Contents

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Evidence summary

Table 1 compares the International Dark Sky Places Program requirements for Dark Sky Reserves against the contents of this application. For each requirement, a summary of how Sunshine Coast Council meets the requirement is provided, along with section and page(s) reference to where the evidence can be found.

Table 1: Evidence summary table - Sunshine Coast Dark Sky Reserve

International Dark Sky Places Program Requirement - Dark Sky Reserves	Evidence	Reference Section/ Page/s
Eligibility		
1. The core of the proposed International Dark Sky Reserve must be a public or private land protected for scientific, natural, educational, cultural, heritage and/or public enjoyment	• Kirbys Road Environment Reserve - Sunshine Coast Council owned and managed. • Maleny National Park - Queensland Government owned and managed national park. • Both sites are protected for conservation values.	Section 3 Pages: 17-19
2. Private inholdings and lands similarly situated within the core zones of Reserves are formally exempt from regulation.	• Not applicable - the core zone does not contain any private inholdings and land.	N/A
3. The core zone boundaries must be drawn according to, and consistent with, the following principles: a) A core area does not have a minimum area requirement but must provide sufficient area to meet the outreach and public access requirements. b) The proposed core area boundary may take any shape and may follow logical or natural geographic features. c) The core need not be a single, contiguous land d) If the core includes a publicly protected area, such as a national or regional park, it must strive to	• The core zone is 7.41 km^2 (741 hectares) in area. • Core zone: Includes the entire Kirbys Road Environment Reserve (284 hectares) and the adjoining full lot of Maleny National Park (457 hectares) to the west.	Section 2 Figure 2 Page: 16

International Dark Sky Places Program Requirement - Dark Sky Reserves	Evidence	Reference Section/ Page/s
fully encompass the boundaries of that area.		
4. The peripheral zone boundaries must be drawn according to, and consistent with, the following principles: a) The proposed peripheral zone boundary must be singular, contiguous, and completely enclose the core zone. It may take any shape and may follow logical or natural geographic features. b) The peripheral area must encompass a minimum of 700 km² c) Large areas of open water, such as oceans, bays, and larger lakes, do not count toward the 700 km² / 80% requirement.	• The peripheral zone is 866 km² (86,600 hectares) in area. • The peripheral zone encompasses Mary River Catchment boundary in the Sunshine Coast local government area and adjoining State Protected Areas. • No large areas of open water are present. • The location and topography of the area is ideal, with the Blackall Range acting as a natural shield protecting the area from much of the skyglow from coastal urban areas and surrounding cities and towns.	Section 2 Figure 2 Page: 16
5. The boundaries of neither core nor peripheral zone must not be arbitrarily drawn to omit areas.	• Core zone: Boundaries follow the lot and plan of the associated environment reserve and national park. • Peripheral zone: Follows Mary River Catchment boundary within Sunshine Coast local government area and includes any State Protected Areas adjoining the boundary.	Section 2 Figure 2 Page: 16
6. The core must provide an opportunity for regular public nighttime access, with or without supervision. A portion of designated land may meet this requirement, or access must be available for a fraction of the length of the night.	• Kirbys Road Environment Reserve is a Bushland Reserve which has existing public access. • The Kirbys Road Environmental Reserve Management Plan outlines the purpose of this area is to: *protect and restore the biodiversity values associated with the reserve to create, consolidate and protect future connectivity values to link the existing surrounding conservation*	Section 4 Page: 25

International Dark Sky Places Program Requirement - Dark Sky Reserves	Evidence	Reference Section/ Page/s
	estate and to facilitate nature-based recreation and education.	
7. The core must provide an exceptional dark sky resource, relative to the communities and cities that surround it.	• The average sky quality in the core zone is 21.5 mag/arcsec^2. • The core zone is located in the Obi Obi Valley. The Blackall Range on the eastern boundary acts as a natural shield protecting the Dark Sky Reserve from much of the skyglow from coastal urban areas and surrounding cities and towns where majority of population growth is occurring.	Section: 8 Page: 34
Minimum requirements		
1. A quality comprehensive Lighting Management Plan (LMP) should be adopted by a sufficient number of communities	• A Lighting Management Plan has been developed and adopted by Council on behalf of the community. • Community consultation outcomes: >90% of survey respondents agree with the Plan's purpose and objectives.	Section 11 Page: 50 Appendix G Page: 131 Appendix C Page: 74
2. Typical nighttime conditions characterizing the core must be consistent with or exceed the following criteria: a) The Milky Way is readily visible to the unaided eye; b) There are no nearby artificial light sources yielding significant glare; and c) Any light domes present are dim, restricted in extent, and close to the horizon. These conditions correspond approximately to a visual-band zenith luminance of 21.2 magnitudes per square arcsecond (0.4 mcd/m^2).	• Milky Way readily visible. • No artificial light sources in the core or nearby. • Light domes are dim. • Average sky quality reading: 21.5 mag/arcsec^2.	Section 8 Page: 33

International Dark Sky Places Program Requirement - Dark Sky Reserves	Evidence	Reference Section/ Page/s
3. Evidence of community commitment to dark skies and quality outdoor lighting, as shown by at least two-thirds (67%) of existing outdoor lighting fixtures within the core conforming to the LMP at the time of application	• Core zone: Ther are no lighting fixtures in the core zone - 100% lighting compliant.	Section 12 Page: 52
4. Lighting inventory and a plan to bring 90% of outdoor lighting in the core into compliance	• Core: 0 lighting - 100% lighting compliant.	Section 10 Page: 47
5. A measurement program must be maintained by the core managing agency	• Measurement program capturing results daily in the core zone using permanent night sky quality meter. This meter is maintained by Sunshine Coast Council. • Dr Ken Wishaw has been collecting measurements since 2017, uploading them to the Globe at Night website, and intends to continue this work following a Reserve's designation.	Section 8 Page: 33
6. Description of current and suspected future threats to dark skies over the core zone, and a plan to address these threats	• Threats identified and a plan to address them - population growth and development.	Section 15 Page: 70
7. Communities must have a number of examples of conforming lighting installations proportional to the size of the population they serve: a) Approximately 10% of fixtures outside of the core must be retrofitted or brought into compliance with the appropriate regulation.	• >35% public lights in the peripheral zone compliant. • Lighting upgrades delivered: o Street lighting upgrades across Reserve (161 lights). o Maleny Community Precinct (13 lights) o Isaac Moore Park, Kenilworth (5 lights).	Section 12 Pages: 52-56
8. Participating communities must have a program, either through education, economic incentives,	• Two-year engagement program completed.	Section 13 Pages: 58-63

International Dark Sky Places Program Requirement - Dark Sky Reserves	Evidence	Reference Section/ Page/s
permitting or regulation, to encourage all new outdoor lighting fixtures to conform.	• Supporting materials developed for local context. • Ongoing education program as part of project and Proposed Planning Scheme lighting provisions for new developments.	Section 14 Pages: 64-69
9. The Reserve's commitment to public education is demonstrated by all of the following: a) The importance of dark skies, natural nighttime darkness, and the benefits of quality lighting should be part of Reserve interpretation/outreach programs. b) Dedicated dark skies programming must occur at least four times per year.	• Over 35 workshops and presentations delivered across 2023-2025. • Minimum 4 events delivered each year.	Section 13 Pages: 58-63
10. Acknowledgement of the protected area by government or regulatory agencies situated higher than community level (county/province/etc.)	• Recognised by local government authority - Sunshine Coast Council o New policy position in Council regional strategy o Inclusion of dark sky reserve area in Proposed Sunshine Coast Planning Scheme.	Section 5 Pages: 27-29
11. Once established, the Reserve must erect and maintain appropriate signage indicating the International Dark Sky Reserve designation.	• Sunshine Coast Council to erect signage on roadway once designated.	Section 13 Pages: 62
12. The Reserve will submit an annual report each year.	• Annual report to be submitted each year by project working group.	N/A

Executive summary

Recognised internationally as a UNESCO Biosphere Reserve, the Sunshine Coast exemplifies global leadership in sustainability and conservation.

Building on this prestigious designation, we are proudly advancing a visionary initiative to protect one of our region's most awe-inspiring natural treasures, our night sky.

Our dark skies are vital to the Sunshine Coast's identity, ecology, and cultural heritage. They nurture wildlife, preserve First Nations astronomical knowledge, and offer transformative opportunities for education, tourism, and community wellbeing.

In collaboration with partners and the community, Sunshine Coast Council is seeking an International Dark Sky Reserve designation in the western part of the local government area.

Spanning over 870 km^2 (87,300 hectares) within the Mary River catchment, this area is naturally shielded by the Blackall Range, creating exceptional night sky conditions with minimal coastal artificial light intrusion.

At the heart of the Sunshine Coast Dark Sky Reserve is a 7.41 km^2 (741 hectares) core zone. The core encompasses Kirbys Road Environment Reserve and Maleny National Park, areas of high ecological value and no artificial lighting present. Managed public access to Kirbys Road Environment Reserve offers immersive experiences in this protected environment. Surrounding the core is an 866 km^2 (86,600 hectares) peripheral zone.

Two formal consultation phases revealed overwhelming public support for the establishment of a proposed dark sky reserve, with 95% of respondents advocating for night sky protection and 94% endorsing the Lighting Management Plan.

Scientific measurements collected over two years between 2023-2025 confirm the area's suitability for Dark Sky Reserve designation, with typical night sky brightness of 21.5 mag/arcsec^2 in the core zone.

The core zone is fully compliant with no lighting present, while the peripheral zone has seen over 170 lighting upgrades, enhancing compliance and reducing light pollution since the project's inception.

Public outreach has been central to this dark sky journey. From stargazing events to community-led education programs, these efforts have inspired stewardship and deepened public understanding of light pollution impacts.

While population growth and urban development present challenges, proactive action including, regional strategy updates, draft planning scheme provisions, cross-government collaboration, and ongoing education contribute to efforts that safeguard the Dark Sky Reserve's integrity.

DarkSky International representatives have been closely involved throughout the entire project, from the eligibility assessment stage through to lighting requirements, developing the lighting management plan, and preparing the application. Expert guidance has ensured this application meets the designation requirements and presents best practice standards.

The Sunshine Coast Dark Sky Reserve is a bold, future-focused initiative aligning with the Sunshine Coast's UNESCO Biosphere vision and values. It is supported by government, local First Nations representatives, community organisations, and the tourism sector, demonstrating a shared commitment to recognising, protecting, and celebrating our night skies. Sunshine Coast Council is proud to submit this application for an International Dark Sky Reserve designation, reaffirming our commitment to sustainability and to safeguarding dark skies as a vital natural asset for future generations.

1. Introduction

In June 2022, the Sunshine Coast was internationally recognised by UNESCO as a Biosphere Reserve, acknowledging our region as a place where sustainable living, responsible development, and environmental conservation coexist. This designation places the Sunshine Coast within a global network of biospheres committed to balancing environmental, social, cultural, and economic needs - now and into the future.

This recognition highlights the values we aim to protect and enhance, and brings new opportunities to support our natural environment, community wellbeing, and local economy. Maintaining our Biosphere status is a shared responsibility, with every resident, visitor, business, and government entity playing a vital role in creating a lasting legacy for future generations

As part of our UNESCO Biosphere Reserve status, protecting our dark skies is important to preserving the Sunshine Coast's distinct character, identity and lifestyle. As a community, we are committed to preserving this unique asset, which supports wildlife, connects us to First Nations knowledge and astronomy, and offers opportunities for education and tourism.

CELEBRATING PEOPLE AND NATURE
SUNSHINE COAST BIOSPHERE

Sunshine Coast Council (Council) is proud to submit this application for an International Dark Sky Reserve designation, demonstrating our region's strong commitment to preserving the night sky, protecting nocturnal wildlife, enhancing human health and wellbeing, supporting local business opportunities, and promoting sustainable lighting practices. This initiative is a collaborative effort between Queensland Government (State) agencies, electricity utilities (Energex), community members, scientific experts, and key stakeholders.

1.1 About the Sunshine Coast Local Government Area, Australia

The Sunshine Coast local government area is located in South East Queensland, Australia - see Figure 1. The southern boundary of the Sunshine Coast local government area is 53 kilometres north of Queensland's capital city, Brisbane.

The Sunshine Coast local government area is managed by the Sunshine Coast Regional Council (the Council). The Country of two distinct First Nations groups, Kabi Kabi and the Jinibara people, extends across the area.

The local government area covers an area of approximately 2,200 square kilometres and is considered a major urban and economic centre and an emerging city-region. It has a strong reputation as a lifestyle region defined by its subtropical climate, picturesque coastline and beaches, extensive waterways and wetlands, and the hinterland mountain ranges. The natural environment and distinct landscapes are the foundations of the Sunshine Coast way of life.

Across the contrasting landscapes, from hinterland to coastal foreshores, there is a vast diversity of native plants and animals that create the region's highly regarded natural environment and rich biodiversity.

The Sunshine Coast offers an enviable lifestyle, attracting around 8,700 new residents each year over the past decade. This steady population growth is expected to continue into the foreseeable future and has driven urban development and investment in supporting infrastructure. Most residents live within established urban centres along the coastline, contributing to a vibrant and growing community. The region now has an estimated population of over 383,000.

Since first formed in 2008, the Council has been consulting with the community about how best to respond to future pressures and maintain the liveability and natural assets valued by the community. As an evolving region, with an increasing population, along with pressures such as climate change and a changing economy, there are both challenges and opportunities to be met in the future.

The Council has a vision of *Australia's most sustainable region – Connected. Liveable. Thriving.* The Council recognises that our valued natural assets underpin and enhance our liveability, and that residents living sustainably within the environment is key to achieving the corporate vision for the region.

The Council has demonstrated its commitment to sustainable development and continues to plan for a sustainable future across the region. The actions and achievements of Council, in partnership with the community, have established a healthy and liveable region, creating a strong platform to respond proactively to change.

As the Sunshine Coast continues to grow as a city-region, it is well positioned to respond to changes. It is a living laboratory that can demonstrate a high standard of sustainable development, so that its people can live, work and play sustainably in a landscape that is valued for its environmental significance and important wildlife habitat and ecosystems.

1.2 Dark Sky Reserve location – Sunshine Coast hinterland

Sunshine Coast Council is seeking to establish a Dark Sky Reserve (the Reserve) in the western part of the local government area in the vicinity of Obi Obi, Maleny, Conondale, Mapleton and Kenilworth (refer to Figure 2).

The area is 873 km^2 and is primarily made up of the Mary River catchment boundary within the local government area. From a night sky perspective, night sky quality readings demonstrate the area has the attributes of a Dark Sky Reserve.

The location and topography of the area is ideal, with the Blackall Range acting as a natural shield protecting the area from much of the skyglow from coastal urban areas and surrounding cities and towns. Refer to Figure 5 (Page 35): Light pollution across the Sunshine Coast Local Government Area.

There a number of benefits of the Sunshine Coast Dark Sky Reserve including to:

- support Council's overall aspirations to transition to a more sustainable way of living
- protect the dark sky environment that currently exists
- provide wildlife sensitive environments
- support the health and wellbeing of Sunshine Coast residents and visitors
- bring international recognition of the efforts made to protect our dark skies.
- provide an opportunity for education on the benefits of responsible outdoor lighting at night to the major population region of Queensland.

Within this area (core and peripheral zones):

- approximately 40% is government owned land – majority of this government land is State Protected Areas.
- a population of approximately 13,500 residents and includes (but not limited to) the townships of Maleny, Mapleton, Montville, Witta, Flaxton and Conondale.
- approximately 700 public lighting assets exist which are mostly street lights.

Two observatories (Figure 4 - Page 26) exist:

1. The Mapleton Observatory is located at the Mapleton School and has been operating since 2002.
2. Maleny Observatory – designated observatory in 2021 by the Astronomical Society of Australia.

1.3 Navigating the process with DarkSky International

DarkSky International has been instrumental in guiding this project from its inception through to the preparation of this application, ensuring alignment with Dark Sky Reserve Guidelines and designation requirements. Their involvement has included:

- Investigation stage (2021-2022): Provided expert guidance on the International Dark Sky Places Program including designation types, through briefings and presentations to Council and Council staff to build understanding and support.
- Eligibility assessment (2023): Offered positive, constructive feedback and advice on the proposed designation type, confirming the Sunshine Coast's suitability for a Dark Sky Reserve.
- Technical documentation (2024-2025): Assisted with templates and resources for night sky quality measurements and lighting inventory preparation. Reviewed the Draft Lighting Management Plan prior to community consultation to ensure compliance with best practice standards.
- Application preparation (2025): Played an instrumental role in shaping the structure and content of the application, ensuring all required steps, evidence, and information are included to meet designation requirements.

Through this extensive involvement, DarkSky International's support and ongoing guidance have ensured a strong, compliant process that gives the Sunshine Coast Dark Sky Reserve the best opportunity for a successful designation.

Figure 1: Sunshine Coast local government area in context of Queensland, Australia.

2. Sunshine Coast Dark Sky Reserve map and boundary

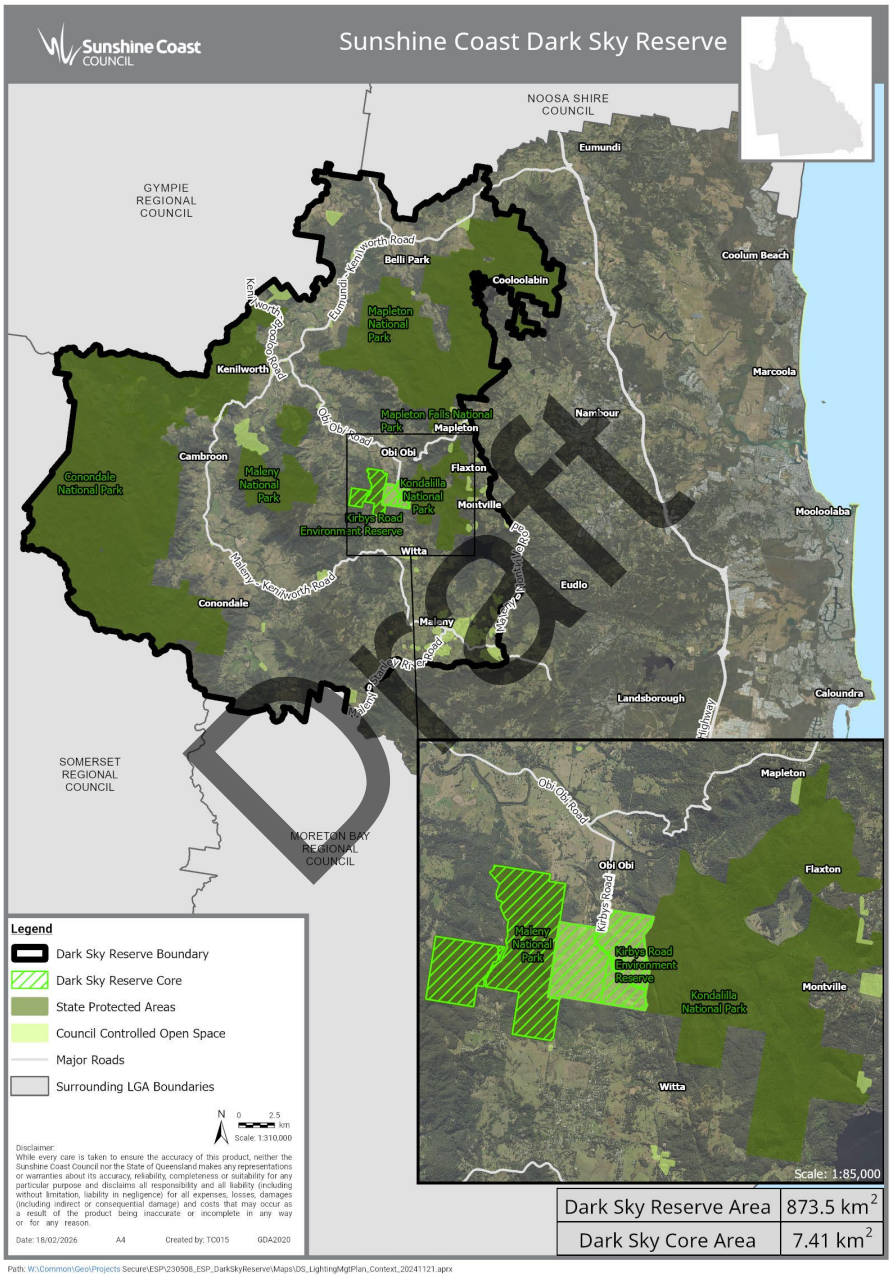


Figure 2: Sunshine Coast Dark Sky Reserve map and boundary.

3. Site environment

Guidelines section compliance

Eligibility:
Item: 1,3,5

Minimum requirements for all Reserves:
Item: 2

The core:

- protected in the public conservation estate
- sky quality - 21.5 mag/arcsec^2
- Milky Way is readily visible to the unaided eye
- there are no nearby artificial light sources
- any visible light domes are dim and limited in extent
- permanent night sky quality meter installed
- location surrounded by national parks and rural land
- current and future management and planning frameworks to support long-term conservation.

3.1 The core

At the heart of the Sunshine Coast Dark Sky Reserve is a protected core area that provides the foundation for long-term conservation of natural darkness. This core is made up of two adjoining reserves: Kirbys Road Environment Reserve, owned and managed by Sunshine Coast Council, and Maleny National Park (Lot 728 NPW787) owned and managed by the Queensland Government. Together, these areas form a contiguous protected landscape of 7.41km^2, offering high ecological value and minimal light pollution. Refer to Figure 2 - Page 16.

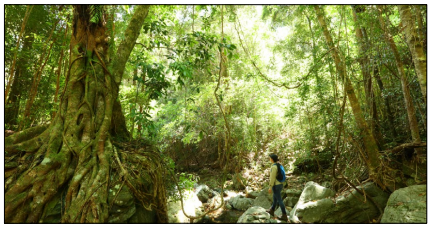


Image: Landscape of the core zone.

Kirbys Road Environment Reserve

Kirbys Road Environment Reserve is part of Sunshine Coast Council's protected estate and was purchased through Council's Environment Levy Land Acquisition Program. The reserve is approximately 3km^2 and a vital ecological and cultural link between Maleny and Kondalilla National Parks.

This environment reserve is located on the native title determined lands of the Jinibara Peoples. It was purchased in 2011 and an additional parcel added in 2022 - for the purpose of protecting and restoring the sites conservation values.

Kirbys Road Environment Reserve is located in the upper Mary River catchment with permanent and seasonal creeks flowing into the lowland reaches of the Obi Obi Creek. The environment reserve contributes to connectivity, while facilitating nature-based recreation and education and cultural opportunities.

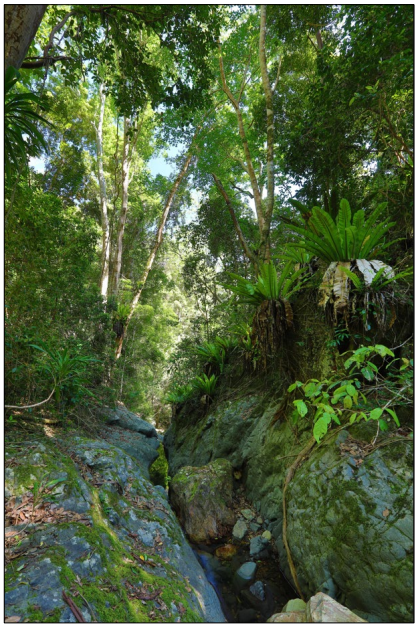


Image: Kirbys Road Environment Reserve in the core.

Kirbys Road Environment Reserve Management Plan outlines the reserve's ecological, cultural, social and economic values and the associated management actions required to maintain or enhance these values. The environment reserve supports five Regional Ecosystems (vegetation communities) including one Endangered; two Of Concern; and two Least Concern. Of these, three rainforest regional ecosystems are also listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*, as Critically Endangered Lowland Rainforest of Subtropical Australia. 298 native plant species have also been identified in the environment reserve. The area supports four observed Endangered, Vulnerable, or Near Threatened (EVNT) plant species.

The reserve has a high diversity of fauna. Field surveys identified 133 native vertebrate fauna species, comprising the following numbers of species in each of the major terrestrial vertebrate fauna groups:

- 84 bird species
- 13 ground dwelling and arboreal mammal species
- 8 micro bat species
- 13 reptile species.

Eight EVNT fauna species are known to occur at this site.

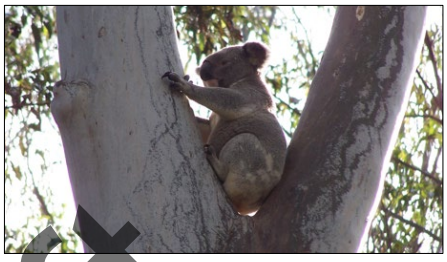


Image: Koala (*Phascolarctos cinereus)* at Kirbys Road Environment Reserve. The koala is listed as Endangered in Queensland.

Image: Elf Skink (*Eroticoscincus graciloides*). Photo credit: S. Wilson.

Image: Grey-headed flying fox *(Pteropus poliocephalus*), Vulnerable species in Australia. Photo credit: J. O'Connor.

Maleny National Park (Lot 728 NPW787)

Maleny National Park is a significant conservation area located in Curramore.

Spanning approximately 1,880 hectares, the national park plays a vital role in preserving the region's natural landscape, flora, and fauna. Formerly known as Maleny Forest Reserve and Walli Forest Reserve, it was gazetted as a national park in 2006.

Maleny National Park represents a relatively large sub-coastal remnant area that protects important vegetation links with several other protected areas, including Kondalilla National Park, Conondale National Park, Imbil State Forest, and Mapleton National Park. This national park is also located within the Jinibara People's native title lands.

The national park is home to over 500 species of plants and animals protects several values similar to those of Kirbys Road Environment Reserve, including regional ecosystems listed as Critically Endangered Lowland Rainforest of subtropical Australia. A key natural value of Maleny National Park is that it provides habitat for the vulnerable cascade treefrog (*Litoria pearsoniana*), rusked frog (*Adelotus brevis*) and the plumed frogmouth (*Podargus ocellatus plumiferus*).

Image: Cascade treefrog (*Litoria pearsoniana*), a Vulnerable species in Queensland. Photo credit: S. Wilson.

Image: Tusked frog *(Adelotus brevis)*, a Vulnerable species in Queensland. Photo credit: S. Wilson.

Only Lot 728 NPW787 is included in the core zone of the Dark Sky Reserve, as it directly adjoins Kirbys Road Environment Reserve, creating a contiguous protected area.

This national park has no formalised visitor access or facilities. Visitor numbers are very low, helping maintain the park's significant ecological values.

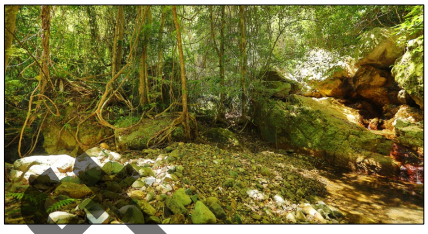


Image: Kirbys Road Environment Reserve.

3.2 Core selection process

The core area within the Sunshine Coast Dark Sky Reserve was determined through a 4-step process:

1. Identify locations in the Dark Sky Reserve that meet core requirements I.e.
    - Centrally located protected areas within the Reserve boundary.
    - Sites that meet night sky quality of 21.2 mag/arcsec^2 or higher.
2. Determine which identified sites are under Council control.
    - Review protected estate and prioritise Council-owned conservation areas as the lead organisation for the Dark Sky Reserve application.
    - Consideration of connectivity of the identified areas with surrounding protected estate.

3. Investigate site conditions, accessibility and opportunities.
    - Sites that support nature-based recreation and education were prioritised. Kirbys Road Environment Reserve was selected because its management plan focuses on biodiversity protection, connectivity with surrounding conservation areas, and nature-based recreation and education.
    - Locations with good night-sky viewing conditions were considered. Many protected areas are extremely remote, prone to fog, or highly sensitive, where public access is discouraged/not permitted.
4. Collaborate with other land managers to potentially expand the core:
    - Consideration of surrounding protected areas managed by the Queensland Government.

3.3 Management planning for the core

Recent enhancements to the Kirbys Road Environment Reserve include the construction of a car park, native vegetation plantings, and the development of a summit trail.

Planned future improvements will focus on bush regeneration, weed and fire management, fauna monitoring, and the establishment of a campground (subject to funding).

Image: Tree planting day at Kirbys Road Environment Reserve.

Image: Kirbys Road Environment Reserve night sky. Photo credit: Dr Ken Wishaw and Dr Geoff Simon.

3.4 The peripheral zone

Guidelines section compliance

Eligibility:
Item: 4,5
The peripheral zone:

- Size - 866 km^2
- boundary is singular, contiguous and fully encloses the core zone
- the boundary has been drawn based on topography considerations, following the Mary River catchment boundary in the Sunshine Coast local government area as well as incorporating adjoining State Protected Areas.

The peripheral zone surrounds the core and makes up the remaining area of the Reserve boundary. The area follows the Mary River catchment boundary within the western portion of the local government area with the addition of Mapleton National Park and Mapleton Forest Reserves in their entirety.

Image: Mary River in the peripheral zone.
Photo credit: D. Dicker

3.4.1 Mary River Catchment

The Mary River is one of the most environmentally and economically diverse catchments in Queensland, supporting a range of activities including agriculture and tourism. Its headwaters are in the Conondale and Blackall Ranges (within the Sunshine Coast local government area) and it flows northwards for hundreds of kilometres to the Great Sandy Strait, influencing the coastal environment of Hervey Bay and ultimately the Coral Sea (including the Great Barrier Reef).

Large areas of the catchment are protected natural areas and support several iconic threatened species – notably the Mary River cod (*Maccullochella mariensis*), Mary River turtle (*Elusor macrurus*) and Queensland lungfish (*Neoceratodus forsteri)*.

Within the Sunshine Coast, native vegetation covers approximately 68% of the catchment area and the Mary River catchment contributes 65% of the local government area's native vegetation.

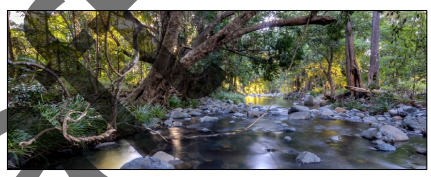


Image: Mary River in the peripheral zone.
Photo credit: T. Fauser

This peripheral zone is a distinctive hinterland region of the Sunshine Coast characterised by elevated plateaus, scenic rural landscape and proximity to significant National Parks. It comprises small hinterland townships including (but not limited to) Maleny, Mapleton, Montville, Conondale and Kenilworth with a resident population of approximately 13,500.

Each township contributes to the area's unique identity and together offer a mix of residential communities, rural lifestyles, and tourism destinations. Set among creeks, rainforest pockets, and panoramic views, these communities share a low-density rural identity that blends lifestyle, tourism, and conservation values.

Image: Maleny township in the peripheral zone.

Images: Landscape of peripheral zone.

3.4.2 State Protected Areas (Queensland)

State Protected Areas in the peripheral zone include Conondale, Mapleton, Maleny and Kondalilla National Parks. Conondale National Park is the largest single Core Habitat Area in the region totalling 19,252 hectares.

Image: Vegetation in Conondale.

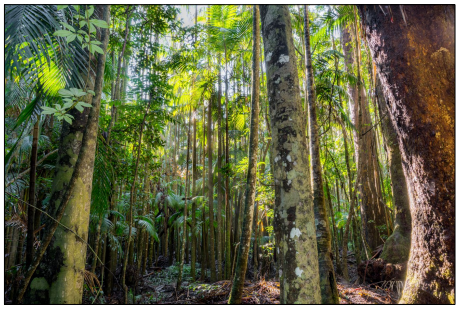


Image: Sub-tropical rainforest in the peripheral zone. Photo credit: B. Hettrick.

The peripheral zone is predominantly in private ownership, accounting for more than half of the area. The remaining area is under government control.

The peripheral zone is made up of:

- 61% - private land.
- 35% Queensland Government (State)
- 1% – Sunshine Coast Council
- 3% other government land (including road and water parcels).

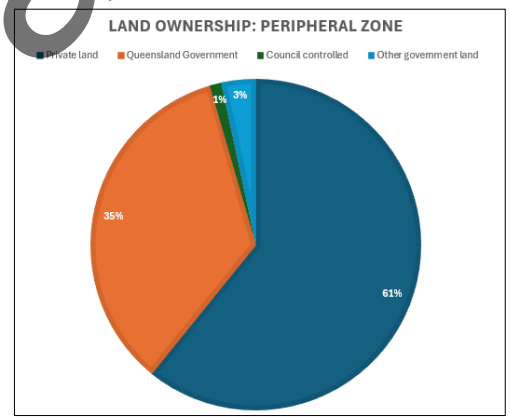


Figure 3: Land ownership: peripheral zone.

Image: Farm property, Maleny. Photo credit: B. DeLAMotte.

3.5 Significant nocturnal species, Sunshine Coast

Across the Sunshine Coast region there are a number of conservation significant nocturnal species which are listed in Appendix A.

Notably, the Southern Pink Underwing Moth (*Phyllodes imperialis smithersi*) is a rare and endangered species found in subtropical rainforests of South East Queensland and North East New South Wales including within the Sunshine Coast Dark Sky Reserve. It is considered a flagship species for rainforest conservation due to its dependence on intact, undisturbed habitat and its sensitivity to light and environmental changes.

3.6 Dark Sky Reserve partners

Sunshine Coast Council - the local government authority for the Sunshine Coast region in Queensland, Australia. Sunshine Coast Council is responsible for public lighting assets across its jurisdiction including some street lighting, pathway lighting and sports lighting etc.

Queensland Parks and Wildlife Services and Partnerships - a division of the Queensland Government's Department of Environment, Tourism, Science and Innovation, which plays a central role in conserving and managing a vast network of protected areas, including national parks and state forests across the Sunshine Coast Dark Sky Reserve. Maleny National Park, which forms part of the core of the Reserve, is also managed by this division.

See support letters on pages 75 and 78.

Energy Queensland (Energex) – Energy Queensland is the group of electricity distribution, retail and energy services business who deliver electricity across the State of Queensland including Sunshine Coast. Energy Queensland is owned by the Queensland Government and is responsible for maintaining public assets such as street lights.

See support letter on pages 76-77.

Department of Transport and Main Roads – a key department of the Queensland Government responsible for managing and delivering an integrated transport system across the State. This includes responsibilities for road lighting particularly on state-controlled roads and bikeways.

Sunshine Coast community - has an estimated resident population of 383,498 across the local government area (June 2023) making it the third most populous region in Queensland, Australia. Most residents reside in the coastal communities with growing populations also in the hinterland communities including the Sunshine Coast Dark Sky Reserve. There is a population of approximately 13,500 residents within the Dark Sky Reserve area.

See community organisations support letters on page 79, 80, 82, 85, 86-87 and community consultation results in Section 13.2.

3.7 Dark Sky Reserve lighting responsibilities

Entity	Department/ Area	Lighting responsibility
Queensland Government (State)	Queensland Parks and Wildlife and Partnerships	• National Parks • State Forests.
	Department of Transport and Main Roads	• State-controlled roads.
	Energex	• Maintenance and operation of public street lighting across Reserve.
Local Government	Sunshine Coast Council	• Council owned public lighting assets i.e. Rate 3 street lights, pathway lighting, carpark lighting.
Sunshine Coast community		Private property lighting.

Table 2: Sunshine Coast Dark Sky Reserve lighting responsibilities

4. Night-time access to the Dark Sky Reserve

4.1 The core

Guidelines section compliance

Eligibility:
Item: 6

The core:

- Kirbys Road Environment Reserve is a Council-managed site with existing public access.

Public access to the core zone is via Kirbys Road Environment Reserve.

Kribys Road Environment Reserve is a Council owned and managed environment reserve within the protected estate.

There is existing public access and an established carpark at the entrance of the environment reserve.

As part of future master planning, consideration is being given to allowing overnight vehicle access through a permit system. Subject to funding, plans are also underway to establish a campground in the environment reserve that will provide further opportunities for night sky viewing. Areas of the environment reserve have open grass land offering ideal locations to support stargazing opportunities.

Access to Maleny National Park (Lot 728 NPW787) is not permitted to the public as the site does not have adequate public infrastructure.

4.2 The peripheral zone

The peripheral zone offers a variety of formal and informal stargazing opportunities, where access is easier and more convenient.

4.2.1 Formal stargazing

- Maleny Observatory - The Brisbane Astronomical Society offers public viewing nights at the Maleny Observatory throughout the year.
- Mapleton Observatory – The Mapleton Observatory is located at Mapleton State School and offers open nights including private viewing nights.

4.2.2 Informal stargazing

Sunshine Coast Council managed parks and lookouts and associated facilities offer a great informal stargazing experiences:

- Balmoral Ridge Lookout, Balmoral Ridge
- Howells Knob Lookout, Reesville
- Isaac Moore Park, Kenilworth
- Little Yabba Rest Area, Cambroon
- Pioneer Park, Gheerulla
- Russell Family Park, Montville
- Tete Park, Conondale.

Refer to Figure 4 - Page 26 for stargazing locations across the Dark Sky Reserve.

Image: Stargazing location in the peripheral zone - Howell's Knob Lookout, Reesville. Photo credit: Dr Ken Wishaw.

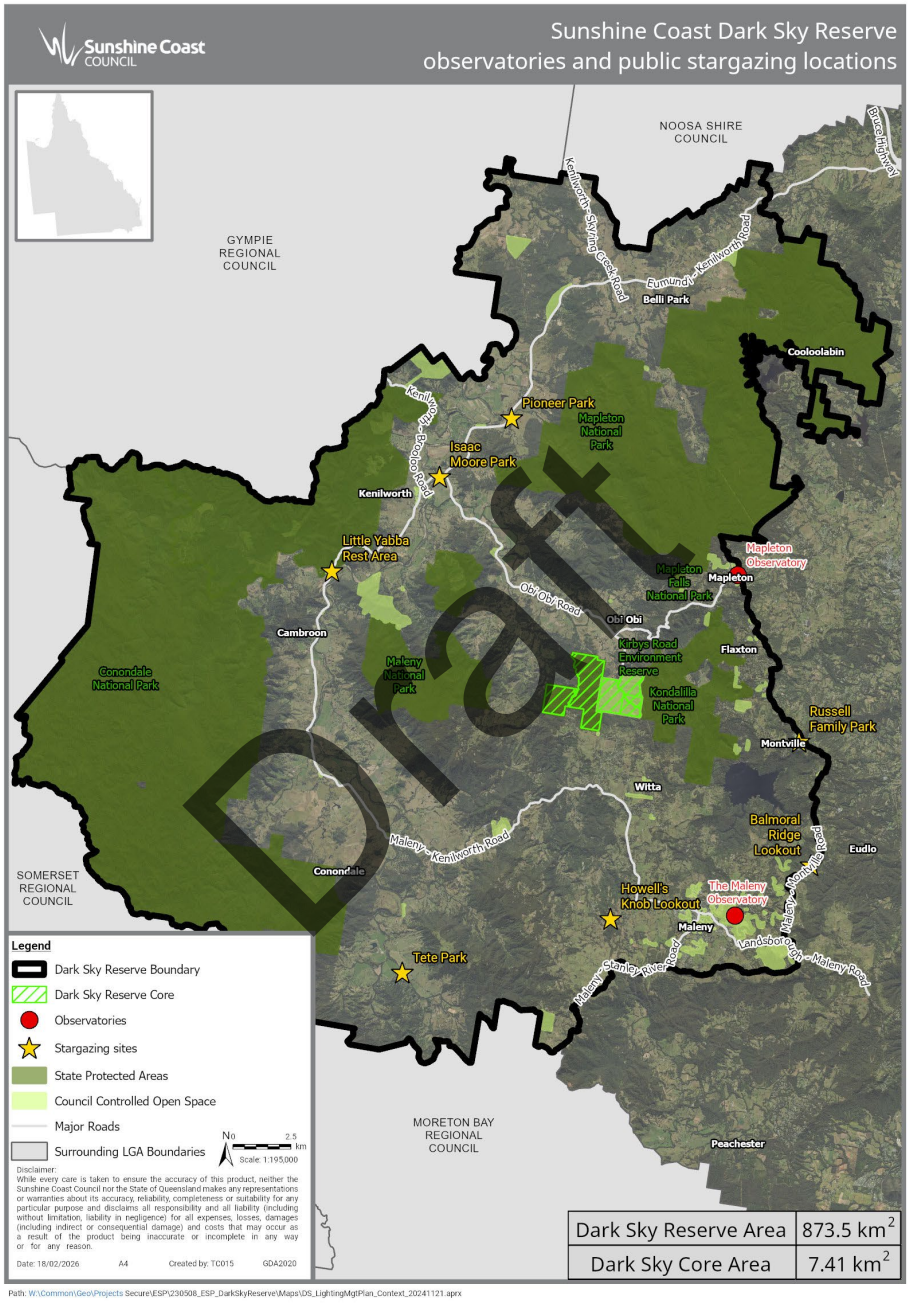


Figure 4: Dark Sky Reserve observatories and stargazing locations map.

5. Support wording in documents

Guidelines section compliance

Minimum requirements for all Reserves:
Item: 10

- preservation of dark skies in long term planning documentation.

A range of International, Commonwealth, Queensland and local government documents support efforts to reduce light pollution and protect dark skies.

5.1 International

UNESCO Man and the Biosphere (MAB) Programme

The UNESCO MAB Programme supports communities around the world to live sustainably while protecting natural environments. As part of this global network, the Sunshine Coast Biosphere Reserve promotes a balance between conservation, cultural heritage, and responsible development. Protecting our dark skies aligns strongly with the goals of the MAB Programme. Natural nightscapes are important for wildlife, cultural connection, especially First Nations astronomy, and sustainable tourism.

The Hangzhou Strategic Action Plan developed under UNESCO's MAB Programme, sets out global targets to strengthen sustainability across Biosphere Reserves. Action Target 8 focuses on reducing pollution from all sources through integrated local approaches. By 2035, all Biosphere Reserves are expected to conduct baseline assessments, set measurable targets, and coordinate efforts across authorities and stakeholders.

United Nations Sustainable Development Goals (UNSDGs)

The United Nations Sustainable Development Goals (UNSDGs) provide an internationally recognised framework for promoting peace, prosperity, and sustainability for people and the planet. Sunshine Coast Council is demonstrating leadership by embedding the UNSDGs into its strategies, plans, and progress reporting.

Protecting dark sky values contributes directly to UNSDGs, including

- Goal 11: Sustainable Cities and Communities
- Goal 13: Climate Action
- Goal 15: Life on Land
- Goal 17: Partnerships for the Goals.

5.2 Commonwealth

National Light Pollution Guidelines

The National Light Pollution Guidelines for Wildlife, developed by the Australian Government's Department of Climate Change, Energy, the Environment and Water (DCCEEW), provide a comprehensive framework for assessing and managing the impacts of artificial light on wildlife. The guidelines promote key dark sky principles such as:

- minimising artificial light at night.
- using lighting only where and when needed
- shielding lights and
- using warm-colour temperatures.

5.3 Queensland (State)

Destination 2045 Plan

The Destination 2045 Plan, released by the Queensland Government in 2025 provides a strategic roadmap to guide the future of tourism over the next 20 years. It has a

strong commitment to dark sky tourism as part of its broader ecotourism strategy including committing to expanding the Queensland's Dark Sky Reserve network.

The plan also promotes the light footprint accommodation in ecologically sensitive areas aligning to dark sky principles by minimising artificial light and preserving natural night environments.

Energex Public Lighting Explanatory Statement

Energex has a plan to upgrade all public lighting across Queensland to LED aeroscreen lights by 30 June 2030. These lights are designed to reduce light pollution by directing light downward (zero-degree upcast) and use a warm 3000K colour temperature in the Sunshine Coast Dark Sky Reserve. As part of this upgrade, smart control devices will also be installed to improve how lighting is managed and to increase energy efficiency.

South East Queensland Natural Resource Management Plan 2009-2031

The South East Queensland Natural Resource Management Plan (SEQ NRM Plan) is a regionally endorsed, non-statutory plan that guides collaborative action across government, industry and community to protect and enhance the region's natural assets.

The SEQ NRM Plan includes a specific target related to light pollution: By 2031, light pollution will be at or below 1998 levels.

5.4 Local Government

Environment and Liveability Strategy

The Environment and Liveability Strategy is Council's long term strategic policy focusing on the natural environment as well as liveability of the Sunshine Coast region. It recognises the importance of dark skies and incorporates a policy position to:

1.1 The distinctive and diverse landscape is preserved to maintain the beauty of the area:

e) Dark skies are recognised, protected and celebrated.

The Strategy also has an action in its implementation plan to '*investigate opportunities to recognise, protect and celebrate the Sunshine Coast dark sky, in partnership with the community*'.

Community Strategy

The Sunshine Coast Community Strategy sets out a vision for a strong, connected, and sustainable community, where people and nature thrive together. Preserving our dark skies supports this vision by protecting a valued natural asset that contributes to community wellbeing, biodiversity, cultural heritage, and sustainable tourism.

Regional Economic Development Strategy

The Sunshine Coast Regional Economic Development Strategy (REDS) outlines a long-term vision for a resilient, innovative, and sustainable regional economy. The strategy supports initiatives that enhance the region's natural assets while creating new opportunities for investment, tourism, and local business growth. The Dark Sky Reserve aligns with the REDS by promoting astro-tourism, supporting eco-friendly development, and encouraging community-led environmental stewardship. Protecting the night sky not only preserves the region's unique character and biodiversity but also contributes to a diversified economy that values sustainability and liveability, key pillars of the REDS framework.

Proposed Sunshine Coast Planning Scheme

A planning scheme is a statutory document prepared and administered by local government under relevant planning legislation such as the *Planning Act 2016 (Qld)*. The Proposed Sunshine Coast Planning Scheme recognises the Dark Sky Reserve in the Sunshine Coast hinterland in the Strategic Framework mapping (refer to Appendix B). and explicitly supports the protection of dark skies by requiring that

external lighting associated with new development within the Dark Sky Reserve be carefully positioned and managed to minimise light pollution.

The Proposed Sunshine Coast Planning Scheme includes detailed outdoor lighting provisions that apply to all new assessable development within the Dark Sky Reserve. These provisions are implemented through development conditions and also apply to certain forms of assessable development. They require downward-directed, fully shielded lighting, restrict short-wavelength emissions (e.g. CCT ≤ 3000K), and mandate the use of timers or motion sensors to minimise unnecessary illumination.

The Proposed Sunshine Coast Planning Scheme also discourages the use of illuminated and digital display signage. It includes specific provisions within the Dark Sky Place, including illuminated signage being switched off between 7pm and 6am and designed to minimise light pollution, using low luminance (maximum 100 nits), downward-directed and shielded lighting, and simple, single-colour displays on a black background.

Sunshine Coast Marine Turtle Conservation Plan 2023-2033

The Sunshine Coast Marine Turtle Conservation Plan recognises light pollution as a critical threat to marine turtles and includes strategic actions to reduce artificial light impacts and promote turtle sensitive lighting across the region including a including a desired outcome of DO2: *Development and implementation of lighting policies and standards that deliver a commitment to Dark Sky objectives and a naturally dark coastline at night, with minimisation of direct light sources and ambient light visible from sensitive nesting beaches and adjacent marine areas.*

Sunshine Coast Council Electrical and Lighting Infrastructure Manual (ELIM)

The ELIM was endorsed in 2024 and is Council's guide for planning, designing and constructing public lighting and electrical infrastructure. The manual incorporates dark sky principles aligning with standards from DarkSky International and the Australasian Dark Sky Alliance. The principles are embedded to reduce light pollution, preserve the nature night sky and minimise disturbance to nocturnal wildlife especially in sensitive areas.

6. Letter of nomination

Guidelines section compliance

Requirement:

Item: Step 3 of application

- Letter of nomination from qualified Dark Sky International member nominator
- Nominator: Dr Ken Wishaw, DarkSky Defender Award Recipient 2024.

Dr Ken Wishaw

28 October 2025

Board of Directors
Dark Sky International

Dear Board of Directors,
As Convenor of Maleny Observatory for the Brisbane Astronomical Society, and 2024 recipient of the DarkSky International Oceania DarkSky Defender Award, I commend to you the application for gazetting the Sunshine Coast Dark Sky Reserve.

This reserve has been a priority project for the Sunshine Coast Council (SCC) for over 5 years.

Preservation
In line with its vision to be "Connected Liveable and Thriving", SCC aspires to be Australia's most sustainable region. A cornerstone of this, is its designation as a UNESCO Biosphere in 2022, and preservation of the night environment is a key element of maintaining this status.

SCC has been a national leader in responsible outdoor lighting with its Sunshine Coast Urban Lighting Master Plan (2016) which has been copied around the country and its Lighting Management Plan (2025) for the reserve will no doubt have the same results. All new streetlights (other than main roads) installed since 2016 in the region have been fully dark sky compliant and a further conversion of 4,000 old technology streetlights to dark sky compatibility is nearing completion.

SCC has been tireless in bringing the community and government stakeholders on board with the concept.

Inspiration
The proposed dark sky reserve, in spite of being only 40 km from the urban coastal region and 100km from Brisbane, Queensland's capital city of 2.6 million people, well exceeds the darkness requirements of a reserve with 90% of the entire reserve periphery complying with core darkness criteria. This is by virtue of protection by a surrounding volcanic crater rim. It is truly a place of peace, serenity and wonder on a clear winter's night with the Milky Way overhead.

Education

The location of a dark sky reserve close to Queensland's major population centres creates an opportunity for education of the public and policy makers that does not occur in isolated and darker areas of the state. The region is a major tourism hub and the potential for dark sky education is very high.

Already, as the project has proceeded, the education of policy makers has been profound.

For example, through discussion of the needs of the reserve, Energy Queensland has embarked on a project to replace all old technology streetlighting in Queensland with zero-degree upcast lighting by 2030.

The southern section of the reserve falls within the state electorate of Glass House. The sitting member for Glass House (Andrew Powell) has been a strong supporter of the reserve concept and is the current Queensland Minister for the Environment and Tourism and Minister for Science and Education. He has directed his departments to follow the lead of Sunshine Coast Council to create dark sky places throughout the state as a top priority. The designation of the Sunshine Coast Reserve is therefore the cornerstone of a potential massive rollout of similar projects state and Australia wide.

I therefore recommend designation of the reserve and have no doubt such recognition would be welcomed by the Council and community with great pride.

Dr Ken Wishaw
M.B.B.S. F.A.N.Z.C.A. A.F.H.E.A. Grad Cert Science (Astronomy)
Honorary Senior Fellow & Senior Lecturer
University of the Sunshine Coast

Recipient 2024 DarkSky International - DarkSky Defender Award

Committee Member and Maleny Observatory convenor.
Brisbane Astronomical Society

Dark Sky Ambassador
International Astronomical Union

Founding Board Member
Australasian Dark Sky Alliance www.australasiandarkskyalliance.org
Email kenwishaw@gmail.com
Mobile No. 0412 947 429

7. Letters of support/acknowledgement

Guidelines section compliance

Minimum requirements for all Reserves:
Item: 10

- Community commitment
- Support from core managing agency.

To demonstrate community support for the Sunshine Coast Dark Sky Reserve, letters of support and formal acknowledgements were proactively sought from a diverse range of key stakeholder groups and organisations (Refer to Appendix C).

Correspondence was received from:

Commonwealth Government

- Department of Climate Change, Energy, Environment and Water - Migratory Species Section.

Queensland Government (State)

- Queensland Parks and Wildlife Service and Partnerships - As a core managing agency, Queensland Parks and Wildlife Service and Partnerships have provided formal support for the project via correspondence as outlined in Appendix C.
- Minister for Environment, Tourism, Science and Innovation.
- Department of Environment, Tourism, Science and Innovation - Tourism Division.
- Energex.

Community

- Maleny Commerce.
- Mapleton and District Community Association
- Sunshine Coast Environment Council.
- Organisation Sunshine Coast Association of Residents

First Nations

- Jinibara People Aboriginal Corporation.

Tourism

- Visit Sunshine Coast.

Adjoining Local Government

- Gympie Regional Council.

8. Darkness measurement and program development

Guidelines section compliance

Minimum requirements for all Reserves:
Item: 5

- two years of data capture at 20 locations across the Reserve
- core result - 21.5 mag/arcsec^2.

From December 2023, seasonal night sky quality data has been systematically collected across a number of locations within the Sunshine Coast Dark Sky Reserve.

Seasonal measurements were undertaken by Dr Ken Wishaw (DarkSky International Dark Sky Defender Awardee, 2024) using a handheld SQM-L, in accordance with Dark Sky Reserve guidelines and the associated darkness measurement template. These measurements complement the long-term data Dr Wishaw has been collecting since 2017, with all data uploaded to the Globe at Night website. Measurements were conducted on clear nights during a new moon, following the end of astronomical twilight.

In addition to seasonal measurements, two permanent night sky quality meters have been installed by Sunshine Coast Council to enable continuous data collection, one located in the core of the Sunshine Coast Dark Sky Reserve (refer to Table 3) and the other within the peripheral zone at Imbil State Forest.

A summary of results from each location over the past two years is available on Council's project webpage via an online map and in Table 3 and 4 below.

For detailed data, including all completed night sky quality DarkSky International spreadsheets, refer to Appendix D.

Table 3: Night sky quality readings in the core zone (Kirbys Road Environment Reserve).

Date	(mag/arcsec^2)
December 2023	21.6
April 2024	21.6
June 2024	21.3
Sept 2024	21.5
November 2024	21.6
April 2025	21.4
July 2025	21.6
September 2025	21.7

Table 4: Average night sky quality results within the peripheral zone.

Suburb	Average reading (mag/arcsec^2)
Balmoral Ridge	21.1
Belli Park	21.4
Cambroon (site 1)	21.4
Cambroon (site 2)	21.5
Conondale (site 1)	21.6
Conondale (site 2)	21.6
Conondale (site 3)	21.5
Flaxton	21.1
Kenilworth (site 1)	21.6
Kenilworth (site 2)	21.4
Kenilworth (site 3)	21.5
Kidaman Creek	21.3
Mapleton	21.4

North Maleny (site 1)	21.1
North Maleny (site 2)	21.1
Obi Obi	21.4
Reesville	21.3
Witta (site 1)	21.3
Witta (site 2)	21.3

Image: Permanent meter, Imbil State Forest (peripheral zone).

Image: Permanent meter, Kirbys Road Environment Reserve (core).

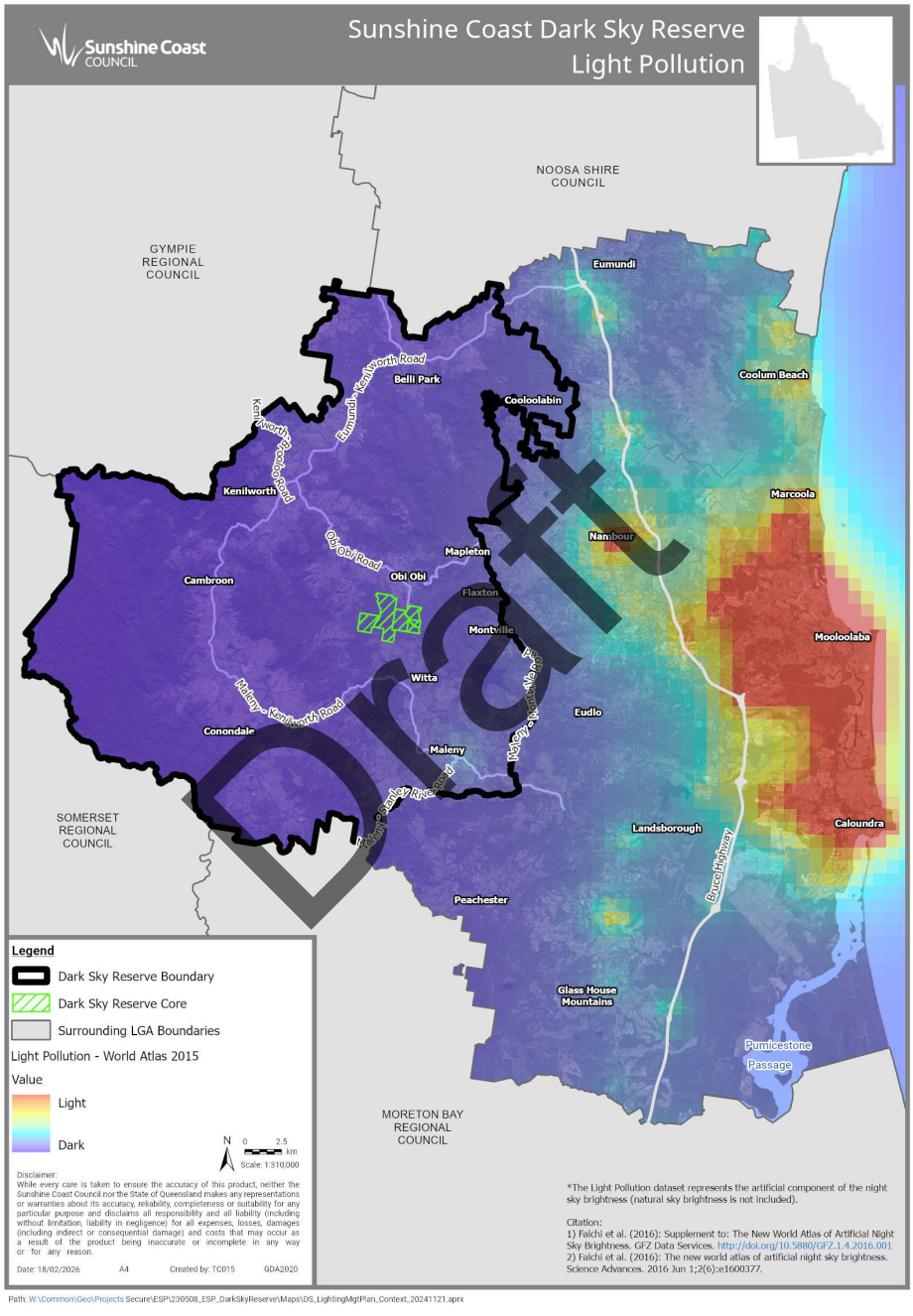


Figure 5: Sunshine Coast region light pollution map.

9. Night sky photography

Guidelines section compliance

Minimum requirements for all Reserves:
Item: 2

- two years of night sky photography captured at three locations across the Reserve.

As part of each seasonal survey, night sky photography was captured to visually document and contextualise the quality of the night sky within the Sunshine Coast Dark Sky Reserve. These images complement the quantitative data and provide a visual reference (see Figure 6) and horizon glow for across the Reserve.

Night sky photography was taken by Dr Ken Wishaw at:

- Eastern Mary River Road, Kenilworth
- Howells Knob, Reesville
- Obi Obi Rd turnoff, Obi Obi.

Photography was undertaken using the same camera lens and settings and no post-production was applied. From June 2024 exposure was increased from 20 seconds to 30 seconds.

At each site, photographs were taken facing north, south, east, and west to capture directional variations in sky quality. These directional images provide valuable insight into the influence of surrounding urban and coastal environments on light pollution levels including:

- South-facing images reveal light pollution originating from Brisbane, the nearest capital city.
- East-facing images show some light encroachment from coastal development and infrastructure.
- North and west-facing images, by contrast, consistently demonstrate the darkest and most pristine sky conditions, highlighting the Reserve's potential for high-quality astronomical observation and ecological preservation.

The sites were chosen to quantify horizon glow from the southern reserve boundary (Howell's Knob), the middle of the reserve (eastern Mary River Road) and the northern part of the Reserve (Obi Obi turnoff).

Howell's Knob is on the southern border of the Reserve, represents the highest point of the landscape, has a direct view to the coastal community to the east and Queensland's capital city, Brisbane to the south. These photographs clearly demonstrate the skyglow of the coast and Brisbane and the effectiveness of the Blackall Range in protecting the Reserve from this skyglow.

For a complete collection of photographs captured during each survey period, refer to Appendix E. Figure 6 (page 37) illustrates the spatial distribution of photography sites across the Reserve.

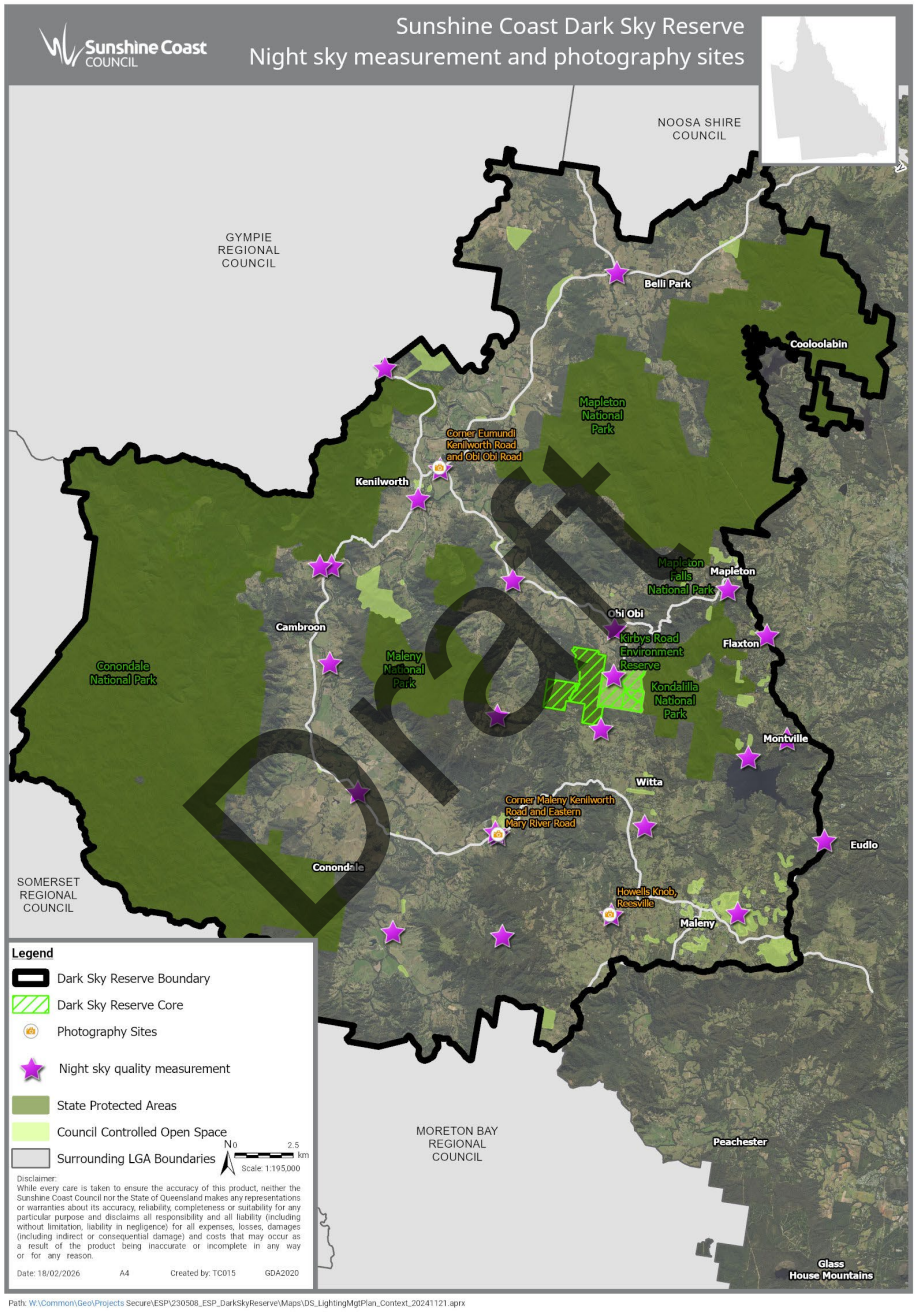
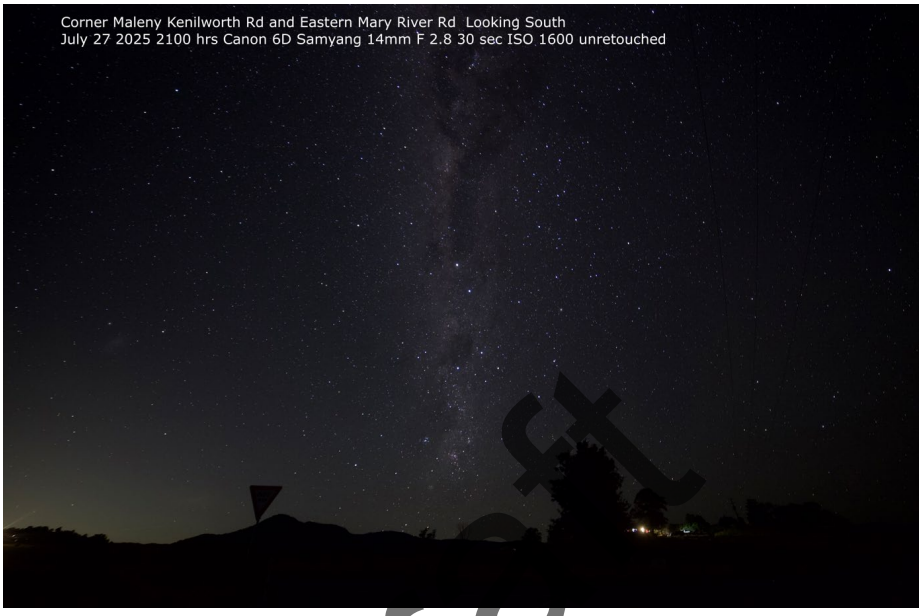


Figure 6: Night sky measurement and photography sites map.

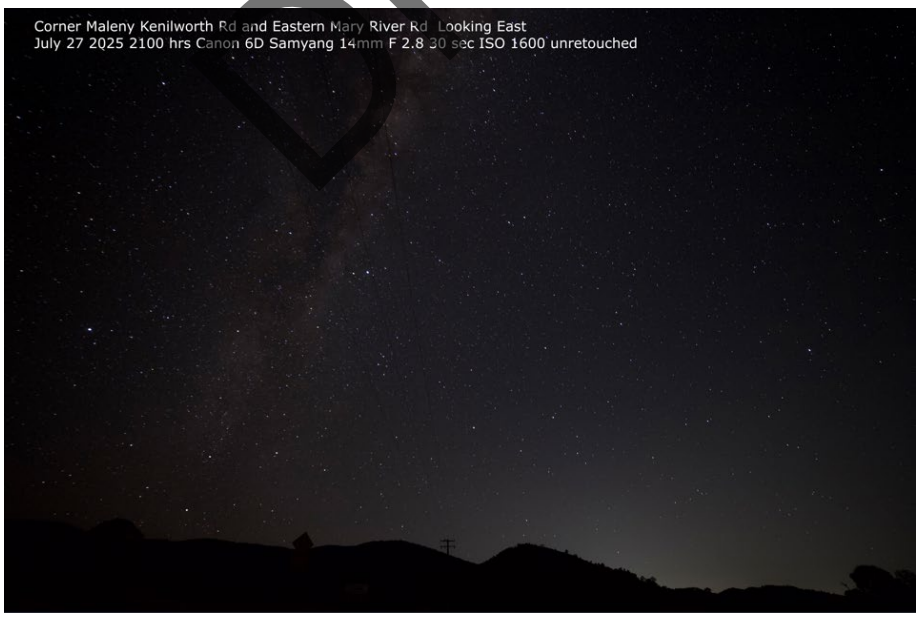
Coner Maleny-Kenilworth Rd and Eastern Mary River Rd, Kenilworth

Figure 7: Cnr Maleny-Kenilworth and Eastern Mary River roads, Kenilworth: context to capital city, Brisbane and coastal urban areas.

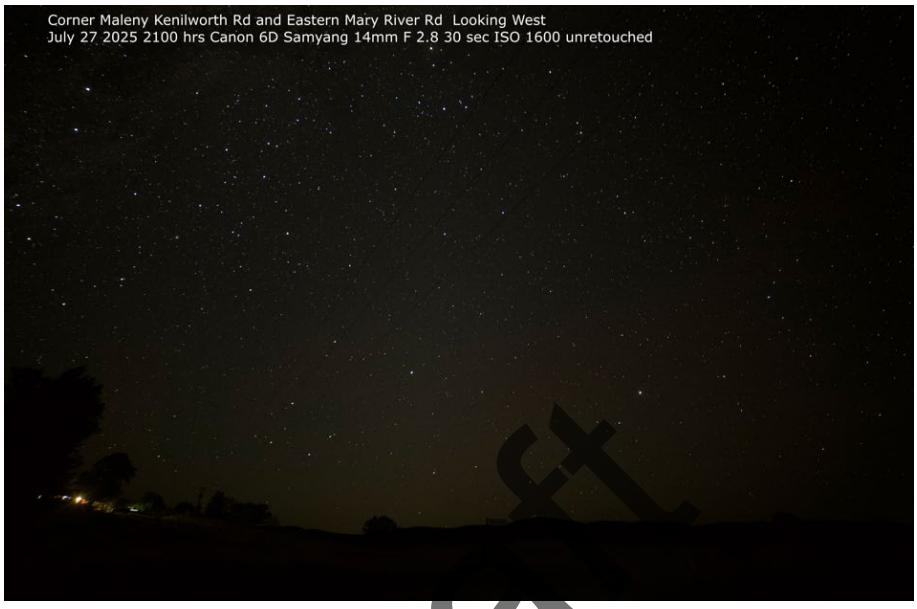
2025 - Cnr Maleny-Kenilworth Rd and Eastern Mary River Rd, Kenilworth looking east



2025 - Cnr Maleny-Kenilworth Rd and Eastern Mary River Rd, Kenilworth looking east



2025 - Cnr Maleny-Kenilworth Rd and Eastern Mary River Rd, Kenilworth looking west

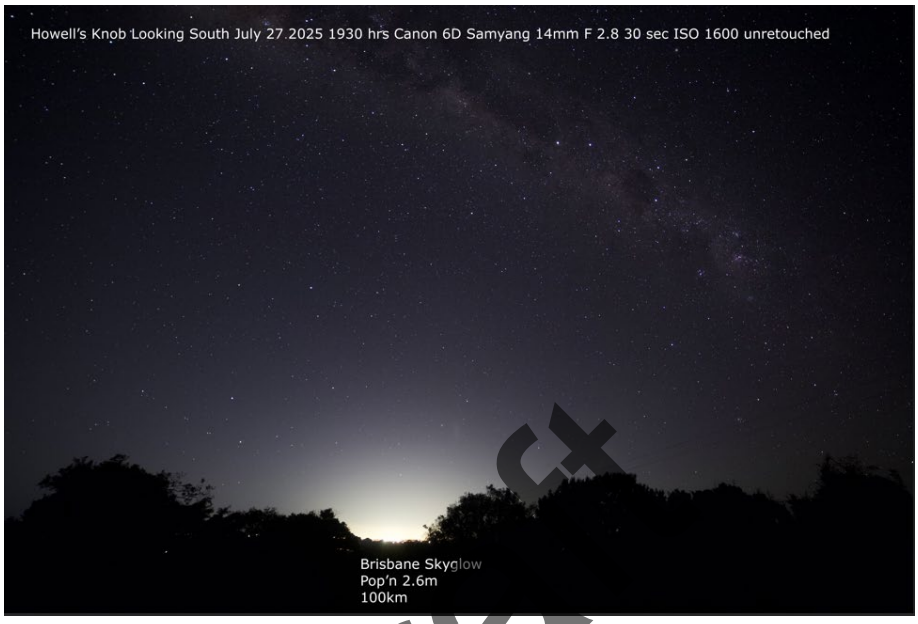


2025 - Cnr Maleny-Kenilworth Rd and Eastern Mary River Rd, Kenilworth looking north

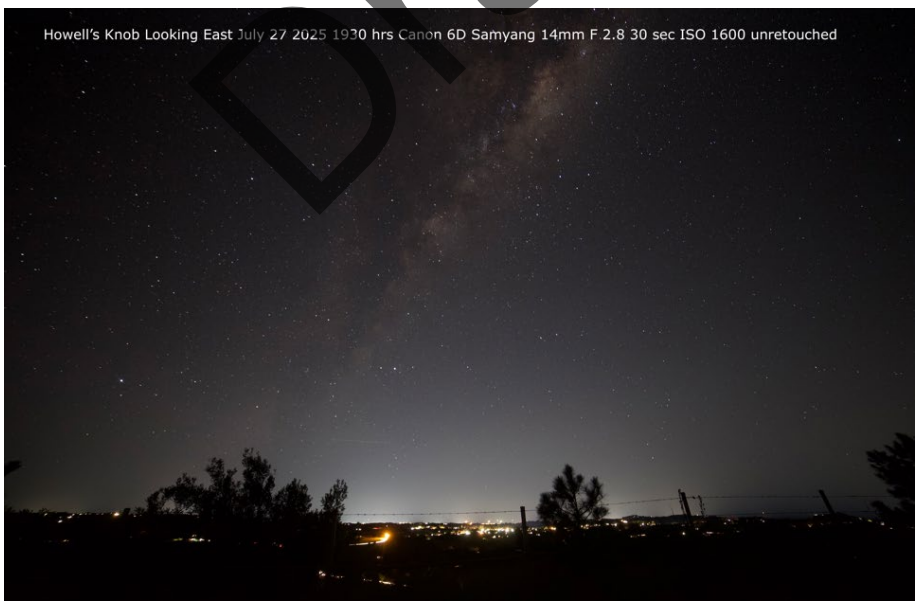
Howell's Knob, Reesville

Figure 8: Howell's Knob, Reesville: context to capital city, Brisbane and coastal urban areas.

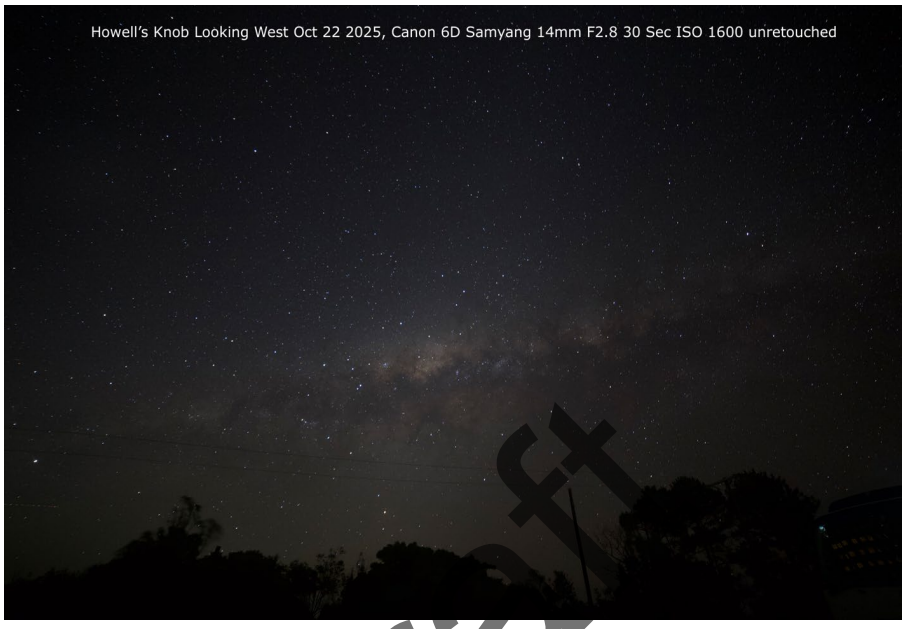
2025 - Howell's Knob, Reesville looking south



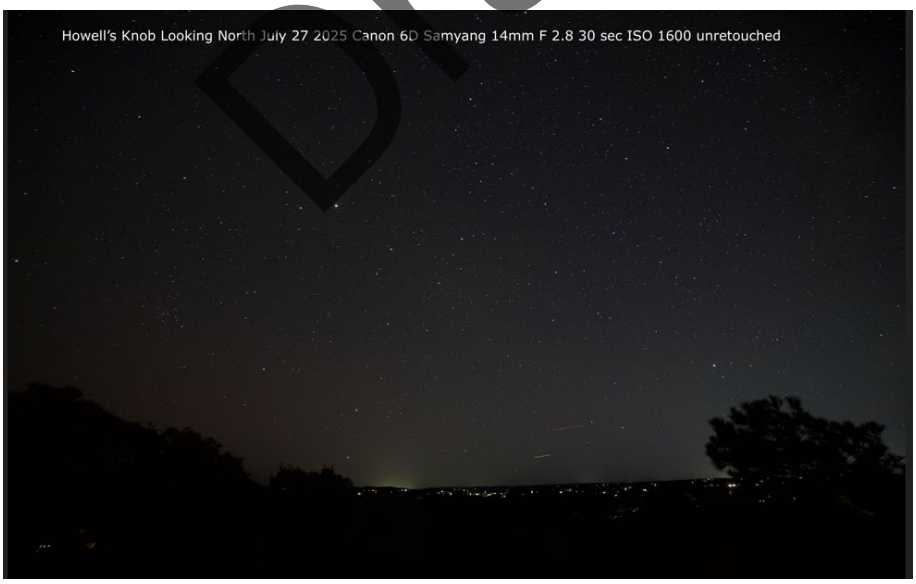
2025 - Howell's Knob, Reesville looking east



2025 - Howell's Knob, Reesville looking west



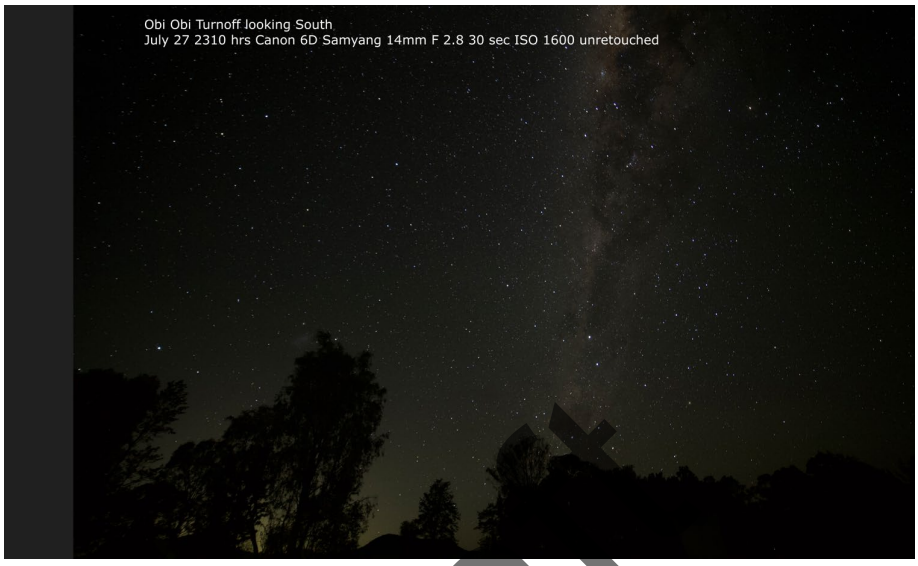
2025 - Howell's Knob, Reesville looking north



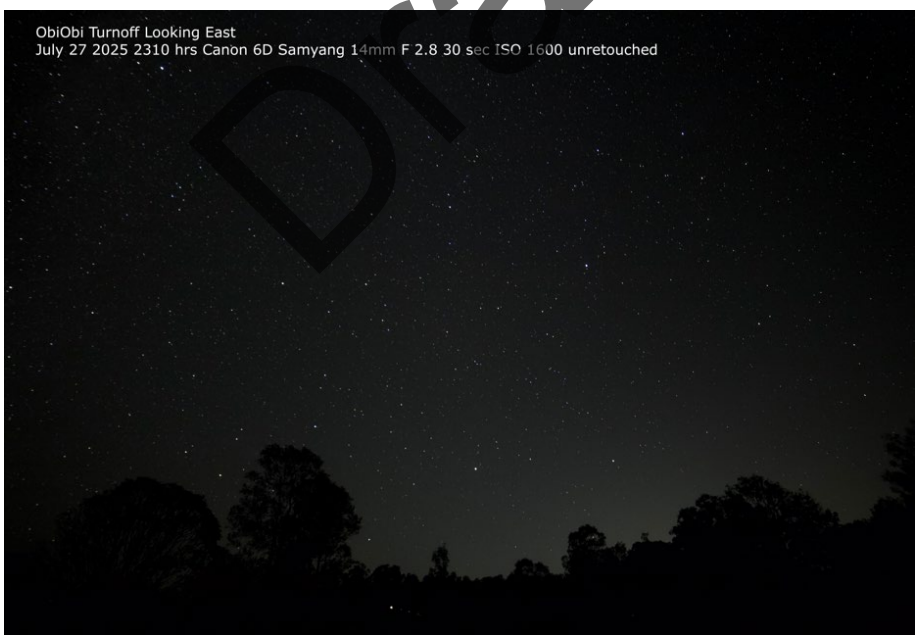
Obi Obi turn off

Figure 9: Obi Obi turn off, Obi Obi context to capital city, Brisbane and coastal urban areas.

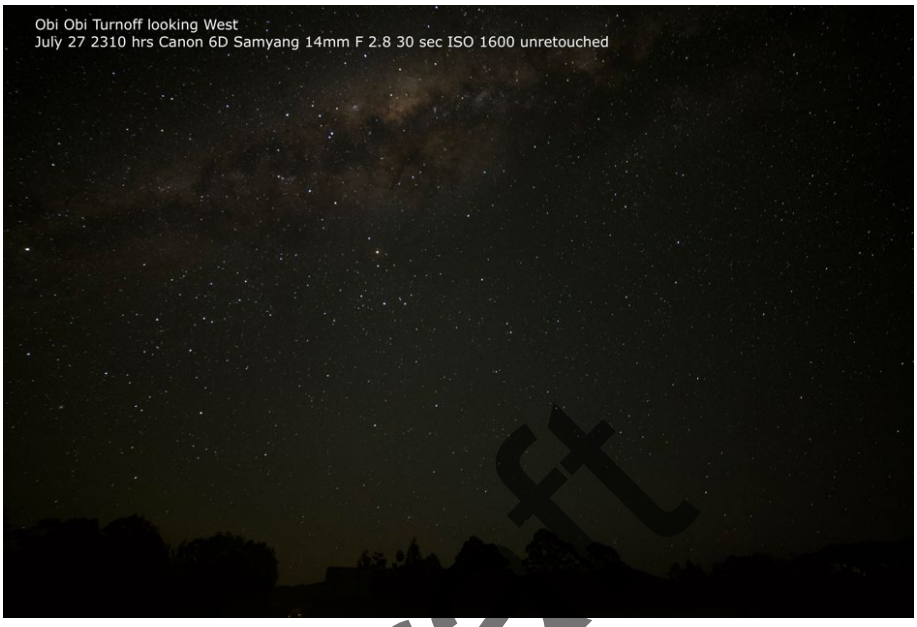
2025 - Obi Obi turn off looking south



2025 - Obi Obi turn off looking east



2025 - Obi Obi turn off looking west



2025 - Obi Obi turn off looking north

10. Lighting inventory

A lighting inventory has been developed for both the core and peripheral zones, in accordance with Dark Sky Reserve guidelines to outline existing lighting within the Sunshine Coast Dark Sky Reserve and current level of compliance.

10.1 The core

Guidelines section compliance

Minimum requirements for all Reserves:
Item: 3, 4

- core zone 100% compliant - no artificial lighting present
- lighting inventory completed.

Table 5: Lighting inventory - core zone.

Location	No. of fixtures	% of compliance
Kirbys Road Environment Reserve	0	100
Maleny National Park (Lot 728 NPW787)	0	100

Kirbys Road Environment Reserve and Maleny National Park contain no artificial lighting within its boundaries. This absence of lighting supports the area's role as the core area of the Sunshine Coast Dark Sky Reserve, helping to preserve natural night sky conditions and minimise light pollution impacts on local ecosystems and astronomical observations.

10.2 The peripheral zone

Guidelines section compliance

Minimum requirements for all Reserves:
Item: 7

- lighting inventory completed
- 700 public lights - 35% compliant.

Within the Sunshine Coast Dark Sky Reserve peripheral zone, there a number of different outdoor lighting types, dependent on the location and function of the outdoor space. These lighting installations may be applicable to public areas as well as privately owned and operated businesses and residences.

It is estimated that there are 700 public outdoor lighting assets (Energex street lights and Council managed/maintained outdoor lights). These include a mix of street lights, path lights, carpark lights, and sports field lights. The breakdown of these assets is outlined in the table below:

Table 6: Public lighting - peripheral zone.

Lighting type	No. if fixtures	% of compliance
Street lighting *(Energex data, Jan 2024)*	560	29%
Council electrical lights includes carpark, path, sports and street lighting (rate 3) *(Council data May, 2025)*	140	61%
Total	700	

The Energex street lighting network within the Reserve consists of 560 lights, including sodium, LED, mercury vapour, and compact fluorescent fittings. Since the inception of the Dark Sky Reserve Project, 29% (161 lights)

have been upgraded to meet Dark Sky compliance.

Council's electrical lighting network comprises 140 lights across a range of types including car park, pathway, sports facilities, and street lighting. Notably, 61% are dark sky compliant, featuring cut-off shielding and adaptive controls such as motion sensors and central management systems to reduce light pollution and enhance energy efficiency. Fittings use LEDs with colour temperatures between 2700K and 3000K.

An inventory of all street lights and Council electrical lights in the categories above is available in Appendix F.

Refer to Figure 11 - Page 57 illustrating retrofit project including street lights.

11. Lighting Management Plan

See the full plan in Appendix G.

Guidelines section compliance

Minimum requirements for all Reserves:
Item: 1

- Lighting Management Plan developed and adopted for the Reserve.
- Core land managers commitment received to implementing the Lighting Management Plan within the Reserve.
- Community consultation on Lighting Management Plan completed.
- 91% of respondents agreed with the Draft Lighting Management Plan's purpose and objectives.
- 85% agreed with what Draft Lighting Management Plans application.

To ensure the Lighting Management Plan met the expectations of DarkSky International and complied with the International Dark Sky Places Program requirements, the draft plan was reviewed by DarkSky International prior to community consultation. Their feedback was considered and incorporated, resulting in a plan that aligns with program standards before being presented for formal community consultation.

11.1 Overview

The Lighting Management Plan (LMP) for the Sunshine Coast Dark Sky Reserve will shape the selection, placement, installation and operation of all new, replacement or retrofitted lighting.

The LMP has been prepared in consultation with key stakeholders and the Sunshine Coast community. A dedicated community consultation program was undertaken on the draft plan seeking feedback.

The plan is intended to be applied with other endorsed Council guidelines and specifications including the Urban Lighting Master Plan and Electrical and Lighting Infrastructure Manual. These two associated guidelines apply to the whole of the Sunshine Coast local government area.

The Lighting Management Plan:

- provides direction for new or upgraded Council-controlled outdoor lighting installations in public open spaces and other public lighting where appropriate within the Dark Sky Reserve.
- establishes a common set of principles to guide lighting provided by other key stakeholders within the Dark Sky Reserve including Energex, Queensland Parks and Wildlife Service and Partnerships, Department of Transport and Mains Roads and the community.
- provides direction for the application of good practice lighting principles to inform the Sunshine Coast Planning Scheme in regard to outdoor lighting associated with new developments within the Dark Sky Reserve.
- raises community awareness of the Dark Sky Reserve and educates how the community can support dark sky aspirations through good practice lighting principles.

The Lighting Management Plan outlines the five overarching responsible lighting principles established by Dark Sky International and provides technical guidance on how to achieve these principles. The principles aim to ensure lighting is:

1. useful – use light only if it is needed.

2. targeted – direct lighting so it falls only where it's needed.

3. low light level – light should be no brighter than necessary.

4. controlled – use light only when it is needed.

5. warm in colour – use warmer-colour lights where possible.

The Lighting Management Plan has two levels of application for how it will be used:

1. mandatory
2. encouraged.

Mandatory application refers to Council owned and operated lighting in the Reserve. This means any new or upgraded outdoor lighting within the Reserve owned and operated by Council must follow the Lighting Management Plan. For example, street and roadway lighting, lighting in parks and gardens spaces, Council controlled sports lighting and lighting associated with Council buildings and facilities.

Encouraged application applies to all other stakeholders responsible for outdoor lighting within the Reserve such as existing private developments and Queensland Government assets etc.

New development: The plan will also inform new outdoor lighting provisions in the Proposed Sunshine Coast Planning Scheme. The Proposed Sunshine Coast Planning Scheme includes detailed outdoor lighting provisions that apply to all new assessable development within the Dark Sky Reserve. These provisions are implemented through development conditions and also apply to certain forms of assessable development. They require downward-directed, fully shielded lighting, restrict short-wavelength emissions (e.g. CCT ≤ 3000K), and mandate the use of timers or motion sensors to minimise unnecessary illumination.

11.2 Authority and jurisdictions

In Australia, the Commonwealth Government has the highest authority and sets broad national laws and standards. Below that, the Queensland State Government has greater power than local councils and controls state legislation, policies, and standards.

Energy Queensland Ltd is owned by the Queensland State Government and is the parent company of Energex, which operates the electricity distribution network in South East Queensland, including the Sunshine Coast. Councils and state departments work with Energex to install, maintain, and upgrade lights in line with Commonwealth and State requirements.

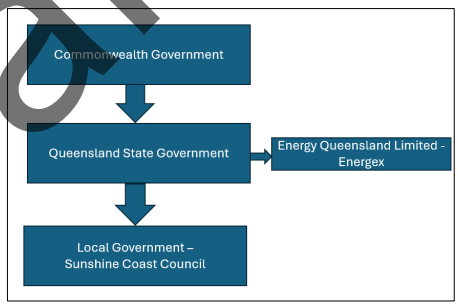


Figure 10: Australian context of authority.

As outlined on page 6 of the Dark Sky Reserve Guidelines, lighting required by law under the authority of any entity having higher legal jurisdiction over either the core or peripheral zones may be formally exempted from the requirements of this section. From a Sunshine Coast context, if Commonwealth Government or Queensland Government requires specific lighting, Council's own standards are exempt to comply with that higher obligation.

Through this project, positive outcomes however have been achieved in partnership with the Queensland State Government. Their collaboration has delivered on the program's objectives and compliant lighting outcomes within the Dark Sky Reserve.

Energex's 2025–2030 strategy is to deploy LED aeroscreen luminaires with zero-degree upcast, available in 3000K, replacing conventional street lights across their network in the Reserve and more broadly throughout Queensland by 30 June 2030. Refer to Appendix C - Pages 76-77.

Queensland Parks and Wildlife Service and Partnerships have committed to ensuring any new or upgraded outdoor lighting within State-owned National Parks and Forests managed by Queensland Parks and Wildlife Service and Partnerships across the Reserve will comply with the Lighting Management Plan. Refer to Appendix C - Page 75

The Department of Transport and Main Roads (TMR) lighting policy provides for replacing legacy lighting that emitted significant wasteful light above the horizontal plane with modern LED aeroscreen luminaires. TMR standards now require zero-degree upcast mounting brackets for all new installations, with a replacement program scheduled for completion by June 2026. Road lighting is only provided where there is a demonstrated safety benefit for motorists or pedestrians, and all lighting levels comply with the relevant Australian Standards.

The policy also allows for the use of lower-impact 3000K light sources in environmentally sensitive areas where appropriate. In addition, TMR is deploying smart lighting controllers alongside the LED upgrade program, enabling reduced lighting levels at times when safety is not compromised.

See Section 12 - Lighting compliance plan for our approach to lighting management in collaboration with key partners.

11.3 Draft Lighting Management Plan community consultation outcomes

Between 16 June and 11 July 2025, community engagement for the Draft Lighting Management Plan was undertaken. 550 surveys were completed and revealed:

- 94% of respondents think it is important preserve dark skies in their community.
- 91% of respondents agreed with the Draft Lighting Management Plan's purpose and objectives.
- 85% agreed with what Draft Lighting Management Plan's application.

12. Lighting compliance plan

This section outlines current lighting compliance in the core and peripheral zones, along with projects completed to deliver dark sky compliant lighting across the Sunshine Coast Dark Sky Reserve. It also describes the future approach to managing outdoor lighting within the Reserve.

12.1 The core

Guidelines section compliance

Minimum requirements for all Reserves:
Item: 3, 4, 5

- 100% compliant - no lighting present
- a lighting inventory has been completed
- installation of a permanent night sky quality meter
- night sky quality measurement program maintained by Council
- adoption of the Lighting Management by core land managers.

As outlined in Section 10 - lighting inventory, the core zone, Kirbys Road Environment Reserve and Maleny National Park is 100% compliant with no lighting present.

Any future lighting proposed within the core zone will comply with the requirements outlined in the Lighting Management Plan.

A permanent dark sky meter is within the core measuring night sky quality daily.

12.2 The peripheral zone

Guidelines section compliance

Minimum requirements for all Reserves:
Item: 7

- visible, proportional examples of compliant lighting installations across the Reserve - Maleny, Kenilworth, and street lighting across the Reserve
- 10% of fixtures outside the core are brought into compliance - >170 lights (24%) upgraded to dark sky compliant since project's inception.
- 35% compliant across peripheral zone
- complimentary lighting projects surrounding the Reserve have also been delivered.

Sunshine Coast Council in partnership has completed a number of projects to improve outdoor lighting within the Reserve since commencing the establishment of the Sunshine Coast Dark Sky Reserve.

LED Street Lighting Replacement Project

The LED Street Light Replacement Project was delivered partnership with Energex, upgrading approximately 4,000 Energex-owned street lights to energy-efficient LED technology across the entire Sunshine Coast region. This includes street lights located within the Sunshine Coast Dark Sky Reserve which were upgraded across 2024/2025.

As of December 2025, 161 street lights within the Reserve have been replaced with dark sky compliant fittings, supporting efforts to reduce light pollution and enhance night sky visibility. All new luminaires are 3000K CCT, complying with dark-sky aligned design intent (zero-degree upcast). Refer to Appendix H for luminaire specifications and

Figure 11 - Page 57 for sites upgraded in the Reserve.

This project is being delivered through funding received from the Australian Government's Local Road and Community Infrastructure Program (LRCIP).

Images: Old lighting verse new lighting.

Isaac Moore Park, Kenilworth

Lighting upgrades at Isaac Moore Park, an identified stargazing site within the Dark Sky Reserve, involved replacing five existing lights in the amenities block with 3000K LED lights fitted with motion sensors. This upgrade aimed to minimise uncontrolled light distribution and reduce excessive upward light spill, supporting the preservation of dark sky conditions. Refer to Figure 11 - Page 57 for location of Isaac Moore Park lighting upgrades within the Reserve.

Maleny Community Precinct, Maleny

Adjoining the Maleny observatory site, eight carpark and street lights as well as five solar bollard lights were replaced to dark sky compliant lighting.

The street light and carpark lights were replaced with Australasian Dark Sky Alliance Certified (ADSA) certified MOD 2.0 Urban, 2200K, 5140 lumens, 44W lighting which have zero upward light emission and precise optical controls.

The solar bollard lights were replaced with a 3000K solar wall light with no upward light emission and an output of 27 lumens.

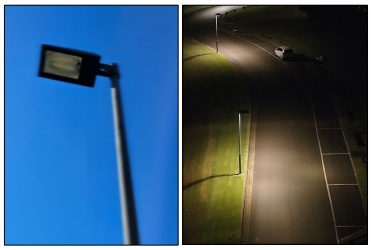


Image: old lighting, Maleny Community Precinct.

Image: New luminaires at Maleny Community Precinct.

Image: New solar bollard light, Maleny Community Precinct.

Refer to Figure 11 - Page 57 for location of Maleny Community Precinct lighting upgrades within the Reserve.

Smart nodes

To help manage light pollution, dimming functionalities have been incorporated into integrating/streamlining Central Management System (CMS) and Asset Management System (AMS) by installing 3000 smart nodes across the Sunshine Coast region.

12.3 Future approach to lighting management

As part of our lighting compliance strategy and our ongoing commitment to minimising light pollution within the Reserve, we are implementing a series of initiatives, either planned or currently underway, to achieve full compliance of public outdoor lighting in the peripheral zone over time.

Building on the successful outcomes of this project, we are working partnership to support the objectives of the Dark Sky Places program. Collaborations with State Government and Energex will guide future lighting practices across national parks, state forests, and street lighting within the Dark Sky Reserve, ensuring alignment with the program's vision and contributing to the reduction of light pollution:

- Council owned and maintained outdoor public lighting - All new or upgraded public outdoor lighting within the Reserve that is owned and operated by Council will comply with the LMP at the time of installation or required upgrade. Across the next five years our goal is to ensure all street lighting owned and maintained by Council is 100% compliant. For other lighting types such as sports lighting, these will be delivered when upgrades are required.
- New development - the Proposed Planning Scheme includes detailed outdoor lighting provisions that apply to all new assessable development within the Dark Sky Reserve. These provisions are implemented through development conditions and also apply to certain forms of assessable development. It is aimed the proposed Planning Scheme is finalised in 2026/2027.
- Energex street lighting - Energex's 2025–2030 strategy is to deploy LED aeroscreen luminaires with zero-degree upcast, available in 3000K, replacing all remaining conventional street lights across their network in the Reserve and more broadly throughout Queensland by 30 June 2030.
- National Parks and State Forests - All new or upgraded outdoor lighting within State-owned National Parks and Forests managed by Queensland Parks and Wildlife Service and Partnerships across the Reserve will comply with the Lighting Management Plan.

12.4 Complementary lighting projects across the Sunshine Coast region

To demonstrate our commitment to reducing light pollution beyond the Sunshine Coast Dark Sky Reserve area, additional measures across the broader Sunshine Coast region to further support best-practice lighting management have been implemented.

Train station lighting - Landsborough

As a result of a successful community-led campaign, Queensland Rail implemented a two-phase lighting adjustment to support dark sky preservation whilst maintaining public safety. The changes occurred in June 2024 and included:

- dimming light to 70% from dusk until 9pm
- further dimming to 40% from 9pm until sunrise.

Wildlife sensitive lighting, coastal areas

As part of Council's turtle conservation efforts, street, carpark and amenity lighting along the coastal areas have been retrofitted to help protect wildlife such as our marine turtles from the impacts of light pollution.

The project included installation of dual engine human and turtle-centric lighting (PC Amber / 2700K) infra-red sensor lighting in carpark and improvements to facilities and local street lighting. A total of 38 lights were retrofitted and one light was removed.

Ongoing artificial light at night studies including dark sky brightness and photometric measurements, and citizen science hatchling orientation data collection are ongoing to monitor outcomes.

This project was led by Sunshine Coast Council and supported by the Commonwealth Government Department of Climate Change, Energy, the Environment and Water.

Image: Before image of lighting upgrade, Shelly Beach.

Image: After images of lighting upgrade, Shelly Beach.

Bulcock Beach pedestrian lighting upgrade

A lighting upgrade was completed at Bulcock Beach to improve the nighttime environment for pedestrians whilst reducing the impact on the surrounding environment. The project used 2200K luminaires and AEC reflector optic. It achieved zero sky glow and very low DGi.

Image: Before and after images of lighting upgrade, Bulcock Beach. *Source: HBW Lighting*

LED Street Lighting Replacement Project - completion

The LED Street Light Replacement Project is nearing completion, with approximately 4,000 street lights across the Sunshine Coast region upgraded to 3000k energy-efficient LED technology complying with dark-sky aligned design intent (zero-degree upcast).

LED lighting across Queensland

Across 2025-2030 Energex are deploying LED lighting on all remaining conventional lights in their network in the State of Queensland by 30 June 2030 and 3000K in the Sunshine Coast region.

Queensland Government building lighting upgrades

$250,000 has been committed to lighting upgrades in Maleny by the Queensland Government to fast-track lighting upgrades to protect the Sunshine Coast Dark Sky Reserve. The funding is anticipated to replace outdated state-controlled lighting on government buildings such as the police station, hospital etc.

Central Management System of Street Lighting

Council is upgrading its own street lights (Rate 3) with a Central Management System (CMS) on 70% of its 3,000 LED lights. These smart lights can be dimmed to 50% during off-peak hours (11pm–5am) while still meeting safety standards. This change is part of a broader national update to electricity and retail rules, with new metering systems expected by mid-2026. Future dimming of street lights through a Central Management System will reduce light pollution and help preserve the natural night environment.

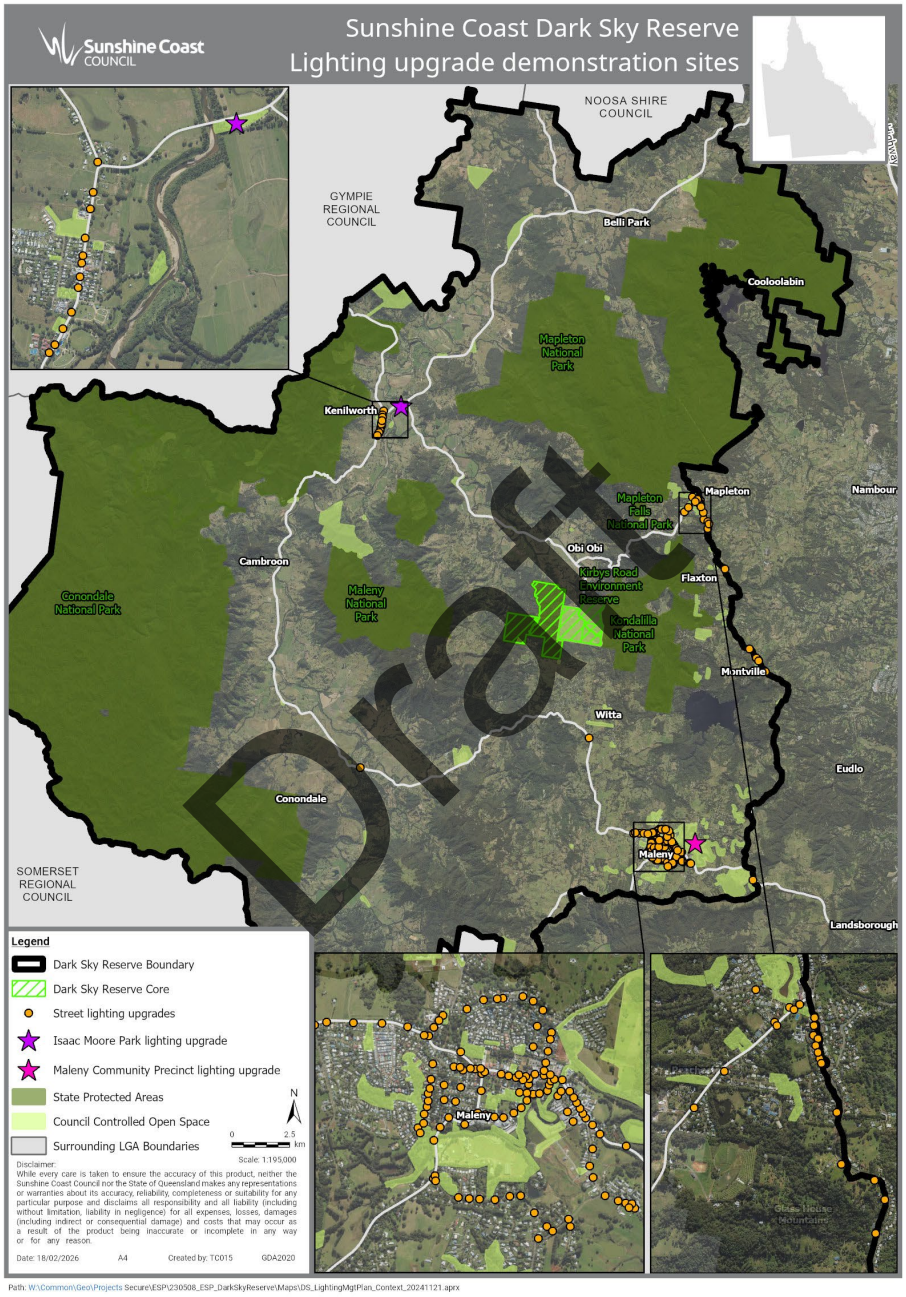


Figure 11: Lighting upgrade demonstration sites as part of the project.

13. Outreach and education

Guidelines section compliance

Minimum requirements for all Reserves:
Item: 8, 9

- participating community providing engagement and education
- commitment to public education
- 4 public events per year
- 35 presentations/workshops delivered.

Outreach and education has been an ongoing focus for the Sunshine Coast Dark Sky Reserve Project with both successful education and well as engagement initiatives delivered.

Image: Library display as part of engagement program, Caloundra.

13.1 Communication campaigns

Since December 2023, Sunshine Coast Council has successfully delivered a comprehensive communication program to support the Sunshine Coast Dark Sky Reserve Project. The campaign has utilised a diverse mix of tools including informative videos, targeted social media posts, media releases, and a dedicated webpage to raise awareness and engage the community. See Appendix I for examples of media stories captured.

Image: Dark skies foyer video on Council foyer screen, Maroochydore as part of engagement program.

13.2 Community consultation

Two formal community consultation phases were delivered.

Stage 1: May/June 2024

The May/June 2024 consultation program invited our communities inside and outside the Reserve area to have their say and participate in a range of conversations, surveys and events.

Community feedback was received through:

- online surveys
- community conversations at drop-in sessions and local events
- community information sessions and presentations
- individual submissions.

A summary fact sheet of engagement outcomes for stage one is in Section 14: Interpretive products.

The majority of feedback received through the engagement process, including 95% of survey respondents, expressed support for the protection of our night sky for future generations. The community see a Dark Sky Reserve designation through the International Dark Sky Places Program as a great initiative and positive approach towards protecting our night skies. The community recognises our night sky as an important natural asset of the region and the role it plays in people's connection to place. Feedback received also acknowledged the many benefits of protecting the night sky including preserving wildlife and ecosystems

as well as for human experiences (i.e. health and wellbeing, recreation and astro-tourism).

Stage 2: June/July 2025

Between 16 June and 11 July 2025, the second stage of community engagement for the Dark Sky Reserve project was undertaken and revealed strong ongoing public support for preserving the night sky for future generations. This phase focused on updating the community, exploring local impacts of light pollution, and gathering feedback on the Draft Lighting Management Plan.

Key themes from the feedback included: widespread support with minimal suggested changes; increased public understanding of the project and Draft Lighting Management Plan; recognition of broad benefits for nature, people, and businesses; a desire to balance low lighting with safety; interest for expanding the initiative; emphasis on continued communication and education; and a sense of urgency to implement the plan.

94% of respondents think it is important to preserve dark skies in their community. 91% of respondents agreed with the Draft Lighting Management Plan's purpose and objectives.

A summary fact sheet of engagement outcomes for Stage one and two is in Section 14.

Image: Local expo display as part of community engagement, Maleny.

13.3 Materials and collateral

To further support outreach, Council has also developed a variety of printed collateral, including brochures, fact sheets, maps, postcards, banners, and other visual materials, helping to communicate key messages across both digital and physical platforms. These efforts have effectively highlighted the Reserve's significance, encouraged public participation, and reinforced Council's commitment to preserving the region's night skies.

See Section 14: Interpretive products for examples of materials and collateral.

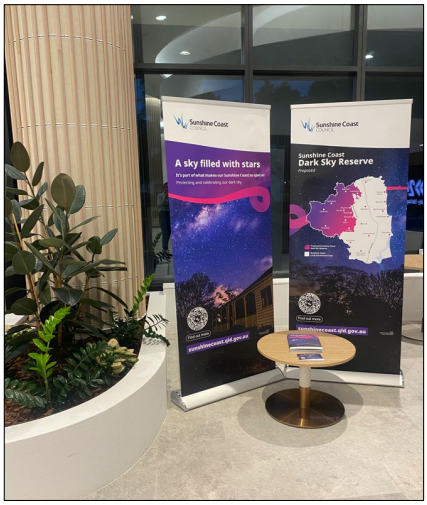


Image: Council City Hall foyer display as part of community engagement efforts, Maroochydore.

13.4 Community-led education and outreach

In addition to Council's communication and engagement efforts, the community has played an active and inspiring role in supporting the Sunshine Coast Dark Sky Reserve project. Local groups and passionate individuals have organised public events including stargazing nights and educational presentations to raise awareness about the importance of dark skies and the impacts of light pollution. These grassroots initiatives have complemented Council's outreach, fostering a shared sense of stewardship and deepening public understanding of the value of preserving the night sky.

Dr Ken Wishaw, the 2024 Dark Sky Defender Awardee and the 2025 Sunshine Coast Biosphere Community Awards, Senior Citizen of the Year, has been a key driver of implementing a Dark Sky Reserve within the Sunshine Coast and has provided invaluable support and technical expertise to the process and educating the community.

Table 7: Education and outreach delivered by Dr Ken Wishaw.

Date	Education and outreach
2023	
July	Maleny Observatory
August	Queensland Astrofest
September	Maleny Observatory
October	Maleny Observatory
December	University of the Sunshine Coast School of Business and Tourism
2024	
March	Mapleton Environmental Group
April	Brisbane Astronomical Society
	University of the Sunshine Coast School of Business and Tourism
May	University of the Sunshine Coast Environmental Group
	Montville Village Association
June	Mapleton and District Community Association
	Mapleton Mystic Mountain Tour Group
	Maleny Observatory
July	University of the 3rd Age Caloundra
August	Maleny Observatory
	University of the Sunshine Coast
	Brisbane Astronomical Society
	University of the Sunshine Coast
	Lake Cooby International Conference
September	Maleny Observatory
	University of the Sunshine Coast

Date	Education and outreach
November	Maleny Observatory
	U3A Caloundra
	Brisbane Astronomical Society
2025	
February	ADSA National Meeting Melbourne 19th February
April	Maleny Golf Club
May	Lighting Council of Australia Scientific Meeting Melbourne
	Lady Elliott Island
July	Buderim Men's Shed
	University of the 3rd Age
September	U3A, Sippy Downs
October	Hinterland Lions Club
	Light source lighting designers and lighting engineers, Brisbane
November	Biosphere Dark Sky Community Event
	Bat Festival, Maleny

Brisbane Astronomical Society

The local chapter of the Brisbane Astronomical Society conducts stargazing nights at the Maleny Observatory within the Dark Sky Reserve. These evenings include a presentation, laser guided tour of the night sky and interaction with high-end telescopes. The demand for these events is ever increasing, with a free but ticketed system requiring implementation to cap the number of attendees. Numbers are capped at 150 attendees and these free tickets regularly sell out within just a few hours of being released.

Image: Public stargazing night 2024 as part of engagement program, Maleny.

Table 8: Dark sky community events 2024-2025.

Month	Event
2024	
May/June	Dark Sky Project Community consultation program of activities (various locations)
April	Public Stargazing night, Maleny Observatory
June	Public Stargazing night, Maleny Observatory
August	Public Stargazing night, Maleny Observatory
	Astronomy Dark Sky Workshop, Mooloolaba
2025	
June/July	Dark Sky Project Community Consultation program of activities

August	Public Stargazing night, Maleny Observatory
November	Dark Sky Community Event, University of the Sunshine Coast
	Australasian Bat Night, Maleny

13.5 Ongoing education and outreach

As part of the Sunshine Coast Dark Sky Reserve's ongoing education and outreach efforts, the following initiatives are proposed to form an inclusive engagement program:

Website Hub

- *Dedicated Dark Sky Reserve page on Council's website featuring:*
  - interactive map of the Reserve area
  - educational content and collateral on light pollution and its impacts
  - Lighting Management Plan
  - stargazing locations.

Public stargazing nights and events

- *Hosted by local astronomy groups including the local chapter of the Brisbane Astronomical Society*
  - regular public nights
  - presentations on light pollution and astronomy
  - naked-eye viewing
  - Telescope viewing

In 2026 local astronomy groups in the Reserve are planning eight public stargazing events (weather permitting). For nights affected by cloud cover, local astrophotography presentations and interactive Q&A sessions are intended to be offered. All events will feature a component addressing light pollution.

Presentations and workshops

- *Delivered to:*
  - community groups
  - universities
  - tourism and local business.

Education and collateral

- Print and digital materials:
  - banners, postcards, fact sheets for local community events
  - resources for local residents and visitors
  - social media campaigns and short videos.

Tourism and visitor engagement

- Dark Sky Reserve branding and signage at a main Reserve entry point.
- Local tourism operators offering dark sky experiences.
- Visitor education through accommodation providers and tour guides.
- Interpretive signage and educational installations.

First Nations engagement

Sunshine Coast Council recognises our shared history and works in partnership with the Kabi Kabi and Jinibara peoples to support a shared future grounded in respect, understanding and collaboration. Council is committed to respectful engagement with First Nations peoples and actively seeks input from Traditional Owners through ongoing consultation across planning, policy development and project delivery.

Council values First Nations knowledge, culture and enduring connection to Country, and seeks to ensure this knowledge informs inclusive outcomes that respect cultural heritage and support shared stewardship of the Sunshine Coast.

Council has a dedicated First Nations Partnerships team that supports Council's commitment to working in partnership with the Kabi Kabi and Jinibara peoples. The Sunshine Coast Dark Sky Reserve project team will work closely with this team to ensure ongoing engagement with the Kabi Kabi and Jinibara peoples and to support the implementation of Dark Sky Reserve activities and initiatives across the wider Sunshine Coast community.

First Nations remain an important part of a sustainable Sunshine Coast and continue to play an active role in the governance arrangements of our Sunshine Coast Biosphere. Engagement has also occurred through the proposal to establish a Sunshine Coast Dark Sky Reserve, including First Nations stories shared through a free community event, supporting broader community understanding of Country and cultural connections to the night sky.

In 2026, as part of exploring visitor experiences within the Dark Sky Reserve while ensuring the long-term protection of the night sky, First Nations groups will be invited to share their cultural perspectives and connections to the night sky.

14. Interpretive products

Guidelines section compliance

Minimum requirements for all Reserves:
Item: 8, 9

- Collateral developed to support local outreach and education efforts - websites, fact sheets, brochure etc.

Guided by DarkSky International's established collateral and best-practice principles, we have developed locally tailored interpretive products to enhance community understanding and engagement. These included:

- dedicated webpages
- brochures, fact sheets, and postcards
- maps
- pull up banners
- frequently asked questions (FAQs) resource to address common queries.

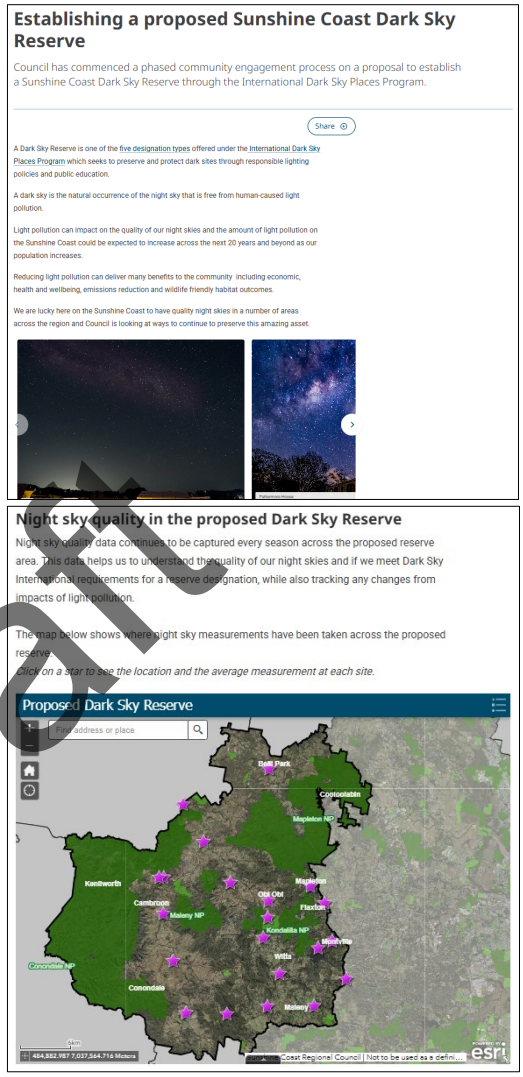


Image: Project webpage.

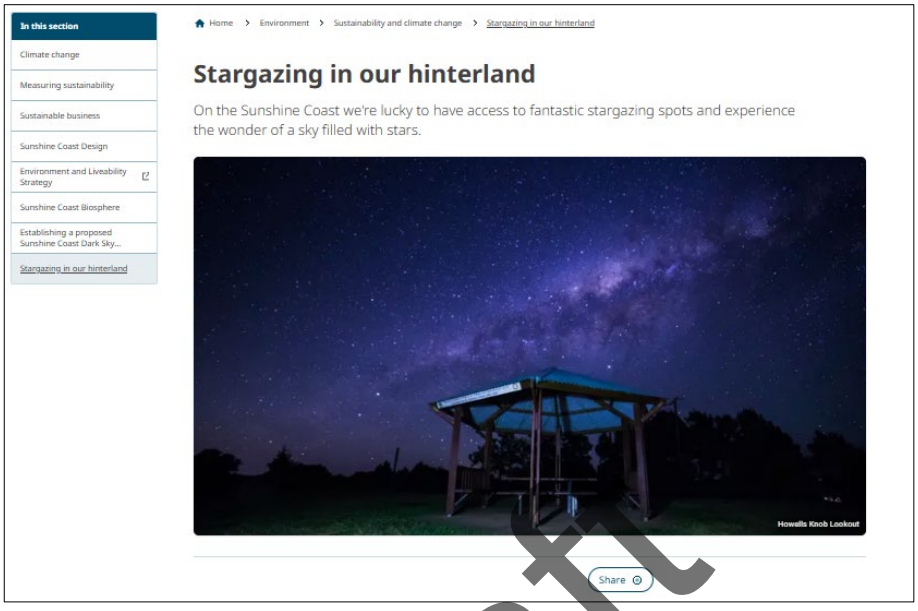


Image: Stargazing webpage.

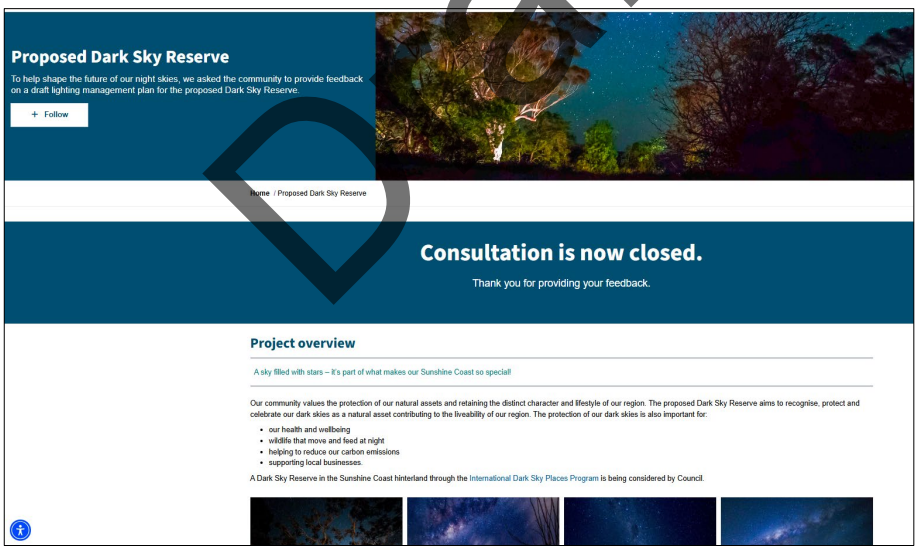


Image: Have your Say webpage.

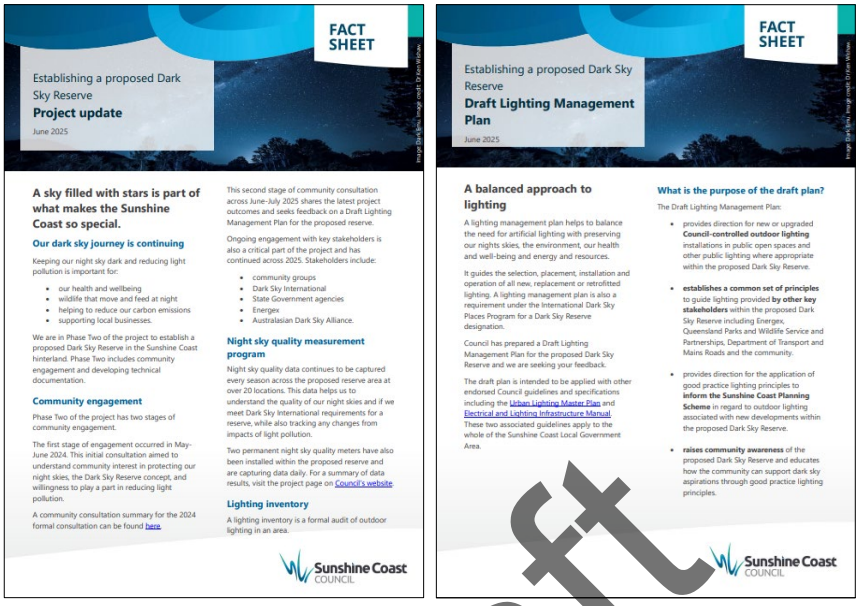


Image: Fact sheets.

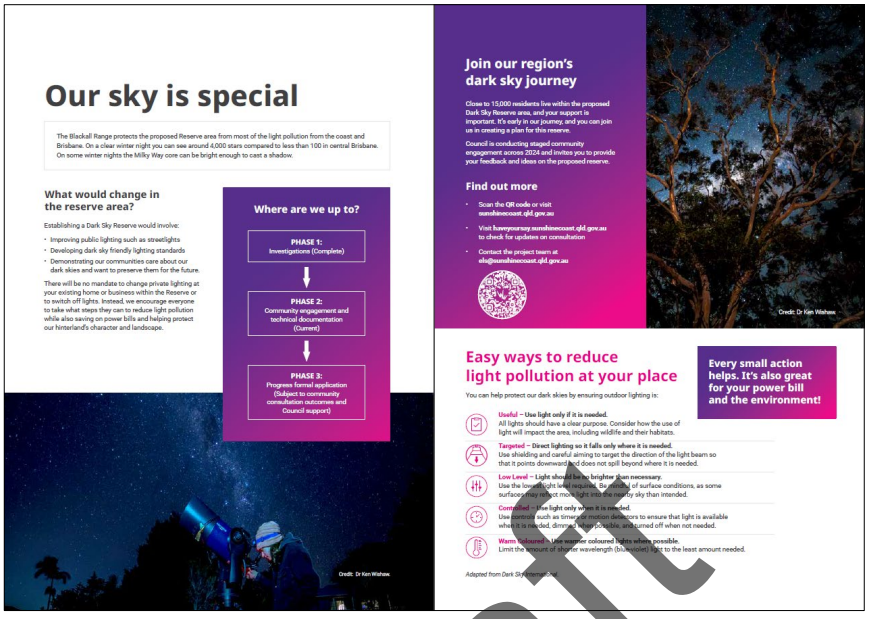


Image: Brochure

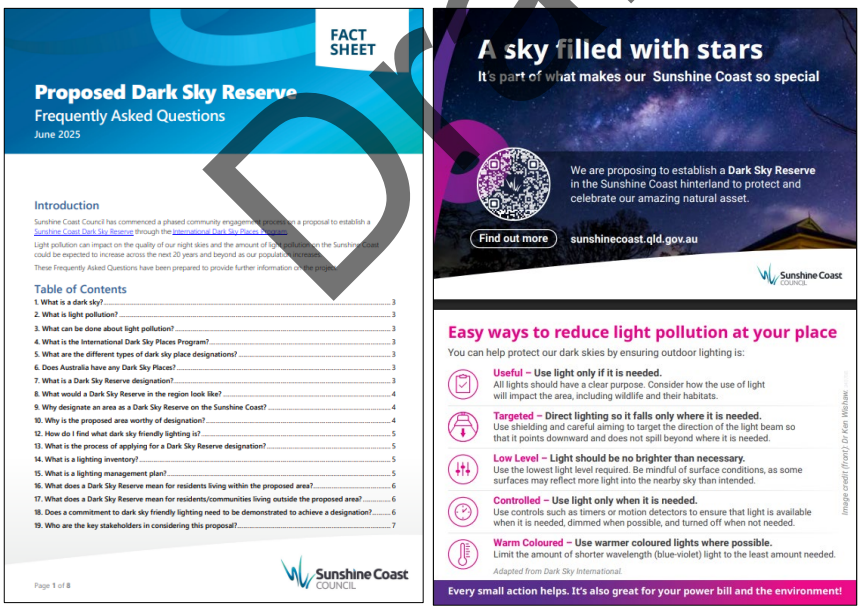


Image: Frequently asked questions document and postcard.

Image: Pull up banners.

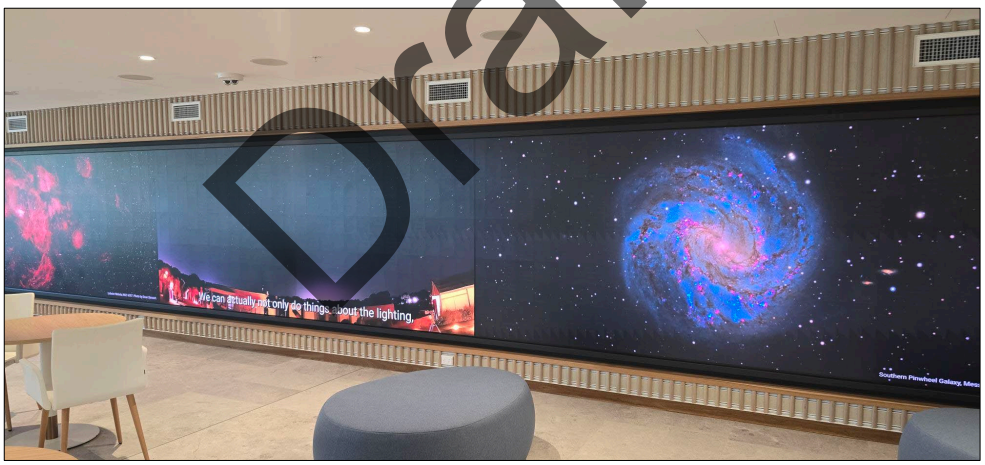


Image: Foyer video.

FACT SHEET

Establishing a proposed Sunshine Coast Dark Sky Reserve
Community Engagement Summary
August 2024

A dark sky is the natural occurrence of the sky at night, free from human-caused light pollution. Light pollution can impact on the quality of our night skies and the amount of light pollution on the Sunshine Coast is expected to increase as our population grows.

To help recognise, protect and celebrate our dark skies, Sunshine Coast Council has been investigating potential opportunities to assist.

As part of these investigations, establishing a Dark Sky Reserve (in the Sunshine Coast hinterland) under the International Dark Sky Places Program was identified as an appropriate mechanism.

In November 2023, Council commenced a phased community engagement process with formal community consultation between 20 May to 16 June 2024, seeking feedback on the proposal to inform ongoing considerations.

The May/June 2024 consultation program invited our communities inside and outside the proposed reserve area to have their say and participate in a range of conversations, surveys and events.

Community feedback was received through:
- Online surveys
- Community conversations at drop-in sessions and local events
- Community information sessions and presentations
- Individual submissions.

Promotion highlights

have your say project webpage and online survey
6 community drop-in sessions
5,800+ correspondences sent to property owners in the proposed reserve
3 promotions at local expos
1 stargazing event
1 community information session
social media promotion
print, online and radio advertising
12 static displays

Participation highlights

1,213 surveys received
48% of survey respondents resided within the proposed Dark Sky Reserve area
35 individual submissions received
3 community presentations
1 university presentation
>150 community conversations
130 stargazing event attendees

Sunshine Coast COUNCIL

FACT SHEET

Establishing a proposed Dark Sky Reserve
Community Engagement Summary | Round Two
October 2025

Image: Dark sky, image credit: Dr Ken Wilcox

Overwhelming support continues for a proposed Dark Sky Reserve designation, and now too for the Draft Lighting Management Plan.

A dark sky is the natural occurrence of the sky at night, free from human-caused light pollution.

Light pollution can impact on the quality of our night skies and is expected to increase as our Sunshine Coast population grows.

Following a successful first round of engagement in 2024, Sunshine Coast Council invited further community feedback on a proposal to establish a Dark Sky Reserve in the Sunshine Coast hinterland.

From 16 June to 11 July 2025, this second round of engagement indicated a continued, high level of community support for the protection of our night sky for future generations.

Engagement methods used were:
- an online survey
- community and key stakeholder meetings
- community and key stakeholder correspondence/communications
- individual submissions/ feedback (email and phone).

This second round of engagement was designed to deepen conversations and involvement with community via:
- providing an update on the project
- understanding light pollution impacts locally and the importance of dark sky preservation for our residents
- seeking feedback on the Draft Lighting Management Plan (DLMP).

What is the Draft Lighting Management Plan?

The Draft Lighting Management Plan (DLMP) guides the selection, placement, installation and operation of new and replacement/ retrofitted lighting in the proposed Dark Sky Reserve.

The plan will assist in the management of light pollution and allow Sunshine Coast Council to meet eligibility requirements under the International Dark Sky Places Program for a Dark Sky Place designation.

Sunshine Coast COUNCIL

Image: Community consultation outcome summaries.

15. Threats and opportunities

Guidelines section compliance

Minimum requirements for all Reserves:
Item: 6

- Current and suspected future threats to dark skies of the core identified - population growth and development.

The Sunshine Coast Dark Sky Reserve in the hinterland presents both exciting opportunities and notable challenges ahead.

The core zone of the Sunshine Coast Dark Sky Reserve is situated within a protected national park and Council-managed environment reserve, ensuring a high level of conservation. The core zone is further buffered by rural areas including Nature Refuges. The Sunshine Coast hinterland areas within the Dark Sky Reserve, experience lower levels of development in comparison to the coastal areas of the region, where majority of the Sunshine Coast's current and projected population growth is. This supports the long-term viability of maintaining dark sky conditions and enhancing the Reserve's potential for successful designation and preservation.

15.1 Threats

Population growth and urban development

As the Sunshine Coast continues to grow, increased development and infrastructure could lead to more light pollution if not carefully managed both within the Reserve itself and surrounding areas.

Mitigation:

- Proposed Sunshine Coast Planning Scheme: adopts a balanced and sustainable approach to managing population growth, with a strong emphasis on urban consolidation. By concentrating development in areas with access to infrastructure, services, and employment, the proposed planning scheme aims to reduce urban sprawl and protect natural and rural landscapes. This includes areas such as the Dark Sky Reserve. The proposed planning scheme also incorporates specific outdoor lighting provisions for new developments with the Dark Sky Reserve ensuring lighting design aligns with dark sky values.
- ongoing education and awareness: an ongoing education and awareness program to inform key stakeholders and the Sunshine Coast community as a whole about the impacts of artificial light and the benefits of responsible lighting practices. Education initiatives could include communication campaigns, new interpretive materials and workshops with key audiences.
- government collaboration and advocacy: Advocacy and cross-government collaboration are essential to effectively address the growing threat of light pollution. Engaging with adjoining local government areas through advocacy strengthens regional commitment to dark sky protection and encourages the adoption of complementary planning provisions. Collaborative approaches also support shared learning, resource efficiency, and unified messaging.
- lighting in the core: Any future lighting proposed within the core zone of the Sunshine Coast Dark Sky Reserve will be managed in accordance with the Reserve's Lighting Management Plan, ensuring

installations are dark sky compliant and environmentally sensitive.

15.2 Opportunities

Supporting our Sunshine Coast vision

As an area striving to be Australia's to be Australia's most sustainable region protecting natural nightscapes, reducing light pollution, and promoting environmentally responsible practices will support our vision. A Dark Sky Reserve reinforces long-term conservation goals while enhancing community awareness, ecological resilience, and sustainable tourism opportunities.

Preserving hinterland's landscape and character

Protecting dark skies is essential to preserving the distinctive and diverse landscape of the Sunshine Coast hinterland. The Dark Sky Reserve will help maintain the natural beauty, rural character, and ecological integrity of the region.

Supporting wildlife sensitive environments

Reducing light pollution supports nocturnal wildlife and improves ecosystem health. With a large percentage of the Dark Sky Reserve area consisting of national park, a designation will further support conservation efforts within the Sunshine Coast hinterland.

Community health and wellbeing

Dark skies play a vital role in supporting community health and wellbeing by promoting better sleep, reducing stress, and fostering deeper connections with nature. Access to natural nightscapes also encourages outdoor recreation, mindfulness, and cultural engagement, contributing to a healthier and more resilient community.

Sustainable and dark sky compliant lighting outcomes

The project supports ongoing efforts to implement sustainable and dark sky compliant lighting region wide.

Tourism

A Dark Sky Reserve designation will showcase the values of our Sunshine Coast hinterland and the astro-tourism opportunities. The hinterland's proximity to airports and urban centres makes it more accessible than many remote dark sky sites, offering a unique opportunity to attract national and international stargazing tourists.

Getting the balance right is important to the community to ensure our region's landscape, character and local amenity is retained and the natural areas preserved, while ensuring tourism or any increased visitation within the Dark Sky Reserve area does not negatively impact on the values a Dark Sky Reserve designation seeks to protect.

Recognising community efforts

The initiative recognises and celebrates the community's ongoing efforts to protect dark skies, acknowledging the strong local support and advocacy that have been instrumental in shaping its success.

Ongoing community engagement and education on dark skies and impacts of light pollution

The project has already inspired strong community involvement, with public stargazing evenings helping to build awareness and stewardship for dark skies. A designation will further provide engagement and education around the importance of dark skies and reducing light pollution region wide.

Appendix A: Conservation significant nocturnal species, Sunshine Coast region.

Scientific name	Common name
Phyllodes imperialis smithersi	southern pink underwing moth
Litoria freycineti	wallum rocketfrog
Litoria olongburensis	wallum sedgefrog
Litoria pearsoniana	cascade treefrog
Adelotus brevis	tusked frog
Crinia tinnula	wallum froglet
Mixophyes fleayi	Fleay's barred frog
Mixophyes iteratus	giant barred frog
Podargus ocellatus plumiferus	plumed frogmouth
Ninox strenua	powerful owl
Dasyurus hallucatus	northern quoll
Xeromys myoides	water mouse
Petaurus australis australis	yellow-bellied glider (southern subspecies)
Potorous tridactylus tridactylus	long-nosed potoroo
Petauroides volans volans	southern greater glider
Pteropus poliocephalus	grey-headed flying-fox
Tachyglossus aculeatus	short-beaked echidna
Acanthophis antarcticus	common death adder
Anilios silvia	striped blind snake

Source: Queensland Government, WildNet.

Appendix B: Proposed Sunshine Coast Planning Scheme Dark Sky Place mapping

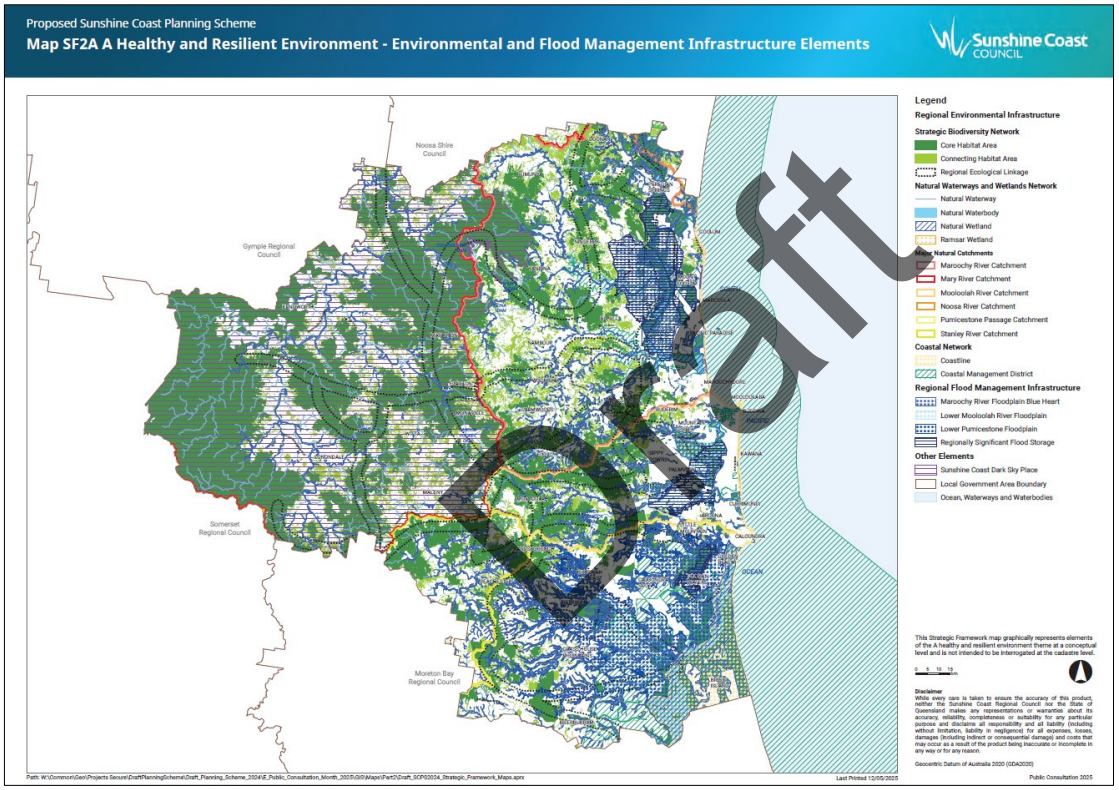


Figure 12: Proposed Sunshine Coast Planning Scheme Strategic Framework - Sunshine Coast Dark Sky Place map

Appendix C: Letters of support/acknowledgements

Subject to the outcome Council's consideration of the Sunshine Dark Sky Reserve at the March 2026 Ordinary Meeting - include Council resolution.

Our Ref: CTS13660/25

DELIVERING FOR QUEENSLAND | Queensland Government

16 October 2025

Department of the
Environment, Tourism, Science and Innovation

Ms Judy Bailey
A/Director Sustainable Growth and Planning
Sunshine Coast Regional Council
judith.bailey@sunshinecoast.qld.gov.au

Dear Ms Bailey

Thank you for your letter dated 26 September 2025 regarding establishment of the Sunshine Coast Dark Sky Reserve.

Firstly I am pleased to reiterate the Department of Environment, Tourism, Science and Innovation's (the department) support for establishing the Sunshine Coast Dark Sky Reserve. The proposal strongly aligns with the Queensland Government's Destination 2045 Tourism Strategy, in particular the objective to increase dark sky tourism experiences in Queensland, and contributes towards the department's priority to protect, conserve and showcase Queensland's environment for current and future generations.

The department has reviewed Council's proposal to include Maleny National Park in the core dark sky area and the request for Queensland Parks and Wildlife Service and Partnerships (QPWS&P) to adopt dark sky compliant lighting standards in line with Council's Draft Lighting Management Plan. I understand that QPWS&P officers have also met with Council officers to discuss these matters. I can confirm the department's full support for incorporation of Maleny National Park into the core dark sky area, and I can confirm that QPWS&P will implement Council's Draft Lighting Management Plan within its parks and forests across the proposed dark sky area. QPWS&P will continue to work with Council to progress these matters.

Further, to this, and in line with the Destination 2045 Tourism Strategy, QPWS&P is keen to work with Council to explore opportunities for the protected area estate associated with the dark sky reserve. This may include opportunities to incorporate dark sky values into existing visitor experiences in protected areas, investigating conservation initiatives that may benefit from dark skies and exploring opportunities for commercial astro-tourism in the area.

Should you require any further information, you may contact Ms Kristie Gray, Manager – Permissions Management and Ecotourism, of the QPWS&P division of the Department on telephone (07) 3338 9349 or by email at ecotourism@detsi.qld.gov.au.

Yours sincerely

B Klaassen

Ben Klaassen
Deputy Director-General
Queensland Parks and Wildlife Service and Partnerships

PO Box 15187 City East
Queensland 4002 Australia
Telephone 13 QGOV (137 468)
Website www.detsi.qld.gov.au
ABN 46 640 294 485

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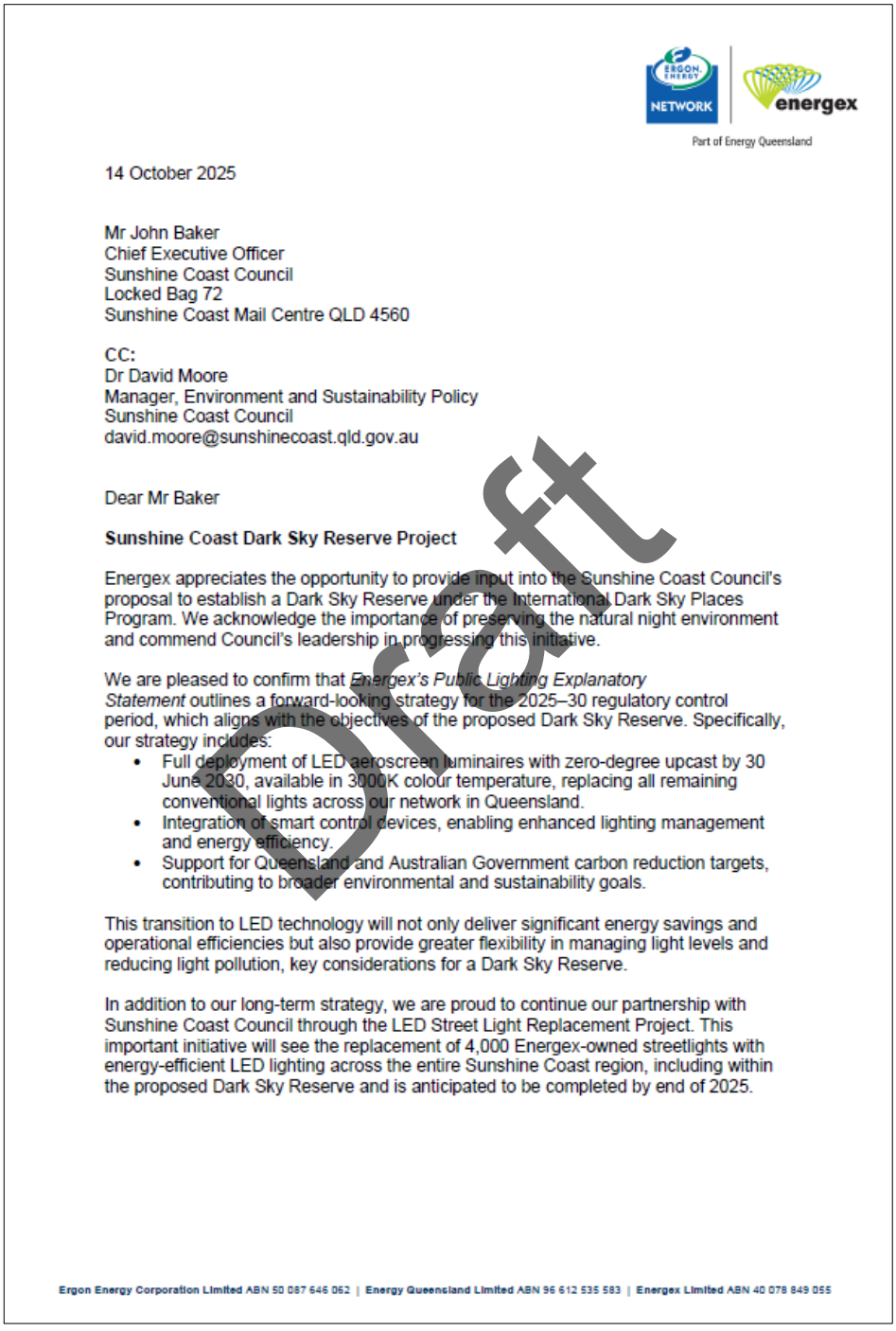

Part of Energy Queensland

14 October 2025

Mr John Baker
Chief Executive Officer
Sunshine Coast Council
Locked Bag 72
Sunshine Coast Mail Centre QLD 4560

CC:
Dr David Moore
Manager, Environment and Sustainability Policy
Sunshine Coast Council
david.moore@sunshinecoast.qld.gov.au

Dear Mr Baker

Sunshine Coast Dark Sky Reserve Project

Energex appreciates the opportunity to provide input into the Sunshine Coast Council's proposal to establish a Dark Sky Reserve under the International Dark Sky Places Program. We acknowledge the importance of preserving the natural night environment and commend Council's leadership in progressing this initiative.

We are pleased to confirm that *Energex's Public Lighting Explanatory Statement* outlines a forward-looking strategy for the 2025–30 regulatory control period, which aligns with the objectives of the proposed Dark Sky Reserve. Specifically, our strategy includes:

- Full deployment of LED aeroscreen luminaires with zero-degree upcast by 30 June 2030, available in 3000K colour temperature, replacing all remaining conventional lights across our network in Queensland.
- Integration of smart control devices, enabling enhanced lighting management and energy efficiency.
- Support for Queensland and Australian Government carbon reduction targets, contributing to broader environmental and sustainability goals.

This transition to LED technology will not only deliver significant energy savings and operational efficiencies but also provide greater flexibility in managing light levels and reducing light pollution, key considerations for a Dark Sky Reserve.

In addition to our long-term strategy, we are proud to continue our partnership with Sunshine Coast Council through the LED Street Light Replacement Project. This important initiative will see the replacement of 4,000 Energex-owned streetlights with energy-efficient LED lighting across the entire Sunshine Coast region, including within the proposed Dark Sky Reserve and is anticipated to be completed by end of 2025.

Sunshine Coast Dark Sky Reserve: Application to Dark Sky International

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The project is being delivered with funding support from the Australian Government's Local Road and Community Infrastructure Program and reflects our shared commitment to sustainability.

We acknowledge our role as a key stakeholder and are committed to working collaboratively with Sunshine Coast Council to ensure that public lighting infrastructure within the proposed Dark Sky Reserve fully supports the program's objectives. In particular, we will ensure that any new or upgraded lighting—where Sunshine Coast Council is the customer—meets dark sky compliance requirements (specifically, 3000K colour temperature, zero-degree upcast, and aeroscreen lenses) as outlined in the Proposed Sunshine Coast Dark Sky Reserve Draft Lighting Management Plan 2025.

Energex will continue to engage with Council and other stakeholders to explore opportunities for tailored lighting solutions that balance community safety, environmental protection, and night sky preservation.

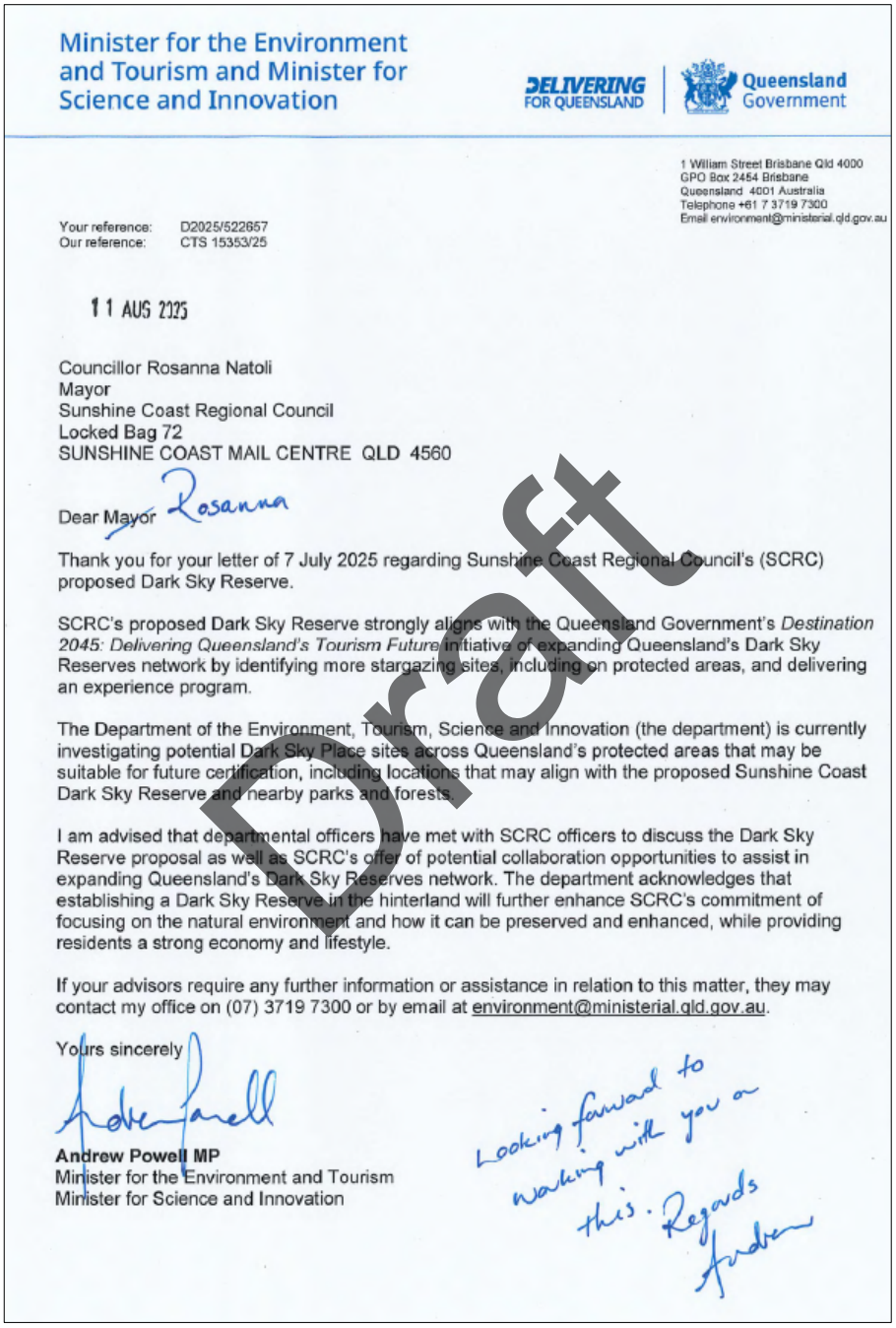
Thank you for including Energex in this important initiative. We look forward to contributing to the success of the Sunshine Coast Dark Sky Reserve and shaping a more sustainable future for our communities.

Please do not hesitate to contact Tim Gleaves 0459 843 777 or tim.gleaves@energyq.com.au should you require any further information or clarification.

Yours sincerely

Jason Farrell
Manager Contestable Works

Ergon Energy Corporation Limited ABN 50 087 646 062
Energy Queensland Limited ABN 96 612 535 583
Energex Limited ABN 40 078 849 055



Minister for the Environment and Tourism and Minister for Science and Innovation

DELIVERING FOR QUEENSLAND | Queensland Government

1 William Street Brisbane Qld 4000
GPO Box 2454 Brisbane
Queensland 4001 Australia
Telephone +61 7 3719 7300
Email environment@ministerial.qld.gov.au

Your reference: D2025/522657
Our reference: CTS 15353/25

11 AUG 2025

Councillor Rosanna Natoli
Mayor
Sunshine Coast Regional Council
Locked Bag 72
SUNSHINE COAST MAIL CENTRE QLD 4560

Dear Mayor Rosanna

Thank you for your letter of 7 July 2025 regarding Sunshine Coast Regional Council's (SCRC) proposed Dark Sky Reserve.

SCRC's proposed Dark Sky Reserve strongly aligns with the Queensland Government's *Destination 2045: Delivering Queensland's Tourism Future* initiative of expanding Queensland's Dark Sky Reserves network by identifying more stargazing sites, including on protected areas, and delivering an experience program.

The Department of the Environment, Tourism, Science and Innovation (the department) is currently investigating potential Dark Sky Place sites across Queensland's protected areas that may be suitable for future certification, including locations that may align with the proposed Sunshine Coast Dark Sky Reserve and nearby parks and forests.

I am advised that departmental officers have met with SCRC officers to discuss the Dark Sky Reserve proposal as well as SCRC's offer of potential collaboration opportunities to assist in expanding Queensland's Dark Sky Reserves network. The department acknowledges that establishing a Dark Sky Reserve in the hinterland will further enhance SCRC's commitment of focusing on the natural environment and how it can be preserved and enhanced, while providing residents a strong economy and lifestyle.

If your advisors require any further information or assistance in relation to this matter, they may contact my office on (07) 3719 7300 or by email at environment@ministerial.qld.gov.au.

Yours sincerely

Andrew Powell MP
Minister for the Environment and Tourism
Minister for Science and Innovation

Looking forward to working with you on this. Regards Andrew

JINIBARA PEOPLE ABORIGINAL CORPORATION RNTBC

Jinibara People Aboriginal Corporation RNTBC ICN: 7794
PO Box 1263 Woodford Q 4514
admin@jinibaracorp.org

24 July 2025

Dr David Moore
Manager, Environment and Sustainability Policy
Sunshine Coast Council
Email: David.Moore@sunshinecoast.qld.gov.au

RE: Support for Proposed Dark Sky Reserve in the Sunshine Coast Hinterland

Dear Dr Moore

On behalf of the Jinibara People Aboriginal Corporation (JPAC), I write to express our strong support for the Sunshine Coast Council's proposal to establish a Dark Sky Reserve encompassing parts of the Sunshine Coast hinterland, including areas within the Mary River catchment.

As the registered Native Title Body Corporate for the Jinibara People, we hold enduring responsibilities for caring for Jinibara Country – including its lands, waters, skies, and all living things. The night sky has always been and continues to be a vital part of our cultural knowledge systems, navigation, seasonal calendars, and storytelling. Our ancestors read the stars to understand time, ceremony, and the cycles of life. Preserving the clarity and natural darkness of the night sky aligns deeply with our cultural values and obligations.

We welcome the steps being taken in Phase 2 of the project, particularly the development of a Draft Lighting Management Plan and ongoing stakeholder engagement. The inclusion of First Nations perspectives is essential in shaping meaningful and culturally respectful approaches to conservation, and we appreciate the opportunity to be consulted on this important initiative.

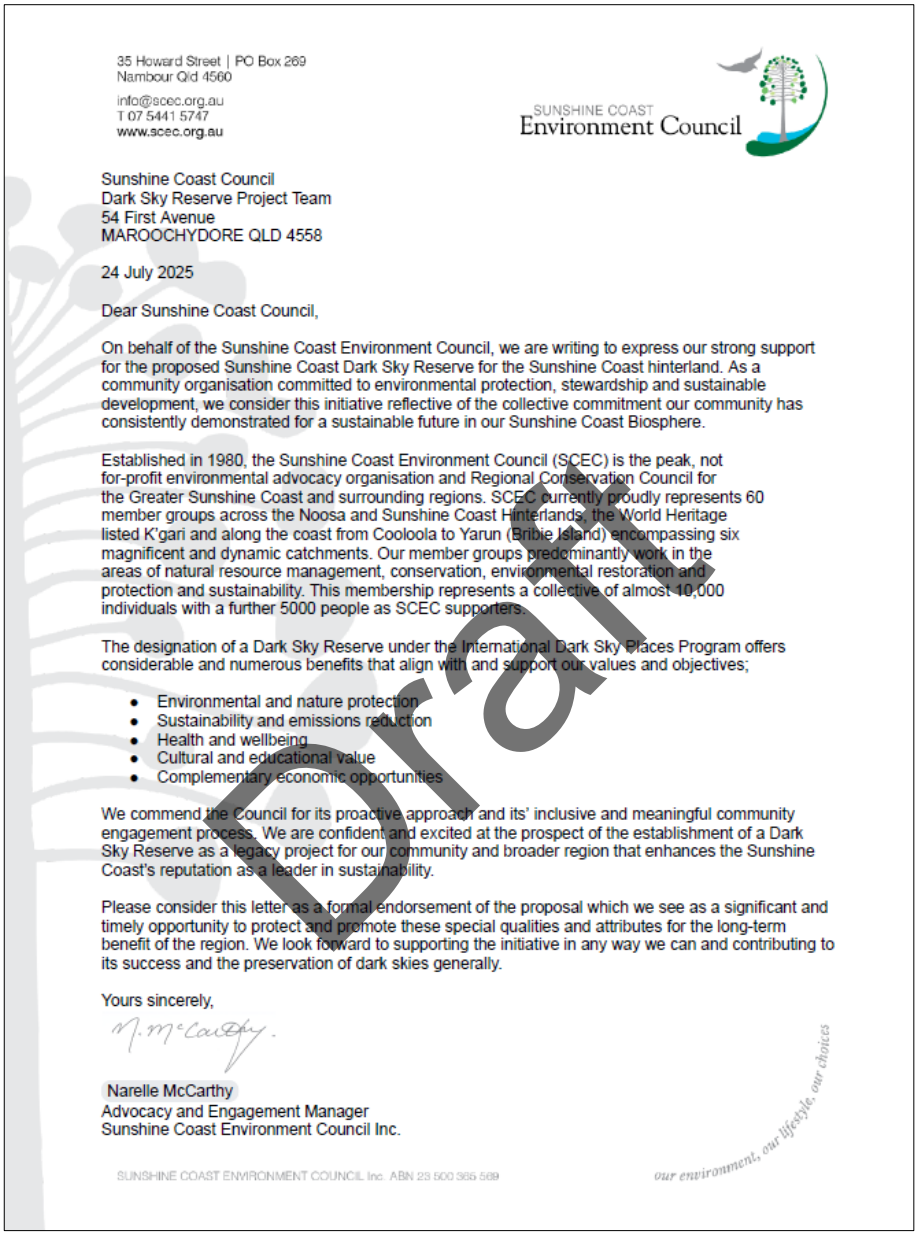
JPAC supports the establishment of the Dark Sky Reserve under the International Dark Sky Places Program, and we commend the Sunshine Coast Council for its leadership in this area. We look forward to continuing to engage with Council as the project progresses and would welcome opportunities for co-designed interpretation, education, and cultural knowledge sharing.

Should you require any further information or wish to discuss our support in more detail, please do not hesitate to contact me.

Yours sincerely

Uncle Colin Ross
JPAC Director/Chairperson

Jinibara People Aboriginal Corporation RNTBC ICN: 7794
PO Box 1263 Woodford Q 4514 admin@jinibaracorp.org



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T 07 5441 5747
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SUNSHINE COAST Environment Council

Sunshine Coast Council
Dark Sky Reserve Project Team
54 First Avenue
MAROOCHYDORE QLD 4558

24 July 2025

Dear Sunshine Coast Council,

On behalf of the Sunshine Coast Environment Council, we are writing to express our strong support for the proposed Sunshine Coast Dark Sky Reserve for the Sunshine Coast hinterland. As a community organisation committed to environmental protection, stewardship and sustainable development, we consider this initiative reflective of the collective commitment our community has consistently demonstrated for a sustainable future in our Sunshine Coast Biosphere.

Established in 1980, the Sunshine Coast Environment Council (SCEC) is the peak, not for-profit environmental advocacy organisation and Regional Conservation Council for the Greater Sunshine Coast and surrounding regions. SCEC currently proudly represents 60 member groups across the Noosa and Sunshine Coast Hinterlands, the World Heritage listed K'gari and along the coast from Cooloola to Yarun (Bribie Island) encompassing six magnificent and dynamic catchments. Our member groups predominantly work in the areas of natural resource management, conservation, environmental restoration and protection and sustainability. This membership represents a collective of almost 10,000 individuals with a further 5000 people as SCEC supporters.

The designation of a Dark Sky Reserve under the International Dark Sky Places Program offers considerable and numerous benefits that align with and support our values and objectives;

- Environmental and nature protection
- Sustainability and emissions reduction
- Health and wellbeing
- Cultural and educational value
- Complementary economic opportunities

We commend the Council for its proactive approach and its' inclusive and meaningful community engagement process. We are confident and excited at the prospect of the establishment of a Dark Sky Reserve as a legacy project for our community and broader region that enhances the Sunshine Coast's reputation as a leader in sustainability.

Please consider this letter as a formal endorsement of the proposal which we see as a significant and timely opportunity to protect and promote these special qualities and attributes for the long-term benefit of the region. We look forward to supporting the initiative in any way we can and contributing to its success and the preservation of dark skies generally.

Yours sincerely,

N. McCarthy.

Narelle McCarthy
Advocacy and Engagement Manager
Sunshine Coast Environment Council Inc.

SUNSHINE COAST ENVIRONMENT COUNCIL Inc. ABN 23 500 366 569

our environment, our lifestyle, our choices

Letter of Support for the Sunshine Coast Dark Sky Reserve Proposal

On behalf of Visit Sunshine Coast, the Regional Tourism Organisation for the Sunshine Coast, I am writing to express our strong support for the proposed Sunshine Coast Dark Sky Reserve. This initiative represents a significant opportunity to enhance our region's tourism offerings, align with state-wide strategic objectives and promote sustainable practices that benefit both our community and visitors now and into the future.

The establishment of a Dark Sky Reserve in the Sunshine Coast hinterland is poised to position our region as a premier destination for astro-tourism – nationally and globally. With the Sunshine Coast welcoming over 4.3 million overnight visitors last year, the addition of an internationally accredited Dark Sky Reserve offers a unique, nature-based experience that caters to the growing demand for meaningful and sustainable travel.

Astro-tourism has demonstrated success in other regions, such as the Aoraki Mackenzie Dark Sky Reserve in New Zealand, which has become a significant drawcard for international visitors. By offering similar experiences, the Sunshine Coast can attract new visitor segments, extend average lengths of stay, and stimulate economic growth in our hinterland communities.

The Dark Sky Reserve initiative aligns seamlessly with the Queensland Government's Destination 2045 plan, which aims to position the state as a global leader in tourism through the development of 45 new ecotourism experiences by 2045, including dark sky tourism. This proposal to protect our dark sky supports the plan's strategic priorities by delivering the opportunity for more nature-based experiences, promoting sustainable tourism and supporting the regional economy.

Visit Sunshine Coast supports the Dark Sky Reserve project and the opportunity to further tourism infrastructure in the Hinterland. We commend the Sunshine Coast Council for its leadership in pursuing this visionary project and look forward to working together to enhance our region's appeal as a sustainable and innovative tourism destination.

Matt Stoeckel

CEO

Visit Sunshine Coast

MADCA
Connecting community

Mapleton and District Community Association
P.O. Box 381
Mapleton, 4560
madca.inc@gmail.com
www.madca.com.au

CEO

Sunshine Coast Council

11/07/2025

Re: Proposed Dark Sky Reserve

Dear Sir,

I am writing on behalf of the Mapleton and District Community Association (MADCA) in response to the current community consultation being carried out by Council on the proposed Dark Sky Reserve. A key proponent of the Reserve, Dr. Ken Wishaw, has presented last year at a MADCA general meeting, and received a strong endorsement of the proposal at that meeting.

Having reviewed the details presented in the consultation process, MADCA remains strongly supportive of the proposal and welcomes the prospect of the establishment of the Dark Sky Reserve and being located in it. Residents are generally supportive of reduced light pollution to the benefit of residents and the environment and the provision of a further visitor attraction to the hinterland region.

MADCA welcomes the Council's initiative in this matter and looks forward to Council's positive engagement with State Government agencies, such as TMR, to cooperate in reducing light pollution across the Sunshine Coast.

Yours sincerely,

M C Standage

President MADCA

Queensland Government

Department of the
Environment, Tourism, Science and Innovation

Our Ref: CTS 13758/25
Your Ref: D2025/506718

4 July 2025

Mr Bill Haddrill
Group Executive, Liveability and Natural Assets
Sunshine Coast Council
Locked Bag 72
SUNSHINE COAST MAIL CENTRE QLD 4560
els@sunshinecoast.qld.gov.au

Dear Mr Haddrill

Thank you for your letter of 23 June 2025 regarding the Sunshine Coast Council's (Council) proposed Dark Sky Reserve in the hinterland under the International Dark Sky Places Program.

In 2022, I am aware Council was accredited by United Nations Educational, Scientific and Cultural Organization (UNESCO) as a Biosphere Reserve, making Queensland unique in that there are three Biospheres adjacent to each other.

Establishing a Dark Sky Reserve in the hinterland under the International Dark Sky Places Program will further enhance Council's commitment of focusing on the natural environment and how it can be preserved and enhanced, while providing residents with a strong economy and lifestyle.

I understand the proposed Dark Sky Reserve covers the Mary River catchment and adjoining State protected areas, including the townships of Maleny, Mapleton, Montville, Witta, Flaxton, Kenilworth and Conondale.

The proposed Dark Sky Reserve strongly aligns with an initiative under the Queensland Government's *Destination 2045: Delivering Queensland's Tourism Future* of expanding Queensland's Dark Sky Reserves network by identifying more stargazing sites, including on protected areas, and delivering an experience program.

I am aware officers from the Department of the Environment, Tourism, Science and Innovation (DETSI) recently met with Council officers to discuss Council's Dark Sky Reserve proposal and current progress, including Council's offer of potential collaboration opportunities to assist in expanding Queensland's Dark Sky Reserves network.

I look forward to hearing of your progress and note this initiative helps to protect night skies through responsible lighting and public education, as well as providing a unique ecotourism experience.

Should you require any further information, you may contact Mr Peter Evans, Acting General Manager - Investment, Infrastructure and Grants, Tourism Division, DETSI on (07) 3333 5273 or by email at peter.evans@detsi.qld.gov.au.

Yours sincerely

Natalie Patch
Acting Deputy Director-General
Tourism Division

Sunshine Coast Dark Sky Reserve: Application to Dark Sky International

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OFFICIAL

Australian Government
Department of Climate Change, Energy, the Environment and Water

Dr David Moore
Manager, Environment and Sustainability Policy
Sunshine Coast Council
Locked Bag 72
SUNSHINE COAST MAIL CENTRE QLD 4560

Dear Dr Moore

Thank you for your correspondence of 18 June 2025 requesting support for Sunshine Coast Council's application to Dark Sky International to create a Dark Sky Reserve in the Sunshine Coast's hinterland.

I am pleased attention is being drawn to Australia's pristine dark skies and their importance to conservation initiatives and support your application to become an International Dark Sky Place. I commend Sunshine Coast Council on its extensive environmental conservation efforts to protect the night sky from light pollution, particularly over the past several years. The Sunshine Coast is a valued example of environmental stewardship, community and sustainability.

The Australian Government recognises the conservation, scientific and cultural value of dark skies and is committed to conserving and maintaining Australia's unique environmental heritage, which includes preserving our dark skies. Light pollution poses a threat to many of Australia's threatened and migratory species. In recognition of this threat the Department of Climate Change, Energy, the Environment and Water published its *National Light Pollution Guidelines for Wildlife* in 2020 and subsequently updated them in 2023. These guidelines were also endorsed internationally through the Convention on the Conservation of Migratory Species of Wild Animals. I am pleased to see that these guidelines have helped support and inform the proposed *Sunshine Coast Dark Sky Reserve Draft Light Management Plan*.

Australia derives important social, cultural, environmental and economic benefits from the environmental conservation work facilitated by Sunshine Coast Council. I believe that Australia should be globally recognised for its exceptional night skies, and I strongly support your proposal to become an International Dark Sky Place.

Thank you for raising this matter with me.

Yours sincerely

N. Montgomery

Narelle Montgomery
Director, Migratory Species Section
Department of Climate Change, Energy, the Environment, and Water

26 June 25

Sunshine Coast Dark Sky Reserve: Application to Dark Sky International

Maleny & District Chamber of Commerce & Industry Inc.
president@malenycommerce.org.au

PO Box 482 MALENY QLD 4552
ABN: 53 996 389 725

23 June 2025

Sunshine Coast Council
Dark Sky Reserve Project Team
54 First Avenue
MAROOCHYDORE QLD 4558

Dear Sunshine Coast Council,

On behalf of Maleny Commerce we are pleased to express our strong support for the proposed Sunshine Coast Dark Sky Reserve.

As a local organisation representing and advocating for businesses and community in Maleny, we see this initiative as a unique opportunity to strengthen our local economy while preserving the natural assets that make our hinterland so special.

The designation of a Dark Sky Reserve not only aligns with our community's values but also opens the door to sustainable tourism, innovation in eco-friendly business practices, and new educational and cultural experiences.

We believe the Dark Sky Reserve will:

- Enhance the Sunshine Coast's brand as a destination, showcasing a community that is committed to sustainability and demonstrating our Biosphere values.
- Create new economic opportunities for local businesses through astro-tourism, eco-accommodation, guided night tours, and hospitality services.
- Preserve the ecological integrity of our hinterland, protecting biodiversity and our valued hinterland landscape and character.
- Foster community pride and engagement through education, cultural storytelling, and environmental stewardship.

We commend the Council for its leadership. This project represents a forward-thinking legacy that showcases the importance of environmental preservation leading to economic development.

Please consider this letter a formal endorsement of the Sunshine Coast Dark Sky Reserve proposal. We look forward to working collaboratively with Council and our community to support the project's ongoing success and encourage our local businesses to be active participants in this exciting journey.

Yours sincerely

Spencer Shaw

President Maleny Commerce

Mail: PO Box 105
Coolum Beach QLD 4573

Email: mail@oscar.org.au
Mobile: 0433 214 320

Recognising and upholding excellence in local government

13 February 2026

To: Dr David Moore

Manager-Environment and Sustainability Policy

Sunshine Coast Regional Council

Email: david.moore@sunshinecoast.qld.gov.au

Dear David

RE: OSCAR SUPPORT FOR SUNSHINE COAST REGIONAL COUNCIL DARK SKY RESERVE APPLICATION

The Sunshine Coast Association of Residents Inc. (OSCAR) is a non-partisan, not-for-profit peak body representing resident and community organisations across the Sunshine Coast and Noosa Local Government Areas in South East Queensland.

OSCAR currently comprises more than 36 member groups spanning from Pumicestone Passage to Noosa and from the Coast to the Hinterland and Ranges. Collectively, these organisations represent several thousand engaged, community-minded residents who are deeply committed to protecting the environmental, cultural and social values of our region.

OSCAR's overarching Vision states:

"The residents of this region enjoy being part of a connected and engaged community living in an area of outstanding natural beauty. They recognise that they are custodians of the unique and abundant biodiversity, beaches and green spaces of the region."

OSCAR holds that "dark skies" belong alongside biodiversity, beaches and green spaces as defining environmental assets of the Sunshine Coast. Protection of our night skies is a natural and essential extension of our long-standing commitment to environmental stewardship. OSCAR hopes that we will be able to add to our vision *''beaches, **dark skies** and green spaces".*

Therefore, OSCAR strongly endorses of Sunshine Coast Regional Council's (Council) application to the International Dark Sky Association for declaration of a Dark Sky Reserve in the hinterland under the International Dark Sky Places Program.

The proposed 873 km² reserve, encompassing the Mary River catchment and adjoining State-protected areas within the Sunshine Coast Local Government Area — including but not limited to Maleny, Mapleton, Montville, Witta, Flaxton, Kenilworth and Conondale — represents a visionary and strategically important initiative. It will safeguard a significant natural asset for current and future generations while reinforcing the region's environmental leadership.

As we are aware, protection of dark skies delivers measurable environmental benefits, including support for nocturnal wildlife, biodiversity conservation, reduced energy consumption and mitigation of light pollution impacts. It also strengthens community wellbeing, educational opportunities, eco-tourism potential and regional identity.

At OSCAR's General Meeting of 24 July 2025, members formally resolved:

Motion: *That OSCAR issue a letter of support for the Sunshine Coast Regional Council Dark Sky Reserve Project application to the International Dark Sky Association.*

This motion reflects clear and united backing from our extensive membership base.

OSCAR commends Council for the thorough, evidence-based and community-centred approach undertaken since endorsement of the concept in the Refreshed Environment and Liveability Strategy (ELS) in late 2023. Within a relatively short timeframe, Council has:

- researched the topic;
- established the requirements for such protection;
- conducted two rounds of extensive community consultation conducted;
- published reports on those consultations; and
- completed the application ready for submission within two and half years of the refreshed ELS, with Council approving the related policy document.

Activities that were part of the extensive consultation included:

- An online survey;
- Community drop-in sessions at local libraries;
- A fully booked stargazing event;
- Community information sessions;
- Presentations at exhibitions and events;
- Direct written submissions;
- Over 5,800 letters and emails to property owners within the proposed reserve area.

The amazing photos of the night sky in the hinterland taken by Dr Ken Wishaw and other sky gazers on the "Have your Say" page, the photos presented throughout the commentary, the Information and Fact sheets, the activities and presentations for this community engagement, plus 95% support of the 1200 survey respondents say it all – our dark skies need to be protected!

Given the Sunshine Coast's status as a UNESCO Biosphere Reserve and its globally recognised natural values, pursuit of Dark Sky Reserve designation is not merely appropriate — it is both logical and aligned with the region's strategic environmental commitments. This initiative is an example of Local Government leadership in sustainable planning and environmental custodianship.

OSCAR strongly supports Council's application and respectfully urges the International Dark Sky Association to recognise the Sunshine Coast Hinterland as a Dark Sky Reserve.

OSCAR commends Council for its process for undertaking activities required to support this application and we wish them well in making its presentation to the International Dark Sky Association.

Yours sincerely

Melva E Hobson.

Melva Hobson PSM
President OSCAR

Organisation Sunshine Coast Association of Residents

Sunshine Coast Dark Sky Reserve: Application to Dark Sky International

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Our Ref: AS/KJS02290 File No: 297874

GYMPIE REGIONAL COUNCIL

16 July 2024

Emma Thomas
Chief Executive Officer
Sunshine Coast Council
Locked Bag 72
SUNSHINE COAST MAIL CENTRE QLD 4560

Email: CEOOffice@sunshinecoast.qld.gov.au

Dear Emma

Re: Dark Sky Reserve Project Proposal

Thank you for keeping Gympie Regional Council informed of your Council's unique Dark Sky Reserve Project Proposal.

I am glad to hear that our Planning Team was able to meet with your Liveability and Natural Assets Group to better understand the Dark Sky's Reserve Project, and as a Council are keen to be informed of the progress of your proposal.

Gympie Regional Council as an adjoining local government area acknowledge the project and consider the Mary River & Catchment within our region as one of our own prized natural assets, one which holds similar environmental values as shared with Sunshine Coast Council.

The area of Gympie Regional Council which connects with the proposed Dark Sky Reserve boundary is primarily designated as Environmental Management and Conservation, Medium Impact Industry, and Rural. The Medium Impact Industry being HQ Plantations operations. The area is also overlayed by our Temporary Local Planning Instrument for Protection of Biodiversity Values, which is predominantly Priority Species Habitat, Waterways and Wetlands, and some Core Ecological Linkages.

These Environment and Biodiversity values are a key priority for the Gympie Region, and Council is supportive of Sunshine Coast Council's Dark Sky Reserve initiative to protect and maintain the value in our shared natural assets, and contribute to the liveability of our regions.

Yours faithfully

Alex Stengl
Director Community Sustainability

cc: Dr David Moore
Email: David.moore@sunshinecoast.qld.gov.au

Sunshine Coast Dark Sky Reserve: Application to Dark Sky International

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Appendix D: Darkness measurement and program development

All measurements were taken by astronomer, Dr Ken Wishaw using a handheld SQM-L (serial number 0919) as per Dark Sky International guidelines. All measurements have been uploaded to the Globe At Night website.

December 2023

SQM Model	**End Astronomical Twilight**	**SQM Serial Number**		**Version (SQM or SQM-L)**				
SQM-L	20:03	919			**Observer 1**	**Observer 2**		
	Austr Eastern St Time +10G	**Total SQM Average**		SQM-L	Ken Wishaw			
Date (DD/MM/YYY and Time Zone)	7-Dec-23	**Total SQM Median**						
	Location 1	**Location 2**	**Location 3**	**Location 4**	**Location 5**	**Location 6**	**Location 7**	**Location 8**
Location Name	Maleny Golf Club Observatory	Howell's Knob Lookout	Schulz Road lookout	Curramore Ridge	Green Park	Eastern Mary River Rd & Maleny Kenil rd	Eatern Mary River Road north Hill	Little Yabba Rest Area
Latitude (in decimal degrees)	-26.795	-26.76	-26.688	-26.683	-26.728	-26.729	-26.662	-26.625
Longitude (in decimal degrees)	152.864	152.809	152.805	152.761	152.76	152.761	152.703	152.689
What3words location	rodeo.market.adventure	comfy.relaxing.encrusted	grail.exist.apron	aroma.negotiated.habits	farmhouses.chopsticks.fogs	ladybug.crowd.they	jingling.widgets.node	parrot.chapter.neatest
Time (24-hour clock)		20;20		21:20	21:50	22:01	22:30	23:05
SQM Reading - #1								
SQM Reading - #2		21.35		21.54	21.64	21.62	21.66	21.72
SQM Reading - #3		21.37		21.54	21.64	21.61	21.67	21.74
SQM Reading - #4		21.37		21.56	21.64	21.62	21.68	21.75
SQM Reading - #5		21.37		21.54	21.63	21.61	21.68	21.71
Location SQM Average		21.365		21.545	21.6375	21.615	21.6725	21.73
Location SQM Median		**21.37**		**21.54**	**21.64**	**21.615**	**21.675**	**21.73**
% Cloud Cover	50%, abandoned	10%	70% thin cloud, abandoned	20%	5%	0		clear
% Moon Visibility		0		0	0	0	0	0
Air Temperature (F or C)		19		18	18		19	19
Other Notes		Cloud band over coast		intermittent thin cloud before readings		Horizon photos		
		Horizon photos						

SQM Model								
SQM-L								
Date (DD/MM/YYY and Time Zone)								
	Location 9	**Location 10**	**Location 11**	**Location 12**	**Location 13**	**Location 14**	**Location 15**	
Location Name	Kenilworth showground	Brooloo	Obi Obi Rd turnoff	Bonney lane, Belli Park	Kiddaman Creek Road	Lower Suses pocket rd	Mapleton, Sommer Rd	
Latitude (in decimal degrees)	-26.599	-26.548	-26.587	-26.511	-26.63	-26.649	-26.634	
Longitude (in decimal degrees)	152.727	152.713	152.736	152.812	152.767	152.812	152.86	
What3words location	appraise.ranches.sonar	bribed.slimmest.loss	wider.negotiators.glitters	heartless.slogan.telescope	reversals.sender.imply	maps.befit.supply	along.spear.jotting	
Time (24-hour clock)	23:17	23:40	23:50			0:25	0:37	
SQM Reading - #1								**cloud cover prevented further survey**
SQM Reading - #2	21.05	21.61	21.61			21.58	21.41	
SQM Reading - #3	21.04	21.61	21.59			21.57	21.44	
SQM Reading - #4	21.01	21.64	21.58			21.56	21.42	
SQM Reading - #5	21.05	21.66	21.56			21.55	21.42	
Location SQM Average	21.0375	21.63	21.585			21.565	21.4225	
Location SQM Median	**21.045**	**21.625**	**21.585**	**#NUM!**		**21.565**	**21.42**	
% Cloud Cover	0	0	0	Not done no time	Not Done no time	10	20%	
% Moon Visibility	0	0	10%			0	0	
Air Temperature (F or C)	19	19	19			19	20	
Other Notes	Extensive light pollution from nearby lights		Horizon Photos					

April 2024

SQM Model		**SQM Serial Number**		**Version (SQM or SQM-L)**					
SQM-L		919			**Observer 1**	**Observer 2**			
	Austr Eastern St Time +10G	**Total SQM Average**		SQM-L	Ken Wishaw				
Date (DD/MM/YYY and Time Zone)	9/10 April 2024	**Total SQM Median**							
	Location 1	**Location 2**	**Location 3**	**Location 4**	**Location 5**	**Location 6**	**Location 7**	**Location 8**	**Location 9**
Location Name	Maleny Golf Club Observatory	Howell's Knob Lookout	Schulz Road lookout	Curramore Ridge	Green Park	Eastern Mary River Rd & Maleny Kenil rd	Eastern Mary River Road north Hill	Little Yabba Rest Area	Kenilworth showground
Latitude (in decimal degrees)	-26.795	-26.76	-26.688	-26.683	-26.728	-26.729	-26.662	-26.625	-26.599
Longitude (in decimal degrees)	152.864	152.809	152.805	152.761	152.76	152.761	152.703	152.689	152.727
What3words location	rodeo.market.adventure	comfy.relaxing.encrusted	grail.exist.apron	aroma.negotiated.habits	farmhouses.chopsticks.fogs	ladybug.crowd.they	jingling.widgets.node	parrot.chapter.neatest	appraise.ranches.sonar
Time (24-hour clock)	**20:50**	**21.07**	**21:40**	**21:55**	**22:18**	**22:28**	**23:17**	**23:27**	**23:44**
SQM Reading - #1	21.04	21.32	21.47	21.41	21.39	21.41	21.39	21.42	21.29
SQM Reading - #2	21.01	21.3	21.38	21.41	21.39	21.42	21.39	21.41.21.42	21.3
SQM Reading - #3	21.05	21.33	21.39	21.45	21.38	21.41	21.4	21.42	21.29
SQM Reading - #4	21.04	21.31	21.41	21.42	21.39	21.43	21.41	21.39	21.31
SQM Reading - #5	21.05	21.31	21.37	21.41	21.39	21.44	21.4		21.3
Location SQM Average	21.0375	21.3125	21.3875	21.4225	21.3875	21.425	21.4	21.405	21.3
Location SQM Median	21.045	21.31	21.385	21.415	21.39	21.425	21.4	21.405	21.3
Time (24-hour clock)									
NELM	5	6	6	6			6	6	6
% Cloud Cover	0%	0%	0						
% Moon Visibility	0	0	0						
Air Temperature (F or C)	19			17	15	17	18	18	
Other Notes	Dry but mushy vis through telescope								
		Photos taken				**Photos taken**			

SQM Model											
SQM-L											
Date (DD/MM/YYY and Time Zone											
	Location 10	**Location 11**	**Location 12**	**Location 13**	**Location 14**	**Location 15**	**Location 16**	**Location 17**	**Location 18**	**Location 19**	**Location 20**
Location Name	Brooloo	Obi Obi Rd turnoff	Bonney lane, Belli Park	Kiddaman Creek Road	Lower Suses pocket rd	Mapleton, Sommer Rd	Flaxton Gardens Helipad	Montville	Montville west	Baroon Pocket Dam	Gerrard's Lookout
Latitude (in decimal degrees)	-26.548	-26.587	-26.511	-26.63	-26.649	-26.634	-26.652	-26.693	-26.692	-26.699	-26.731
Longitude (in decimal degrees)	152.713	152.736	152.812	152.767	152.812	152.86	152.877	152.892	152.886	152.869	152.902
What3words location	bribed.slimmest.loss	wider.negotiators.glitters	heartless.slogan.telescope	reversals.sender.imply	maps.befit.supply	along.spear.jotting	among.shelter.dazzles	boil.unassuming.clubhouse	thudded.token.whirring	mysteriously.hoot.continued	vessels.mechanic.longs
Time (24-hour clock)	**23:57**	**0:07**	**0:33**	**0:55**	**1:05**	**1:44**	**1:55**	**2:02**	**Not Done**	**Not Done**	**2:29**
SQM Reading - #1	21.44	21.38	21.38	21.38	21.34	21.29	21.16	21.16			21.07
SQM Reading - #2	21.44	21.39	21.38	21.37	21.32	21.27	21.17	21.17			21.08
SQM Reading - #3	21.46	21.39	21.37	21.38	21.36	21.29	21.17	21.17			21.04
SQM Reading - #4	21.42	21.39	21.38	21.37	21.32	21.29	21.16	21.16			21.07
SQM Reading - #5	21.41	21.39	21.38	21.38	21.32	21.28	21.21	21.21			21.07
Location SQM Average	21.4325	21.39	21.3775		21.33	21.2825	21.1775	21.1775	#DIV/0!	#DIV/0!	21.065
Location SQM Median	21.43	21.39	21.38	21.375	21.32	21.285	21.17	21.17	#NUM!	#NUM!	21.07
Time (24-hour clock)											
NELM	6	6	6								
% Cloud Cover		0	0								
% Moon Visibility		0%	0								
Air Temperature (F or C)	14			16		16					
Other Notes											**Photos taken**

June 2024

SQM Model		SQM Serial Number		Version (SQM or SQM-L)					
SQM-L		919			Observer 1	Observer 2			
	Austr Eastern St Time +10G	Total SQM Average		SQM-L	Ken Wishaw				
Date (DD/MM/YYY and Time Zone)	9/10 April 2024	Total SQM Median							
	Location 1	Location 2	Location 3	Location 4	Location 5	Location 6	Location 7	Location 8	Location 9
Location Name	Maleny Golf Club Observatory	Howell's Knob Lookout	Schulz Road lookout	Curramore Ridge	Green Park	Eastern Mary River Rd & Maleny Kenil rd	Eastern Mary River Road north Hill	Little Yabba Rest Area	Kenilworth showground
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Longitude (in decimal degrees)	152.864	152.809	152.805	152.761	152.76	152.761	152.703	152.689	152.727
What3words location	rodeo.market.adventure	comfy.relaxing.encrusted	grail.exist.apron	aroma.negotiated.habits	farmhouses.chopsticks.fogs	ladybug.crowd.they	jingling.widgets.node	parrot.chapter.neatest	appraise.ranches.sonar
Time (24-hour clock)	20:50	21.07	21:40	21:55	22:18	22:28	23:17	23:27	23:44
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SQM Reading - #2	21.01	21.3	21.38	21.41	21.39	21.42	21.39	21.41.21.42	21.3
SQM Reading - #3	21.05	21.33	21.39	21.45	21.38	21.41	21.4	21.42	21.29
SQM Reading - #4	21.04	21.31	21.41	21.42	21.39	21.43	21.41	21.39	21.31
SQM Reading - #5	21.05	21.31	21.37	21.41	21.39	21.44	21.4		21.3
Location SQM Average	21.0375	21.3125	21.3875	21.4225	21.3875	21.425	21.4	21.405	21.3
Location SQM Median	21.045	21.31	21.385	21.415	21.39	21.425	21.4	21.405	21.3
Time (24-hour clock)									
NELM	5	6	6	6			6	6	6
% Cloud Cover	0%	0%	0						
% Moon Visibility	0	0	0						
Air Temperature (F or C)	19			17	15	17	18	18	
Other Notes	Dry but mushy vis through telescope								
		Photos taken				Photos taken			

SQM Model											
SQM-L											
Date (DD/MM/YYY and Time Zone											
	Location 10	Location 11	Location 12	Location 13	Location 14	Location 15	Location 16	Location 17	Location 18	Location 19	Location 20
Location Name	Brooloo	Obi Obi Rd turnoff	Bonney lane, Belli Park	Kiddaman Creek Road	Lower Suses pocket rd	Mapleton, Sommer Rd	Flaxton Gardens Helipad	Montville	Montville west	Baroon Pocket Dam	Gerrard's Lookout
Latitude (in decimal degrees)	-26.548	-26.587	-26.511	-26.63	-26.649	-26.634	-26.652	-26.693	-26.692	-26.699	-26.731
Longitude (in decimal degrees)	152.713	152.736	152.812	152.767	152.812	152.86	152.877	152.892	152.886	152.869	152.902
What3words location	bribed.slimmest.loss	wider.negotiators.glitters	heartless.slogan.telescope	reversals.sender.imply	maps.befit.supply	along.spear.jotting	among.shelter.dazzles	boil.unassuming.clubhouse	thudded.token.whirring	mysteriously.hoot.continued	vessels.mechanic.longs
Time (24-hour clock)	23:57	0:07	0:33	0:55	1:05	1:44	1:55	2:02	Not Done	Not Done	2:29
SQM Reading - #1	21.44	21.38	21.38	21.38	21.34	21.29	21.16	21.16			21.07
SQM Reading - #2	21.44	21.39	21.38	21.37	21.32	21.27	21.17	21.17			21.08
SQM Reading - #3	21.46	21.39	21.37	21.38	21.36	21.29	21.17	21.17			21.04
SQM Reading - #4	21.42	21.39	21.38	21.37	21.32	21.29	21.16	21.16			21.07
SQM Reading - #5	21.41	21.39	21.38	21.38	21.32	21.28	21.21	21.21			21.07
Location SQM Average	21.4325	21.39	21.3775		21.33	21.2825	21.1775	21.1775	#DIV/0!	#DIV/0!	21.065
Location SQM Median	21.43	21.39	21.38	21.375	21.32	21.285	21.17	21.17	#NUM!	#NUM!	21.07
Time (24-hour clock)											
NELM	6	6	6								
% Cloud Cover		0	0								
% Moon Visibility		0%	0								
Air Temperature (F or C)	14			16		16					
Other Notes											Photos taken
		Photos taken									

August/September 2024

SQM Model									
SQM-L					Observer 1	Observer 2			
SQM Serial Number 0919	Austr Eastern St Time +10GMT				Ken Wishaw	Colin Gale, Doug Edwards			
Date (DD/MM/YYY and Time Zone)	4-Aug-24	31/08/2024	31/08/2024	31/08/2024	31/08/2024	30/08/2024	30/08/2024	30/08/2024	30/08/2024
	Location 1	Location 2	Location 3	Location 4	Location 5	Location 6	Location 7	Location 8	Location 9
Location Name	Maleny Golf Club Observatory	Howell's Knob Lookout	Schulz Road lookout	Curramore Ridge	Green Park	Eastern Mary River Rd & Maleny Kenil rd	Eastern Mary River Road north Hill	Little Yabba Rest Area	Kenilworth showground
Latitude (in decimal degrees)	-26.795	-26.76	-26.688	-26.683	-26.728	-26.729	-26.662	-26.625	-26.599
Longitude (in decimal degrees)	152.864	152.809	152.805	152.761	152.76	152.761	152.703	152.689	152.727
What3words location	rodeo.market.adventure	comfy.relaxing.encrusted	grail.exist.apron	aroma.negotiated.habits	farmhouses.chopsticks.fogs	ladybug.crowd.they	jingling.widgets.node	parrot.chapter.neatest	appraise.ranches.sonar
Time (24-hour clock)	21:40	22:35	22:51	23:08	23:29	21:05	20:58	20:38	20:25
SQM Reading - #1	21.23	21.19	21.29	21.29	21.29	21.26	21.27	21.12	21.07
SQM Reading - #2	21.19	21.19	21.27	21.32	21.3	21.26	21.27	21.1	21.07
SQM Reading - #3	21.24	21.22	21.27	21.32	21.31	21.25	21.25	21.07	21.06
SQM Reading - #4	21.23	21.21	21.25	21.31	21.29	21.26	21.26	21.112	21.07
SQM Reading - #5	21.24	21.19	21.27	21.29	21.3	21.25	21.27	21.11	21.07
Location SQM Average	21.225	21.2025	21.265	21.31	21.3	21.255	21.2625	21.098	21.0675
Location SQM Median	21.235	21.2	21.27	21.315	21.3	21.255	21.265	21.105	21.07
NELM	6	5	6	6	6	6	6	6	
% Cloud Cover	0%	0%	0%	0%%	0%%	0%	0%	0%	0%
% Moon Visibility	0	0	0	0	0	0	0	0	0
Air Temperature (C)	8	21	18	16	15		28	26	28
Other Notes	clear and dry	mild smoke haze	mild smoke haze	mild smoke haze	mild smoke haze	mild smoke haze	mild smoke haze	mild smoke haze	mild smoke haze
		horizon photos taken				horizon photos taken			centre of rural town

SQM Model											
SQM-L											
SQM Serial Number 0919											
Date (DD/MM/YYY and Time Zone		30/08/2024				4/08/2024	4/04/2024	4/08/2024	4/08/2024		4/08/2024
	Location 10	Location 11	Location 12	Location 13	Location 14	Location 15	Location 16	Location 17	Location 18	Location 19	Location 20
Location Name	Brooloo	Obi Obi Rd turnoff	Bonney lane, Belli Park	Kiddaman Creek Road	Lower Suses pocket rd	Mapleton, Sommer Rd	Flaxton Gardens Helipad	Montville	Montville west	Baroon Pocket Dam	Gerrard's Lookout
Latitude (in decimal degrees)	-26.548	-26.587	-26.511	-26.63	-26.649	-26.634	-26.652	-26.693	-26.692	-26.699	-26.731
Longitude (in decimal degrees)	152.713	152.736	152.812	152.767	152.812	152.86	152.877	152.892	152.886	152.869	152.902
What3words location	bribed.slimmest.loss	wider.negotiators.glitters	heartless.slogan.telescope	reversals.sender.imply	maps.befit.supply	along.spear.jotting	among.shelter.dazzles	boil.unassuming.clubhouse	thudded.token.whirring	mysteriously.hoot.continued	vessels.mechanic.longs
Time (24-hour clock)		20:02				1:51	1:37	1:25	1:15		1:05
SQM Reading - #1	Not surveyed	21.1	Not Surveyed	Not surveyed	Not surveyed	21.31	21.17	21.36	21.33	Not surveyed	21.31
SQM Reading - #2		21.11				21.32	21.16	21.33	21.31		21.28
SQM Reading - #3		21.1				21.28	21.16	21.32	21.29		21.27
SQM Reading - #4		21.09				21.31	21.12	21.33	21.3		21.33
SQM Reading - #5		21.11				21.3	21.17	21.32	21.34		21.32
Location SQM Average	#DIV/0!	21.1025	#DIV/0!		#DIV/0!	21.3025	21.1525	21.325	21.31	#DIV/0!	21.3
Location SQM Median	#NUM!	21.105	#NUM!		#NUM!	21.305	21.16	21.325	21.305	#NUM!	21.3
NELM		5				6	5				6
% Cloud Cover	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% Moon Visibility	0	0	0	0	0	0	0	0	0	0	0
Air Temperature (C)		28				11	12	12	12		12
Other Notes	mild smoke haze	moderate smoke haze	mild smoke haze	mild smoke haze	mild smoke haze	clear	clear	mild smoke haze	clear	mild smoke haze	mild smoke haze
		Horizon photos taken									

November 2024

SQM Model		**SQM Serial Number**		**Version (SQM or SQM-L)**	
SQM-L		919			**Observer 2**
	Austr Eastern St Time +10GMT	**Total SQM Average**		SQM-L	
Date (DD/MM/YYY and Time Zone)	1-Nov-24	**Total SQM Median**			
	Location 1	**Location 2**	**Location 3**	**Location 4**	**Location 5**
Location Name	Maleny Golf Club Observatory	Howell's Knob Lookout	Schulz Road lookout	Curramore Ridge	Eastern Mary River Rd & Maleny Kenil
Latitude (in decimal degrees)	-26.795	-26.76	-26.688	-26.683	-26.729
Longitude (in decimal degrees)	152.864	152.809	152.805	152.761	152.761
What3words location	rodeo.market.adventure	comfy.relaxing.encrusted	grail.exist.apron	aroma.negotiated.habits	ladybug.crowd.they
Time (24-hour clock)	2030	2105	2126	2141	2226
SQM Reading - #1	21.2	21.48	21.52	21.61	21.57
SQM Reading - #2	21.19	21.5	21.53	21.61	21.59
SQM Reading - #3	21.17	21.51	21.51	21.58	21.58
SQM Reading - #4	21.16	21.51	21.52	21.61	21.59
SQM Reading - #5	21.19	21.52	21.51	21.61	21.59
Location SQM Average	21.1775	21.51	21.5175	21.6025	21.5875
Location SQM Median	**21.18**	**21.51**	**21.515**	**21.61**	**21.59**
NELM	5	6	6	6	6
% Cloud Cover	30%	10%	10%	5%	5%
% Moon Visibility	0	0	0	0	0
Air Temperature (F or C)	17	17	17	16	16
Other Notes	Humid	Humid	Humid	Humid	Humid
		Photos taken			

SQM Model					
SQM-L					
Date (DD/MM/YYY and Time Zone)					
	Location 6	**Location 7**	**Location 8**	**Location 9**	**Location 10**
Location Name	Little Yabba Rest Area	Obi Obi Rd turnoff	Lower Suses pocket rd	Mapleton, Sommer Rd	Cnr Gheerulla Rd and Eumundi K Rd
Latitude (in decimal degrees)	-26.625	-26.587	-26.649	-26.634	-26.568
Longitude (in decimal degrees)	152.689	152.736	152.812	152.86	152.763
What3words location	parrot.chapter.neatest	wider.negotiators.glitters	maps.befit.supply	along.spear.jotting	servants cassette retainer
Time (24-hour clock)	2241	**Roadworks and floodlights**	2338	23.56	2310
SQM Reading - #1	21.64	went to Gheerulla	21.6	21.51	21.65
SQM Reading - #2	21.65		21.6	21.53	21.65
SQM Reading - #3	21.65		21.59	21.53	21.64
SQM Reading - #4	21.64		21.58	21.53	21.64
SQM Reading - #5	21.65		21.59	21.51	21.63
Location SQM Average	21.6475	#DIV/0!	21.59	21.525	21.64
Location SQM Median	**21.65**	**#NUM!**	**21.59**	**21.53**	**21.64**
NELM	6		6	6	6
% Cloud Cover	0%		0%	0%%	0
% Moon Visibility	0		0	0	0
Air Temperature (F or C)	16		16	18	16
Other Notes	Humid	Humid	Humid	Humid	Humid

April 2025

SQM Model		**SQM Serial Number**			**Version (SQM or SQM-L)**						
SQM-L		919				**Observer 1**	**Observer 2**				
	Austr Eastern St Time +10GMT	**Total SQM Average**			SQM-L	Ken Wishaw					
Date (DD/MM/YYY and Time Zone	27-Apr-25	**Total SQM Median**									
	Location 1	**Location 2**	**Location additional**	**Location 3**	**Location 4**	**Location 5**	**Location 6**	**Location 7**	**Location 8**	**Location 9**	**Location 10**
Location Name	**Maleny Golf Club Observat**	**Howell's Knob Lookout**	**Witta Ridge**	**Schulz Road lookout**	**Curramore Ridge**	**Green Park**	**Eastern Mary River Rd & Maleny K**	**Eastern Mary River Road nor**	**Little Yabba Rest Area**	**Kenilworth showground**	**Brooloo**
Latitude (in decimal degrees)	-26.795	-26.76	-26.726	-26.688	-26.683	-26.728	-26.729	-26.662	-26.625	-26.599	-26.548
Longitude (in decimal degrees)	152.864	152.809	152.824	152.805	152.761	152.76	152.761	152.703	152.689	152.727	152.713
What3words location	rodeo.market.adventure	comfy.relaxing.encrusted	lunging.importing.imploded	grail.exist.apron	aroma.negotiated.habits	farmhouses.chopsticks.fogs	ladybug.crowd.they	jingling.widgets.node	parrot.chapter.neatest	appraise.ranches.sonar	bribed.slimmest.loss
SQM Reading - #1	20.92	21.13	21.14	21.25	21.37	21.32	21.4	21.37	21.47	21.21	
SQM Reading - #2	20.99	21.13	21.15	21.24	21.36	21.32	21.36	21.37	21.47	21.22	Not Surveyed
SQM Reading - #3	20.94	21.14	21.16	21.25	21.39	21.32	21.37	21.42	21.48	21.23	
SQM Reading - #4	20.94	21.14	21.16	21.25	21.36	21.31	21.37	21.42	21.47	21.23	
SQM Reading - #5	20.95	21.13	21.15	21.26	21.36	21.31	21.37	21.41	21.42	21.2	
Location SQM Average	20.955	21.135	21.152	21.25	21.3675	21.315	21.3675	21.405	21.47	21.22	#DIV/0!
Location SQM Median	**20.94**	**21.13**	**21.15**	**21.25**	**21.36**	**21.32**	**21.37**	**21.41**	**21.47**	**21.22**	**#NUM!**
Time (24-hour clock)	18:45	19:00	19:44	20:00	20:33	21:23	21:36	22:37	22:48	22:55	
NELM											
% Cloud Cover	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% Moon Visibility	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Air Temperature (F or C)	19	18	18	18	18	15	17	17	17	17	
Other Notes		Horizon Photos taken					Horizon Photos taken				

SQM Model										
SQM-L										
Date (DD/MM/YYY and Time Zone										
	Location 11	**Location 12**	**Location 13**	**Location 14**	**Location 15**	**Location 16**	**Location 17**	**Location 18**	**Location 19**	**Location 20**
Location Name	**Obi Obi Rd turnoff**	**Bonney lane, Belli Park**	**Kiddaman Creek Road**	**Lower Suses pocket rd**	**Mapleton, QCCC**	**Flaxton Gardens Helipad**	**Montville Russell Family Pa**	**Montville west**	**Baroon Pocket Dam**	**Gerrard's Lookout**
Latitude (in decimal degrees)	-26.587	-26.511	-26.63	-26.649	-26.629	-26.652	-26.692	-26.692	-26.699	-26.731
Longitude (in decimal degrees)	152.736	152.812	152.767	152.812	152.86	152.877	152.892	152.886	152.869	152.902
What3words location	wider.negotiators.glitters	heartless.slogan.telescope	reversals.sender.imply	maps.befit.supply	lightning.rolled.educates	among.shelter.dazzles	gigantic.vine.caves	thudded.token.whirring	mysteriously.hoot.continued	vessels.mechanic.longs
SQM Reading - #1	21.34		21.31	21.32	20.98	21.02	21.04			21.01
SQM Reading - #2	21.36	Not Surveyed	21.32	21.31	20.98	20.97	21.04	Not Surveyed	Not Surveyed	21.02
SQM Reading - #3	21.36		21.32	21.3	20.98	21.01	21.05			21.01
SQM Reading - #4	21.37		21.31	21.29	20.96	21.02	21.04			21.02
SQM Reading - #5	21.36		21.31	21.31	20.94	21.04	21.06			21.01
Location SQM Average	21.3625	#DIV/0!	21.315	21.3025	20.965	21.01	21.0475	#DIV/0!	#DIV/0!	21.015
Location SQM Median	**21.36**	**#NUM!**	**21.31**	**21.31**	**20.98**	**21.02**	**21.04**	**#NUM!**	**#NUM!**	**21.01**
Time (24-hour clock)	23:15		23:59	0:09	0:24	0:34	0:46			0:55
NELM										
% Cloud Cover	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% Moon Visibility	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Air Temperature (F or C)	14		14	13	17	17	17			17
Other Notes										
	Horizon Photos taken									

July 2025

SQM Model		SQM Serial Number		Version (SQM or SQM-L)			
SQM-L		919			Observer 1	Observer 2	
	Austr Eastern St Time +10G	Total SQM Average		SQM-L	Ken Wishaw		
Date (DD/MM/YYY and Time Zone)	27-Jul-25	Total SQM Median					
	Location 1	Location 2	Location 3	Location 4	Location 5	Location 6	Location 7
Location Name	Maleny Golf Club Observatory	Howells Knob Lookout	Sommer Fuel Supplies Witta	Curramore Ridge	Green Park	Eastern Mary River Rd & Maleny Kenil rd	Eastern Mary River Road north Hill
Latitude (in decimal degrees)	-26.795	-26.76	-26.725	-26.683	-26.728	-26.729	-26.662
Longitude (in decimal degrees)	152.864	152.809	152.824	152.761	152.76	152.761	152.703
What3words location	rodeo.market.adventure	comfy.relaxing.encrusted	lunging.importing.imploded	aroma.negotiated.habits	farmhouses.chopsticks.fogs	ladybug.crowd.they	jingling.widgets.node
Time (24-hour clock)							
SQM Reading - #1		21.3	21.28	21.35	21.43	21.42	21.41
SQM Reading - #2		21.32	21.29	21.36	21.42	21.41	21.41
SQM Reading - #3		21.3	21.29	21.37	21.41	21.43	21.39
SQM Reading - #4		21.32	21.28	21.37	21.41	21.412	21.41
SQM Reading - #5		21.28	21.27	21.36	21.4	21.41	21.41
Location SQM Average	21.16	21.305	21.2825	21.365	21.41	21.4155	21.405
Location SQM Median	21.16	21.31	21.285	21.365	21.41	21.411	21.41
Time (24-hour clock)		19:30	20:05	20:30	20:50	21:00	21:50
NELM							
% Cloud Cover	0%	0%	0			0	
% Moon Visibility		2%				0	
Air Temperature (F or C)		12	11	12	7	6	7
Other Notes	from 19 July 2025						
		yes					
	Too much Moon crescent						
	on July 27th at 19:00						

SQM Model								
SQM-L								
Date (DD/MM/YYY and Time Zone)								
	Location 8	Location 9	Location 10	Location 11	Location 12	Location 13	Location 14	Location 15
Location Name	Little Yabba Rest Area	Kenilworth showground	Brooloo	Obi Obi Rd turnoff	Bonney lane, Belli Park	Kiddaman Creek Road	Lower Susies pocket rd	Mapleton, QCCC
Latitude (in decimal degrees)	-26.625	-26.599	-26.548	-26.587	-26.511	-26.63	-26.649	-26.63
Longitude (in decimal degrees)	152.689	152.727	152.713	152.736	152.812	152.767	152.812	152.8
What3words location	parrot.chapter.neatest	appraise.ranches.sonar	bribed.slimmest.loss	wider.negotiators.glitters	heartless.slogan.telescope	reversals.sender.imply	maps.befit.supply	
Time (24-hour clock)								
SQM Reading - #1	21.42	21.33	21.52	21.52	21.48	21.39	21.35	20.94
SQM Reading - #2	21.44	21.31	21.51	21.52	21.46	21.4	21.36	20.9
SQM Reading - #3	21.44	21.34	21.52	21.51	21.46	21.4	21.38	20.92
SQM Reading - #4	21.41	21.33	21.5	21.52	21.45	21.39	21.37	20.94
SQM Reading - #5	21.44	21.34	21.52	21.52	21.46	21.4	21.39	20.9
Location SQM Average	21.4325	21.33	21.5125	21.52	21.4775	21.3975	21.375	20.915
Location SQM Median	21.44	21.335	21.515	21.52	21.46	21.4	21.375	20.91
Time (24-hour clock)	22:05	22:12		23:10	23:40	0:20	0:25	0:40
NELM								
% Cloud Cover								
% Moon Visibility								
Air Temperature (F or C)	6	8	6	7	8	7	7	4
Other Notes								

October 2025

		SQM-L Serial Number	Observer		Moon Phase		
		919	Ken Wishaw		0days 17hrs		
	Austr Eastern St Time +10GMT						
Date (DD/MM/YYY and Time Zone)	22-Oct-25						
	Location 1	Location 2	Location 3	Location 4	Location 5	Location 6	
Location Name	Maleny Golf Club Observatory	Howell's Knob Lookout	Sommer Fuel Supplies Witta	Schulz Rd look out	Curramore Ridge	Green Park	Eastern Mary River Rd & Maleny Kenil rd
Latitude (in decimal degrees)	-26.795	-26.76	-26.725	-26.688	-26.683	-26.728	-26.729
Longitude (in decimal degrees)	152.864	152.809	152.824	152.805	152.761	152.76	152.761
What3words location	rodeo.market.adventure	comfy.relaxing.encrusted	lunging.importing.imploded	grail.exist.apron	aroma.negotiated.habits	farmhouses.chopsticks.fogs	ladybug.crowd.they
Time (24-hour clock)	19:35	20:18		20:44	20:56	21:33	21:55
SQM Reading - #1	20.86	21.31	21.31	21.42	21.49	21.58	21.61
SQM Reading - #2	20.86	21.32	21.32	21.43	21.5	21.6	21.61
SQM Reading - #3	20.85	21.31	21.32	21.43	21.5	21.61	21.59
SQM Reading - #4	20.84	21.32	21.31	21.43	21.5	21.6	21.61
SQM Reading - #5	20.84	21.32	21.32	21.42	21.52	21.6	21.61
Location SQM Average	20.8475	21.316	21.316	21.426	21.5	21.598	21.606
Location SQM Median	20.845	21.32	21.32	21.43	21.5	21.6	21.61
NELM							
% Cloud Cover	0%	0%	0%	0%	0%	0%	0%
% Moon Visibility	0						
Air Temperature (F or C)	19	19	19	19	18	19	19
Other Notes	Clear and dry						
horizon photos		yes					yes

	Location 7	Location 8	Location 9	Location 10	Location 11	Location 12	Location 13	Location 14	Location 15
Location Name	Eastern Mary River Road north Hill	Little Yabba Rest Area	Kenilworth showground	Brooloo	Obi Obi Rd turnoff	Bonney lane, Belli Park	Kiddaman Creek Road	Lower Susies pocket rd	Mapleton, QCCC
Latitude (in decimal degrees)	-26.662	-26.625	-26.599	-26.548	-26.587	-26.511	-26.63	-26.649	-26.634
Longitude (in decimal degrees)	152.703	152.689	152.727	152.713	152.736	152.812	152.767	152.812	152.8
What3words location	jingling.widgets.node	parrot.chapter.neatest	appraise.ranches.sonar	bribed.slimmest.loss	wider.negotiators.glitters	heartless.slogan.telescope	reversals.sender.imply	maps.befit.supply	
Time (24-hour clock)	22:09	22:20	22:25	22:58	23:09				
SQM Reading - #1	21.59	21.62	21.21	21.68	21.61				
SQM Reading - #2	21.59	21.62	21.23	21.66	21.6				
SQM Reading - #3	21.59	21.62	21.23	21.66	21.61				
SQM Reading - #4	21.59	21.62	21.22	21.67	21.59				
SQM Reading - #5	21.59	21.61	21.23	21.66	21.61				
Location SQM Average	21.59	21.618	21.224	21.666	21.604	unable due to cloud	unable due to cloud	unable due to cloud	unable due to cloud
Location SQM Median	21.59	21.62	21.23	21.66	21.61				
NELM									
% Cloud Cover	0%	0%	0%	0%	0%	100% cloud cover	100% cloud cover	100% cloud cover	100% cloud cover
% Moon Visibility									
Air Temperature (F or C)	20	19	19	19	19				
Other Notes									
horizon photos			showground lighting high		yes				

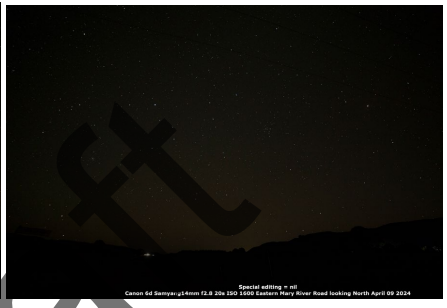
Appendix E: Night sky photography

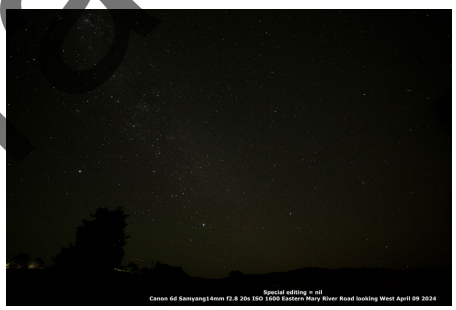
Night sky photography was conducted by Dr Ken Wishaw using the same camera lens and settings and no post- production applied. From June 2024 exposure was increased from 20 seconds to 30 seconds.

Site 1: Eastern Mary River Road, Kenilworth

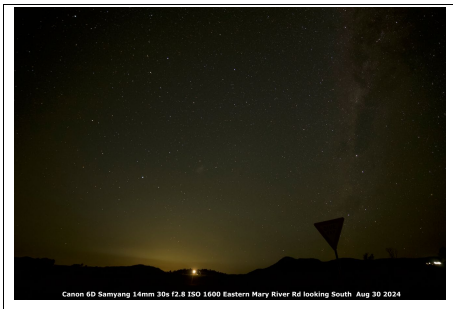
December 2023	
	

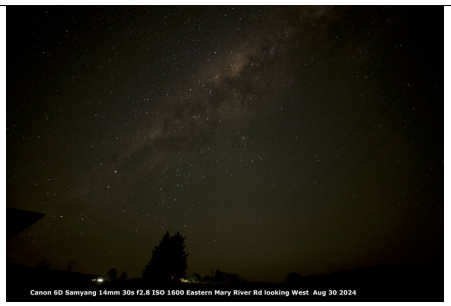
April 2024



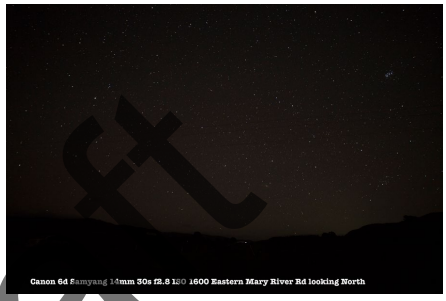


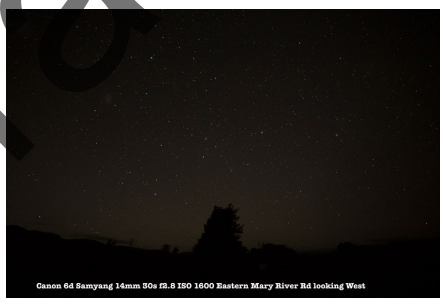
August 2024



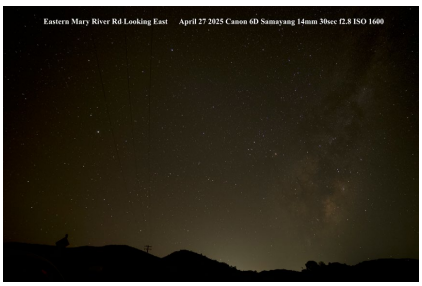


November 2024





April 2025

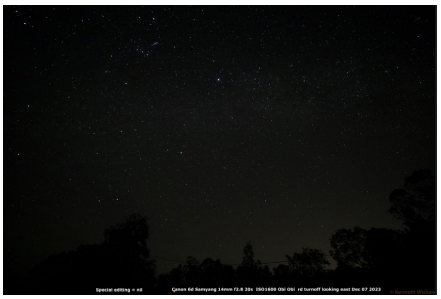


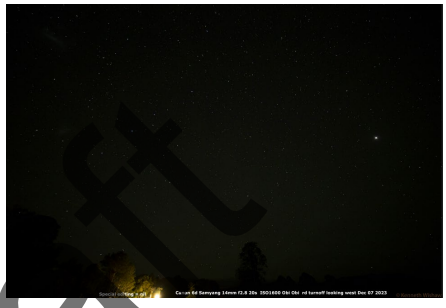
July 2025

October 2025

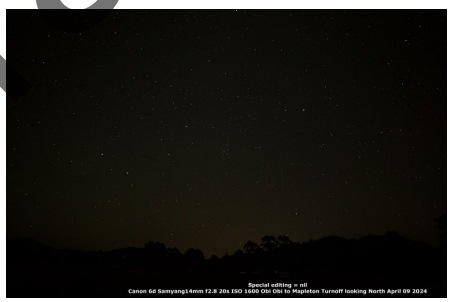
Site 2: Obi Obi turn off, Obi Obi

December 2023



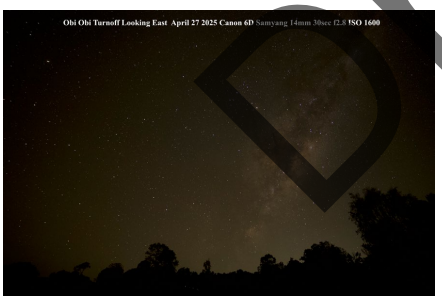


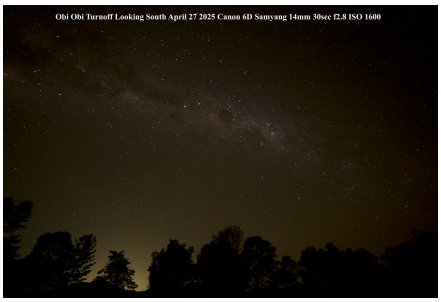
April 2024



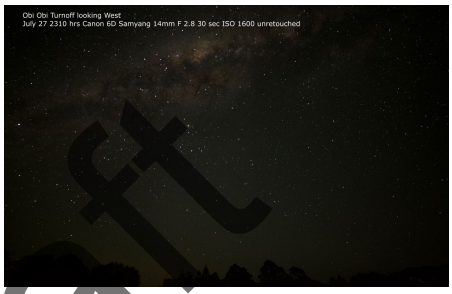
August 2024

April 2025





July 2025

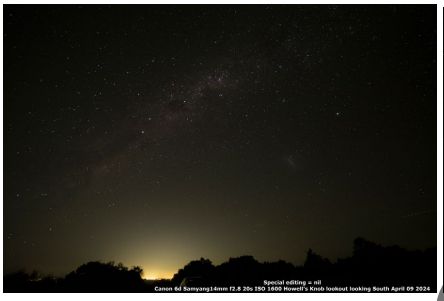


October 2025

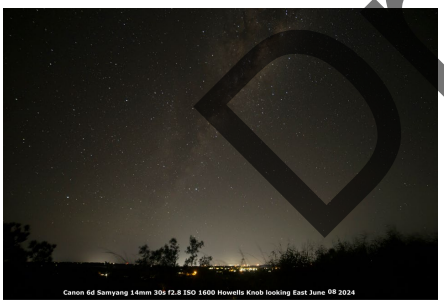
Site 3: Howell's Knob, Reesville

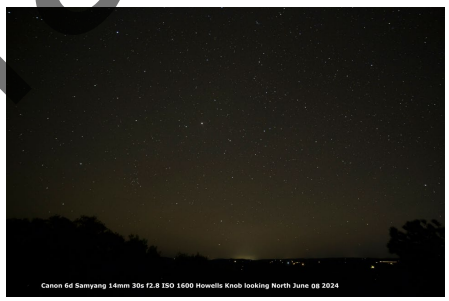
December 2023

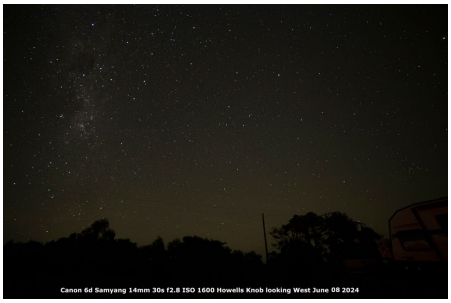
April 2024



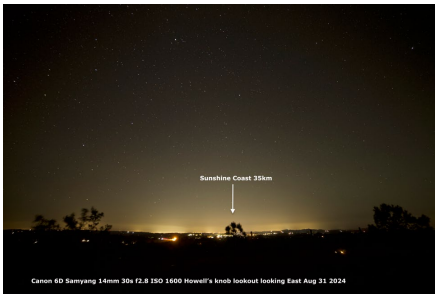
June 2024

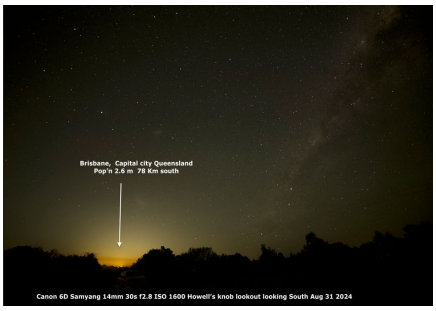


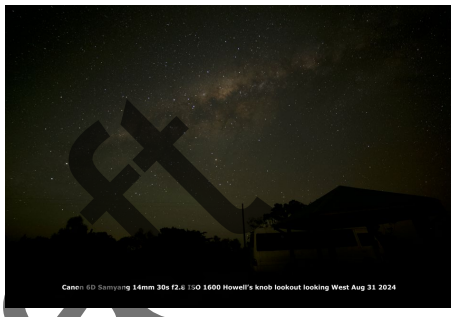




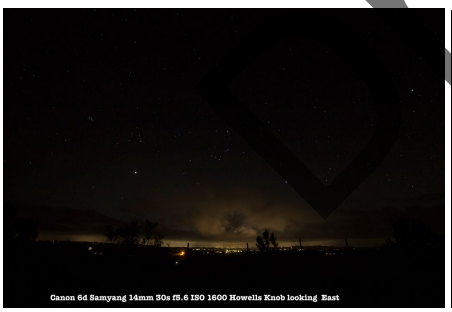
August 2024



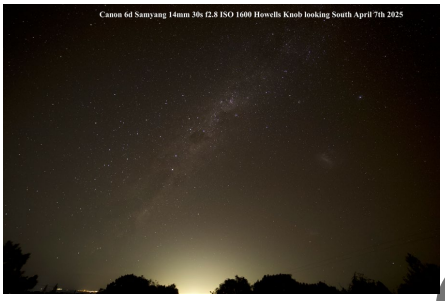


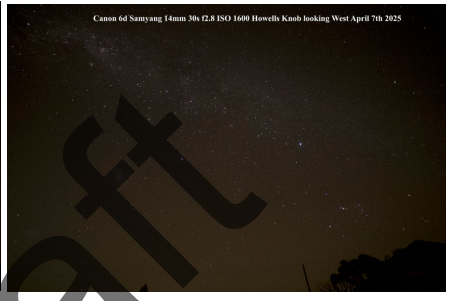


November 2024

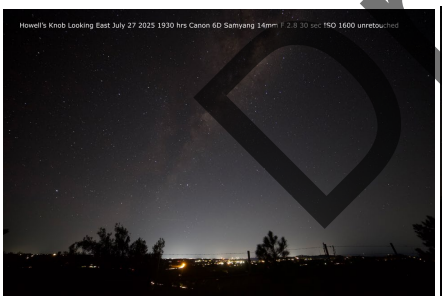


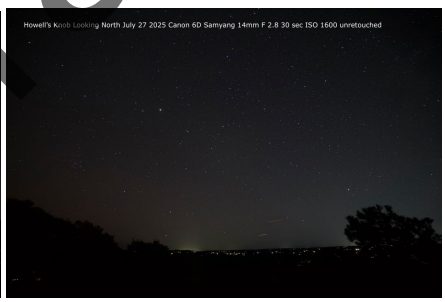
April 2025

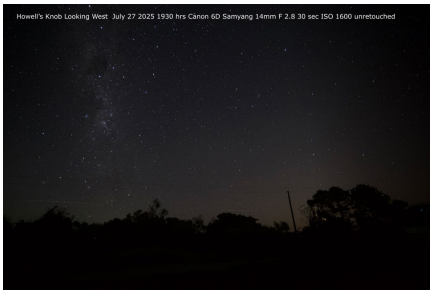




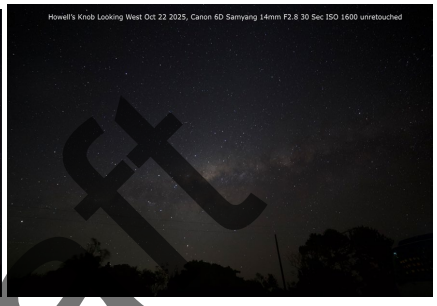
July 2025







October 2025



Appendix F: Lighting inventory

1. Council electrical lighting

Lighting type	Fittings	CCT	Shielded Y/N	Adaptive controls	Dark Sky Compliant Y/N	Total Lights
Carpark lighting	LED	3000K	Full cut off	4 x Yes Motion sensor or Telensa CMS	Yes	6
Carpark lighting	LED	2700K	Full cut off	4 x Yes	Yes	4
Path lighting - bollard	LED	3000K			Yes	5
Path lighting - pole	LED	3000K	5 x Full cut off 36 x Semi cut off	2 x Yes 39 x No	Yes	40
Sports lighting	16 x LED			N/A - Switched of throughout the night	12 x Yes (Witta) 46 x No (Maleny)	56
Street - Road Light	LED	3000K	Full cut off	Yes - Telensa CMS	Yes	15
Street - Road Light	LED	2700K	Full cut off	Yes	Yes	4
Street - Road Light	LED	4000K	Full cut off	Yes - Telensa CMS	No	10
Total						140

2. Street lighting including upgrades

DEVICE ID	Locality	Original luminaire	Luminaire upgrade since project inception / Future luminaire	Dark Sky compliant status
100066901	MALENY	FLUORO 36.6W	StreetLED 13.7W 3K Aero	Compliant
5861491	MALENY	FLUORO 36.6W	StreetLED 13.7W 3K Aero	Compliant
5224788	MALENY	FLUORO 36.6W	StreetLED 13.7W 3K Aero	Compliant
100066891	MALENY	FLUORO 36.6W	StreetLED 13.7W 3K Aero	Compliant
5224922	MALENY	LED 13.7W	StreetLED 13.7W 3K Aero	Compliant
5224818	MALENY	FLUORO 36.6W	StreetLED 13.7W 3K Aero	Compliant
5211909	MAPLETON	LED 24.4W	StreetLED 24W LED 3K Aero	Compliant
5224817	MALENY	MERCURY VAPOUR 139.2W	StreetLED 24W LED 3K Aero	Compliant
5224675	MALENY	MERCURY VAPOUR 139.2W	StreetLED 24W LED 3K Aero	Compliant
5224704	MALENY	MERCURY VAPOUR 61.7W	StreetLED 13.7W 3K Aero	Compliant
5813242	MALENY	MERCURY VAPOUR 61.7W	StreetLED 13.7W 3K Aero	Compliant
5224824	MALENY	MERCURY VAPOUR 61.7W	StreetLED 13.7W 3K Aero	Compliant
105399925	MALENY	MERCURY VAPOUR 61.7W	StreetLED 13.7W 3K Aero	Compliant
5224720	MALENY	FLUORO 36.6W	StreetLED 13.7W 3K Aero	Compliant
5224739	MALENY	MERCURY VAPOUR 61.7W	StreetLED 13.7W 3K Aero	Compliant
5224740	MALENY	LED 13.7W	StreetLED 13.7W 3K Aero	Compliant

DEVICE ID	Locality	Original luminaire	Luminaire upgrade since project inception / Future luminaire	Dark Sky compliant status
5224733	MALENY	MERCURY VAPOUR 61.7W	StreetLED 13.7W 3K Aero	Compliant
5224732	MALENY	MERCURY VAPOUR 61.7W	StreetLED 13.7W 3K Aero	Compliant
5224667	MALENY	MERCURY VAPOUR 61.7W	StreetLED 13.7W 3K Aero	Compliant
104082013	MALENY	MERCURY VAPOUR 61.7W	Avenue II 3K 14W LED	Compliant
5907255	MALENY	MERCURY VAPOUR 61.7W	Avenue II 3K 14W LED	Compliant
5907253	MALENY	MERCURY VAPOUR 61.7W	Avenue II 3K 14W LED	Compliant
5907250	MALENY	MERCURY VAPOUR 61.7W	Avenue II 3K 14W LED	Compliant
5224937	MALENY	MERCURY VAPOUR 61.7W	StreetLED 13.7W 3K Aero	Compliant
5224861	MALENY	MERCURY VAPOUR 61.7W	StreetLED 13.7W 3K Aero	Compliant
104082001	MALENY	MERCURY VAPOUR 61.7W	Avenue II 3K 14W LED	Compliant
5861489	MALENY	MERCURY VAPOUR 61.7W	StreetLED 13.7W 3K Aero	Compliant
5225018	MALENY	MERCURY VAPOUR 61.7W	StreetLED 13.7W 3K Aero	Compliant
5224822	MALENY	MERCURY VAPOUR 61.7W	StreetLED 13.7W 3K Aero	Compliant
5224654	MALENY	MERCURY VAPOUR 61.7W	StreetLED 13.7W 3K Aero	Compliant
5224653	MALENY	MERCURY VAPOUR 61.7W	StreetLED 13.7W 3K Aero	Compliant
5224673	MALENY	MERCURY VAPOUR 61.7W	StreetLED 13.7W 3K Aero	Compliant
5224672	MALENY	MERCURY VAPOUR 61.7W	StreetLED 13.7W 3K Aero	Compliant
5224936	MALENY	MERCURY VAPOUR 61.7W	StreetLED 13.7W 3K Aero	Compliant

DEVICE ID	Locality	Original luminaire	Luminaire upgrade since project inception / Future luminaire	Dark Sky compliant status
5224661	MALENY	MERCURY VAPOUR 61.7W	StreetLED 13.7W 3K Aero	Compliant
5827096	MALENY	MERCURY VAPOUR 61.7W	StreetLED 13.7W 3K Aero	Compliant
5224781	MALENY	LED 13.7W	StreetLED 13.7W 3K Aero	Compliant
5224779	MALENY	MERCURY VAPOUR 61.7W	StreetLED 13.7W 3K Aero	Compliant
5224823	MALENY	MERCURY VAPOUR 61.7W	StreetLED 13.7W 3K Aero	Compliant
100066890	MALENY	MERCURY VAPOUR 61.7W	StreetLED 13.7W 3K Aero	Compliant
100066899	MALENY	MERCURY VAPOUR 61.7W	StreetLED 13.7W 3K Aero	Compliant
100066892	MALENY	MERCURY VAPOUR 61.7W	StreetLED 13.7W 3K Aero	Compliant
100066893	MALENY	LED 13.7W	StreetLED 13.7W 3K Aero	Compliant
100066895	MALENY	MERCURY VAPOUR 61.7W	StreetLED 13.7W 3K Aero	Compliant
100066896	MALENY	MERCURY VAPOUR 61.7W	StreetLED 13.7W 3K Aero	Compliant
5224447	MALENY	MERCURY VAPOUR 61.7W	StreetLED 13.7W 3K Aero	Compliant
5224926	MALENY	MERCURY VAPOUR 61.7W	StreetLED 13.7W 3K Aero	Compliant
5224449	MALENY	MERCURY VAPOUR 61.7W	StreetLED 13.7W 3K Aero	Compliant
5224925	MALENY	MERCURY VAPOUR 61.7W	StreetLED 13.7W 3K Aero	Compliant
5224436	MALENY	MERCURY VAPOUR 61.7W	StreetLED 24W 3K Aero	Compliant
5224471	MALENY	MERCURY VAPOUR 61.7W	StreetLED 13.7W 3K Aero	Compliant

DEVICE ID	Locality	Original luminaire	Luminaire upgrade since project inception / Future luminaire	Dark Sky compliant status
105698549	MALENY	MERCURY VAPOUR 61.7W	StreetLED 13.7W 3K Aero	Compliant
5224914	MALENY	MERCURY VAPOUR 61.7W	StreetLED 13.7W 3K Aero	Compliant
5224664	MALENY	MERCURY VAPOUR 61.7W	StreetLED 13.7W 3K Aero	Compliant
5224786	MALENY	MERCURY VAPOUR 61.7W	StreetLED 13.7W 3K Aero	Compliant
5224935	MALENY	MERCURY VAPOUR 61.7W	StreetLED 13.7W 3K Aero	Compliant
5224660	MALENY	MERCURY VAPOUR 61.7W	StreetLED 13.7W 3K Aero	Compliant
5224404	MALENY	MERCURY VAPOUR 61.7W	StreetLED 13.7W 3K Aero	Compliant
5224795	MALENY	MERCURY VAPOUR 61.7W	StreetLED 13.7W 3K Aero	Compliant
5224793	MALENY	MERCURY VAPOUR 61.7W	StreetLED 13.7W 3K Aero	Compliant
5224521	MALENY	MERCURY VAPOUR 61.7W	StreetLED 13.7W 3K Aero	Compliant
5224520	MALENY	MERCURY VAPOUR 61.7W	StreetLED 13.7W 3K Aero	Compliant
5224799	MALENY	MERCURY VAPOUR 61.7W	StreetLED 13.7W 3K Aero	Compliant
5224801	MALENY	MERCURY VAPOUR 61.7W	StreetLED 13.7W 3K Aero	Compliant
5224785	MALENY	MERCURY VAPOUR 61.7W	StreetLED 13.7W 3K Aero	Compliant
5224784	MALENY	MERCURY VAPOUR 61.7W	StreetLED 13.7W 3K Aero	Compliant
103581192	MAPLETON	LED 13.7W	StreetLED 13.7W 3K Aero	Compliant
5211689	MAPLETON	LED 13.7W	StreetLED 13.7W 3K Aero	Compliant

DEVICE ID	Locality	Original luminaire	Luminaire upgrade since project inception / Future luminaire	Dark Sky compliant status
5907241	MALENY	MERCURY VAPOUR 92.4W	Avenue II 3K 14W LED	Compliant
5907243	MALENY	MERCURY VAPOUR 92.4W	Avenue II 3K 14W LED	Compliant
5907246	MALENY	MERCURY VAPOUR 92.4W	Avenue II 3K 14W LED	Compliant
5907248	MALENY	MERCURY VAPOUR 92.4W	Avenue II 3K 14W LED	Compliant
104062934	MALENY	MERCURY VAPOUR 92.4W	StreetLED 13.7W 3K Aero	Compliant
100066894	MALENY	MERCURY VAPOUR 92.4W	StreetLED 13.7W 3K Aero	Compliant
5224803	MALENY	MERCURY VAPOUR 92.4W	StreetLED 13.7W 3K Aero	Compliant
5224804	MALENY	MERCURY VAPOUR 92.4W	StreetLED 13.7W 3K Aero	Compliant
5224802	MALENY	MERCURY VAPOUR 92.4W	StreetLED 13.7W 3K Aero	Compliant
105570955	MALENY	SODIUM 85.2W	StreetLED 24W LED 3K Aero	Compliant
104797971	MALENY	SODIUM 85.2W	StreetLED 24W LED 3K Aero	Compliant
103304622	MALENY	SODIUM 85.2W	StreetLED 24W LED 3K Aero	Compliant
103527516	MALENY	SODIUM 85.2W	StreetLED 24W LED 3K Aero	Compliant
5224639	MALENY	SODIUM 85.2W	StreetLED 24W LED 3K Aero	Compliant
5224816	MALENY	SODIUM 85.2W	StreetLED 24W LED 3K Aero	Compliant
5224783	MALENY	SODIUM 85.2W	StreetLED 24W LED 3K Aero	Compliant
100043172	MALENY	LED 32.5W	StreetLED 24W LED 3K Aero	Compliant
5224842	MALENY	SODIUM 85.2W	StreetLED 24W LED 3K Aero	Compliant

DEVICE ID	Locality	Original luminaire	Luminaire upgrade since project inception / Future luminaire	Dark Sky compliant status
5224917	MALENY	SODIUM 85.2W	StreetLED 24W LED 3K Aero	Compliant
5224434	MALENY	SODIUM 85.2W	StreetLED 24W LED 3K Aero	Compliant
105762349	MALENY	SODIUM 85.2W	StreetLED 24W LED 3K Aero	Compliant
106799990	MALENY	SODIUM 85.2W	StreetLED 24W LED 3K Aero	Compliant
5224797	MALENY	SODIUM 85.2W	StreetLED 24W LED 3K Aero	Compliant
5211901	MAPLETON	LED 24.4W	StreetLED 24W LED 3K Aero	Compliant
5211907	MAPLETON	LED 24.4W	StreetLED 24W LED 3K Aero	Compliant
5232900	KENILWORTH	MERCURY VAPOUR 273.3W	Philips RoadFlair 38W	Compliant
5224934	MALENY	MERCURY VAPOUR 273.3W	Philips RoadFlair 61W LED	Compliant
5224776	MALENY	MERCURY VAPOUR 273.3W	Philips RoadFlair 61W LED	Compliant
5232915	KENILWORTH	MERCURY VAPOUR 61.7W	Philips RoadFlair 38W LED	Compliant
5232862	KENILWORTH	MERCURY VAPOUR 61.7W	Philips RoadFlair 38W LED	Compliant
107072443	KENILWORTH	SODIUM 116.6W	Philips RoadFlair 113W LED	Compliant
5842391	KENILWORTH	SODIUM 116.6W	Philips RoadFlair 38W LED	Compliant
5224764	MALENY	SODIUM 116.6W	Philips RoadFlair 38W LED	Compliant
5224765	MALENY	SODIUM 116.6W	Philips RoadFlair 38W LED	Compliant
5224766	MALENY	SODIUM 116.6W	Philips RoadFlair 38W LED	Compliant

DEVICE ID	Locality	Original luminaire	Luminaire upgrade since project inception / Future luminaire	Dark Sky compliant status
5224767	MALENY	SODIUM 116.6W	Philips RoadFlair 38W LED	Compliant
5224769	MALENY	SODIUM 116.6W	Philips RoadFlair 38W LED	Compliant
5224480	MALENY	SODIUM 116.6W	Philips RoadFlair 38W LED	Compliant
5224479	MALENY	SODIUM 116.6W	Philips RoadFlair 38W LED	Compliant
103588616	MALENY	SODIUM 116.6W	Philips RoadFlair 38W LED	Compliant
5225014	MALENY	SODIUM 116.6W	Philips RoadFlair 38W LED	Compliant
5224777	MALENY	SODIUM 116.6W	Philips RoadFlair 38W LED	Compliant
5224774	MALENY	SODIUM 116.6W	Philips RoadFlair 38W LED	Compliant
5225021	MALENY	SODIUM 116.6W	Philips RoadFlair 38W LED	Compliant
106898320	MALENY	SODIUM 116.6W	Philips RoadFlair 38W LED	Compliant
5224787	MALENY	SODIUM 116.6W	Philips RoadFlair 38W LED	Compliant
5211903	MAPLETON	SODIUM 116.6W	Philips RoadFlair 38W LED	Compliant
5211904	MAPLETON	SODIUM 116.6W	StreetLED 24W 3K Aero	Compliant
5211892	MAPLETON	SODIUM 116.6W	Philips RoadFlair 38W LED	Compliant
5211893	MAPLETON	LED 80.8W	Philips RoadFlair 38W LED	Compliant
5211894	MAPLETON	SODIUM 116.6W	Philips RoadFlair 38W LED	Compliant
5873958	MAPLETON	SODIUM 116.6W	Philips RoadFlair 38W LED	Compliant

DEVICE ID	Locality	Original luminaire	Luminaire upgrade since project inception / Future luminaire	Dark Sky compliant status
5873959	MAPLETON	SODIUM 116.6W	Philips RoadFlair 38W LED	Compliant
5873960	MAPLETON	SODIUM 116.6W	Philips RoadFlair 38W LED	Compliant
5809233	MAPLETON	SODIUM 116.6W	Philips RoadFlair 38W LED	Compliant
102497909	MAPLETON	SODIUM 116.6W	Philips RoadFlair 38W LED	Compliant
105923355	MAPLETON	SODIUM 116.6W	Philips RoadFlair 38W LED	Compliant
5211889	MAPLETON	SODIUM 116.6W	Philips RoadFlair 38W LED	Compliant
5211891	MAPLETON	SODIUM 116.6W	Philips RoadFlair 38W LED	Compliant
5211902	MAPLETON	SODIUM 116.6W	Philips RoadFlair 38W LED	Compliant
107283828	MONTVILLE	SODIUM 116.6W	Philips RoadFlair 38W LED	Compliant
107283829	MONTVILLE	SODIUM 116.6W	Philips RoadFlair 38W LED	Compliant
5224868	MONTVILLE	SODIUM 116.6W	Philips RoadFlair 38W LED	Compliant
5224753	FLAXTON	SODIUM 168.5W	Philips RoadFlair 61W LED	Compliant
5232855	KENILWORTH	SODIUM 168.5W	Philips RoadFlair 38W	Compliant
105901375	MALENY	SODIUM 168.5W	Philips RoadFlair 61W LED	Compliant
105901373	MALENY	SODIUM 168.5W	Philips RoadFlair 61W LED	Compliant
5224770	MALENY	SODIUM 168.5W	Philips RoadFlair 61W LED	Compliant
105694249	MALENY	SODIUM 168.5W	Philips RoadFlair 61W LED	Compliant

DEVICE ID	Locality	Original luminaire	Luminaire upgrade since project inception / Future luminaire	Dark Sky compliant status
5224475	MALENY	SODIUM 168.5W	Philips RoadFlair 61W LED	Compliant
100043169	MALENY	SODIUM 168.5W	Philips RoadFlair 61W LED	Compliant
5224476	MALENY	SODIUM 168.5W	Philips RoadFlair 61W LED	Compliant
5224854	MALENY	SODIUM 168.5W	Philips RoadFlair 61W LED	Compliant
105694216	MALENY	SODIUM 168.5W	Philips RoadFlair 61W LED	Compliant
104890716	MALENY	SODIUM 168.5W	Philips RoadFlair 61W LED	Compliant
5211833	MAPLETON	SODIUM 168.5W	Philips RoadFlair 61W LED	Compliant
5211888	MAPLETON	SODIUM 168.5W	Philips RoadFlair 61W LED	Compliant
5224836	MONTVILLE	SODIUM 168.5W	Philips RoadFlair 61W LED	Compliant
5224829	MONTVILLE	SODIUM 168.5W	Philips RoadFlair 61W LED	Compliant
104682582	CONONDALE	SODIUM 273W	Philips RoadFlair 70W	Compliant
5224450	MALENY	SODIUM 273W	Philips RoadFlair 61W	Compliant
5224445	MALENY	SODIUM 273W	Philips RoadFlair 143W LED	Compliant
5224919	MALENY	SODIUM 273W	Philips RoadFlair 61W	Compliant
105694252	MALENY	SODIUM 273W	Philips RoadFlair 143W LED	Compliant
5224851	MALENY	SODIUM 273W	Philips RoadFlair 143W LED	Compliant
106898324	MALENY	SODIUM 273W	Philips RoadFlair 143W LED	Compliant
5232909	KENILWORTH	SODIUM 85.2W	Philips RoadFlair 38W LED	Compliant

DEVICE ID	Locality	Original luminaire	Luminaire upgrade since project inception / Future luminaire	Dark Sky compliant status
5232868	KENILWORTH	SODIUM 85.2W	Philips RoadFlair 38W LED	Compliant
5232863	KENILWORTH	SODIUM 85.2W	Philips RoadFlair 38W LED	Compliant
103875767	KENILWORTH	SODIUM 85.2W	Philips RoadFlair 38W LED	Compliant
5232867	KENILWORTH	SODIUM 85.2W	Philips RoadFlair 38W LED	Compliant
5232866	KENILWORTH	SODIUM 85.2W	Philips RoadFlair 38W LED	Compliant
5232853	KENILWORTH	SODIUM 85.2W	Philips RoadFlair 38W LED	Compliant
5224724	MONTVILLE	FLUORO 36.6W	FUTURE - StreetLED 13.7W 3K Aero	Not Compliant
5224958	MONTVILLE	LED 16.9W	FUTURE -StreetLED 24W LED 3K Aero	Future - TBA
5211688	MAPLETON	LED 32.5W	FUTURE -StreetLED 24W LED 3K Aero	Future - TBA
5211910	MAPLETON	LED 32.5W	FUTURE - StreetLED 24W LED 3K Aero	Future - TBA
5224433	MONTVILLE	LED 32.5W	FUTURE - StreetLED 24W LED 3K Aero	Future - TBA
5232893	CONONDALE	MERCURY VAPOUR 139.2W	FUTURE - StreetLED 24W LED 3K Aero	Not Compliant
5211687	MAPLETON	MERCURY VAPOUR 139.2W	FUTURE - StreetLED 24W LED 3K Aero	Not Compliant
5224428	MONTVILLE	MERCURY VAPOUR 139.2W	FUTURE - StreetLED 24W LED 3K Aero	Not Compliant
5224426	MONTVILLE	MERCURY VAPOUR 139.2W	FUTURE - StreetLED 24W LED 3K Aero	Not Compliant
5814238	BALMORAL RIDGE	MERCURY VAPOUR 61.7W	FUTURE - StreetLED 13.7W 3K Aero	Not Compliant
5232891	CONONDALE	LED 13.7W	FUTURE - StreetLED 13.7W 3K Aero	Future - TBA

DEVICE ID	Locality	Original luminaire	Luminaire upgrade since project inception / Future luminaire	Dark Sky compliant status
5224951	FLAXTON	MERCURY VAPOUR 61.7W	FUTURE - StreetLED 13.7W 3K Aero	Not Compliant
100233973	FLAXTON	MERCURY VAPOUR 61.7W	FUTURE - StreetLED 13.7W 3K Aero	Not Compliant
5232905	KENILWORTH	MERCURY VAPOUR 61.7W	FUTURE - StreetLED 13.7W 3K Aero	Not Compliant
5232875	KENILWORTH	MERCURY VAPOUR 61.7W	FUTURE - StreetLED 13.7W 3K Aero	Not Compliant
5842419	KENILWORTH	MERCURY VAPOUR 61.7W	FUTURE - StreetLED 13.7W 3K Aero	Not Compliant
5232874	KENILWORTH	MERCURY VAPOUR 61.7W	FUTURE - StreetLED 13.7W 3K Aero	Not Compliant
5232906	KENILWORTH	MERCURY VAPOUR 61.7W	FUTURE - StreetLED 13.7W 3K Aero	Not Compliant
5232857	KENILWORTH	MERCURY VAPOUR 61.7W	FUTURE - StreetLED 13.7W 3K Aero	Not Compliant
5232889	KENILWORTH	MERCURY VAPOUR 61.7W	FUTURE - StreetLED 13.7W 3K Aero	Not Compliant
5232858	KENILWORTH	MERCURY VAPOUR 61.7W	FUTURE -StreetLED 13.7W 3K Aero	Not Compliant
5232871	KENILWORTH	MERCURY VAPOUR 61.7W	FUTURE - StreetLED 13.7W 3K Aero	Not Compliant
5232870	KENILWORTH	MERCURY VAPOUR 61.7W	FUTURE - StreetLED 13.7W 3K Aero	Not Compliant
5232872	KENILWORTH	MERCURY VAPOUR 61.7W	FUTURE - StreetLED 13.7W 3K Aero	Not Compliant
5232886	KENILWORTH	MERCURY VAPOUR 61.7W	FUTURE - StreetLED 13.7W 3K Aero	Not Compliant
5232860	KENILWORTH	MERCURY VAPOUR 61.7W	FUTURE - StreetLED 13.7W 3K Aero	Not Compliant
5232859	KENILWORTH	MERCURY VAPOUR 61.7W	FUTURE - StreetLED 13.7W 3K Aero	Not Compliant
106083669	KENILWORTH	MERCURY VAPOUR 61.7W	FUTURE - StreetLED 13.7W 3K Aero	Not Compliant

DEVICE ID	Locality	Original luminaire	Luminaire upgrade since project inception / Future luminaire	Dark Sky compliant status
5232894	KENILWORTH	MERCURY VAPOUR 61.7W	FUTURE - StreetLED 13.7W 3K Aero	Not Compliant
5232911	KENILWORTH	MERCURY VAPOUR 61.7W	FUTURE - StreetLED 13.7W 3K Aero	Not Compliant
5232895	KENILWORTH	MERCURY VAPOUR 61.7W	FUTURE - StreetLED 13.7W 3K Aero	Not Compliant
5232912	KENILWORTH	MERCURY VAPOUR 61.7W	FUTURE -StreetLED 13.7W 3K Aero	Not Compliant
104422430	KENILWORTH	MERCURY VAPOUR 61.7W	FUTURE - StreetLED 13.7W 3K Aero	Not Compliant
5232864	KENILWORTH	MERCURY VAPOUR 61.7W	FUTURE - StreetLED 13.7W 3K Aero	Not Compliant
5212725	MAPLETON	LED 13.7W	FUTURE - StreetLED 13.7W 3K Aero	Future - TBA
5211906	MAPLETON	MERCURY VAPOUR 61.7W	FUTURE - StreetLED 13.7W 3K Aero	Not Compliant
5211720	MAPLETON	MERCURY VAPOUR 61.7W	FUTURE - StreetLED 13.7W 3K Aero	Not Compliant
5211299	MAPLETON	MERCURY VAPOUR 61.7W	FUTURE - StreetLED 13.7W 3K Aero	Not Compliant
5211381	MAPLETON	MERCURY VAPOUR 61.7W	FUTURE - StreetLED 13.7W 3K Aero	Not Compliant
5211382	MAPLETON	MERCURY VAPOUR 61.7W	FUTURE -StreetLED 13.7W 3K Aero	Not Compliant
5211690	MAPLETON	LED 13.7W	FUTURE - StreetLED 13.7W 3K Aero	Future - TBA
5211692	MAPLETON	MERCURY VAPOUR 61.7W	FUTURE -StreetLED 13.7W 3K Aero	Not Compliant
5211693	MAPLETON	MERCURY VAPOUR 61.7W	FUTURE - StreetLED 13.7W 3K Aero	Not Compliant
102701434	MAPLETON	MERCURY VAPOUR 92.4W	FUTURE - StreetLED 13.7W 3K Aero	Not Compliant
102701435	MAPLETON	MERCURY VAPOUR 92.4W	FUTURE - StreetLED 13.7W 3K Aero	Not Compliant

DEVICE ID	Locality	Original luminaire	Luminaire upgrade since project inception / Future luminaire	Dark Sky compliant status
102854957	MONTVILLE	LED 13.7W	FUTURE - StreetLED 13.7W 3K Aero	Future - TBA
5848784	MONTVILLE	MERCURY VAPOUR 92.4W	FUTURE - StreetLED 13.7W 3K Aero	Not Compliant
5232907	CONONDALE	SODIUM 85.2W	FUTURE - StreetLED 24W LED 3K Aero	Future - TBA
5224634	FLAXTON	SODIUM 85.2W	FUTURE - StreetLED 24W LED 3K Aero	Future - TBA
5224953	FLAXTON	SODIUM 85.2W	FUTURE - StreetLED 24W LED 3K Aero	Future - TBA
5232884	KENILWORTH	SODIUM 85.2W	FUTURE - StreetLED 24W LED 3K Aero	Future - TBA
5232854	KENILWORTH	SODIUM 85.2W	FUTURE - StreetLED 24W LED 3K Aero	Future - TBA
104001836	KENILWORTH	SODIUM 85.2W	FUTURE - StreetLED 24W LED 3K Aero	Future - TBA
5232865	KENILWORTH	SODIUM 85.2W	FUTURE - StreetLED 24W LED 3K Aero	Future - TBA
5232898	KENILWORTH	SODIUM 85.2W	FUTURE - StreetLED 24W LED 3K Aero	Future - TBA
5211665	MAPLETON	SODIUM 85.2W	FUTURE - StreetLED 24W LED 3K Aero	Future - TBA
5212785	MAPLETON	SODIUM 85.2W	FUTURE - StreetLED 24W LED 3K Aero	Future - TBA
5211908	MAPLETON	SODIUM 85.2W	FUTURE - StreetLED 24W LED 3K Aero	Future - TBA
5211380	MAPLETON	SODIUM 85.2W	FUTURE - StreetLED 24W LED 3K Aero	Future - TBA
5224826	MONTVILLE	SODIUM 85.2W	FUTURE - StreetLED 24W LED 3K Aero	Future - TBA
5224908	MONTVILLE	SODIUM 85.2W	FUTURE - StreetLED 24W LED 3K Aero	Future - TBA
5224674	MONTVILLE	SODIUM 85.2W	FUTURE - StreetLED 24W LED 3K Aero	Future - TBA

DEVICE ID	Locality	Original luminaire	Luminaire upgrade since project inception / Future luminaire	Dark Sky compliant status
5224429	MONTVILLE	SODIUM 85.2W	FUTURE - StreetLED 24W LED 3K Aero	Future - TBA
100064368	MONTVILLE	SODIUM 85.2W	FUTURE - StreetLED 24W LED 3K Aero	Future - TBA
5224867	MONTVILLE	SODIUM 85.2W	FUTURE - StreetLED 24W LED 3K Aero	Future - TBA
5224464	MONTVILLE	SODIUM 85.2W	FUTURE - StreetLED 24W LED 3K Aero	Future - TBA
106313775	CONONDALE	FLUORO 36.6W	TBD	Not Compliant
106313794	CONONDALE	FLUORO 36.6W	TBD	Not Compliant
5224468	FLAXTON	FLUORO 36.6W	TBD	Not Compliant
5224508	MALENY	FLUORO 36.6W	TBD	Not Compliant
5224513	MALENY	FLUORO 36.6W	TBD	Not Compliant
106342934	MALENY	FLUORO 36.6W	TBD	Not Compliant
106342932	MALENY	FLUORO 36.6W	TBD	Not Compliant
106650167	MALENY	FLUORO 36.6W	TBD	Not Compliant
106650165	MALENY	FLUORO 36.6W	TBD	Not Compliant
106447035	MALENY	FLUORO 36.6W	TBD	Not Compliant
106447033	MALENY	FLUORO 36.6W	TBD	Not Compliant
106447031	MALENY	FLUORO 36.6W	TBD	Not Compliant
106447028	MALENY	FLUORO 36.6W	TBD	Not Compliant
106650159	MALENY	FLUORO 36.6W	TBD	Not Compliant
103609018	MALENY	FLUORO 36.6W	TBD	Not Compliant
106342926	MALENY	FLUORO 36.6W	TBD	Not Compliant
106342929	MALENY	FLUORO 36.6W	TBD	Not Compliant
106342931	MALENY	FLUORO 36.6W	TBD	Not Compliant
106650154	MALENY	FLUORO 36.6W	TBD	Not Compliant
106650156	MALENY	FLUORO 36.6W	TBD	Not Compliant

DEVICE ID	Locality	Original luminaire	Luminaire upgrade since project inception / Future luminaire	Dark Sky compliant status
106650157	MALENY	FLUORO 36.6W	TBD	Not Compliant
106650160	MALENY	FLUORO 36.6W	TBD	Not Compliant
5907290	MONTVILLE	FLUORO 36.6W	TBD	Not Compliant
106883083	NORTH MALENY	FLUORO 36.6W	TBD	Not Compliant
106883088	NORTH MALENY	FLUORO 36.6W	TBD	Not Compliant
106883080	NORTH MALENY	FLUORO 36.6W	TBD	Not Compliant
106883084	NORTH MALENY	FLUORO 36.6W	TBD	Not Compliant
106883085	NORTH MALENY	FLUORO 36.6W	TBD	Not Compliant
5224967	FLAXTON	LED 16.9W	TBD	Future - TBA
103776774	FLAXTON	LED 16.9W	TBD	Future - TBA
5211391	FLAXTON	LED 16.9W	TBD	Future - TBA
100233972	FLAXTON	LED 16.9W	TBD	Future - TBA
105960463	FLAXTON	LED 16.9W	TBD	Future - TBA
5224715	FLAXTON	LED 16.9W	TBD	Future - TBA
5224716	FLAXTON	LED 16.9W	TBD	Future - TBA
5859493	FLAXTON	LED 16.9W	TBD	Future - TBA
5224573	FLAXTON	LED 16.9W	TBD	Future - TBA
5224559	FLAXTON	LED 16.9W	TBD	Future - TBA
5232856	KENILWORTH	LED 16.9W	TBD	Future - TBA
5224938	MALENY	LED 16.9W	TBD	Future - TBA
5224604	MALENY	LED 16.9W	TBD	Future - TBA
5224605	MALENY	LED 16.9W	TBD	Future - TBA
5224435	MALENY	LED 16.9W	TBD	Future - TBA

DEVICE ID	Locality	Original luminaire	Luminaire upgrade since project inception / Future luminaire	Dark Sky compliant status
103278199	MALENY	LED 16.9W	TBD	Future - TBA
5211630	MAPLETON	LED 16.9W	TBD	Future - TBA
5211721	MAPLETON	LED 16.9W	TBD	Future - TBA
5211638	MAPLETON	LED 16.9W	TBD	Future - TBA
5211691	MAPLETON	LED 16.9W	TBD	Future - TBA
5212596	MAPLETON	LED 16.9W	TBD	Future - TBA
5212597	MAPLETON	LED 16.9W	TBD	Future - TBA
5212625	MAPLETON	LED 16.9W	TBD	Future - TBA
107773958	MONTVILLE	LED 16.9W	TBD	Future - TBA
107774189	MONTVILLE	LED 16.9W	TBD	Future - TBA
107662990	MONTVILLE	LED 16.9W	TBD	Future - TBA
5224534	MONTVILLE	LED 16.9W	TBD	Future - TBA
5224731	MONTVILLE	LED 16.9W	TBD	Future - TBA
5224465	FLAXTON	LED 21.1W	TBD	Future - TBA
5224466	FLAXTON	LED 21.1W	TBD	Future - TBA
5224407	FLAXTON	LED 21.1W	TBD	Future - TBA
5907328	FLAXTON	LED 21.1W	TBD	Future - TBA
5907330	FLAXTON	LED 21.1W	TBD	Future - TBA
5224467	FLAXTON	LED 21.1W	TBD	Future - TBA
103731475	FLAXTON	LED 21.1W	TBD	Future - TBA
103436251	MALENY	LED 21.1W	TBD	Future - TBA
5922138	MALENY	LED 21.1W	TBD	Future - TBA
5922149	MALENY	LED 21.1W	TBD	Future - TBA
102635234	MALENY	LED 21.1W	TBD	Future - TBA
103416294	MALENY	LED 21.1W	TBD	Future - TBA
103571619	MALENY	LED 21.1W	TBD	Future - TBA

DEVICE ID	Locality	Original luminaire	Luminaire upgrade since project inception / Future luminaire	Dark Sky compliant status
105073363	MALENY	LED 21.1W	TBD	Future - TBA
103502426	MAPLETON	LED 21.1W	TBD	Future - TBA
102922996	MAPLETON	LED 21.1W	TBD	Future - TBA
102922976	MAPLETON	LED 21.1W	TBD	Future - TBA
102922993	MAPLETON	LED 21.1W	TBD	Future - TBA
102922991	MAPLETON	LED 21.1W	TBD	Future - TBA
102922987	MAPLETON	LED 21.1W	TBD	Future - TBA
102922986	MAPLETON	LED 21.1W	TBD	Future - TBA
102922995	MAPLETON	LED 21.1W	TBD	Future - TBA
102922979	MAPLETON	LED 21.1W	TBD	Future - TBA
102922980	MAPLETON	LED 21.1W	TBD	Future - TBA
102922983	MAPLETON	LED 21.1W	TBD	Future - TBA
102922985	MAPLETON	LED 21.1W	TBD	Future - TBA
5224558	MONTVILLE	LED 21.1W	TBD	Future - TBA
5224524	MONTVILLE	LED 21.1W	TBD	Future - TBA
5224525	MONTVILLE	LED 21.1W	TBD	Future - TBA
5224954	FLAXTON	LED 32.5W	TBD	Future - TBA
5224950	FLAXTON	LED 32.5W	TBD	Future - TBA
5224635	FLAXTON	LED 32.5W	TBD	Future - TBA
107707601	MALENY	LED 32.5W	TBD	Future - TBA
5224807	MALENY	LED 32.5W	TBD	Future - TBA
5224916	MALENY	LED 32.5W	TBD	Future - TBA
103435935	MALENY	LED 32.5W	TBD	Future - TBA
5224791	MALENY	LED 32.5W	TBD	Future - TBA
5211659	MAPLETON	LED 32.5W	TBD	Future - TBA
103436222	MALENY	LED 21.1W	TBD	Future - TBA

DEVICE ID	Locality	Original luminaire	Luminaire upgrade since project inception / Future luminaire	Dark Sky compliant status
103436230	MALENY	LED 35.9W	TBD	Future - TBA
100121673	MALENY	LED 35.9W	TBD	Future - TBA
102922981	MAPLETON	LED 35.9W	TBD	Future - TBA
103435938	MALENY	LED 80.8W	TBD	Future - TBA
107822085	MALENY	LED 98.5W	TBD	Future - TBA
107822107	MALENY	LED 98.5W	TBD	Future - TBA
5211390	FLAXTON	MERCURY VAPOUR 61.7W	TBD	Not Compliant
5224665	FLAXTON	MERCURY VAPOUR 61.7W	TBD	Not Compliant
104055584	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
102667376	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
102667381	MALENY	LED 13.7W	TBD	Future - TBA
104062999	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
104063000	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
104063002	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
5224514	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
104055516	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
104055528	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
104055526	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
104055523	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
104055581	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
104055577	MALENY	LED 21.1W	TBD	Future - TBA
104055578	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
104055532	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
103436243	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
105042772	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
105042774	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant

DEVICE ID	Locality	Original luminaire	Luminaire upgrade since project inception / Future luminaire	Dark Sky compliant status
5224505	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
5224506	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
5224507	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
5224509	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
5224511	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
5224512	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
5922159	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
5922162	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
5224510	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
103609038	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
103609047	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
5224606	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
103962083	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
103962086	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
103609026	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
103609027	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
103609036	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
103609037	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
104081985	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
103609041	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
103416313	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
103416281	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
103416286	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
103416314	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
103416311	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
103436223	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant

DEVICE ID	Locality	Original luminaire	Luminaire upgrade since project inception / Future luminaire	Dark Sky compliant status
103436219	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
103436218	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
103436220	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
103571712	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
103571698	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
103571700	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
103571711	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
103571707	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
103571703	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
5224515	MALENY	LED 21.1W	TBD	Future - TBA
5224516	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
105042770	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
105042768	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
103609044	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
105073366	MALENY	LED 21.1W	TBD	Future - TBA
105073368	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
103571705	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
103571715	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
103571713	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
5922145	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
5922140	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
5922142	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
5922132	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
5922135	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
103571718	MALENY	LED 21.1W	TBD	Future - TBA
103571721	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant

DEVICE ID	Locality	Original luminaire	Luminaire upgrade since project inception / Future luminaire	Dark Sky compliant status
103571723	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
104055522	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
104055518	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
104055531	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
102635236	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
102635231	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
102635238	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
103416288	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
103416278	MALENY	LED 21.1W	TBD	Future - TBA
103416274	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
103416289	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
103416297	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
103571683	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
103416295	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
103416276	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
103416273	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
103416285	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
103571690	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
103571689	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
103416296	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
103571682	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
103571679	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
103571676	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
103571688	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
103571686	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
103571675	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant

DEVICE ID	Locality	Original luminaire	Luminaire upgrade since project inception / Future luminaire	Dark Sky compliant status
5224519	MALENY	LED 21.1W	TBD	Future - TBA
5224518	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
5224517	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
104081944	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
104081968	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
103278204	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
103278207	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
105073359	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
105073362	MALENY	LED 21.1W	TBD	Future - TBA
105073355	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
5922129	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
105073357	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
103609030	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
103609025	MALENY	MERCURY VAPOUR 61.7W	TBD	Not Compliant
100493999	MAPLETON	MERCURY VAPOUR 61.7W	TBD	Not Compliant
100494000	MAPLETON	MERCURY VAPOUR 61.7W	TBD	Not Compliant
100494001	MAPLETON	LED 21.1W	TBD	Future - TBA
5224630	MONTVILLE	MERCURY VAPOUR 61.7W	TBD	Not Compliant
5224394	WITTA	MERCURY VAPOUR 61.7W	TBD	Not Compliant
5224957	FLAXTON	MERCURY VAPOUR 92.4W	TBD	Not Compliant
102667373	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant
102667371	MALENY	LED 21.1W	TBD	Future - TBA
103057243	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant
102667379	MALENY	LED 21.1W	TBD	Not Compliant
5224432	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant
103210043	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant

DEVICE ID	Locality	Original luminaire	Luminaire upgrade since project inception / Future luminaire	Dark Sky compliant status
103210040	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant
104062995	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant
104055534	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant
104055574	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant
103436238	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant
103436245	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant
103436248	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant
103436237	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant
103436231	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant
103436234	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant
103436235	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant
104055585	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant
104055586	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant
104055589	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant
104055571	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant
104055575	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant
103278201	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant
103278203	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant
102667384	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant
103436224	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant
103436247	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant
103942834	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant
103942844	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant
103942833	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant
103942836	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant
103942843	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant

DEVICE ID	Locality	Original luminaire	Luminaire upgrade since project inception / Future luminaire	Dark Sky compliant status
103942826	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant
105946621	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant
105946622	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant
103435923	MALENY	LED 13.7W	TBD	Future - TBA
103435922	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant
103435917	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant
103435933	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant
103435918	MALENY	LED 13.7W	TBD	Future - TBA
104055592	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant
104062997	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant
104062933	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant
104062990	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant
104062993	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant
102714699	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant
104055521	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant
100121633	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant
105003832	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant
105003829	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant
105003828	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant
100121635	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant
103210039	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant
102714695	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant
102714696	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant
102714697	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant
100121631	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant
5224815	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant

DEVICE ID	Locality	Original luminaire	Luminaire upgrade since project inception / Future luminaire	Dark Sky compliant status
5224800	MALENY	MERCURY VAPOUR 92.4W	TBD	Not Compliant
100493949	MAPLETON	MERCURY VAPOUR 92.4W	TBD	Not Compliant
103502424	MAPLETON	MERCURY VAPOUR 92.4W	TBD	Not Compliant
5211432	MAPLETON	MERCURY VAPOUR 92.4W	TBD	Not Compliant
5211431	MAPLETON	MERCURY VAPOUR 92.4W	TBD	Not Compliant
103502423	MAPLETON	MERCURY VAPOUR 92.4W	TBD	Not Compliant
103502422	MAPLETON	MERCURY VAPOUR 92.4W	TBD	Not Compliant
103502417	MAPLETON	MERCURY VAPOUR 92.4W	TBD	Not Compliant
104679721	KENILWORTH	SODIUM 116.6W	TBD	Future - TBA
104679727	KENILWORTH	SODIUM 116.6W	TBD	Future - TBA
104679725	KENILWORTH	SODIUM 116.6W	TBD	Future - TBA
107057110	MALENY	SODIUM 116.6W	TBD	Future - TBA
107057103	MALENY	SODIUM 116.6W	TBD	Future - TBA
5224533	MONTVILLE	SODIUM 116.6W	TBD	Future - TBA
105806135	NORTH MALENY	SODIUM 116.6W	TBD	Future - TBA
105806132	MALENY	SODIUM 168.5W	TBD	Future - TBA
103942837	MALENY	SODIUM 168.5W	TBD	Future - TBA
5224768	MALENY	SODIUM 273W	TBD	Future - TBA
5224456	MALENY	SODIUM 273W	TBD	Future - TBA
102620080	MALENY	SODIUM 273W	TBD	Future - TBA
102620078	MALENY	SODIUM 273W	TBD	Future - TBA
105469186	MALENY	SODIUM 273W	TBD	Future - TBA
107014834	MONTVILLE	SODIUM 273W	TBD	Future - TBA
107014851	MONTVILLE	SODIUM 273W	TBD	Future - TBA
107014870	MONTVILLE	SODIUM 273W	TBD	Future - TBA
107014872	MONTVILLE	SODIUM 273W	TBD	Future - TBA

DEVICE ID	Locality	Original luminaire	Luminaire upgrade since project inception / Future luminaire	Dark Sky compliant status
107014836	MONTVILLE	SODIUM 273W	TBD	Future - TBA
102811976	MALENY	SODIUM 436.5W	TBD	Future - TBA
105694217	MALENY	SODIUM 436.5W	TBD	Future - TBA
102811975	MALENY	SODIUM 436.5W	TBD	Future - TBA
5224496	MALENY	SODIUM 62.5W	TBD	Future - TBA
5224497	MALENY	SODIUM 62.5W	TBD	Future - TBA
5224498	MALENY	SODIUM 62.5W	TBD	Future - TBA
5224499	MALENY	SODIUM 62.5W	TBD	Future - TBA
5224500	MALENY	SODIUM 62.5W	TBD	Future - TBA
5224502	MALENY	SODIUM 62.5W	TBD	Future - TBA
104679719	KENILWORTH	SODIUM 85.2W	TBD	Future - TBA
104679732	KENILWORTH	SODIUM 85.2W	TBD	Future - TBA
104679730	KENILWORTH	SODIUM 85.2W	TBD	Future - TBA
5224501	MALENY	SODIUM 85.2W	TBD	Future - TBA
103571766	MALENY	SODIUM 85.2W	TBD	Future - TBA
103416332	MALENY	SODIUM 85.2W	TBD	Future - TBA
103416329	MALENY	SODIUM 85.2W	TBD	Future - TBA
103416327	MALENY	SODIUM 85.2W	TBD	Future - TBA
102667389	MALENY	SODIUM 85.2W	TBD	Future - TBA
107057105	MALENY	SODIUM 85.2W	TBD	Future - TBA
107057107	MALENY	SODIUM 85.2W	TBD	Future - TBA
105963351	MALENY	SODIUM 85.2W	TBD	Future - TBA
105963348	MALENY	SODIUM 85.2W	TBD	Future - TBA
105963346	MALENY	SODIUM 85.2W	TBD	Future - TBA
105963352	MALENY	SODIUM 85.2W	TBD	Future - TBA
105963345	MALENY	SODIUM 85.2W	TBD	Future - TBA

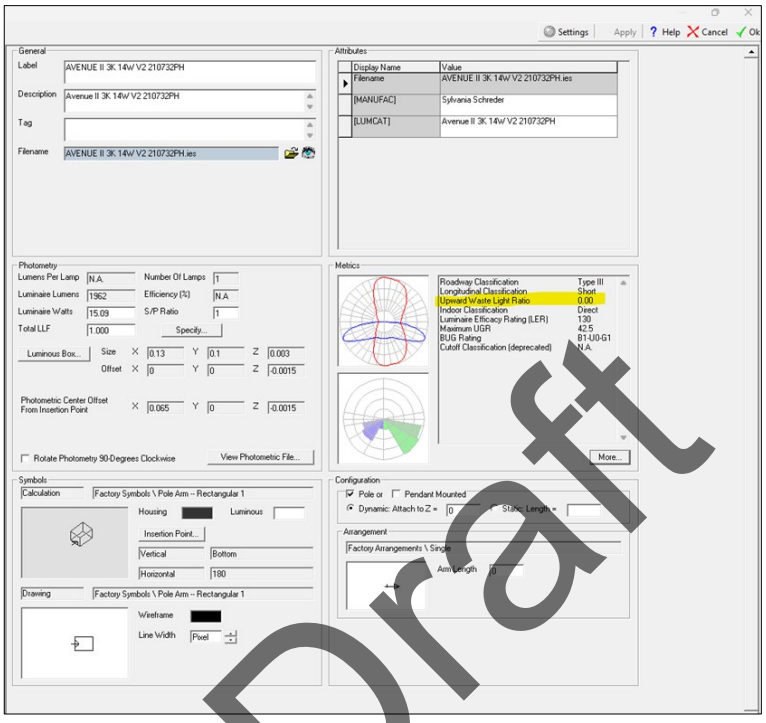
DEVICE ID	Locality	Original luminaire	Luminaire upgrade since project inception / Future luminaire	Dark Sky compliant status
104289261	MAPLETON	SODIUM 85.2W	TBD	Future - TBA
104289263	MAPLETON	SODIUM 85.2W	TBD	Future - TBA
102702238	BELLI PARK	SODIUM 85.2W	TBD	Future - TBA

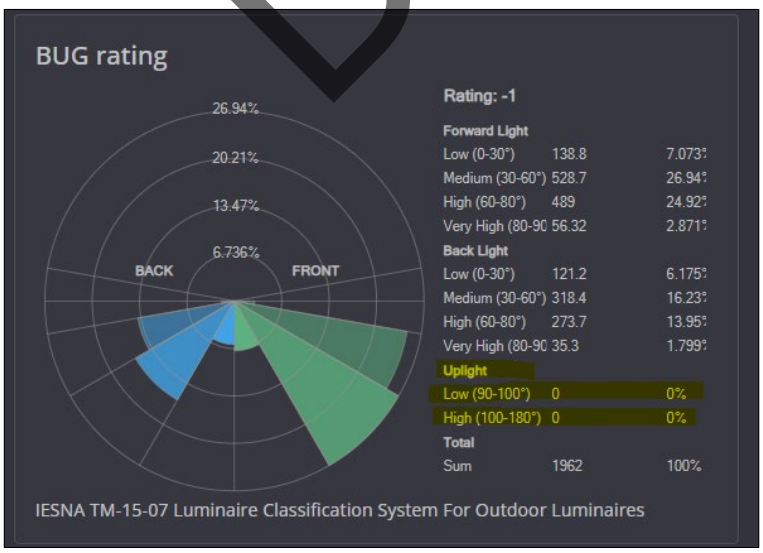
Appendix G: Lighting Management Plan

Sunshine Coast Dark Sky Reserve Lighting Management Plan - Refer to Appendix A of the Council Ordinary Meeting Report.

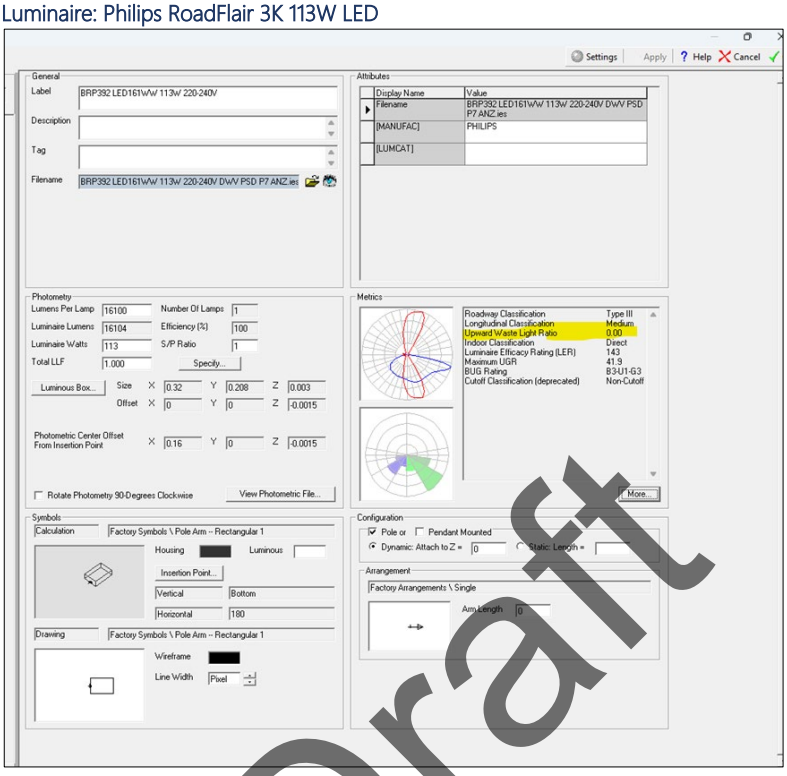
Appendix H: Street lighting upgrades demonstrating upward light ratio compliance

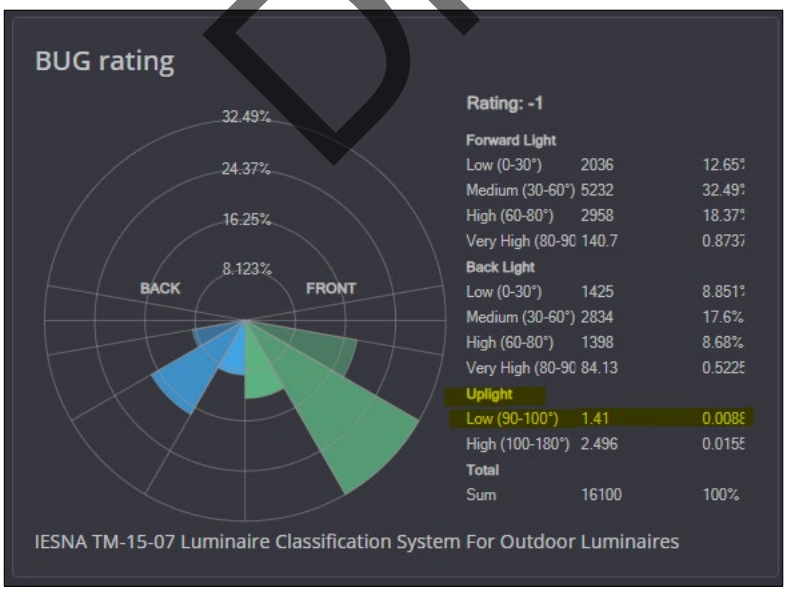
Luminaire: Avenue II 3K 14W LED



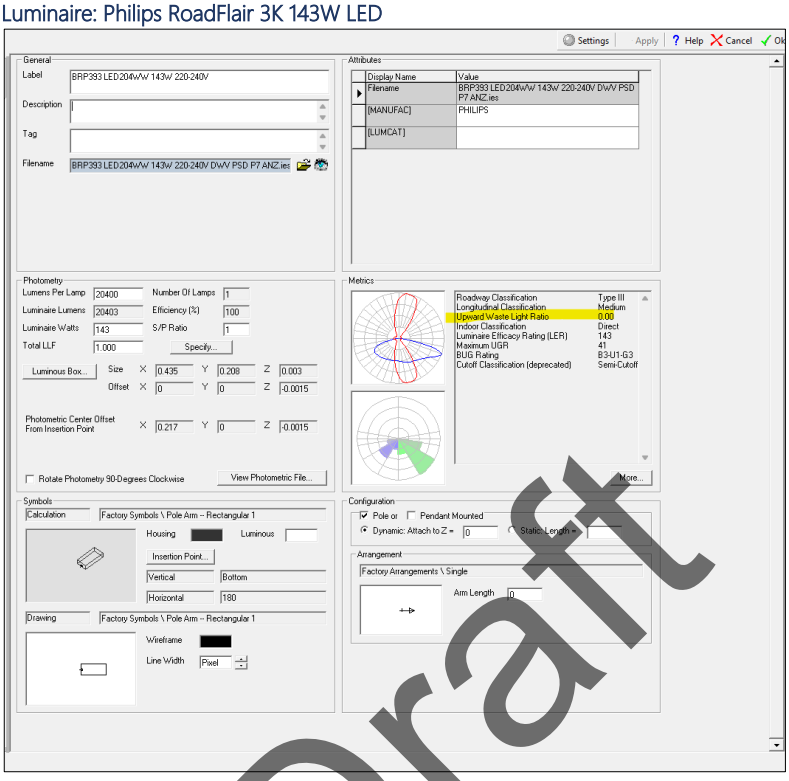


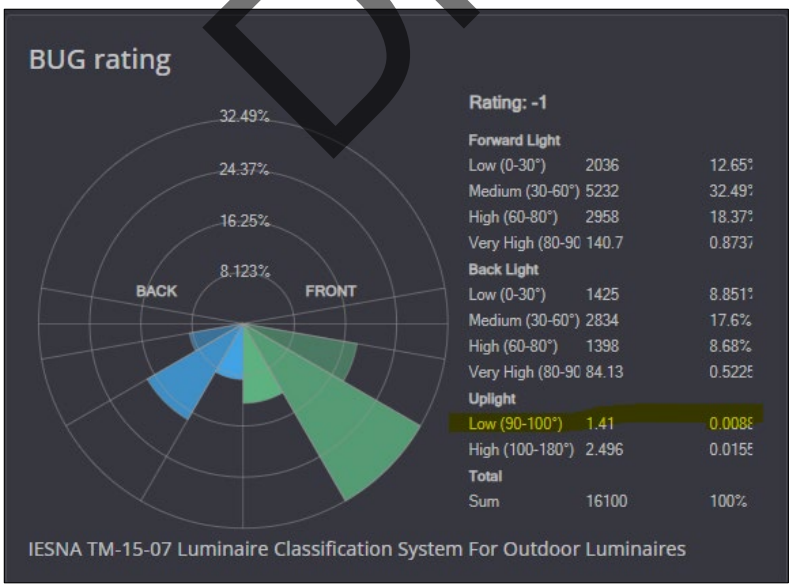
Luminaire: Philips RoadFlair 3K 113W LED



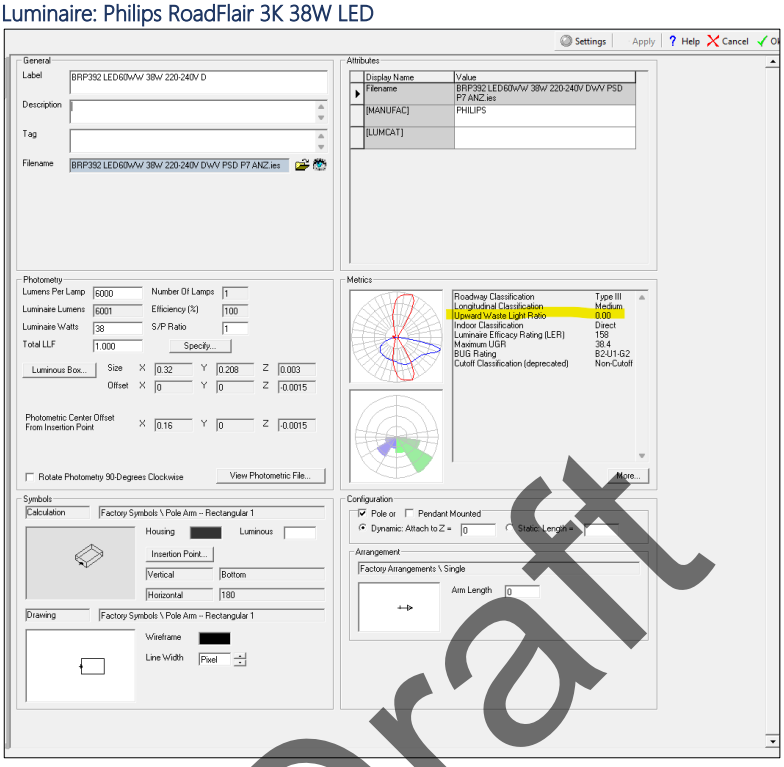


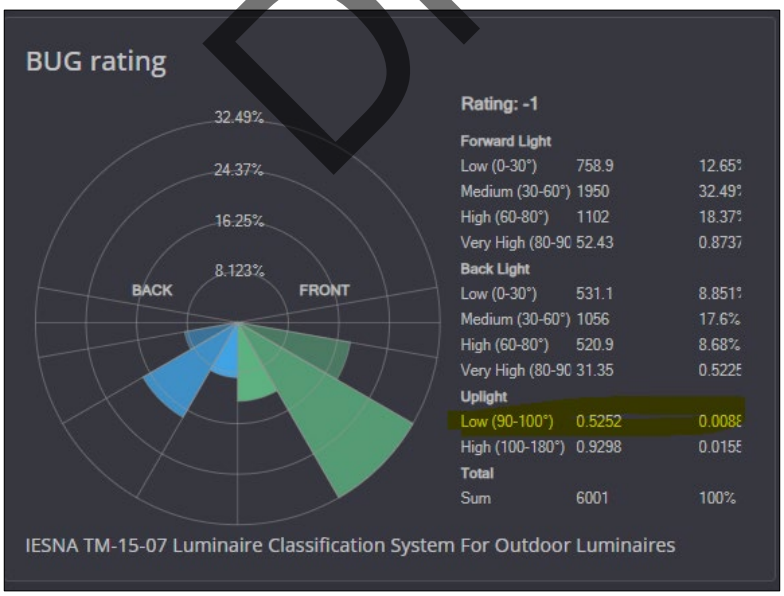
Luminaire: Philips RoadFlair 3K 143W LED



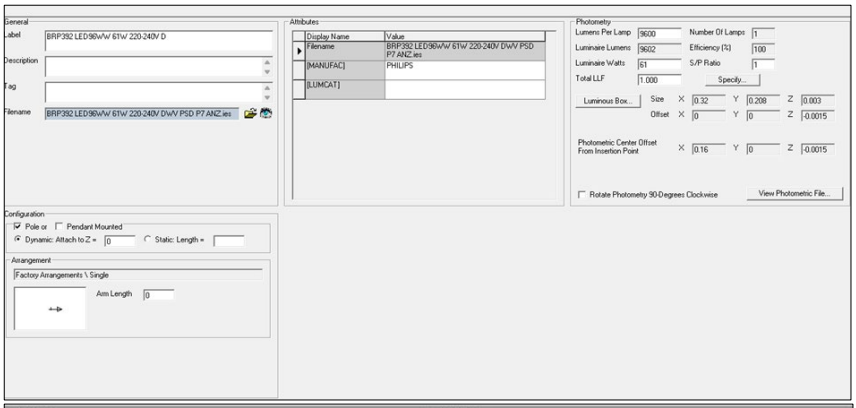


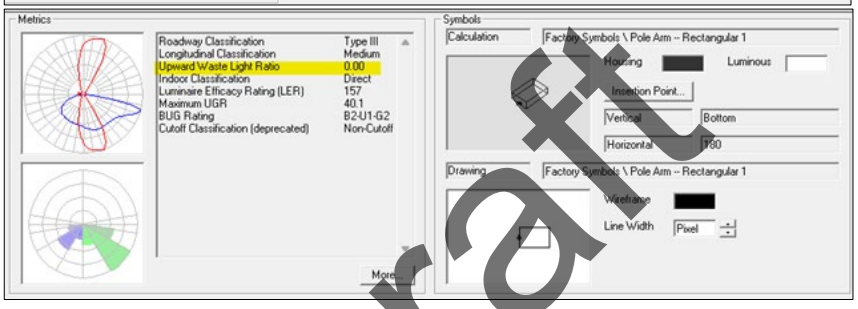
Luminaire: Philips RoadFlair 3K 38W LED

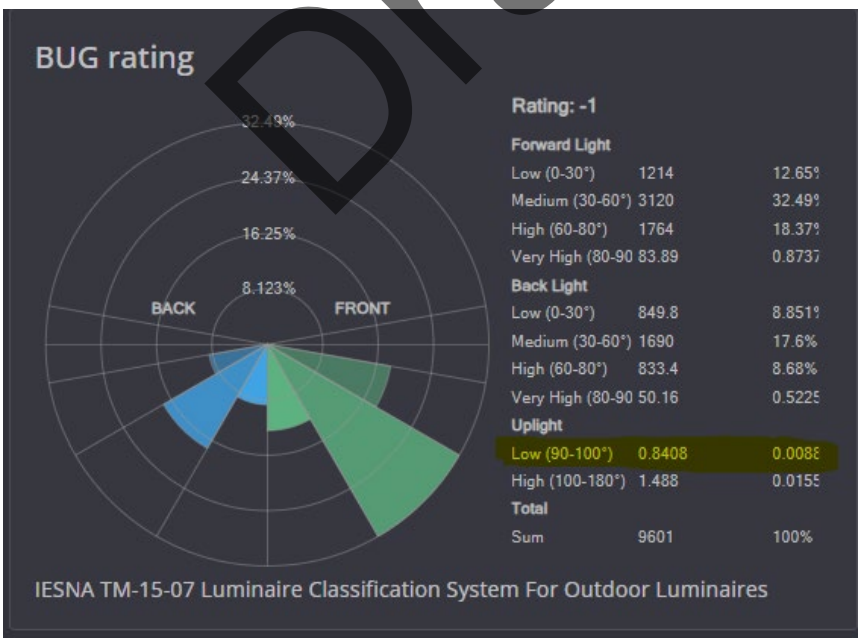




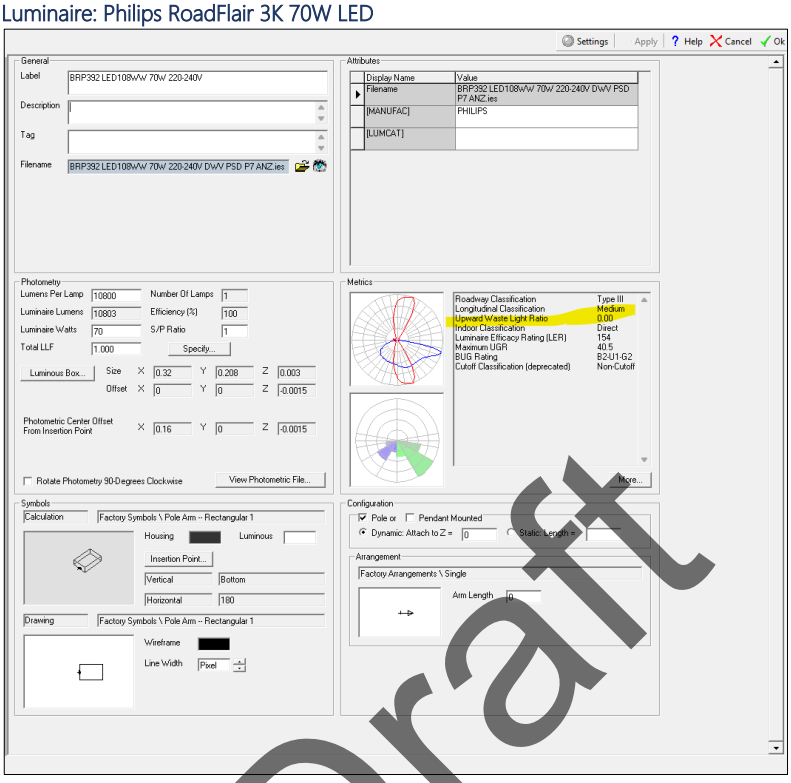
Luminaire: Philips RoadFlair 3K 61W LED

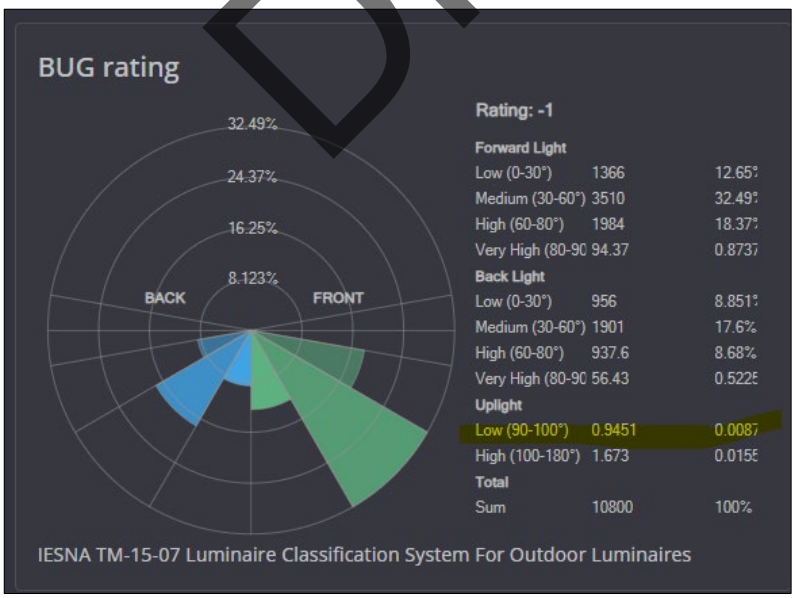




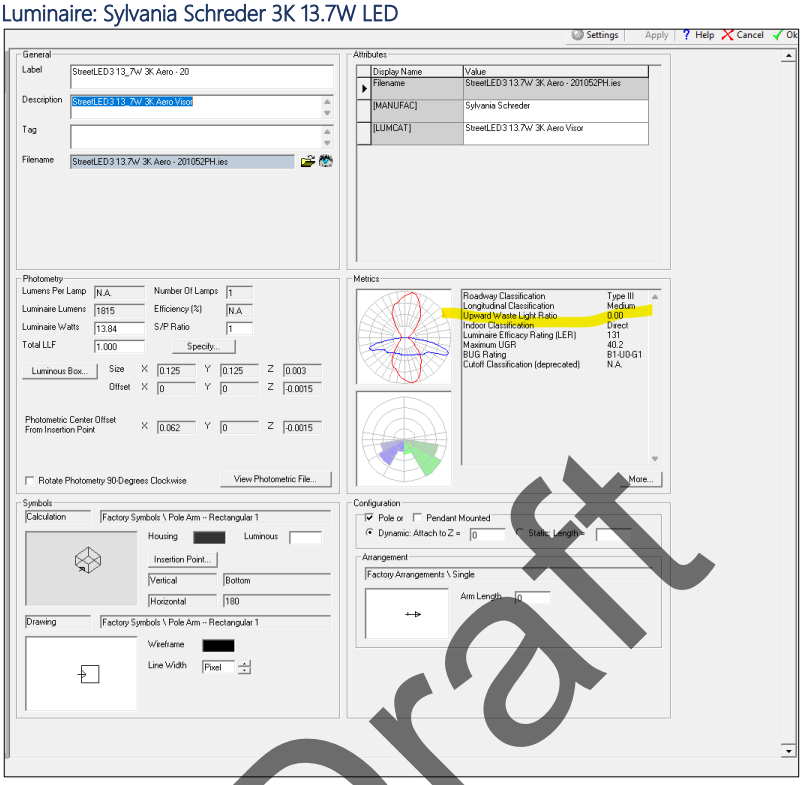


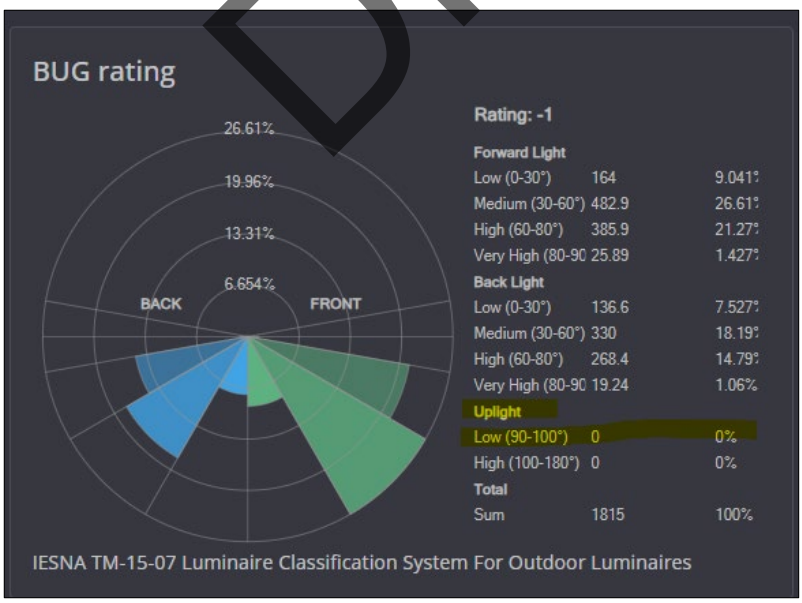
Luminaire: Philips RoadFlair 3K 70W LED



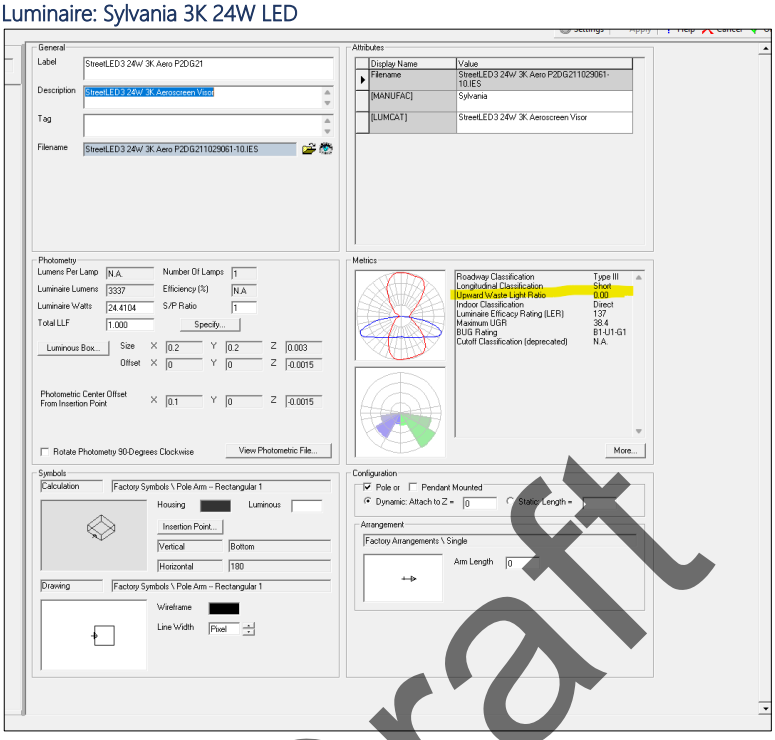


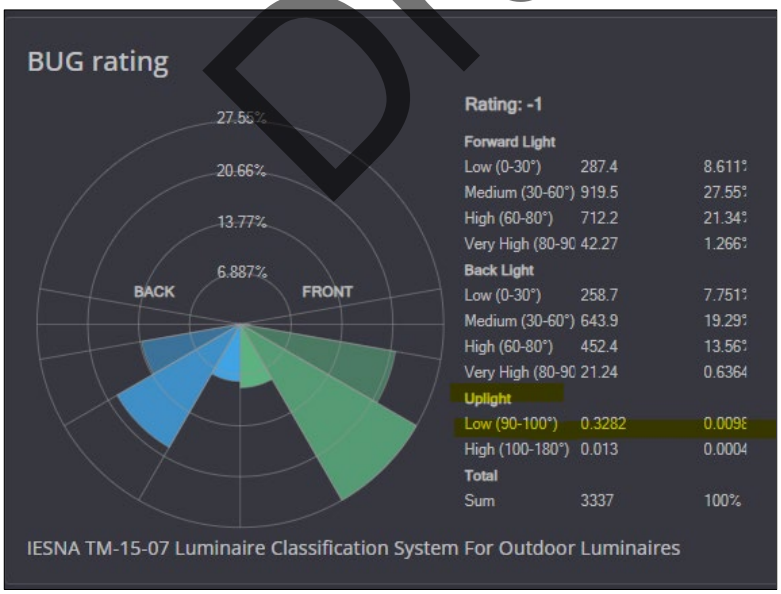
Luminaire: Sylvania Schreder 3K 13.7W LED





Luminaire: Sylvania 3K 24W LED





Source: IES Photometric file

Appendix I: Media

The project received comprehensive media across 2024 and 2025. Examples of media articles are below.

Defender of our dark sky

Local dark sky advocate honoured with prestigious International award

By Sonia Isaacs

DR Ken Wishaw, Senior Fellow at the University of the Sunshine Coast, and Maleny Observatory convenor, has been honoured with a prestigious Dark Sky Defender Award from Dark Sky International.

The award recognises his efforts to combat light pollution and his work toward establishing an International Dark Sky Reserve within the Sunshine Coast Hinterland.

"Dark Sky International has over 193,000 members across 70 countries, and only six such awards are granted globally each year, making it a rare and significant honour," Dr Wishaw said.

"I am very flattered to be recognised."

Dr Wishaw's interest in light pollution began almost a decade ago during a star talk at the Grand Canyon, Arizona, USA. Many participants shared that they had never seen stars before, some glimpsing them only during power outages caused by Hurricane Katrina, when streetlights were off. When the lights returned, the stars disappeared from view. This revelation led Dr Wishaw to discover that over 80 per cent of the world's population lives under light-polluted skies, with light pollution increasing at a rate of 10 per cent per year.

Dr Ken Wishaw.

While only five to ten stars are typically visible in central Brisbane, over 2,000 stars can be seen in the clear night skies of the Obi-Obi Valley. Determined to protect the night skies from excessive artificial lighting, Dr Wishaw co-founded the Australasian Dark Sky Alliance in 2019.

The Alliance has since become the peak advisory body for light pollution issues in Australasia, and Dr Wishaw's research on the human eye's adaptation to night lighting has been published internationally.

He has also served as a technical advisor on eco-friendly lighting to both the Federal Government and the Sunshine Coast Council.

His primary local project involves establishing an International Dark Sky Reserve in the Sunshine Coast Hinterland.

Supported by the Sunshine Coast Council, a recent resident survey showed overwhelming approval for the reserve.

"We are fortunate to have a council that is environmentally conscious and sees the benefits of such a reserve," Dr Wishaw noted. Creating the reserve will also enable education on the importance of responsible outdoor lighting. "Light pollution is easy to fix with current technology," he added. "The main challenge is raising awareness of the issue."

FEATURE

OUR *stargazers*

WORDS CANDICE HOLZNAGEL

The Dark Emu

ON ANY GIVEN night in the Sunshine Coast hinterland, small groups of people gather in the dark, eyes turned skyward. Some bring telescopes, others binoculars, and a few are content to simply look up, letting their eyes adjust to the vast expanse above them.

The quiet hum of conversation drifts through the night – talk of constellations, planets and the occasional excited whisper when someone spots Saturn's rings or a meteor streaking across the sky.

For Ken Wishaw, the magic of the night sky has been a lifelong fascination. But one moment, thousands of kilometres away, cemented for Ken just how powerful the sight of the stars can be.

It was 2016, and the retired Sunshine Coast anaesthetist was enjoying a rafting tour through the Grand Canyon. It was his second trip, and he noted the unusual balance of travellers on both occasions – all but one or two hailed from Florida.

"I realised why as we sat around a campfire," Ken recalls. "I was talking about astronomy and was asked to point out the stars when a woman said it was the second night of her life she had seen a star."

The first, she consistered, was when she was 35 years old. It was 2005, and Hurricane Katrina had just wreaked devastation in the southern American states. The woman had been driving along the freeway to go and assist her mother when the "orange dome" that encompasses Florida disappeared.

The entire power grid had failed.

"She said that she stopped right there on the freeway and hopped out of her car," Ken explains. "Everyone stopped and did the same thing. Twenty minutes later, the grid came back up, the orange dome reappeared, and the stars disappeared. All those other people who were from Florida also said they had predominantly come to the Grand Canyon to see the stars. They said the Grand Canyon itself is pretty good, but nothing when compared to seeing the stars. We definitely take stars for granted."

Ken, who was now deeply aware of how many people never get the chance to gaze at the night sky's beauty, came home with a renewed passion and thirst for knowledge.

He discovered that 80 per cent of the world's population live under light-polluted skies. Furthermore, only five per cent of people can see the Milky Way from where they live. Go back 150 years and everyone could see the stars twinkling above.

"I had been thinking about what I could do in retirement that would fill my passion. This answered the question," Ken tells us.

And so, he became a warrior against light pollution. Ken, who was Australia's first full-time helicopter rescue doctor, co-founder of CareFlight and a medevac officer for the Royal Australian Air Force and Australian Army, is not one to shy away from a challenge – or a learning opportunity.

And so, at the age of 62, he enrolled in a post-grad certificate for astronomy through the University of Southern Queensland.

Ken's interest in the universe stems back to his childhood. In fact, his family has dabbled in astronomy since the 1850s. His ancestors, who lived around the Tamworth region, would gaze at the night sky through a family telescope that has been passed through the generations.

Ken Wishaw

"WE DEFINITELY TAKE THE STARS FOR GRANTED"

"I remember looking through the telescope when I was nine years old. I still remember my uncle showing me Saturn for the first time."

It was an experience that Ken carried with him and he went on to join the Brisbane Astronomical Society and discover an interest in space photography. In 2017, Ken helped to establish the Maleny Observatory.

All of this, coupled with his astronomy post-grad certificate, led to Ken co-founding the Australasian Darky Sky Alliance, which advises policymakers on light-pollution matters (he was also the recipient of the Dark Sky Defender Award for 2024).

While Ken says the skies above the Coast are "generally pretty good", his aim is to minimise ongoing issues.

"I was in Brisbane six weeks ago," he adds. "I had been in Maleny the night before doing a survey and calculated over 2000 visible stars. In Brisbane the following night… with the same weather conditions, I could count seven. Nobody was looking up.

"There is a little trick that the ere plays on us. No matter how light-polluted the sky is, we always see black. It is the way our eyes are designed to adapt.

8 SALT

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HOME / NEWS

'Once you lose it, it's very hard to get back': doctor pushes preservation of dark sky

Dr Ken Wishaw is passionate about astronomy and preserving the night sky.

By Sunshine Coast News | 2 January 2020

Australia's first full-time helicopter rescue doctor is now doing what he can to save the dark night sky.

Sunshine Coast resident Dr Ken Wishaw was an anaesthetist, helicopter rescue doctor and medevac officer for the Royal Australian Air Force and Australian Army.

He co-founded CareFlight and the NSW Medical Retrieval Service, pioneered helicopter medicine and helped to develop life-saving initiatives and techniques like battle trauma management and a mobile intensive care unit for transferring patients.

In his retirement, he has turned to fulfilling a lifelong passion, completing a post-graduate certificate in astronomy and becoming an advocate for the night sky.

"Astronomy's been in my family since the mid-1800s," he said.

"One of my first memories is my uncle showing me Saturn through the big old brass family telescope.

Lambsborough Station

... And let there be (less) light

By Sonia Isaacs

QUEENSLAND Rail has "seen the light" and will dim lighting at Landsborough Train Station following a lengthy campaign by GC&M News and astronomer Dr Ken Wishaw.Caloundra MP, Jason Hunt, made the announcement last week, saying that Queensland Rail had agreed to lower lighting levels in a way that strikes the right balance between public safety and "preserving dark sky integrity".

"I'm pleased to be able to have championed this important issue for our community," Mr Hunt said. "What is being proposed is a two-phase approach which shows some intelligence has been applied."

Full story P3

Dark sky win for hinterland

Queensland Rail gets on board with dark sky win

By Sonia Isaacs

QUEENSLAND Rail has "seen the light" and will dim lighting at Landsborough Train Station following a lengthy campaign by GC&M News and astronomer Dr Ken Wishaw.

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As reported by GC&M News, Dr Wishaw, had conducted studies that showed Landsborough's new Park 'n Ride was the most light-polluted location on the Sunshine Coast, outside of the Maroochydore CBD.

The issue also ran counter to the Sunshine Coast Council's push to create one of the largest Dark Sky Reserves in the Southern Hemisphere, around Maleny.

Dr Wishaw said Mr Hunt's announcement was an excellent outcome and he thanked Department of Transport and Main Roads (TMR) and Queensland Rail for "supporting dark sky preservation".

"When they first put these lights in, I expressed my concerns. They have eventually taken notice and decided to do the right thing," Dr Wishaw said.

"They have set a precedent for other government organisations to consider the same thing: not using light when it's not necessary.

"This decision will make a significant difference to the light pollution around Landsborough."

Dr Wishaw also thanked GC&M News.

"It's no coincidence that these actions have occurred soon after the issue was raised by GC&M News," he said.

Glasshouse MP Andrew Powell had asked a question on notice to Transport Minister Bart Mellish in early June.

He said it was a great outcome for the region.

"This is really an outstanding outcome but raises the question why it could not have been done when Dr Wishaw first raised the concern," Mr Powell said.

"To every rational person in and around Landsborough it was obvious there was a solution that ensured safety but reduced light pollution. I'm glad QR finally saw the light."

The Sunshine Coast Council's Dark Sky Reserve proposal is currently under consideration. Public consultation has closed.

Jenny Broderick, Division 1

A NEW FACE IN DIVISION 1

I'm Jenny Broderick and am pleased to introduce myself.

I'm passionate about our community and committed to listening, engaging and communicating. I put myself forward for election as I want a fresh, relevant Sunshine Coast Council that serves with transparency, authenticity and availability.

I'm looking forward to working with residents to make our community even better.

Division 1 project updates – I'm happy to share that two new shaded picnic settings have been installed at Settlement Park, Beerwah and that works have started on upgrading the perimeter fence at Pioneer Park, Landsborough. We are also investigating potential upgrades to the Beerwah stormwater infrastructure improvements from Tudor Court to Arcadia Drive.

Landsborough Museum Street Festival – On May 18, I was thrilled to attend the centenary celebration for the Landsborough Museum and the Landsborough Schools of Arts. It was lovely to see so many people enjoying the day and making new memories, while reliving old memories.

It's time to have your say – Whether you live in the new suburbs of Aura or one of our many historical hinterland towns, I encourage you to have your say at haveyoursay.sunshinecoast.qld.gov.au/.

Community Strategy refresh: Feedback on the draft Community Strategy can be made online until June 10.

Dark Sky Reserve: A Dark Sky Reserve in the Sunshine Coast hinterland, through the International Dark Sky Places Program, is being considered by the council and we are seeking your feedback on the proposal by June 16.

Active Transport Plan: Residents can assist the council in achieving a connected, safe, healthy and sustainable transport system by completing the online survey by June 17.

Council Budget – The council will consider and adopt its 2024-25 budget at a Special Meeting on June 20. I will share the outcomes and highlights for Division 1 following the meeting.

I look forward to seeing you out and about in our community soon.

HOW TO PLAY A STARRING ROLE IN OUR DARK SKY FUTURE

Sunshine Coast Council is proposing to establish a Dark Sky Reserve in parts of our hinterland, with the community now invited to provide feedback on the proposal.

About 15,000 residents live in the proposed reserve area, including the townships of Maleny, Mapleton, Montville, Witta, Flaxton and Conondale.

Dark skies, with plenty of visible stars, are important for retaining the character of our hinterland, community wellbeing, hinterland businesses, wildlife and more.

Division 5 Councillor Winston Johnston says stars in the sky are etched into the hinterland identity.

"We're seeking to understand what our dark skies mean for all our residents, groups and businesses, and we need to know if our community supports a Dark Sky Reserve," Cr Johnston says.

Division 10 Councillor David Law says the project would help to nurture and enhance our environment and quality of life.

"We're encouraging our community to get involved and consider the small changes that are in your power: making sure your outdoor lighting is useful, targeted, low-level, controlled and warm coloured wherever possible," Cr Law says

Visit Council's Have Your Say website to provide your feedback before June 16.

Dark Sky reserve rising

Sunshine Coast set to be sustainability star

by Sonia Isaacs

THE Sunshine Coast is on track to be an internationally recognised sustainability star, with plans to establish a designated dark sky site gaining traction.

The bid to establish an expansive 900 square kilometre Dark Sky Reserve over parts of North Maleny and the Obi Obi Valley is now well underway, with public consultation expected to kick off in June 2024.

Council is commencing a phased community engagement process on its proposal to establish Sunshine Coast Dark Sky Reserve through the International Dark Sky Places Program.

A Dark Sky Reserve is one of the five designation types offered under the international accreditation program which seeks to preserve and protect dark skies through responsible lighting policies and public education.

If successful, the almost 900 squared kilometres Sunshine Coast Dark Sky Reserve would formally recognise and protect the quality and integrity of the night sky and nocturnal environment, traversing an area from North Maleny through the Obi Obi Valley and beyond Kenilworth, and parts of the Montville and Mapleton region.

Local astronomers are currently conducting preliminary accreditation surveys with favourable results.

Australasian Dark Sky Alliance Founder, Dr Ken Wishaw, said the project had been on the table with Council since 2017, and was now well on track with supporting data currently being collated on light pollution and darkness assessment.

"The valley easily meets the requirements for International recognition. We are now considering public outdoor lighting fixtures and assessing which ones are having a negative impact on the valley," he said.

Dr Wishaw acknowledged that while the proposed reserve area was not the darkest site in Australia, its proximity to such large populations would allow it to have a substantial influence on large numbers of people.

"Astro tourism is a very low impact form of environmental tourism and would be of great benefit to the region with minimal impact on our way of life," he said.

"Declaration of the reserve by Dark Sky International recognises good stewardship of the night environment. It would lock in environmentally sound lighting polices which are good for wildlife, human health and stargazing."

A Sunshine Coast Council spokesperson said Council was continuing Phase 2 of the Dark Sky Reserve project, which includes a phased community engagement process and consideration of supporting technical documents.

"We continue to collect data on night sky quality in the proposed Dark Sky Reserve area," the spokesperson said.

"The project team is briefing and engaging with key stakeholders including State Government, Dark Sky International and Energex."

Formal community consultation is proposed to commence for mid-2024, when community members will be invited to provide their feedback.

www.sunshinecoast.qld.gov.au/environment/sustainability-and-climate-change/establishing-a-proposed-sunshine-coast-dark-sky-reserve

Turn it down for our dark skies

Light pollution is expected to increase as our region's population grows, impacting the number of stars visible in the night sky, but we can help minimise the effects with a few simple actions.

It's International Dark Sky Week, and did you know that on clear nights, we can see about 4000 stars from dark locations in our hinterland?

With this week's waning crescent moon, it's one of the best times to look up and appreciate our night skies.

As our region grows, light pollution is expected to impact the natural darkness of our skies and the number of stars visible.

That can impact our health and wellbeing, wildlife, local business and our region's character.

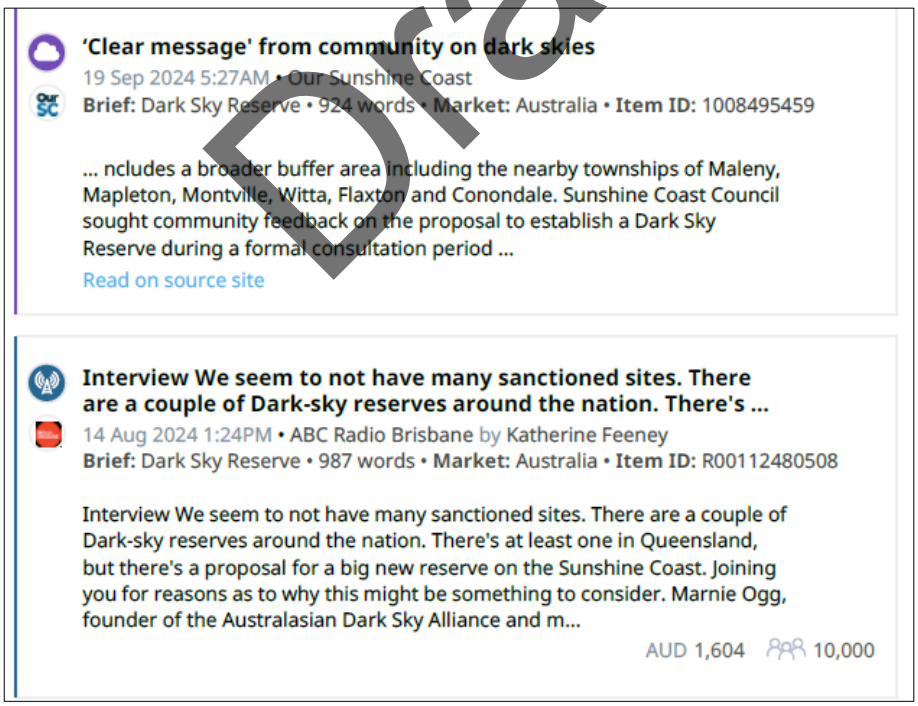
Everyone can help reduce light pollution by using lighting only when required, shielding or directing lights downwards and using amber lighting.

To protect our dark skies for the future, Sunshine Coast Council is proposing to establish a Dark Sky Reserve that will encompass much of our region's hinterland.

A Dark Sky Reserve, designated by Dark Sky International, would encourage dark sky friendly lighting and bring the community together to celebrate our wondrous dark skies.

This year, Council will launch consultation activities, inviting the community to contribute ideas and feedback to help create a plan for the reserve.

Scan the QR code or visit sunshinecoast.qld.gov.au and search for 'Dark Sky' to find out how you can join our Dark Sky journey.



'Clear message' from community on dark skies

19 Sep 2024 5:27AM • Our Sunshine Coast

Brief: Dark Sky Reserve • 924 words • **Market:** Australia • **Item ID:** 1008495459

... ncludes a broader buffer area including the nearby townships of Maleny, Mapleton, Montville, Witta, Flaxton and Conondale. Sunshine Coast Council sought community feedback on the proposal to establish a Dark Sky Reserve during a formal consultation period ...

Read on source site

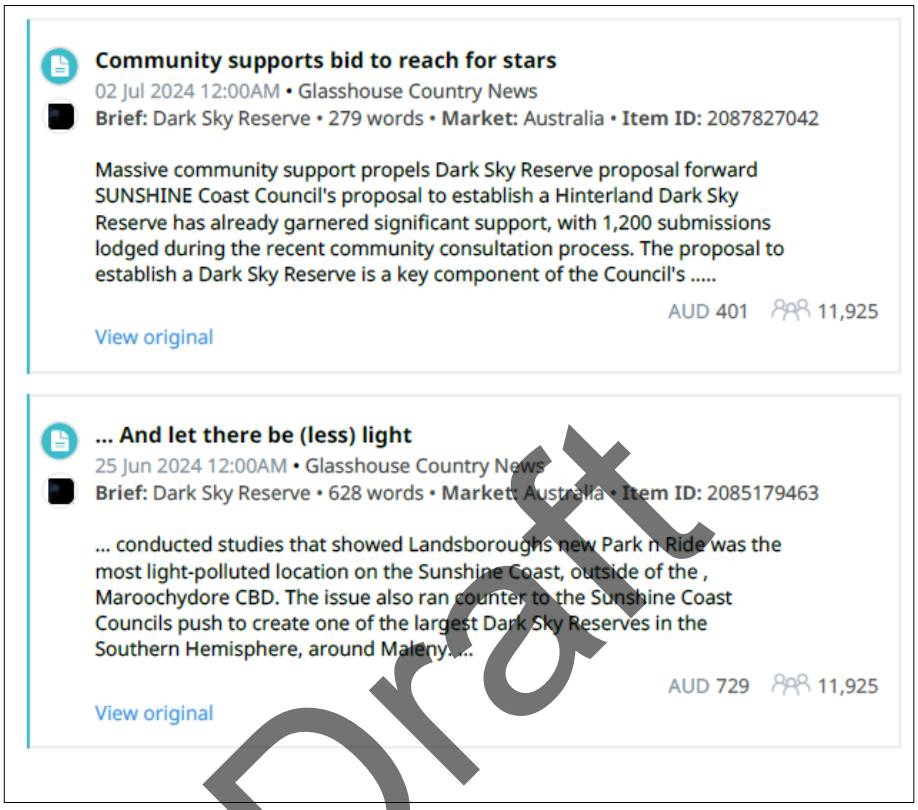
Interview We seem to not have many sanctioned sites. There are a couple of Dark-sky reserves around the nation. There's ...

14 Aug 2024 1:24PM • ABC Radio Brisbane by Katherine Feeney

Brief: Dark Sky Reserve • 987 words • **Market:** Australia • **Item ID:** R00112480508

Interview We seem to not have many sanctioned sites. There are a couple of Dark-sky reserves around the nation. There's at least one in Queensland, but there's a proposal for a big new reserve on the Sunshine Coast. Joining you for reasons as to why this might be something to consider. Marnie Ogg, founder of the Australasian Dark Sky Alliance and m...

AUD 1,604 10,000



Community supports bid to reach for stars

02 Jul 2024 12:00AM • Glasshouse Country News

Brief: Dark Sky Reserve • 279 words • **Market:** Australia • **Item ID:** 2087827042

Massive community support propels Dark Sky Reserve proposal forward SUNSHINE Coast Council's proposal to establish a Hinterland Dark Sky Reserve has already garnered significant support, with 1,200 submissions lodged during the recent community consultation process. The proposal to establish a Dark Sky Reserve is a key component of the Council's .....

AUD 401 11,925

View original

... And let there be (less) light

25 Jun 2024 12:00AM • Glasshouse Country News

Brief: Dark Sky Reserve • 628 words • **Market:** Australia • **Item ID:** 2085179463

... conducted studies that showed Landsboroughs new Park n Ride was the most light-polluted location on the Sunshine Coast, outside of the , Maroochydore CBD. The issue also ran counter to the Sunshine Coast Councils push to create one of the largest Dark Sky Reserves in the Southern Hemisphere, around Maleny....

AUD 729 11,925

View original

Local advocate champions new national petition to protect dark skies

Shining light on night

By Sonia Isaacs

A NEW national petition aiming to curb light pollution and preserve Australia's night skies is gaining momentum, thanks to the tireless efforts of local dark sky advocates such as Dr Ken Wishaw.

The petition, launched just last week, seeks to gather over 10,000 signatures to push the federal government to adopt robust legislation modeled on international best practices.

Over 2,000 signatures were collected in the first 48 hours.

Dr Wishaw, a leading figure in the dark sky movement, is calling on Australians to support the New Sky Alliance petition, which advocates for national laws to reduce unnecessary artificial lighting.

"The standout success in the world is France, which actually brought in national legislation regarding light pollution and has decreased its amount of light pollution across the entire country by 25 per cent in four years," Dr Wishaw said.

"We believe the best way to tackle this issue is through similar national legislation here in Australia."

The petition comes as dark sky-compliant lighting is rolled out around areas of Maleny, Kenilworth and Conondale.

Across the Sunshine Coast region, local authorities are in the process of replacing around 250 outdated streetlights in the dark sky reserve with new, fully shielded, dark sky-compatible fixtures.

This upgrade, which began in July and August (pictured right), is the final step before submitting a formal application for dark sky reserve status - a move that would place the region among a select group of areas worldwide recognised for their commitment to preserving the night environment.

"We're hopeful that in the next couple of months, we'll see substantial changes to streetlights in Maleny, Kenilworth, and other local areas," Dr Wishaw said.

"That really is the last thing we had to see happen before putting in our application for dark sky reserve.

"Once the council gives the green light, we'll be ready to go."

But the campaign's ambitions extend far beyond local improvements.

Dr Wishaw points to the Department of Climate Change, Energy, and Wildlife as a key ally, noting their proactive stance and the adoption of national light pollution guidelines for wildlife - guidelines now recognized by 135 countries worldwide.

Dr Wishaw said the stakes are high with research indicating that excessive night time lighting not only wastes energy and increases carbon emissions but also poses significant health risks.

"Light pollution from excessive Artificial Light at Night (ALAN) harms human health and disrupts vulnerable flora and fauna. People living in high light pollution areas, on average, live five years less than those who aren't," Dr. Wishaw noted, referencing a recent study he discussed in a public webinar.

"We want to see that night lighting is only used when and where is it necessary, and it is limited to levels which are safe and fit for purpose.

"All of us, for example, have seen high rise buildings in Brisbane that are lit up right through the entire night for no good reason. It's just wasteful."

With the petition closing September 19, Dr. Wishaw urges the public to act quickly. "It literally takes two minutes to fill out," he said. "The more people who sign, the greater our chances of making a real difference." www.aph.gov.au/e-petitions/petition/EN7346

Stargazing at Maleny Golf Club (Photo: Erol Briant); Inset Dr Ken Wishaw; and compliant lighting installation Maleny (Photo: Dr Max Whitten)

Sunshine Coast Council's post

Sunshine Coast Council
1 May 2025

The Eta Aquarids meteor shower is coming!
Time to ready the picnic blanket, set the alarm and cross those fingers for clear weather. Here's how to watch the cosmic spectacle:
https://oursc.com.au/.../your-stargazing-guide-to-eta...

126 14 comments 30 shares

Like Comment

Most relevant

Sunshine Coast Council
Did you know Council is proposing a Dark Sky Reserve in our hinterland? Establishing the reserve would support wellbeing and wildlife that move and feed at night. It would guide responsible lighting, support astrotourism, and bring our communities together in celebration of the night sky in our Sunshine Coast Biosphere. Find out more about the proposal here:
https://www.sunshinecoast.qld.gov.au/.../establishing-a...

SUNSHINECOAST.QLD.GOV.AU
Establishing a proposed Sunshine Coast Dark Sky Reserve | Sunshine Coast Council

Sunshine Coast Council's post

Sunshine Coast Council
7 September 2025

Who's watching the total lunar eclipse early Monday morning?
During this "blood moon" event in the early hours of 8 September 2025 (for our region), the moon will turn red as it passes through Earth's shadow.
Partial eclipse starts 2:27am

Total eclipse from 3:30pm, peaking 4:11am, ends 4:52am
Look towards the western horizon!

Love the night sky? Head to the comments for the list of our top stargazing spots and learn about the proposed Dark Sky Reserve for the Sunshine Coast hinterland.
#LunarEclipse #BloodMoon #Stargazing #DarkSkyReserve #SunshineCoast

233 49 comments 24 shares

Dark sky win for hinterland

Queensland Rail gets on board with dark sky win

By Sonia Isaacs

QUEENSLAND Rail has "seen the light" and will dim lighting at Landsborough Train Station following a lengthy campaign by GC&M News and astronomer Dr Ken Wishaw.

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"They have set a precedent for other government organisations to consider the same thing: not using light when it's not necessary.

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The Sunshine Coast Council's Dark Sky Reserve proposal is currently under consideration. Public consultation has closed.

Sunshine Coast Dark Sky Reserve: Application to Dark Sky International

COVER STORY

Star light, star bright

The Draft Lighting Management Plan and proposal to create a Dark Sky Reserve in the hinterland are opening up the heavens to the possibility of a new tourism drawcard, as well as better mental health prospects for all residents by reducing light pollution.
WORDS: Abbey Cannan.

Horsehead Nebula

Growing up on a farm in country Victoria, Dean Stewart never wondered what the night sky looked like: it was impossible to miss.

"The sky was as dark as anything and it just jumped out at you," he says.

"You walked outside and the sky was just singing at you.

"I always had the passion to look up."

That childhood wonder has carried into adulthood. Today, Dean is a member of the Brisbane Astronomical Society, helping run monthly public telescope nights and sharing deep-space imagery captured largely from his Sunshine Coast backyard.

Dean's astrophotography has drawn local attention, with several of his images recently displayed on screens at the Sunshine Coast Council building.

"It was quite a compliment," Dean says.

But for him, the recognition is about more than personal achievement.

It's a way to shine a light on a bigger issue: the disappearing night sky.

"There are people in the states in Florida who've never seen the night sky ... it's just orange," Dean says. "People pay to have holidays at the Grand Canyon ... not to see the Grand Canyon but to have a full night sky."

More than 80 per cent of the world's population lives under light-polluted skies, and 90 per cent for those living in the US or Europe.

On the Sunshine Coast, Dean is hopeful. Sunshine Coast Council is proposing to establish a Dark Sky Reserve in the hinterland, encompassing almost 900 square kilometres in the Mary River catchment and adjoining national parks in our local government area.

This would provide ways to reduce light pollution and contribute to an increased number of stars visible at night.

The council asked the community for feedback on the Draft Lighting Management Plan, which guides the selection, placement, installation and operation of lighting in the reserve.

It will guide decisions on new lighting or lighting that is replaced or retro-fitted.

"Specifications in the Draft Lighting Management Plan, once finalised, would be mandatory for all council-managed lighting in the proposed reserve area," a Sunshine Coast Council spokesperson says.

"It also details responsible lighting principles that will be encouraged for others who manage lighting in the area, including Energex, state bodies and our community."

The council proposes to present the project, including recent engagement outcomes, technical documentation and an application to Dark Sky International to establish the proposed reserve.

The proposal is up for councillor consideration early in 2026.

Light pollution is not just an astronomical concern.

Dean with his equipment

It also affects human health.

The world's largest study on light exposure and its impact on mental health, with almost 87,000 participants, has found that increased exposure to light at night increases a person's risk of psychiatric disorders such as anxiety, bipolar and PTSD severity, as well as self-harm.

Led by Associate Professor Sean Cain, of the Monash School of Psychological Sciences and the Turner Institute for Brain and Mental Health in Melbourne, the study "could have a potentially huge societal impact".

"Once people understand that their light exposure patterns have a powerful influence on their mental health, they can take some simple steps to optimise their wellbeing," Associate Professor Cain says.

"It's about getting bright light in the day and darkness at night."

For Dean, this reinforces the urgency of protecting dark skies.

Dean's love for the stars extends into the painstaking craft of astrophotography.

One of his favourite images, captured at the Maleny Observatory in January, shows the Orion Nebula in breathtaking detail.

"The Orion is my favourite ... it surpassed my expectations," he says.

Together with Dr Paul Baker, Dean spent two nights capturing nebulae in Orion's 'Saucepan': a star-forming region about 1300 light-years away.

The hydrogen- and helium-rich clouds, laced with remnants of older stars, are continually sculpted by gravity, giving rise to hundreds of newly forming stars.

But producing such crisp cosmic landscapes is far from simple.

"The challenging part is working around the weather on the Sunshine Coast," he says.

"There might be clouds or some serious wind or humidity which causes a lot of turbulence."

Each photo requires hours of patient exposures, careful stacking and meticulous processing.

"There's a ton of stuff that goes into it and I've spent thousands of dollars on equipment over the years," he says.

Despite the technical challenges, Dean encourages everyone to "just look up".

The Brisbane Astronomical Society hosts monthly public telescope nights on the Coast, giving locals a chance to experience the universe first-hand.

For Dean, the night sky is more than science: it's a reminder of our connection to the cosmos.

"We're all part of the universe. The abundant elements in the universe are what makes us up as well," he says.

> "The abundant elements in the universe are what makes us up as well. When they say you're made of stardust, it's actually correct"

"When they say you're made of stardust, it's actually correct."

Australian science commentator Karl Kruszelnicki confirms: "... four elements – hydrogen, oxygen, carbon and nitrogen – account for more than 99 per cent of all your atoms, and 96 per cent of your mass.

"It's true that about 86 per cent of our mass is stardust: almost certainly we each carry at least a few million atoms of gold inside us; and yes, the carbon atoms we carry are mostly many billions of years old."

Protecting the night sky, Dean argues, is not just about preserving beauty.

It's about preserving wonder, science and a vital connection to the universe.

To get involved, visit the Brisbane Astronomical Society website or the Sunshine Coast Astronomy Facebook page.

Orion Nebula

FAST FACTS

Sunshine Coast residents overwhelmingly support efforts to reduce light pollution:

- **94 per cent** think it is important or very important to preserve dark skies in their community
- **91 per cent** agreed or strongly agreed with the Draft Lighting Management Plan's purpose and objectives
- **89 per cent** are likely or extremely likely to change their lighting habits to help protect our night skies.

This backs up initial community feedback in 2024, when more than 95 per cent of 1200 survey respondents supported protecting dark skies for future generations.

10 My Weekly Preview | November 27, 2025 — myweeklypreview.com.au — myweeklypreview.com.au — My Weekly Preview | November 27, 2025 11

Sunshine Coast Dark Sky Reserve: Application to Dark Sky International

150

Sunshine Coast COUNCIL

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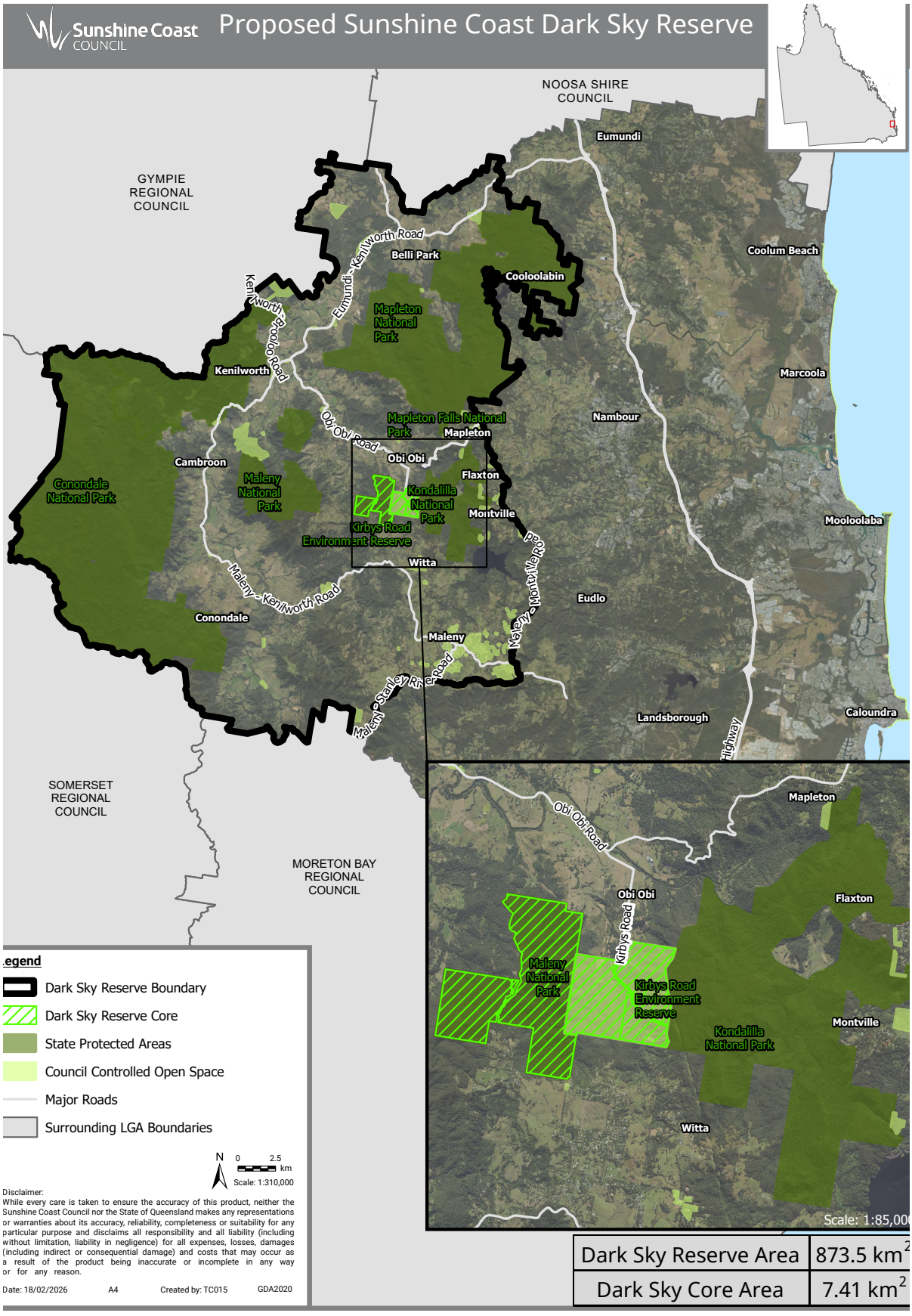
Sunshine Coast COUNCIL
Proposed Sunshine Coast Dark Sky Reserve
NOOSA SHIRE COUNCIL
GYMPIE REGIONAL COUNCIL
SOMERSET REGIONAL COUNCIL
MORETON BAY REGIONAL COUNCIL
Eumundi
Coolum Beach
Belli Park
Cooloolabin
Mapleton National Park
Kenilworth
Marcoola
Nambour
Mapleton Falls National Park
Mapleton
Obi Obi
Cambroon
Flaxton
Conondale National Park
Maleny National Park
Kondalilla National Park
Montville
Kirbys Road Environment Reserve
Mooloolaba
Witta
Eudlo
Conondale
Maleny
Landsborough
Caloundra
Kenilworth - Eumundi Road
Eumundi - Kenilworth Road
Obi Obi Road
Maleny - Kenilworth Road
Maleny - Montville Road
Maleny - Stanley River Road
Bruce Highway
Kirbys Road
Legend
Dark Sky Reserve Boundary
Dark Sky Reserve Core
State Protected Areas
Council Controlled Open Space
Major Roads
Surrounding LGA Boundaries
N
0 2.5 km
Scale: 1:310,000
Scale: 1:85,000
Dark Sky Reserve Area 873.5 km²
Dark Sky Core Area 7.41 km²
Disclaimer:
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