



CABINET

24 September 2014

Subject Heading:

APPROVAL TO CONVERT 10600 STREET LIGHTS IN ROADS ACROSS THE BOROUGH TO MORE ENERGY EFFICIENT LED LIGHTS.

Cabinet Member:

Councillor Roger Ramsey

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Policy context:

Improving the energy efficiency of council services is part of the Council's Climate Change Action Plan and one of the key objectives outlined in the Corporate Plan – 'Invest in our street lighting and install energy efficient schemes that reduce carbon emissions and save money'. This proposal will also assist the council in 'future proofing' the cost of running its street lighting provision against the background of increasing energy prices.

Financial summary:

The total investment required to convert up to 10,600 street lights across the borough is estimated at £2.7million. A funding plan is identified. The resultant annual financial savings are estimated at £280k pa energy, and later down the track, £83k of component savings - all at today's prices. The project is estimated to "payback" within 8 to 9 years.

Is this a Key Decision?

Yes as the total cost of project exceeds £500k

When should this matter be reviewed?

Annually

Reviewing OSC:

Environment

The subject matter of this report deals with the following Council Objectives

Ensuring a clean, safe and green borough	[X]
Championing education and learning for all	[]
Providing economic, social and cultural activity in thriving towns and villages	[]
Valuing and enhancing the lives of our residents	[X]
Delivering high customer satisfaction and a stable council tax	[X]

SUMMARY

This report sets out a proposal to commence a tendering process in order to convert a further 60% (10600) of the Council's sodium street lights to modern Light Emitting Diode (LED) technology, which will bring significant longer term savings in energy usage/costs, maintenance costs and reduction in carbon emissions.

In October 2013 the council agreed to convert 6000 street lights in residential roads to LED. This project is due to be completed by November 2014. This report seeks agreement to commence phase two of the LED rollout by converting a further 10600 street lights.

The estimated cost of the project is £2.7 million with a resultant annual energy cost saving of £280k, and a further anticipated (effective from 2017/18) component replacement cost saving of £83k at current prices, meaning a simple payback period of under 8 years, and 9 years measured on a net present value basis. An interest free loan should be available to the Council to fund 52% (£1.4 million) of the total capital cost with the remaining funding coming from resources to be identified at the appropriate time by the Director of Resources.

RECOMMENDATIONS

That Cabinet approves:

- a) That the Service proceeds to tender for the purchase of 10,600 LED lanterns and the conversion of 10,600 existing street lights, across the borough.
- b) In principle, to apply for the maximum interest free loan available under the Salix Energy Efficiency Loan Scheme (SEELS) of £1.4 million to part fund this project.
- c) The addition of a capital scheme to the value of £2.7m to the Council's Capital Budget for 2015/16, as detailed in the Financial Implications, para 7. and to refer this recommendation to full Council.
- d) To delegate award(s) of the contract(s) set out at (a) above to the Group

- Director of Culture, Community and Economic Development
- e) The undertaking of small scale trials of dimming street lights during hours of low movement on selected roads to assess the suitability and benefit of adopting a dimming regime.

REPORT DETAIL

- 1.1 The Council provides and maintains approximately 18,000 street lights across the borough. There is no statutory obligation for the Council to provide street lighting, but it does have a duty of care to road and footpath users and could face claims if it failed to provide adequate lighting which led to injuries and damage. Currently the council spends over £650k a year on electricity for street lighting, excluding the streetlights within the social housing estate which are paid from the Housing Revenue Allocation (HRA). In view of the need to make large efficiency savings and reduce the maintenance costs, of future streetlight budgets, the Energy Strategy Team have been working with the StreetCare Service to identify ways of reducing this sizeable annual electricity bill.
- 1.2 In the current financial climate, all local authorities with responsibility for highways have been looking at ways to reduce the substantial cost of lighting their roads, and have adopted a number of ways to do this. The conversion of existing light sources to modern Light Emitting Diode (LED) is becoming a popular choice amongst local authorities as a way to reduce long term energy costs, as the savings are substantial in both energy and maintenance costs.
- 1.3 In October 2013 the council agreed to convert 6000 street lights in residential roads to LED. This project is due to be completed by November 2014. This report seeks agreement to commence phase two of the LED rollout by converting a further 10600 street lights.
2. The benefits of LED lighting are:
- LEDs use around 60% less energy than current light sources.
 - The guaranteed lifetime of LED street lights is usually 10 to 15 years, three times the life of current technologies adopted. The much less frequent need to service or replace LEDs means a greatly reduced maintenance cost.
 - LEDs can easily be dimmed when less street lighting is needed, such as late at night, and at dusk or early dawn, again offering more savings opportunities.
 - LEDs provide a white light which is closer to daylight and allows colours to be seen easily. White light also offers further safety advantages in that pedestrians feel more secure in their environment and driver

- reaction time is improved due to improved vision in low lighting situations.
- LEDs switch on instantaneously, unlike other commonly used street lighting. LEDs do not have a problem restarting immediately following a brief power failure or if inadvertently turned off.
 - LEDs do not contain mercury or lead making disposal of 'blown' lamps less problematic.
3. Following a number of small trials of various types of LED lights in selected residential roads across the borough undertaken in 2013 the council agreed the implementation of Phase One of a roll out of LED street lights. There has so far been positive feedback from residents and StreetCare staff working in the areas which have LED lights installed. The trials and Phase One have confirmed that the use of LED lighting has the ability to reduce cost whilst maintaining (and in the majority of cases improving on) current lighting levels. Most available LED street lights come with a minimum ten year guarantee and an average life of 15-20 years.
 4. The Council currently spends an average of £53.49 per each of the orange sodium street lights on residential roads, replacing the lantern components every three years, which for 10600 street lights equates to an annual cost of £189k. Replacing these with LED lanterns will cost £100 per street light every **ten** years, which for 10600 street lights equates to an annual cost of £106k – a significant saving of £83k.
 5. The current proposal (Phase Two) focuses on those roads which currently have streetlights that are viable candidates for LED conversion. Given the speed with which LED street light technology is progressing, further investigations will be undertaken to find suitable LED lanterns for those street lights which are left, approximately 5% of our total streetlight stock.
 6. The proposed LED lights, and those installed in Phase 1 are capable of being dimmed or switched off from a central control, on an individual basis. There is a potential for a further £60k annual saving from implementing a dimming regime during hours of reduced vehicle or pedestrian movement, It is proposed to undertake small scale trials, on selected roads, to assess the viability and benefit, of dimming of selected lights.

REASONS AND OPTIONS

Reasons for the decision:

The change of 10.600 sodium street lights across the borough to LED lighting has a number of benefits including:

- Reduced annual energy costs
- Help future proof the street lighting electricity budget against inevitable future energy price increases

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- The installation of the LED lanterns will enable the Head of StreetCare to achieve savings as part of the retendering of the street lighting maintenance contract (due Nov 2016) to reflect the lower requirement for maintenance of the new lanterns.
- Help residents feel safe and secure. Through superior colour rendering and a higher perceived brightness, the white light of LED lighting makes it easier to distinguish objects, colours, shapes and other details. In particular, facial recognition is easier. White light also gives the most even illumination with fewer areas of intimidating shadow.
- Ensure the light is directed downwards instead of upwards into the night sky. In contrast to the old orange/yellow lighting this will dramatically reduce light pollution in the sky.

Other options considered:

- Do nothing

Not implementing energy efficiency measures in the council's street lighting will leave the street lighting energy budget vulnerable to the inevitable future increases in UK electricity costs.

IMPLICATIONS AND RISKS

Financial implications and risks:

1. The estimated cost for the supply and installation of 10,600 LED fitting is £2.7 million. This would result in an annual saving at current energy prices of approximately **£280k**. These savings are guaranteed as long as the street lighting inventory records are completed promptly for the LED switch over. Savings will commence as the new lamps are phased in. In order to ensure savings are realised straight away, a bi-monthly update of the street lighting inventory will be submitted to the Network Administrator (UK Power Networks).
2. The £280k annual savings figure has been increased by 4% per annum to reflect Ofgem's current assessment that prices will rise by 4% year on year from 14/15 to 18/19, and then stabilise. Detailed figures in Appendix A reflect those increases - £278k at current prices has 4% added for both 2015/16 and 2016/17, and thus savings in 2016/17 are shown at an estimated £300,685.
3. The current street lighting component replacement contract expired in May 2014, and has been extended until November 2016. The figures in Appendix A very prudently only assume component replacement savings from 1st April 2017. However, clearly there will be an expectation that the

savings will be negotiated and delivered before then. Component replacement savings of **£83k**, at current prices, have been estimated.

4. The Department of Energy and Climate Change (DECC) currently provides a four year interest free loan to local authorities under the Salix Energy Efficiency Loan Scheme (SEELS). The amount of the loan available for any one project is up to a maximum of five years annual energy savings stemming from the project. Therefore in the case of this proposal a maximum of £1.4 million could be loaned interest free. Repayments must be made at six monthly intervals over a four year period from completion of the project, which is anticipated to be March 2016. Therefore the first repayment of £175k would be made in September 2016 with further payments of the same amount being made at six monthly intervals until March 2020.
5. Appendix A provides a detailed funding flow, and summary of funding. The proposal is deemed good value for money. The council will invest £2.7m, and will save an estimated £395k by 2017/18. (This overall figure is slightly higher than the figures in the financial summary, as energy inflation has been added).
6. A “net present value” calculation has also been shown in Appendix A to reflect the fact that upfront investment is needed, with the savings accruing over time. The Appendix shows that over a 13 year period, the proposal will produce a net saving of £1.335m.
7. The total cost of £2.7m will need to be added to the Council capital budget, and this is reflected in recommendation c. The Council capital investment of £2.65m will all – either immediately (£1.25m), or over time (the provisional Salix loan of £1.4m) – require funding, and decisions on that will be made at the appropriate time. Any decision to accept the Salix loan will be made in the context of treasury management assessment at that time.
8. The savings identified – energy and component replacement – will be removed from StreetCare budgets at the appropriate time, and will create a corporate revenue saving. Clearly the service will have had the benefit of the capital investment, and the savings generated.

Legal implications and risks:

The proposed decisions appear reasonable and there is minimal legal risk in making them. More detailed legal advice may be necessary for later stages in the process, particularly procurement.

Human Resources implications and risks:

Management of the project will be done within existing staff resources or included in external contract management arrangements. Support by Council staff to assist delivery of measures will also be done within existing staff resources.

Equalities implications and risks:

The new lighting will not reduce the current level of street lighting in the roads affected. Lighting levels will be maintained or improved and the use of white light will have positive effect on the visual impact of the street scene.

Improved road and community safety through improved visual definition from LED lighting will be especially relevant to elderly and visually impaired residents.

As the lighting levels will be maintained or improved it is deemed not necessary to undertake an additional Equalities Assessment.

BACKGROUND PAPERS

<http://democracy.havering.gov.uk/ieDecisionDetails.aspx?ID=942>

Approval to convert 6000 sodium street lights in residential roads across the borough to more energy efficient LED lights