

Freedom of information request NCC-037477-19

Thank you for your recent freedom of information request, for ease we have provided our response alongside each point raised.

1. Do you have a 5G strategy? Nottinghamshire County Council do not have a 5G Strategy.

1.1 If yes, I request to see the complete strategy, its ambitions and its objectives in PPTX, Word, PDF or picture format. N/A

1.2 If yes, has the public had the opportunity to read and understand [Council's] 5G strategy? Where was this information published? N/A

1.3 I also request a supplementary document that includes the highest level of detail on all 5G technology that's planned to be used and current in use in public spaces within [Council]:N/A

(a) Companies and entities involved and the names of the company/entity officers.

(b) Specification sheets of 5G technology.

(c) What technology e.g. units and arrays are not currently 5G, but can be 5G enabled e.g. with current software, future software, hardware upgrades or retrofitting?

(d) What UK, EU and International safety standards is [Council] complying with for the 5G strategy and existing 5G technology.

(e) I request proof e.g. a certificate from [Council] that confirms that UK, EU and International safety standards for workers and the public have been meet.

1.4 If no, I request to know when you will be chairing a 5G strategy? There are no plans to have a strategy. NCC have a contract with EE and we will utilise their 5G when they become available.

2. I request the name/s of the Officer/s in charge of the 5G strategy and roll out for 5G and Smart Cities; and who their subject area expert or consultancy is, their CV and qualifications on 5G and Smart Cities. N/A.

3. Are you in talks with any experts, companies or entities about autonomous vehicles (AV) for public transport and/or private use on Public Highways? No

3.1 If yes, I request to see the complete strategy, its ambitions and its objectives in PPTX, Word, PDF or picture format.

3.2 I also request a supplementary document that includes all levels of detail on:

(a) Companies and entities involved and the names of the company/entity officers?

(b) Specification sheets of all technology.

(c) What type of communication system will [Council] be utilising to control the vehicles?

(d) What UK, EU and International safety standards does your AV strategy and rollout comply with?

(e) I request proof e.g. a certificate from [Council] that confirms that UK, EU and International safety standards for workers and the public have been meet.

4. Do you have a strategy for smart roads and smart signage on Public Highways and Public spaces?
No

4.1 If yes, I request to see the complete strategy, its ambitions and its objectives in PPTX, Word, PDF or picture format.

4.2 I also request a supplementary document that includes all levels of detail on:

(a) Companies and entities involved and the names of the company/entity officers?

(b) Specification sheets of all technology.

(c) What technology e.g. units and arrays will not be 5G, but can be 5G enabled e.g. with current software, future software, hardware upgrades or retrofitting etc (you must be specific on anything here)?

(d) What UK, EU and International safety standards does your 5G strategy and rollout comply with?

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

5. Are you planning to rollout or have rolled out LED street lighting? Yes

5.1 If yes, please answer these questions:

(a) What is the CMS and specification of the software and hardware of the LED street light system?
No CMS Included

(b) What type of waveform is the LED? e.g. Square wave? – The power supplied from the power convertor (driver) is DC

(c) Can you control the Pulse Width Modulation (PWM) of the streetlight system using the CMS? The LED are powered with DC, not PWM – and as per the above, there is no CMS system

(d) Can you control the PWM of each streetlight that's connected to the system? The LED are powered with DC, not PWM – and as per the above, there is no CMS system

(e) What restrictions do you have in place for the control of the PWM? The LED are powered with DC, not PWM – and as per the above, there is no CMS system

(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? - The IEEE (Institute of Electrical and Electronics Engineers) in the USA has recently published an extensive review of the effects along with guidance. See link below where standard can be obtained for reference.

(g) I request to see the training manual and safety operation manual for the CMS and the LED streetlight system. – No Operations manual for LED Lights?

(h) Who is the company who is or has installed the CMS LED streetlight system? – Via East Midlands Ltd

(i) What company maintains and repairs the CMS and LED streetlight system? – Via East Midlands Ltd

(j) What entity and Officer is responsible for the safety standards for the CMS and LED streetlight system? – SS & Regs referred to in below documentation

(k) I request proof e.g. a certificate from [Council] that confirms that UK, EU and International safety standards for workers and the public have been met. – See documentation below on SS.

(l) What is the amount of Blue Light leakage that's safe for the public and workers during the LED streetlights operation? - The International Commission on Non-ionizing Radiation Protection (ICNIRP) have produced guidelines on exposure limits, see the below reference documents.

(m) What level of LED streetlight exposure is safe for the public at daytime and night time? – This depends on numerous factors, but the International Commission on Non-ionizing Radiation Protection (ICNIRP) have produced guidelines on exposure limits, see the below reference documents

(n) Is there a legal requirement for diffusers to be fitted to LED streetlights? – No, at least none that I am aware of.

(o) How have you addressed the amount of Oxidative Stress on Human and Animal cells that's produced from LED? Fittings have been tested in line with IEC 61471 - Photobiological Safety of

Lamps and Lamp Systems, and then applied to IEC 62778 - Assessment of Blue light hazard of light sources and luminaires

Reference reading;

CIE (International Commission on Illumination) position statement 23/04/2019 -

<http://www.cie.co.at/publications/position-statement-blue-light-hazard-april-23-2019>

Public Health England paper, commissioned by CIBSE - <https://www.cibse.org/knowledge/knowledge-items/detail?id=a0q2000000816z6AAC>

The International Commission on Non-ionizing Radiation Protection (ICNIRP) Guidelines on limits of exposure to incoherent visible and infrared radiation -

https://www.icnirp.org/cms/upload/publications/ICNIRPVisible_Infrared2013.pdf

ICNIRP Guidelines on limits of exposure to Ultraviolet radiation wavelengths between 180nm and 400nm (Incoherent optical Radiation) -

<https://www.icnirp.org/cms/upload/publications/ICNIRPUV2004.pdf>

Health and Safety Executive (HSE) – Information regarding optical radiation -

<http://www.hse.gov.uk/radiation/nonionising/optical.htm>

Institute of Electrical and Electronics Engineers (IEEE) - <https://standards.ieee.org/standard/1789-2015.html>

5.2 If no, then I request a declaration from [Council] that you will not be installing LED streetlights in the future. If you cannot provide a declaration, I would like the following answered in the future tense:

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

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

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

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

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

(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?

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

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

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

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

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

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

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

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

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

6. Where do you have 3G and 4G systems in public spaces and public roads? N/A

I trust the above information is of assistance to you.

If you wish to raise any concerns about the way your request was dealt with, then please write to the Team Manager, Complaints and Information, County Hall, West Bridgford, Nottingham, NG2 7QP or e-mail foi@nottsc.gov.uk quoting the reference number above.

With kind regards

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