

Mr R Paul
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From
Lucy McLaughlin
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Our Ref: LM

31 December 2018

Dear Mr Paul

Information Request FOI Ref. iw18/12/22087

Thank you for your information request dated, 21 December 2018 and addressed to John Metcalfe, Chief Executive of the Isle of Wight Council, which is currently being considered. Please note that although you have requested information under a Subject Access Request (SAR), that relates to personal information held about an individual. Your request does not fall under a SAR and is therefore being dealt with under the Freedom of Information Act 2000.

I confirm that the basis of your request falls into the following categories:

- 1) Fifth Generation Technology (5G)
- 2) Autonomous vehicles on the Isle of Wight
- 3) Smart Roads/signage on the Isle of Wight
- 4) LED street lighting on the Isle of Wight
- 5) Information regarding 2G, 3G, 4G WiFi and WiGIG in public spaces

As required by the Freedom of Information Act 2000, the Isle of Wight Council will respond to you as soon as possible and no later than 20 working days after the receipt of your request (31 December 2018).

Under the Act, there is a limit for responding to requests where they exceed the Appropriate Fee Limit as set out in the Freedom of Information and Data Protection (Appropriate Limit and Fees) Regulation 2004. The fee limit is set down by the Lord Chancellor and is £450 which equates to a maximum of 18 hours of search and retrieval time.

Should your request fall into this category, we will notify you as soon as possible, to discuss any options available to you.

If you have any complaints in respect of your information request, please write to the Corporate Information Unit, County Hall, Newport, Isle of Wight, PO30 1UD. Or by email

to ciu@iow.gov.uk, or complete the on-line appeals form that can be found at <http://www.iwight.com/Council/transparency/Freedom-of-Information-Act-2000/Tasks>. If your complaint is not resolved to your complete satisfaction, you have the ultimate right, once you have exhausted the internal appeals process, to appeal to the Information Commissioner.

Yours sincerely

A handwritten signature in black ink that reads "L McLaughlin". The signature is written in a cursive, flowing style.

Lucy McLaughlin
Corporate Leadership Support Officer

Mr R Paul
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18 January 2019

Dear Mr Paul

Information Request CRM FOI Ref. iw18/12/22087

Further to my letter to you of 31 December 2018, please find below the information you have requested.

In answer to all the points you raised regarding 5G, I can confirm Isle of Wight council does not have a 5G strategy”

With regard to autonomous vehicles for public transport and/or private use on public highways, I can confirm that the council is not in talks with any experts regarding this point.

I can also confirm that the council does not have a strategy for smart roads and smart signage on public highways and public spaces.

With regard to your query regarding LED street lighting, please see the responses to your specific questions below:

(a) What is the CMS and specification of the software and hardware of the LED street light system?

The CMS is Philips City Touch and the LED Street lights are predominantly Philips Luma and Philips Stella Luminaires

(b) What type of waveform is the LED? e.g. Square wave?

The waveform is not square in the street lighting, it is a continuous signal. The street lighting uses a reduction of the current rather than PWM (turning the LED on and off rapidly).

(c) Can you control the Pulse Width Modulation (PWM) of the streetlight system using the CMS?

This is not relevant as street lighting uses a reduction of current rather than PWM

(d) Can you control the PWM of each streetlight that's connected to the system?

As above

(e) What restrictions do you have in place for the control of the PWM?

As above

(f) What is the UK, EU and International safety limit (low and high) for the amount of 'flicker' (Hz) the Human Body and eyes can be exposed to and for how long?

Our installed luminaires comply with BS EN 60598. This ensures that they operate in the correct range.

(g) I request to see the training manual and safety operation manual for the CMS and the LED streetlight system.

Web based help guide and manual on the Philips City Touch CMS system a request should be made to Philips to obtain a copy.

(h) Who is the company who is or has installed the CMS LED streetlight system?

Island Roads

(i) What company maintains and repairs the CMS and LED streetlight system?

Island Roads

(j) What entity and Officer is responsible for the safety standards for the CMS and LED streetlight system?

Island Roads

(k) I request proof e.g. a certificate from Isle of Wight Council that confirms that UK, EU and International safety standards for workers and the public have been met.

<https://www.agg-net.com/news/iso-45001-compliance-for-eurovia-uk-and-ringway-jacobs>

(l) What is the amount of Blue Light leakage that's safe for the public and workers during the LED streetlights operation?

Please see the following introduction and explanation of the term 'photobiological' – this is key to the detail provided further below:

Photobiology is a scientific field that involves biology, physics and chemistry in order to study the effects of optical radiations on living organisms. Lighting systems are sources of artificial optical radiations used primarily to provide light to the human eye in order to enable visual processes in the absence of enough daylight. The first photobiological effect of a visible light source is vision itself.

Photobiological safety refers to the undesirable effects of optical radiations on human tissues, especially the skin and the eye. These effects have several possible causes, according to the exposed tissue, the wavelength of the incident radiation, the intensity of the exposure and the duration of the exposure.

According to these combined parameters (time – radiation – intensity), the applicable International Standard IEC 62471 defines 3 classification types for luminaires:

- RG0= Risk Group 0 = No risk
- RG1 = Risk Group 1 = Low risk
- RG2= Risk Group 2 = Moderate risk
- RG3= Risk Group 3 = High risk

The Philips products supplied have been tested according to IEC 62471 standard.

For outdoor use, the combination of time - radiation - intensity is low so the standard defines a Risk Group 1 (RG1) as minimum.

The Signify Outdoor products are mostly classified as Risk Group 0 (No risk) and some as Risk Group 1.

(m) What level of LED streetlight exposure is safe for the public at daytime and night time?

The street lights we have installed are designed for the environment they are placed in. They have been purchased from a reputable manufacturer Philips Lighting and are one of the largest suppliers in the UK market. With regard to issues with these lights being a threat to your eyes, Public Health England, the European Commission and the Lighting Research Centre have all produced reports that conclude there is no evidence of adverse health effects. A summary of the reports are as follows:

1. Public Health England

- Covered all LED scenarios (offices Streetlights etc) and states there are no ocular safety issues (won't damage the eye), it did advise manufacturers to ensure that glare was minimised and flicker was ok – we have chosen a product that conforms to this recommendation
- No advice on colour temperatures, just said be mindful of high CCT (colour temperature) effect on Melatonin.
- Public Health England's report concluded that to damage your eyesight you would need to be less than 2m away with steady fixation for 2.5 hours, which is not relative to street lighting.

2. European Commission Report – SCHEER (scientific committee on Health, Environment and emerging risks)

- The Committee concluded that there is no evidence of direct adverse health effects from LEDs emission in normal use (lamps and displays) by the general healthy population.
- There is a low level of evidence that exposure to light in the late evening, including that from LED lighting and/or screens may have an impact on the circadian rhythm.
- Not yet clear if this disturbance of the circadian system leads to adverse health effects.

3. The Lighting Research Centre

- Carried out research to evaluate the 'blue-light hazard from solid state lighting' to determine whether new light sources including light-emitting diodes (LEDs) can give retinal damage, including the blue-light hazard.
- The paper concludes that LEDs present no special concerns for the blue-light hazard over some other common sources in typical use cases because photophobic responses limit exposure to bright sources.

All the above reports show that street lighting should not have an adverse effect on the circadian rhythm. In general, in normal Outdoor use (not excessive over-exposure) there are no adverse health effects for general public from LEDs, they are safe. LED lighting is hugely beneficial to our everyday lives. Not only is it more sustainable and cost-effective than traditional lighting but can also boost our mood and positively impact our behaviour, while also contributing positively to the body's circadian rhythms. But to have this effect you would need much higher light levels to suppress melatonin for outdoor applications.

It must be noted that office and home lighting and the use of laptops and mobile phones is more likely to have an effect.

(n) Is there a legal requirement for diffusers to be fitted to LED streetlights?

No

(o) How have you have addressed the amount of Oxidative Stress on Human and Animal cells that's produced from LED?

We are unaware of any issues, the luminaires that we have installed meet the required standards mentioned above.

With regard to 2G, 3G, 4G and WiFi in public places - the council continues to work with telecommunications providers on the Island to encourage improvements to the reliability and coverage of their networks. In relation to town centres in particular, the council is proactively seeking methods to improve networks in public places in our main town centres.

Some of the information that we provide in response to Freedom of Information Act requests may be subject to copyright protection. In most cases the copyright will be owned by the Isle of Wight Council. The copyright in other information may be owned by another person or organisation, as indicated on the information itself.

You are free to use any information supplied for your own non-commercial, research, or private study purposes. However, if you intend to use the information for other reasons, please contact the Corporate Information Unit for advice.

Please contact me again if you require any further assistance on this matter and I will do my best to provide relevant help and advice.

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Yours sincerely



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Corporate Leadership Support Officer