

**Report To:** Environment & Regeneration  
Committee

**Date:** 15 January 2014

**Report By:** Corporate Director Environment,  
Regeneration & Resources

**Report No:** ERC/ENV/IM/14.220

**Contact  
Officer:** Graeme Blackie

**Contact  
No:** 714828

**Subject:** Environmental & Commercial Services (Roads) – Update on Proposed Street  
Lighting Investment Strategy

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## **1.0 PURPOSE**

- 1.1 The purpose of this report is to advise the Committee of the progress on the proposed street lighting investment strategy.

## **2.0 SUMMARY**

- 2.1 As part of the roads asset management planning, the Council is currently developing a street lighting investment strategy which will provide good quality street lighting which will meet specified legislative and road safety requirements, substantially reduce energy consumption and maintenance costs, and reduce exposure to future carbon tax charges and rising energy prices.
- 2.2 As previously reported and approved by Committee a review of existing street lighting installations is being carried out to identify areas where energy savings could be realised. This is being done in conjunction with a review of lighting standards, along with technologies currently available to identify potential energy and maintenance savings. In addition, a column condition survey has been carried out to identify those lighting columns which need replacement in the shorter term.

## **3.0 RECOMMENDATIONS**

- 3.1 That the Committee note the ongoing development of the street lighting investment strategy.
- 3.2 That the Committee note that a report will be brought to the March 2015 Environment and Regeneration Committee in respect of the detailed street lighting investment strategy, along with procurement arrangements and works programme.

**Ian Moffat**  
**Head of Environmental and Commercial Services**

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## 4.0 BACKGROUND

- 4.1 The Council currently has some 12,500 street lights with an associated maintenance budget of £440k per annum and associated electrical energy costs of £550k in 2014/15. This energy produces 2,937 tonnes of carbon (CO<sub>2</sub>). Current analysis of energy market predicts that energy costs may double in the next 10 years followed by a gradual increase in line with inflation thereafter. There are also a number of lighting columns which are known to be life expired and which need replacement in the shorter term.
- 4.2 A review of existing street lighting installations is being carried out to identify areas where energy savings could be realised. This is being done in conjunction with a review of lighting standards, along with technologies currently available to identify potential energy and maintenance savings. In addition, a column condition survey has been carried out to identify those lighting columns which need replacement in the shorter term.
- 4.3 This review has resulted in the development of an outline business case and the ongoing development of a final business case. The business case development has been carried out in collaboration with Renfrewshire Council who are carrying out a similar exercise, and via external Consultants employed by Zero Waste Scotland.
- 4.4 The aim of the strategy is to provide an optimum way forward for the Council in terms of investment in street lighting such that good quality lighting is provided which meets specified requirements, provides for roads safety considerations, continues to assist with the reduction/prevention in street crime, and which reduces the carbon footprint of the Council and, in turn, minimises the costs of electrical power consumption and exposure to rising electricity prices.

## 5.0 STRATEGY DEVELOPMENT

- 5.1 Street lighting as a benefit to the local community contributes to night time road safety, a reduction/prevention role in terms of street crime, provides for a feeling of general security, and helps to promote economic development by supporting a 24 hour economy. Street Lighting is provided in accordance with the requirements of the Roads (Scotland) Act 1984 and via guidance provided by relevant British and European Standards, and that of the professional body involved with this work, the Institution of Lighting Professionals.
- 5.2 The aim of the review is to provide for a street lighting investment strategy that meets the requirements of national standards and guidance along with the Council's own aims and priorities, combined with the provision of lighting stock that will minimise energy consumption and the associated energy costs, reduce maintenance costs, and reduce light pollution. There are a number of drivers for change with regards to the current strategy and these are outlined below in paragraphs 5.3 to 5.6.
- 5.3 *Legislation:* It should be noted that new legislation will prohibit the use of inefficient technologies; this includes the control gear used in many of our street lights, and as a result, replacement parts will become increasingly difficult to source after 2017.
- 5.4 *Design Standards & New Technologies:* The latest British/European Standards offer a more flexible approach to lighting design classes to account for differing traffic flows, usage, crime levels etc. These new standards along with improved lantern technology enable lighting levels to be more effectively controlled using less energy, which assists with reductions in carbon use and light pollution. Additional guidance on the required design standards are provided by the Association of Chief Police Officers and the Institution of Lighting Professionals. In addition, data analysed by the Royal Society for the Prevention of Accidents (ROSPA) highlights the reductions in fatal accidents in areas which have street lighting. The new technologies also use "white" light providing good colour recognition and clarity; this is also of advantage in terms of the Council's CCTV installations.

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5.5 *Energy Costs:* Energy costs for street lighting are paid through an unmetered tariff which uses the assessed wattage of each street light multiplied by the hours it is on for the year, this is currently 4,090 hours. This measurement of kilowatt hours (kWh) is then multiplied by the energy tariff which, while comprised of different elements, the effective cost is currently £0.106 per kWh. For example, a typical 55w low pressure sodium lantern (orange light) used extensively in residential areas costs £33.77 per annum. The Energy costs for a typical replacement for a 55w unit will cost £15.35 per annum. Whilst a number of options for lantern replacement are being considered, an LED solution across the majority of the existing lighting stock could deliver an energy saving across the entire lighting stock of up to 50%. It should be noted that, in addition to the potential for rising energy prices, the Council will become eligible for the carbon tax in 2019; this will add (at current prices and total consumption) around £47k per annum to the energy cost for street lighting.

5.6 *Maintenance Costs:* There is a potential for maintenance savings offered by the use of LED lanterns due to the longer life cycle of this technology and removal of consumable components such as lamps. Current lamps have a life of 4 to 6 years, while LED's may offer a service life of over 25 years. Routine maintenance operations such as planned cleaning, routine inspection, and electrical testing will require to continue. This may save up to 40% in terms of the current maintenance budget. However, it should be noted that these savings do depend on the validity of the claimed operational life of these newer LED lanterns and this is not wholly tested at this time. A sensitivity analysis is being built into the strategy development to further explore this aspect of the potential for costs savings.

5.7 The Council has installed a number of LED lanterns on several roads on a trial basis; this trial is ongoing and has involved consultation, via a questionnaire, with the residents. The affected roads are Dunvegan Avenue and Tantallon Avenue, Gourrock, and Killochend Drive, Greenock. White light technology (non LED) has been used on various new residential housing schemes and on a recent small scale lantern retrofit scheme the Esplanade, Greenock.

## **6.0 POTENTIAL STRATEGY OUTCOME**

6.1 Whilst the development of final business case as part of the strategy review is currently ongoing with consideration of a number of options, it is anticipated that the following is the likely outcome:

- A phased lantern replacement programme involving white light across the majority of the Council's lighting stock, and using in the main, LED technology, but with alternative white light sources (fluorescent or cosmopolis) to suit specific locations where LED may not be suitable.
- In tandem with the above, a phased column replacement programme for those columns that are life expired and requiring replacement; in essence this will be the concrete columns and specific steel columns identified as part of the recent column condition survey.
- A reduction in energy consumption of up to 50% upon completion of the phased works programme.
- A reduction in maintenance costs of up to 40% upon completion of the phased works programme; this is subject to further detailed analysis.

6.2 A report will be brought to the March 2015 Environment and Regeneration Committee in respect of the detailed street lighting investment strategy, along with proposed procurement arrangements and proposed phased works programme.

## **7.0 IMPLICATIONS**

### **Finance**

7.1 At this stage it is anticipated that the capital costs associated with the strategy will be contained where possible within existing RAMP budgets, this will be confirmed once the detailed strategy and 2015/18 Capital programme are finalised. Full details of this, along with any additional

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implementation costs and anticipated energy & maintenance savings, will be included in the report brought to the March 2015 Environment and Regeneration Committee.

### **Legal**

7.2 There are no Legal implications arising from this report.

### **Human Resources**

7.3 There are no specific HR implications arising from this report.

### **Equalities**

7.4 Whilst this report involves a new strategy, there are no equalities issues arising. This strategy meets with the requirements of the Roads (Scotland) Act 1984 and approved national standards and codes of practise for the provision, maintenance and operation of street lighting on roads.

### **Repopulation**

7.5 The quality of the roads network and its associated street lighting is an influencing factor in the perception which people have of the area and therefore it is important that the Council optimises its limited spend on roads maintenance and as such the work generated by this report will have a positive benefit to the Council's Repopulation Strategy.

## **8.0 CONSULTATIONS**

8.1 No specific consultations are required as a result of this report.

## **9.0 LIST OF BACKGROUND PAPERS**

9.1 None.