

**Slough Borough Council  
 Record of Significant Officer Decision**

<b>Information needed</b>	<b>Details</b>
<b>Title of decision</b>	Streetlighting Dimming Trial II
<b>Date decision taken</b>	07/12/2023
<b>Decision maker</b>	Pat Hayes, Executive Director Regeneration, Housing and Environment
<b>Portfolio</b>	Cllr Bedi, lead member for transport, housing, highways, the environment and environmental services
<b>Details of decision taken</b>	To proceed with a second dimming trial covering the trial areas outlined in Appendix A: Zone 1: Upton Court Zone 2: Cippenham Manor Zone 3: Manor Park & Stoke Zone 4: Colnbrook Zone 5: Cippenham Village Zone 6: A355 Tuns Lane (between M4 j6 and the Copthorne Roundabout) Zone 7: A412 Uxbridge Road (Sainsbury's Roundabout to Borough Boundary)
<b>Reasons for taking decision</b>	To develop an adaptive lighting strategy that meets the following objectives: <ul style="list-style-type: none"> <li>• Providing a cost-effective public street lighting service;</li> <li>• Conserving energy and promoting sustainability, both environmentally and financially;</li> <li>• Controlling light pollution;</li> <li>• Promoting a general feeling of well-being and supporting night-time economy; and</li> <li>• Aiding movement across the network.</li> </ul>
<b>Options considered</b>	Several dimming options will be tested and observed as part of the trial.
<b>Details of any conflict of interest, disclosable pecuniary interest or non-statutory disclosable interest declared</b>	Cabinet Members and local ward councillors were invited to attend a dimming test at Quaves Road on evening of 29 <sup>th</sup> November. The test demonstrated different light dimming light outputs in terms of % energy input to observe lights being dimmed to different lighting levels. There is no conflict of interest and no Members have pecuniary interests in the company involved in managing our street lighting network, Enerveo.
<b>Reports considered</b>	No formal cabinet report has been prepared a previous significant decision for the first dimming trial was submitted and approved on 26 <sup>th</sup> January 2023. <a href="https://democracy.slough.gov.uk/ieDecisionDetails.aspx?ID=2250">https://democracy.slough.gov.uk/ieDecisionDetails.aspx?ID=2250</a>

## **Regeneration, Housing and Environment - Significant Decision**

### **Street lighting Dimming Trial II**

**Prepared by:** Anka Asandei – Principal Environment Officer

#### **Background**

This report sets out to initiate a second trial-based approach that will eventually lead to implementing a borough-wide adaptive streetlighting regime, to achieve significant carbon, energy and cost savings.

As part of a joint project with Reading and Wokingham between 2016 and 2018, most streetlights were replaced with LEDs. Immediately after the new network was up and running, the lighting output was set at 70%. This dimming by 30% can now be considered our baseline. Since 2018, the Council's inventory of street lighting has increased, not least by adoption of the former SSE network on the Slough Trading Estate. However, no further assessment of its efficiency and cost-effectiveness has been carried out until we conducted a light dimming trial between January 23 and March 23.

#### **Proposed scheme**

Recent financial and environmental constraints prompted the need for a review of the current arrangements and consideration is being given to the possibility of further reducing the street lighting outputs by additional dimming and/or switching off lights entirely in some areas.

The British Standard for Road Lighting, BS5489, proposes the following energy saving options to be considered: adaptive/adaptive lighting (dimming); trimming; part-night; switch off; sensors. Slough currently employs some of these techniques for approximately 78% of its network; the other 22% consists of older technology, CCTV, lit street signs, bollards and billboards, and traffic signals, that is not controlled by our central management system (CMS).

As part of the project to alter/fine tune the current installed street lighting Central Management System (CMS), on the Mayflower Smart Cities Platform, we need to plan with our service partners Enerveo, Volker & Power Data Associates (PDA).

- a) Enerveo: Supplier of the Mayflower CMS for the installed lighting controlling / programmable units and operates the computer-based light profile (dimming) controlling system.
- b) Volker Highways: Service partner, handles the maintenance of the network and update the FM database following replacement of lighting columns and lamps.
- c) PDA: Meter Administrator, supplier of data & power consumptions & optimisation reports.

#### **Adaptive lighting**

Our existing Central Management System (CMS) enables:

- 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.

The ability to vary lighting intensity at different times during the night, creates an opportunity to mitigate the pressures on Council budgets from rising energy costs. It is also an opportunity to reduce the carbon emissions associated with energy consumption. Dimming streetlighting levels will also reduce light pollution levels and consequently may have potentially beneficial effects for biodiversity. Our previous trial suggests that in practice even a reduction by 50% in lighting at a certain location would not necessarily be obviously noticeable to most people if introduced gradually over the evening-night period.

Any decision to reduce streetlighting levels also needs to consider the potential impacts. Streetlighting plays a vital role in relation to crime prevention including the operation of CCTV, and well-lit streets are likely to reduce fear of crime. Streetlighting is vital to traffic management and road safety, and to promoting the night-time economy, especially in town centres. During our initial trial we engaged with

both Thames Valley Police (TVP) and the CCTV room, and their feedback was positive and supportive of our proposal. Engagement with TVP revealed that during the trial there were no significant increases in criminal activity in Colnbrook, where the trial was successfully carried out. The CCTV room operatives confirmed that the small reductions in lighting levels that we employed during the first trial (max. 40% reduction) did not impede the functionality of the CCTV cameras.

The CMS creates the opportunity to deploy adaptive lighting that takes account of the characteristics of different areas, helping to maximise the potential benefits of dimming while reflecting the need to ensure other objectives are not compromised. Light level changes can be implemented quickly, without the need to be physically present at the site.

### Proposed second field trial

Before finalising the permanent scheme for an Adaptive Streetlighting Strategy, we propose a second dimming trial in five residential areas and two 'A' roads sections. In this second trial we plan for six locations to be dimmed gradually throughout the night and throughout the whole trial period, and the seventh location shall be our control, with no light being dimmed.

Having learned from the errors of the first trial, on this occasion we aim to test even further not only the perception of the proposed new dimming scenarios, but also the potential savings each could achieve if applied all the residential areas in Slough. The new sites have been selected based on their location, avoiding any potentially contentious settings including shopping parades, busy highways and junctions, roundabouts and where there is likely to be lots of people congregating at night (busy commercial streets/roads and the town centre), and where there are known crime hotspots, or where TVP advise us otherwise. At the same time, the choice of trial areas was informed by the status and health of the network in those locations, where we now know that the infrastructure is up to the task and will function as planned.

Before the first trial the residents were informed and given the opportunity to contact the Council with any questions, issues, or complaints they might have. Even though there has been some activity and random comments on social media, there were no official complaints or comments received. For this second trial, and in agreement with the Communications Team, it is proposed that residents will not be directly informed about the trial, so that we can fully assess the perceived reactions and avoid any biased responses, as other Councils discovered to be the case during some of their lighting trials.

Scenario	Dusk to 10pm	10pm to midnight	Midnight to Dawn	Duration/
<i>4 Residential - Stepped Dimming Scenarios &amp; 1 Control: Trial Area D</i>				
<b>Dimming profile 1</b>	60%	50%	40%	<b>5 weeks</b>
<b>Dimming profile 2</b>	50%	40%	30%	<b>5 weeks</b>
<b>Dimming profile 3</b>	40%	30%	20%	<b>5 weeks</b>

Following this second trial we proposed to prepare a report for the approval by Cabinet. This will report on the findings of the trial and consultation and outline the proposed Adaptive Streetlighting Strategy for approval by Cabinet. Such a strategy would enable the Council to pursue a clear, informed, and consistent approach towards adaptive lighting across its streetlighting assets, both as existing and in the future. With an adaptive lighting strategy, the concept is of the "right light in the right place at the right time" to promote an efficient lighting scheme. An adaptive lighting strategy will have the strategic objectives of:

- Providing a cost-effective public street lighting service;
- Conserving energy and promoting sustainability, both environmentally and financially;
- Helping to reduce crime and fear of crime;
- Controlling light pollution;
- Promoting a general feeling of well-being and supporting night-time economy; and
- Aiding movement across the network.

Subject to Cabinet approval of the strategy and preferred option, full implementation could commence in 2024/25.

## **Legal Implications**

There is no statutory duty on the Council to provide street lighting. The Council has a power under S.97 of the Highways Act 1980 to provide street lighting on roads for which it is responsible. In exercising its powers as to the extent of nature, maintenance, and operation of street lighting, the Council must act reasonably and in the interests of road safety.

The Council has general duties, which it should consider when making decisions on how to exercise its powers. The Council has an overarching duty under s.17 of the Crime and Disorder Act 1998, which requires the Council to have due regard to the effects on, and the need to do all it reasonably can to prevent (a) crime and disorder in its area (including anti-social and other behaviour adversely affecting the local environment); and (b) the misuse of drugs, alcohol, and other substances in its area.

The Council also has duties under s.39 of the Road Traffic Act 1988 to undertake studies into accidents arising out of the use of vehicles and to take such measures as appear appropriate to prevent such accidents. The Council has duties under the Equality Act 2010. An initial equality impact assessment has been carried out as part of the project initiation. A full EIA will be developed further following the responses to the feedback from statutory consultees.

The British Standard BS5489: Design of road lighting; Part 1: Lighting of roads and public amenity areas, contains guidance and recommendations for designers of lighting systems. The guidance emphasises the reasons for road lighting, including assisting traffic safety and ease of passage for road users and in particular cyclists and pedestrians. The guidance also refers to environmental considerations when designing a lighting scheme, including minimising obstructive light, daytime and night-time appearance and the effect on ecology, flora, and fauna.

Any decision to switch off existing lighting should also consider the guidance produced by the Institution of Lighting Professionals - "Advice for considering switching off streetlights in the public realm."

## **Financial Implications**

The key objective of any dimming strategy is to reduce the Council's exposure to rising costs associated with street lighting. However, in order to achieve this, additional costs are likely to be ensued: mainly related to renewing out of date contracts and access to specialist advice and software.



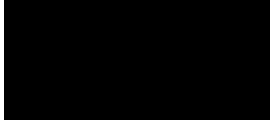
The Council has previously made significant improvements to Street Lighting with the conversion of most of its highway lighting asset to LED lighting in 2016-2018, and setting a dimming level of 70%, which almost halved electricity consumption by street lighting. The electricity usage in 2015/2016, before the LED project was initiated, was 5,096,200 kWh, and in 2018/2019, after the network was up and running, it was 2,655,354 kWh.

The options to be explored as part of this project will aim to further reduce electricity consumption, to deliver both environmental benefits and reduce pressure on revenue budgets from rising energy prices. Some of the potential options that will be explored further as part of the project could necessitate capital investment on an invest to save basis. The size of that investment and the return period are not currently known, but this information will be obtained, and it is intended to include this within the further report to Cabinet following the trial and consultation.

## **Recommended Decision**

It is recommended:

1. That the trial is implemented in December until the end of March, in order to gather sufficient data and to receive consultation feedback from key stakeholders.
2. That a report following the trial be brought to Cabinet recommending options to be rolled out across the borough.

Approved by	Title	Signature	Date
Jason Newman	Group Manager Carbon & Sustainability		7/12/23
Savio DeCruz	Associate Director Place Operations		7/12/23
Pat Hayes	Executive Director Regeneration, Housing and Environment		7/12/23