

Bath & North East Somerset Council

MEETING:	Cabinet	
MEETING DATE:	13 June 2012	EXECUTIVE FORWARD PLAN REFERENCE:
		E 2429
TITLE:	Street Lighting - Conversion of LED Street Lights	
WARD:	All	
AN OPEN PUBLIC ITEM		
List of attachments to this report: Appendix A:- Delivery Plan		

1 THE ISSUE

1.1 This initiative will enable half the Council's Street Lighting assets to be converted to modern Light Emitting Diode (LED) technology, this will bring significant longer term benefits resulting in reductions in:- energy usage, carbon emissions and maintenance costs.

2 RECOMMENDATION

The Cabinet agrees that:

2.1 The budget of £2m for this project is approved for spend in 2012/13 and the project to convert all main road lights to LED source during 2012-2013 is progressed in line with the programme in Appendix A.

2.2 The use of optimised multi-staged dimming profiles for use on both main roads and within residential streets is implemented to maximise savings and ensure such localities remain lit to appropriate levels.

3 FINANCIAL IMPLICATIONS

3.1 The 2012/13 Council Budget Report provisionally approved budget for a LED street lighting replacement programme of £0.75m in 2012/13 and £1.25m in 2013/14. This report proposes that the whole spend is accelerated to 2012/13 in order to deliver savings more quickly.

3.2 A £2m spend to replace main road lights with LED and to implement a dimming profile on these lights is estimated to deliver the following revenue savings:

- Maintenance: £50kpa
- Energy savings: £135kpa, 60% of energy cost
- Carbon tax saving: £10kpa (from 2014)

In addition there would be a small saving as a result of dimming residential lights.

The capital spend will be funded by service supported borrowing, and the net annual saving is forecast to be £25k per annum, this will increase to 35k per annum when the carbon tax savings are realised.

We anticipate a significant energy price increase in October and the delivery of this project will go some way towards mitigating this increase; these additional costs and savings do not form part of this report.

4 CORPORATE OBJECTIVES

4.1 IMPROVING TRANSPORT AND THE PUBLIC REALM:- Introducing LED lighting will bring a better quality, more consistent level of lighting, aiding road safety. Lighting styles will be applied to all areas covered improving the wider public realm project.

4.2 BUILDING COMMUNITIES WHERE PEOPLE FEEL SAFE AND SECURE:- LED lanterns will distribute light in a more controlled manner thus improving the recognition of colours and facial features assisting with crime reduction on street. Dark spots are often perceived to increase the risk of personal attacks taking place the fear of crime

4.3 ADDRESSING THE CAUSES AND EFFECTS OF CLIMATE CHANGE:- Action has already been taken to avoid the current carbon reduction credit (CRC) tax at £12 per tonne (this equates to £41K on the total street lighting budget) until April 2014 by changing the way we purchase our energy. This has already resulting in a £123K (avoidance) saving centrally. After April 2014 this tax loop hole shall be closed and we will have to revert to dynamic trading, at this stage the figure of £41K will have been reduced to circa £31K as a result of the project. Increases in the CRC tax will be announced as part of the Treasury's annual budget process. Furthermore this initiative will reduce the Council overall carbon emissions by 783 tonnes of Co² per annum which equates to 3% of the Councils total carbon emissions.

5 THE REPORT

5.1 The Council currently has 16,000 street lights, 2,000 lit signs / bollards and 100 traffic signal and controlled pedestrian crossing sites. These accounts for 13% of the Council's total energy spend. 89% of this energy is consumed by the street lights (4,000 units on main traffic routes and 12,000 in residential streets), 8% on lighting signs and bollards and 3% consumed by traffic signals here.

5.2 The Council undertook a trial of LED technology in April 2011 this involved the conversion of 71 high powered lights on the A4 and A4174 Hicks Gate roundabout. These units contained static dimming devices that enabled the use of multi stage dimming to be deployed as follows between the following hours:-

- 0% from Dusk to 21.30)
- 25% from 21.30 to 00.00)
- 50% from 00.00 to 05.00) level of dimming employed
- 25% from 05.00 to 07.00)
- 0% from 07.00 to Dawn)

This maximised the possible savings of Co² by reducing high levels of unnecessary light outside of peak traffic hours, effectively optimising the light to ensure in busy traffic periods the routes are lit to maximum levels and then reduced throughout the rest of the evening based upon traffic use whilst not compromising on Road Safety.

The roll out of LED technology on main roads would initially be rolled out utilising the same profile.

Furthermore we have undertaken a review of all the strategic traffic routes that are currently lit considering usage and geometry. This has identified we currently have two sections of relatively straight roads with little conflict except one T junction on each. The Council's accident investigation specialists have undertaken a review of the risks associated with these two links to see if the lighting on these sections (A4 from the Globe roundabout to Saltford and A367 Peasedown to Radstock). This research has concluded that we should initially switch off these sections of lighting with a longer term view to completely remove these sections of lights.

5.3 LED lanterns utilise full cut off optical control with flat glass fittings this ensures that no upward light is sent into the atmosphere, this being the major cause of light pollution.

5.4 Procurement of this project will be delivered through the Council current maintenance contract arrangements with Scottish and Southern Energy

6 RISK MANAGEMENT

6.1 The report author and Lead Cabinet member have fully reviewed the risk assessment related to the issue and recommendations, in compliance with the Council's decision making risk management guidance.

7 EQUALITIES

7.1 An Equality Impact Assessment (EqIA) has not been completed. Because there is no impact in converting the existing road lighting and all areas converted will remain adequately lit and meet the British Standard for Road Lighting BS5489.

8 RATIONALE

- 8.1 A number of options have been considered to minimise the Council's financial exposure to energy price rises and future carbon tax liabilities effective from 1 April 2014.
- 8.2 These options have included switching off lights, consideration of part night lighting, conversion of existing lanterns utilising older technology and replacement with the latest LED technology. The recommended option of utilising LED technology will substantially reduce carbon emissions whilst the lights remain operational throughout the hours of darkness. By utilising optimised static dimming profiles the levels of light deployed throughout the night in all localities can be tuned to reflect varying social needs though considering the activity and or use of the space lit whilst ensuring future revenue cost controls are carbon savings are maximised.

9 OTHER OPTIONS CONSIDERED

- 9.1 **TURNING OFF LIGHTS:-** A project was undertaken last year in Swindon where four hundred lights were turned off, this resulted in significant social pressure from the communities affected and this year all lights have been restored back into operational service, the trial being clearly acknowledged as a disappointment which cost the Council more to re-commission the lights than the savings made.
- 9.2 **PART NIGHT LIGHTING:-** Has been considered however longer term views suggest this solution may well saves carbon emissions at the same time as placing the streets into darkness, more importantly this option has not realise the substantive savings claimed. This being because the periods when the lights are required relate directly to when the largest demands for electricity exists. Authorities already choosing this path are now seeing substantial rises in their energy rates where part night lighting is deployed.
- 9.3 **CONVERSION OF EXISTING LAMP SOURCES:-** Existing units may be converted to dimming technology, however due to the way discharge lighting operates the power losses are not linear as with modern LED technology so savings and carbon reduction are less. Projected maintenance savings would be less due to the on-going need to maintain planned lamp replacements.

10 CONSULTATION

- 10.1 Cabinet members; Parish Council; Town Council; Overview & Scrutiny Panel; Staff; Section 151 Finance Officer; Monitoring Officer.
- 10.2 Significant discussion has been undertaken with the Cabinet Member for Transport and Strategic Director for Place, and other Senior Officers which has outlined the benefits and financing of this invest to save and invest to avoid initiative. Furthermore a number of reports and papers were taken to the Safer Stronger Communities Overview and Scrutiny Panel during 2009-2010 which resulted in the recommendation being approved and content referred back to the Cabinet Member for Transport. Thus resulting in provisional budget being included within the 12-13 and 13-14 budgets.

11 ISSUES TO CONSIDER IN REACHING THE DECISION

11.1 Social Inclusion; Customer Focus; Sustainability.

12 ADVICE SOUGHT

12.1 The Council's Monitoring Officer (Divisional Director – Legal and Democratic Services) and Section 151 Officer (Divisional Director - Finance) have had the opportunity to input to this report and have cleared it for publication.

Contact person	Keith Showering 01225 394342
Sponsoring Cabinet Member	Councillor Roger Symonds
Background papers	29 January 2009 Safer Stronger Communities Overview and Scrutiny Panel. 22 July 2010 Safer Stronger Communities Overview and Scrutiny Panel. 08 February 2012 Financial Plan 2012/13 - 2014/15, Budget & Council Tax 2012/13
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