Inverclyde council

AGENDA ITEM NO. 14

Report To:	**Environment & Regeneration Committee**	**Date:**	**5 March 2014**
Report By:	**Corporate Director Environment, Regeneration & Resources**	**Report No:**	**ERC/ENV/IM/14.228**
Contact Officer:	**Graeme Blackie**	**Contact No:**	**714828**
Subject:	**Environmental & Commercial Services (Roads) Street Lighting Investment Strategy**		

1.0 PURPOSE

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

2.0 SUMMARY

2.1 As part of the roads asset management planning, the Council has developed 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 was 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 approve the Street Lighting Investment Strategy.

3.2 That the Committee note that a report will be brought to a future Environment and Regeneration Committee in respect of the proposed schemes, including procurement arrangements and works programme, as these aspects are under consideration.

Ian Moffat
Head of Environmental and Commercial Services

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_2). 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 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.

4.3 A review of existing street lighting installations was carried out 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.

4.4 This review has resulted in the development of an outline business case and final business case. This work 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.

4.5 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, 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.

5.0 REGULATIONS

5.1 Section 35 of the Roads (Scotland) Act 1984 empowers the local roads authority to provide lighting for roads and proposed roads that will be maintained by them and which in their opinion should be lit.

5.2 The regulations and standards affecting the design and maintenance of road lighting include the Local Government (Scotland) Act 2003 and the Health and Safety at Work Act 1974 (HASWA). The HASWA sets out the duties and responsibilities which employers have to their employees and the public, as well as those which employees have to themselves and others. The HASWA is an enabling act and is the foundation to a number of regulations and European directives, some of those directly affecting road lighting include:

- BS7671 Requirements for Electrical Installations (IEE Wiring Regulations 17th Edition)
- Management of Health and Safety at Work Regulations 1999
- Construction (Design and Management) Regulations 2007
- The Electricity Safety, Quality and Continuity Regulations 2002

Further clarification of these regulations is given in their accompanying approved Codes of Practice and guidance notes.

5.3 Road lighting design is carried out to BS 5489 (2013) and BS EN 13201. BS EN 13201 is currently under review, and the recommendations in technical report CIE115 (2010), also referenced in BS 5489 has been used. There are a number of codes of practice issued by the Institution of Lighting Professionals providing advice on the interpretation of the standards, and which have also been considered; these include:

- Lighting Guide 02 – The Application of Conflict Areas on the Highway
- Lighting Guide 03 – Lighting for Subsidiary Roads
- Lighting Guide 04 – Environmental Lighting Impact Assessments
- Technical Report 27 – CoP for Variable Lighting Levels for Highways

6.0 DRIVERS FOR CHANGE

6.1 *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.

6.2 *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.

6.3 *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 measurement of kilowatt hours (kWh) is then multiplied by the energy tariff. 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.

6.4 *Maintenance* Costs: There is a potential for maintenance savings offered by the use of new lanterns due to the longer life cycle of this technology. Current lamps have a life of 4 to 6 years, while new technologies may offer a service life of up to 25 years. Routine maintenance operations such as planned cleaning, routine inspection, and electrical testing will require to continue.

7.0 TECHNOLOGIES

7.1 Within the last 10 years there have been significant advances in the science of producing and controlling light and understanding the key concepts of these developments and how they are applied to street lighting can deliver energy savings and maintain or enhance service delivery.

7.2 *Low Pressure Sodium (SOX)*: These make up 34% of the Council’s lights and for many years were considered one the most efficient and reliable light sources. This light is monochromatic with no colour recognition possible. These lamps will be affected by the energy efficiency legislation and due to the introduction of the European EuP legislation, spares will prove difficult to source from 2017. Lamp costs have also been rising and with a relatively short service life of around 3 years, combined with control ballasts that meet the new legislation, the use of SOX lamps is now becoming an expensive option.
+ Good reliability.
- No colour recognition, poor light control (sky glow), short life, increasing costs.

7.3 *High Pressure Sodium (SON)*: These make up, 33%, of the Council's lighting stock and while not being as monochromatic as the "orange" SOX lamps, they do not allow for good colour recognition. The lamps have a low cost, and are reliable with a service life of up to 6 years. These lamps will also be affected by energy efficiency legislation, however there is now a range of efficient control equipment that will meet this legislation which can be retrofitted into around 50% of the lanterns. The retrofit control gear also gives the option of reducing wattages by using other lamps and/or introducing part night dimming.
+ Good reliability, reasonable life, dimmable.
- No colour recognition.

7.4 *Ceramic Metal Halides (CPO, CDO or CMH)*: Recently introduced to street lighting, these lamps provide a white light which is easy to control and with a service life of up to 6 years. The lamps do have a high cost, 5 times that of SON, but are relatively efficient. The CDO/CMH version of these lamps can be retro-fitted to existing SON lanterns with, in most cases, a smaller wattage lamp size meeting the current design standards. This means a traditional 70 watt SON running at 90 watt can be replaced with a 50 watt CDO lamp at 55 watt, a 40% energy saving.
+ Reasonable life, dimmable, can be retrofitted to SON lanterns and 'white' light.
- Reliability, lamp cost.

7.5 *Fluorescent (PLL or PLT)*: When introduced to street lighting the lamps had low durability and the light output depreciated significantly within a year. The latest lamps have been modified for outdoor use, with increased service life versions available (up to 10 years). The lamps' control gear is also very efficient, and the lamps can be dimmed to low levels. Poor light control due to the size and shape of the lamps, is the main concern, although there are some lantern types than can assist with this issue. Cost is their main benefit, as a good PLL lantern with long life lamp will cost less than 50% of the cost of a conventional lantern.
+ Low cost, good life, dimmable, ideal for replacing SOX lanterns, and 'white' light.
- Poor optical control.

7.6 *Induction (QL)*: These lamps have no electrodes to wear out and have a long and proven reliable life in excess of 60,000 hours (15 years). A number of street lighting products are available with this technology, but their perceived high cost at the time (1990's) meant few were used in this country. They are however widely used in the USA where they are considered an alternative to LEDs. They would make an excellent alternative to SOX lighting as they have similar performance, produce a warm white light, however they are more than double the cost of long life fluorescents. The light produced is soft and pleasing and is well suited to lighting community areas.
+ Reliable, long life, 'white' light.
- Cost, poor optical control.

7.7 *Light Emitting Diodes (LED)*: LEDs have seen a steep rise in their efficacy, the amount of light they produce against the energy used (lumens/watt), rising from around 30 lumens/watt in 2002 to over 150 lumens/watt today. While this figure will continue to rise over the next few years, it is projected to be more of a more gradual increase. The maintenance requirements for LED lanterns will be greatly reduced over the lifetime of the lantern as the LEDs themselves do not require the frequent replacement that is the case with individual lamps.
+ Long life, 'white' light, easy to control, reduces obtrusive light, low maintenance.
- increased glare if not fitted correctly.

7.8 *Central Management Systems (CMS)*: Technologies now exist to directly control individual street lights using a number of methods that are collectively known as machine to machine communications. This can either be done using the power cables or radio waves to transmit information. A CMS system will allow lighting levels to be adjusted to meet demand and levels can be adjusted to suit. For instance lights can be run at full power during peak periods and dimmed as traffic or pedestrian activity declines. A typical dimming shape can be where the lights are at 100% at switch on, dimming by 20% at 8pm, a further 30% at midnight and returning to full power for the

morning peak period.

A fully implemented CMS systems may result in additional savings, with other un-quantified savings being achieved through the direct control of individual street lights and additional information gained. However, a CMS system would have an initial capital cost and ongoing revenue costs for the software and the required staff resource. With the additional installation costs, it is felt that the comparatively small additional savings cannot be justified at this time when compared to the savings achieved from LEDs with part night dimming. However, by fitting the new lanterns with a industry standard NEMA socket the Council would future proof our street lights for the provision of a CMS further down the line; all new lanterns would be equipped with control gear cable of interfacing with a CMS system.

8.0 DESIGN CONSIDERATIONS AND LIGHTING PLAN

8.1 Standards for lighting design were first introduced in 1952 under the Code of Practice CP1004, this was subsequently replaced by BS5489 in 1973, now on its 7th edition it also incorporates guidance from other member states of the European Union with guide EN13201 and CIE 115. BS5489-1:2013 takes greater cognisance of the different types of light now available for road lighting, the types of road, and the environment in which lighting is to be provided. Correct use of the guidance will allow the type and level of lighting to be used more accurately with a resultant saving in energy. This is of importance to our street lighting strategy as due to the use of white light, which allows greater colour recognition, in many cases we can light a scheme to a lower level resulting in greater energy savings.

8.2 Taking into account the various design considerations noted above, the characteristic of the road network hierarchy and geometry, traffic flows, crime considerations and maintenance factors, the Lighting Plan in 8.3 below for design is considered appropriate for Inverclyde's road network.

8.3 Lighting Plan

Location	*Area*	*Main Users*	*Traffic Flow*	*Crime Risk*	*Design Class*
Main Artery	>40 mph	Vehicle	High	N/A	M2
Main Artery	>40 mph	Vehicle	Moderate	N/A	M3
Main Artery	< 40 mph	Vehicle	High	N/A	M3
Main Artery	< 40 mph	Vehicle	Moderate	N/A	M4
Town Centre	High Amenity	Vehicle/Cyclist/Pedestrian	Moderate	Moderate	P2
Town Centre	Distributor Road	Vehicle/Cyclist	Low	N/A	M4
Town Centre	Residential	Vehicle/Cyclist	≤ 30 mph	Moderate	P3
Town Centre	Residential	Vehicle/Cyclist/Pedestrian	Low	Moderate	P4
Town	Industrial Areas	Traffic	Moderate	Moderate	P4
Town	Car Park	Vehicle/Pedestrian		Moderate	10 Lux Uniformity 0.25
Village Centre	High Amenity	Vehicle/Cyclist/Pedestrian	Moderate	Low	P3
Village Centre	High Amenity	Vehicle/Cyclist/Pedestrian	Low	Low	P4
Village	Distributor Road	Vehicle/Cyclist	Low	Low	M4
Village	Residential	Vehicle/Cyclist	Low	Low	P4
Village	Residential	Vehicle/Cyclist/Pedestrian	Low	Low	P5
Village	Industrial Areas	Vehicle	Moderate	Low	P4
Village	Car Park	Vehicle/Pedestrian		Low	5 Lux Uniformity 0.25

9.0 COST BENEFIT ANALYSIS – BETWEEN THE DIFFERENT TECHNOLOGIES

9.1 Street lighting lanterns have an effective life of over 25 years, and to maximise the asset value of the current infrastructure it is proposed that a combination of the technologies discussed in this document will be used in conjunction with the lighting plan for design in 8.3 above, to provide the most cost effective method of delivering savings.

9.2 Costs have been calculated over a 25 year period using predicted life cycles. Typical material costs have been sourced from the existing Scotland Excel framework for lighting materials and an attendance cost per visit of £15, as based on the current lighting maintenance contract.

9.3 The options considered in the reduction of energy and maintenance costs included:

- Implementation of lighting plan;
- Reducing lamp sizes in existing SON lanterns;
- Use of more energy efficient lamps such as the Ceramic metal halides;
- Use of electronic control gear and part night dimming for existing SON lanterns;
- Replacement of inefficient lanterns with new LED and Fluorescent lanterns.

The solutions discussed below provide cost effective options for all of the above points, with the lower cost of the fluorescent lanterns and lamp conversions offering the fastest payback periods. When looking at the whole life cost, the anticipated rise in energy and lower maintenance costs of LED lanterns provide whole life costs significantly lower than any other solution. Some examples are noted in 9.4 and 9.5 below.

9.4 The Council has some 4,265 SOX lanterns or 34% of the inventory, with the majority located within residential areas. Options for each of the different sized lamps are offered here, taking into account the anticipated road type and the proposed lighting standard. The existing 55 watt SOX lanterns (3,317 units) are currently used on roads which would be lit to a design class of P4 using the proposed lighting plan.

	Annual Energy	Lifetime Energy	Lifetime Maintenance	Whole Life Cost	Annual Saving	Lantern Cost	ROI (Years)
Existing 55w SOX	£32.08	£802	£289	£1,091			
Proposed 55w PLL	£26.88	£672	£80	£752	£13.57	£120	8.8
Proposed 30w LED	**£15.17**	**£379**	**£50**	**£429**	**£26.46**	**£224**	**8.5**
Proposed 45w CPO	£21.68	£542	£235	£777	£12.56	£140	11.1

The existing 90 watt SOX lanterns (692 units) are currently used on roads which would be lit to a design class of M5/P3 using the proposed lighting plan.

	Annual Energy	Lifetime Energy	Lifetime Maintenance	Whole Life Cost	Annual Saving	Lantern Cost	ROI (Years)
Existing 90w SOX	£52.89	£1,322	£317	£1,639			
Proposed 80w PLL	£40.75	£1,019	£87	£1,106	£21.31	£120	5.6
Proposed 45w LED	**£19.51**	**£488**	**£50**	**£538**	**£44.05**	**£257**	**5.8**
Proposed 60w CPO	£28.61	£715	£240	£956	£27.33	£150	5.5

The existing 135 watt SOX lanterns (408 units) are currently used on roads which would be lit to a design class of M4 using the proposed lighting plan. In this instance only the LED and Cosmopolis lanterns have sufficient performance to offer an alternative.

	Annual Energy	Lifetime Energy	Lifetime Maintenance	Whole Life Cost	Annual Saving	Lantern Cost	ROI (Years)
Existing 135w SOX	£77.17	£1,929	£448	£2,377			
Proposed 60w LED	**£26.01**	**£650**	**£50**	**£700**	**£67.07**	**£257**	**3.8**
Proposed 90w CPO	£42.05	£1,051	£251	£1,303	£42.97	£160	3.7

9.5 The Council's largest lamp type group is high pressure sodium (SON) lanterns, with 5,409 or 44% of the inventory, and are used to light the full range of roads. It is also noted that Inverclyde has already utilised electronic control gear for the majority of their SON lanterns which has saved around 25% energy over conventional control gear in recent years.

The most popular of these are 70 watt SON lanterns (3,222 units) which are used on a range of routes including residential areas and minor distributor routes which would be lit to M5, P3 or P4 categories. While fluorescents can be considered here, they struggle to perform at the P3 design level and do not offer sufficient energy savings. Another option would be the conversion of the existing lanterns to a lower wattage with a 'white' lamp. This option is considered suitable as the majority of existing lanterns have over 50% of their useful service life available.

	Annual Energy	Lifetime Energy	Lifetime Maintenance	Whole Life Cost	Annual Saving	Lantern Cost	ROI (Years)
Existing 70w SON	£36.42	£910	£200	£1,110			
Convert to 50w CMH	£24.28	£607	£271	£878	£9.29	£75	8.1
Proposed 35w LED	**£15.17**	**£379**	**£50**	**£429**	**£27.23**	**£224**	**8.2**
Proposed 45w CPO	£21.68	£542	£235	£777	£13.33	£140	10.5

The existing 150 watt SON lanterns (1,069 units) are generally used on distributor roads to category M4, and as car park flood lights to category C3. No fluorescent option is available here, but conversion to a smaller lamp type has been considered.

	Annual Energy	Lifetime Energy	Lifetime Maintenance	Whole Life Cost	Annual Saving	Lantern Cost	ROI (Years)
Existing 150w SON	£82.37	£2,059	£211	£2,270			
Convert to 100w CDO	£49.42	£1,236	£212	£1,447	£32.91	£80	2.4
Proposed 60w LED	**£26.01**	**£650**	**£50**	**£700**	**£62.78**	**£257**	**4.1**
Proposed 90w CPO	£42.05	£1,051	£251	£1,303	£38.68	£160	4.1

The Council has only small number of 250 watt SON (325 units), and the return on investment charts shown below highlight potential savings. Similar to the 150w SON, a change to a smaller lamp type has been considered.

	Annual Energy	Lifetime Energy	Lifetime Maintenance	Whole Life Cost	Annual Saving	Lantern Cost	ROI (Years)
Existing 250w SON	£130.50	£3,262	£224	£3,486			
Convert to 150w CDO	£71.10	£1,778	£215	£1,992	£59.75	£85	1.4
Proposed 100w LED	**£43.35**	**£1,084**	**£75**	**£1,159**	**£93.09**	**£350**	**3.8**
Proposed 140w CPO	£64.60	£1,615	£269	£1,884	£64.06	£170	2.7

10.0 OPTIONS

10.1 Do nothing: In the most basic sense, doing nothing will not mitigate the Council against the future risk of increasing energy costs and failure to meet Carbon reduction targets and lose the opportunity to make significant savings. In simple terms, over a ten year period the Council's energy costs, at current infrastructure population alone, would increase to over £1M per annum. A more pressing matter is the phasing out of existing technologies by European legislation discussed in that will remove the ability to source replacement maintenance parts for over 48% of the lighting infrastructure. SOX lamps will be affected by the energy efficiency legislation with component spares difficult to source from 2017.

10.2 Switch off lighting (part night operation): Savings can be made in street lighting energy costs by switching off lighting for periods and leaving streets in darkness. However there are many factors to consider when looking at such a radical proposal, including:

- future energy billing trends which will increase as a result of not taking up "cheaper" through the night tariffs,
- connection to network charges being raised as units remain connected but not drawing energy rates,
- failure to fulfil statutory duties, crime & disorder, social inclusion/Human Rights legislation, promoting economic development and after dark educational facilities & amenities, emergency service assistance, CCTV coverage, road safety and,
- Potential claims to the Council as a result of failure to adequately prevent issues arising from the above.

A number of English Authorities have trialled switching off street lights for part of the night. This has been met with mixed results, from Police and public complaints.

One recent study by an English Authority determined that the savings for switching off completely during certain hours was not significantly greater than reducing lighting class with newer white light solutions (a 36 watt PLL extra-long life lamp), before factoring the associated risks of such a policy. Some English Authorities are now looking at reinstating all night lighting with controlled dimming seen as a more acceptable alternative to achieving energy savings.

In Scottish Authorities only one trial has been attempted in a rural location in Aberdeenshire, with the result that after negative feedback, the night-time lighting is set to be restored. Aside from this, only the Western Isles have always had a policy of night-time switch off in their most extremely rural locations.

Even in the most rural of Inverclyde locations, the population and night-time use is not comparable to the Western Isles, and consultation throughout Scottish Councils is that such measures are likely to be met with extreme resistance.

The industry is moving away from considering switching off for energy savings, in favour of newer technological advances in energy reducing lamp source and control systems such as part night dimming.

10.3 Replacement Lantern Solutions on a Phased Basis: With the introduction of LED Lanterns the overall financial savings of project proposals are estimated, at current energy rates, as £333k per annum (60%). However it is recognised that these figures are based on a desktop study and lantern replacement schemes will be required to be designed on a street by street basis and taking into account the actual column spacings and column heights. It is anticipated that this will result in some locations where the chosen lantern will need to be of slightly higher wattage or of a different type, and this will reduce the energy savings. Notwithstanding this, it is anticipated that an energy saving of between 50 to 55% is readily achievable.

Further considerations that can be addressed as part of any more detailed study include but are not limited to:

- Consideration of dimming a percentage of the lighting stock between midnight and 5am through extending lantern control systems. The introduction of LED Lanterns and part night dimming could bring energy savings to around £355k per annum (64%);
- Cost benefits of a CMS system throughout the entire infrastructure, or only to the most remote locations. It is felt that the initial capital costs and ongoing revenue costs, including staff resource to operate and monitor the system, will not provide any additional savings at this time;
- Recommendations on how to Improve Performance Indicator and ability to monitor/predict failures;
- Recommendations on how to reduce lighting faults and the added benefits on how it would also help with the reduction of CO2 emissions from maintenance vehicles.

The above will place Inverclyde Council in a position to address and meet forthcoming European Commission and UK Government Regulations and Directives on lighting energy efficiencies and carbon footprint reduction.

11.0 STRATEGY OUTCOME

11.1 The following is proposed in terms of the street lighting investment strategy:

- A 3 year phased lantern replacement programme involving around 10,300 units and using white light LED technology, but with alternative white light sources (fluorescent or ceramic metal halide) to suit specific locations where LED may not be suitable; estimated cost £2.9m.
- In tandem with the above, a phased column replacement programme for those columns that are life expired and requiring replacement – around 720 in number; in essence this will be the concrete columns and specific steel columns identified as part of the recent column condition survey; estimated cost £0.9m.
- A reduction in energy consumption of between 50 to 55% upon completion of the phased works programme.
- A reduction in maintenance costs of up to 40% upon completion of the phased works programme.
- Design of street lighting to be in accordance with current standards and as per the Lighting Plan.

11.2 Further reports will be brought to future Environment and Regeneration Committees in respect of the proposed schemes, delivery options as note in 12.1 below, including procurement arrangements, and works programme, as these aspects are under consideration.

12.0 OUTLINE DELIVERY OPTIONS

12.1 There are a number of delivery options that are currently being considered in terms of delivering the strategy outcome over the 3 year period noted in 11.1 above; as follows:

- Internal design and management, with external installation of lantern and columns;
- Combined internal design and management on a collaborative basis with Renfrewshire Council, and external installation of lanterns and columns;
- All external design, management, and installation of lanterns and columns;

- Complete internal delivery for design, management and installation of lanterns and columns.

13.0 IMPLICATIONS

Finance

13.1 At this stage it is anticipated that the capital costs associated with the strategy will be contained within existing RAMP budgets. Currently £3.8m is allocated towards lighting, and initial estimates are that this will generate savings in electricity & maintenance in the region of £450k per annum. Further details of implementation of the strategy will be included in a future report to this Committee; once the detailed implementation is known, a more accurate phasing of the revenue saving will be confirmed, and this will be included in the report to Committee.

One off Costs

Cost Centre	Budget Heading	Budget Years	Proposed Spend this Report £000	Virement From	Other Comments
RAMP Capital	Lighting	2015/18	3,800	-	

Annually Recurring Costs/ (Savings)

Cost Centre	Budget Heading	With Effect from	Annual Net Impact £000	Virement From (If Applicable)	Other Comments
Roads - Street Lighting	Electrical Power/ Lighting Maintenance	2016/17 2017/18 2018/19	(50) (200) (200)		Net annual impact is cumulative, giving a total saving of £450k

Legal

13.2 There are no Legal implications arising from this report.

Human Resources

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

Equalities

13.4 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

13.5 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.

14.0 CONSULTATIONS

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

15.0 LIST OF BACKGROUND PAPERS

15.1 None.