Response to Request for Information

Reference: 2728
Date: April 2013
Type of request EIR

New Street Lighting

Whilst driving around I have noticed there is a lamp post replacement programme in progress. This has raised a few questions and under the Freedom of Information Act please could you find the information for the following questions:

1. Why are the lamp posts being replaced?

Cambridgeshire County Council were faced with the problem of an aged and inefficient lighting stock with many of the columns across Cambridgeshire nearing, or having passed, the end of their lives. If these columns were not replaced, they could present a safety hazard either structurally or electrically or both. Some columns (mostly the newer columns) are structurally and electrically safe and able to last the duration of the 25yr PFI Contract so in most cases these street lights are being kept, with just up an upgrade to the new white light lantern.

2. Were the public asked at any time if they wanted the lamp posts to be replaced and what was the response?

During the design of the work, consultation is carried out with Councillors, Parish Council's and local residents on the proposed designs.

3. Who authorised the lamp posts to be replaced?

The Cambridgeshire Street Lighting PFI contract was authorised by the County Council's Cabinet.

4. What are the antennas on top of the lamp posts for?

The antennas on top of the street lights are for the transfer of information to the centralised control system and are the control points for the lantern.

5. Please detail the following EMF (Electromagnetic Field) emissions for the antennas:
   a) Frequency (Hertz)
   b) Wavelength (metre)
   c) Electrical field strength (volt per metre)
   d) Magnetic field density (ampere per metre)
   e) Magnetic flux density (tesla)
   f) Power flux density (watt per square metre)

a) Telecells operate in the 868MHz ISM unlicensed radio band which is the same band used for car central locking key-fobs, wireless burglar alarms etc.

(b) The wavelength of a signal at 868MHz is 0.346m

(c-f) Electric field strength, magnetic field density, magnetic flux density and power flux density all will follow the inverse square law and so will decrease as the distance from the antenna increases. The Telecells are tested and approved to ETSI EN300-220. The maximum effective radiated power from a Telecell is 25mW. In practice, each telecell transmits for only a few seconds per day. Field strengths are shown in this table:

During telecell transmission (3-6 seconds total per day)	Electric Field Strength*E*	Magnetic Field Strength*H*	Magnetic Flux Density*B*
at 5m distance	0.173 V/m	0.000460 A/m	0.000578 micro Tesla
at 10m distance	0.0866 V/m	0.000230 A/m	0.000289 micro Tesla

6. What are the guide lines for EMF exposure to the public and are the lamp posts adhering to them.

ICNIRP exposure guidelines give a basic restriction of 0.08W/kg for exposure to RF energy in the frequency range 100kHz to 10GHz. Since telecells have a maximum effective radiated power of less than a third of this power, they are in general mounted several metres away from the general public, an average person has a mass of over 50kg and a Telecell transmits for only a few seconds each day, it is clear that exposure from telecells will be several orders of magnitude below these limits.

Information Governance Team
RES1405 Cambridgeshire County Council
Castle Hill, Cambridge, CB3 0AP
Tel: 0345 045 5200
Email: xxx@xxxxxxxxxxxxx.xxx.xx