
Report To:	Environment & Regeneration Committee	Date:	18 January 2018
Report By:	Corporate Director Environment, Regeneration & Resources	Report No:	ERC/ENV/WR/17.318
Contact Officer:	Steven Walker	Contact No:	714828
Subject:	LED Strategy – Future Spend to Save		

1.0 PURPOSE

- 1.1 The purpose of this report is to seek Committee approval for a spend to save project for street lighting.

2.0 SUMMARY

- 2.1 The thrust of the original lantern replacement strategy, which formed part of the Council's Street Lighting Investment Strategy, and approved by this Committee during March 2015, was a phased programme involving the introduction of white light across the majority of the Council's lighting stock, and using in the main, LED technology. Taking into account the parallel need to commit funding to column replacement, it was determined that the monies available for the lantern conversion programme would be taken forward on the basis of conversions of those streetlights which were, at that time, non-white. The existing white lanterns, which already provided a degree of energy saving compared to the older non-white lanterns, would remain in-situ and be converted to LEDs in future years.
- 2.2 With the ongoing and rapid technological developments in lantern technology which continues to deliver more efficient lanterns, and taking into account the possibility of further driving down energy consumption, and thus revenue expenditure on both electricity costs and maintenance costs, it is considered appropriate to re-assess the viability of a further possible spend to save project ("LED Work Package 5") involving the conversion of the remaining white non-LED lanterns on the Council's road network.
- 2.3 Preliminary design has indicated that the conversion of the remaining 3,034 white non-LED lanterns to white LED lanterns will reduce the overall electrical consumption by a further 526,000 kWh (this would be subject to confirmation via detailed design) - this represents an annualised revenue saving for electricity (at current rates and prices) of £58k; it is further estimated that there will be a corresponding annualised maintenance estimated at around £17k.
- 2.4 Based on the recent and ongoing lantern conversion programme, preliminary estimates indicate that the capital costs associated with the design and construction of the spend to save project ("LED Work Package 5"), would be £715k.

3.0 RECOMMENDATIONS

- 3.1 That the Committee approve the proposed spend to save project (LED Work Package 5) comprising the conversion of existing white, non-LED lanterns to white LED lanterns.

Willie Rennie
Head of Environmental and Commercial Services

4.0 BACKGROUND

- 4.1 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.
- 4.2 A review of existing street lighting installations was carried out previously during 2014 to identify areas where energy savings could be realised. This was done in conjunction with a review of lighting standards and technologies currently available to identify potential energy and maintenance savings. In addition, a column condition survey was carried out to identify lighting columns which need replacement in the shorter term. This review resulted in the development of an outline business case and final business case. This work was carried out in collaboration with Renfrewshire Council who carried out a similar exercise, and via external consultants employed by Zero Waste Scotland.
- 4.3 This work culminated in this Committee approving a Street Lighting Investment Strategy in early March 2015. The aim of this strategy, which remains unchanged, 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, reduces the carbon footprint of the Council and, in turn, minimises the costs of electrical power consumption and exposure to rising electricity prices, reduces maintenance costs, and reduces light pollution.
- 4.4 The thrust of the original lantern replacement strategy was a phased 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. Taking into account the parallel need to commit funding to column replacement, it was determined that the monies available for the lantern conversion programme would be taken forward on the basis of conversions of those streetlights which were non-white and which used, in the main, older technologies such as low and high pressure sodium lamps (some 75% of the lantern stock); existing white lanterns, which comprised around 25% of the overall stock at that time, would remain in-situ and be converted to LED in later years. The existing white non-LED lanterns already provided a degree of energy saving compared to the older non-white lanterns.
- 4.5 Since the approval of the Strategy, the Council has invested in significant works to its street lighting lantern infrastructure as follows:
- Conversion of 5,412 older non-white type lanterns to white LEDs, giving an energy consumption reduction of around 30% (to end November 2017); refer to Appendix 1 which detailed progress on LED lantern installation on a Scotland wide basis at September 2017.
 - Commitment towards the completion of the original lantern conversion strategy with a target completion date of around the end of September 2018 (comprising lantern only and lantern plus column replacement); this will comprises 9,000 conversions in total, with an associated overall energy consumption reduction of around 50%.
- 4.6 With the ongoing and rapid technological developments in lantern technology which continue to deliver more efficient lanterns, and taking into account the possibility of further driving down energy consumption, and thus revenue expenditure on both electricity costs and maintenance costs, it is considered appropriate to re-assess the viability of a further possible spend to save project ("LED Work Package 5") involving the conversion of the remaining white non-LED lanterns on the Council's road network.

5.0 PROPOSALS & RECOMMENDATIONS

- 5.1 Preliminary design has indicated that the conversion of the remaining 3,034 white non-LED lanterns to white LED lanterns will reduce the overall electrical consumption by a further 526,000 kWh (this

would be subject to confirmation via detailed design); this represents an annualised revenue saving for electricity (at current rates and prices) of £58k; it is further estimated that there will be a corresponding annualised maintenance estimated at around £17k. The overall reduction in energy consumption for Inverclyde's street lighting would be just over 55%.

- 5.2 Based on the experience of the recent and ongoing lantern conversion programme, preliminary estimates indicate that the capital costs associated with the design and construction of the spend to save project ("LED Work Package 5"), would be £715k; this includes an allowance for detailed design by external consultancy, supply of lantern materials via the Scotland Excel Framework for Street Lighting Materials (16-13), lantern erection by a contractor procured via the Scotland Excel Street Lighting Framework for Bulk Renewal of Luminaires (10-13), and for a significant number of higher wattage lanterns on main routes, and which come at a higher unit cost.
- 5.3 That the Committee approve the proposed spend to save project (LED Work Package 5) comprising the conversion of existing white, non-LED lanterns to white LED lanterns, to an overall value of £715k.
- 5.4 Assuming the early procurement of an external design consultant late in 2017/18, it is anticipated that design would be completed by around June 2018, with lantern erection around December 2018 to March 2019, this allows for the significant mobilisation period for the supply of lanterns.

6.0 IMPLICATIONS

6.1 Finance:

One-off costs:

Cost Centre	Budget Heading	Budget Years	Proposed spend this report (£000s)	Virement from	Other comments
Capital	Lighting	2018/19	715		£620 Reserves £95k Contained within RAMP

Annually recurring costs:

Cost Centre	Budget Heading	Budget Years	Proposed spend this report (£000s)	Virement from	Other comments
Revenue	Lighting	2019/20 (recurring)	(75)		

- 6.2 There are no legal implications arising from this report.

Human Resources

- 6.3 There are no specific HR implications arising from this report.

Equalities

- 6.4 As this report does not involve a new policy or a new strategy, there are no equalities issues arising.

Repopulation

- 6.5 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 spend on roads maintenance and as such the work generated by this report will have a positive benefit to the Council's Repopulation Strategy.

7.0 CONSULTATIONS

7.1 The Chief Financial Officer, Head of Legal & Property Services, and the Corporate Procurement Manager have been consulted on the contents of this report.

8.0 LIST OF BACKGROUND PAPERS

8.1 None.

Appendix 1 – LED Lantern Installation on a Scotland Wide Basis

Percentage of LEDs Installed (Sept 2017)

