

The Wairarapa International Dark Sky Reserve – Outdoor Artificial Lighting Plan Change

The Wairarapa Dark Sky Association are applying to the International Dark Sky Association for part of Wairarapa to be certified as an International Dark Sky Reserve. South Wairarapa, Carterton, and Masterton District Councils support this application for the variety of economic, environmental, social, and cultural benefits the certification would bring to the districts.

The South Wairarapa and Carterton District Councils are proposing to add some rules in the Wairarapa Combined District Plan to manage light pollution better. This will help the dark sky certification application go more smoothly. These new rules would need to be in place before the Martinborough Dark Sky Society can submit their dark sky reserve application in February 2021.

You can make a formal submission on those changes.

What is a Dark Sky Reserve

A dark sky reserve is public or private land where the quality of starry nights and the nocturnal environment are exceptional, and those qualities are specifically protected for cultural, natural, educational, scientific or public purposes (www.darksky.org).

There are only 16 dark sky reserves in the world, and three of them are in the southern hemisphere. There is one dark sky reserve in the Mackenzie Valley, Aoraki, and there are two dark sky sanctuaries¹ in New Zealand - Stewart Island and Great Barrier Island. If Wairarapa became a dark sky reserve, it would be one of the largest.

Dark sky reserves create benefits for the community

An International Dark Sky Reserve certification could substantially boost economic, social and cultural growth in Wairarapa.

Economic growth and tourism

Jarvis McDonald Group report found that within 10 years Wairarapa could expect 115 extra tourism jobs, an additional \$190 million tourist dollars, and up to 280,000 more guest nights. Wairarapa's existing dark sky businesses could expand, and new dark sky associated businesses could be established.

Cultural

The night sky is integral to the spiritual connections and livelihood of Māori, including:

- Whakatere waka (Celestial navigation)
- Matariki (Pleiades, start of the Māori new year)
- Māramataka (Māori lunar calendar, guides planting, harvesting, fishing, hunting)

Environmental

As cities grow larger and brighter, night skies begin to become less visible. New Zealanders in 56% of the country cannot view the Milky Way because of light pollution. Plants and animals depend on a

¹ A sanctuary is different from a Dark Sky Reserve. It is typically situated in a very remote location with few (if any) nearby threats to the quality of its dark night skies.

daily rhythms of light and dark for important things such as reproduction, nourishment, sleep and protection from predators.

Health

Darkness at night time is essential to human health. Artificial light at night can disrupt our sleep-wake cycle.

Social

The dark sky reserve is an opportunity to protect views of the night sky and educate people about historic uses for stars. Local universities and schools will be able to utilise the proposed dark sky reserve to support astronomy related courses and the science curriculum.

Historic Heritage

The natural night sky is our common and universal heritage, yet it's rapidly becoming unknown to the newest generations. A dark sky reserve will preserve views of the night sky that inspired science, religion, philosophy, art and literature.

Managing light pollution better will help the dark sky reserve application

Light pollution is the biggest hurdle to gaining International Dark Sky Reserve certification. To qualify as a dark sky reserve, light pollution in the region must be managed. Therefore, South Wairarapa and Carterton district councils are proposing to add some rules in the Wairarapa Combined District Plan in order to manage light pollution better.

The proposed changes to the district plan

A district plan is a public document that guides how we manage activities and environmental impacts (like outdoor lighting) in our districts. The Wairarapa Combined District Plan is the one shared by the South Wairarapa, Carterton, and Masterton districts. District plans are reviewed approximately every ten years, but councils can initiate smaller 'plan changes' between the major reviews. This helps keep plans current and respond to opportunities like the dark sky certification.

We would like to add and change some objectives, policies, and rules (collectively called 'provisions') in the Wairarapa Combined District Plan so light pollution can be managed better. As they are currently written, the district plan provisions do not address light pollution that affects the brightness and clarity of the night sky. The current provisions also do not meet the International Dark Sky Association requirements for dark sky reserve certification.

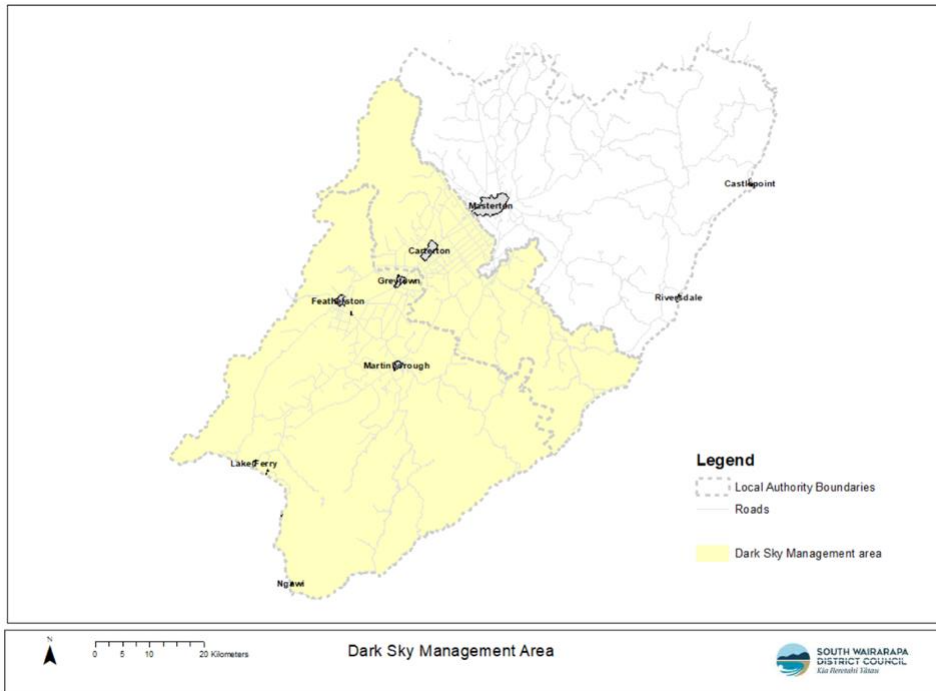
Here are the main changes

- A new rule will require new outdoor lighting to be tilted down or shielded so light goes out and down – not out and up.
- A new rule will make sure the 'colour temperature' of new lighting is 3000 Kelvin and under.
- An exemption to the above rules if outdoor lighting is on a five-minute (or less) sensor/timer.
- New rules for sports lighting at recreational facilities to address light pollution, and to make it easier (eg. fewer resource consents) for sports recreation facilities to install outdoor sports lighting.

These proposed new provisions will not apply to existing lighting. If you replace your lighting, then the new provisions would apply. However, we will encourage people to change their lighting to meet these new standards and reduce light pollution in the districts.

The initial reserve area will be over South Wairarapa and Carterton districts

The Wairarapa Dark Sky Association are applying for the Wairarapa Dark Sky Reserve area to be over the South Wairarapa and Carterton districts. Light pollution is already low in these districts, so they are the best places to get the dark sky reserve started. Our proposed changes to the plan will therefore only apply to the South Wairarapa and Carterton districts at this time (not to the Masterton District). The area will be clearly identified in the planning maps as the ‘Dark Sky Management Area’.



Have your say on the Plan Change

This plan change has been publicly notified and anyone can make a submission on it. The submissions will be considered at a hearing by a hearing panel, who will issue a decision on the plan change.

The proposed changes to the plan and a section 32 report (that explains the reasoning behind each proposed change) are available at <https://www.swdc.govt.nz>

Anyone can make a submission on a plan change. If you make a submission, you can also participate in a hearing if you want. To find out how to make a submission, please go to <https://www.swdc.govt.nz>

If you have questions about the proposed changes or about the plan change process, please email planning@swdc.govt.nz or phone the Planning Department at South Wairarapa District Council on 06 306 9611.

Frequently Asked Questions

This reserve sounds great – how can I make sure my outside lights are not adding to the light pollution?

We'd love it if everyone can make sure their outside lights are under 3000 Kelvin and tilted down. But you don't have to - you can make a start by putting your outside lights on timers. If your outside lights are on motion sensors and time out after 5 minutes, they won't have to be under 3000K, and they won't have to be tilted down.

What does a 3000 Kelvin light look like?

Kelvin is a measure of light temperature/colour that ranges from warm white to daylight white. A 3000K light is on the warm end of the spectrum. Warmer light creates less light pollution.

Do I have to replace my outside lighting now?

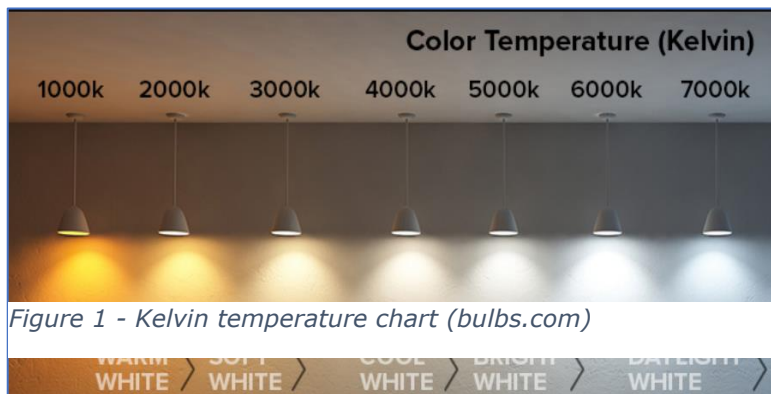


Figure 1 - Kelvin temperature chart (bulbs.com)

No, you don't have to replace your existing fixtures now. Our aim is that within 10 years, 80% of our outdoor lighting will comply with International Dark Sky requirements. If you are able to replace your outdoor lighting now, we'd like to encourage it. That will help decrease light pollution and give our districts a head start on the 10 year/80% compliance goal.

Do I have to turn my residential/business outside lights off at 10pm?

No, you don't have to turn your lights off at 10pm. To help keep light pollution down, though, we'd like to encourage everyone to turn them off by 10pm or have lights on a motion sensor.

Are the streets going to be darker at night?

The whole Wairarapa has already replaced streetlights with low Kelvin bulbs, so the street lighting will be just like it is now.

What about public safety?

Using lower Kelvin lights means that we will actually be able to install *more* lights - and make sure they are focussed better on what needs to be lit. So, we'll be able to reduce unnecessary light pollution and increase public safety.

What are the proposed new rules for sport recreation facilities?

Some new rules that manage outdoor sports lighting will help minimise light pollution. These new rules acknowledge that different sports need different levels of lighting, and they need different lighting than residential and most business areas. Here's what we're proposing:

- 4000 Kelvin limit per light
- Hours between 7am-10pm
- Sport facilities in rural, commercial, and industrial zones – maximum light pole heights will be increased from 15 metres to 18 metres. The change to 18 metre high light poles will mean sport facilities can use more effective and focussed down-lighting that covers a broad area.

Does my sport facility have to turn its outside lights off at 10pm?

The Plan change proposes a curfew for sport lighting at recreational facilities from 10pm-7am. We think this is okay as generally sporting facilities do not require lighting past 10pm. We would like to hear from you if that is not the case.

What do the proposed new rules mean for events like concerts and festivals?

Festivals and events that need to go beyond 10pm already need a resource consent under the 'temporary activities' rules. So there's no change for festivals and events. Also, for temporary events and festivals, lights will not have to be 3000k or tilted or shielded.

Why does this dark sky reserve only apply to South Wairarapa and Carterton districts, and not Masterton?

South Wairarapa and Carterton districts have less light pollution already. So it is an easier first step to work through this plan change and get the dark sky reserve certification started there.

Masterton is a much more populated area and would be one of the largest cities in a dark sky reserve area. Once they work out the best way to address light pollution there, we could apply to the International Dark Sky Association to add Masterton to the dark sky reserve area.

How will the proposed new rules affect Māori?

Everyone in the district will need to comply with the new lighting requirements, including marae and iwi businesses. Dark sky reserve status could provide new development and economic opportunities for Wairarapa iwi and marae, as we anticipate the reserve will attract more tourism and associated growth.