



APPENDIX 1

# STREET LIGHTING STRATEGY AND ACTION PLAN 2014



**WIRRAL**

## **Wirral Council – Street Lighting Strategy .... the proposed way forward**

### **Executive Summary**

Wirral Council as a Highway Authority has a duty to ensure the safety of the public highway. There is not a legal duty on the Council to provide and maintain road lighting, however, the Council does have a duty of care to maintain the lighting stock it has installed in a safe condition and to ensure that the equipment is fit for purpose.

In the current economic climate, the Council must reassess the way street lighting currently performs and the options available to improve the efficiency and expenditure associated with providing the service. The overall aim of this strategy is that energy usage and carbon emissions will have been minimised as far as practically possible within appropriate and relevant political, environmental, legal and technological limits.

These aims are represented within the Council Vision, and the strategy further supports the refreshed Corporate Plan as it is proposed that funding for improvements will be provided by a sustainable budget.

The strategy recommends combining Light Emitting Diode (LED) lighting with a Central Management System (CMS). The conversion of existing light sources from conventional sodium discharge lighting to LED lighting is a way to reduce long-term energy costs; the savings can be substantial in both energy and maintenance costs. It would also help towards the Councils carbon reduction targets and reduce overall carbon footprint. This combined with a reduction in lighting levels (dimming) controlled by a CMS system programmed to provide variable lighting across the borough to meet the various different demands, would have an increased beneficial effect.

The intention of the proposed strategy is not to repeat the current policies, practices and procedures that form the framework for the current street lighting service. Much of what the service does currently reflects good practice and the service has a good reputation. The approach taken has been to focus on those areas where changes and/or improvements would lead to increased benefits, efficiency and value for money to the service.

Through the identified aims and objectives, the Council's street lighting stock will continue to be modern, well designed, installed and maintained, providing clear benefits to residents, visitors and road users.

The street lighting service will continue to provide a significant contribution to the achievement of the Council's priorities.

### **1.0 Introduction**

This document outlines the basic principles and standards applying to street lighting and illuminated signage in Wirral. The term "street lighting" encompasses lighting and all other items of illuminated street furniture provided on the public highway (and unadopted highway), except traffic signals and electrically operated vehicle information signs.

In the current economic climate, the Council needs to reassess the way street lighting performs and the options available to improve the efficiency and expenditure associated with providing the service. A reduction of the Council carbon footprint is also a necessary consideration that must be complied with.

This document will consider the progression of street lighting schemes and the options available to the Council to procure a new scheme with the aim of reducing future on-going costs.

## **2.0 Local Lighting Authorities**

The Local Government Act 1966, means that Wirral Council is a Highway Authority in its own right with a duty to ensure the safety of the public highway. The Act does not confer a legal duty on a Highway Authority to provide and maintain road lighting, however, a highway Authority does have a duty of care to maintain the lighting stock it has installed in a safe condition and to ensure that the equipment is fit for purpose.

### **2.1 British Standard for the Lighting of Highways**

Where Wirral Council does provide street lighting, consideration will be given to national guidelines such as the recommendations contained in the Well-lit Highways: Code of Practice for Highway Lighting Management.

To achieve a structured and coherent approach to the provision of lighting on the public highway the correct levels and associated parameters for the lighting for each specific class of road, street, footpath, cycle track etc. must be determined. Such determination should take account of the following:

- Road hierarchy;
- The use of the road, for vehicular, cycle and pedestrian traffic;
- Local amenities such as leisure centres, schools, churches, village halls, shops, public houses, doctors surgeries etc. which may affect the night-time use of the road;
- The location of the road, rural, urban etc.;
- The environmental aspects.

A new and comprehensively updated BS 5489-1:2013 Code of practice for the design of road lighting - Lighting of roads and public amenity areas, was published on 31 December 2012. This new British Standard provides minimum specification guidance on all aspects of the design of road and public amenity lighting, including passive safety, sustainability, variable lighting, and risk assessments. There are also draft proposals contained in the European Norm of Road Lighting, EN13201 that deal with lighting quality.

## **3.0 Council Vision**

The refreshed Corporate Plan 2014-2016 continues to support the vision:

“Wirral will be a place where the vulnerable are safe and protected, where employers want to invest and local businesses thrive, and where good health and an excellent quality of life is within the reach of everyone who lives here”

The Council needs to reassess the practice of street lighting borough wide and the aims of this street lighting strategy are represented within this vision. The strategy further supports the Plan as it is proposed that funding for improvements will be provided by a sustainable budget.

In delivering a new street lighting approach the Council will aim to:

- Act in the best interests of the customer and the Council at all times;
- Have consideration for the natural and built environments;
- Continually seek to improve energy efficiency and reduce carbon emissions;
- Give full consideration to the impact of its actions on safety and street lighting related crime;
- Strive to reduce the cost of the service to the Council and residents of Wirral whilst still maintaining an effective and efficient service;
- Wherever practicable, adopt best practice in the equipment, design and maintenance of the street lighting asset including where appropriate the use of emerging and innovative technologies.

#### **4.0 Background to the Strategy**

##### **4.1 Condition**

The condition of street lighting assets varies across the borough. In rural areas approximately 50 percent of the asset is in a good condition however, this decreases to approximately 25 percent in urban areas.

Wirral's current street lighting column stock has been predominantly fabricated from concrete, cast iron, aluminium and steel, but a few wooden columns also exist.

Lanterns in residential areas and side roads are mostly 35 watt and 55 watt SOX (low pressure sodium) although some have been replaced with 50 watt and 70 watt SON (high pressure sodium) lanterns; these are very energy hungry.

The condition of underground electrical loops and cabling is generally fit-for-purpose however, due to the age of some of the apparatus, it may not conform to current electrical recommendations. Repairs to the supply cables of the electrical network are undertaken by Scottish Power with the Council being responsible for repair and maintenance of approximately 500,000 linear metres of underground service loops and cables

##### **4.2 Inspection**

Lanterns; fault detection in the past was determined by a series of fortnightly night-time visual scouting surveys that covered all of the borough's lighting stock, this ceased in February 2013 as part of the budget saving reductions. Scouting staff not only identified failed lanterns they were also able to identify obvious structural concerns, missing column access doors and damage to items such as lantern covers, bollards and illuminated street furniture.

The visual scouting defect sheets generated from each survey also provided monitoring evidence of the performance of both Scottish Power and the term maintenance contractor in relation to ordered and completed defect repairs.

Since February 2013, the Council has relied upon members of the public to report defective street lights and illuminated street furniture to Streetscene, however, this has been less than successful as it is currently estimated that 10 percent of the boroughs street lighting asset is unlit or defective. In the unlikely event that the vast majority of these outages were reported to Streetscene over a short period of time, based on recent volumes of reported defects and to comply with the contractor performance indicators, the contractor would have insufficient labour resources to repair them. Unless these defects were prioritised, for example on a road hierarchy basis, the annual street lighting maintenance budget would be spent well before the end of the financial year.

Structural and electrical testing of all street lighting columns is currently undertaken over a 6 year period, with a percentage of columns being inspected on an annual cyclical basis. Orders are issued to the contractor to replace where necessary however, the contractor will remove any column considered structurally unsound without requiring prior consent from the Council.

#### **4.3 Bulk change lantern replacement programme**

Presently, the lanterns that burn to extinction are replaced accordingly, otherwise they are changed as part of the annual bulk change programme regardless of whether the lanterns are extinguished; the bulk change programme currently involves replacing 5,000 to 5,500 lanterns each year.

A bulk change programme was widely recognised by local authorities as best practice prior to current advances in technology. It has now become a costly exercise; in 2010/11 the annual spend on the bulk change was £125,317 and in 2011/12 it was £128,234.

#### **4.4 Switch-off**

Some roads in the borough have already seen street lighting switched off except around significant road junctions etc. as part of the budget savings options 2013/14 (Phase 1). Ward Councillors and local residents viewed this as an unwelcome move and there has been a part reversal of the first phase of this exercise, immediately negating potential savings intended as part of the initiative. The initial switch-off and subsequent switching back on has been costly in financial terms as damage has been caused to electrical elements due to moisture ingress whilst the lanterns have been unlit.

To avoid un-necessary pressures on the Council's revenue budget as part of the budget savings options, there is a need to reduce all costs associated with the street lighting service and in particular energy charges. Reducing energy usage will also have a positive impact on the Council's carbon footprint.

It was intended to introduce alternate street light switch-off in certain locations for Phase 2 of the Switch-off proposals (Budget Savings Option 2014/15). However, following consideration on the decommissioning of the switched off lighting columns and then restoring the same lighting units with Light Emitting Diode (LED) lanterns and Central Management System (CMS) capability would confuse the public and likely result in additional maintenance costs arising from the re-energising of cold/damp circuitry. The approved budget savings would be met from savings elsewhere in the street lighting budget for the current year, and met from the overall savings from the LED/CMS conversion project in future years.

## **5.0 Drivers for Change**

Street lighting is high on the agenda of many local authorities as a potential area for change. The main drivers are issues of energy saving, environmental awareness, economic and financial pressures and changes in technology.

It is widely acknowledged that the current leading technology in street lighting is Light Emitting Diode's (LED's). LED street lights have been installed or announced for installation in several large cities as well as smaller cities throughout the world and many local authorities in the UK have already started to roll out LED lighting schemes across their stock.

Liverpool City Council have announced plans to replace the total network of 57,000 sodium street lights across the city with LED lighting. The programme will be completed in phases over the next two years as part of a £7m investment into the project. Phase one will begin in June 2014 and will see 12,000 street lights fitted with the new LED lights.

## **5.1 Light Emitting Diode (LED) technology**

The key advantages of LEDs are:

- **Reduced energy consumption and consequent CO2 emissions**  
New LED units consume around half the energy that some existing traditional lanterns do. The reduced consumption is derived principally from the lumen output and the ability to readily control lighting levels without deterioration of the lamps and hence the need to 'over-rate' lamps on installation to meet performance standards later.
  
- **Reduced Lamp Renewal Costs**  
Manufacturers are claiming service life expectancy of LEDs of up to 20 years, with these claims, in some cases, supported by guarantees. When compared to conventional lamps, which may have service life expectancies of around 3-6 years, this represents a substantial reduction in cost of renewals as well as in the costs to manage and administer this work. This negates the need for the frequent expensive bulk change lantern replacement programmes. Due to the long life expectancy of LEDs, the number of outages will be significantly reduced as will the need for Scouting or public reporting of failures.
  
- **Better Quality of Light**

LEDs have good colour rendering particularly compared to both low and high-pressure sodium light sources and will increase the visibility of pedestrians to road users as well as provide more uniform light levels across the lit area. It is possible to reduce a lighting class and get a better quality of lighting with fewer lumens. The increased controllability of light dispersal means that the light can be focused upon the areas intended to be lit and, back and up-light pollution is reduced, as is that of overspill and obtrusive light.

Summary of benefits of LED lighting are:

- LEDs use up to 60 percent less energy than current light sources and more if dimmed;
- The lifetime of LED street lights is considered to be a minimum of 10 to 15 years, three times the life of current technologies adopted. The much less frequent need to service or replace LEDs means a greatly reduced maintenance cost and in turn, a more rapid payback on investment;
- LEDs can easily be dimmed when less street lighting is needed, such as late at night, and at dusk or early dawn, again offering more saving opportunities;
- LEDs provide a white light that is closer to daylight and allows colours to be seen easily. White light also offers further advantages in that pedestrians feel more secure in their environment and driver reaction time is improved due to improved vision in low lighting situations (mesopic vision);
- LEDs switch on instantaneously, unlike other commonly used street lighting. LEDs do not have a problem restarting immediately following a brief power failure or if inadvertently switched off;
- LEDs do not contain mercury or lead making disposal of 'blown' lamps less problematic and expensive.

LED lighting is unquestionably the way forward if the Council is to achieve its strategic aims however, there are a number of different options available to the Council to support the introduction of this technology.

## **5.2 Column Light Emitting Diode (LED) retrofit and replacement**

The core component of a viable 'Invest-to-Save' street lighting renewal model is the replacement of lanterns, lamps and possibly control systems with modern equipment that achieves energy savings sufficient to fund the investment. However, columns, cabling and feeder pillars are all part of street lighting systems that need maintaining and periodically replacing. These factors will need to be considered in any future investment programme.

If a lantern renewal programme is undertaken, decisions need to be made on whether to replace ageing columns and cabling or possibly just retrofit lanterns to existing columns. A clear understanding of the condition of each column and the associated cabling is needed in order to make this assessment.

To replace deteriorating columns at the same time as retrofitting lanterns will have implications on the project budget however, to leave them in if replacement is not essential may mean that they will need replacing in the near future.

In Wirral, an accurate asset database is held regarding the condition of street lighting and it is anticipated that many columns, and associated equipment, will be suitable for retrofitting. Matching lantern design with column spacing will be important in order to meet required lighting performance standards in a way that realises the energy saving potential of LEDs.

### **5.3 Central Management System (CMS) and Photocell Technology**

CMS can provide a wide range of remote monitoring functionality that has the following benefits for maintaining the assets:

- Improved fault identification and location of fault prior to leaving the depot;
- Lamp failure prediction based on out of tolerance monitoring of electrical characteristics. Under-performing lanterns can be worked into future maintenance programmes;
- Interface with asset management database for sharing and analysing data;
- Reduced need for visual inspections or public reporting of defects.

A CMS provides a wide area control system that communicates with individual lanterns.

The system provides a flexible solution unlike conventional control strategies; individual luminaries can be switched or dimmed at any time (assuming a dimming module is installed) and settings can be changed remotely. It provides the ability to produce the right amount of light at the right time at the right location. Using CMS will enable the Council to accurately control the brightness of each lamp thereby leading to energy savings.

One of the benefits of CMS is that the system enables two-way communication of information on the lamp life of individual lanterns informing of faults and providing notification of lighting failures and day-burning lamps.

CMS will be able to serve the growing demands of our street lighting aiming to reduce energy and operating costs through automated management of the outdoor lighting inventory.

There are two ways to monitor and to control street light infrastructure using CMS:

- Using the underground power lines beneath street poles as fixed lines to monitor, to communicate with and to control individual streetlights – CMS;
- Using a wireless photocell fitted to each street light which monitors, communicates and controls each street light individually - wireless CMS.



Utilising the under ground power cables relies on these cables being of a suitable condition and fully networked. Utilising photocell technology is lighting column specific and does not require the support of a cable network.

Installation costs and on-going service costs are favourable with the photocell, wireless CMS option however, this still does not provide information on the structural condition of the lighting column. Visual inspection provides this information and so a combined wireless CMS and inspection approach would provide the optimum condition survey of the lighting assets.

Capital funding of £350,000 was provided in 2010/11 and 2011/12, to fund the installation of wireless CMS to 1,024 lanterns in the Wallasey and Birkenhead areas of the Borough. Road signage and bollards were not included in this work.

#### **5.4 Combined LED street lighting and CMS**

CMS can also monitor the usage and energy consumption of each lantern; by investing in new LED and CMS technology. This investment will ensure that the Council's carbon footprint will be dramatically reduced as will the cost of street lighting. At the same time, the borough's road network will stay well lit around the clock.

For example, by installing new photocells combined with LED lighting a more efficient light activation regime can be introduced. Lights can be switched on later and off earlier; reducing the lamp burn time by eight minutes each day which equates to 47 hours annually.

Electronic dimming ballasts can also provide a variable lighting regime of a reduction to 60 percent power from 22:00 to 06:00 hours and also obtain Constant Light Output (CLO) savings through these dimming ballasts providing significant energy savings. Experience from authorities that have introduced a dimming regime would suggest that dimming schemes are more acceptable to local communities than a complete night switch off and in fact, most residents did not notice the dimming of lights during these core hours (reference: Campaign to Protect Rural England; A survey of local authority approaches to lighting in England).

The reduced maintenance burden of LEDs and CMS would provide significant budget savings through reduced management and administration costs. It would also lower Scouting needs and fault diagnostics by predictive maintenance warnings allowing asset work to be programmed more efficiently.

These potential savings strengthen the business case for a renewal programme however, they require a change in the way we currently manage street lighting activities, and the perception residents have towards street lighting will require education.

The extent of the achievable savings will depend on the willingness to change significantly from current working practices and procedures and will need to be considered in the context of wider aspects of maintenance and resource management.

To introduce LED lighting to those street lights that are currently high energy consumers will reduce energy consumption and thus energy costs based on today's energy prices.

## **6.0 The Strategy**

In producing this document, it has not been the intention to repeat the current policies, practices and procedures that form the framework for the current street lighting service. Much of what the service does currently reflects good practice and the service has a good reputation. The approach taken has been to focus on those areas where changes and/or improvements would lead to increased benefits, efficiency and value for money to the service.

### **6.1 Energy usage and carbon emissions**

The Carbon Reduction Commitment Energy Efficiency Scheme (CRC Scheme) is a UK government scheme. It is designed to improve energy efficiency and cut carbon dioxide emissions in private and public sector organisations where energy consumption is high. Calculations for street lighting energy usage have been included for the first time this financial year, 2014/2015.

The conversion of existing light sources from conventional sodium discharge lighting to LED lighting is a way to reduce long-term energy costs; the savings can be substantial in both energy and maintenance costs. It would also help towards the Councils carbon reduction targets and reduce overall carbon footprint. This combined with a reduction in lighting levels (dimming) controlled by a CMS system programmed to provide variable lighting across the borough to meet the various different demands, would have an increased beneficial effect.

**Aim** - To minimise future energy usage and carbon emissions from street lighting through the implementation of economically viable programmes of work using LED and CMS technology to achieve energy savings and by ensuring that new street lighting is provided only where necessary.

### **6.2 Street lighting design**

When considering a street lighting scheme it is important to take into account both the natural and built environments. Light pollution is a problem that is becoming increasingly serious. During the 1990s, the area with pure dark skies in England reduced by some 27% (CPRE 2011). This reduction in dark skies can affect heavily on areas that are of ecological interest, with effects on mammals, birds, insects and trees. Lighting can also affect the appearance of the built environment where listed buildings and conservation areas are involved.

**Aim** - To take full account of both the natural and built environments in the design of new street lighting schemes and ensure that designs and selection of equipment match the needs of the specific location for which they are intended.

### **6.3 Equipment specification**

Standardising street lighting equipment will ease future maintenance liabilities and keep replacement stocks to a minimum. However, roads across the borough are not of a uniform width and therefore, different equipment will be needed to ensure lighting classes can be met and a maximum return made on an Invest-to-Save project.

**Aim** - To take account of whole life costs and lifecycle planning in the selection and provision of new and replacement street lighting equipment by using standardised equipment wherever practicable.

### **6.4 Maintenance and asset management**

It is important that street lighting equipment is maintained to the highest possible standard so that it performs at its optimum, does not waste money and generate unnecessary carbon. It is also important that the street lighting inventory, which is used to calculate the borough's annual energy charge, be updated as soon as possible after any on site change, to ensure that the correct payment is made to the energy provider. In addition, it is important where residents, developers, public utilities or other bodies require lighting columns to be relocated to facilitate their works, or where damage or vandalism occurs, full costs are recovered by the Council.

**Aim** - To continue to maintain a fit for purpose street lighting asset by managing the service in accordance with sound asset management principles and nationally accepted good practice.

### **6.5 New developments**

The number of new housing developments across the borough is continuing to rise. These developments will result in future energy and maintenance costs for such lighting installations being passed on to the Council through the highway adoption process.

**Aim** - To ensure that new developments do not place an unnecessary burden on the street lighting service by the implementation of appropriate and up to date control processes.

### **6.6 Illuminated traffic signs and bollards**

Reducing the number of illuminated signs and bollards on the highway network can have a positive impact on street clutter and can have cost benefits in terms of reduced energy consumption (thus reducing CO<sub>2</sub>), lower traffic sign and bollard installation costs, lower maintenance costs and would also produce less light pollution.

On some new traffic safety schemes, there has been a complete replacement of the existing electronically illuminated signs and bollards with new street furniture illuminated by solar powered lighting or micro prismatic lighting sources. Changes in highway law have allowed for traditionally illuminated traffic signs to be replaced with reflective signs.

**Aim** - To ensure that illuminated signs and bollards are used only where essential for the purposes of road safety and minimising congestion.

### **6.7 Working with customers and partner organisations**

Customers, residents and the travelling public are central to the Council's vision for the borough. The Council is committed to delivering maximum value and to be open, honest and approachable in its dealing with the public. Street lighting is regarded by the public as a particularly important service because of the potential impact it can have on convenience and safety. The service involves working with a number of partner organisations and third parties. It is important that interfaces with these organisations and the public work as efficiently and effectively as possible. Central to this is the way in which the Council communicates its actions and the reasons for them.

The Council also deals with a number of requests for attachments and connections to its street lighting columns from external organisations. It is important for the Council to control this process well so that the integrity of the asset is not compromised.

**Aim** - To work effectively with customers, partner organisations, third parties and other service providers for the overall benefit of the service.

### **6.8 Procurement and delivery**

The Council has two options to consider in order to introduce LED lighting schemes across the borough. Option one would include retrofitting or replacing the 7,000 high energy consuming lanterns in the borough with LED lanterns. Option two would include the remainder of the 30,000 lanterns. However, as these 30,000 lanterns consume a lesser amount of energy the savings achieved would be over a significantly longer period therefore, conversion of these is not considered to be cost effective at this time.

Funding for a Phase 1 improvement scheme would be via an Invest-to-Save bid and following an initial payback period, future energy savings based on current costings would be considerable.

The Council's current annual energy costs for street lighting are in excess of £1.6m. The introduction of LED lighting as a replacement for the existing highway lanterns on current terms could reduce the annual energy costs by as much as £288,000 with a further additional saving of £80,000 with dimming technology.

However, the advantages and financial savings generated by introducing LED lights will be significantly reduced if energy suppliers choose to increase their

energy tariffs as demand and installation of LED lights and CMS systems increases nationally.

### **6.8.1 Delivery**

Advice from the industry would suggest that to replace the 7,000 high energy consuming lanterns with LED lanterns is achievable in a one year period with a mobilisation time of 8 to 12 weeks.

Resources within the Highway Management Division are unable to deliver a project of this scale and the Council will need to procure an external contract to design and deliver new LED and CMS combined schemes as part of an Invest-to-Save replacement programme.

**Aim** - To maximise value for money when purchasing street lighting equipment, services and energy, by ensuring compliance with the corporate procurement process.

(See Appendix A for full Action Plan)

## **7.0 Conclusion**

This strategy for the Council provides a clear vision for the future of the street lighting service.

The overall aim is that energy usage and carbon emissions will have been minimised as far as practically possible within appropriate and relevant political, environmental, legal and technological limits.

Lighting will only be provided where necessary and subjected to appropriate control and, as the street lighting asset increases due to new developments, this will not place an unnecessary burden on the street lighting service.

New street lighting schemes, whether built by the Council or developers, will have taken into account both the natural and built environments and value for money will have been obtained for the purchase of street lighting equipment, services and energy.

Through the identified aims and objectives, the Council's street lighting stock will continue to be modern, well designed, installed and maintained, providing clear benefits to residents, visitors and road users.

The street lighting service will continue to provide a significant contribution to the achievement of the Council's priorities.

## **Wirral Council – Street Lighting Strategy: Action Plan**

### **6.1 Energy Usage and Carbon Emissions**

**Aim** - To minimise future energy usage and carbon emissions from street lighting through the implementation of economically viable programmes of

work to achieve energy savings and by ensuring that new street lighting is provided only where necessary.

#### **Action Plan**

- Combine retrofit and replacement LED lanterns with a wireless CMS system, initially to the 7,000 high energy consuming street lights across the borough through an Invest-to-Save programme to mitigate current high energy costs and increased carbon emissions;
- Seek to design dimming for new schemes to ensure that roads and areas are not over lit;
- Ensure that white light is adopted in town centres and areas of high pedestrian activity as new lighting schemes are developed;
- Ensure that the impact on known personal injury collision locations and areas of anti-social behaviour be carefully considered should the Borough change its lighting regime, for example the adoption of dimming protocols.

In terms of only lighting where necessary:

- Adopt a general presumption that new street lighting will not normally be provided in areas considered rural in nature
- Adopt the concept of environmental zones as set out in the Institution of Lighting Engineers advice -Guidance Notes for the Reduction of Obtrusive Light; and use this when assessing requirements for new and existing lighting installations

### **6.2 Street Lighting Design**

**Aim** - To take full account of both the natural and built environments in the design of new street lighting schemes and ensure that designs and selection of equipment match the needs of the specific location for which they are intended.

#### **Action Plan**

- To procure an external contract to design and deliver new LED and CMS combined schemes as part of an Invest-to-Save replacement programme;
- New locations for lighting columns permit a lighting scheme to meet the requirements of BS5489-1:2013;
- Minimum desirable clearances from the edge of the carriageway are achieved where possible with new or replacement lighting schemes;
- Where new streets are proposed, lighting should be designed first and the planting sites fixed afterwards;
- Schemes to introduce new lighting within existing areas consider existing trees and that column positions are sited so as to not require serious vegetation works.

### **6.3 Equipment Specification**

**Aim** - To take account of whole life costs and lifecycle planning in the selection and provision of new and replacement street lighting equipment by using standardised equipment wherever practicable.

### **Action Plan**

- Specify a list of suitable future lanterns, with consideration given to both lighting performance and environmental concerns;
- Select new or replacement apparatus taking into account whole life cost, including repair, vandal resistance, energy consumption, other lighting styles in the vicinity and on-going maintenance;
- Give special consideration to variation from standard equipment where environmental or conservation requirements dictate otherwise or where improved value for money can be achieved by taking an alternative approach.

### **6.4 Maintenance and Asset Management**

**Aim** - To continue to maintain a fit for purpose street lighting asset by managing the service in accordance with sound asset management principles and nationally accepted good practice.

### **Action Plan**

- Restore the street lighting affected by the switch-off scheme and replace with later switch-on, earlier switch-off and dimming through the wider application of the CMS.
- Where lanterns have not been converted to LED lanterns but require replacing, they will be retrofitted with an LED lantern according to the accepted specification negating the need for the current bulk change strategy;
- Continue to undertake maintenance in accordance with the requirements set out in Well Lit Highways: Code of Practice for Highway Lighting Management and good industry practice;
- Ensure a lifecycle planning regime in respect of structural and electrical testing of lighting columns and the cleaning of and replacement of lanterns;
- Maintain an up to date and accurate inventory of all highway electrical equipment (including Council cable networks) as part of the asset management system.

### **6.5 New Developments**

**Aim** - To ensure that new developments do not place an unnecessary burden on the Street Lighting service by the implementation of appropriate and up to date control processes.

### **Action Plan**

- All new developments will be required to install LED street lighting with wireless CMS technology;
- Existing lighting levels are evaluated if an area changes use or character;

- The full costs associated with changes to the Council's asset inventory are recovered from developers where new columns are installed or existing arrangements altered.

## **6.6 Illuminated Traffic Signs and Bollards**

**Aim** - To ensure that illuminated signs and bollards are used only where essential for the purposes of road safety and minimising congestion

### **Action Plan**

- Undertake an audit of existing traffic signs and remove any unnecessary sign lighting;
- Seek to use LED or other low voltage/energy lighting, solar powered lighting or micro prismatic items.

## **6.7 Working with Customers and Partner Organisations**

**Aim** - To work effectively with customers, partner organisations, third party's and other service providers for the overall benefit of the service.

### **Action Plan**

- Enter into consultation with internal and external partners regarding reduced lighting schemes;
- Via the Council website, consult with Members and the public about proposed changes to current lighting schemes;
- Communicate planned works to all those potentially affected in a timely way and ensure that appropriate channels are available for the reporting of issues relating to street lighting;
- Monitor the performance of the Distribution Network Operator on the repair of faults which are its responsibility and new connections;
- Discourage third-party connections and attachments to the Council's street lighting apparatus and prohibit the use of linking into the lighting column energy supply;
- Ensure that where third part connections are permitted, with the written consent of the Council, that evidence of £5m Public Liability Insurance is presented;
- Ensure that traffic signs that are attached to lighting columns do not exceed the lighting column manufacturers recommended criteria for wind loading;
- Promptly remove signs and attachments to lighting columns that have not been approved by the Council, recovering the costs of removal, storage and disposal from those responsible where possible;
- Work with third parties to enable their works to progress whilst still maintaining the integrity of the lighting system by the installation of temporary lighting if required;
- Recharge to third parties any costs incurred by the Council, its contractors, sub-contractors and agents for the works undertaken for the third party.

## **6.8 Procurement and delivery**



**Aim** - To maximise value for money when purchasing street lighting equipment, services and energy, by ensuring compliance with the corporate procurement process.

**Action Plan**

- Investigate the potential for funding future upgrade projects through external sources;
- Ensure that appropriate time is built into future project programmes to fully examine options for procurement and complete an appropriate procurement exercise prior to implementation;

Give consideration to externally resourcing the delivery of major projects, from a design and management as well as a works implementation