

DECISION MAKER:	CABINET MEMBER: INFRASTRUCTURE
DECISION DATE:	13th August 2014
SCRUTINY COMMITTEE FINAL CALL-IN DATE:	18th August 2014
DATE DECISION MAY BE IMPLEMENTED:	19th August 2014
TITLE OF REPORT:	LED Street Lights
REPORT BY:	Energy & Environmental Management Team Leader

Classification

Open

Key Decision

This is a key decision because it is likely to be significant in terms of its effect on communities living or working in an area comprising one or more wards in the county

NOTICE has been served in accordance with Part 3, Section 9 (Publicity in connection with key decisions) of The Local Authorities (Executive Arrangements) (Meetings and Access to Information) (England) Regulations 2012

Wards Affected

County-wide

Purpose

To seek approval to commence the invest to save project for LED street lighting with our Public Realm delivery partner, Balfour Beatty Living Places (BBLP), to deliver community, financial and environmental benefits.

Recommendation(s)

- That approval is given to proceed with the implementation of the £5.517m LED Street Lights “Invest to Save” Project as outlined in the report.

Alternative Options

1. Option 1 – Not to proceed
 - Without significant investment in new energy efficient street lighting, the two thirds of street lighting (~9,000 lanterns) would remain old and inefficient. This would result in rising energy and maintenance costs and a failure by Herefordshire Council to meet its targets for carbon reduction.
 - Additionally there are currently approximately 3,000 lighting columns that are in need of replacement with an overall cost in the region of £3million. This is currently unbudgeted and will be a future budget pressure over the next 5years.
2. Option 2 – To select an alternative option from Appendix 1 to this report – “LED Street Lighting Options”
 - This is not recommended as the proposed option of pre-set dimming offers the best value for money with significantly lower capital costs and the highest energy and cost savings.

Reasons for Recommendation

3. The recommendation to upgrade all street lighting to LED lanterns is based on the success of the previous LED street lighting project and the council’s public commitment to upgrade all street lighting to LED in October 2012.
4. To date, the council has invested £1.495m to upgrade 30% of street lights and all traffic bollards, sign lights and signal heads to LED. This will generate a predicted saving of £3.877m and 12,153tCO₂ over the next 20years.
5. The proposed savings of the recommendation are set out below:

Project Summary	Cost £m	20yr £m saving	20yr CO ₂ saving
Upgrading ~9,000 street lights to LED (with pre-set dimming) and replacing ~3,000 lighting columns.	£5.5	£13.3 (Excluding repayments)	17.2 tCO ₂

Key Considerations

Background

6. Street lighting accounts for the second largest proportion of the council’s carbon emissions (9%) and the number of street lights is growing with adoptions from new developments.

7. The standard street light burning hours assigned to Herefordshire has recently been increased which has increased the annual energy consumption.
8. The current lighting inventory shows 8,944 non LED street lights and 2,926 street lighting columns in need of replacement.

Why we are doing this

9. Energy prices and the maintenance cost of maintaining our Low Pressure Sodium (SOX) luminaires have been rising over the years resulting in additional financial pressures on the Council.
10. Most Local Authorities in England have some kind of energy saving initiative in place on street lights. This includes overnight dimming and in some cases switching off of lights either permanently or during the early hours. Since 2008 Scrutiny Committee has been looking at options with regard to saving energy on street lighting with dimming and LED lanterns seen as the best compromise.
11. There are currently approximately 3,000 obsolete street lighting columns in need of replacement. There is currently no budget provision for this, which would cost an estimated £3m.

Proposal

12. **The Street Lights “Invest to Save” Project aims to replace approximately 9,000 street light lanterns with LED lanterns. Additionally these lanterns will be dimmed by 20% between 10pm and 12am, and by 50% between 12am and 5.30am. Dimming times are approximate as they are based on the mid-point of the hours of darkness.**
13. **To replace approximately 3,000 street lighting columns that are considered at risk of failing and pose a risk to public health and safety.**
14. The lantern type (Urbis Ampera) has been recommended by BBLP due to the best whole life cost when considering quality, cost, life expectancy and energy / maintenance savings.
15. The majority of the columns in need of replacement are concrete columns which were installed in the 1960's with a 25 year product life and are now starting to fail. The remainder are a mix of aluminium and steel columns that have outlived their design lives and are starting to fail around the welded joint on the column.
16. The council is currently in the process of structurally testing the aluminium and steel columns to ascertain whether they need replacement. Here the full replacement cost has already been included, so if they are deemed safe with a reasonable predicted life then these will be excluded from the column replacement programme, thus reducing the capital cost.
17. The proposed completion date is October 2015, which accounts for a six week supplier lead time and 12 months for delivery. This is considered the most cost effective delivery timetable based on delivery cost and accelerating the energy and maintenance savings.
18. The cost and saving calculations within Appendix 1 of this report differ from the final figures within the refined business case as when the Urbis Ampera was identified as the preferred solution, a detailed value engineering exercise was undertaken to refine the figures and ensure best value.

Conclusion

19. This proposal offers an opportunity to reduce future energy/maintenance revenue costs, alleviating the £3m pressure for the column replacement and also improving the whole street lighting asset.
20. The recommended proposal represents the best compromise in terms of value for money, and long term cost and carbon savings, whilst maintaining a lighting level that meets the needs of residents.
21. This proposal is the single largest carbon reduction project that the council has ever undertaken, estimated to save 861 tCO₂ emissions per annum, and is essential to the delivery of our 30% CO₂ reduction target.
22. The below table summarises the refined business case illustrating the financial savings after the loan repayments.

	Year 1 £000	Year 2 £000	Year 3 £000	Year 4 £000	Year 5 £000	Year 10 £000	Year 15 £000	Year 20 £000	Cumulative Total £000
BAU Energy cost (inc 5% inflation)	£347	£364	£382	£402	£422	£538	£687	£876	£11,469
Post Energy cost (inc 5% inflation)	£117	£122	£129	£135	£142	£181	£231	£295	£3,858
Energy saving	£230	£242	£254	£266	£280	£357	£456	£582	£7,611
BAU Maintenance cost (inc 3% inflation)	£303	£312	£320	£329	£339	£389	£448	£516	£8,005
Post Maintenance cost (inc 3% inflation)	£162	£167	£172	£177	£182	£211	£245	£284	£4,351
Maintenance saving	£141	£145	£149	£153	£157	£178	£203	£232	£3,654
Gross Savings	£371	£387	£402	£419	£436	£535	£659	£813	£11,265
Loan Repayment	-£195	-£461	-£451	-£441	-£432	-£383	-£334	-£286	-£7,453
Net Saving	£177	-£74	-£49	-£22	£5	£152	£325	£528	£3,812

23. This project is within the scope of the Public Realm Contract awarded to BBLP last year and represents Value for Money as this contract was procured using a robust Competitive Dialogue process.

Community Impact

24. The existing LED street lighting projects have been well received by residents due to a better quality of street lighting, and reduced levels of light pollution. There have been a small number of complaints where residents' properties are no longer lit, although this has generally been resolved through communications and education as the lights are only intended to light the public highways and that this is seen by the majority as an improvement.
25. The significant financial and carbon savings offered through these proposals will both protect public service provision in a time of austerity whilst also demonstrating our commitment to community leadership on carbon reduction when natural resources are decreasing.
26. A pilot study in Essex, over a 1 year period, found that switching off street lights at night

reduced the level of reported crime by nearly 50%. There was however an increase in the public's fear of crime.

27. Pilot dimming programmes have been carried out with no complaints from residents.
28. Minimising light pollution is now in the public forum. A number of organisations now campaign for reducing light pollution including the British Astronomical Society and the Campaign to Protect Rural England. Herefordshire is adjacent to the Brecon Beacons Dark Sky Reserve, one of only 5 reserves internationally. International Dark Sky Reserves are areas recognised as possessing an exceptional or distinguished quality of starry nights and nocturnal environment specifically protected for scientific, natural, educational, cultural, heritage or public enjoyment. Many areas within the Brecon Beacons, including places bordering Herefordshire such as Hay on Wye are using the Dark Sky Reserve status to promote tourism.
29. In the "Your Community Your Say" consultation in 2012, 10 of 14 local meetings stated that street lighting could be done differently through either dimming or part night lighting. None of the other 4 local meetings saw street lighting as a priority.
30. We are currently in the process of consulting with the emergency services. Following this any streets not deemed suitable for dimming will be omitted from the dimming programme.

Equality and Human Rights

31. An equalities impact assessment has been developed with the council's Equality and Diversity Team and is attached as Appendix 3.

Financial Implications

32. This invest-to-save project is included in the medium term financial strategy in order to address the continued budget pressures through rising energy costs. The current allocation in the capital programme is £5.655m.
33. The total cost is currently £5.517m although this may reduce subject to the outcome of the structural testing, as outlined in paragraph 16.
34. The loan repayments total £7.453m over 20 years, will be met from the existing street lighting energy and maintenance budgets, with the pressures in years 2, 3 and 4 to be met by carrying forward the excess savings from year 1.

Legal Implications

35. The powers and duties of a street lighting authority in the matter of lighting are statutory. The common law imposes no duty to light and confers no powers.
36. Points of further note;
 - Under the relevant provisions of the Highways Act 1980 there is a power to light a highway but no duty to do so.
 - No liability for an accident arising from a failure to light, or failure to continue to light, a

highway

- There is a statutory duty of care to road users to warn and protect , such as providing lighting to warn of obstructions on the highway and includes the safety of lighting equipment on the highway
- The Electricity at Work Regulations imposes a duty on owners and operators of electrical equipment to ensure its safety.

Risk Management

37. The project risks have been jointly developed by the council and BBLP project team and are set out in full in Appendix 2 of this report – LED Street Lighting Risk Register. Here the associated risk value is included within the total project cost. The three categories of risk are

- Subcontractor risks – which have been taken by the subcontractor within their quotations.
- Target Cost Risks – where any additional costs/savings will be shared between the Council and BBLP through the pain/gain mechanism within the Public Realm contract.
- Project Risks – which are HC risks.
- Perceived increase in the public's fear of crime.

Consultees

38. This proposal has been developed in partnership with Highways & Community Services, Transport & Access Services, Energy & Environmental Management, Finance, and Balfour Beatty Living Places and was reported to the Council's Carbon Board.

Appendices

- Appendix 1 - LED Street Lighting Options
- Appendix 2 - LED Street Lighting Risk Register
- Appendix 3 – LED Street Lighting Equalities Impact Assessment

Background Papers

- None identified