
Decision Maker: **EXECUTIVE**

**For Pre-Decision Scrutiny by the Environment and Community Services
PDS Committee on:**

Date: **28th August 2019**

Decision Type: Non-Urgent Executive Key

Title: **SALIX STREET LIGHTING LED UPGRADE**

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Chief Officer: Colin Brand, Director of Environment & Public Protection

Ward: All Wards

1. Reason for report

- 1.1 This report details a proposal to upgrade 3,870 street lights across the borough with new energy efficient LED lanterns and photocells, using the Carbon Management Fund and funding from an interest-free Salix Energy Efficiency Loan Scheme (SEELS) loan.

2. RECOMMENDATIONS

- 2.1 The ECS PDS is asked to review and provide their comments on the proposal to replace a further 3,870 street lights with improved LED lighting and photocells to the Executive for consideration.

2.2 The Executive is asked to:

- i) Approve the proposal set out in this report to replace a further 3,870 street lights with improved LED lighting and photocells, at a cost of £1.124m, funded from the Carbon Management Fund of £500k and an additional interest-free SEELS loan of £624k.
- ii) Agree that the scheme is added to the capital programme at an estimated cost of £1.124m, subject to approval of Full Council.
- iii) Note that following payback of the loans, annual savings of £221.1k will be achieved in 2025/26 and £229.4k from 2026/27 onwards, excluding any increases in energy prices.

Impact on Vulnerable Adults and Children

1. Summary of Impact: Positive, broad impact on members of the community/users of the highway.
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Corporate Policy

1. Policy Status: Existing Policy: Carbon Management Programme
 2. BBB Priority: Excellent Council
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Financial

1. Cost of proposal: £1,123,952
 2. Ongoing costs: Potential revenue savings of £229k per annum following repayment of the Carbon Management Fund and SEELS loan.
 3. Budget head/performance centre: Capital Programme Salix Fund & Street Lighting Energy budget
 4. Total current budget for this head: £500k (Salix Fund) and £1.498m
 5. Source of funding: Carbon Management Fund (£500k) and SEELS loan (£624k) for capital works, Existing revenue budget for 2019/20 for energy
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Personnel

1. Number of staff (current and additional): 1fte
 2. If from existing staff resources, number of staff hours:
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Legal

1. Legal Requirement: Statutory Requirement
 2. Call-in: Applicable
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Procurement

1. Summary of Procurement Implications:
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Customer Impact

1. Estimated number of users/beneficiaries (current and projected): This project will mainly benefit local residents and motorists.
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Ward Councillor Views

1. Have Ward Councillors been asked for comments? No
2. Summary of Ward Councillors comments: n/a

3. COMMENTARY

Background

- 3.1 The Executive established a Carbon Management Programme (CMP) in 2008 to take action to reduce energy consumption, revenue costs and carbon emissions.
- 3.2 To fund initiatives, the Executive also established a Carbon Management Fund (£500k), authorising officers to deliver projects. Savings derived from these projects are repaid into the fund, thereby creating a self-sustaining source of investment for new energy reduction initiatives.
- 3.3 The Council's Carbon Management Fund, which invests in energy reduction measures, started operating in 2008/09. Projects such as the multi-storey car parks LED lighting upgrade project help reduce both the Council's energy costs and carbon emissions.
- 3.4 In 2013 the Council approved an invest to save project, which resulted in the replacement of 14,000 street light lanterns with energy efficient LED lanterns, bringing both cost savings and improved light quality to residents and motorists.
- 3.5 A Council Motion on Monday 15th July 2019 unanimously approved a ten year plan to ensure that the council will have net zero carbon emissions by 2029.
- 3.6 Street lighting consumes a significant amount of electricity, and is responsible for a high proportion of LBB's direct carbon emissions.
- 3.7 With energy prices increasing, it is imperative that the Council takes action to reduce lighting costs where possible.

Proposed Project

- 3.8 It is proposed to reduce operating costs further by replacing 3,870 existing street lights on the boroughs main traffic routes with new energy efficient LED lanterns.
- 3.9 The work detailed in this report will be undertaken by JB Riney & Co Ltd who was awarded the Council's eight year Highway Maintenance contract in 2018.
- 3.10 These particular lights have been identified as offering the largest energy and cost savings, importantly resulting in a project payback period of less than five years, therefore satisfying SALIX funded project criteria.
- 3.11 The 3,870 lights are located across the borough, comprising of:
 - 951 x 6m columns
 - 2,140 x 8m columns
 - 779 x 10m columns
- 3.12 In addition to replacing the lights, the proposal includes the installation of improved controls with daylight sensor (i.e. photocells) and dimming during the early hours of the night, to reduce electricity and running costs still further.
- 3.13 Actual energy costs for the 3,870 street lights is approximately £345,575 per annum. Detailed calculations indicate that LBB's current electricity consumption and costs could be reduced by approximately 60% or over £200k per annum, by replacing the 3,870 street lights with LED lanterns.

- 3.14 Currently the existing 3,870 street lights operate at 100% capacity for approximately 4,100 hours per year. The installation of a photocell with dimming capability will mean that the new LED lights will only come on at 100% capacity for 2,000 hours per year, and 75% capacity for 2,100 hours per year.
- 3.15 At the moment different wattage light bulbs are used for each column height. This project will standardise this by using the same wattage LED bulb for each given column height:
- 6m columns – 30 watts
 - 8m columns – 65 watts
 - 10m columns – 126 watts
- 3.16 The estimated cost of the project is £1,123,952, which has been derived from an agreed 'supply and fit' schedule of rates with LBB's Highways Maintenance contractor JB Riney & Co Ltd. The project cost includes a 10% contingency to cover any required traffic route management requirements.
- 3.17 A SEELS loan application has been submitted to SALIX to secure a provisional offer. It is therefore proposed that the cost of the project is funded from a combination of the SEELS loan of £623,952 and the Carbon Management Fund of £500k.
- 3.18 It is estimated that at least 1,935 street lights will be replaced by 31 March 2020 and the remaining 1,935 will be replaced by the end of June 2020.
- 3.19 The estimated savings are based on a number of assumptions detailed below:
- Existing lights on 4,100 hours per year at 100% capacity
 - Proposed LED lights on 2000 hours per year at 100% capacity, and 2100 hours per year at 75% capacity.
 - Street lights on during the winter period for 2,450 hours per year
 - Street lights on during the summer period for 1,650 hours per year
 - LBB currently has two street lighting electricity meters which each have different energy tariffs. These tariffs also vary between summer and winter; hence there are four different rates in one year that have to be considered when costing energy costs. To simplify the energy cost calculations two averages were used: winter tariff (17.68p per kWh) and summer tariff (9.52p per kWh).

3.20 Summary project information:

Annual energy kWh savings LED	1,512,168	kWh
Climate Change Levy rate	0.847	p/kWh
Annual Climate Change Levy savings	£12,808	£
Annual energy cost savings (excl CCL)	£216,582	£
Total Annual savings incl CCL	£229,390	£
Annual carbon savings	419	tCO ₂
Total project cost (supply and fit)	£1,123,952	£
Cost of carbon reduction over 20 year lifetime	£134	£/tCO ₂
Project payback	4.9	years

- 3.21 The project payback period is 4.9 years, and the anticipated carbon reduction equates to 134 tCO₂ per annum. The UK Government 2019 emission factors for electricity generation were used to calculate carbon emissions.

4. IMPACT ON VULNERABLE ADULTS AND CHILDREN

- 4.1 Improving lighting in the borough will help ensure improved access to the Council's highways, and will contribute to a safer highway.

5. POLICY IMPLICATIONS

- 5.1 This report accords with the Building a Better Bromley's 'Excellent Council' ambition in relation to 'scrutinising everything we do and how we do it to provide efficient services' and 'continue a financial strategy that focuses on stewardship and sustainability'.
- 5.2 This activity also contributes to delivering the Council's agreed objective for the Carbon Management Programme to reduce energy consumption, costs, and carbon emissions by 15% over five years.
- 5.3 This project will also contribute to achieving the Council's 2029 net zero carbon target, since energy consumption from street lighting is a major component of Bromley's direct carbon emissions.
- 5.4 Approximately half of Bromley's 29,000 street lights have been upgraded with LED lights. This project supports LBB's ambition of replacing the remaining lanterns with LEDs to maximise energy savings and provide better light quality to residents and motorists.

6. FINANCIAL IMPLICATIONS

- 6.1 This report is recommending that 3,870 street lights are replaced with new energy efficient LED lanterns at an estimated cost of £1.124m. It is proposed that the costs are funded from the existing Carbon Management Fund of £500k and an additional interest free SEELs loan of £624k.
- 6.2 Should this project proceed, energy consumption/costs could be reduced by 60%, realising £216.6k in savings per annum and £12.8k savings would be achieved each year from the reduced Climate Change Levy (CCL) cost.
- 6.3 The estimated annual savings of £229.4k will initially be used to pay back the Carbon Management Fund and SEELs loan within five years. Once fully repaid, the annual savings would permanently reduce revenue costs. The table below shows the estimated savings and payback of the loans over the next 7 years: -

	2020/21	2021/22	2022/23	2023/24	2024/25	2024/25	2026/27
	£'000	£'000	£'000	£'000	£'000	£'000	£'000
Energy savings from initial 1,935 lights	-108.3	-108.3	-108.3	-108.3	-108.3	-108.3	-108.3
Energy savings from final 1,935 lights	-81.2	-108.3	-108.3	-108.3	-108.3	-108.3	-108.3
CCL savings	-9.6	-12.8	-12.8	-12.8	-12.8	-12.8	-12.8
Total Savings	-199.1	-229.4	-229.4	-229.4	-229.4	-229.4	-229.4
Payback of SEELs loan & Carbon Fund	199.1	229.4	229.4	229.4	229.4	7.3	0.0
Balance of revenue savings	0.0	0.0	0.0	0.0	0.0	-222.1	-229.4

- 6.4 It should be noted that the savings above do not take account of any future potential increases electricity prices over the payback period.
- 6.5 Executive is therefore asked to agree the project and to add the scheme to the capital programme for an estimated cost of £1.124m, subject to agreement of Full Council.

7. LEGAL IMPLICATIONS

- 7.1 The Highways Act 1980 empowers the Council as Highway Authority to provide lighting. The Council has a duty of care to the highway user and must ensure it can demonstrate it has systems and programmes in place to ensure the safety of all highway lighting equipment.
- 7.2 The works can be delivered by the Council's contractor under the Highway Major Services Contract 2018 which includes street lighting (as well as other work streams) . The specific details of this work will need to be included in the contract in accordance with the Contract and Councils requirements.

8. PROCUREMENT IMPLICATIONS

- 8.1 This report details a proposal to upgrade 3870 street lights across the borough with new energy efficient LED lanterns and photocells. There are no direct procurement implications as the schemes are to be implemented by the Council's term highways contractor. This is provided for by the inclusion of this type of work, within an EU compliant tender, and therefore there is not a requirement to tender this work separately.

Non-Applicable Sections:	Personnel Implications
Background Documents: (Access via Contact Officer)	Carbon Management Programme: Executive Report ED98067 (7 October 2008) Inventory - Street Lighting LED Upgrade Business Case Calculations (spreadsheet). Salix Business Case (spreadsheet) salix_loans_single_fuel_compliance_tool (spreadsheet)