

Dear Mr Edwards

**Dacorum Environmental Forum: request for participant in Zoom meeting
7.30pm Feb. 10th**

Thank you for your e-mail and invitation dated 2 February 2022 regarding the above.

Apologies, I will not be able to attend the above meeting due to other commitments.

However, I thought it may be helpful to explain Hertfordshire County Councils (HCC) position regarding street lighting as follows:

There are two lighting regimes which operate across Hertfordshire, and the level of lighting is as bright as deemed safe and operational by the County Council within those regimes:

i) Part Night Lighting (PNL, circa 75,000 units): lights switch on at full power at dusk, then dimmed by 50% at 9pm until 11pm, then further dimmed by 30% at 11pm until 1am, switch off until 5am, then at least equal to the lighting levels of the original installation from 5am until dawn.

ii) Full Night Lighting (FNL, circa 40,000 units): A Class Roads and PNL Exception Criteria - lights switch on at full power at dusk, then dimmed by 25% between the hours of 11pm and 6am.

Part Night Lighting has been in place across Hertfordshire for a number of years, and was implemented to reduce carbon emissions and combat rising energy prices.

A full Equality Impact Assessment of the Part Night Lighting was undertaken in February 2011. All / most sections of the Hertfordshire population are equally impacted by changes to current all-night operation.

There is the potential for the partially sighted to experience greater difficulty during that period of the night when lighting is extinguished. For other groups, those distinguished by race, gender, other disabilities, caring responsibilities, age, sexual orientation and religious communities, the impact is likely to be consistent with that experienced by the wider population of the county.

Monitoring of crime rates was carried out in the early years of the project, with no increases in crime due to the lack of lighting. Continuous monitoring since then has showed that, overall, there is no evidence to suggest that Part Night Lighting has exacerbated crime levels at night. The local Chief Inspectors of Hertfordshire Constabulary across Hertfordshire confirmed this position in April 2018.

The LED lighting project started in 2014, and the phased approach was completed at the end of March 2021, whereby all of Hertfordshire's street lighting was converted to LED, and are under Central Management System (CMS) control (that includes operating to the PNL regime described above), except for some specialist lighting in high masts, subways, illuminated signs and the like. The ten Districts have been substantially completed, with minimal adverse customer feedback.

Developments in technology mean we have been able to trial 'dimming & trimming' of new LED street lights. This means, at no extra cost, the lights can remain on for longer at night time in a dimmed fashion, thereby reducing the hours of full darkness.

An Equality Impact Assessment has been undertaken for subsequent phases of the LED conversion project. The Equality Impact Assessment for phase 4 was signed off in April 2018. Because of the installation of circa 114,000 LED lanterns in previous phases of the LED project, there have been no requests or complaints regarding any adverse impact on equality.

Minimal equality impacts have been identified regarding the change in the colour of the LED light source, which may have an impact on members of the community who may have specific conditions regarding their vision. However, these impacts have been objectively justified and no major change is required to the project. The proposed LED street lighting illumination strategy (dimming and trimming) will improve the situation by reducing the aforementioned impacts. Reviews have been undertaken in October 2018 and in October 2019, and will be undertaken in October 2020.

The County Council is continuing to review its LED street lighting illumination strategy ('dimming & trimming'). More information can be found in the report (and decision record) presented to the County Council's Cabinet in October 2020: <https://democracy.hertfordshire.gov.uk/ieListDocuments.aspx?CI=146&MI=2009>

Any lighting installed by the county council meets the position of current national and international guidance. For the avoidance of doubt the county council has no 5G lighting or technology. All lighting and associated equipment put in place by Hertfordshire County Council complies with best practice guidelines and undergoes checks for safety. HCC Highways teams ensure that LED streetlights comply with the national best practice guidance. When the county council started work on installing LED street lighting and the other associated equipment, advice was taken from experts at the radiation dosimetry department at Public Health England, who in their turn took advice from the World Health Organization.

There are national guidelines available, including guidance which suggests that LED lighting does not have harmful impacts on health. This was produced in 2016 with the Chartered Institution of Building Services Engineers and the Society of Lights and Lighting: https://www.researchgate.net/publication/304136116_Human_responses_to_lighting_based_on_LED_lighting_solutions_report_for_CIBSESL

In line with this, HCC were advised that the equipment is safe and not harmful to human health.

LED street lighting luminaires come with the same warning as flashlights however the risks to the public are taken into consideration in the relevant standards, which are met in their entirety in Hertfordshire. Risks to vision are only apparent at very short viewing distances (such as might be encountered when servicing a unit) and

only then by forced exposure (i.e. by deliberately overcoming the natural aversion response and enduring the discomfort) and over a very long time. Other light sources (such as the sun, or car headlights) pose far greater risks to eye damage. Street lighting luminaires when installed are classified in the safety standards as “zero risk”.

The testing and labelling is a mandatory requirement of EN60598-1, with which manufacturers must comply in order to CE (and ENEC) mark against. The test report for Hertfordshire’s LED lights shows no risk to the public and only a ‘moderate risk’ at 200mm if maintenance operators stare into the operating light source.

Please see links to:

Public Health England position statement about blue light exposure from LED street lighting and international recommended limits:

<https://www.nature.com/articles/eye2015261>

The International Commission on Illumination position statement on blue light exposure:

<https://cie.co.at/publications/position-statement-blue-light-hazard-april-23-2019#:~:text=The%20term%20%E2%80%9Cblue%20light%20hazard%E2%80%9D%20should%20only%20be%20used%20when,the%20sun%20or%20welding%20arcs>

The Institution of Lighting Professionals ‘Using LEDs’ guidance note:

<https://theilp.org.uk/publication/guidance-note-5-using-leds/>

HCC are aware that wildlife generally benefits from warmer colour temperatures with regards to lighting but the best solution is to keep as much artificial light away from sensitive zones. Therefore the light from highway lanterns is controlled so that almost all the light falls within the curtilage of the highway and any stray light is reduced to an absolute minimum, unless there is a specific requirement for "spill lighting", thereby reducing the potential impact on nocturnal wildlife.

The luminaires on the residential areas all have back shields and combined with the low levels of upward light offer a very high degree of control. Furthermore, we operate a part night policy which enhances these elements of control. We have therefore followed the guidance in “Shedding Light” – low light trespass, very low upward emissions, exceptionally low lighting levels (“no worse than before”), part night lighting/dimming, which does not impose any greater impact on wildlife than that which was installed prior to the change in light source, indeed with the enhanced dimming and trimming regimes any effects that the artificial lighting had previous has been significantly reduced.

Prior to the LED programme, HCC undertook an Environmental Impact Assessment and also engaged with the Hertfordshire and Middlesex Bat Group and the lighting chosen (4000K) was considered in consultation with the Herts and Middlesex Bat Group. Two studies which specifically involved Hertfordshire, were undertaken to consider the impact of new street lighting on bats resulting in papers published (please see web links below) from the University of Bristol, School of Biological Sciences.

- 'The effect of new street lighting technologies on British Bat species'
https://www.researchgate.net/publication/273700605_The_impacts_of_new_street_lighting_technologies_Experimentally_testing_the_effects_on_bats_of_changing_from_low_pressure_sodium_to_white_metal_halide

- 'The Switch from Low-Pressure Sodium to Light Emitting Diodes Does Not Affect Bat Activity at Street Lights'
<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0150884>

The Part Night Lighting policy, combined with the switch to LED streetlights, has led to a 60% reduction in carbon emissions from street lighting, as well as improving light pollution, reducing demand for energy and avoiding around £5million a year on the council's electricity bill, benefiting Hertfordshire's taxpayers.

It would be helpful to HCC, for residents and customers to report problems with street lighting as accurately and as specifically as possible via HCC's Highway Fault Reporting system, which can be found here:
<https://www.hertfordshire.gov.uk/services/Highways-roads-and-pavements/Report-a-problem/Report-a-street-light-or-pothole.aspx>

I trust the above information is of assistance. Should you have any further enquiries, please contact CSCHighways@hertfordshire.gov.uk, tel no. 0300 123 4047

Regards

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