Wiltshire Council

Cabinet

18 December 2012

Subject: **Street Lighting Savings**

Cabinet Member: **Councillor Dick Tonge – Highways and Transport**

Key Decision: **Yes**

Executive Summary

There is a need to reduce street lighting costs because of budget constraints and rising energy costs, carbon tax and in order to meet the Council's carbon reduction target.

In the Public Consultation on the Council's 2012/13 budget in February 2012 savings from reduced street lighting scored the highest of the seven savings options suggested, showing a high level of public support for changes to the street lighting.

Following consideration of the options a package of measures was developed, including permanently turning off some street lighting, converting lights to operate for only part of the night, dimming others at off peak periods, and introducing LED lighting on new installations, and a public consultation undertaken to obtain views on these.

The opportunity has been provided for the views of the Police, other public bodies and those affected by the proposals to be considered. The consultation was announced at the Area Board meetings, and local Town and Parish Councils were invited to comment. The consultation documents were available on the Council's website, and this was announced in the August and September Parish Newsletters. The consultation received substantial local press coverage, including reports on a number of local radio stations.

The consultation closed on 30 September 2012. There were 246 responses via the on-line questionnaire, and 18 by letter and e-mail. The majority of those responding were generally in favour of changes to the street lighting. In response to the on-line questionnaire 73.2% thought that many or some of the lights should be turned off permanently, 86.2% thought that many or some should be turned off between midnight and 5.30 a.m., and 91.1% thought that many or some of the street lights should be dimmed. The responses not in favour of the proposals were mainly concerned about public safety issues.

The Wiltshire Community Safety Partnership Executive Board, whose members include Wiltshire Police, Wiltshire Fire and Rescue Service, the Probation service, the Youth Offending Team and Wiltshire Council, considered the matter at their October meeting, and advised that they support the street lighting reduction proposed.

Proposals

It is proposed that energy savings should be obtained by a scheme to:

(i) Introduce Part Night Lighting where feasible so that approximately half of the street lights are turned off between midnight and 5.30 a.m.

(ii) Dim lighting levels at less busy times where appropriate and technically feasible.

(iii) Use LED lighting or similar energy efficient lighting on new installations.

(iv) Turn off street lighting where there are no significant pedestrian movements and it is not required for safety reasons.

(v) Introduce a Street Lighting Management System to provide more responsive and flexible control over the operation of the Council's street lights.

The scheme would require capital investment to proceed and it is suggested that the proposals are considered as a potential invest to save scheme.

Reasons for Proposals

There is a need to reduce street lighting costs because of budget constraints and rising energy costs and carbon tax, and the need to meet the Council's carbon reduction targets.

The assessment of options indicates that the best balance is a package of measures, including the conversion of about half the existing lights to operate for part of the night, and turning out some lights permanently, and dimming others at off peak periods.

The proposed option would have good economic returns and provide flexibility to adapt to future changes in energy costs and carbon tax. It has been assessed with a 25 year business case model using a standard Net Present Value appraisal method (NPV). Three scenarios of energy cost increases have been modelled to allow for uncertainties about future energy costs, and overall the proposal would represent a good investment.

Parvis Khansari
Service Director for Highways and Transport

Wiltshire Council

Cabinet

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Subject: **Street Lighting Savings**

Cabinet Member: **Councillor Dick Tonge – Highways and Transport**

Key Decision: **Yes**

Purpose of Report

1. To consider proposals to reduce the energy consumption and carbon footprint of the Council's street lighting following the recent public consultation.

Background

2. The Council has 40,524 street lights and illuminated signs. Energy costs have risen sharply in the past, and they are likely to continue to rise in the longer term. Carbon tax also has to be allowed for. The energy budget for street lighting is currently over £1.2 million, and with current budget restrictions these costs are becoming unaffordable. It is anticipated that energy costs will increase by 10% in the next financial year.

3. Street lighting accounts for 12% of the Council's carbon footprint producing 7,084 tCO2 per year. Allowances under the Carbon Reduction Commitment (CRC) Scheme are payable for street lighting as the Council is responsible for procuring and paying for electricity consumption. These allowances will be payable on the Council's street lighting from 2014/15 onwards at an estimated annual cost of £128,000, which will increase year on year. The Council has a target to reduce its carbon footprint by 20% by 2013/14 and an aspiration to achieve a 50% reduction by 2020.

4. Street lighting is a highly technical service, which in Wiltshire is managed by a specialist consultant on behalf of the Council, with a specialist contractor carrying out the lighting maintenance. The electricity for the lighting is procured corporately as part of corporate energy purchasing. Energy costs are particularly volatile, but are expected to continue to rise in the future. With limited budgets and rising costs the future provision of street lighting needs to be considered.

5. The number of street lights in Wiltshire is increasing. New developments have lighting which is adopted by the Council and, although the new houses bring in extra revenue for the Council, they increase the energy costs and also incur carbon tax. The developments recently completed, or in the process of being constructed, generally include more energy efficient units than the older stock, but they will still continue to increase energy costs for the Council.

6. The Council has already made a start in reducing its energy consumption in connection with street lighting. Over 1,300 units have already been converted to part night lighting following the community based project last year, and a previous Salix funded invest to save scheme converted the Council's illuminated bollards to low energy units.

7. At the Council meeting on 28 February 2012 Members asked for a report for Cabinet regarding ways to improve the efficiency of street lighting and reduce energy costs. In order to understand the public's view of potential changes to street lighting a public consultation has been undertaken.

8. In the Public Consultation on the Council's 2012/13 budget in February 2012 savings from reduced street lighting scored the highest of the seven savings options suggested, showing a high level of public support for reducing lighting costs.

Main Considerations for the Council

9. From the initial investigations it would be possible to obtain energy savings by a number of means:

   (i) Part night lighting where feasible so that lights are turned off between midnight and 5.30 a.m.

   (ii) Dim lighting levels at less busy times where appropriate and technically feasible.

   (iii) Use LED lighting or similar energy efficient lighting.

   (iv) Turn off street lighting where there are no significant pedestrian movements and it is not required for safety reasons.

   (v) Introduce a Street Lighting Management System to provide more responsive and flexible control over the operation of the Council's street lights.

Consultation

10. In July 2012 the Cabinet Member for Highways and Transport approved public consultation being undertaken on implementing changes to the Council's street lighting.

11. The opportunity was provided for the views of the Police, other public bodies and those affected by the proposals to be considered. The consultation was announced at the Area Board meetings, and local Town and Parish Councils were invited to comment. The consultation documents were available on the Council's website, and the consultation was announced in the August and September Parish Newsletters. The consultation received substantial local press coverage, including reports on a number of local radio stations. A document of 'Frequently Asked Questions' was prepared to inform the consultation (see **Appendix 1**).

12. The consultation period was extended until the end of September to allow for the summer holidays when many Town and Parish Councils and other organisations do not hold regular meetings.

Response to the Consultation

13. The consultation closed on 30 September 2012. There were 246 responses via the on-line questionnaire, and 18 by letter and e-mail. The results of the response and a summary of the comments made are included in **Appendix 2** of this report.

14. The majority of those responding were generally in favour of changes to the street lighting. In response to the on-line questionnaire 73.2% thought that many or some of the lights should be turned off permanently, 86.2% thought that many or some should be turned off between midnight and 5.30 a.m., and 91.1% thought that many or some of the street lights should be dimmed.

15. Most of those responding lived on streets with street lighting (91.8%), and the majority rarely travelled between midnight and 5.30 a.m., or only did so once a year (70.0%). Those who did travel at night mainly travelled for pleasure/entertainment (47.9%), visiting people (21.6%) or work/business (14.8%). Most used the car to travel during those hours (78.3%) or were walking (17.5%).

16. Most of those responding were concerned about light pollution (78.9%), and thought there was too much street lighting (78.6%). There was concern about increasing energy costs (96.8%), and about carbon emissions (80.9%).

17. The majority thought that some lights should remain on all night at junctions and roundabouts (71.4%), in town centres (74.8%), and at subways and alleyways (92.2%) and at speed humps and central islands (71.3%).

18. Those responses not in favour of changes to the street lighting indicated that their main concerns were in connection with crime and road safety.

19. There were a number of comments regarding specific sites where the replies indicated that lighting could be turned off, or where it was important that lighting was left on.

Wiltshire Community Safety Partnership

20. The Wiltshire Community Safety Partnership works to address community safety issue across the county. The members include Wiltshire Police, Wiltshire Fire and Rescue Service, the Probation service, the Youth Offending Team and Wiltshire Council. The views of the Partnership were requested.

21. The Wiltshire Community Safety Partnership Executive Board considered the proposals at their October meeting. The Executive Board thought that there needed to be efforts made in encouraging people to change their behaviour in respect of walking the streets at night, regardless of whether street lighting is available or not. There was discussion about encouraging people to wear reflective clothing, which was identified as an urgent need. Suggestions were made about school children being encouraged to walk to school, using the partnership safe drive, stay alive programme, and other opportunities to put the message over. In respect of young people it was felt that a competition for

young people themselves to design a campaign to get it over to peers might be a way forward. It should be noted that only a small proportion of the road network has street lighting, and the use of reflective clothing would be a real benefit on all roads used by pedestrians.

22. The Road Safety Delivery Board was asked to give consideration to help in respect of getting the reflective clothing message over to people in Wiltshire and better understanding of the need for this behaviour change for all aspects of road safety.

23. The Wiltshire Community Safety Partnership advised that they support the street lighting reduction proposed, and will do all they can to promote the safety aspects as highlighted in the discussions.

Options to reduce street lighting energy consumption

24. There are a number of options which have been considered for reducing the energy consumption of the Council's street lighting stock. The technology used in street lighting has improved considerably in recent years, and where possible energy efficient equipment is being installed as part of the routine maintenance of the lighting units and is used when new lighting is installed. However, there are still many older units which would be difficult or expensive to adapt to dimming.

25. For comparison purposes four main options have been compared in terms of financial benefits, operational and safety considerations.

Option 1 - Permanently turn off street lights

26. Permanently turning off street lights would reduce energy costs, but the columns would still remain as a maintenance liability. The columns would eventually have to be disconnected and removed for safety reasons. The timescale for their removal would depend on their rate of deterioration, which is likely to accelerate when the lights are not operational, and there would be concerns about the safety of the electrical equipment. Removal within a period of about five years would probably be necessary when lights are turned off completely. Initial disconnection costs would be low at £0.083 million, but the column removal costs (revenue costs) would be substantial at £2.654 million over a ten year period. Energy savings would be £0.234 million in the first year.

27. The permanent removal of large numbers of street lights would result in dark areas on many streets at nights and on winter mornings. The impact on individuals and the community, which have had the benefit of street lighting for many years, would need to be carefully considered where this option is applied. There is a risk of considerable adverse publicity and comment in connection with turning street lights out permanently. The fear of crime and concerns about road safety should not be underestimated. Other authorities have had to turn lights back on because of local opposition.

28. It is anticipated that permanently removing street lighting would be most suitable at a small number of sites where under current design standards street lighting would not be installed. A number of these are high energy consuming lights on main roads, which are currently operating for part of the night, and could be turned off to further reduce energy consumption.

29. For comparison purposes it has been assumed that 20% of the lighting units could be turned off permanently.

Option 2 - Part night lighting and dimming

30. The introduction of controls to turn off the lights after midnight and back on in the early morning would reduce energy costs whilst still having the lights operating when most needed. The Council has already converted 1,300 street lights to part night lighting, mainly through the successful community area based project to reduce unnecessary lighting.

31. Some of the newer units which need to be kept on for safety reasons could be dimmed in off peak periods in order to slightly reduce lighting levels and energy consumption. For example, on the A350, near the new ASDA development at Melksham, the new lighting units are dimmed when traffic volumes are low, resulting in a 30% reduction in energy usage. Unfortunately, at present about half of the county's current lighting stock is not suitable for dimming because they are older units.

32. It is considered that it would be feasible to convert over half of the Council's lighting stock to part night lighting, and introduce dimming on a further 5% of the remaining lights. The cost of conversion would be £1.060 million, and the initial savings in energy costs would be £0.294 million in the first full year.

33. Most of the street lights to be converted to part night lighting would be on residential minor roads, with the main road units being dimmed for part of the night, or turned off where appropriate. The lights would be on at peak times in the mornings and evenings.

Option 3 - Part night lighting and dimming with Management System

34. The technology is now available to control street lighting from a computer management system. This would allow units to operate for part of the night, and where existing lights are suitable for the lighting levels to be dimmed or adjusted to meet circumstances. An initial scheme has been implemented in Wiltshire using developer's contributions arising from a recent development. This has allowed the technology to be tested in a small area before it is rolled out to the rest of the county. A number of other authorities have also already successfully introduced this or similar technology, including Warwickshire, Birmingham, Essex, Suffolk and Cornwall.

35. The Management System would enable individual lights to be operated separately. For example, lights in some streets could be timed to come on or go off at particular times according to circumstances. Lighting in town centres could be dimmed or turned off during the evenings, but turned up late at night when people leave clubs and public houses. The lighting can be changed remotely with no need for engineers to visit site, and the system can accommodate changes to British Summer Time. Lights that are faulty or remain on all day can be detected remotely and efficient repair schedules can be set up. The cost of installation of the Management System is estimated at c. £2.000 million, with savings of energy costs of £0.380 million in the first full year.

36. In the event of anti-social or criminal behaviour occurring, the lighting could be switched on, or its timing altered, as necessary. The computer controlled system offers the opportunity to react to circumstances, and offers scope to achieve further savings through dimming or reducing the hours of operation as circumstances and energy costs change. There should be fewer complaints about faulty lighting units and reduced electricity usage.

Option 4 - LED (Light Emitting Diode) Lighting

37. The latest street lighting equipment is more energy efficient than the older equipment which comprises most of Wiltshire's lighting stock. LED lighting uses less energy and the units are longer lasting than the older lighting units.

38. The cost of converting street lights to LED lighting can be considerable, with the costs of the higher powered LED units for main road lighting currently significantly higher at over £600, compared to traditional units which usually cost just over £300. However, LED units are reducing in price, and it is likely that there will be further reductions in the future as the technology improves and the use of these units increases. As and when LED lighting becomes more financially attractive, they could be introduced.

39. The LED lighting is particularly suitable for dimming, either through a Management System, or with individual control of units. They allow much more control of lighting levels at different times of day to take into account traffic or pedestrian movements than the lighting systems currently used. On recently constructed developments, all new street lighting is being installed with LED or similar so that it can be dimmed, usually between midnight and 5.30 a.m. to reduce energy usage by up to 70%.

40. For comparison purposes it has been assumed that 10,000 lights would be converted to LED units with this option. The cost of installation would be £3.175 million, with first full year energy savings of £0.195 million.

Comparison of options

41. All four options would reduce energy costs, with Options 1, 2 and 3 offering the best economic return as described in the Financial Implications section of the report below.

42. Turning off street lights (Option 1) would have the high initial costs due to the phased revenue impact of disconnection and removal of units although it provides good economic returns immediately. However, communities have become accustomed to street lighting being provided, especially in urban areas, and for it to be on during the hours of darkness. With lighting permanently turned off there would be dark areas on streets which would affect residents' journeys to work and schools in the mornings and evenings during the winter.

43. Turning off street lights for part of the night (Options 2 and 3) appears to be acceptable to most members of the public, based on the response to the consultation and the Part Night Lighting trials carried out in conjunction with the Area Boards last year. However, it should be noted that in the community based initiative there were a small number of locations where the full night lighting was reinstated following requests from the public.

44. The introduction of Part Night Lighting (Option 2) would require capital investment of £1.060 million, but would have significantly less overall adverse effect on the public and road users than turning the lights out permanently as the lighting would be operating when the roads are busiest.

45. A Management System (Option 3) would require the most investment (c.£2.000 million), but would be the most flexible method of introducing changes to the street lighting. It would facilitate further changes should it be necessary and can be much more responsive to changing demands. The introduction of a Management System would allow the operation of the lighting to be monitored remotely, reducing the need for night visits to inspect them. It will also reduce the incidents of street lights being on all day as faulty units will be identified by the system. This will have financial benefits over and above the energy savings.

46. The Management System offers an inexpensive, flexible and rapid response to locations where:

- Anti-social behaviour has appeared.
- Young people are congregating, improving their safety and addressing concerns of residents.
- There are scenes of crime or the Police make special requests.
- There are accident black spots where different timing of lighting might be appropriate.
- There are community events which finish very late.
- Temporary road works are in process.
- Roads are compromised by works being carried out by developers.
- Severe bad weather is causing driving difficulties.

With the other options rapid responses of this type would be prohibitively expensive as it would involve several staff and a cherry picker to gain access to the lights. With the centralised system, changes can be made instantly from a computer keyboard. In addition, there is a possibility of offering this flexible service to third parties, such as housing associations, other public and private organisations. At present no marketing has been carried out, and no financial benefit of this has been included in the financial considerations.

47. Should energy costs rise considerably, Option 3 would provide the opportunity to reduce energy consumption by reducing the hours of operation of the street lights. The lights could remain on during peak hours, but be reduced for the remainder of the night. This would enable additional savings to be made without incurring additional costs.

48. The introduction of LED lighting (Option 4) would have economic benefits, but based on current costs these are not as economically attractive as the other options. It is expected that the viability of the units will improve in the future, and it would be desirable to use these or other energy efficient units on all new lighting installations.

Other Considerations

49. Despite Wiltshire being a safe county, the consultation indicates that there still is a fear of crime. There are concerns that reducing street lighting could increase anti-social behaviour and vandalism at night, but some responses indicated the contrary and suggested lights should be turned off to discourage people congregating late at night.

50. Making changes to the street lighting when there are concerns about crime or safety would be easier with Option 3 as it would be more flexible and would allow changes to be made to the lighting regime if required. Putting in place a good community engagement programme and working in partnership with local environmental groups would be necessary to help minimise negative impacts of the proposed changes.

51. The main differences between the options are summarised in **Appendix 3**.

Environmental and Climate Change Considerations

52. Carbon emissions associated with street lighting account for 12% of the Council's overall footprint. Street lighting has a key part to play in reducing the Council's energy consumption, and a number of part night lighting schemes have already been installed by this Council successfully. The implementation of a scheme to further reduce energy would help the Council meet its carbon reduction targets.

53. The Council co-ordinates the Wiltshire World Changers Network, which brings together people and communities from across Wiltshire who are taking action to look after the environment, tackle climate change and protect wildlife, and can use this forum to engage groups on this topic. The proposals offer the opportunity for local environmental groups to reduce the carbon footprint of their area and engage their community in the debate on environmental impacts and energy savings.

Equalities Impact of the Proposal

54. A reduction in street lighting, especially in urban areas, could have equality and diversity implications. With street lighting permanently turned off some sections of the community may feel disadvantaged or at risk.

55. Fear of crime is a serious consideration, even in a safe county like Wiltshire, and walking along streets with unlit areas may inhibit some members of the community from walking at night or early in the morning, or result in parents refusing to let children walk to school. The introduction of part night lighting in residential areas is likely to have less adverse effects than turning off lighting permanently.

56. In localised areas where there are higher than average crime rates, or where anti-social behaviour is a problem, reducing street lighting may be perceived to be increasing the danger to the public, and care would need to be taken in implementing changes to street lighting. In some areas, such as town centres with CCTV systems, it is anticipated that the lighting would remain on all night.

Legal Implications

57. There is no legal requirement for the Council to provide street lighting, but where lighting is provided there is a responsibility to keep it in safe condition.

58. Street lighting is often provided at major junctions and locations where there may be hazards. It can play a part in improving road safety, and the current proposals will leave lights on at the identified high risk areas.

59. Some existing 30 mph speed limits in urban areas require a street lighting system to be in place to be enforceable. If street lights are turned off permanently, and redundant columns are removed, it may be necessary to amend some Traffic Regulation Orders to ensure that the speed limits on the road are not compromised.

Risk Assessment

60. Increased energy costs and carbon tax are a concern to the Council. Energy costs are likely to increase significantly in the future. Taking measures to reduce the energy consumption of street lighting now will reduce the risk of energy costs having an adverse impact on budgets in future, with consequent implications for Council services.

61. Although the consultation indicates support for reducing street lighting, there is a risk that there may be public concern about changes to street lighting in particular areas, especially with regard to turning street lights out permanently. The fear of crime and concerns about road safety should not be underestimated in considering the options. In order to manage this risk, a comprehensive communication and engagement programme will need to be developed, working in partnership with Area Boards and local environmental groups where they exist to maximise positive news stories.

62. The street lighting currently uses energy throughout the night when demand is low. There is a risk that the introduction of energy saving measures which reduce off-peak energy consumption may not deliver the full value of expected savings if energy suppliers increase their pricing mechanisms to allow for the reduced consumption from street lighting during off-peak hours. However, carbon tax would not be affected.

Financial Implications

63. The financial implications of the proposed changes to the Council's street lighting have been assessed. The assessment included consideration of initial capital outlay as well as ongoing revenue financing and operational costs. An estimate of cashable savings through a 25 year business case model using a standard NPV appraisal method has been made.

64. Three scenarios of energy cost increases have been modelled. These are to assume no increase in energy costs, a 10% rise in 2013/14 and another 10% in 2018/19, and a situation with 5% year on year increase. These represent a range of values which allow an estimate of the scale of the likely financial benefits to be assessed.

65. The four potential options for changing street lighting have been assessed using the three scenarios for energy costs. The summary of the results is shown in **Appendix 4**. All four options would have economic benefits, with Options 1, 2 and 3 providing the best returns.

66. The table below shows the various NPV outcomes based on the potential rises in future energy costs.

67. The savings are split between cashable, i.e. where there is a recurring current budget that could be removed or reduced, and non cashable where there are savings on future rises (cost avoidance).

Option	NPV over 25 Years £m	Cashable savings over 25 years £m	Non Cashable (Cost Avoidance) savings over 25 years £m
Option 1 Switch off 20% of light permanently – No Energy increase	-3.790	-3.790	0.000
Option 1 Switch off 20% of light permanently – 5 % annual rise	-6.661	-3.790	-2.871
Option 1 Switch off 20% of light permanently – 10% rise in 2013/14 and 2018/19	-4.531	-3.790	-0.741
Option 2 Part night lighting and Dimming (Permanent) – No Energy increase	-4.884	-4.884	0.000
Option 2 Part night lighting and Dimming (Permanent) – 5 % annual rise	-8.212	-4.884	-3.328
Option 2 Part night lighting and Dimming (Permanent) – 10% rise in 2013/14 and 2018/19	-5.307	-4.884	-0.423
Option 3 Part night lighting and Dimming (Management System) - No Energy increase	-4.876	-4.876	0.000
Option 3 Part night lighting and Dimming (Management System) - 5 % annual rise	-9.184	4.876	-4.308

Option 3 Part night lighting and Dimming (Management System) - 10% rise in 2013/14 and 2018/19	-5.424	4.876	-0.548
Option 4 LED Lanterns - No Energy increase	-0.602	-0.602	0.000
Option 4 LED Lanterns - 5 % annual rise	-2.812	-0.602	-2.210
Option 4 LED Lanterns - 10% rise in 2013/14 and 2018/19	-0.883	-0.602	-0.281

68. Option 2 would have the best value, on a purely cashable savings basis with a NPV of -£4.884 million. Option 3 would provide slightly lower cashable savings of -£4.876 million.

69. Taking into account both cashable and non cashable savings and the varying potential for energy price increases in the future, Option 3 represents best value with a NPV of -£9.184 million for the 5 % increase in energy prices and a NPV of -£5.424 million for the 10% increase in energy prices. This is due to the option generating larger cost avoidance savings from a greater reduction in the usage of energy.

70. All options would generate savings within the street lighting energy budget. The forecast annual saving, which could be realised as a base budget reduction in the street lighting energy budget, is summarised per option below:

Option	Street lighting Energy savings £m
Option 1 Switch off 20% of light permanently	0.234
Option 2 Part night lighting and Dimming (Permanent)	0.294
Option 3 Part night lighting and Dimming (Management System)	0.380
Option 4 LED Lanterns	0.195

*Street lighting energy savings exclude any savings relating to reduced scouting of the light network.

71. Option 3 therefore provides the largest forecast saving against the Street lighting energy budget of £0.380 million (full year annual saving); a vital requirement of the street lighting schemes and an important factor in setting the 2013/14 (and future) revenue budgets.

72. The street lighting energy savings will however be offset by an increased revenue cost required in borrowing the capital funds to procure the management system. The revenue borrowing costs are £0.231 million, meaning a net saving of £0.149 million recurring when taking into account energy savings and borrowing costs.

73. Option 3 with the Management System to control the lights would provide significantly greater flexibility to adapt to changing conditions. It would be comparatively easy to adjust the timing of operation of the lights to make greater savings if required for future budget setting.

74. The requirement for capital funds to implement the preferred street lighting scheme would carry the requirement to produce a separate business case to the Cabinet Capital Asset Committee. The revenue cost of financing the capital expenditure has been factored into the NPV calculations above.

Options Considered

75. The cost of energy for street lighting is likely to rise substantially in the future. Considerable budget provision would need to be made in future years to allow for rising energy costs and carbon tax for street lighting, with consequent adverse effects on budgets for other services if changes are not made.

76. There are various options which have been considered to reduce street lighting energy consumption, including permanently turning off some street lighting, converting lights to operate for only part of the night and dimming others at off peak periods, and introducing LED lighting to replace existing lighting units.

77. From the initial investigations converting a majority of the street lights to operate for only part of the night, and dimming others at off peak periods, would appear to offer the best savings in the longer term, with potentially little adverse impact on the public and communities. The proposals also include the removal of lights at locations where they would not be provided under current design standards, and the introduction of LED and similar energy efficient units on new lighting schemes.

78. The lighting at key locations, such as important junctions and traffic signals, would operate all night as necessary to ensure that road safety is not compromised. Lighting in town centres would be controlled so that lighting levels are appropriate for the time and potential usage by the public, and would remain on where there are CCTV systems.

79. From a purely financial analysis, Option 3 represents the best value for money when taking into account the possible future increase in energy costs. This option will provide both cashable and non cashable savings as detailed in the financial implications.

Conclusions

80. There is a need to reduce street lighting costs because of budget constraints and rising energy costs and carbon tax.

81. There is a range of options available to reduce street lighting energy consumption, from turning out lights permanently to dimming them at off peak periods. The assessments indicate that the best balance would be a package of measures, including the conversion of about half of the existing street lights to operate for part of the night, with a Management System to provide flexibility in the control of the lighting.

82. From the consultations undertaken on changes to street lighting it would appear that there is support for reducing unnecessary lighting, and that there are concerns about the costs of energy and carbon emissions. The main concern about the proposals was in connection with crime and safety issues.

Parvis Khansari
Service Director for Highways and Transport

Report Author:
Peter Binley
Head of Highways Asset Management and Commissioning
Tel No. 01225 713412

The following unpublished documents have been relied on in the preparation of this Report:

None

Appendices:

Appendix 1 – Consultation on Street Lighting – Saving Money, Energy and Carbon
Appendix 2 – Summary of Consultation Response
Appendix 3 – Summary of Options
Appendix 4 – Financial Implications