

		<b>AGENDA ITEM 7</b>
		<b>PSEG/20/14</b>
<b>Committee:</b>	<b>Place Services and Economic Growth Scrutiny Committee</b>	
<b>Date:</b>	<b>26 June 2014</b>	
<b>PART NIGHT LIGHTING SCRUTINY REVIEW</b> (Minute 10/ January 2014)		
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At its meeting in September 2013 (Minute 7) the Committee agreed that a Task and Finish Group ('the Group') be set up to consider Part Night Lighting with the following terms of reference for the scrutiny review:

‘To examine the process of the current consultation on Part night Lighting, and review the findings of the former Safer and Stronger Communities Policy and Scrutiny Committee set out in its Scrutiny Report dated 2010 in the context of the current situation including the application of new technology.’

The Group comprises Councillors Chris Pond (Lead Member), Tony Hedley, Roger Hirst, Mike Danvers, Stephen Robinson, and Andy Wood. Councillor Simon Walsh is an ex officio member.

The Group has now concluded the review, and is seeking the Committee's endorsement of its final draft scrutiny report, which sets out the conclusions and recommendations it has reached.

The Group's final draft scrutiny report dated June 2014 is attached at the Appendix to this report. Please note that the final report will be formatted and the Executive Summary completed once the Committee's endorsement has been given, and before it is forwarded to the Cabinet Member.

#### **Action required by the Committee:**

**The Committee is requested to endorse the attached scrutiny report**

containing the following recommendations of the Task and Finish Group:

**Recommended to the Cabinet Member for Highways and Transportation:**

**Recommendation 1**

**That the lessons learned from the feedback on the way that the roll out of PNL across Essex was communicated to the public and local councils be taken into consideration to improve the way that projects are launched in the future.**

**Recommendation 2**

**That any potential changes to metered energy supply be kept under constant review, and implemented when it becomes permissible and when clear savings would result.**

**Recommendation 3**

**That a formal procedure be adopted for the consideration of requests for the variation of PNL scheme at specific locations.**

**Recommendation 4**

**That the exception criteria be amended so that the provisions are more transparent, and reflect variations that may have become permissible by virtue of variations allowed during the course of the recent roll out of PNL across Essex.**

**Recommendation 5**

**That the costs and benefits of LED lighting should be kept under constant review, and particularly its application in new lighting installed as a part of any new development.**

**Recommendation 6**

**That the County Council implement a mechanism by 31 December 2014 whereby it provides a means for others to be recharged where there is a local wish for more variations to PNL that did not co-incide with exception criteria including a recharge for the extra cost of energy, and agency arrangements.**

**Recommendation 7**

**That a protocol for limited area switch on at the request of the Emergency Services be developed urgently and no later than 31 December 2014, and a separate one for wide-area emergencies such as floods and high winds. Furthermore it is requested that those protocols be submitted to the Committee for its consideration.**

**Recommendation 8**

**That the Cabinet Members for Waste and Recycling, and Highways and Transportation take positive action to launch a major publicity campaign to persuade local councils, public service providers and private firms to review their current levels of street and premises lighting in order to encourage them to support the County Council in reducing the carbon footprint and cost of lighting overall.**

**Recommendation 9**

**That in respect of the all the above recommendations the Cabinet Members, as identified, be requested to provide an indication when action will be implemented and details of the action proposed at an early stage, or alternatively a clear indication why a recommendation will not be acceded to.**

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## Appendix

# Draft Part Night Lighting Scrutiny Report

Dated June 2014

### Index and glossary

- Executive Summary
- Introduction
- Background
- General Considerations
- Analysis
- Conclusions and Recommendations

### Glossary

CMS	Central Management System
ECC	Essex County Council
LED	Light Emitting Diode
PFI	Private Finance Initiative
PNL	Part Night Lighting
PSEGSC	Place Services and Economic Growth Scrutiny Committee
SSCPSC	Safer and Stronger Communities Policy and Scrutiny Committee

### Executive Summary

***To be written and finalised once the scrutiny report has been endorsed by the Committee and before it is forwarded to the Cabinet Member.***

From the scrutiny investigation it was proposed by a Task and Finish Group that the following recommendations be forwarded to the Cabinet Member for his consideration, and in turn his response to the Committee's recommendations would be reported back in due course.

**Recommended to the Cabinet Member for Highways and Transportation:**

#### **Recommendation 1**

**That the lessons learned from the feedback on the way that the roll out of PNL across Essex was communicated to the public and local councils be taken into consideration to improve the way that projects are launched in the future.**

#### **Recommendation 2**

**That any potential changes to metered energy supply be kept under constant review, and implemented when it becomes permissible and when clear savings would result.**

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#### **Recommendation 8**

**That the Cabinet Members for Waste and Recycling, and Highways and Transportation take positive action to launch a major publicity campaign to persuade local councils, public service providers and private firms to review their current levels of street and premises lighting in order to encourage them to support the County Council in reducing the carbon footprint and cost of lighting overall.**

#### **Recommendation 9**

**That in respect of the all the above recommendations the Cabinet Members, as identified, be requested to provide an indication when action will be implemented and details of the action proposed at an early stage, or alternatively a clear indication why a recommendation will not be acceded to. A full Cabinet Member response to the Scrutiny Report would be sought for the Committee in Autumn 2014.**

## **Introduction**

In September 2013 (Minute 7) the Place Services and Economic Growth Scrutiny Committee (PSEGSC) decided to set up a Task and Finish Group ('the Group') with the following terms of reference:

'To examine the process of the current consultation on Part Night Lighting, and review the findings of the former Safer and Stronger Communities Policy and Scrutiny Committee set out in its Scrutiny Report dated 2010 in the context of the current situation including the application of new technology.'

The Group comprises Councillors Chris Pond (Lead Member), Mike Danvers, Roger Hirst, Tony Hedley, Stephen Robinson, Andy Wood, and Simon Walsh (ex officio). Originally Councillor Kerry Smith was appointed as a member of the Group but did not participate in the review.

This scrutiny report sets out the Group's findings and conclusions, and a number of recommendations addressed to the Cabinet Member (subject to the Committee's endorsement)

## **Background**

During 2006 Essex County Council (ECC) developed proposals to introduce part night lighting (PNL) across the whole county having taken into account experience in West Sussex where it has been in operation since the energy crisis of the 1970s.

In 2007 ECC introduced PNL in the district areas of Maldon and Uttlesford as a pilot scheme to save money and reduce its carbon emissions and light pollution. In effect street lighting is switched off between 12 midnight and 5 am with some exceptions such as town centres, key road junctions, and accident cluster sites. This has not resulted in any increase in recorded crime or road collisions in those districts, and has delivered energy savings of 20% (approximately £70,000 per annum).

The former Safer and Stronger Communities Policy and Scrutiny Committee (SSCPSC) played a role in reviewing the pilot scheme before the Council reached any decisions on how to proceed countywide. It produced a scrutiny report entitled 'Street Lighting at Night' dated July 2010, which set out its conclusions and a number of recommendations. It was clear to that Committee that views on the subject were strongly held and that there was no right or wrong answer to satisfy all shades of opinion. Nevertheless the County Council, as the Lighting Authority, had to take the lead role in the county and whilst consultation with other parties would be important, the final decisions had to rest with it. The Council had a clear view on handling

environmental concerns, and the Committee reiterated the Council's policy that cutting emissions should be taken onto account. It specifically rejected the view that nothing should be done. The advice that the Committee decided to offer the Cabinet Member was based on the principle that the level of lighting in the county should be reduced, and that wherever possible, new technology should be the means of achieving targets in this field.

The Cabinet Member's response to the SSCPSC recommendations was reviewed in July 2010, and published as part of its scrutiny report. The Cabinet Member at that time confirmed that he accepted the recommendations, and explained how he proposed to roll out a Central Management System (CMS) for the control of street lighting throughout Essex. A full business case was being prepared as an 'invest to save scheme' by the Council. At that time the implementation of the project was based upon a start date of April 2011 with a caveat being the availability of funding.

In fact the Cabinet approved formally the purchase of a system for the central management of all ECC street lights following vigorous tendering procedures in June 2011. The business case highlighted that the following benefits would accrue from the implementation of a CMS and PNL:

Financial savings – revenue savings of around £1 million per annum as a result of reduced energy consumption.

Environmental benefits – Significant carbon and light pollution or 'sky glow' reductions across Essex. If the target of switching 70% of street lights to part night lighting is achieved, it is estimated that it will reduce carbon emissions by 8,000 tonnes per annum.

Operational benefits – The installation of CMS would provide notification of street lighting failure enabling a responsive maintenance service across Essex, and increased equipment lifespan. In addition the CMS will allow street lights to come on/off with greater accuracy in relation to natural light levels and lead to more intelligent overall management of street lights. These operational improvements would serve to improve the public perception of street lighting maintenance as a result.

The CMS would be installed on all street lighting columns across Essex namely in the region of 128,000 fixtures. Cabinet report CAB/17/11 provides a fuller explanation of the implications of acquiring the new technology.

With the implementation of the CMS the programme for the roll out of PNL across the whole county on a district by district basis could gain momentum, as lighting columns were fitted the relevant equipment.

Aside from the principle of PNL having been established as ECC policy, the application of exception criteria is an important feature of the Essex project throughout its development. This means that street lights in certain locations meeting the criteria set out below will continue to be lit through the night.

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### Exception Criteria

- Major lit inter-urban dual carriageway traffic routes.
- Sites where there are a large number of conflicting traffic movements (eg roundabouts) which are on significant routes (generally those lit by columns greater than 6 metres high).
- Sites where street lights installed as a result of accident remedial measures.
- Town Centre type areas where there is one or more of the following features:
  - Public CCTV
  - High proportion of high security premises (eg banks, jewellers); areas of high crime risk high crime risk;
  - High concentration of people at night such as transport interchanges, nightclubs etc.
- Main approaches to town centre areas defined in the section above, where there is a mix of development between residential and commercial/ industrial i.e. not exclusively residential.
- Sites where the police can demonstrate that there will be an increase in crime if the lights are switched off during part of the night (or that there will be a decrease in crime if the lights are switched back on).
- Remote footpaths and alleys linking residential streets.
- Where there is a statutory requirement to provide lighting.

In areas meeting the above criteria, where there are more than adequate numbers of lighting columns, the County Council will consider switching off some of the lights between midnight and 5 am.

The roll out of PNL across Essex has encountered criticism, and was an underlying reason for the setting up of the Task and Finish Group. While the consultation undertaken is explored in more depth in the analysis section of this report, it is important to put it into the overall context of the PNL roll out.

While the principle of PNL has been adopted by ECC for several years, more recently it has sought feedback on its proposals for the application of the exception criteria in individual districts. It is noted that the Council has published ongoing press releases providing updates on the scheme throughout the PNL project.

Consultation in the summer of 2012 began on the implementation of PNL in Braintree and Chelmsford with the local councils, the Police, Fire and Ambulance

Services, and other stakeholders. This was an opportunity for stakeholders to identify any sites that they wanted to be considered as an exception for lights to remain lit through the night. The Cabinet Member's decision to implement PNL in the two districts was published in August 2013, and was subsequently called in. Following an informal meeting the call in was withdrawn on the basis that the PSEGSC receive a briefing on PNL and, in turn, the Committee established this Group to consider certain aspects of the project.

In September 2013 further consultation was initiated to complete the implementation of PNL across Essex on a district by district basis. Gradually the Cabinet Member published individual district decisions. All but two were called in, and their consideration is recorded in the Minutes of PSEGSC meetings between September 2013 and February 2014.

The focus of the consultation was upon the application of the proposed exception criteria, and maps were produced to show the position of individual lighting columns as well as identifying those columns proposed to be switched to PNL.

### **General Considerations**

ECC is the third largest lighting authority in the country. There are in the region of 160,000 lighting columns in the county of which 128,000 are controlled by the County Council as Highways Authority. Other lighting may be provided for amenity purposes by other local councils and housing authorities.

If all street lights in Essex remain on throughout the night, the total annual bill for street lighting is estimated at £4.9 million. Once PNL is fully rolled out across the county that bill is estimated to fall to £3.7 million.

The annual cost energy cost of a typical light for instance outside County Hall (Column 3 Market Street) per annum is estimated at £120. If that light was fitted with a LED lantern then the energy cost per annum is estimated at £76. The cost of changing the lantern to LED would be £580.

The Group received the following advice from Officers upon the responsibilities of a Highways Authority:

#### **Highways Act 1980 – Section 97**

The law about street lighting is set out in section 97 of the Highways Act 1980 which is set out below:

Section “97 — Lighting of highways.

(1) The Minister and every local highway authority **may** provide lighting for the purposes of any highway or proposed highway for which they are or will be the highway authority, and may for that purpose—

(a) contract with any persons for the supply of gas, electricity or other means of lighting; and

(b) construct and maintain such lamps, posts and other works as they consider necessary.

(2) A highway authority may alter or remove any works constructed by them under this section or vested in them under Part III of the Local Government Act 1966 or section 270 below.

(3) A highway authority shall pay compensation to any person who sustains damage by reason of the execution of works under this section.

(4) Section 45 of the Public Health Act 1961 (attachment of street lamps to buildings) and section 81 of that Act (summary recovery of damages for negligence) apply to a highway authority who are not a council of a kind therein mentioned as they apply to such a council."

The key word is 'may' in sub-section (1) which makes it clear that there is never a duty to light.

In 2006 the case of *Cartwright v Derbyshire County Council* was decided in the Mansfield County Court. Mrs Cartwright tripped over a kerb in a poorly lit street (in fact the street light nearest to the house she had left was unlit). The Court made it clear that the Council had no duty to light the highway and no duty that it did not.

Sub-sections (3) and (4) are solely concerned with people who suffer damage to their property caused by physical works of putting up street lights or, it could be supposed, if a badly maintained streetlight fell on a pedestrian. They are not relevant to people suffering a loss as a result of there being no lights. Although this is only a County Court decision, it has been reported informally by legal publishers considered.

There is an exception to this which is that specific road features (such as traffic calming road humps and central refuges) which are required to be lit and Essex County Council does ensure that these features continue to be supplied with all night lighting.

Although PNL is not a new concept, its adoption across the country has gradually been expanding recently for example in Hertfordshire, Suffolk, Northamptonshire, Nottinghamshire, Dorset, and Bath, and a number of local authorities are in the process of introducing it including Kent. Experience and public reaction to the switching of street lights has varied where PNL has been rolled out being affected by the way it has been planned, managed, and extent of the proposals. Information about the individual schemes can be found on council websites, including some scrutiny investigations, as well as reviews conducted by Police organisations on road safety and crime issues.

## **Analysis**

- **Central Management System**

The CMS has been an important milestone in the development not only of PNL in Essex, but also as a street lighting management tool for repair and maintenance. Consequently the Group considered that it would be helpful to gain a better understanding of its operation and took the opportunity to invite Will Gibson, the Managing Director of Telensa, a local company based at Great Chesterford, to give evidence.

At the outset Mr Gibson confirmed that the CMS is applying new technology to street lighting management. His company currently has 50% of the world market, and Essex has the largest deployment of the wireless technology in the world. He gave the Group a comprehensive overview of the technology, its operation and capabilities, and answered the Group's questions.

The CMS is based upon wireless communications technology and Essex is at the forefront of its development for the management of street lighting. It is a tool to:

- communicate with individual street lights,
- control the lights,
- monitor lights to detect faults for repair and maintenance,
- measure energy consumption, and
- assist in the management of the street lighting asset and deliver a better service.

In Essex there are a variety of lighting columns in existence and each one has been retrofitted with appropriate telecell equipment so that they can communicate with a base station network.

The CMS features and benefits include:

- Full control of the ECC lighting network (on/off/ override).
- Fully interoperable with ECC's asset management system (eg Mayrise).
- It provides comprehensive monitoring and reporting information that can be produced in a variety of formats using different parameters, and can be programmed according to requirements. Historical data will be captured through event logging.
- The CMS is operated remotely via the internet.
- "Trimming" the time at which lights were switched on, which could save energy costs in the expensive evening period.

It was confirmed that as the CMS is capable of measuring energy consumption, it can be used to inform a more accurate assessment for invoicing purposes. In the future if street lighting consumption becomes metered across the country then the CMS could assist in that process. However, the Group was cautioned that metering has not been accepted by the energy companies and other local authorities, and in practice there is not the equipment in place for consumption to be widely metered.

The Group asked a range of questions in order to form a better understanding of street lighting matters, and how the CMS had affected the roll out of PNL. It was reassured that the CMS was resilient in a number of ways: In the event of a base station failure, lighting columns would communicate with the centre through an alternative base station. Servers were backed up. Radio communication and the

server are not critical to the switch on of street lighting, as each column is programmed to turn on according to its daylight profile management. Risk management provision was also addressed.

In terms being able to respond to new lighting technology such as LED, it was confirmed that there is scope for the CMS to be upgraded and therefore the Council's current investment would not become redundant. By way of example ECC street lighting does not have a dimmer facility installed, but if it becomes a feasible option in the future then there would be an incremental cost rather than full cost associated adjustments to the CMS.

Given the CMS versatility, the Group questioned its viability as a charging mechanism that would enable members of the public to switch on and pay for individual lighting columns. Mr Gibson referred to publicity that had been given to a project in Germany a few years ago whereby it was proposed that individuals could subscribe for lighting by text. However, such a system has not been developed. There would be difficulties associated with giving control to different parties and managing the lighting system overall. In practice the consequences of variable lighting patterns could be detrimental to highway safety.

Other local authorities have acquired Telensa CMS technology including Suffolk County Council.

- **Street Lighting Technology**

The terms of reference for the Group's investigation refer to the application of new technology associated with PNL, and arose in part from the belief of some Members that alternative technology could provide an alternative to switching off street lights during the night. During the investigation witnesses asserted that some of the new technologies are still evolving and have not proven effective in terms of the financial investment that was envisaged in terms of converting the County Council's sizeable stock of lighting columns. Nevertheless the Group learned that ECC has been at the forefront in the installation of the CMS, which is using new technology and will be capable of adaptation in the future if and when more efficient changes to street lighting provision may be made.

While PNL and the type of street lighting equipment are not mutually exclusive issues, they are separate in that PNL has been agreed and is based upon the principle of switching off lights during the night regardless of the technology used. The recent consultation and implementation of PNL across Essex was focussed upon the verification of lights to be switched on/ off, not the options for street lighting apparatus.

During the investigation the Group was shown several different types of lamp head including two LED examples. It was confirmed that the adaptation of an existing lighting column to LED lighting is not simply a task of changing a light bulb, and the ability to adapt existing columns to support LED lighting will rely on the compatibility of the existing equipment to support any new lighting apparatus. Given the number and range of columns throughout Essex, not all columns will be capable of supporting LED technology for instance each column would have to be structurally

tested to assess if the heavier weight of the LED equipment could be safely supported. The costs associated with fitting LED lighting are also higher, and where existing lighting may be converted the whole lamp head would have to be replaced.

It is a fact that LED technology is still evolving albeit its associated costs are gradually being reduced, and may become a more viable option in the future. Aside from costs, there are also technical issues for instance LED lighting has no adjustable optics, and so consideration must be given to the practical impact on the area to be actually lit.

The Group also noted that despite the reduced energy consumption of LED lights, an LED light switched off part night still consumes less energy than one left on all night.

Highways Lighting Officers advised the Group that the Council actively monitors developments in lighting technology, and that as the third largest lighting authority in the country suppliers tend to be proactive in supplying it with information about new products. There is also ongoing discussion with other UK lighting authorities. While the principle of PNL is established, the increasing costs of energy consumption will continue to receive attention, therefore the Council will develop business cases as appropriate once efficient technology emerges. However, any changes will be made as part of a managed programme for the adoption of new technology rather than adopting change without thorough consideration of the broader issues including the costs and consequences of updating existing equipment.

During the review attention was drawn to the fact that in February 2010 the County Council won a bid for a £164 million private finance initiative (PFI) project that would have included the costs of lighting column replacement and LED equipment across Essex. The scheme would have entailed huge expenditure from the Council itself aside from Government funding. However, the Government withdrew its funding in October 2010. Furthermore, it was confirmed to the Group that the PFI project would not have resulted in a change in the Council's stance on the principle of PNL.

The Group sought clarification on the costs associated with the installation of street lighting, and the following information was provided by the Highways Lighting Officers:

1. The capital cost of installing 50 lamp columns on a new estate under current policy using Essex Highways current contractual arrangements, would be £23,045. This does not include electrical connection costs. Actual developer's costs are unknown as this will be subject to their own commercial agreements
2. The capital cost of requiring those 50 columns to support LED technology from the outset using Essex Highways current contractual arrangements, would be £32,442. This does not include electrical connection costs. Actual developer's costs are unknown as this will be subject to their commercial agreements
3. The current benefits or otherwise of installing LED lighting in preference to more traditional street lighting include:

Positive	Negative
<ul style="list-style-type: none"> <li>Expected long life of LEDs</li> </ul>	<ul style="list-style-type: none"> <li>Relatively unproven technology</li> </ul>
<ul style="list-style-type: none"> <li>White light</li> </ul>	<ul style="list-style-type: none"> <li>LEDs expected to last 20 years (no actual experience on site). However, associated equipment does not last as long e.g. drivers, photocells etc.</li> </ul>
<ul style="list-style-type: none"> <li>Reduced Maintenance</li> </ul>	<ul style="list-style-type: none"> <li>Warranties normally involve LED lantern being returned to manufacturers with a set fee being paid to ECC. This fee is not expected to cover additional costs like traffic management</li> </ul>
<ul style="list-style-type: none"> <li>Reduced energy consumption</li> </ul>	<ul style="list-style-type: none"> <li>Need to keep spare LED lantern in stock for particular sites</li> </ul>
<ul style="list-style-type: none"> <li>Better control of light footprint</li> </ul>	<ul style="list-style-type: none"> <li>Vandalism and road traffic collisions still occur*</li> </ul>
<ul style="list-style-type: none"> <li>Instantaneous lighting</li> </ul>	<ul style="list-style-type: none"> <li>Routine maintenance still needs to be carried out e.g. cleaning</li> </ul>
<ul style="list-style-type: none"> <li>Reduced energy consumption</li> </ul>	<ul style="list-style-type: none"> <li>Columns in Essex may not be suitable to have LED lanterns fitted due to bracket type, additional weight of lantern compared to traditional lighting</li> </ul>
<ul style="list-style-type: none"> <li>Dimmable</li> </ul>	<ul style="list-style-type: none"> <li>Public perception of white light</li> </ul>
<ul style="list-style-type: none"> <li>Constant light output</li> </ul>	<ul style="list-style-type: none"> <li>Public reaction of directional lighting being installed (existing areas not being lit, motorway lighting being installed etc.)</li> </ul>
<ul style="list-style-type: none"> <li>Light footprint can be tailored to suit individual locations</li> </ul>	<ul style="list-style-type: none"> <li>High initial capital outlay</li> </ul>
<ul style="list-style-type: none"> <li>Light output of the lantern is expected to drop by only 10% over the lifetime of the lantern</li> </ul>	<ul style="list-style-type: none"> <li>White light available using existing technology</li> </ul>
	<ul style="list-style-type: none"> <li>Environmental impact on flora and fauna is unknown*</li> </ul>
	<ul style="list-style-type: none"> <li>Possible health risk to humans</li> </ul>
	<ul style="list-style-type: none"> <li>LED lanterns are dearer than traditional lanterns</li> </ul>
	<ul style="list-style-type: none"> <li>Thermal management issues</li> </ul>
	<ul style="list-style-type: none"> <li>Parts not interchangeable between manufacturers</li> </ul>
	<ul style="list-style-type: none"> <li>Light footprint not adjustable on site</li> </ul>
	<ul style="list-style-type: none"> <li>Lantern replacement instead of retro</li> </ul>

	fitting of lamp
	<ul style="list-style-type: none"> <li>• Individual design for the location and normally not interchangeable with other areas</li> </ul>
	<ul style="list-style-type: none"> <li>• Expected life of LEDs are not generally covered by the manufacturers guarantee for the lantern</li> </ul>

*\*The Group questioned the classification of these two points in the negative column.*

The lessons learned from pilots conducted in Essex using LED lighting include:

- Experienced failures when LED lanterns were initially installed
- LED technology has changed consistently over the years
- LED lantern design created public concern that they are were not working correctly
- Public comments on the “feel” of white lighting

#### - **Consultation**

In September 2013 when the Committee considered the roll out of PNL across the twelve remaining districts in Essex, arising from the call in of the decision to implement PNL in Braintree and Chelmsford, a key area of concern focussed upon Members’ differing expectations of the format of ‘consultation’. As the roll out continued it appeared that a different approach had been adopted in the way proposals were communicated for subsequent districts

The policy for rolling out PNL across Essex has been established for several years, and steps have been ongoing to install the chosen framework for its implementation such the CMS. Therefore the focus of more recent discussion with stakeholders has been upon the application of the exception criteria ie identifying those street lights that will remain lit through the night by virtue of the exception criteria.

While some lighting authorities like Hertfordshire County Council had chosen to roll out PNL across their areas as a whole and without extensive advance detailed consultation, ECC has rolled it out on a district by district basis during the autumn 2013/ winter 2014 months in line with the stated aims of the project. The acquisition of the CMS does enable the County Council to vary where lights may or may not be switched off rather than taking a blanket approach across the whole county, an approach that has been adopted by some other local authorities without that facility. It was estimated that 80% of County Council lighting columns would be switched off between midnight and 5 am, leaving 20% of its lighting remaining on throughout the night.

There was some criticism arising from an impression that a number of local councils had had only three weeks in September 2013 to respond to proposals for their areas

following correspondence sent to all County Councillors, Essex MPs, Leaders and Chief Executives of Borough and District, Town and Parish Councils, and the Emergency Services. In that letter the Cabinet Member confirmed that he would welcome any suggestions highlighting areas that were thought to meet the exception criteria, and those views would be used to inform his final decision. Plans would be published on the ECC website in advance of the switch over to PNL. Where people felt that street lights should be left on all night they were asked to email the address noting the location of the lights (including the street and settlement name) and reason why it was felt the light(s) met the exception criteria. However, parish councils have made their dissatisfaction known, in that they could read the exception criteria, but did not know how they would be applied (a layman would not necessarily understand or be able to distinguish what, for instance, was a remote alley linking residential areas, or a major transport hub?)

In response to criticism about the 'consultation process' Councillor Bass has emphasised that it has been well publicised for several years that ECC was taking steps to implement PNL. Indeed as an early pioneer in this matter Essex has attracted ongoing media attention not only locally but across the country with other councils now moving ahead more quickly in their introduction of similar schemes. During the intervening time this County Council has also been in ongoing discussion with interested stakeholders including local councils and the Police on related matters including the development of the exception criteria.

All Essex Councils have had opportunities over the longer term to come forward with locations where they wanted street lights to be exempt from PNL. The later three week consultations he saw as an additional 'check' opportunity, and it was possible that there had been acquiescence on the part of some Councils to address the roll out of PNL in their areas. Regardless of what publicity may have been given, public feedback had been received from residents suggesting some awareness of the proposals. It also appeared that there had been an ECC expectation that the borough, city and district councils would raise awareness with residents about the project locally, though the Group saw no evidence they had been asked to do this and few had done it. Most had simply been informed.

The Cabinet Member's published final decisions have included more detailed information on the individual districts, and feedback/ response to consultations. It was confirmed that feedback to consultation and application of exception criteria is evaluated by the professional lighting engineers taking into account technical and legal considerations, and consistency across county.

Aside from the experience gained from the introduction of PNL in Maldon and Uttlesford, the choice of continuing with the implementation of the project in Braintree and Chelmsford had been useful. Both those areas had provided pertinent information because they have a mixture of both large urban and rural communities, and variety of town centres. Councillor Bass said that consultation with those Councils had been going on for some time until the point had been reached when he felt it would be more beneficial to implement the PNL and to learn from practical experience given the flexibility provided by CMS to amend lighting at individual locations if deemed appropriate.

The purpose of the later stages of the consultation process was not to establish whether or not PNL should be implemented across individual areas, but rather to enable parties to come forward to identify particular additional locations where the exception criteria might apply for lighting to remain on throughout the night post implementation. Final decisions would be made on the basis of proven evidence rather than perception or hearsay. The control and flexibility provided by the CMS will enable the Council to amend lighting proposals at specified locations if deemed appropriate. However, some requests would not be acceded to where they fall outside the exception criteria for instance the lighting of estate roads and footway links.

As part of the PNL roll out in individual districts, maps had been intended to illustrate the ownership of individual street lights, and those ECC lights where the exception criteria had been applied. The timing and availability of those maps had been dependent on the volume of work entailed in their production, the timing of representations received and consequently the identification and plotting of any additional lights that would remain lit, as well as issues associated with having to produce multiple maps to be able to produce the relevant information. The maps were made available on the Council's website. While it was acknowledged that the publication of plans was close to the date for implementation, the value of the maps was drawn into question. While residents may be more interested in the locations of those lights being switched off, they did not necessarily require maps to understand information on those lights that may or may not be subject to PNL. On the other hand, parish and town councils would have found it easier to comment on the basis of exact information as to the intended status of particular streets, paths, or junctions, rather than against published criteria, whose effect was uncertain. It was only when the maps were published that one could see how the criteria were being applied.

- **The Group's consideration of the outcomes of the recommendations of the original Scrutiny Report**

The original scrutiny report produced by the SSCPSC contained thirteen recommendations that are set out below. Although the Cabinet Member's response was captured orally at that Committee's meeting in July 2010 the Group was mindful that things may have changed in the intervening years.

The recommendations are set out below together with an up to date comments in italics based up evidence received during this investigation.

- 1. The Council should aim to achieve savings of up to 70% of the current carbon emission footprint and thus of the lighting energy bill, principally through the use of new technology, the negotiation of contracts related to actual rather than unmetered usage, and also the turning off of any unnecessary street lights.** This should be set as a target to be achieved within a set timescale (possibly three years).

*A key aim of the roll out of PNL across Essex remains to reduce energy consumption/ bills and carbon emissions as detailed elsewhere in this report.*

*With particular reference to the negotiation of contracts where the Council pays for metered energy consumption, the Group learned that it is likely for the foreseeable future that energy bills will continue to be calculated on a monthly basis. Aside from the fact that the use of metering is controlled by legislation, there has not been any impetus shown by energy companies or other local authorities nationally to move away from current assessment/ invoicing practice. It was confirmed that although the ECC CMS can be used to inform the energy consumption calculations, it is not a metering tool. There are a variety of different types of lighting column in Essex, which means that they have different ratings and consumption. Nevertheless it was acknowledged that if metering is introduced in the future, the CMS would be used to assist in that process.*

**2. The Council should implement the programme to reduce the emissions and cost of ECC and local council owned and operated street lighting across the whole county.**

*The implementation of PNL across ECC controlled street lighting will be complete in Spring 2014, and has coincided with the installation of the CMS.*

**3. Any changes should be implemented across an agreed timescale. Given the location of the pilot areas, the Council might decide that a swathe across the centre of the county (to include, therefore, towns the size of Chelmsford and Braintree) should be the first area to be reviewed and converted to new technology, such that its operation in a range of settlements wider than that in the pilots could be monitored.**

*This was done. Braintree and Chelmsford were chosen to be the first areas to be converted to the new technology since the original pilots in Maldon and Uttlesford. The lessons learned from the consultation in those districts were also used to inform the subsequent consultation and roll out of PNL to other districts.*

*The installation of the CMS has necessitated every lighting column (128,000 in total) being retrofitted with equipment capable of communicating with the central system. Therefore the timing of the PNL project has reflected the steps that have had to be taken to achieve its installation and operation.*

**4. Whilst a normal turn off time of midnight to 5 am GMT seemed reasonable, this might not be appropriate in all areas and the Council should therefore be willing to agree a level of flexibility to meet any clearly defined and specific local needs in relation to part night operation and/or dimming.**

*In practice, the Cabinet Member has reiterated on a number of occasions that he has responded to Members as part of the call in of PNL decisions that the current roll out is only the first stage in the process, and its impact will be reviewed after it has been in operation for a while. A limited number of changes were agreed following the call-in process. A number of timing variations may be considered where there may be evidence to confirm that there is a local need.*

- 5. Before any changes were proposed for a town or village, the parish or town council (District Council for unparished areas) should be invited to express its views on what lights it felt could appropriately be dimmed or turned off. The local Area Forum should also be consulted. The County Council would seek to further these views where possible, but the final decision should always rest with the County Council, as the lighting authority.**

*This was done, though Area Forums were abolished in 2011. In practice, ECC has sought the views of local councils and other stakeholders on the application of the exception criteria, and the responses are set out in the reports accompanying the Cabinet Member decisions.*

*The notes of the informal meeting for the call in of the decisions for the implementation of PNL in Castle Point and Epping Forest districts confirm that 'The current roll out of the implementation of part night lighting is the first stage in the overall development of street lighting in Essex, and its consistent application would enable people to become accustomed to it in practice and potentially change attitudes in the longer term. Its impact will be kept under review and various street lighting trials will be conducted to assess how the service may be developed in the future eg new technology, lighting standards. Nevertheless Councillor Bass reiterated that in the first instance he intended that street lighting should be switched off between midnight and 5 am, and once implemented fully he would consider further flexibility in street lighting arrangements. However, any decisions on changes would have to be based on evidence.'*

- 6. Once a level of lighting had been agreed by the County Council under (4) and (5) above, the local council (parish or town, but District for unparished areas) could determine that some lighting additional to the County Council decision was required, but it would be expected to reimburse to ECC the additional costs incurred. It is expected that this power would be used sparingly: ECC should be able to refuse patently unreasonable requests.**

*The Cabinet Member has confirmed that the roll out of PNL is limited to ECC controlled street lighting.*

*When Councillor Pond had called in the Cabinet Member decision to implement PNL in Epping Forest District, he had challenged the lack of any mechanism for local bodies to pay for continued all night lighting, and at the meeting he asked why there was no provision to maintain lighting at Borough and District Council's own expense.*

*Councillor Bass had responded that 'Essex County Council has a statutory responsibility for highways street lights whilst amenity lighting came under the auspices of district and parish councils. Under these circumstances it was considered that it would become confusing if other bodies paid for lights they are not responsible for. Furthermore there are broader costs associated with street lights aside from energy costs, which would need to be paid for proportionately and could create more confusion in terms of accountability.'*

*Further Group discussion on this matter took place and is reflected in the Conclusions section of this report.*

- 7. It was imperative that any changes proposed should be explained to local residents prior to implementation.**

*ECC has released on an ongoing basis various press releases about PNL, which have been sent to Essex media, papers and broadcast, and Borough and District contacts among others. Information has also been published on the Council's website. Despite that fact there has been criticism about the lack of understanding across the community and other councils about the implementation of PNL, and its implications.*

- 8. As a matter of policy, the Council should not seek to introduce street lighting in any area where it did not already exist in October 2009, with the exception of new estates and developments, where any lighting should be operated from the start as part of the central management system.**

*It was confirmed that any new lighting, that the Council is aware of, has been installed as part of a new estate/development or major project. Where possible these lights have been installed with the correct CMS equipment. However, some schemes may not be covered as the supplier of the system was not known until the tender process had been completed.*

- 9. The Council should review the level of lighting on all roads which were once bypasses, main routes, or ring roads but which themselves had now been bypassed or supplanted.**

*It was confirmed that as part of the roll out of PNL across Essex all County Council owned street lights had been reviewed.*

- 10. The Council should consider adding the following to the pilot area exception criteria: (i) pedestrian routes to and from transport facilities such as railway and Underground stations which have services arriving after midnight; (ii) Strategic Diversion Routes as nominated by the Highways Agency; and routes where no footpath exists on either side of the road.**

*In practice, the exception criteria has been developed taking into account experience learned from implementing PNL elsewhere, coupled with consultation upon its application in Essex.*

*It was confirmed that the two situations set out in the recommendation have not been added formally to the exception criteria. However, where representations have been made they have been duly considered.*

- 11. The Cabinet Member should prepare and submit to the Cabinet as soon as practicable a Business Case for the introduction of appropriate elements of the new technology into the county. This new**

**technology would include a central computer managed, wirelessly-connected system which would allow for dimming during (variable) hours of low footfall rather than switch-off at a countywide fixed time, with immediate switch on by request of the emergency services, and should also include resident activated switch-on by PC or text when an event, for instance, was due to finish in dark or dimmed hours.**

*In practice, the Cabinet approved the acquisition of the CMS in 2011 based upon the Business Case that was produced and its installation will be completed in spring 2014. During its investigation the Cabinet Member has confirmed on various occasions that the roll out of PNL is the first stage of the project, and over time some modifications may be made if appropriate. However, any modifications would have to be compatible with the large number and variety of lighting fixtures in situ and the development of technology notwithstanding the suitability of proposals.*

*It was confirmed that the business case submitted and approved for the introduction of the central management system covered the matters set out in the recommendation. However, a resident activated switch is currently not commercially available.*

- 12. If the trial of the new technology in Great Chesterford was deemed insufficient to prepare a viable business case, then the Council should consider implementing a wider trial of it in one or two larger population centres.**

*The Great Chesterford trial had proven sufficient and a CMS purchased.*

- 13. The Council should vigorously encourage local councils and privately owned retail and commercial outlets across the county to review their current levels of street and premises lighting and encourage them to support the County Council in reducing the carbon footprint and cost of lighting overall.**

*It was confirmed that no action has been taken to encourage private businesses to review the levels of lighting on their premises as part of the street lighting project. However, the County Council through its 'Our Environmental Statement' commits ECC to 'Encourage other public sector partners, community groups and businesses in local environmental projects'. A report is submitted annually to the Department for Energy and Climate Change through the Corporate Green House Gas Report, of which ECC street lighting forms an element. Whilst carbon reduction can be evidenced it could never be measured as a reduction amongst local councils and privately owned retail and commercial outlets, hence the reason for the use of the wording 'encourage them to support...'*

*Given the roll out of PNL has now taken place, the Group considered that it would be an opportunity to pursue the proposal set out in line with recommendation 13. The proposal has implications for more than one cabinet portfolio, namely those covering carbon reduction and highways. Therefore **it was recommended that** the Cabinet Members for Waste and Recycling, and Highways and Transportation take positive action to launch a major publicity campaign to persuade local councils and private*

*firms to review their current levels of street and premises lighting in order to encourage them to support the County Council in reducing the carbon footprint and cost of lighting overall.*

## **Conclusions and Recommendations**

The Group's terms of reference for this review were agreed at the outset by the PSEGSC, and are made up of two components namely the consultation process and how PNL has been implemented in the light of the findings of the original SSCPSC scrutiny report including the application of new technology.

- **Roll Out of PNL across Essex County Council**

The principle of PNL in Essex was first established with the successful pilot projects undertaken in Uttlesford and Maldon District, which were initiated in 2007, and was underpinned by the business case and purchase of the CMS in 2011. While acknowledging that the roll out of PNL throughout Essex by the County Council has been known about for some time, the Group felt that public awareness was probably quite low and should have been given greater priority to ensure that there was greater understanding of the forthcoming operational changes to street lighting arrangements across the whole county. It was also noted that in the intervening period since 2007, there have been changes in the elected membership of the County Council and other local authorities. Consequently it would have been beneficial to have ensured that successive councillors had also been provided with a better understanding of street lighting and proposals for PNL.

In conclusion the Group considered that in 2013 there had been an unmet need to take positive steps to re-launch the PNL policy, and in its view this should have been done by presenting the delivery scheme to this Committee, by briefing County Councillors more fully, and more effective consultation with partner authorities.

### **Recommendation 1**

**That the lessons learned from the feedback on the way that the roll out of PNL across Essex was communicated to the public and local councils be taken into consideration to improve the way that projects are launched in the future.**

- **Energy Consumption**

A key aim of PNL is to reduce the costs of energy consumption and carbon emissions. With reference to the original Scrutiny Report the Group reviewed the current situation in respect of metered energy consumption, and learned that energy bills continue to be calculated on a monthly basis albeit the CMS will provide more accurate information upon the Council's street lighting stock.

In conclusion, the Group considered that this matter should be kept under ongoing review.

## **Recommendation 2**

**That any potential changes to metered energy supply be kept under constant review, and implemented when it becomes permissible and when clear savings would result.**

- **Application of Exception Criteria**

The general presumption is that all ECC street lights will be subject to PNL unless covered by the exception criteria that have been established. A part of the criticism of the way that the roll out has been handled is the uncertainty around the application of the exception criteria and the definition of some of the provisions.

Throughout the roll out process it has been stressed that people could submit requests to the County Council for certain street lights to remain lit throughout the night, or for other operational variations. Although the Group acknowledged that this option existed, there was not a transparent procedure on how requests would be handled and what information was required to support requests. In some instances individuals had submitted requests that lighting columns remain lit throughout the night, and had not received any advice on how that information had been taken into account and/or experienced a delay in receiving a response.

The Group considered that a more effective and transparent approach should be adopted to the handling of requests for the application of any variations to PNL to specific street lights. This could be achieved by having a published procedure to:

1. Explain the provisions of the exception criteria, with clear explanation of the terminology used and how the criteria will be applied and a final decision made.
2. Explain what information should accompany any request for a variation of PNL in order for it to be considered in terms of the exception criteria.
3. Confirm the process and timescale for the consideration of requests.

The procedure should be communicated to all parishes, districts/borough/city councils and via print, broadcast and social media.

## **Recommendation 3**

**That a formal procedure be adopted for the consideration of requests for the variation of PNL scheme at specific locations.**

With reference to the recommendation 10(i) of the original Scrutiny Report and the current exception criteria, the Group considered that there was some ambiguity around some of the provisions, which should be addressed. For instance the criteria should contain clarification of terms such as 'Remote footpaths and alleys linking residential streets', 'significant routes' and 'mix of development'. Furthermore the current exception criteria omits reference to variations that will be applied in the case of pedestrian routes to and from transport facilities such as railway and underground stations that have services after midnight.

#### **Recommendation 4**

**That the exception criteria be amended so that the provisions are more transparent, and reflect variations that may have become permissible by virtue of variations allowed during the course of the recent roll out of PNL across Essex.**

- **LED Technology**

The Group was mindful of the application of new technology associated with street lighting, and the significant benefits that could accrue as it is developed. Therefore Members wanted to reinforce the need for constant vigilance for improvements that could be achieved through the application of new technology.

#### **Recommendation 5**

**That the costs and benefits of LED lighting should be kept under constant review, and particularly its application when new lighting is installed as a part of any new development.**

- **Third Party Financial Contributions to the Costs of Street Lighting**

In the original Scrutiny Report recommendations were made in respect of third parties contributing to the costs of street lighting provision where there was local demand for additional lighting beyond that the County Council would support. However, that recommendation had not been acted upon.

While acknowledging the financial limitations upon all local council budgets, the Group nonetheless discussed the wishes of some districts to vary the implementation of PNL within their areas, and the variety of costs associated with street lighting aside from energy consumption itself including installation, repair and maintenance costs. With reference to past highways experience the Group discussed the possibility of whether agency arrangements could be introduced with local councils whereby those councils that wish street lights to remain lit throughout the night be empowered to manage and support that service.

The Group felt that there should be a means of creating a recharging formula based on the extra cost of energy between 2400-0500 hours with a component to recharge the additional costs of bulb replacement, in order that local councils who so desire could provide lighting outside the provisions of PNL.

#### **Recommendation 6**

**That the County Council implement a mechanism by 31 December 2014 whereby it provides a means for others to be recharged where there is a local wish for more variations to PNL that did not co-incide with exception criteria including a recharge for the extra cost of energy, and agency arrangements.**

- **Emergency Switch On Protocol**

During the course of the investigation attention was drawn to those situations where it might be appropriate for street lighting to be switched on at short notice in response to emergencies that might arise from time to time. For instance the bad weather and expected high tides experienced in November 2013, and a house gas explosion in Clacton.

The Cabinet Member has indicated that a protocol will be developed with the emergency services to address those situations where the CMS will be used to switch off PNL to accommodate local needs where emergencies have arisen. The Group was advised that protocols had been developed by some other lighting authorities.

Given the need for clear and consistent approaches to be adopted across the county, the Group considered that it was imperative that an Emergency Switch On Protocol be developed and adopted as soon as possible.

#### **Recommendation 7**

**That a protocol for limited area switch on at the request of the Emergency Services be developed urgently and no later than 31 December 2014, and a separate one for wide-area emergencies such as floods and high winds. Furthermore it is requested that those protocols be submitted to the Committee for its consideration.**

- **Reducing the Carbon Footprint**

A key tenet of the PNL project has been to reduce the effect of street lighting upon the Carbon Footprint across Essex, and the original scrutiny review proposed that the County Council should encourage local councils and privately owned retail and commercial outlets across the county to review their current levels of street and premises lighting to reduce the carbon footprint and cost of lighting overall. The Group considered that although no direct action has been taken to date as a result of the roll out of PNL, the proposal was still worthy of pursuit given its environmental implications.

#### **Recommendation 8**

**That the Cabinet Members for Waste and Recycling, and Highways and Transportation take positive action to launch a major publicity campaign to persuade local councils, public service providers and private firms to review their current levels of street and premises lighting in order to encourage them to support the County Council in reducing the carbon footprint and cost of lighting overall.**

- **Monitoring the outcomes of this scrutiny review**

It is proposed that the Cabinet Member responses to the above recommendations be reported to the Committee in Autumn 2014.

#### **Recommendation 9**

**That in respect of the all the above recommendations the Cabinet Members, as identified, be requested to provide an indication when action will be implemented and details of the action proposed at an early stage, or alternatively a clear indication why a recommendation will not be acceded to. A full Cabinet Member response to the Scrutiny Report would be sought for the Committee in Autumn 2014.**

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