LONDON BOROUGH OF CROYDON

REPORT:		Cabinet
DATE OF DECISION		*22 February 2023*
REPORT TITLE:		Street Lighting Policy
CORPORATE DIRECTOR / DIRECTOR:		Nick Hibberd, Corporate Director - Sustainable Communities, Regeneration & Economic Recovery Steve Iles – Director Sustainable Communities
LEAD OFFICER:		Lead Officer: John Algar - Street Lighting Manager
LEAD MEMBER:		Councillor Roche – Cabinet Member for Streets and Environment
KEY DECISION? [Insert Ref. Number if a Key Decision]	Yes	6422EM
CONTAINS EXEMPT INFORMATION?		No
WARDS AFFECTED:		All

1 SUMMARY OF REPORT

1.1 The Council's Street lighting infrastructure incorporates smart technology connected to a Central Management System (CMS) that can control light levels on the highway via a wireless (internet based) interface. The ability to vary light levels provides the Council with the opportunity to make significant savings in carbon emissions (CO2), energy consumption (kW) and ongoing costs (£).

1.2 After several small-scale trials (from 2015 onwards), In January 2022 the Council introduced a borough wide variable light level trial as part of the 22/23 MTFS (22/23 PLA SAV 06). This report describes the trial completed by the Council and summarises both the environmental and financial benefits that will be realised through energy saving annually by adopting the trial as the standard light levels for the borough.

1.3 The report then introduces, for Mayor approval, a draft 'Street Lighting Policy' for application on all roads within the borough and makes recommendation on the opportunity for further carbon reduction, energy savings and financial savings if additional studies are completed.

2 RECOMMENDATIONS

2.1 The Executive Mayor in Cabinet is recommended to note the outcome of the pilot studies as set out in section 4.15 of this report.

2.2 The Executive Mayor in Cabinet is recommended to agree to the introduction of the draft 'Street Lighting Policy' as summarised in Section 3 and Appendix A of this report.

2.3 The Executive Mayor in Cabinet is asked to formalise the trial running since 06 January 2022 and adopt the pilot regime of 50% reduction in light levels in residential streets between 7pm – 5am and 50% reduction along main traffic routes from Midnight – 5am.

2.4 The Executive Mayor in Cabinet is finally asked to delegate to officers to undertake further pilot studies within the framework of the draft Street Lighting Policy, to reduce energy consumption and C02 emissions from the street lighting infrastructure across the borough and report back to a future cabinet.

3 REASONS FOR RECOMMENDATIONS

3.1 The energy saving provided by application of the draft Street Lighting Policy equates to an energy saving of approximately 33% and a cost mitigation of £967k per annum when compared with the energy price that will be applied in 2023. This policy forms part of an MTFS proposal to explore variable lighting levels for streetlights which was agreed at Cabinet on 7 March 2022 (MTFS 22/23 (PLA SAV 06).

3.2 The cause of the major electricity price rise is set out in more detail in paragraphs 4.7 and 4.8. These historic high market prices are likely to remain in future years as the impact of the conflict in Ukraine on energy markets is built in. The usual market volatility will be imposed on top of these new high prices (e.g., changing economic and weather conditions). This makes the management of consumption even more critical to minimising costs.

3.3 The flexibility provided by the CMS has not been fully explored it allows the Council to vary light levels in three pre-defined steps of 25%, 50% and 100% (i.e., switched off). Further small-scale pilot studies will allow the Council to better understand the opportunity for further savings.

3.4 The reduction of the lighting levels across the borough will bring environmental benefits due to the reduction of carbon emissions (CO2) of 631 tonne.

3.5 The recommendations support the Council's Carbon Neutral Action Plan to work towards carbon neutrality by 2030.

4 BACKGROUND AND DETAILS

The Street Lighting Service

4.1 In 2011, the Council entered public lighting PFI contract with M Group Services, Milestone (formally Skanska) for a contract term of twenty-five (25) years.

4.2 During the contract term the PFI Service Provider is responsible for the street lighting apparatus in the borough, this includes:

- An initial five (5) year investment programme (from 2011 to 2016) when approximately 98% of the existing street lighting was replaced with the latest lighting technology.

- Reactive and planned maintenance activities (in accordance with agreed performance standards).

- Apparatus replacement due to accident damage, life expiry, component failure, etc,

- Asset management including all risk associated with maintaining an accurate inventory and energy consumption record.

- Central Management System allows the Council to monitor and control its street lighting on a-point-by-point / on a street-by-street basis at any location on the highway network.

4.3 Under the terms of the PFI contract, the Council does, however, retain responsibility for the payment of energy consumed by the street lighting.

Energy Implications

4.4 The annual payment for energy consumed by street lighting was approximately £2m in financial year 2021 / 2022, when energy cost approximately, 17p per kWh compared with approximately14p per kWh pre-2021.

4.5 In September 2022, the Council's energy provider confirmed that the cost per kWh will rise by approximately 45% to 32p in March 2023. The resultant energy payment for 2023/2024 will therefore be £2.92m if the draft Street Lighting Policy is not adopted.

4.6 The dominant cause of the major increase in electricity price is the conflict in Ukraine. The subsequent withdrawal of Russian gas from the European market caused gas prices to reach record levels. As 40% of UK electricity is generated using gas, this increase subsequently drove up electricity prices. This increase now looks set to be 'built-in' to market prices as the majority of European states have sought to cut future dependency on Russian gas supplies by seeking alternatives globally. Current wholesale gas prices have eased due to mild winter conditions across Europe.

4.7 The UK government introduced a cap on wholesale gas electricity prices for non-domestic customers. This is in place from 01/10/22 to 31/03/23. However, the council's energy broker has secured wholesale prices below this cap. The removal of this cap is therefore unlikely to affect the council's prices. However, as a precaution, inflation has been applied to estimate the 2023/24 costs above.

Technology Opportunity

4.8 The initial five (5) year investment programme, completed in 2016, replaced approximately twenty-three thousand five hundred (23,500) lighting columns (including lantern units) and updated the remainder (approximately, 500) with new lanterns. Each lantern installed as part of the investment programme incorporated smart technology connected to a Central Management System (CMS). A Central Management System (CMS) is a system which centrally manages and controls the lighting via a radio frequency signal from a central computer to each unit. A CMS allows greater flexibility

and the capability to control and manage the lighting more smartly. The key benefits of a CMS system are:

- Optimised lighting for each location
- Fewer “non-working” lights
- Reduced number of “day burners”
- Optimised maintenance
- Provides the ability for remote monitoring of outages to reduce the need for staff physically checking at night.
- Flexibility to change and override settings
- A key feature of the control provided by the CMS is the ability to vary light levels to reduce energy consumption (KW) and carbon emissions (C02)

4.9 Light Dimming or Adaptive Lighting is a useful tool for councils to further reduce their energy consumption and carbon emissions. The adaptive use of a CMS system does not form part of this report. However, the basic philosophy is that the light levels are related to the usage of the road and thus when usage changes significantly up or down, then the light levels can also be adjusted in accordance with the guidance within the standards.

4.10 The Council sent out a variant lighting level questionnaire in September 2022 to all other London Boroughs. For those who responded 17 out of the 32 London Boroughs have reduced their lighting levels in either residential roads or main traffic routes. Surrey County Council also implemented their variant lighting level policy in 2010 and further reduced their lighting levels by having part night lighting in remote areas since 2016.

Draft Street Lighting Policy

4.11 The Council has, since 2015, applied the technology opportunity provided by the CMS to complete several small (on individual streets) variable light level pilot studies and trials across the highway network, the latest being a borough wide trail implemented in January 2022 (see the ‘Street Lighting Trial’ details below).

4.12 The experience gained and information garnered from the pilot studies was used to develop a draft Street Lighting Policy that it considered could be applied across the entire borough. The policy developed by the Council considers all of the following:

- Policy aims and objectives.
- Legal considerations applicable to the variation of light levels.
- The variable light level options available to the Council.
- The impact of the light level studies to date.
- Proposed a draft Street Lighting policy for application across the borough.

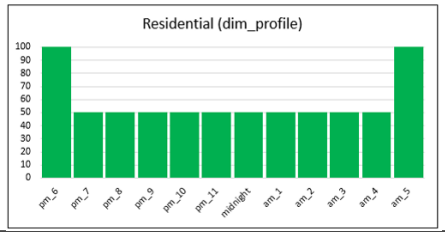
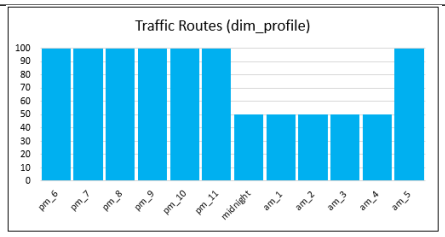
- Highlights the decision-making considerations applied by the Council; and

- Introduces a risk based 'exception criteria' framework where variable light levels may not be applied.

4.13 A copy of the proposed draft Street Lighting Policy has been included in Appendix A (draft Street Lighting Policy) of this report.

Variable Lighting Trial

4.14 A borough wide trail was implemented from January 2022, the variable light levels applied are described below.

Residential Areas	50% reduction in levels between 7pm to 5am.	
Traffic Route Areas	50% reduction in levels from midnight to 5am.	

4.15 The levels described above wholly align with the Councils draft Street Lighting Policy in Appendix A of this report.

4.16 During the trial the Council's Street lighting team has been conducting various surveys and monitoring the impact, this exercise has included:

- Conducting night-time site visits with the previous administration during October 2020 to review the street scene in selected areas.

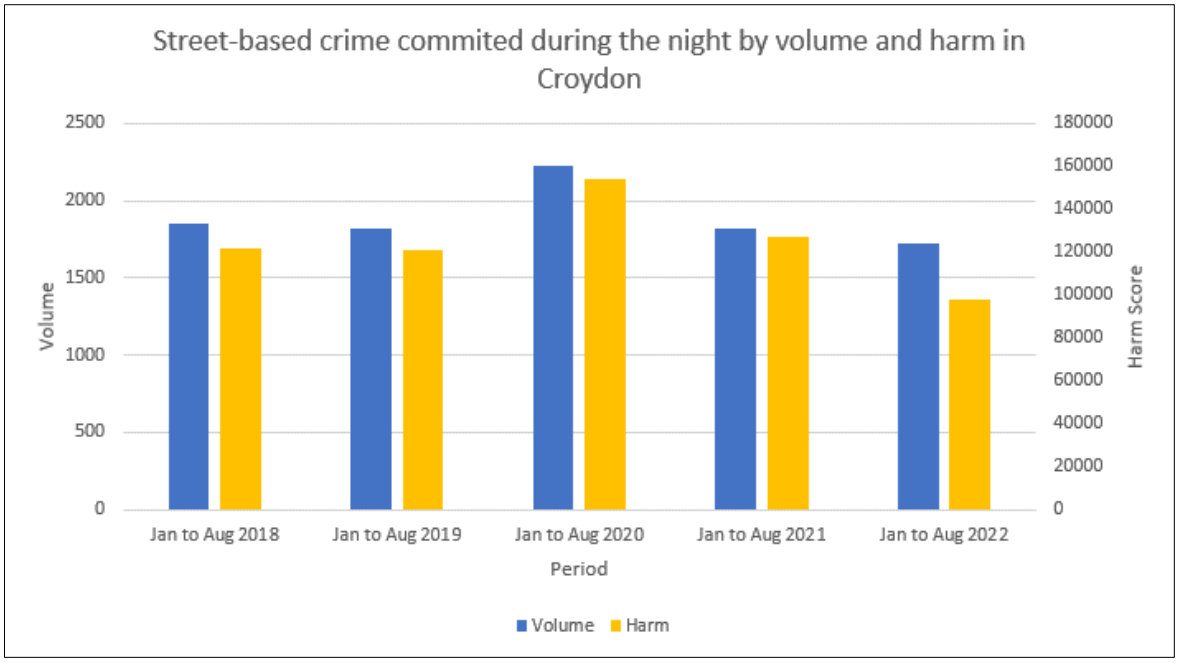
- Monitoring for feedback from road users and residents received by the Council's Service Provider (note; all feedback is recorded in the Contract reports).

4.17 It is important to note that no enquiries or complaints specific to the change in light levels were received within the pilot study period timeframe or upon the subsequent months thereafter.

4.18 Crime statistics provided by the Council's Culture and Community Safety Team show that during the variable light level trial there has been no direct increase in street crimes that take place during "night-time" hours.

4.19 The chart below shows that in the latest available reporting period (Jan-Aug 2022), there has been the lowest volume and harm of street-based crime in the borough compared to the four periods before. The latest period shows a 5% decrease compared to the period and harm has gone down by almost a quarter (23%). By comparing the latest

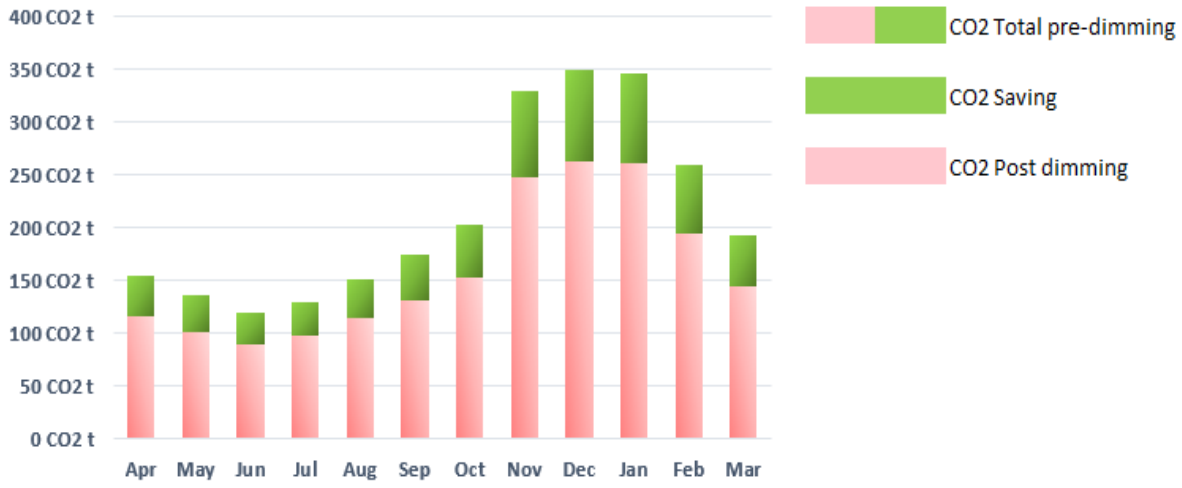
period to the “pre-covid” period (Jan-Aug 2019), volume has gone down also by 5% and harm by almost a fifth (19%).



Variable Lighting Proposal

4.20 The Councils proposal is for light levels to be reduced across the entire borough by the levels detailed within the pilot studies – i.e., as per the ‘Variable Lighting Trial’ details above.

4.21 CO2 savings would be 631 tonne per annum if the recommended draft street lighting policy were introduced. The figure below shows the Carbon Emissions (CO2) Saving for a typical year.



4.22 The application of this proposal will allow the Council to make significant energy savings and mitigate the cost implications presented by the energy price increase of approximately 45% to 32p per kWh in March 2023. The table below provides a summary of the energy and cost implication of ‘do-nothing / no dimming’ versus application of the variable light levels proposed.

Scenario	Energy Consumption (MWh)	Carbon Emissions (CO2) tonne	Energy Cost
No dimming @17p per kWh (2021/22)	9,173	1,917	£1.56m
No dimming @34p per kWh (March 2023 onwards)	9,173	1,917	£2.92m
Variable Light Level Policy implementation.	6,151	1,286	£1.97m

4.23 The energy saving provided by application of the draft Street Lighting Policy as described in the table 4.22 equates to an energy saving of approximately 33% and a financial mitigation of £967k per annum when compared with the energy price that will be applied from March 2023.

5 ALTERNATIVE OPTIONS

5.1 The policy promoted within this paper is proposing that the light levels remain the same as the current pilot at 50% at specific times during the night. This approach effectively reduces light levels by one lighting class based on road use peak / off peak.

5.2 The CMS technology incorporated into the Council's Street lighting lanterns allows the Council to vary light levels in three pre-defined steps of 25%, 50% and 100% (i.e., switched off).

5.3 The Council would propose that the CMS capability is explored further by the application of additional variable light level pilot studies to appraise the options for further energy savings.

5.4 The Council also considered whether to reduce light levels from dusk till dawn, this raised a potential higher risk to road users during peak hours.

6 CONSULTATION

6.1 Croydon Council is currently asking residents, staff, businesses, and partners to give their views on its budget plans for 2023/24, in a public engagement exercise.

6.2 The council must make savings and has put forward a wide range of proposals, including changing and stopping some discretionary services, selling properties and land, and transformation plans to become more efficient.

6.3 The scale of the challenge facing Croydon was set out in the council's medium term financial strategy which was considered at November's Cabinet.

6.4 A budget engagement survey launched following the meeting is available online.

7 CONTRIBUTION TO COUNCIL PRIORITIES

7.1 This draft Street lighting Policy contributes towards Executive Mayor Perry's business plan.

i) Deliver the savings in the Medium-Term Financial Strategy and increase the Council's income

ii) Embed climate adaptation and carbon reduction in the strategies and policies of the Council and its key partners

7.2 Climate Neutral Action Plan and reducing carbon emissions from street lighting within the borough.

8 IMPLICATIONS

Financial Implications

8.1 The proposal detailed within this report does not have any impact on Council expenditure budget, the proposal delivers efficiencies by reducing the Councils ongoing energy consumption for street lighting which has been showing an overspend in monitoring through 22/23. A recent virement from the Corporate Inflationary Contingency budget has now been made and this combined with the approval of the draft Street Lighting Policy will result in the budget being sufficient to cover the anticipated cost of energy in 23/24.

8.2 The revenue and capital consequences of adopting the draft Street Lighting Policy proposal put forward within this report is detailed below.

8.3 There is a risk that any additional increases in the cost of energy outside the control of the council could still result in budgetary pressures. Likewise, any reductions would result in the council receiving a monetary benefit as a result of any changes.

8.4 Should the proposal not be accepted then there is unlikely to be sufficient budget to cover the ongoing cost of energy and will result in budgetary pressures. This is anticipated to be circa £967k.

Revenue and Capital consequences of report recommendation

This revenue and capital consequences of the report recommendation has been summarised in the table below.

	Current Year	Medium Term Financial Strategy – 3 year forecast		
	2022/23 £'000	2023/24 £'000	2024/25 £'000	2025/26 £'000
Revenue Budget Available	1963	1963	1963	1963
Expenditure Income	0	0	0	0
Effect of decision from report				
Expenditure Income	0	0	0	0
Remaining Budget	1963	1963	1963	1963
Capital Budget available				
Expenditure Income				
Effect of decision from report				
Expenditure Income				
Remaining Budget				

Approved by: Darrell Jones Acting Head of Finance SCRER Date: 3rd January 2023

9 LEGAL IMPLICATIONS

9.1 As the Highway Council the Council 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 Council must act reasonably and in the interests of road safety.

9.2 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 Council 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.

9.3 Where the Highway Council chooses to exercise its power to light a highway, BS EN 13201:2003 & BS EN 5489-1 (2020) 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), which provides that the authority must exercise its various functions with due regard to the likely effect of the exercise of those functions on, and the need to do all that it reasonably can to prevent crime and disorder, including antisocial behaviour, the misuse of drugs, alcohol and other substances, and re-offending in its area, and the potential impact of lower light levels on such activities.

Approved by: Sandra Herbert, Head of Litigation & Corporate Law, on behalf of the Director of Legal Services and Monitoring Officer. Date 6th January 2023.

10 EQUALITIES IMPLICATIONS

10.1 The introduction of a Street Lighting policy will reduce of light levels and therefore has the potential to give rise to having an impact on groups that share a protected characteristic. Mitigation has been identified which will address this issue, should there be representation from residents to this regard. This is detailed in the equality analysis which has therefore been completed at attached to this report in Appendix B (Equality Analysis).

Approved by: Denise McCausland Equality Programme Manager, Date 10.01.2023

11 OTHER IMPLICATIONS

Procurement

11.1 The proposal made within this report does not have any implication directly linked to procurement.

Human Resource

11.2 There are no immediate human resources implications in this proposal. If any should arise these will be managed under the Council's policies and procedures.

Approved by Jennifer Sankar, Head of HR Housing Directorate and SCRER Directorate for an on behalf of Dean Shoesmith, Chief People Officer. Dated 3 January 2023.

Crime and Disorder

11.3 The latest crime statistics show that during the variable light level trial (introduced in January 2022) there has been no direct increase in those street crimes that take place during "night-time" hours.

11.4 Further detail of the Crime and Disorder impact is set out at paragraph 4.19 above.

Approved by: Kristian Aspinall, Director of Culture and Community Safety 04.01.2023

Environmental Impact

11.5 The introduction of a Street Lighting policy will make significant savings in energy use and related carbon emissions. The estimated savings made are outlined below:

		Current year		Medium Term - 3 year forecast				
		2022/23		2023/24		2024/25		2025/26
Energy Saving (MWh)		3022		3022		3022		3022
CO2 Saving (tonne)		631		631		631		631

11.6 The savings shown will increase if alternative variable light level regimes are adopted.

11.7 Carbon emissions related to street lighting electricity consumption have been rapidly decreasing in recent years. This is due to the decarbonisation of the UK power generation (through large increases in offshore wind and solar generation). Croydon has set a target to be carbon neutral by 2023. Current UK government policy is that electricity supply will be zero carbon by 2050. Therefore, Croydon will need to secure additional zero carbon electricity through its contracts to achieve the 2030 target.

11.8 Croydon is currently working with other London boroughs to identify the best value options to secure 100% renewable electricity. This is through the 'Renewable Power for London' programme established by London Councils

Approved by Bob Fiddik, Team Leader- Sustainable Development and Energy Date 04.01.2023

Risk

11.9 The key risks identified by the Council when developing a Street Lighting policy have been summarised below.

Risk Identified	**Mitigation Measures**
Direct effect on night-time crime figures	Monitor night-time crime statistics – see section 8.13 & 14 above.
Complaints from road users and residents	Monitor complaints / comment received – see section 8.13 & 14 above.

Data Protection

11.10 The proposal made within this report does not have any implication directly linked to Data Protection.

NO

Approved by: Steve Iles Director of Sustainable Communities. Date 03/01/2023

12 APPENDICES

Appendix A (draft Street Lighting Policy)
Appendix B (Equality Analysis)

13 BACKGROUND DOCUMENTS

None

14 URGENCY

No