

<b>Sustainable Development Select Committee</b>			
<b>Report Title</b>	Street lighting: variable lighting policy		
<b>Key Decision</b>	No	<b>Item:</b>	7
<b>Ward</b>	All		
<b>Contributors</b>	Asset Management Planning Manager	<b>Date:</b>	18 April 2016

## **1. Purpose**

- 1.1 The purpose of this report is to provide the Sustainable Development Select Committee with an update on the Council's approach to variable lighting for street lighting.
- 1.2 The report is an opportunity to highlight issues on variable lighting and follows a discussion at the Committee's meeting on 30 June 2015 and a trial of variable lighting in a number of streets across the borough. Variable lighting is one of the reserved decisions under the Lewisham and Croydon Street Lighting Governance Agreement and the intention is that a variable lighting policy will be tabled at Mayor and Cabinet for agreement.

## **2. Recommendations**

- 2.1 The Sustainable Development Select Committee is asked to note the contents of this report, and in particular:
- The proposal at 5.15 to implement dimming of 50% in designated streets
  - The proposal at 5.16 to cut 20 minutes of lighting time per day
  - The draft variable lighting policy at Annex A

## **3. Policy Context**

- 3.1 *Shaping our future*, Lewisham's Sustainable Community Strategy for 2008-2020, sets out a vision for Lewisham: 'Together, we will make Lewisham the best place in London to live, work and learn'. *Shaping our future* includes the following priority outcomes relevant to street lighting:
- Safer – where people feel safe and live free from crime, antisocial behaviour and Abuse
  - Clean, green and liveable – where people live in high quality housing and can care for and enjoy their environment.
- 3.2 The Council also has ten corporate priorities which support delivery of the Sustainable Community Strategy. Street lighting is particularly relevant to three of these corporate priorities:
- Clean, green and liveable – environmental management, cleanliness and care for roads, pavements and a sustainable environment.

- Safety, security and a visible presence – partnership working with the police and others to further reduce crime levels, and using Council powers to combat anti-social behaviour.
  - Inspiring efficiency, effectiveness and equity – ensuring efficiency, effectiveness and equity in the delivery of excellent services to meet the needs of the community.
- 3.3 The Council's Strategic Asset Management Plan 2015-2020 describes the Council's approach to management of its assets, including street lighting. It includes four interlinked objectives:
- Compliance with regulation and responsiveness to risk.
  - Improving the quality of services delivered by the corporate asset function.
  - Reducing expenditure associated with the Council's assets.
  - Increasing the level of income generated by the Council's assets.

#### **4. Lewisham and Croydon Street Lighting PFI**

- 4.1 The Lewisham and Croydon Street Lighting PFI is a joint procurement project to replace the ageing street lighting stock of both London Boroughs. The aims of the project are:
- Improving efficiency, including energy savings and reduced carbon emissions;
  - Improving overall safety;
  - Providing a better living and working environment;
  - Providing value for money;
  - Improved street lighting standards;
  - Reduction in crime and the fear of crime; and
  - Supporting the night-time economy.
- 4.2 The project scope includes the replacement of approximately 17,500 Lewisham street lights over an initial 5-year Core Investment Programme, with an on-going 25-year responsibility for maintenance and repair. Works to replace Lewisham's street lighting stock were substantially complete in 2015.
- 4.3 Lewisham and Croydon Councils have put in place agreed governance and joint working arrangements for the project, with a Joint Committee to discharge on their behalf the functions set out in the Governance Agreement. Day to day operations are undertaken by a joint co-located Client Monitoring Team consisting of officers from each of the Authorities.
- 4.4 Decisions or actions which are not set out in the agreement as having been delegated to the Joint Committee are reserved for the Authorities themselves (Reserved Decisions). Variable lighting is one of the reserved decisions requiring specific agreement of Lewisham Council.
- 4.5 The Street Lighting PFI project includes the installation of a centrally managed control system (CMS) connected to each street light.
- 4.6 The CMS will enable:
- Energy consumption and performance data to be collected remotely;
  - Automatic fault reporting;
  - Lights to be switched off or on or the level of lighting to be adjusted remotely
- 4.7 The ability to vary lighting intensity and times creates an opportunity to reduce the cost of energy for street lighting, as well as associated carbon emissions. It is also an

opportunity to reduce the carbon emissions associated with energy consumption. Dimming lighting levels will also reduce light pollution levels and consequently may have potentially beneficial effects for biodiversity.

- 4.8 Energy savings applicable to changes in the dimming and/or switching regimes applied on the PFI contract are managed financially by the payment mechanism (Schedule 8 of the Contract). This works as follows:
- During procurement the Service Provider forecast energy for 25yrs, a calculation in the Payment Mechanism ensures that the Service Provider pays for all energy above that forecast.
  - If the actual consumption is below that forecast by the Service Provider then a calculation in the Payment Mechanism ensures that the Service Provider takes the first 5% and anything below that is shared by way of an annual reconciliation. This does not however apply to dimming and / or switch regime changes instructed by the Authority.
  - Another section in the Payment Mechanism ensures that energy savings from dimming and / or switch regime changes instructed by the Authority are retained by the Authority.
- 4.9 An alternative to the introduction of a variable light level policy would be significant capital investment in the recently developed LED lighting technology. This option has however been discounted because it would take approximately 5 to 7 years before any savings would be realised. This position is one that the joint client monitoring team will continue to monitor.

## **5. Proposed approach to variable lighting in Lewisham**

- 5.1 Dimming and switching off street lighting are well established options for local authorities looking to make savings. Local authorities that have implemented a variable lighting policy include Blackpool MBC, Derby City Council, Wokingham MBC, Cornwall County Council, Northamptonshire County Council, Cambridgeshire County council and Birmingham City Council, and a number of other authorities are progressing plans to follow suit.
- 5.2 Any decision to reduce lighting levels needs to consider the potential impacts. Street lighting plays an important role in relation to crime prevention including the operation of CCTC, and well-lit streets are likely to reduce fear of crime. Street lighting is also relevant to traffic management and road safety. Lighting is also a factor in relation to promoting the night time economy for example in town centres.
- 5.3 Given these potential impacts fully switching off lights as opposed to dimming is considered outside the scope of this report, though proposals can be put forward if members request it.
- 5.4 The CMS system can be set at the level of individual lighting columns. It is therefore possible to deploy variable lighting that takes account of the characteristics of different areas. The CMS can be used to maximise the potential benefits of dimming while ensuring other objectives are not compromised. The CMS also means that light level changes can be implemented quickly, if necessary instantly, without the need to be physically present at the site.
- 5.5 The basic premise of the approach set out in this report is that the timing and degree of dimming should be determined by the requirements of the area the street light is

situated. This is to mitigate against any adverse impacts, while retaining the opportunity to reduce energy consumption.

- 5.6 Following the report to the Committee in June 2015 a trial of dimming took place from November 2015. The following 3 options were trialled in 3 residential streets in each ward:

Option 1		Option 2		Option 3	
Before midnight	After midnight	Before midnight	After midnight	Before midnight	After midnight
25% reduction	25% reduction	25% reduction	50% reduction	50% reduction	50% reduction

Table 1: three options for dimming

- 5.9 A list of streets involved in the trial is included in Annex B. No resident feedback has been received since the start of the trial. A similar trial has been conducted in Croydon and has also not generated any feedback.
- 5.10 The Client Monitoring Team working on behalf of both councils with Skanska has modelled the impact of applying the different options across the borough. As described above in 5.2-5.5 the proposed approach is based on adopting a different approach in areas depending on the nature of lighting requirements. The approach taken is set out below in table 2.

Highway type	Proposed dimming regime
Residential	Dimming applied from dusk to dawn
Town and district centres	Dimming applied from midnight
Link roads	Dimming applied from midnight
Strategic routes and main distributors	Dimming applied from 9pm
Secondary distributors	Dimming applied from dusk to dawn

Table 2: proposed approach across different highway types

- 5.11 The CMS allows pre-identified streets to be exempted from any dimming. It is proposed that officers in Regeneration and Asset Management division liaise with colleagues in crime reduction, road safety and highways to identify and monitor exemptions. The exemptions will focus on areas characterised in the list below. Where there are location-specific reasons identified for granting an exemption outside the scope of the list below these can be considered on a case-by-case basis. It is proposed that the initial list of exemptions is drawn up before dimming is applied. Changes to the list of exempted areas will be implemented on an ongoing basis and the list of exemptions reviewed on an annual basis by Regeneration and Asset Management division. Officers will also maintain details of 24 hour contacts at Skanska to allow lights to be switched to full intensity with immediate effect. Locations where exemptions will be applied include:
- Lights at major junctions/ roundabouts.
  - Outside schools.
  - In town centres where there is CCTV, high security businesses such as banks, and/or lots of people at night, for example near night clubs and train stations.
  - Areas where street lights are needed to reduce road accidents or where the Authority considers it has a specific duty of care.
  - Areas where there could be an increase in crime through reduced lighting, like pubs, clubs and specific night-time use in residential areas.
  - Areas where for operational reasons the police require the highest levels of lighting.
  - Remote alleys linking residential streets.

- Where there is sheltered housing for the elderly.

5.12 Table 3 sets out indicative financial benefits forecast for each of the options set out above.

	<b>Energy reduction</b>	<b>Annual saving</b>
Option 1	16%	95,000
Option 2	25%	£148,000
Option 3	32%	£190,000

Table 3: Estimated financial benefit by model

5.13 The above forecast includes the following assumptions:

- That dimming is operational for a full financial year
- That the price per kilowatt hour of energy saved is £0.09. Any increase in energy costs will increase the financial benefit of dimming lights, but will also erode any budget saving that might be considered.
- That a maximum of 20% of lights are given an exemption, where no dimming is implemented.
- Lewisham Council is not required to pay for allowances relating to street light energy consumption under the Carbon Reduction Commitment or successor carbon tax scheme.
- A trimming policy (see 5.16) has been implemented saving 2% from the street lighting energy bill.

5.14 It should be noted that the forecast annual saving does not automatically translate into a cashable saving. Although in the last 12 months electricity prices have fallen slightly the long-term trend is for rising prices. Implementing dimming should reduce pressures on already stretched budgets and it is recommended that following the introduction of dimming actual expenditure is monitored against the modelling of benefits forecast by the Client Monitoring Team.

5.15 Based on the results of the dimming trial and the forecast of savings across the three options it is proposed that the Council opts for option 3. This is in line with the approach under consideration in Croydon.

5.16 An additional energy saving of approximately 2% could be achieved by switching the lights on and off slightly later at dusk and dawn respectively (based on ambient light levels). This approach has historically been implemented by most local authorities in the UK by changing photo-cells at each lighting point, in Lewisham we can implement the change quickly via the CMS. It is proposed that we implement this as part of the wider policy on dimming.

## **6. Financial implications**

6.1 There are no specific financial implications arising from this report, although a key purpose of any dimming policy would be designed to reduce the Council's exposure to rising energy costs associated with street lighting. In 2014/15 the cost of electricity for streetlights was £698,200. The forecast for 2015/16 is £650,000.

## **7. Legal implications**

- 7.1 As the Highway Authority the Authority has a discretionary power under S.97 of the Highway Act 1980 to provide street lighting on roads for which it is responsible. However in exercising its powers as to the extent, nature, maintenance and operation of street lighting the Highway Authority must act reasonably and in the interests of road safety.
- 7.2 Case law suggests that a Highway Authority would not be negligent for accidents arising from a failure to light a highway unless an accident arises because the authority has failed to take reasonable steps to prevent a hazard it has placed or caused to be placed in or around the highway (for example signs, bus shelters, lighting columns) from becoming a danger to the public. It can therefore be concluded that it is within the Council's discretionary powers to modify the lighting levels on its streets.
- 7.3 Where the Highway Authority chooses to exercise its power to light a highway, BS EN 13201:2003 can be used as guidance for lighting class, or hours of operation. Consideration should be given to the implications of Section 17 of the Crime and Disorder Act 1998 (as amended by the Police and Justice Act 2006) and the potential impact on lower light levels on crime and disorder. Consideration should also be given to the Council's equalities duties under the Equalities Act 2010.

## **8. Crime and disorder implications**

- 8.1 The dimming of street lights has the potential to give rise to crime and disorder implications, and as noted above consideration must be given to the implications of Section 17 of the Crime and Disorder Act 1998 (as amended by the Police and Justice Act 2006).
- 8.2 The views of Lewisham Police and the Council's Crime Reduction Service have been sought in developing the Council policy. Officers from the Crime Reduction Service have confirmed that there is recognition that a balance of efficiency and safety needs to be met and that the flexibility outlined in the report and exempt areas goes as far as possible to mitigate concerns whilst ensuring key potential crime hotspots are sufficiently supported by street lighting.

## **9. Equalities implications**

- 9.1 The dimming of street lights has the potential to give rise to equality implications, particularly, in the context of the characteristics protected under the Equalities Act 2010, in relation to age, gender and disabilities. Paragraph 5.11 above identifies a range of street lights that could be exempted from any dimming and where concerns emerge about particular locations sites officers will be able to amend the instruction to Skanska for immediate implementation.

## **10. Environmental implications**

- 10.1 The dimming of street lights has the potential to support environmental objectives for reducing carbon emissions. Dimming street lights may also have a positive impact on light pollution and therefore potentially has benefits for biodiversity.

## **11. Conclusion**

- 11.1 The cost of electricity to run street lighting is approximately £650k a year, and energy costs are expected to continue to rise over the coming years. The new street lighting infrastructure installed under the joint Lewisham and Croydon private finance

initiative creates the potential to vary levels of street lighting using a central management system.

- 11.2 Estimates based on the Client Monitoring Team's modelling of dimming indicate that there is the potential to reduce energy consumption by up to 32% and this is something that a number of local authorities have already implemented. It is proposed that Lewisham implements the dimming policy set out in this report including a reduction in lighting of 50% in residential areas.

If there are any queries on this report please contact **Martin O'Brien, Asset Management Planning Manager**, 020 8314 6605.

### **Background Documents**

10 March 2015 Street Lighting PFI Contract report to Public Accounts Committee  
<http://councilmeetings.lewisham.gov.uk/ieListDocuments.aspx?CId=123&MId=3442&Ver=4>

30 June 2015 Street lighting: variable lighting policy  
<http://councilmeetings.lewisham.gov.uk/documents/s37215/06StreetLighting300615.pdf>

## Annex A: Draft Variable Lighting Policy

1. The Variable Lighting Policy for Lewisham seeks to use the technology installed under the Lewisham and Croydon Street Lighting PFI to reduce the consumption of energy from street lighting without compromising objectives for crime reduction, safety and economic development.
2. It is proposed that street lights are dimmed by 50% as follows:

Highway type	Proposed dimming regime
Residential	Dimming applied from dusk to dawn
Town and district centres	Dimming applied from midnight
Link roads	Dimming applied from midnight
Strategic routes and main distributors	Dimming applied from 9pm
Secondary distributors	Dimming applied from dusk to dawn

3. Specific street lights and streets can be exempted from the variable lighting. The following criteria are proposed for these exemptions:
  - Lights at major junctions/ roundabouts.
  - Outside schools.
  - In town centres where there is CCTV, high security businesses such as banks, and/or lots of people at night, for example near night clubs and train stations.
  - Areas where street lights are needed to reduce road accidents or where the Authority considers it has a specific duty of care.
  - Areas where there could be an increase in crime through reduced lighting, like pubs, clubs and specific night-time use in residential areas.
  - Areas where for operational reasons the police require the highest levels of lighting.
  - Remote alleys linking residential streets.
  - Where there is sheltered housing for the elderly.
4. It will be possible to revert any street light to 100% lighting and key Council officers and other nominated organisations will be provided with contact details at Skanska providing a 24 hour response.
5. Implementation of the policy will be kept under review with an annual report to Sustainable Development Select Committee, or other committee as directed by Lewisham's Chair of Overview and Scrutiny.



## **Annex B: List of street included within the trial of dimming**

<u>Bellingham</u>	No. Cols	
Winchfield Road	6	Dim 1
Hawkins Way	9	Dim 2
Otterden Street	7	Dim 3
<u>Blackheath</u>		
Oppenheim Road	7	Dim 1
Heathlee	8	Dim 2
Eliot Park	7	Dim 3
<u>Brockley</u>		
Millmark Grove	7	Dim 1
Alpha Road	6	Dim 2
Ashby Road	10	Dim 3
<u>Catford South</u>		
Hafton Road	10	Dim 1
Killearn Road	11	Dim 2
Ardoch Road	11	Dim 3
<u>Crofton Park</u>		
Whatman Road	7	Dim 1
Brockely View	9	Dim 2
Gabriel Street	10	Dim 3
<u>Downham</u>		
Belgravia Gardens	7	Dim 1
Camlan Road	6	Dim 2
Galahad Road	8	Dim 3
<u>Evelyn</u>		
Alloa Road	7	Dim 1
Arklow Road	9	Dim 2
Eugenia Road	9	Dim 3
<u>Forest Hill</u>		
Horniman Drive	18	Dim 1
Netherby Road	7	Dim 2
Plane Street	6	Dim 3
<u>Grove Park</u>		
Pennington Way	12	Dim 1
Luffman Road	8	Dim 2
Ashwater Road	8	Dim 3

Ladywell

Undercliff Road	8	Dim 1
Malyons Road	12	Dim 2
Veda Road	6	Dim 3

Lee Green

Pascoe Road	7	Dim 1
Murillo Road	8	Dim 2
Hedgley Street	5	Dim 3

Lewisham Central

Thornford Road	6	Dim 1
Elthruda Road	6	Dim 2
Longbridge Way	10	Dim 3

New Cross

Achilles Street	7	Dim 1
Mornington Road	8	Dim 2
Farrow Lane	8	Dim 3

Perry Vale

Carholme Road	8	Dim 1
Inglemere Road	10	Dim 2
De Frene Road	14	Dim 3

Rushey Green

Glenwood Road	6	Dim 1
Jutland Road	10	Dim 2
Blythe Hill Lane	9	Dim 3

Sydenham

Peak Hill	10	Dim 1
Bishopsthorpe Road	12	Dim 2
Sunnydene Street	6	Dim 3

Telegraph Hill

Brockill Crescent	11	Dim 1
Selden Road	7	Dim 2
Mantle Road	11	Dim 3

Whitefoot

Brockman Rose	11	Dim 1
Cranmore road	6	Dim 2
Cotton Hill	14	Dim 3