To:	Environment Highways & Waste Policy Overview & Scrutiny Committee - 22 November 2011
By:	Bryan Sweetland, Cabinet Member for Environment Highways and Waste
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Subject:	A Common Sense Plan for Safe and Sensible Street Lighting
Classification:	Unrestricted

Summary: This report sets out how the County Council can reduce energy costs in street lighting whilst working with the community to improve acceptance of this and reduce the perception that such a policy increases crashes and reduces personal safety. The proposals in this report for safe and sensible street lighting in Kent are informed by the Street Lighting Policy agreed by the EHW POSC in May 2010.

1. Introduction

Street Lighting energy costs the County Council £5.1m p.a. It is on an upward trend and the cost of energy is set to rise year on year, the anticipated increase for the next financial year is over 10%.

KCC has some 118,500 street lights and 29,000 lit signs/bollards. Provision of street lighting is not a legal requirement, except when linked to demonstrable road safety. However it has become established practice over time and almost all street lights in Kent are continually lit during the hours of darkness, ie automatically turn on at dusk (due to a fitted light sensor in each column) and turn off at first light.

The challenge of rising energy costs and carbon emissions were among the key factors resulting in a new approach to street lighting provision and operation being formally agreed at the EH&W POSC in May 2010.

The Government's Carbon Reduction Commitment requires councils to publish their greenhouse gas emissions, including CO2. The street lighting energy in Kent currently equates to approx 29,000 Tonnes of CO2. Although it has not been a requirement to pay for carbon credits, this is likely to change and some form of levy linked to carbon emission is likely to be introduced thus increasing the cost of energy even further.

A number of initiatives have been introduced by Highways & Transportation in the past two years to reduce energy consumption, these are:

- Upgrades – 6,289 inefficient mercury lamps as well as 3,441 failing lamps have been replaced with energy efficient units.

- Trimming – The photocell in 12,616 lamps has been reset to reduce burning time (lights come on later at dusk and going off earlier at dawn). All new columns have these photocells as standard.

- Dimming – New lanterns have been fitted to 230 columns of 60w and above to dim the wattage at pre-determined times to reduce energy consumption. This is quite costly as it requires replacement of lanterns and has only been incorporated where lantern replacement was programmed.

These initiatives have reduced the energy charges by £128,000 annually.

2. Discussion

Light pollution and costs can be reduced in locations where the street lights are not contributing to safety at all. Many road lights were installed when vehicles had poor lighting systems and ambient light levels on major urban roads were low. Today, some street lighting is far less effective than the illumination provided by traffic or nearby buildings yet it remains switched on all night.

Where streetlights have been dimmed or switched off, data shows that crashes and crime have **not** increased. There is a clear difference between perception and actual data. It is the design of lighting schemes, rather than the number or hours of illumination that is most important. Kent County Council's aim is to target the wasted lights and energy.

There are a number of useful articles linking street lighting and crime, for example;

From the Guardian newspaper (2003): Bright lights 'do not deter criminals'. "Over-anxious Britons are placing a blind, almost medieval, faith in brighter street-lamps and security lighting as crime deterrents, according to a statistical analysis... published in the British Journal of Criminology. "

In Essex, a trial to turn off suburban street lights between midnight and 05.30, has been deemed a success. Police state: "A year on year comparison for April 2006 to May 2007 [when street-lights were left on all night] and April 2007 to May 2008 [when street-lights were turned off at midnight] has shown that night-time crime has almost halved in Saffron Walden and reduced by over a third in Dunmow."

Better lighting by itself has very little effect on crime.", a quote from The effect of Better Street-lighting on Crime and Fear: A review, by Malcom Ramsay of the UK's Home office.

"The principal conclusion is that no evidence could be found to support the hypothesis that improved street lighting reduces reported crime.", from The Influence of Street lighting on Crime and the Fear of Crime (Crown Copyright 1991).

"The very wide extent of the study, covering some 3500 new street lights introduced over a period of nearly three years, was unprecedented in the UK. The change in street lighting standard was considerable; typically a four-fold increase in the intensity of lighting was achieved, with more lighting columns and white light sources being introduced throughout.

"The main database for the study consisted of over 100,000 reported crimes, although analysis was principally focused on some 9500 allegations in the most relevant locations and time periods. The area studied, an inner London Borough, has a high crime rate in a national context and thus represented a fair test for environmental crime prevention measures. In short, if street lighting does affect crime, this study should have detected it."

To overcome the negative perception, it is vital that we address this by involving residents in discussions about what makes some people feel they are less safe.

3. Next Steps

We have established how further savings could be achieved. This has identified a number of potential areas suitable for energy conservation, these are:

Part Night Lighting – This involves installing new light sensor in each column that has a timer built into it. The net result is that the column would light automatically at dusk, turn off at a pre determined time (possibly midnight), turn back on at a predetermined time (possibly 5am) and stay on until first light. Other than complete removal of lighting, part night lighting provides the most significant energy savings. Two categories of roads could be suitable for this, minor roads (which includes residential, estate and rural roads) and high speed roads. There are over 70,000 street lights in these roads which could be changed to part-night lighting and could result in a reduction of 10% in the annual energy bill.

Removal of Lights – In the past, extension of street lighting went far beyond the required needs, a clear case in point here is street lighting on main routes. These are generally roads leading to or out of local settlements where current design standards would not recommend street lighting. There are some 5000 unnecessary high wattage lights on these roads potentially suitable for permanent disconnection and removal. Their removal will have no adverse effect on the locality yet delivery a saving of around 5% of the energy bill. Lights within the settlements would be retained.

Future areas for possible review

Dimming – This involves reducing the illumination level of lights. However, the technology for implementing this option is currently very expensive as it involves replacing the lantern on each lighting column. Some 25,000 lights could be suitable for this treatment and as technology improves this could become a viable option. Savings could be achieved up to 10% of the annual energy bill. As of today, this is not a cost effective option.

Central Monitoring System -This involves installing a small radio device on each column, a collection of these, around 1,000 are then linked to a local base station, which in turn is connected to a remote Central Monitoring Unit. This future option would allow each column to be remotely monitored and controlled. Benefits would be significant but the systems are relatively new and expensive. This option will be reviewed in detail in the spring of 2012/13. There will be no abortive costs if this option is adopted.

4. Conclusion

In order to ensure that KCC utilises its limited resources in the best manner it is proposed to follow the agreed Street Lighting Strategy agreed by POSC in May 2010. This will reduce energy costs and protect the environment. The County Council should;

- Ensure value is achieved by supplying lighting at the time of greatest demand or need.
- Manage energy sensibly thus reducing consumption for street lighting. This will help address the financial challenge to reduce costs of service delivery as outlined in Bold Steps for Kent.
- Reduce CO2 emission to help meet the challenge of climate change as set out in Bold Steps for Kent.
- Engage with Kent stakeholders to consult on ways to ensure an appropriate and effective level of street lighting.

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5. Recommendations

Members of the Committee are asked to comment on:

(1) The specific proposals outlined above to introduce a common sense approach to safe and sensible management/operation of street lighting is endorsed

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