

### SUSTAINABLE STREET LIGHTING STRATEGY

#### FOREWORD

1. It is the intention of this strategy to promote the benefits that sustainable street lighting brings. The strategy can play a major part in many of the other strategies documented in LTP2, such as accessibility, walking, cycling, the use of buses and road safety.

#### POLICY CONTEXT

2. The strategy has been developed within the National and LTP policy environment and aims to be consistent with the wider policy framework.
3. The strategy is also aligned to the approved recommendations of the Sustainable Street Lighting Scrutiny Sub-Committee, dated November 2006 and the approved motion to full Council in November 2004, requesting the Executive to consider and report on the options for reducing the amount of light pollution generated in the City.
4. The policy standards used are in line with the following legislation, the more specific street lighting industry standards and codes of practice:
  - Highways Act 1980
  - Local Authorities (Goods and Services) Act 1970
  - The Local Government (Contracts) Act 1997
  - The Management of Health and Safety at Work Regulations 1982
  - Electricity at Work Regulations 1989
  - Traffic Signs Regulations and General Directions 2002
  - Disabled Persons Act 1981
  - Road Hump Regulations 1990
  - New Roads and Street Works Act 1991
  - BS 7671: Regulations for Electrical Installations 1992
  - BS 5489: CEN13201 2003
  - BS EN 60529: Specification for Classification of Degrees of Protection provided by Enclosures
  - BS EN 605589-2-3: 1994 Luminaires for Road and Street Lighting
  - BS 5649: Lighting Columns
  - BS EN 40: Lighting Columns 1992
  - Department of Environment Transport and Regions Departmental Standard BD26-94 – Design of Lighting Columns
  - Well-lit Highways, 'Code of Practice for Highway Lighting Management'

## AIMS AND OBJECTIVES

### Vision

5. In short, this can be summarised as York as a sustainable community, flourishing within economic, social and environmental limits.
6. This strategy can contribute to the Local Strategic Partnership, Without Walls, vision of a York community:
  - With a thriving, vibrant community where people want to live and work and where businesses are able to develop and grow;
  - Where traffic will be less congested and there will be cleaner air;
  - That can function with a reduced reliance on non-renewable resources;
  - Where everyone can access services and enjoy a better quality of life, without dependence on the availability of a car; and
  - With communities with no casualties and where people feel safe and secure

### Aims

7. The overall aim is to strive to work within the environmental limits of one planet by putting sustainability, and a reduction in its impact on climate change, at the heart of everything.
8. Specifically, the street lighting service meets the corporate aims of 'Take Pride in the City by improving quality and sustainability, creating a clean and safe environment'. It also supports the priority to 'Increase the use of public and other environmental modes of transport' by providing a safe environment for all users of the highway.
9. Adopting the 'Well-maintained Highways' code of practice approach to sustainability, serviceability and safety, the broad aims of the sustainable street lighting strategy are set out in the table below:

<b>Sustainability Aims</b>	<b>Contribution through Serviceability</b>	<b>Contribution through Safety</b>
Energy source – aim for true renewable energy	Based on equipment design and specification	Increased safety with solar power
Energy usage should be kept to a minimum	Aim for lowest overall consumption through equipment design and specification	Increase safety through high quality equipment specification and installation
The use of natural resources for equipment should be kept to a minimum	Adopt a whole life cost approach whenever possible, taking into account 'end of life'	Aim to protect the environment through high levels of reduction in waste, reuse and

	issues	recycling
Light pollution should be fully considered and kept to the minimum possible	New scheme designs to properly consider the issues. Appropriate use of emerging technology.	Any reductions in lighting levels should not impact adversely on crime statistics and accident statistics
Efficient and effective maintenance	Appropriate use of existing and emerging technology to increase life expectancy and reduce maintenance costs, using equipment that is appropriate to its surroundings	Ease of access to maintain the assets safely
Appropriate criteria for design and installation of new schemes and assets	Appropriate use of design criteria and emerging technology	Increase safety through high quality equipment specification and installation

## Objectives

10. Appropriate street lighting can contribute to our global responsibilities for climate protection through the following sustainability objectives:

### Social

- 1 Preserve and enhance York's urban and rural landscapes and public open spaces
- 2 Improve the health and well being of the York population
- 3 Improve safety and security for people and property
- 4 Increase accessibility to public recreational areas and leisure facilities for all
- 5 Reduce the need to travel by car
- 6 Provide good access to encourage use of public transport, walking and cycling
- 7 Provide a transport network that integrates all modes for effective none car based movements

### Economic

- 1 The procurement ensures that local needs are met locally as much as possible
- 2 Minimising cost by taking a whole life cost approach

### Environmental

- 1 Preserve and enhance the cultural heritage of York and the quality of its built environment
- 2 Conserve and enhance a bio-diverse, attractive and accessible natural environment
- 3 Minimise greenhouse gas emissions and develop a managed response to the effects of climate change

- 4 Ensure the prudent and efficient use of energy, water and other natural resources
- 5 Reduce pollution and waste generation and increase levels of reuse and recycling

## **POLICY FRAMEWORK**

11. The following policy framework is proposed as an appropriate basis for achieving the aims and objectives associated with sustainable street lighting (SSL). These policies have been designed to make better use of energy, materials and equipment through improvements in the designs of schemes and through the appropriate use of new technology.
12. The policy framework forms the linkage between the strategic objectives of the authority at the highest level and the material, practices and processes used in an ongoing way.

### **Policy SSL1: Provision of the street lighting service through the procurement of a term maintenance contract, or other procurement as approved by the Council**

13. The current street lighting term maintenance contract extends to April 2010 with opportunities to extend this. The end date will, to a large extent be determined by the procurement strategy adopted by Members for a range of highway maintenance services. This will be influenced by the outcome of the highway maintenance PFI Expression of Interest. If the PFI does not proceed then a strategy report on procurement options will be brought to Members during 2008.

### **Policy SSL2: As much energy as possible will be obtained from renewable 'green' sources**

14. The current energy contract supplies green energy from combined heat and power sources and runs to October 2008. The Council has obtained a much better arrangement for the supply of energy by joining with other local authorities in the YPO and this arrangement will be pursued in 2008 to seek favourable rates in the future for energy from combined heat and power sources as well as truly renewable green sources. The latter is often in greater demand than can be supplied and is therefore subject to availability. The aim, however, in line with the Sustainable Street Lighting Scrutiny Sub-Committee recommendation will be to include within any supply contract upwards of 20% renewable sourcing to be increased to a target of 100%.
15. The procurement of energy for street lighting purposes will be linked to similar bulk energy procurements across the Council.
16. Improvements in technology are considered in SSL7; these advances are improving photovoltaic systems as well as the opportunities to introduce the option to dim street lights or to turn them off at certain times. The current unmetered supply of electricity will not properly recognise these reductions in

energy consumption and a critical action for the Council will be to review the use of the unmetered supply and in due course, subject to the benefits and drawbacks of this being fully understood and decide on a possible move onto a different tariff in the same way that a number of other local authorities have done.

17. Only by committing to the goal of switching to a metered supply will the Council be able to quantify energy use and CO2 emissions, and to ensure that it is billed for what is used. It is not possible to run a system based on 'whole-life' costing without being able to accurately quantify both use and cost. EU legislation should ensure that the power companies are obliged to assist customers in this regard and OFGEM is already forcing electricity companies to comply on this issue.
18. There is a possibility of metering in conjunction with remote monitoring systems, as these can provide accurate information on energy used, but remote monitoring technology is still expensive and in its early stages of implementation with a limited number of local authorities.
19. Carbon dioxide emissions from energy use in street lighting will be reported annually under the environmental management system. Greater use of green energy and less use of energy, through measures such as dimming or having lights lit for shorter periods, will assist in reducing these emissions.

### **Policy SSL3: Energy use will be kept to a minimum**

20. The ongoing maintenance of the recently completed up-to-date inventory of all items of illuminated street furniture will enable accurate assessment of the electrical energy consumed.
21. Through implementation and management of the maintenance regime the asset can be maintained to the highest possible standard, allowing minimum use of energy. This process ensures that the most appropriate luminaires and lamps and ballasts are used in line with power factor requirements.
22. Arrangements will be made, where possible, for architectural and flood lighting to be switched off at midnight
23. New installation will be designed to meet the minimum lighting requirements.
24. Dimming and switching off will be investigated, particularly as the technology in this area develops.

### **Policy SSL4: Materials and equipment used will be as sustainable as possible**

25. All procurement activities will be undertaken with regard to the need to ensure integrated, sustainable development and the use of assets. Procurement decisions must be made with regard to 'whole life' value for money considerations and environmental impacts. The Council will implement the

actions recommended by the Sustainable Procurement Taskforce (May 2007) to support the shared national goal for the UK to become a leader in the EU on sustainable procurement by 2009"

26. The policy framework itself states:

"Goods, services and works will be procured wherever possible and within known financial constraints in such a way as to maximise the whole life value to the organisation, its partners and the wider community whilst seeking to minimise any adverse environmental impacts of any given supply. Thought must be given to any relevant environmental sustainability issues. Equally, consideration should be given to the sustainability of the supply within the market place and how contracted goods, services or works will contribute to the sustainability of the Council and its services to the community."

27. Equipment and services will be purchased taking into account whole life costs both in financial terms but also taking into consideration, where practical, the social and environmental factors.

28. End of life equipment will be retained or reused on site, if possible, to avoid the environmental implications of transport and disposal.

29. Any material that cannot be re-used or recycled is disposed of to licensed sites in accordance with statutory requirements.

**Policy SSL5: New street lighting schemes will be designed to minimise visual impact in terms of the equipment used and the light pollution generated**

30. New lighting schemes will be designed on the basis of preserving the natural and built environment through sympathetic use of street lighting, taking into account appropriate lighting fittings, materials, colours etc for conservation and other areas. This will minimise the adverse effect on the environment whilst enhancing the night-time ambience.

31. This approach is in line with the new Manual for Streets (2007) prepared by Communities and Local Government and Department for Transport. It comprises technical guidance and does not set any new policy or legal requirements. It supports the Sustainable Street Lighting Strategy in many ways, for example:

- *Lighting levels do not have to be constant during the hours of darkness. Increasing equipment is available which will allow street lighting to be varied or switched off based on timing and ambient levels. This offers opportunities to design variable lighting to maximise the benefits while reducing negative impacts at times when lower lighting levels may be adequate.*
- *Continuity of lighting is important to pedestrians. Sudden changes in lighting level can be particularly problematic for partially sighted people.*

32. Street lighting designs will be based on the following procedure:
- Is there a need for street lighting as determined in accordance with standards and codes of practice?
  - If there is a need then the appropriate minimum design category in accordance with all relevant standards, codes of practice and legislation, must be established, to avoid any inability on the part of the Council to defend its actions
  - A design to this minimum category will be carried out to:
    - Limit the extent of the scheme to the minimum
    - Provide the minimum number of lights with the lowest column heights and the lowest lamp wattage applicable
    - Maximise use of dark sky compliant luminaries using the latest technology (currently full cut off lanterns)
    - Determine the most appropriate equipment to enable future developments in technology to be most easily incorporated, such as the use of electronic switchgear
    - Provide where appropriate, especially on larger schemes, design options to enable the Council to provide installations that are more in keeping with their surroundings than would be the case if based purely on normal design standards. Where an option is chosen that deviates from normal standards then the decision to allow this will be made by the Council on a scheme by scheme basis
  - The specification document for illuminated street furniture will provide the details of columns, luminaries etc
33. The existing Notes for guidance to Consultants, Developers and Contractors covering the specification of equipment and installation requirements for adoption of illuminated street furniture has been updated to take into account the Sustainable Street Lighting Strategy and a copy is attached in Annex 2.

**Policy SSL6: Sustainable approach to the maintenance of existing assets**

34. The maintenance regime exists to ensure that there is a safe illuminated street lighting infrastructure. This will be maintained so as to prevent premature structural failures and to ensure that streets are lit at all times to the minimum national standard.
35. It is proposed that Ward Committees and Parish Councils will be consulted on the type of replacement columns and lanterns they would prefer in their community. This information would cover either small scale replacements due to a knock down, or replacement due to age. Once these views are established, and they are already known in many instances, suitable replacement equipment will be provided where feasible. If there are cost or technical difficulties in meeting the wishes of the community, then these issues will be raised on completion of the information gathering exercise to enable better understanding of the situation by all parties and so that possible solutions can be explored. This is seen as an ongoing process.

36. Existing assets will be maintained on the basis of:
- routine clean and change
  - night scouting to identify faults until such time as the need for this is replaced by new technology, such as remote monitoring
  - replacement equipment, shall, where feasible, match the existing, particularly if the forthcoming consultation with Ward Committees and Parish Councils identifies this as the preferred option
  - structural testing of columns
  - electrical testing of columns
  - electrical testing of equipment
  - routine painting of existing painted columns
  - new columns to retain their galvanised finish without the requirement for painting other than in conservation areas
  - repair, or make safe, within pre-determined response times
  - the Distribution Network Operator will conform with the response times in the service level agreement
37. Systems for reporting of faults will be maintained, including the reporting of emergencies on a 24/7 basis. Whenever possible attempts will be made to recover third party costs for damage to existing assets to keep maintenance costs to a minimum.
38. Excessive and redundant signing 'clutter' can contribute to environmental intrusion and adversely affect the overall streetscape. Opportunities will be taken to remove or simplify redundant signing wherever possible.
39. Fly posting and graffiti are removed within set timescales of receipt of information.
40. A range of performance indicators will be used to demonstrate the effectiveness of the service.

**Policy SSL7: Improvements in technology will be closely monitored and assessed for future use**

41. Developments in street lighting technology are increasing rapidly and some of these can potentially provide savings, in whole life terms, in energy use, as well as improvements in maintenance techniques. These technological developments will continue to be monitored to determine the appropriateness of their introduction and this will be done mainly via the Institution of Lighting Engineers and the Yorkshire Lighting Group. The outcome of this monitoring will be reported, at least annually, through Highway Maintenance report.
42. The introduction of new technology will inevitably be a balance of standards and sustainability. Subject to risk assessment, the Council will encourage the relaxation of technical standards where this would bring significant benefits of sustainability. Assessments will be made in the first instance on the basis of



whole life costs of installation, including offsetting the installation costs against savings made from energy charges during the systems life.

43. The sort of technological developments under review are:
- Consider introducing a full switch off or a partial reduction, through stepless dimming of lighting in selected locations, subject to a protocol being developed for identification of sites and consultation on the proposals
  - To examine the potential benefits of WIFI and GPRS technologies for remote monitoring and control of street lights, including the sourcing of potential external funding to introduce experimental trials via a consortium of interested parties
  - The continued development and use of photovoltaic (PV) powered stand alone systems, commonly known as solar power, and other sustainable technologies, leading to community netted systems installations for areas of the authority without grid netting but requiring lighting.

**Policy SSL8: Improve York's natural and built environment and to improve the appearance of the city at night**

44. CYC will ensure that materials, products and designs are consistent with the character of the area, for example conservation areas, and do not contribute to the urbanisation of rural areas.
45. Supplementary Planning Guidance (SPG) requires that large scale new developments include measures to reduce the occurrence of light pollution. However, as this refers to new developments only it will have little overall effect, as for example, the new highway adoptions account for a 0.2% to 0.3% increase in the size of the highway network and the extent of the street lighting each year.
46. The Draft SPG on Sustainable Design and Construction, currently out to consultation, does include minimum standards for large scale development relating to light pollution.
47. Where possible, there will be an amendment to the Supplementary Planning Guidance – that all new or significantly refurbished developments should give consideration to incorporating sustainable street lighting. Council officers also will research and investigate the inclusion of a more detailed policy to address this issue as part of the development of the 'Local Development Framework'.
48. Members of the Council will be asked to determine a more rigorous approach to evaluating whether or not new streetlights are required in new developments as a matter of course, especially if there is no requirement for these in the interests of road safety. Developers or other organisations such as Ward or Parish Councils could elect to provide such lighting at their own cost. However, the approach ultimately taken will need to consider the fact that street lighting will improve the night-time safety for members of the community, helping to reduce crime and the fear of crime as well as creating a feeling of well being.

49. Street lighting, including decorative lighting, is known to assist in the promotion of the evening economy and in these situations its use will be promoted.

## **ACTION PLAN**

### **Overall strategy**

50.

<b>ITEM</b>	<b>ACTION</b>	<b>TIMESCALE</b>
1	Carry out the consultation with Ward Committees and Parish Councils to identify their preferred street lighting equipment for replacement of existing.	Initial consultation to be completed by December 2007. Any issues this raises will be followed up and discussed before the end of March 2008 but this also seen as an ongoing process.
2	Bring a procurement report to Members on a range of highway maintenance services, including street lighting so that the procurement strategy can be determined and then implemented.	Report to Members in 2008 to allow procurement to be finalised by 2010/11
3	Arrangement will be pursued to seek favourable rates in the future for energy from CHP and truly renewable green sources, linked to similar bulk energy procurements across the Council.	New energy arrangements will commence in October 2008
4	Review the use of the unmetered electricity supply arrangements compared to other tariffs.	This will be done at least on an annual basis but also in association with any proposals to introduce dimming or switching off lights
5	Continue to update and maintain an accurate inventory of all items of illuminated street furniture to enable detailed assessment of the electrical energy consumed.	Ongoing
6	Implementation and management of an effective maintenance programme for the street lighting asset	Ongoing with the present term maintenance contract to at least 2010, but with the

		possibility of extensions
7	New installations will be designed to meet the minimum lighting requirements and a revised procedure for the design of new schemes will be adopted	Ongoing from the adoption of this strategy
8	New technology will continue to be monitored and investigated, concentrating on dimming and switching off, remote monitoring and the use of PV equipment	Ongoing with at least an annual report back to Members
9	The purchasing of equipment and services will take into account all the factors necessary to produce the whole life costs so that the most informed decisions can be made	Ongoing
10	The extent of recycling achieved with the term maintenance contract will be monitored against agreed targets	Ongoing from the adoption of this strategy

11	Where possible, there will be an amendment to the Supplementary Planning Guidance – that all new or significantly refurbished developments should give consideration to incorporating sustainable street lighting	To be introduced as and when an amendment is possible
12	Council officers will research and investigate the inclusion of a more detailed policy on sustainable street as part of the development of the 'Local Development Framework'	Ongoing
13	The different types of funding that may be available will be determined so that trial schemes, to introduce new technology, can be aligned to these funding streams from the outset	Initial investigation to be completed by December 2007 and then reviewed in the light of any forthcoming proposals

### **Engagement**

51. Engagement will mainly take place with other local authorities taking a lead on developing and introducing new technology and with technical bodies such as the Institution of Lighting Engineers and the Yorkshire Lighting Group.

### **Funding**

52. Sources of funding, possibly European funding, may exist for the further development of new technology through the use of trial systems and the different types of funding that may be available will be determined.

### **Monitoring**

53. The items in the Action Plan will be incorporated into the appropriate Business Plans and Work Plans for this year and future years. The Annual Highway Maintenance report will include an update on the Action Plan.