

Click to enter



Campaign to Protect
Rural England
Standing up for your countryside

SHEDDING LIGHT

A survey of local authority
approaches to lighting in England

Acknowledgements

CPRE gratefully acknowledges the kind financial support of Thurstan Adburgham that made this study possible. The author of this report, Emma Marrington, also wishes to thank the 83 local authorities who responded to our survey about how they deal with lighting in their areas. Without them, this report would not have been possible.

Contents

Executive summary	2
About our survey	3
Lighting and CPRE	4
Planning, lighting and the law	6
Survey results and analysis, including CPRE’s view and recommendations:	
Local planning and lighting	8
Street light switch-off schemes	14
Street light dimming schemes	16
Crime and street lighting	20
Lighting types	22
New lighting in previously unlit areas	24
Conclusion	26
Recommendations	27
Appendix: CPRE lighting survey questions	28

Executive summary

The Campaign to Protect Rural England (CPRE) has long been a leading voice in the campaign against light pollution. We have a special interest in this issue: darkness at night is one of the key characteristics of rural areas and it represents a major difference between what is rural and what is urban.

But light doesn't respect boundaries; it can spread for miles from the source and blurs the distinction between town and country. Light spilling up into the night sky is also a waste of energy and money – local authorities were estimated to spend £616 million on street lighting in 2013-14¹ – and the lights can account for between 15-30% of a local authority's carbon emissions.

In 2012, CPRE welcomed the first ever planning policy on light pollution. This was contained in the National Planning Policy Framework (NPPF). To help us understand how local authorities are responding to this change, we decided to carry out a survey of English local authorities to find out more about their approaches to lighting.

The survey results have given us a better understanding of how decisions are made about lighting at the local level, including how lighting is dealt with in local planning and how local authorities are working to make street lighting more energy and cost efficient.

The key findings are:

- the NPPF policy to control light pollution does not appear to have made a real impact in local policies. Only six of the 49 local authorities who have a lighting policy said it was introduced due to the NPPF;
- local authorities can potentially save hundreds of thousands of pounds each year by either switching off street lighting in suitable locations between midnight and 5am, or dimming lights. These schemes can also reduce carbon emissions and save energy;

- local authorities told us that communities are far more supportive of street light dimming schemes than switching off street lights between midnight and 5am.

There has been a lot of progress in recent years in developing policies to control the use of lighting, both by the Department for Environment, Food and Rural Affairs and local authorities. Street light switch-off and dimming schemes have become increasingly popular as local authorities look for ways to save money and energy, and to reduce their carbon emissions. The reduction in light pollution is a welcome side effect of these schemes but it has rarely been the main motivation.

We believe that there is still a lot of potential to improve the way that lighting is managed in ways which reduce light pollution. More effective sharing of best practice between and within local authorities is an important way to take this forward.

As a result of the evidence presented in this report, CPRE makes the following recommendations:

- all local authorities should have a policy to control light pollution in their Local Plan, in line with the NPPF and the associated National Planning Practice Guidance (NPPG) on light pollution. This should include identifying existing dark areas that need protecting;
- local authorities should consider preparing a Street Lighting Policy, which could include Environmental Lighting Zones to ensure that the appropriate lighting levels are used in each zone, with very strict requirements applying in identified dark areas;
- we encourage local authorities to investigate how part-night lighting schemes (e.g. switching off between midnight and 5am) or dimming could work in their areas, including

examining the cost, energy and carbon savings. This should be done in full consultation with the local community;

- all local authorities who are switching off or dimming street lighting should monitor crime and accident statistics and consider taking part in the Institution of Lighting Professionals/ LANTERNS research project which aims to quantify any effects of changes to street lighting on road traffic accidents and crime;
- local authorities should give careful consideration to the type of Light-Emitting Diode (LED) lighting they use and consider the potential impacts that higher temperature blue rich lighting has on ecology and on human health;
- local authorities with responsibility for street lighting could set targets for replacing all their street and road lights with less light polluting types, such as full cut off flat glass lamps;
- new street lighting should be tested 'in situ' before a lighting scheme is rolled out across a wider area to ensure that it is the minimum required for the task and does not cause a nuisance to residents;
- local authorities should have a strong presumption against new lighting in existing dark areas, unless essential as part of a new development or for public safety reasons that have been clearly demonstrated;
- the Highways Agency should review the lighting section of the Design Manual for Roads and Bridges, which is used to design motorway and trunk road lighting, to ensure it remains relevant for local authorities.

¹ Department for Communities and Local Government 'Local authority revenue expenditure and financing England: 2013 to 2014 budget'

About our survey

In early 2014 (between January and February), CPRE carried out a survey of English local authorities to find out how they approach lighting in their areas. Up until now there has been a serious lack of information about how local authorities in England deal with lighting as part of the local planning process (e.g. new development), how they design street light switch-off or dimming schemes, and how they decide which street lighting to install in new developments or when replacing existing schemes.

CPRE worked with the Department for Environment, Food and Rural Affairs (Defra) and the British Astronomical Association's Campaign for Dark Skies (CfDS) in the development and design of the survey.

We sent our survey questionnaire to all county, district, borough, unitary and

city authorities in England (a total of 351 authorities) with detailed questions about:

- whether local authorities have adopted new or revised lighting policies as a result of the NPPF;
- the type of lighting that is used by local authorities and how decisions are made on whether to install new or replacement lighting;
- whether local authorities have introduced schemes for switching off street lights or installing dimming technology to offer varied levels of lighting during the hours of darkness.

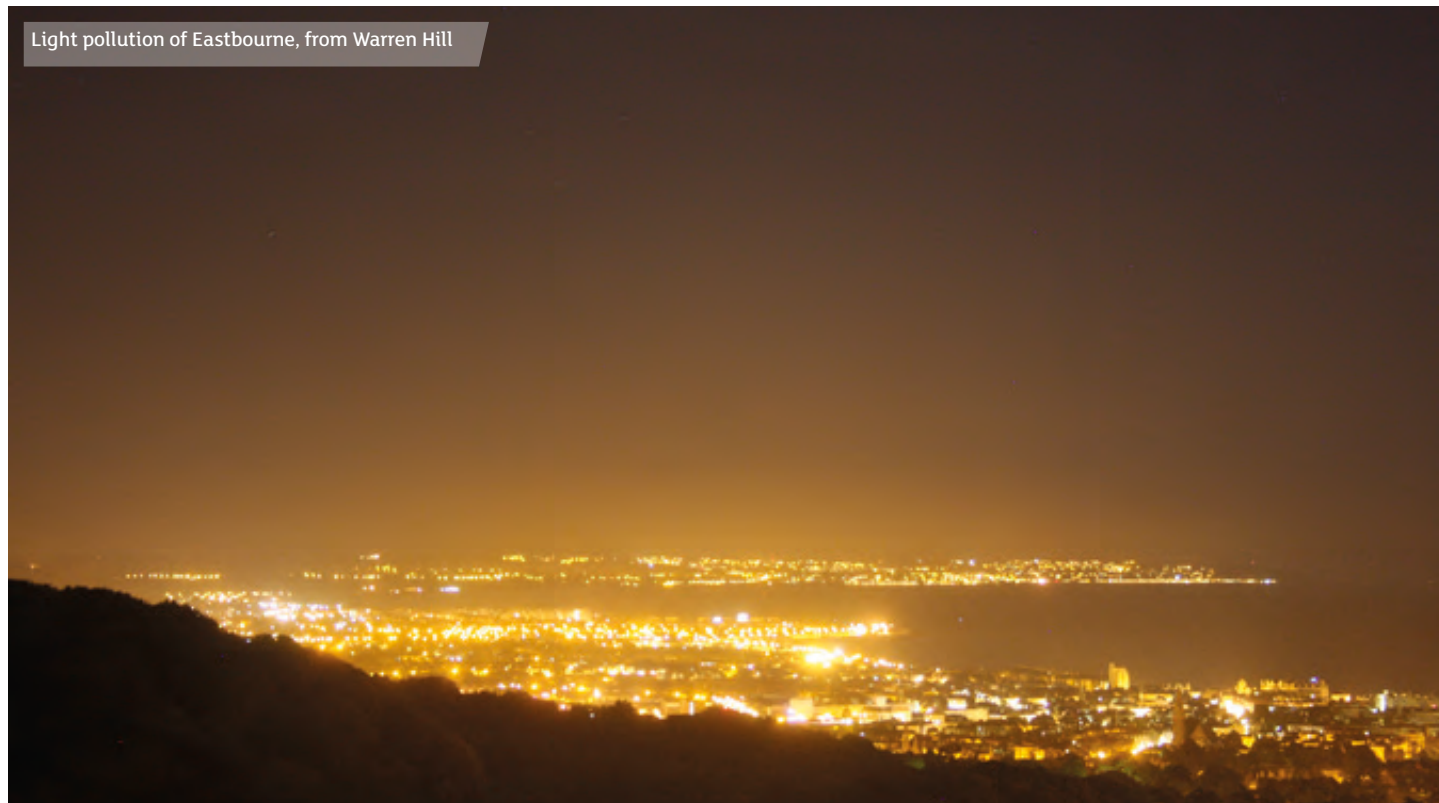
We received responses from 83 local authorities – including 17 county councils, 31 district councils, 10 metropolitan borough councils, 18 unitary authorities and seven London boroughs. This represents a 24% response rate. Responses were received from every English region.

In 2003, CPRE published maps of light pollution across the UK, as part of our *Night Blight!*² report.

We also carried out a short survey at the time, of 44 district and unitary councils and five county councils, to inform a section of the *Night Blight!*² report about lighting and local planning. Of the district and unitary councils surveyed then, 39% had specific light pollution policies in their Local Plan and 7% had some coverage of light pollution in other policies. Another 5% said they had included consideration of light pollution in the review of their plan, 9% were considering including it in the future and 5% had included guidance on the reduction of light pollution, although not a specific policy.³

This report is based on a far more comprehensive survey and creates a detailed picture of how local authorities are currently dealing with lighting issues.

Light pollution of Eastbourne, from Warren Hill



² CPRE *Night Blight!* (2003) <http://www.cpre.org.uk/resources/countryside/dark-skies/item/1986->

³ Despite the national planning system having changed dramatically since 2003, the local approach to planning and lighting is similar, which is why we refer to the short 2003 survey in this report.

Lighting and CPRE

'THE STREET LIGHTS ARE ONE OF THE REASONS I AM PLANNING TO MOVE HOUSE WITHIN THE NEXT FEW YEARS.'

The impact of light pollution

Light pollution is a generic term referring to artificial light which shines where it is neither wanted nor needed. In broad terms, there are three types of light pollution:

Skyglow – the pink or orange glow we see for miles around towns and cities, spreading deep into the countryside, caused by a scattering of artificial light by airborne dust and water droplets;

Glare – the uncomfortable brightness of a light source;

Light intrusion – light spilling beyond the boundary of the property on which a light is located, sometimes shining through windows and curtains.

Light pollution can also affect wildlife. Artificial light can interrupt natural rhythms including migration, reproduction and feeding patterns. For instance, man-made light is known to cause confusion to migrating birds, often with fatal outcomes. Exposure to artificial light, which simulates short nights, is known to induce early breeding in some species of birds. Another well-known example is the effect on the feeding behaviour of bats caused by insects clustering around outdoor light sources.⁴

There are also concerns about the effect of light pollution on people. Recent studies⁵ suggest that exposure to light at night can disrupt the body's production of melatonin, a brain hormone best known for its daily role in resetting the body's biological clock. Secreted primarily in the brain, and at night, melatonin triggers a host of biochemical activities, including a nocturnal reduction in the body's production of oestrogen. Research has shown that decreasing nocturnal melatonin production increases

an individual's risk of developing oestrogen-related malignancies, such as breast cancer.

In recent years, CPRE has carried out a variety of initiatives to find out more about light pollution, for example how excess light affects people's lives and views of the night sky.

Sources of light pollution

In 2010, CPRE worked with the Campaign for Dark Skies to carry out a 'Lighting Nuisance survey'⁶ to find out how light pollution is affecting people's lives. Almost 1,400 people took part and the results showed the range of sources that cause a light nuisance; road lighting was cited as a source of light pollution by almost nine out of ten respondents, along with almost eight in ten people who mentioned the orange glow of older streetlights.

The main sources of light pollution mentioned in the survey were:

Road lighting	89%
Domestic security lights	79%
Old street lights (> 5 yrs old with orange glow)	77%
Businesses	56%
Sports grounds	53%
Supermarkets	41%

Many of the people who took part in the survey said they were angry and frustrated about the problems caused by light pollution. Some people responding to the survey had moved house to escape from the problems caused by light intrusion, one respondent said that 'The street lights are one of the reasons I am planning to move house within the next few years.'

The survey revealed that:

- 83% had their home view of night sky blighted by light pollution;
- 50% of the respondents had their sleep disrupted by light spilling in to their bedrooms;
- 68% have fitted thicker curtains;
- 37% told us that excess lighting shines across their drive or garden;
- 30% said that light intruded into another room in their property;
- 71% of people had not complained to anyone about the lighting;
- 24% had complained to their local council but only 27% of those said their council had been supportive.



Canbury Park Road, Kingston-upon-Thames, by day and by night

⁴ Royal Commission on Environmental Pollution *Artificial Light in the Environment* (2009) https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/228832/9780108508547.pdf.pdf

⁵ British Astronomical Association's Campaign for Dark Skies *Blinded by the Light? A handbook on light pollution* Chapter 4 'Light pollution and human health' Steven W Lockley Ph.D

⁶ CPRE *Lighting Nuisance survey* (2010) <http://www.cpre.org.uk/resources/countryside/dark-skies/item/1974-lighting-nuisance-survey-2009-10-report>

Night Blight maps

In 2003, CPRE published satellite maps of the UK in 1993 and 2000 which showed, for the first time, how much light was spilling up into the night sky. The data revealed that light pollution increased by 26% in England and 24% across the United Kingdom as a whole. The maps showed the brightness of night time lights at both a national and regional level.

The maps were created by dividing the land surface into small pixels less than a mile across and giving them each a value – from 0 to 255 – according to the accumulated brightness of lights within each square. The scale was then divided into five bands – from darkest blue, to two lighter blue shades, to yellow then red (see the key alongside fig 1). Red shows the brightest pixels, yellow corresponds to sprawling suburbs, towns and lit stretches of roads and the darkest blue covers the most remote, thinly populated areas.

Across England, 26% of all pixels, representing just over a quarter of the nation's total land area, had shifted up a brightness band while only two per cent had shifted down a band. The biggest change of all involved the two lighter blue bands, with great tracts of the lowland countryside becoming more brightly lit at night. The proportion of England's land area within the darkest band fell from 15% in 1993 to 11% in 2000.

Counting stars to monitor light pollution

In 2010, CPRE and the Campaign for Dark Skies organised a Star Count to encourage the public to get engaged with the campaign against light pollution. We asked people to count the number of stars they could see within the Orion constellation and send us their result. We then created a map of star counts around the country to illustrate how light pollution affects people's view of the night sky. We also ran the event in 2011, 2012 and 2013 and the results have been

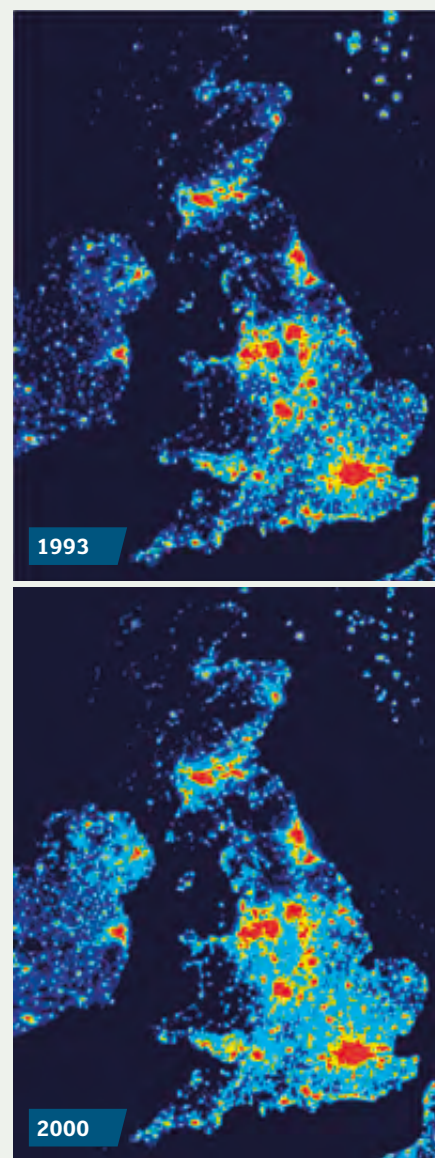
broadly consistent each year. Around 8,000 star counts have been submitted since the survey began. Star Count 2014 revealed that only 4% of participants said they could see more than 30 stars, which the British Astronomical Association deem to show truly dark skies, compared with 59% who saw fewer than ten stars in Orion – a level which indicates severe light pollution.

CPRE county branches and the light pollution campaign

CPRE has branches in every English county and many of them work locally in the campaign against light pollution, for example:

- CPRE Norfolk engages with public and private sector organisations and individuals in order to prevent unnecessary, excessive and inappropriate lighting in the county. The branch have organised conferences on the issue and have also recognised good practice, giving CPRE Norfolk Awards to sensitive lighting schemes.⁷
- CPRE Isle of Wight presented a 'Good Lighting Award' in 2013 to the island's highway service provider for their work to enhance or replace all street lights across the island by 2016, converting existing lights to energy-saving, carbon efficient LED units. The branch is also part of the 'DarkWightSkies'⁸ initiative which aims to gain 'Dark Skies' status for the Isle of Wight.
- Friends of the Lake District, CPRE's representatives in Cumbria, ran a pilot project in 2011/12 called *See the Stars*⁹, funded by the Lake District Sustainable Development Fund. The project aimed to interest people in the night sky and raise awareness of how light pollution is spoiling our view of the stars, as well as wasting energy and money. As part of this work they produced a 'Stargazing Guide for Beginners' leaflet.

FIG 1 CPRE'S LIGHT POLLUTION MAPS



KEY

Dark Blue	0 – 1.7
Light Blue	1.700000001 – 50
Yellow	50.00000001 – 150
Orange	150.0000001 – 240
Red	240.0000001 – 255.163325

⁷ CPRE Norfolk: <http://www.cprenorfolk.org.uk/campaigns/light-pollution/>

⁸ CPRE Isle of Wight and the DarkWightSkies initiative: <http://www.darkwightskies.com/>

⁹ Friends of the Lake District: <http://www.fld.org.uk/see-the-stars.html>

Planning, lighting and the law

National planning

In March 2012, the Government introduced the first ever policy to control light pollution in the NPPF. CPRE welcomed this as a significant step forward. Paragraph 125 of the NPPF states: 'By encouraging good design, planning policies and decisions should limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation.' CPRE had campaigned for many years for planning guidance to control light pollution, so we welcomed this important move.

National Planning Practice Guidance has also been published (in March 2014) on how local authorities should address light pollution¹⁰. This Guidance sets out how the Government defines the link between lighting and planning:

'Artificial light provides valuable benefits to society, including through extending opportunities for sport and recreation, and can be essential to a new development. Equally, artificial light is not always necessary, has the potential to become what is termed 'light pollution' or 'obtrusive light' and not all modern lighting is suitable in all locations. It can be a source of annoyance to people, harmful to wildlife, undermine enjoyment of the countryside or detract from enjoyment of the night sky. For maximum benefit, the best use of artificial light is about getting the right light, in the right place and providing light at the right time.

Lighting schemes can be costly and difficult to change, so getting the design right and setting appropriate conditions at the planning stage is important. In particular, some types of premises (including prisons, airports and transport depots where high levels of light may be required for safety and security reasons)

are exempt from the statutory nuisance regime for artificial light, so it is even more important to get the lighting design for these premises right at the outset'.

The Guidance goes on to explore which factors should be considered when assessing whether a development proposal might have implications for light pollution and which factors are relevant when considering where, when and how much the light shines and possible ecological impacts. CPRE applauds the Department for Environment, Food and Rural Affairs for its proactive work on this issue and its willingness to take on board the views of CPRE in creating this Guidance. We hope that it will encourage more local authorities to address light pollution by adopting effective local planning policies in their Local Plans and associated local guidance.

IF SOMEONE'S LIFE IS BEING NEGATIVELY AFFECTED BY EXCESSIVE LIGHT THIS COULD BE DEEMED AS A LIGHTING NUISANCE

One of the aims of our survey was to find out whether the NPPF policy to control light pollution has made a difference to how lighting is dealt with by local authorities.

Lighting and the law

CPRE welcomed the first UK law tackling light pollution which came into force in 2006 under Section 102 of the Clean Neighbourhoods and Environment Act (2005)¹¹. Exterior lighting joins noise and smells on the list of things that can be treated as a statutory nuisance; things against which local council Environmental Health Departments can take legal action. The law makes 'exterior light emitted from premises so as to be prejudicial to



Inefficient car park flood lighting in Eynsford, Kent

health or a nuisance' a criminal offence.¹²

This law does not tackle all forms of light pollution, only incidents of particularly bad lighting from some types of premises which cause people real nuisance. But CPRE would like to see it used, to raise awareness of the issue and to help people who are suffering from severe light pollution. If someone's life is being negatively affected by excessive light this could be deemed as a lighting nuisance, although it may not fall under the official criteria for a statutory nuisance. For example, if a street light is shining into a bedroom window it can affect quality of sleep but it is exempt from the statutory nuisance criteria.¹³

¹⁰ Planning Practice Guidance: Light pollution <http://planningguidance.planningportal.gov.uk/blog/guidance/light-pollution/>

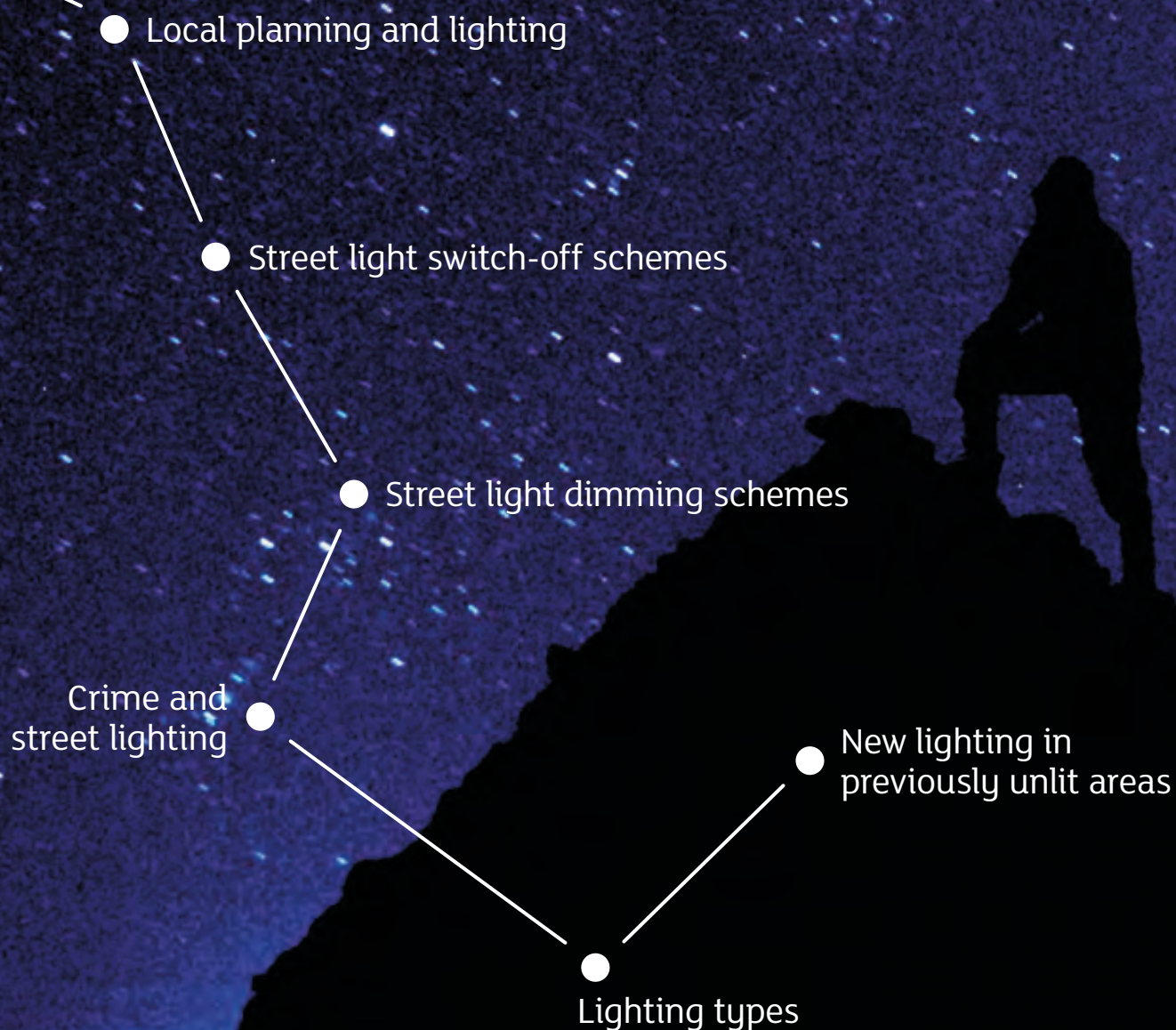
¹¹ Clean Neighbourhoods and Environment Act (2005) <http://www.legislation.gov.uk/ukpga/2005/16/part/9/crossheading/statutory-nuisances>

¹² Morgan-Taylor, M. (2012) *The Legal Methods of Controlling Light Pollution in the UK*. in Conference proceedings, pp 257-276, 19 September 2012, Seoul, Korea <http://www.sustainablehealthybuildings.org/PDF/8th/martintaylor.pdf>

¹³ CPRE Light pollution as a statutory nuisance: a how to guide (2014) <http://www.cpre.org.uk/resources/countryside/dark-skies/item/3545-light-pollution-as-a-statutory-nuisance-a-how-to-guide>

Survey results and analysis

The results and analysis are divided into six sections which include CPRE's view and recommendations:



Local planning and lighting

Find out more about how local authorities deal with lighting, both in planning policies and decisions about planning applications.

We asked local authorities to tell us about how they dealt with lighting in connection with their planning responsibilities, including policy making and when making decisions on planning applications. Out of the 76 local authorities who responded to the question on whether they had a lighting policy in either their Local Plan or related document, 49 of them (65%) said they did have a policy on lighting. This includes 12 county councils, 16 district councils, four London Boroughs, seven Metropolitan Boroughs and ten unitary authorities. This is an improvement compared with the survey we carried out in 2003. At that time only 39% of respondents reported they had specific light pollution policies in their Local Plan and 7% had some coverage of light pollution in other policies.

41 of 47 local authorities responding said that it was the continuation of a lighting policy they have had for some time, this compares with six who said it was an entirely new policy due to the NPPF. 16 said they had adapted the lighting policy to comply with the NPPF whereas over two thirds (34) had not adapted their policy.

There was a wide variation in the length of time that local authorities have had lighting policies in place, ranging from under a year to some which had long-standing policies which have evolved over a number of years. The London Borough of Barnet, for example, has had a policy since 2006, which has been adapted to become part of its Supplementary Planning Document on Sustainable Design and Construction. This was adopted in April 2013 and states, in policy 2.4B:

Light Pollution – Ensure that the design minimises adverse impacts from the lighting of a building or external areas.



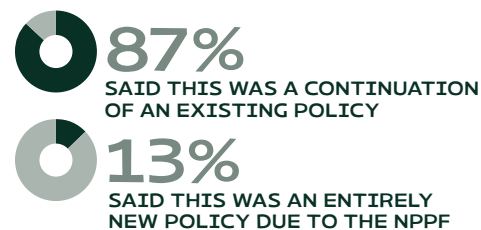
Light pollution is defined as being any light emitting from artificial sources into spaces where this light is unwanted, such as spillage of security lights surrounding car parking areas into residential accommodation such as bedrooms, where this causes inconvenience to their occupants. Design solutions to control the effect of new lighting may include the type of technology used to control the distribution of light and minimise glare. Other solutions include screening, shielding, reducing lantern mounting heights and managing the operating hours of the light source. The visual impact of light fittings should also be considered.

Five of the local authorities who responded to the question about how long they have had a lighting policy said that it had been in place for less than two years. An example is Stafford District Council whose Local Plan is currently under examination. It includes a policy under the design section (N1) which states that 'To secure enhancements in

design quality, development must, at a minimum, meet the following principles, including: Require the design and layout to take account of noise and light implications, together with the amenity of adjacent residential areas or operations of existing activities.'

Hampshire County Council was one of the first local authorities to introduce a street lighting policy in 1994. The County Council was hailed by the Institution of Lighting Professionals (ILP) as setting the standard for other local authorities to achieve. The Hampshire policy is now in its 4th edition¹⁴ following a comprehensive review in 2009. The document aims to strike a balance between the aspiration to reduce the effect of artificial light intrusion on the night-time environment and the need to provide the necessary illumination to enhance the safety of highway users. The county policy also includes Environmental Lighting Zones (as recommended by the ILP) and divides Hampshire into four zones (see fig 2).

¹⁴ Hampshire County Council, Street Lighting Policy Document, 4th Edition <http://www3.hants.gov.uk/street-lighting-policy-100930.pdf>



Environmental Lighting Zones

Zone E1

National Parks, Areas of Outstanding Natural Beauty, Sites of Special Scientific Interest and other Dark Areas

The general presumption is that street lighting should not be provided in Zone E1 areas unless the County Council, or the Local Lighting Authority, can demonstrate an overriding road safety issue which cannot be overcome by other means.

Zone E2

Areas of Low District Brightness (Rural Areas outside Zone E1)

The general presumption is that street

lighting should not be provided in Zone E2 areas unless the County Council, or the Local Lighting Authority, deem it to be in the best interest of the local community from either a road safety or a personal security point of view.

Zone E3

Areas of Medium District Brightness (Low Crime Urban Locations)

Roads falling into this category include all urban residential local access roads and footpaths (as defined by "Well Lit Highways") where reported crimes, per 1000 households, are less than, or equal to, the County average.

As a general rule, roads in Zone E3

areas shall be lit to the levels originally provided at the time of adoption. For the sake of clarity, replacement columns shall be installed on a 1:4:1 basis with new columns being positioned at the rear of the footway and on property party lines wherever possible.

Zone E4

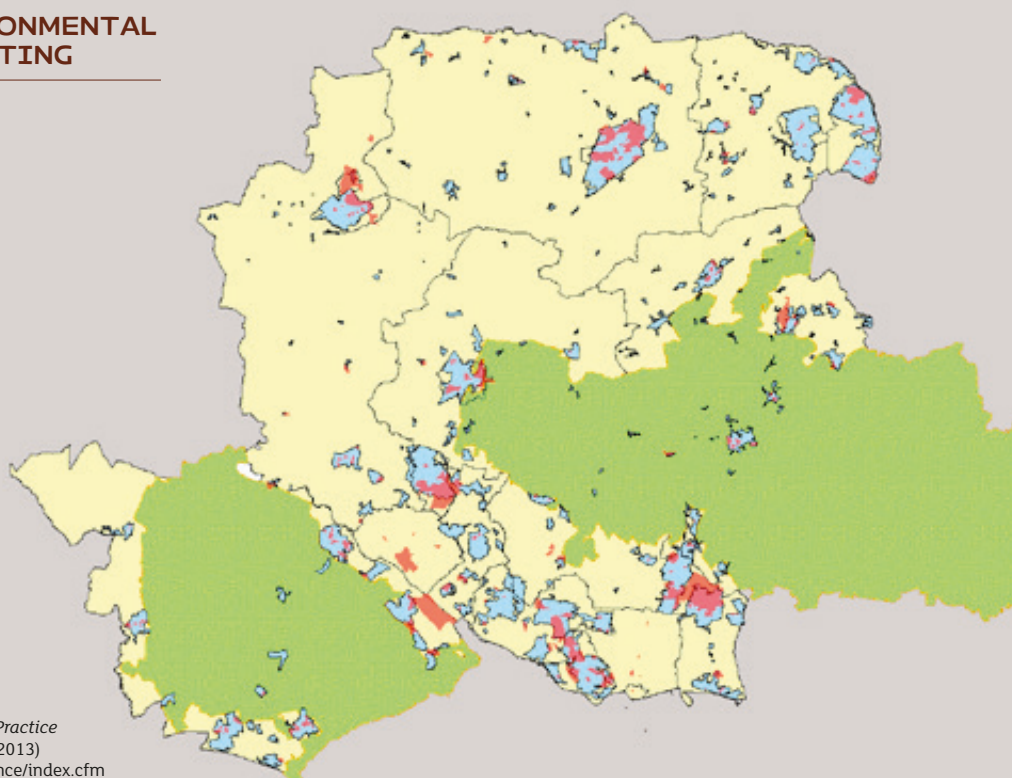
Areas of High District Brightness (Major Traffic Routes, High Crime Urban Areas, and Town Centres)

Major traffic routes are defined as all A, B and C class roads and contain all strategic routes, main/secondary distributor and link roads as defined in "Well Lit Highways".¹⁵

FIG 2 HAMPSHIRE ENVIRONMENTAL ZONES FOR STREET LIGHTING

KEY

- Zone E1
- Zone E2
- Zone E3
- Zone E4

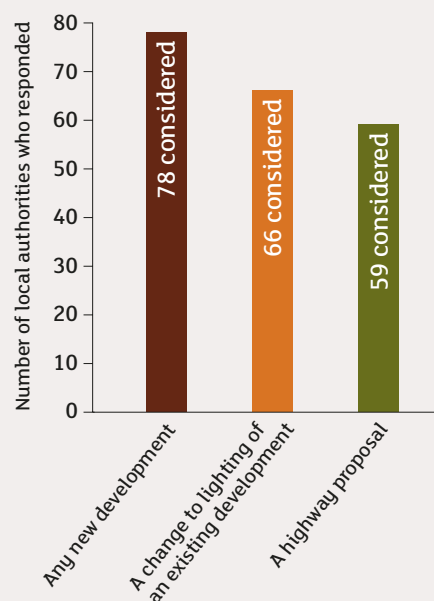


¹⁵ UK Lighting Board *Well-lit Highways: Code of Practice for Highway Lighting Management* (Updated 2013)
<http://www.ukroadsliaisongroup.org/en/guidance/index.cfm>

Consideration of lighting impact

The survey asked local authorities what type of developments they considered the lighting impact of; new development, change to lighting of existing development or highway proposals. 80 authorities responded (see fig 3).

FIG 3 WHAT TYPE OF DEVELOPMENTS DO LOCAL AUTHORITIES CONSIDER THE LIGHTING IMPACT OF?



Brighton and Hove City Council said it considered the lighting impact of all three types and explained that it was in the process of developing a lighting policy for the authority. A similar approach is taken by Cumbria County Council in its Cumbria Design Guide, which addresses lighting on new developments, replacement lighting on existing developments and lighting for all highway schemes as part of an Environmental Impact Assessment. The London Borough of Barnet and Worcester District Council

said that they would consider a change to the lighting of an existing development or a highway proposal only if it required planning permission. This could mean that new lighting could be added to an existing development without any restrictions.

Two local authorities described how they lead on lighting designs for the majority of developments in their areas. This means they can monitor proposed lighting schemes put forward by developers and recommend adjustments if needed.

In Essex, Braintree District Council said that all new major and the majority of minor developments will have a lighting condition attached which sets out the agreed external lighting that is permitted


in the development. Westminster Council explained how it required a hotel in their area to reduce up-lighting and remove 250 items of equipment in order to meet the Westminster Council Design Guide requirements. North Yorkshire County Council described a recent case where lighting design was provided by external consultants for a new housing development. However, the design was amended by the council to reduce both the number and wattage of the proposed lighting columns.

Changes in land use can also mean adjustments to lighting requirements, as a recent example in Dacorum, Hertfordshire shows. A planning application was submitted for a change


Floodlighting from nearby rugby club in London causing a nuisance to nearby homes



71%
**RECOMMENDED
ALTERATIONS TO A
PROPOSED SCHEME
TO ENSURE LIGHTING IS
ONLY INSTALLED IF NEEDED**



**WHEN ASSESSING DEVELOPMENT
OR HIGHWAY LIGHTING PROPOSALS:
OVER TWO THIRDS
OF COUNCILS SAID
ENERGY
EFFICIENCY
WAS THE MOST
IMPORTANT FACTOR**



of use from household waste recycling centre to waste vehicle depot with the construction of new CCTV/lighting columns. The submitted lighting scheme was deemed unacceptable due to the sensitive location – classed as Zone E1 Lighting Zone, close to a SSSI, within the Chilterns AONB, open countryside and Green Belt – and a condition was imposed to address this.

The fact that just 59 local authorities reported that they consider the lighting impact of a highway proposal is due to the mixture of district and county level authorities responding to the question. County and unitary councils have responsibility for highway lighting in their areas but would consult relevant district councils when considering a new lighting scheme.

We asked local authorities how important a variety of factors were when assessing development/highway lighting proposals (fig 4). Out of 74 who responded to this question, over two thirds (51) of respondents said that the factor that was classed as most important was energy efficiency. All respondents said that the potential impact of light shining into residential/business premises was either very important or at least considered, followed by more than 9 out of 10 (70) respondents who said that the potential impact of light pollution on the night sky was very important or considered when they assess lighting proposals; however, four of the local authorities said this factor was not a consideration for them. This factor was closely followed by 70 (95%) local authorities saying that lamp design was either important or considered.

The potential impact of light on wildlife and habitat was classed as very important or considered by more than 9 out of 10 (91%) respondents while slightly fewer respondents (89%) said that the impact of street lights and columns in the daytime (i.e. street clutter)

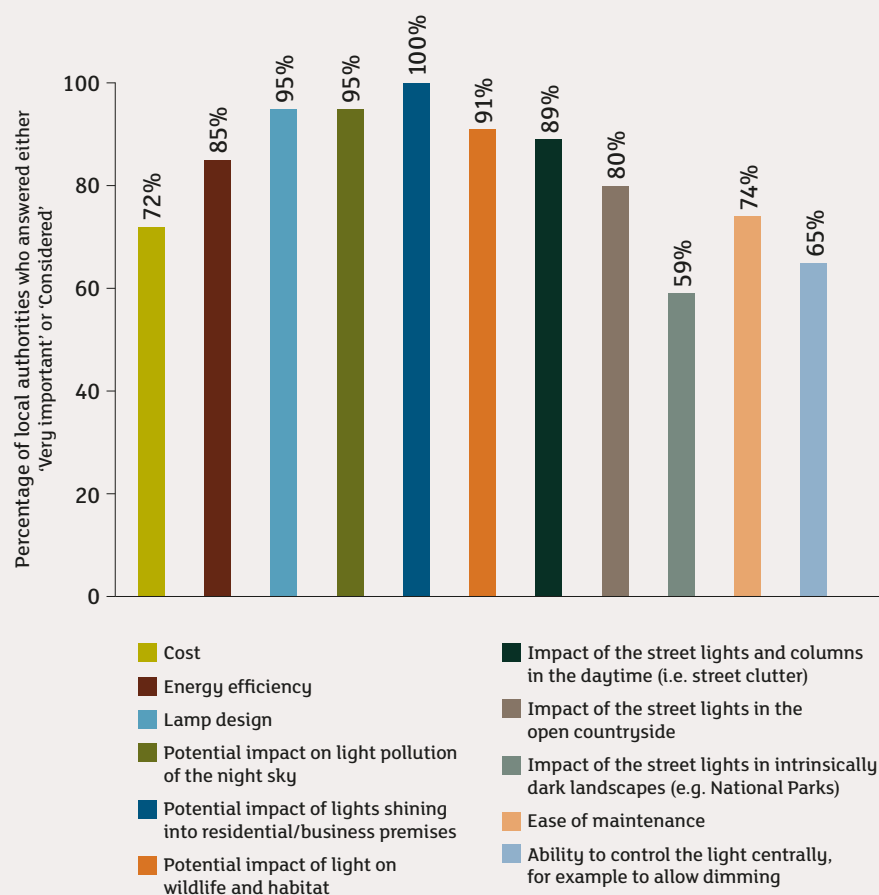
was either very important or considered.

Almost two thirds (47) of respondents said that in relation to highway lighting proposals the ability to control the light centrally, e.g. to allow dimming, was an important or a considered factor. Cumbria County Council stated that while they were not in a position to justify the costs of installing and maintaining a Central Management System they do trim the times lights are on, e.g. by turning on ten minutes

later and turning off ten minutes earlier. They also dim lighting by means of photocell and electronic control technology located in individual lights.

We asked local authorities whether they had recommended or required alterations to a proposed lighting scheme to ensure lighting is installed appropriately and only if needed. Of the 69 local authorities who responded, 49 said they had and 20 said they had not.

FIG 4 HOW IMPORTANT ARE THESE FACTORS TO YOUR LOCAL AUTHORITY WHEN ASSESSING DEVELOPMENT / HIGHWAY LIGHTING PROPOSALS?



CASE STUDY

Huntingdonshire District Council

Huntingdonshire District Council has strong planning policies to control the use of artificial light in the area.

It has had a Supplementary Planning Guidance document, 'External Artificial Lighting', since 1998 and includes a policy on obtrusive light in its draft Local Plan to 2036. The draft Plan states: 'Development proposals will be required to demonstrate how a high standard of amenity for existing and future users, of both the proposed development and surroundings, will be provided for with specific reference to: *e) the potential for adverse impacts on air quality, from obtrusive light and the contamination of land, groundwater or surface water.* The policy also defines obtrusive light as 'Light pollution that includes the brightening of the night sky (sky glow), uncomfortably bright light (glare) and light spilled beyond the area being lit (light intrusion)'.

The council's Project Engineer is sent planning applications that involve external lighting so that they can advise on the proposal. There are three possible outcomes:

1) Good, well-designed scheme – no objections if conditioned as per the lighting design plan;

2) Need more information – e.g. luminaire type, lamp type, aiming angle (if floodlight), mounting height and iso-lux contours to 1 lux (which shows where the light is distributed)

3) Poor design and unacceptable for range of reasons e.g. glare, light intrusion or sky glow being the main reasons.

For the second and third options, the Project Engineer would try to have technical discussions with the applicant's lighting designer (if they had used one) with the aim of obtaining a scheme that gives the applicant lighting in the right place without affecting neighbours or public amenity. A condition to secure this would then be attached to approval of a planning application (see box on the right).

In 2011, the Council advised on lighting a proposed housing development. The council's Project Engineer specified a pre-commencement condition on the type of lighting that should be installed but this was ignored and an inappropriate scheme was installed. The Planning Officer informed the developer they were in breach of condition and the Project Engineer offered solutions. The developer then removed all unapproved lanterns and bollards and installed appropriate, approved lighting.

Conditions for approval

09001

Lighting scheme before installation

Prior to the erection of or installation of any outdoor lighting onsite a detailed outdoor lighting scheme shall be submitted to and approved in writing by the Local Planning Authority and thereafter implemented in accordance with the approved scheme.

09002

Floodlight details

Prior to the erection of the floodlights hereby approved, details of the light source, the headgear cowl and light intensity footprint and spillage shall be submitted to and approved in writing by the Local Planning Authority and thereafter implemented in accordance with the approved details.

09003

Lighting scheme before development

Prior to the commencement of development (on any phase) a scheme showing the method of lighting and extent of illumination to the access roads, parking and circulation areas shall be submitted to and approved in writing by the Local Planning Authority and thereafter implemented in accordance with the approved scheme.

Before



After



THE TOP FACTORS WHEN ASSESSING LIGHTING PROPOSALS:



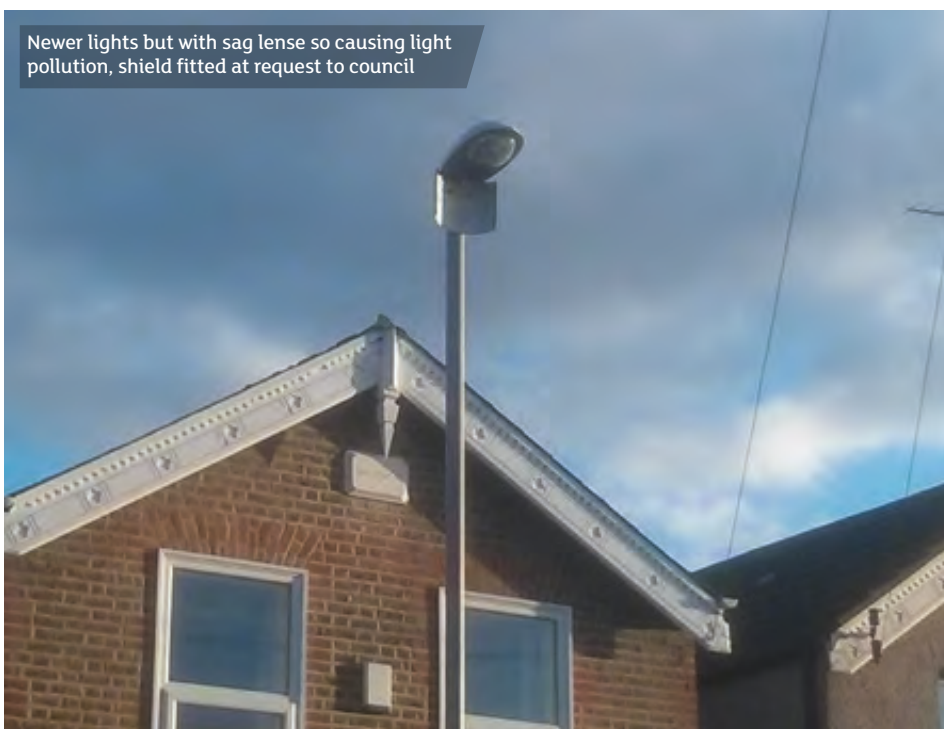
CPRE's view

CPRE is encouraged that almost two thirds of local authorities have a lighting policy in their Local Plan or similar. Almost 90% of these policies were the continuation of a long term lighting policy and a third of these had been adapted to comply with the NPPF. Only six local authorities (13%) said they had an entirely new policy due to the NPPF. It is disappointing that there is not more evidence of local authorities adopting lighting policies. We would like to see many more local authorities adopting a lighting policy based on the NPPF and the related National Planning Practice Guidance on light pollution.

We believe that local authorities should always consider the lighting scheme of any new development and require notification of a change to the lighting scheme of an existing development. The lighting impact of highway proposals should also be given careful consideration, particularly at junctions and roundabouts which may be closer to residential areas and visible over a wider area. We welcomed the Highways Agency's revision of standards in 2007 to require there to be no light above the horizontal (90°), which was previously mandatory only in National Parks. CPRE hopes this means that if lighting is to be installed along new stretches of road it will be full cut off flat glass which minimises light pollution.

We also strongly support the Institution of Lighting Professionals' recommendations for Environmental Lighting Zones, as adopted in Hampshire. While this might be seen as a major project for a local authority to undertake, it would make a big difference to the protection of dark skies and tranquillity. By ensuring that the most suitable, if any, lighting

Newer lights but with sag lense so causing light pollution, shield fitted at request to council



is used or installed in the most sensitive zones it could do much to prevent the spread of light pollution and contribute to saving energy and reducing carbon emissions.

The top three factors that local authorities consider when assessing development/highway lighting proposals were the potential impacts of lights shining into residential or business properties and light pollution of the night sky, followed by lamp design. CPRE welcomes the importance that local authorities appear to place on ensuring that new lighting schemes do not cause nearby residents a nuisance or light pollution. However, there are still many thousands of cases of bad lighting causing such problems, and we urge all local authorities to take action to improve this situation.

Recommendations

- all local authorities should have a policy to control light pollution in their Local Plan, in line with the National Planning Policy Framework and the associated National Planning Practice Guidance on light pollution. This should include identifying existing dark areas that need protecting;
- local authorities should consider preparing a Street Lighting Policy, which could include Environmental Lighting Zones¹⁶ to ensure that the appropriate lighting levels are used in each zone, with very strict requirements applying in identified dark areas.

¹⁶ Institution of Lighting Professionals *Guidance Notes for the Reduction of Obtrusive Light GN01: 2011* <https://www.theilp.org.uk/documents/obtrusive-light/>

Street light switch-off schemes

Our survey asked local authorities if they are engaged in a street light switch-off scheme – also referred to as part-night lighting.

Out of 71 local authorities who responded to this question almost a third (23) said they were switching off street lighting in their areas. Of these, 16 were permanent schemes and seven were trials. More than a third (39%) of the switch-off schemes had been running for a year or two, and a further quarter (26%) had been running for less than a year.

Here are examples of local authorities who are exploring street light switch-off/part-night lighting schemes:

Sefton Council, in Merseyside, is running a street light switch-off trial where it is switching off alternate street lights. Following a review and public consultation, it was agreed that selected lengths of semi-rural roads would be subject to a 12 month pilot scheme during 2013/14. This scheme is expected to save the Council £15,000 during 2013/14 and also reduce the Council's carbon emissions.

Cornwall County Council is running both a street light switch-off and dimming trial in nine villages across the county where communities have shown an interest in operating reduced levels of street lighting. This follows the installation of new street lighting control system infrastructure and new lamp technology in over 51,000 street lights throughout the county. Shropshire County Council is engaged in a three year trial to switch off 70% of the lighting in the county (12,500) lamps. They also hope to save up to 600 tonnes of CO₂ per year, which is around 15% of current street lighting emissions in the county.

For the last couple of years, Hertfordshire County Council has been running a permanent street light switch-off scheme in all residential areas including towns and villages between midnight and 6am. Approximately 70%

of the county's street lights have now been converted to operate for part of the night only but the remaining 30% of lights continue to operate overnight and are on 'A' roads, town centres, junctions and roads with a history of night time accidents.

Essex County Council was one of the first to run a street light switch-off trial; part-night lighting has been in effect in Maldon and Uttlesford since early 2007. The Council is nearing completion of part-night lighting across the county, following recent public consultations. Over 70% of the 127,000 Council-owned streetlights are switched off at night

THE REMAINING 30% OF LIGHTS CONTINUE TO OPERATE OVERNIGHT AND ARE ON 'A' ROADS, TOWN CENTRES, JUNCTIONS AND ROADS WITH A HISTORY OF NIGHT TIME ACCIDENTS

between midnight and 5am, with certain exceptions. The Council previously spent approximately £4.6m on electricity for street lighting each year but expects that switching to part-night lighting will save approximately £1m per year. It also expects to reduce carbon emissions by over 8,000 tonnes per year.

Our survey asked local authorities what had motivated them to pursue a street light switch-off scheme in their area; 21 responded to this question. It comes as little surprise that energy saving topped the list with all bar one authority (95%) saying it was a motivation, closely followed by cost saving cited by 19 authorities (91%). A reduction in light pollution was cited as a factor by just two out of five (43%) of respondents. Four of the local authorities also added that carbon reduction was an additional factor they considered.

Money saved by adjustments to street lighting

Cost saving was a motivation for nine out of ten (91%) local authorities who were running a street light switch-off scheme and eight out of ten (78%) of those running a dimming scheme.

Examples in this report are:

- Sefton Council expects to save £15,000 during 2013/14 by trialling switching off alternate street lights.
- Essex County Council previously spent approximately £4.6m on electricity for street lighting each year but expect that switching to part-night lighting will save approximately £1m per year.
- Bradford Council's street light dimming scheme is designed to save £400,000 a year.
- North Somerset Council estimates £300,000 a year will be saved following the completion of their dimming and part-night lighting scheme.

We asked local authorities whether they had to invest in new technology to run the switch-off scheme. Almost two thirds (62%) said they did compared with just over one third (38%) who did not. The majority of respondents (59%) did not plan to remove street lighting that had been switched off but almost two out of ten (18%) planned to do just that while almost a quarter (23%) were

COMMUNITY ENGAGEMENT IS VITAL WHEN LOCAL AUTHORITIES ARE CONSIDERING PART-NIGHT LIGHTING AND SWITCHING OFF STREET LIGHTING

THE TOP REASONS FOR SWITCHING OFF:

95% ENERGY SAVING

91% COST SAVING

43% REDUCING LIGHT POLLUTION



ALMOST A THIRD

OF LOCAL AUTHORITIES SAID THEY WERE SWITCHING OFF STREET LIGHTING, EITHER PERMANENTLY OR AS A TRIAL



86%

SAID THE RESPONSE FROM THE LOCAL COMMUNITY HAD BEEN MIXED ABOUT PART-NIGHT LIGHTING

considering removing the lighting.

Community engagement is vital when local authorities are considering part-night lighting and switching off street lighting, commonly between midnight and 5am. Nine out of ten respondents (91%) said they had consulted the local community about the street light switch-off scheme proposals (N.B. the remaining two local authorities were not responsible for the scheme or it related to a short section of motorway.) For example, Norfolk County Council said that they carried out a written consultation process with both key stakeholders and residents of affected streets and that all feedback was considered prior to part-night lighting being implemented. In Cheshire, Halton Borough Council published information on the Council's website and issued a press release (due to the potential impact being on the travelling public rather than specific residents) to consult a wider audience.

The survey asked how the local community had reacted to the switch-off scheme; 21 local authorities responded and the majority – 18 (86%) said the response had been mixed. This compares with two local authorities (10%) who said their community had been very supportive and one (5%) who said the community was not supportive.

Exmoor National Park is a Dark Sky Reserve, which means it has exceptional views of the night sky



Street light dimming schemes

An increasing number of local authorities are investing in new lighting technology which can be dimmed – allowing local discretion for lighting levels.

We asked local authorities whether they were engaged in a dimming scheme; almost half (32) of the 67 respondents to this question said they were. Of the councils who are running a dimming scheme 26 said it was permanent compared with five who are currently running dimming trials. Three quarters (23) of the 31 local authorities who stated how long they had been running a dimming scheme said that it had been for under three years with the remainder reporting that their scheme had been running for between three and five years.

Here are examples of local authorities who are exploring street light dimming schemes:

In West Yorkshire, Bradford Council's first dimming scheme had been installed in 2008 in a mainly residential street in the outskirts of Bradford. The trial was unpublicised but was deemed a success due to there being no impact on public safety. More than 1,000 street lights are now being dimmed between 11pm and 5am as part of energy saving measures across the district designed to save £400,000 a year and reduce power consumption by 25%.

Northumberland County Council described how they are currently in the process of appointing a private sector partner to help modernise the street lighting stock within the county. It will involve the use of LED lighting and a dimming regime for all residential lighting. Over the last year, the council has begun installing LED luminaires and are dimming residential areas with the technology in place, between midnight and 6am.



Dudley Council, in the West Midlands, is now rolling out a dimming scheme to all residential areas in the Borough, following a successful 2010 trial in a housing estate, which required a small scale Central Management Scheme (CMS)¹⁷ – this allows lighting to be tailored to the needs of different areas. A larger CMS scheme was commissioned in 2013 to operate borough-wide, complemented by a lantern replacement or conversion programme which will install a white light source and CMS control across all residential roads by early 2017.

A number of respondents described how dimming schemes are underway in a variety of areas ranging from short sections of road to across entire counties. For example, North Somerset Council is running both street light switch-off and dimming schemes across their area. Over two thirds (70%) of North Somerset

has part-night lighting but not all lights can be dimmed due to the cost of dimming equipment; remaining street light columns will be replaced as needed. Up to 18,000 lights (80% of the lights in North Somerset) could be converted to part-night or dimming. The Council currently has more than 2,000 street lights dimming at 50% between the hours of 8pm and 6am and estimates £300,000 a year will be saved following the completion of the lighting scheme.

East Sussex County Council is making changes to street lighting on residential and main roads across the county to save energy and money. There are two different lighting schemes in East Sussex – the LED Lighting Scheme and the Part-night Lighting Scheme. In Eastbourne and Hastings most of the lights will be changed to new white LED lighting and some lights will be dimmed along main roads between midnight and 6.00am. The Part-night scheme is in operation in most other towns and villages in the county.

¹⁷ The central management system (CMS) uses wireless technology (radio waves) to communicate with each street light that is being monitored. The operating times can be controlled and changed if required. Variable lighting levels, or dimming, can be set to different levels and over different durations for those units that have a dimming module installed.

ALMOST
HALFOF THE COUNCILS WHO
RESPONDED SAID THEY
WERE ENGAGED IN A
DIMMING SCHEMEReducing carbon emissions by
adjusting street lighting

Old, inefficient sag lens lighting (right) next to new full cut-off lighting (left)

Many of the local authorities who took part in the survey said how they hoped to reduce their carbon emissions by adjusting their approach to street lighting. Almost a third (30%) of the UK's carbon dioxide emissions come from fossil-fuelled electricity generation¹⁸. As a result, the Government has initiated a mandatory carbon trading scheme for large private and public sector organisations called the 'Carbon Reduction Commitment' which began in 2011. The aim of this scheme is to reduce CO₂ emissions by putting a price on carbon. Almost all (95%) of local

authorities who were running part-night lighting schemes and more (97%) who were running dimming schemes said that energy saving was the leading motivation. Examples in this report are:

- Shropshire County Council hopes to save up to 600 tonnes of CO₂ per year, which is around 15% of current street lighting emissions as a result of their part-night lighting trial.
- Essex County Council expects to reduce carbon emissions by over 8,000 tonnes per year due to their part-night lighting scheme.
- Derbyshire County Council has a commitment to reduce carbon emissions by 25% by 2015 which it hopes to achieve through part-night lighting schemes.
- Leicestershire County Council is aiming to reduce carbon emissions by 30% by 2014 by dimming and part-night lighting scheme.
- Cornwall County Council hopes to save up to 4,700 tonnes of CO₂ per year due to part-night lighting and dimming trial.

¹⁸ Figure calculated from Department of Energy and Climate Change report on UK Greenhouse Gas Emissions 2012/2013: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/295968/20140327_2013_UK_Greenhouse_Gas_Emissions_Provisional_Figures.pdf

CASE STUDY

Leicester City Council

Leicester City Council is updating its street lighting as part of its commitment to reduce the council's carbon footprint by 50% before 2025.

The £13.9m project began in March 2013, after a trial in 2010, and will contribute a saving of 5,350 tonnes of carbon emissions per annum. Leicester City Council has a lighting stock of 37,490 public lights, of which 32,560 will be replaced with LED lights. 4,930 of the existing High Intensity Discharge (HID) white light luminaire in the City will remain unchanged. The replacement units will be installed over a three year period with the completion of the project in March 2016.

Existing lighting is run at 100% of the specified power output. This project includes a Central Management System (CMS) which allows remote control of lighting levels for individual streets. Street lights are programmed to operate at full power from dusk until 8.00pm and at 75% from 8.00pm until dawn. This level of reduction is not normally noticeable to the human eye. The CMS will allow the use of other lighting patterns, customised by street, for example reducing down to 50% of maximum output from 11.00pm to dawn.



Replacing the existing lighting stock with LED luminaires will mean that energy usage and carbon emissions will be reduced by over 40% compared with current levels, saving £0.84m a year in electricity costs based on 2013 prices. Using the CMS should conservatively provide a further 17% reduction on these levels, increasing the overall savings to 57% of current energy usage and carbon emissions. This would save £1.2m

a year in electricity costs based on 2013 prices.

The local community and the police have been quite supportive of the White Light/CMS conversation project as they were not able to tell the difference in the lighting levels after dimming. Leicester City Council plans to collate before and after crime figures to assess any impact this scheme may have had on night time activities.

Investing in new technology for dimming schemes

We asked the local authorities who were running street light dimming schemes whether they had to invest in new technology in order to run the dimming scheme. Almost nine in ten (28) of respondents had done so, compared with four who said they hadn't needed to. Cumbria County Council explained that it had investigated the potential for introducing a Central Management System (CMS) to enable dynamic switching of its road lighting. Brighton and Hove Council said that it has invested in a trial of a Central Management System and is

in the process of installing 180 CMS controlled lanterns in an area of the City that borders the South Downs National Park. Bournemouth Council has been running a dimming scheme for almost five years and has invested in a CMS

THE LEADING MOTIVATION FOR DIMMING LIGHTS WAS ENERGY SAVING AT 97%

which allows lower levels of lighting during quiet times but is boosted in the town centre for CCTV surveillance during busy club nights. The Council is planning to replace all of Bournemouth's current

street lights with 16,500 LED luminaires. The new lights are expected to bring a 73% energy saving in street light consumption. The Council currently spends £1.1m a year on street lighting energy.

As with the top reason cited for switching off street lights, the leading motivation for dimming lights was energy saving at 97%. This is followed by 78% of local authorities saying it was cost saving. Just over half (53%) said that reducing light pollution had been a factor. In West Yorkshire, Wakefield Council said that 'Improvements in light pollution are a positive benefit of the actions driven by Climate Change Act

THE TOP REASONS FOR DIMMING:

97% ENERGY SAVING
78% COST SAVING
53% REDUCING LIGHT
POLLUTION



**SWITCH-OFF SCHEMES
TYPICALLY RUN BETWEEN
MIDNIGHT AND 5AM**

**11 COUNCILS SAID
DIMMING HAD BEEN
LARGELY
UNNOTICED
BY COMMUNITY**



and budget austerity measures.'

We asked the local authorities who are running dimming schemes whether they plan to remove any street lighting; just over half (56%) said they were not. Five local authorities (15%) said they did plan to remove lighting and the remaining ten said they were considering it.

Derbyshire County Council explained that it proposed to remove some lighting (around 900 units) which is identified as no longer providing a community benefit or where the road use has changed significantly. The Council is committed to reducing carbon emissions by 25% by 2015. In addition, it believes it is important to protect dark sky areas for the enjoyment of local people and 'so that Derbyshire is a great place to visit.'

Northumberland County Council explained that it does not intend to remove any lighting, but the county does have a mix of urban and rural areas. The council mentioned that it has had requests for lighting to be removed, mainly in its rural areas, and each request is considered on its merit. Lighting across the county will be reconsidered once their street lighting review is underway and it will be done in consultation with residents.

A higher number of local authorities did not consult their communities about dimming street lights, compared to the number who consulted about switching off the lights. Three quarters (75%) of the 32 respondents said they did not consult about dimming lights, compared to two (9%) who said they had not consulted about switching off street lights (due to it not being relevant in those cases). Interestingly, 11 local authorities said that the dimming of street lights had been largely unnoticed by communities in the areas.

There is greater community support for street light dimming schemes than switching lights off altogether. More than

two thirds (68%) of local authorities said that their local community were very supportive of dimming street lights (compared to only 10% of communities who supported switching off). In South Yorkshire, Sheffield Council said they had mixed feedback to the proposal but no reaction post implementation.

Local authorities were asked whether they were currently consulting (or would shortly) about trialling street light switch-off or dimming schemes. 13 local authorities said they were, of these, five were considering a switch-off trial, three were consulting about a dimming scheme trial and five were considering a combination of both. Almost two thirds (64%) of respondents expected the scheme to go ahead with adjustment to address local concerns, and 36% thought that the scheme would go ahead as proposed. Six local authorities stated how long their trial would run; three said the trial would last for two years, followed by two who said it would last for a year. The remaining local authority planned to run a trial for between six months and a year. Eight out of ten local authorities hoped the trial would become permanent but the remaining two said it was too early to say. Eight of the local authorities said they planned to monitor crime statistics as part of the trial.

CPRE's view

There is increasing interest among local authorities to find new ways to save money and reduce energy consumption and carbon emissions. Almost a third (23) of local authority respondents said they were involved in switching off street lights typically between midnight and 5am and 32 said they were involved in dimming street lights in their areas. Reducing light pollution, which is a key concern of CPRE, was a motivating factor for 43% of councils who are switching off lighting and 53% who are dimming street lights.

One council said that improvements in light pollution are a positive benefit of actions driven by climate change and austerity measures. The survey has confirmed that the reduction in light pollution is coincidental as local authorities look to reduce costs and energy use.

CPRE believes that the right lighting should be used only where and when it is needed. The evidence within the survey about the money that could be saved by local authorities, either through part-night lighting or dimming schemes, suggests that these schemes will become increasingly popular. Many local authorities are running trials before committing to permanent schemes and CPRE believes this is a positive way forward.

Public consultation is vital to the success of any adjustment to street lighting in an area. All of the local authorities who were responsible for a street light switch-off scheme said they had consulted the affected communities.

THE RIGHT LIGHTING SHOULD BE USED ONLY WHERE AND WHEN IT IS NEEDED

Dimming schemes are significantly more popular with residents with 68% of local authorities saying their communities had been very supportive, compared with only 10% of communities who were very supportive of switching off street lights overnight.

Recommendation

- we encourage local authorities to investigate how part-night lighting schemes (e.g. switching off between midnight and 5am) or dimming could work in their areas, including examining the cost, energy and carbon savings. This should be done in full consultation with the local community.

Crime and street lighting

**Does reduced lighting have an impact on crime levels?
Find out how local authorities address this issue.**

The relationship between lighting and crime is a contentious issue. A Home Office Research Study in 2002 (and a consequent update in 2008) argued that crime levels are reduced by up to 38% by improvements to street lighting¹⁹. The research has been questioned by a leading statistician at Leeds Metropolitan University^{20,21}.

This section presents information about what local authorities say about crime levels in areas with part-night or dimmed lighting:

The majority of councils (91%) who are switching off street lights, are monitoring crime statistics. This compares to 51% of local authorities who are dimming street lights.

East Sussex County Council said that it has regular meetings with the police and so far has not been informed of any increase in reported crime or anti-social behaviour. Oxfordshire County Council also work closely with the local neighbourhood police, who inform the council of any increase in crime, such as vandalism and personal attacks. If requested by the police, lights have been returned to all night operation. North Somerset Council reported that their last two reviews show crime has actually reduced since the part-night switch-off. Shropshire County Council also states that the safety and wellbeing of residents has always been the biggest consideration of the part night lighting scheme.

Worcestershire County Council ran a six-month trial part-night switch-off

(midnight until 6am) in Droitwich between November 2012 and May 2013. They say that during the trial period there was no discernible change in crime or road safety and, after an initial period of public concern during the early stages of the trials, little complaint occurred from the public. North Yorkshire County Council has undertaken one review to date and the results indicated a drop in crime. However, areas not subject to the part-night lighting scheme also indicated a similar drop in crime and it was felt that the energy reduction programme therefore had no impact on the crime statistics.

North Somerset Council described how the evidence from their trials shows that levels of crime and numbers of traffic accidents do not increase. They emphasise that the safety and wellbeing of residents and motorists is important and has always been the biggest consideration of this project. Consultation is also carried out with parish and town councils on part-night lighting proposals. Street lights in areas with evidence of high accident levels at night, needed for road safety reasons, in residential areas with higher crime rates and in town centres will be excluded from the measures. The London Borough of Barnet said there has been no detectable movement in crime statistics to date.

Leicestershire County Council explained that crime has reduced and that there had been only two instances of crime increases (burglaries) immediately after switching to part-night lighting. In the first instance, a concerted effort by police officers secured arrests and an immediate drop-off in crime. For the second, the police requested a temporary

return to full-night lighting of some columns that had been changed to part-night lighting – culminating in apprehension of burglars, enabling a full return to part-night lighting. The Council said that ‘the burglaries were actually predominantly by lighting columns that remained lit throughout the night.’

NO LOCAL AUTHORITY RESPONDENTS SAID THERE HAD BEEN AN INCREASE IN CRIME IN AREAS WHERE STREET LIGHTS HAD BEEN SWITCHED OFF. INSTEAD CRIME HAS FALLEN SLIGHTLY

The Institution of Lighting Professionals/ LANTERNS project²², launched in April 2013, is a research collaboration between local authorities in England & Wales and researchers at the University of London. It aims to quantify any effects of changes to street lighting on road traffic crashes and crimes. 69 local authorities are currently involved in the research. By working together in collaboration with all local authorities of England & Wales, the LANTERNS project aims to answer reliably the important question of whether reducing night-time streetlight for environmental and energy reasons, has any impact on road traffic crashes and crime.

CPRE's view

The impact of lower light levels is an understandable concern for residents when they hear that their council is considering either part-night lighting or dimming schemes. It is a contentious issue; which has led to political and academic debate. The evidence submitted by local authorities to this survey has not shown a clear link between crime and lighting levels. No local authority respondents said there had been an increase in crime in areas where street lights had been switched off.

¹⁹ Campbell Systematic Reviews B.C. Welsh, D.P. Farrington *Effects of Improved Street Lighting on Crime* http://www.campbellcollaboration.org/news/_improved_street_lighting_reduce_crime.php

²⁰ Marchant PR. *A demonstration that the claim that brighter lighting reduces crime is unfounded*. British Journal of Criminology 2004; 44:441-447 http://praxis.leedsmet.ac.uk/praxis/documents/lighting_pm.pdf

²¹ <http://specialseeds.files.wordpress.com/2012/02/light-pollution-reference.pdf>

²² Local Authority Collaborators' National Evaluation of Reduced Night-time Streetlight: <http://lanterns.ishtm.ac.uk/>

Shedding light

A survey of local authority approaches to lighting in England

Crime and street lighting

21

91%

OF COUNCILS WHO
ARE **SWITCHING OFF**
STREET LIGHTS ARE
MONITORING LOCAL
CRIME STATISTICS



COMPARED WITH:

51%

WHERE THE LOCAL
AUTHORITIES ARE
DIMMING STREET LIGHTS

Instead crime has fallen slightly. The councils are in close contact with police forces in their areas to monitor any incidents and will re-light any area at the request of the police.

However, the 'fear of crime' is an important issue that needs to be addressed which is why it is essential that the community is fully consulted about proposals to switch off street lighting overnight.

Recommendation

- all local authorities who are switching off or dimming street lighting should monitor crime and accident statistics and consider taking part in the Institution of Lighting Professionals/ LANTERNS research project which aims to quantify any effects of changes to street lighting on road traffic accidents and crime.



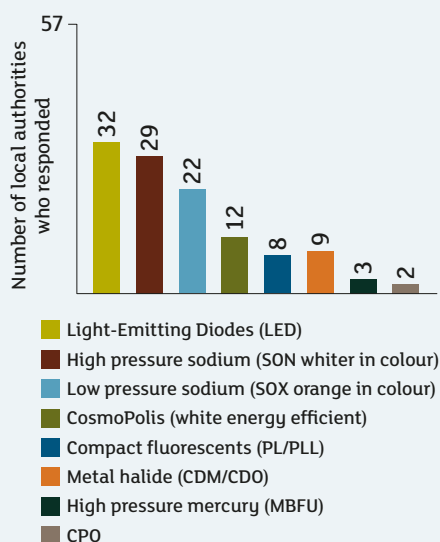
Does street lighting deter crime?

Lighting types

The type of lighting that is used will affect the way the light is distributed and whether light pollution spills up into the night sky.

Here are the most common lighting types used by 57 local authorities who responded to this question (see fig 5).

FIG 5 THE MOST COMMON LIGHTING TYPES USED BY LOCAL AUTHORITIES



The most common colour temperature of LED lighting was 4000k cited by almost two thirds (64%) of 28 local authority respondents. This is followed by just over a quarter (29%) who used 4100k, then 18% used under 3500K and then 14% who used 3500-3999K. Wakefield Council, in West Yorkshire, said that its current installations fall in the range of 4000k to 5700k and it is 'working to ensure they are in the low end of cool white heading towards neutral.' The London Borough of Islington said it has 'some 5000K as a trial but residents find these too harsh'. Northumberland County Council say that it is using Cool white (6200K) on residential areas and Neutral white (4250K) on traffic areas.

Energy efficiency makes LED technology attractive for street lighting. However, LED lighting can have negative effects. While colder (blue rich, or daylight type) temperatures may be slightly more efficient than 'cool white' types, research suggests that blue rich lighting is known to disturb ecology, and it has been linked with serious effects on human health²³. LEDs may also create more glare if not angled correctly.

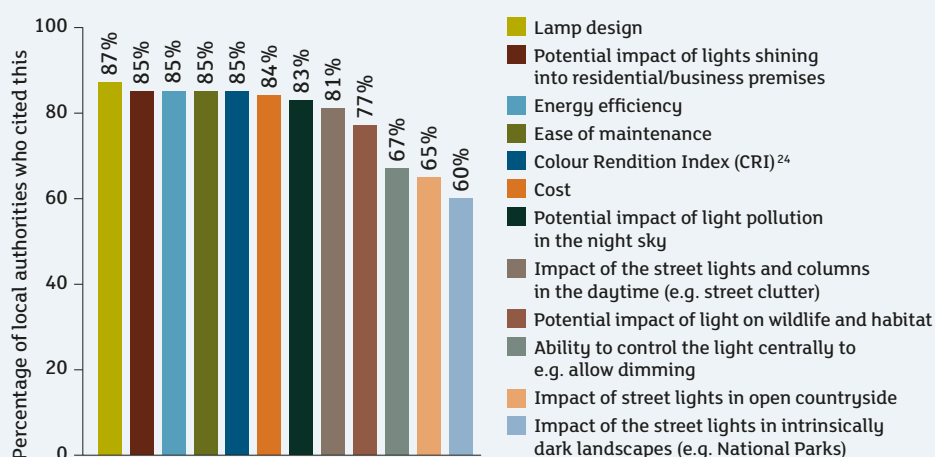
When local authorities were asked if they varied street light column height depending on location, more than nine out of ten (94%) said they did. In Kent, Tunbridge Wells Council explained that they consider column height in terms of impact on wildlife. Bradford Council said that wherever possible they install lighting appropriate to the surroundings and try to utilise lower column heights to reduce the visual impact. Oxfordshire County Council said that it ensures that the column height fits in the surrounding area and is fit for purposed for the road

widths. Central Bedfordshire Council explained that they design with uniformity ratios in mind, versus location, site constraints, nuisance and a wish to minimise the number of lighting assets.

We asked local authorities how important a variety of factors were when choosing new street lamps. The highest factor, deemed 'very important' by 83% of respondents, was energy efficiency. When the responses are combined for what is either 'very important' or 'considered' by a local authority when choosing new street lamps, the most important factor was lamp design (see fig 6).

Seven (14%) local authorities said they had not considered the ability to control lighting centrally and one local authority said this was not important. Five (10%) local authorities said that they had not considered the impact of light on wildlife and habitat, followed by four (8%) local authorities who said they had not considered the impact of street lights on the open countryside.

FIG 6 HOW IMPORTANT ARE THESE FACTORS WHEN YOU ARE CHOOSING NEW STREET LAMPS?



²³ International Dark-Sky Association *Visibility, Environmental, and Astronomical Issues Associated with Blue-Rich White Outdoor Lighting* May 2010 <http://www.darksky.org/assets/documents/Reports/IDA-Blue-Rich-Light-White-Paper.pdf>

²⁴ The Colour Rendition Index measures a light source's colour characteristics. In general terms, CRI is a measure of a light source's ability to show object colours "realistically" or "naturally" compared to a familiar reference source, either incandescent light or daylight.

CASE STUDY

Knowsley Council, Merseyside

Working in partnership to replace street lighting with new energy efficient equipment.

Knowsley Council and its street lighting service provider, SSE Contracting, are working in partnership to replace its street lighting and traffic signs with new energy efficient equipment over a four year programme, due for completion in July 2015.

The new equipment includes High Pressure Sodium equipment for traffic routes and Cosmopolis equipment for residential areas; LED lighting is also being trailed in selected areas. The columns are galvanised steel with a paint system designed to last for 25 years.

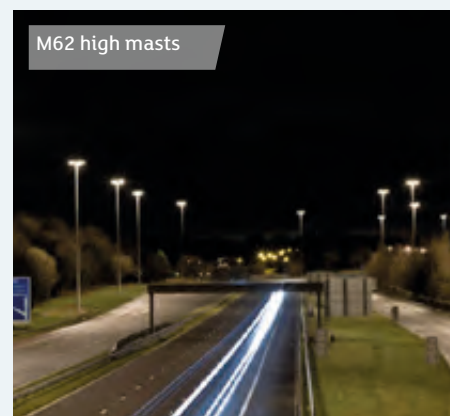
The service provider, is required to be registered to ISO9001, which sets standards for quality assurance. The lighting used is determined by the contractual output specification, which requires the service provider to design all installations in accordance with national standards EN13201 and BS5489. The lighting will also need to meet requirements for colour indexation and glare ratings according to whether the streets are traffic routes, high speed roads or residential roads.

The Environmental Lighting Zone, as determined in the Institution of Lighting Professionals Guidance Notes for the Reduction of Light Pollution, is considered as part of the design process.

All illuminated apparatus is installed with a remote monitoring and variable lighting system which enables the service provider to adjust lighting levels and reduce energy consumption and carbon emissions, in line with the Council's approved Variable Lighting Policy. Remote monitoring equipment will assist maintenance response times and also remove the requirement for night checks. All traffic signs and bollards are de-illuminated where allowed by Department for Transport regulations.

Another aim of the programme is to de-clutter the street scene. This is done at design stage, by only providing necessary signage, and by affixing signage to street lighting columns and sharing signposts wherever possible. All materials are recycled wherever possible in accordance with the Waste Electrical and Electronic Equipment Directive.

Knowsley Council also recently began a



M62 high masts

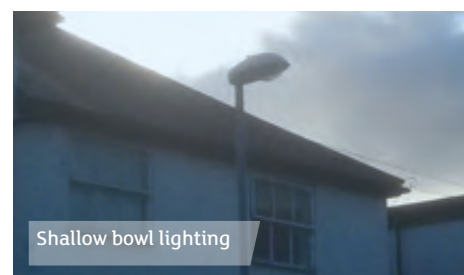
12-month trial to switch off the road lights between two junctions of the M62 motorway. However, slip roads onto and off the motorway will remain lit, as will the gantry signage. The Council has renewed road markings, reflective studs, and improved reflective traffic signs ahead of the start of the trial. The impact of the trial will be assessed through analysis of energy efficiencies, financial savings, and survey data over the 12 months. Any feedback from residents and road users will also be taken into consideration.

CPRE's view

CPRE suggests that local authorities with responsibility for street lighting should set targets for replacing all their street and road lights with less light polluting types (e.g. full cut off flat glass lamps) over a period of time. They should consider reducing the number of road and street lights in over-lit areas as part of any replacement programme. They should also consider using solar powered LED studs instead of street lighting on rural roads, and consider introducing street light dimming/switch-off trials in their area.

Recommendations

- local authorities should give careful consideration to the type of Light-Emitting Diode (LED) lighting they use and consider the potential impacts that higher temperature blue rich lighting has on ecology and on human health;
- local authorities with responsibility for street lighting could set targets for replacing all their street and road lights with less light polluting types, such as full cut off flat glass lamps;
- new street lighting should be tested 'in situ' before a lighting scheme is rolled out across a wider area to ensure that it is the minimum required for the task and does not cause a nuisance to residents.



Shallow bowl lighting



Full cut off flat glass lighting with shield

New lighting in previously unlit areas

How do local authorities decide whether to install new lighting in previously unlit areas and what guidance do they use?

CPRE wanted to find out how local authorities make decisions about installing new lighting in previously unlit rural areas and what advice they use. We asked local authorities why they would consider installing new lighting (see fig 7).

Here are examples of how local authorities decide about new lighting in previously unlit areas:

Cheshire West and Cheshire Council, Derbyshire County Council and Central Bedfordshire Council state that they consider accident data, crime rate, community involvement and police recommendation. In Lincolnshire, Boston District Council added that the fear of crime was a factor they considered when deciding to light previously unlit areas. They work with local police to decide whether it is best to keep a place unlit so it does not suggest it is safe to use at night or light it to make the area used/safer.

Mole Valley District Council in Surrey

said that it also considered the setting and location, design of development, requests of local community, views of

IT IS VERY RARE THAT NORTHUMBERLAND COUNTY COUNCIL WOULD LIGHT A PREVIOUSLY UNLIT AREA

local councillors and impact on adjacent residential properties.

Northumberland County Council explained that it is very rare that it would light a previously unlit area. However, if the land use was changing the decision may be driven by the planning department who may feel that new lighting is necessary to a new development. Other instances include requests from council members or the community safety department where they have received personal requests due to crime or fear of crime issues. The London Borough of Barnet also said it does not generally install new lighting in previously unlit areas as it has a

general policy not to, unless there is a proven risk of health or crime issues.

Guidance used when considering new lighting

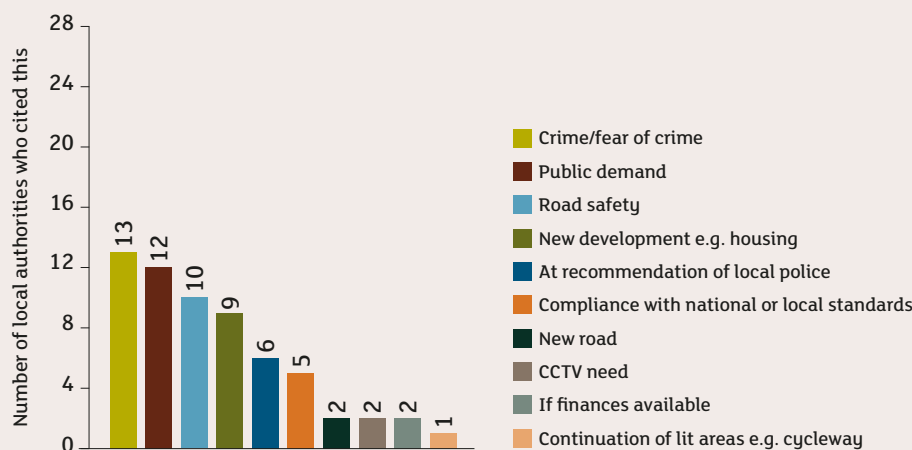
CPRE asked local authorities what guidance they used to aid decisions about new lighting. A section of the Department for Transport/Highways Agency Design Manual for Roads and Bridges (DMRB) is often used to inform design of lighting on motorways and trunk roads. The two most relevant policies are TD34: *Design of Road Lighting for the Strategic Motorway & Trunk Road Network* and TA49: *Appraisal of New & Replacement Lighting on the Strategic Motorway & All Purpose Trunk Road Network*.²⁵ CPRE has worked with the Highways Agency to review TD34 and an updated version is due to be published in 2014. The Highways Agency is also considering a review of TA49 to ensure that the lighting for new schemes is only installed as necessary.

For our survey, local authorities were asked whether they referred to the DMRB when considering new lighting. Out of 55 local authorities who responded to this question 24 (44%) said they had referred to it and the remaining 31 (56%) said they had not referred to it. We asked respondents whether they felt the DMRB could be improved, of the 22 local authorities who replied more than half of them (55%) felt it could be improved, with 45% saying it did not need to be improved.

A total of 13 local authorities made suggestions about how the Design Manual could be improved. Lincolnshire County Council felt that DMRB is targeted at major (trunk) roads and it would like to see greater flexibility and guidance for use on county roads included, a view supported by East Sussex County Council.

Worcestershire County Council said that 'as a Highways Agency document it is not always relevant to some local authority roads /areas'. Cumbria County

FIG 7 WHAT ARE YOUR REASONS FOR CONSIDERING INSTALLING NEW LIGHTING IN PREVIOUSLY UNLIT AREAS?



²⁵ DfT/Highways Agency *Design Manual for Roads and Bridges: Volume 8 Traffic Signs and Lighting* <http://www.dft.gov.uk/ha/standards/dmr/vol8/section3.htm>

DESIGN MANUAL NEEDS TO CONSIDER THE LINKS TO AUSTERITY, THE ECONOMY AND FINANCIAL SUSTAINABILITY

Council agreed and explained that the standards and associated documents are based on trunk roads and motorways, and so in many cases are not relevant to single carriageway and residential roads. The Council believes that while these documents can be adapted for use by local authorities there is more relevant information available through bodies such as the Institution of Lighting Professionals.

Central Bedfordshire Council believes that the DMRB should be reviewed more regularly as street lighting is a fast-moving marketplace and DMRB should keep abreast of opportunities brought about by new technology. It also suggests that the Design Manual needs to consider the links to austerity, the economy and financial sustainability; it instead focuses on technical issues which occasionally produce recommendations which may not be suited to these necessary considerations. The London Borough of Barnet shared these concerns and said that the Design Manual needs to be brought into line with the current thinking on energy efficiency and environmental impacts aspired to in the recent introduction of the EU Standard for Road Lighting BS EN 13201 2013 (Code of practice for the design of road lighting: Lighting of roads and public amenity areas).

Cheshire West and Cheshire Council would also like the Design Manual to provide comprehensive information concerning lighting levels and better advice regarding switching lights off.

Our survey asked local authorities whether there was other guidance they would refer to in deciding whether to introduce new street lighting in previously unlit areas (see fig 8). A total of 28 local authorities responded to this question and listed the other guidance they would refer to when considering new lighting.

CPRE's view

CPRE believes that darkness at night is a unique part of being in the countryside and that lighting has an urbanising effect. We welcome the fact that many local authorities have a presumption against installing new lighting in previously unlit areas, although we recognise there will be cases where it is deemed necessary, e.g. for new housing developments.

Local authorities cited a range of guidance that they refer to when considering new lighting. Some recommended improvements to the Department for Transport/Highways Agency Design Manual for Roads and Bridges (DMRB) to make it more widely applicable. CPRE believes that guidance should be reviewed regularly (e.g. every three years) to ensure that it is relevant to current approaches to use of lighting and takes full account of evolving best practice. We will provide the suggestions gathered from local authorities in this survey to the Highways Agency to consider when revising the relevant sections of the DMRB.

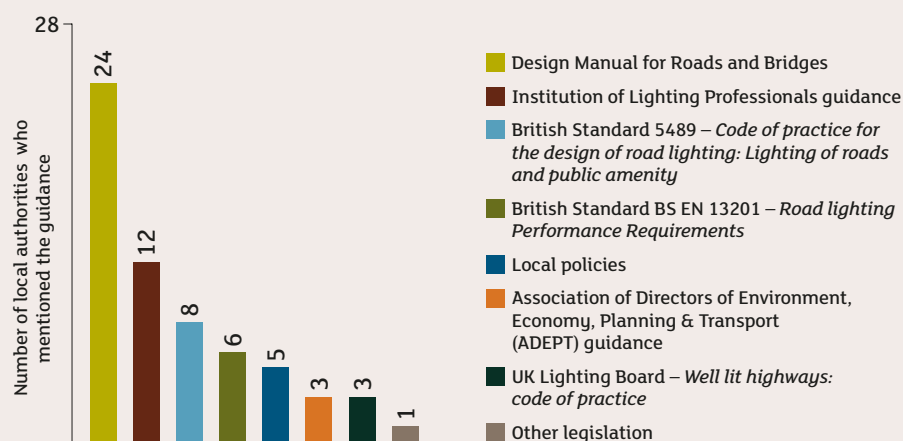
The milky Way over the Isle of Wight



Recommendations

- local authorities should have a strong presumption against new lighting in existing dark areas, unless essential as part of a new development or for public safety reasons that have been clearly demonstrated;
- the Highways Agency should review the lighting section of the Design Manual for Roads and Bridges, which is used to design motorway and trunk road lighting, to ensure it remains relevant for local authorities.

FIG 8 IS THERE OTHER GUIDANCE THAT YOU WOULD REFER TO IN DECIDING WHETHER TO INTRODUCE NEW LIGHTING IN PREVIOUSLY UNLIT AREAS?



Conclusion

Our survey aimed to find out how English local authorities approach lighting as part of the planning process, how they design street light switch-off or dimming schemes, and how they decide which street lighting to install in either new or existing schemes.

The results of the CPRE survey show that many local authorities are taking a proactive approach to managing lighting in their areas, be this through local planning policies or in management of street lighting.

It is encouraging to find that almost two thirds of local authorities have a lighting policy in their Local Plan or similar, but the majority of these are the continuation of existing policies – and only a third had proactively adapted it to comply with the National Planning Policy Framework. Only six local authorities who responded to the survey said that they had a new policy on lighting due to the NPPF. This is disappointing. CPRE believes more local authorities should take the opportunity presented by the NPPF to adopt new policies to control lighting and protect existing dark places in their areas. The Government's recently published National Planning Practice Guidance on light pollution should help persuade more local authorities to take a proactive approach and introduce policies to control lighting.

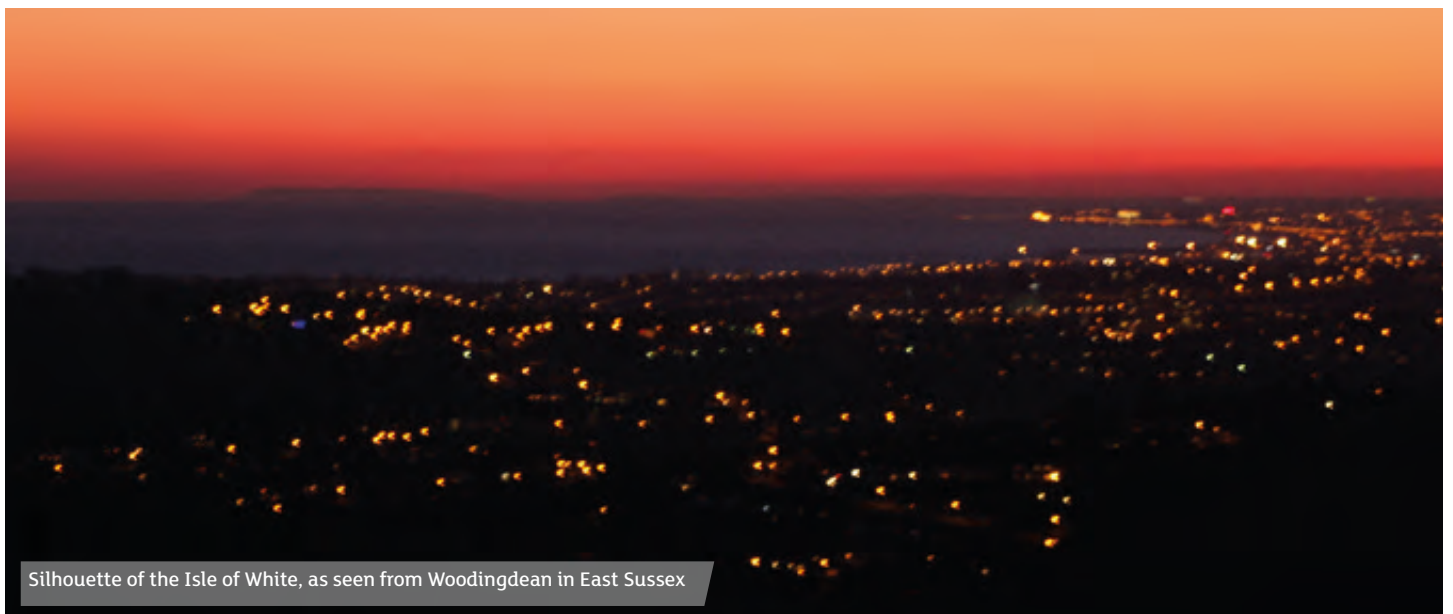
There is increasing interest among local authorities to find new ways to save money, reduce energy consumption and reduce carbon emissions. A total of 23 local authorities said they were involved in switching off street lights, typically between midnight and 5am, and 32 said they were involved in dimming street lights in their areas. Saving energy was the most important factor for local authorities who were switching off or dimming street lights, followed by cost saving. The reduction of local light pollution was largely viewed as an additional benefit.

The survey has also revealed that communities are much more supportive of dimming street lights than switching them off; 68% were very supportive of dimming street lights compared with only 10% of communities who supported switching off. Although a main concern about switching off or dimming lights is the potential impact on crime levels, no local authority said that there had been an increase in crime or a clear link to adjusted street lighting. Many respondents

said that they liaised with the local police about lighting and would make any recommended adjustments.

Many local authorities are upgrading their street lighting to LEDs or white lighting, which could help reduce light pollution levels in the coming years. CPRE suggests that the use of full cut off flat glass lamps are the best way to ensure that the light shines only where it is needed. The majority of respondents said that they would discourage new lighting in previously unlit areas, unless in exceptional circumstances.

In conclusion, on the basis of evidence in this survey, it is clear that many local authorities are taking steps in the right direction to manage lighting more effectively. However, much more can be done to encourage all authorities to take this issue seriously. We have made a series of recommendations in this report to encourage the sharing of best practice and to encourage all local authorities to consider how they can further improve their approach to tackling light pollution.



Silhouette of the Isle of White, as seen from Woodingdean in East Sussex

Recommendations

As a result of the evidence presented in this report, CPRE makes the following recommendations:

1

Light pollution policy

All local authorities should have a policy to control light pollution in their Local Plan, in line with the National Planning Policy Framework and the associated National Planning Practice Guidance on light pollution. This should include identifying existing dark areas that need protecting.

2

Street lighting policy

Local authorities should consider preparing a Street Lighting Policy, which could include Environmental Lighting Zones to ensure that the appropriate lighting levels are used in each zone, with very strict requirements applying in identified dark areas.

3

Part-night lighting schemes

We encourage local authorities to investigate how part-night lighting schemes (e.g. switching off between midnight and 5am) or dimming could work in their areas, including examining the cost, energy and carbon savings. This should be done in full consultation with the local community.

4

LANTERNS research project

All local authorities who are switching off or dimming street lighting should monitor crime and accident statistics and consider taking part in the Institution of Lighting Professionals/LANTERNS research project which aims to quantify any effects of changes to street lighting on road traffic accidents and crime.

5

LED lighting

Local authorities should give careful consideration to the type of Light-Emitting Diodes (LED) lighting they use and consider the potential impacts that higher temperature blue rich lighting has on ecology and on human health.

6

Targets for replacing lights

Local authorities with responsibility for street lighting could set targets for replacing all their street and road lights with less light polluting types, such as full cut off flat glass lamps.

7

Testing new street lighting

New street lighting should be tested 'in situ' before a lighting scheme is rolled out across a wider area to ensure that it is the minimum required for the task and does not cause a nuisance to residents.

8

Preserving dark skies

Local authorities should have a strong presumption against new lighting in existing dark areas, unless essential as part of a new development or for public safety reasons that have been clearly demonstrated.

9

Highways Agency guidance

The Highways Agency should review the lighting section of the Design Manual for Roads and Bridges, which is used to design motorway and trunk road lighting, to ensure it remains relevant for local authorities.

Appendix

CPRE lighting survey questions

National Planning Policy Framework and lighting

1. Do you have a lighting policy in either your Local Plan or related document? *Yes/No*
2. If so, is this:
 - a. The continuation of a lighting policy your local authority has had for some time? *Yes/No*
 - b. An entirely new policy due to the National Planning Policy Framework *Yes/No*
 - c. If possible, please provide a website link to your Local Plan policy or similar on lighting:
3. Have you adapted it to comply with the NPPF? *Yes/No*
4. How long have you had a policy on lighting? *Under a year/one-two years/two-three years/three-four years/other (please specify)*
5. Does your local authority consider the lighting impact of:
 - a. any new development proposal *Yes/No*
 - b. a change to lighting of existing development *Yes/No*
 - c. a highway proposal? *Yes/No*
6. How important are these factors to your local authority when assessing development/highway lighting proposals? *(Please rank: Very important/Considered/Not considered/Not important/N/A)*
 - a) Cost
 - b) Energy efficiency
 - c) Lamp design
 - d) Potential impact on light pollution of the night sky
 - e) Potential impact of lights shining into residential/business premises
 - f) Potential impact of light on wildlife and habitat
 - g) Impact of the street lights and columns in the daytime (i.e. street clutter)
 - h) Impact of the street lights in the open countryside
 - i) Impact of the street lights in intrinsically dark landscapes (e.g. National Parks)
 - j) Ease of maintenance
 - k) Ability to control the light centrally, for example to allow dimming
 - l) Other *(Please state)*
7. Has your local authority recommended or required alterations to a proposed lighting scheme to ensure lighting is installed appropriately and only if needed? *Yes/No*
- a. If yes, please provide a recent example: Street light switch-off/dimming schemes in progress

Switch-off schemes

8. Is your local authority engaged in a street light switch-off scheme? *Yes/No*
9. Is this a trial or permanent? *Trial/permanent*
10. How long has the switch-off scheme been running? *Under a year/one-two years/two-three years/three-four years/over four years (please specify)*
11. What areas in your local authority does the switch-off scheme cover? (e.g. village) *Please state*
12. Can you provide a website link to information on your local authority switch-off scheme?
13. Did your local authority need to invest in new technology in order to run the switch-off scheme? *Yes/No*
14. What motivated your local authority to pursue a street light switch-off scheme?

- a. Cost saving
- b. Energy saving
- c. Reduction in light pollution
- d. Other *(Please specify)*
15. Does your local authority plan to remove any street lighting that is switched off? *Yes/No/Possibly*
 - a. If so, please provide details on the extent of removal:
16. Did you consult the local community about the switch-off scheme proposals? *Yes/No*
 - a. If so, can you provide details?
17. How has your local community reacted to the switch-off scheme? *Very supportive/Mixed/Not supportive*
 - a. Please provide any details about local community reaction:
18. Are you monitoring crime statistics? *Yes/No*
 - a. If so, what has happened? *(Please include any relevant web links)*

Dimming schemes

19. Is your local authority engaged in a street light dimming scheme? *Yes/No*
20. Is this a trial or permanent? *Trial/permanent*
21. How long has the dimming scheme been running? *Under a year/one-two years/two-three years/three-four years/four-five years/Other (please specify)*
22. What areas in your local authority does the dimming scheme cover? (e.g. village) *Please state*
23. Can you provide a website link to information on your local authority dimming scheme? *Please state*
24. Did your local authority need to invest in new technology in order to run the dimming scheme? *Yes/No (Please add any details)*
25. What motivated your local authority to pursue a street light dimming scheme?
 - a. Cost saving
 - b. Energy saving
 - c. Reduction in light pollution
 - d. Other *(please specify)*
26. Does your local authority plan to remove any street lighting? *Yes/No/Possibly*
 - a. If so, please provide details on the extent of removal.
27. Did you consult the local community about the dimming scheme? *Yes/No*
 - a. If so, can you provide details?
28. How has your local community reacted to the dimming scheme? *Very supportive/Mixed/Not supportive*
29. Are you monitoring crime statistics? *Yes/No*
 - a. If so, what has happened? *(Please include any relevant web links)*

Considering street light switch-off/dimming scheme

30. Is your local authority currently consulting (or plan to soon) about a street light switch-off/dimming trial? *Yes/No*
31. Is it a switch-off or dimming scheme? *Switch-off/Dimming/combination*
32. What areas in your local authority would the switch-off/dimming scheme cover? (e.g. villages, residential areas)
33. How long is the consultation period? *Under a month/Two months/Three months/Over three months*
34. How will you promote the consultation to the public and interested parties?

35. What do you expect the outcome will be? *The scheme will go ahead as proposed/The scheme will go ahead with adjustments/The scheme will not go ahead*
36. Please provide a website link to information about the consultation:
37. How long do you envisage the trial will be? *Under three months/three-six months/Over six months/A year/Two years/Other (please specify):*
38. Do you hope that the trial will become permanent? *Yes/No/It's too early to say*
39. Do you plan to monitor crime statistics as part of a trial? *Yes/No*

Type of lighting installed in your local authority

40. What types of lighting that are used across your local authority area? *(Please list)*
41. If LED, which colour temperature: 1) 4100K 2) 4000K 3) 3500-3999K or 4) Less than 3500 5) Other *(Please specify)*
42. Do you vary column height depending on location? *Yes/No*
43. What factors do you consider when choosing new street lamps? *(Please rank: Very important/Considered/Not considered/Not important/N/A)*
 - a. Cost
 - b. Energy efficiency
 - c. Lamp design
 - d. Colour rendition index (CRI)
 - e. Potential impact on light pollution of the night sky
 - f. Potential impact of lights shining into residential/business premises
 - g. Potential impact of light on wildlife and habitat
 - h. Impact of the street lights and columns in the daytime (e.g. street clutter)
 - i. Impact of the street lights in open countryside
 - j. Impact of the street lights in intrinsically dark landscapes (e.g. National Parks)
 - k. Ease of maintenance
 - l. Ability to control the light centrally to e.g. allow dimming
44. Who makes the final decision about the type of lighting installed in your local authority area? *(Job title, Department, Comments)*

New lighting

45. How do you decide whether to install new lighting in places that have previously been unlit?
46. Do you have direct experience of using the Department for Transport/Highways Agency Design Manual for Roads and Bridges when considering new lighting? *Yes/No*
47. If you have referred to the Design Manual for Roads and Bridges, do you think it could be improved? *Yes/No*
 - a. If so, how?
48. Is there any other guidance you would refer to in deciding whether to introduce new street lighting?
49. Who makes the final decision about new lighting installed in your local authority area? *(Job title, Department, Comments)*



Front cover image
© Darren Baskill

Photo credits

Inside front cover and inside back cover © David J Southern;
Page 4 © Emma Marrington CPRE; Page 5 © CPRE/Land Use Consultants;
Page 6 © Richard Murrin; Page 7 Dan James (©ENPA); Page 10 © Grant
Privett; Page 12 © Pete Lummis; Page 13 © Emma Marrington CPRE;
Page 16 © Emma Marrington CPRE; Page 18 © Leicester City Council;
Page 21 © Paul Marchant; Page 23 (top) © Knowsley Council; Page 23
(middle) © Emma Marrington CPRE; Page 25 © Andrew Whyte;
All other photos © Darren Baskill

Design
www.staffordtilley.co.uk

CPRE fights for a better future for England's unique, essential and precious countryside. From giving parish councils expert advice on planning issues to influencing national and European policies, we work to protect and enhance the countryside.

We believe a beautiful, thriving countryside is important for everyone, no matter where they live. We don't own land or represent any special interests. Our members are united in their love for England's landscapes and rural communities, and stand up for the countryside, so it can continue to sustain, enchant and inspire future generations.

Our objectives

We campaign for a sustainable future for the English countryside, a vital but undervalued environmental, economic and social asset to the nation. We highlight threats and promote positive solutions. Our in-depth research supports active campaigning, and we seek to influence public opinion and decision-makers at every level.

Our values

- We believe that a beautiful, tranquil, diverse and productive countryside is fundamental to people's quality of life, wherever they live
- We believe the countryside should be valued for its own sake
- We believe the planning system should protect and enhance the countryside in the public interest



Campaign to Protect Rural England

5-11 Lavington Street
London SE1 0NZ

T 020 7981 2800

F 020 7981 2899

E info@cpre.org.uk

www.cpre.org.uk

 @CPRE

Registered charity number: 1089685
CPRE is a company limited by guarantee
registered in England, number 4302973

April 2014

Our reports are provided free of charge.
If you would like to make a donation you can do this by text message.

Text CPRE05 plus the amount you would like to donate to 70070, e.g. to make a £5 donation text: CPRE05 £5.

JOIN US ►

IN STANDING UP
FOR THE COUNTRYSIDE

www.cpre.org.uk