



CABINET

16 October 2013

Subject Heading:

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

Cabinet Member:

Councillor Barry Tebbutt
Lead Member for the Environment

CMT Lead:

Cynthia Griffin
Group Director for Culture, Community and Economic Development

Report Author and contact details:

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Policy context:

Improving the energy efficiency of council services is part of the Council's Climate Change Action Plan and the 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 6000 street lights in residential roads is £1.3million. A funding plan is identified. The resultant annual financial savings are estimated to rise to a maximum of £246k. The project is estimated to "payback" within 6 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 relevant processes in order to convert 30% (6000) 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.

The estimated cost of the project is £1.3 million with a resultant annual energy cost saving of £154k and £59k maintenance saving, at current prices, meaning a payback period of 6.1 years. An interest free loan should be available to the Council to fund 59% (£770k) of the total capital cost with the remaining funding coming from existing capital budgets and TfL LIP funding.

RECOMMENDATIONS

. Cabinet agrees to:

- a) Proceed to tender for the purchase of 6,000 LED lanterns and the conversion of 6000 sodium street lights, in residential roads. ,
- b) In principle, to apply for the maximum interest free loan available under the Salix Energy Efficiency Loan Scheme (SEELS) of £770,000 to part fund this project.
- c) Add the funding of the scheme as set out in Appendix A to the Capital Budget 13/14, and to refer this recommendation to full Council.
- d) Delegate award(s) of the contract(s) set out at (a) above to the Group Director of Culture, Community and Economic Development

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.

2. The benefits of LED lighting are:

- LEDs use around 60% less energy than current light sources.
- The 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 advantages in that pedestrians feel more secure in their environment and driver reaction time is improved due to improved vision in low lighting situations (mesopic vision).
- 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. The council's street lighting team have undertaken a number of small trials of various types of LED lights in selected residential roads across the borough over the past year. Following these trials a larger trial involving 200 of the best performing LED light in five roads has now been completed. There have been positive responses from residents and Streetcare staff working in the trial areas who are pleased with the lighting improvements. The aims of the trials were to

identify if LED lanterns would reduce street lighting energy costs whilst maintaining an acceptable street lighting level. The trials confirmed that the use of LED lighting has the ability to reduce cost whilst maintaining (and in some cases improving on) current lighting levels. Most available LED street lights come with a ten year guarantee and an average life of 15 years.

4. The Council current spends £53.49 per street light, on residential roads, replacing the lantern components every three years, which for 6000 street lights equates to an annual cost of £106,980. Replacing these with LED lanterns will cost £80 per street light every **ten** years, which for 6000 street lights equates to an annual cost of £48,000 – a significant saving of £59,000.
5. The selected 6,000 streetlights are situated in residential roads across the whole borough. Not all residential roads are included in this project - only those which have been deemed to benefit from the changeover to LED lanterns at this time. The current proposal focuses on those roads which currently have sodium streetlights and the specific spacing between lighting columns which make the use of LEDs lights viable. Given the speed with which LED street light technology is progressing, following a successful implementation on residential roads, further investigations will be undertaken to find suitable LED lanterns for other roads and social housing streetlights.

REASONS AND OPTIONS

Reasons for the decision:

The change of 6,000 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
- The installation of the LED lanterns will enable the Head of StreetCare to renegotiate the current maintenance contract to reflect the lower requirement for maintenance of the new lanterns.
- Help residents feel safer safe and more 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 measure in the council's street lighting will leave the street lighting energy budget vulnerable to the inevitable future increases in UK electricity costs.

- Turning off selected lights at night:

Where implemented by other local authorities this option has often resulted in significant social pressure from the communities affected and in a number of cases lights have been restored back into operational service.

- Switching lights off completely during hours of low traffic and pedestrian movement:

This option reduces energy costs considerably, but as it also places roads into darkness and is likely to meet with the same public resistance as the previous option.

IMPLICATIONS AND RISKS

Financial implications and risks:

Conway Mulcahy, Corporate Finance

1. The estimated cost for the supply and installation of 6,000 LED fitting is £1.3 million. This would result in an annual saving at current energy prices of approximately **£154k**. 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 £154k 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.
3. Component replacement savings are likely also to be achievable, but not under current contractual arrangements, which will need to be reviewed at the earliest opportunity. The current street lighting contract expires in May 2014 with an opportunity to extend. The installation of the LED lanterns will enable the Head of Street Care to either renegotiate the maintenance contract or to retender to reflect the reduced amount of maintenance required for the new lanterns. Component replacement savings of £58,980 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 £770k could be borrowed 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 2015. Therefore the first repayment of £96k would be made in September 2015 with further payments of the same amount being made at six monthly intervals until March 2019.

Financial Summary

Appendix A provides a detailed funding flow, and summary of funding. The proposal is deemed good value for money. The council will invest £1.250m (with TfL providing £50k), and will save an estimated maximum of £246k.

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 16 year period, the proposal will produce a net saving of £1.480m.

The total cost of £1.3m will need to be added to the Council capital budget, and this is reflected in recommendation c. The Council capital investment of £1.250m will all – either immediately (£480K), or over time (the provisional Salix loan of £770k) – 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.

The savings identified – energy and maintenance – will be removed from Streetcare budgets at the appropriate time, and will create a corporate revenue saving.

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.

Ian Burns, Legal and Democratic Services

Human Resources implications and risks:

Geraldine Minchin, Human Resources

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:

Andreyana Ivanova, Equalities and Diversity

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

None