PUBLIC STREET LIGHTING

PFI ANNUAL SERVICE REPORT 2011

CITY OF STOKE-OF-TRENT

SSE Contracting

Working In Partnership With

city of stoke on trent

Contents

SSE Contracting

1- INTRODUCTION

This Annual Service Report relates to the City of Stoke-on-Trent Council Public Street Lighting and has been prepared by the PFI Service Provider on behalf of the Authority to provide an overall summary of performance when considered against the Performance Indicators.

The performance indicators are as listed in the Output Specification of the Project Agreement. The report will also consider other requirements of the Output Specification that are listed as forming part of the Annual Service Report. Specifically the report has been prepared in accordance with the requirements of the Output Specification and will provide details of the following:

1. Graphical representation of LPI's showing trend analysis over the previous twelve (12) Months;
2. Environmental Considerations
3. Details of local Crime and community safety statistics
4. Details of local Road Safety statistics
5. Innovation
6. Progress of Asset Replacement Program
7. Health and Safety data
8. Customer Feedback in tabulated and graphical formats
9. Continuous Improvement update

2 – BEST VALUE PERFORMANCE INDICATORS AND LOCAL PERFORMANCE INDICATORS

This section of the Annual Service Report focuses on the Service Providers performance against the relevant and local performance indicators for the Project.

a) LP1 - Percentage of Lighting Points working as planned.

b) LP2 - Percentage of Apparatus more than twenty five (25) years old

c) LP3 - Percentage of streets which conform to the lighting standards referred to in the Output Specification.

d) LP4 - Average time to repair a non-emergency fault from first being reported.

e) LP5 - Average time to attend an emergency repair.

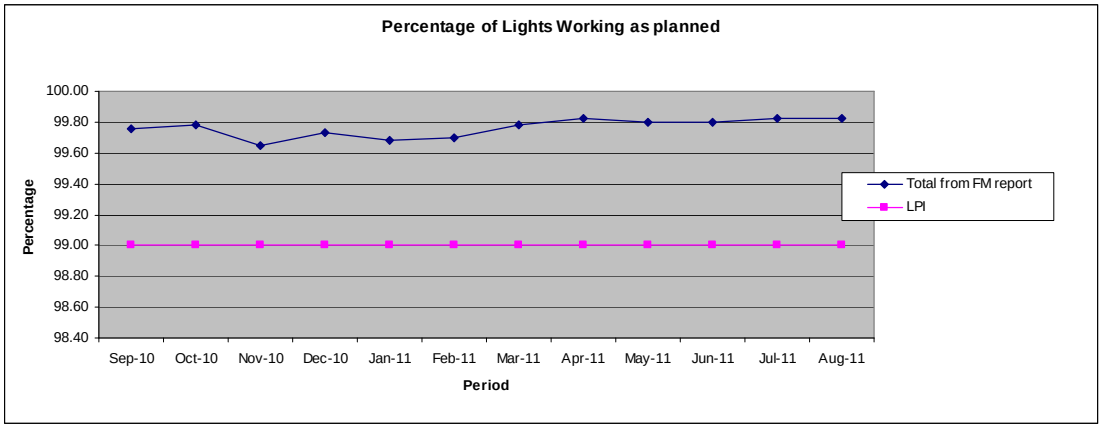
f) LP6 - Percentage of inefficient light sources.

g) LP7 - Percentage number of repeat visits associated with non-Emergency Faults.

h) LPI8 – Number of requests for additional lighting.

The requirement for the Annual Service Report is to provide graphical representation of the above performance indicators. The information contained in the Monthly Monitoring Reports each month has been collated and is detailed on the graphical representations below. This information details the trends of the performance of the Service Provider for the past year of the Project.

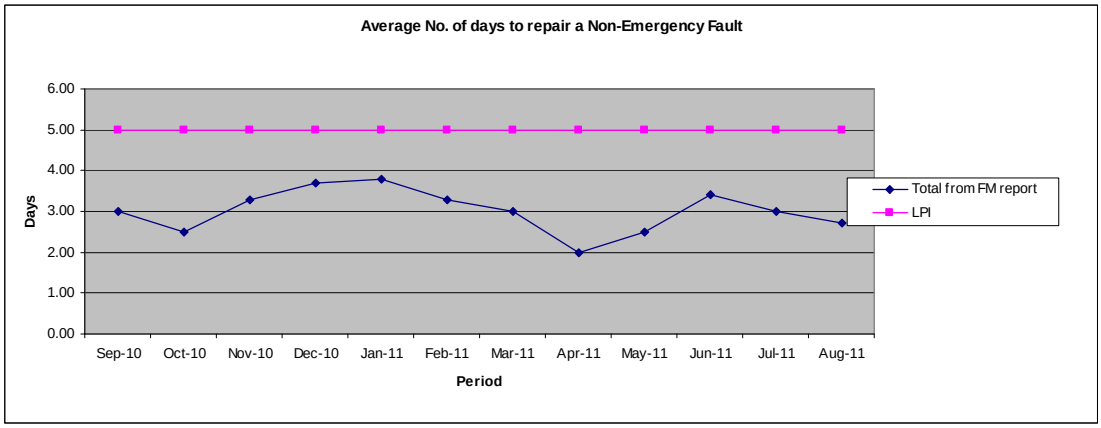
a). LP1 - Percentage of Lighting Points working as planned



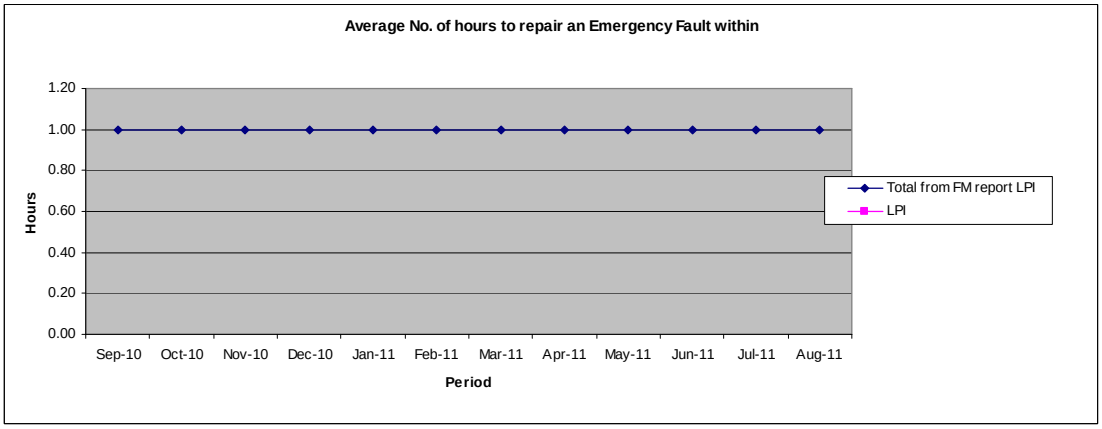
b). LP2 – Percentage of apparatus more than 25 years old, this equates to, at the time of this report to 0.57%. These lighting columns have not been replaced as they fall within development areas and thus have mitigation with the Local Authority.

c). LP3 – At the time of this report the percentage of streets which conform to the lighting standards referred to in the Output Specification is 78%.

d). LP4 - Average time to repair a non-emergency fault from first being reported

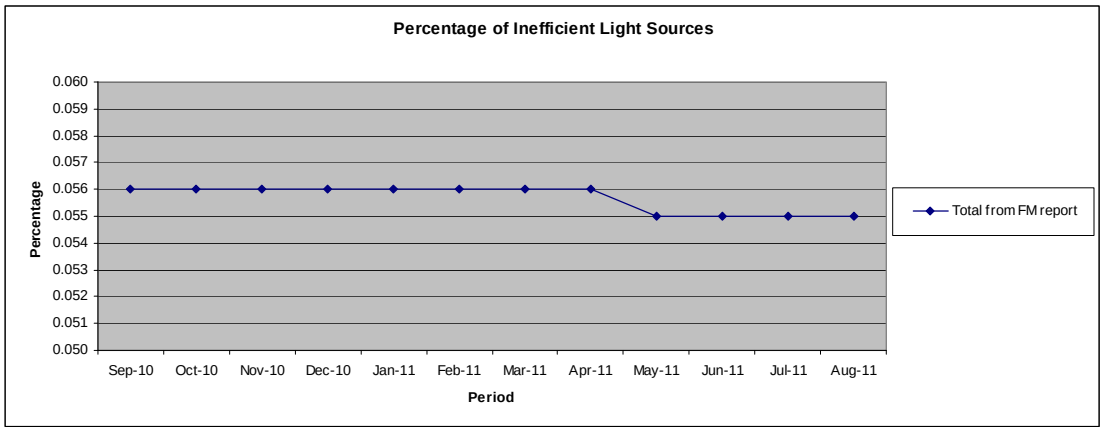


e). LP5 - Average time to attend to attend an emergency repair within

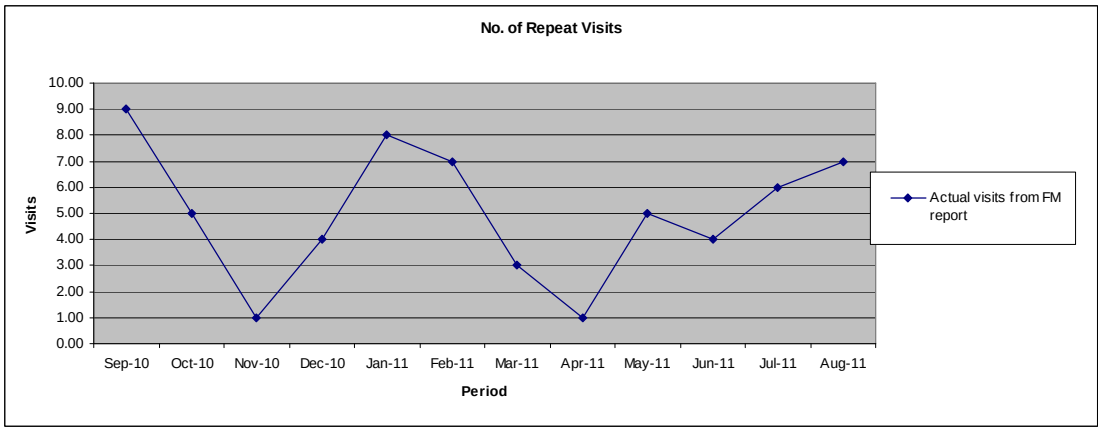


Note: LPI is 1.00 for LP5, indicator line is hidden behind trend line

f). LP6 - Percentage of inefficient light sources



g). LP7 - Number of repeat visits associated with non-emergency faults



h). LP8 – Since the commencement of the PFi Project there have been 368No requests for additional lighting (Clause 9.5 requests).

3 – ENVIRONMENTAL CONSIDERATIONS

The service provider supports the need for reducing the carbon footprint in the UK and Stoke-on-Trent. Global warming is a constant threat to our environment and considered a contributory factor in many freak weather conditions. Electricity production is the biggest contributor to the emissions that cause climate change.

The prime gas responsible for global warming is CO2. Burning fossil fuels - coal, oil and natural gas - produces a large amount of this gas and supplies of fossil fuels are rapidly decreasing. There is an ever-increasing need to find alternatives.

One alternative to fossil fuels is nuclear power, however this has met with wide protests from campaigners who believe that a nuclear reactor can produce radioactive waste with a 'lifespan' of thousands of years. There are also by-products that could potentially do harm to the environment.

Renewable energy is the environmentally friendly alternative. It has no by-products that could harm the atmosphere and comes from everlasting sources such as wind and water. There is little to no waste, and consequently more and more people are seeing renewable energy as a legitimate alternative.

The annual energy consumption for street lighting in the City of Stoke-on-Trent for the previous year was 13,494,096kwh. Since the energy purchased for Stoke-on-Trent is from renewable sources, which is 100% exempt from Climate Change levy, means there is zero carbon emissions.

The electricity supplier ensures that for every unit of electricity you used, the same amount of green electricity is generated.

For further reading please see Appendix 1 – Street Lighting Carbon Emissions and Energy Efficiency Response Paper for Stoke-on-Trent City Council.

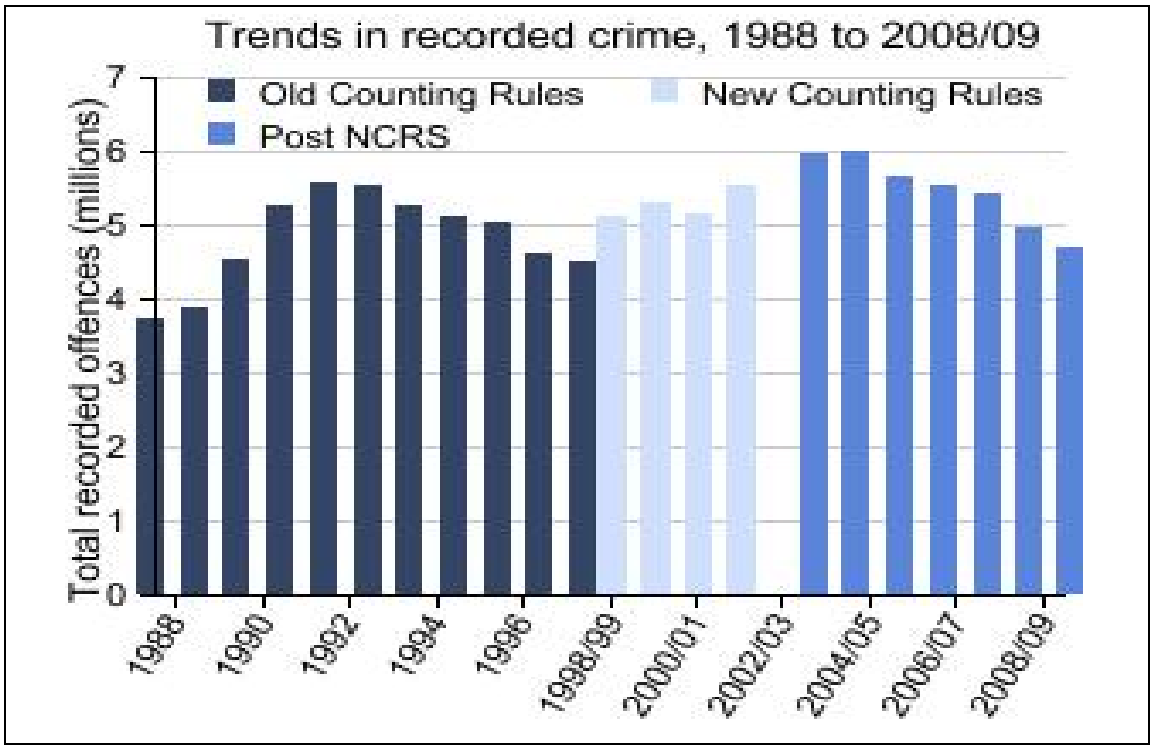
4 – CRIME AND COMMUNITY SAFETY

The table below shows the trend for notifiable offences recorded by the Police for the Stoke-on-Trent area. The table shows a comparison from 2002-3, before commencement of the PFi Project to 2010-11. The trend, with exception of wounding, is a reduction of offences, with a significant in drop in some offences. Data has been provided by the Office for National Statistics.

Offence	2002-3	2010-11	Percentage increase or decrease
Violence against the person	6623	6598	-0.5%
Wounding or other act endangering life	7	171	+ 2342%
Other Wounding	2114	2937	+39%
Harassment including penalty notices for disorder	1237	1118	-9.6%
Common Assault	2605	1986	-24%
Robbery	356	265	-25%
Theft from the person	502	200	-60%
Criminal damage including arson	9124	5183	-43%
Burglary in a dwelling	2438	1038	-57%
Burglary other than a dwelling	2663	1298	-51%
Theft of a motor vehicle	1591	422	-73%
Theft from a motor vehicle	3237	1043	-68%

The above table shows, with the exception of the wounding offences, the trend has been a reduction in offences since 2002-3 when the PFi Project Commenced. The improvement of street lighting will undoubtedly been a contributory factor to the reduction of offences, but this is just part of the City of Stoke-on-Trent Councils' bigger picture, which has seen the introduction of strategies such as Stoke-on-Trent Safer City Partnership was officially launched in October 2007 to improve community safety. The Safer City Partnership is responsible for implementing the national crime, disorder, drug and alcohol strategies at a local level.

The following table shows national trend and provides a comparison for the period 2003 to 2011.



The above table was provided by Office for National Statistics

5 – ROAD SAFETY

The Government's casualty reduction targets have been achieved in Stoke-on-Trent over the last ten years, though the number of people killed or seriously injured is still unacceptably high. The table below shows an overview comparison between 2002 prior to the PFi Project to 2010. The trend shows that since the introduction of the PFi project there has been a reduction in casulties/injuries.

Road Accident Data	2002	2010
Killed or serious injured (total)	114	45
Slightly injured (total)	1309	903
Child Killed or seriously injured*	27	6
Casualties 16-25 years**	409	279
Motorcycle casualties**	120	59
Pedal cycle casualties**	67	56
*Child killed or seriously injured figure is included within total killed or seriously injured total.		
**These individual injury figures are included within the total slightly injured total .		

The above data for Stoke-on-Trent has been provided by Staffordshire Safer Roads Partnership/Staffordshire Police.

For further localised accident information please refer to Appendix 2 – Innovation Report.

6 - INNOVATION

The last 12 months have seen several initiatives being implemented, either in Street Lighting or across SSE as a whole, including project work and organisational changes. These changes have had a positive effect on the sustained improvements in performance and contract delivery and include the following:

- → Implementation of 'hand held' electronic consoles for on-site operatives to log and complete maintenance works.
- → Working party investigating suitable street lighting innovations that could be implemented in Stoke-on-Trent.
- → Investigation of a new Central Management System to replace the now obsolete first generation Mayflower system.
- → SSE's Heart and Service Value projects aimed at treating our customers like family.
- → SSE's 'Safety Family' initiative is being piloted in Lighting Services.

There remains a need to reduce energy and the consequent CO_2 emissions. One of our major objectives over the next few years is to assist the City of Stoke-on-Trent Council in meeting their obligations and to contribute to SSE's fourth Core Value, sustainability.

Energy Management

The use of a Central Management System is not new to Stoke-on-Trent, the PFi Project has seen the implementation of the original Mayflower CMS system from the start of the PFi Project. This system is now life expired and over the coming months will see its replacement with the Mayflower second generation system.

The implementation of Mayflower 2 will replace all the existing equipment located in various parks across the City. It will also be used in the Innovation areas to trial the facilities of part night lighting and variable lighting levels (dimming).

Low Energy Light Sources

From the outset of the PFi Project the solution to illuminate back lanes was replaced. It was originally planned to install 50w son lanterns, but the light source was revised to a combination of 36w and 24w fluorescent lanterns which have proved to be successful and will deliver a substantial energy saving for the lifetime of the Project agreement. In addition to the back lanes, a section of Potteries Way, Hanley has been installed using a 140w Cosmopolis white light source, this has been well received and has provided a saving against the previous 150w son.

LED Light Sources

The benefits of using LED technology includes: reduced energy consumption; reduction of the carbon footprint; reduced maintenance visits; and, increased lamp life replacement. There have been several highway safety schemes across the City that have included LED light sources for road traffic signs, bollards, centre refuge island poles and Zebra crossings. A project at Glyn Place, Burslem has seen the introduction of LED lanterns mounted in 6m lighting columns.

At present this technology is relatively new and like most new products comes at a premium price when compared to existing options. As the cost of the LED technology out weighs any savings that would be made it is not perceived to be a viable option with regard to wide scale use at this time. However, LED Light Sources will be used in the innovation area, it will help us look at the options that will be most suitable for future use within the City. Within the innovation areas there will be SON lanterns replaced with LED lanterns and also retro-fit lanterns, which will convert a standard lantern to an LED light source. As more LED products become available in the street lighting industry and competition increases it is anticipated that the purchase costs will reduce making the LED option more attractive.

No Energy Light Sources

The ultimate way to reduce energy and make carbon reductions is to use equipment that does not need to be illuminated. From the commencement of the PFi Project a de-illumination program of road traffic signs has been carried out. This is achieved by replacing old stock with highly reflective signs which omit the requirement for being illuminated and meet legislative requirements. De-illuminating a sign lighting unit will provide an energy saving 32w per sign (based on a 2x8w mcf/u lamp sign lighting unit).

Further to the above a non-illuminated bollard is on long term trial in the City, again bollards can only be de-illuminated where legislative measures can be met. Bollards are often victims of vandalism and road traffic incidents, and to date the un-illuminated bollard on trail has been free from this. De-illuminating a bollard will provide an energy saving 32w per bollard (based on a 2x11w PL lamp bollard).

Innovation for the community

In addition to researching and implementing innovative ideas and technologies that improve the efficiency of street lighting, SSE has implemented an innovative application to assist the community of Stoke-on-Trent in reporting of a faulty street light. The SSE Contracting website, 'lights on in Stoke' at lightsoninstoke.co.uk gives any resident direct access to reporting a faulty street light and not just by writing down the location and sending an email. The website gives the user an interactive map and shows positions of units so that the resident is able to select the correct unit to register a fault against.

For further information on Innovation please see Appendix 2 – Innovation Report.

7 – ASSET REPLACEMENT

With the Initial Asset Replacement Programme complete (IARP), the Asset Replacement Programme (ARP) continues to progress as lighting columns become life expired.

364No units were replaced last year in the following streets:

Hollywall Lane, Sandyford
Knypersley Road, Norton
Cobden Street, Dresden
New Century Street, Hanley
Ogmore Grove, Meir
Glendue Close, Trentham
Leek Road, Stoke
Liverpool Road, Stoke
The Strand, Longton
Boothen Road, Stoke
Garner Street, Etruria
York Street, Hanley
Leek New Road, Cobridge/Stockton Brook
City Road, Fenton
Bethesda Street, Hanley
Gilman Street, Hanley
John Street, Hanley
Parlimant Square, Hanley
Gold Street, Longton
Heathcote Road, Longton
Market Street, Longton
Reid Street, Middleport
Howard Place, Shelton
Snow Hill, Shelton
Chumleigh Grove, Stanfields
Boscombe Grove, Trentham
Whieldon Road, Heron Cross
Gilman Street, Hanley
Stoke Road, Shelton
Transport Lane, Longton
Chell Heath Road, Chell Heath
Little Chell Lane, Little Chell
Turnhurst Road, Packmoor
Trade Street, Stoke
Victoria Park Road, Tunstall
Hilton Toad, Hartshill
Chell Street, Hanley
Uttoxeter Road, Longton
Dewsbury Road, Fenton
Quadrant Road Hanley
Gravelly Bank, Lightwood

Merrick Street, Hanley
Heathcote Road, Hanley
Woodhouse Street, Stoke
Chapel Lane Link Road, Burslem
Furlong Passage, Burslem
Moorland Road, Burslem
Cobridge Road, Cobridge/Hanley
Baths Passage, Fenton/Longton
Chell Street, Hanley
Etruria Road, Hanley
Old Town Road, Hanley
Potteries Way Slip Roads, Hanley
Town Road, Hanley
Brookside, Longport
Shelton New Road, Shelton
Eldon Stret, Sneyd Green
Albion Square, Hanley
Clough Street, Hanley
Campbell Road, Stoke
Marsh Street North, Hanley
Sampson Street, Hanley
Trinity Street, Hanley
Consort Street, Hartshill
Sunnyside Avenue, Little Chell
Commerce Street car park, Longton
Hide Street car park, Stoke

8 – HEALTH AND SAFETY DATA

The first core value of SSE is 'Safety'. SSE is proactive in promoting health and safety amongst its staff. This is achieved using the following tools:

- Site Safety Inspections – SSE Contracting Operational Managers at Stoke-on-Trent carried out over 109 inspections at work sites across the City of Stoke-on-Trent during the project year 2010-11

- Near-miss/hazard reports (report of a situation which has been identified that has the potential to cause damage or injury.) – SSE Contracting staff at Stoke-on-Trent completed over 493 reports during the project year 2010-11.

- Challenge Campaign – SSE encourage all staff to openly 'challenge' other staff if they identify an 'unsafe' act.

- Mission Zero – Each and every working day all staff receive a safety brief. This will consist of relevant topics for that day, which could include a safety bulletin, weather conditions or local issues.

- Toolbox talks – Any change in procedures; learning from incidents elsewhere in SSE and externally; training sessions enable staff to be briefed on the latest topics.

- Competency Portfolios – Through the Association of Signals, Lighting and other Highway Electrical contractors (ASLEC), a portfolio system is used to track and log the competency of each operative who SSE Contracting sets to work within Stoke-on-Trent. This process involves timetabled on-site audits which are carried out on operatives to prove their competence and to ensure the required standard is maintained. Training records are also managed through the portfolio system to sure all operatives' training is up to date.

- Road Safety – SSE Contracting depot have recently been awarded for there driving safety with an internal award of £1000 which was donated, split between two local charities in Stoke-on-Trent.

All the above have contributed towards SSE Contracting staff's safety culture in Stoke-on-Trent, having gone 84 months free from HSE Major Reportable Incidents; 90 months free from a Lost Time Injury; and 105 months free from a Class 1 Road Traffic Collision.

SSE Contracting

9 – CUSTOMER FEEDBACK

As part of our commitment to Customer Service, this year we publicised our desire to involve the residents of Stoke-on-Trent in our annual survey to gauge how satisfied the public are with the service provided by our company.
Two advertisements were placed, one in the local 'Evening Sentinel' newspaper and a second in the local 'Focus' business magazine. Via these advertisements we encouraged people to visit our website and complete a short questionnaire regarding the new street lighting and the standard of it's maintenance. There was also the added incentive of a prize draw in which participants completing the questionnaire could win a meal for two.

After the closing we were very disappointed to find that one completed form had been received and thus were unable to collate any information. With the failure of the advertising campaign, in order to obtain residents perception of the public street lighting in Stoke-on-Trent a traditional door-to-door survey to obtain the views of one hundred residents. A copy of the questionnaire can be found in Appendix 3.

Further to this we have included in Appendix 4 details from the Stoke-on-Trent Authority Dashboard and Appendix 5 NHT Public Satisfaction survey for Stoke-on-Trent. Appendix 4 and Appendix 5 compare Public Street Lighting against other factors including Highway Services and thus establishes the public view across a wider consideration.

Customer Survey

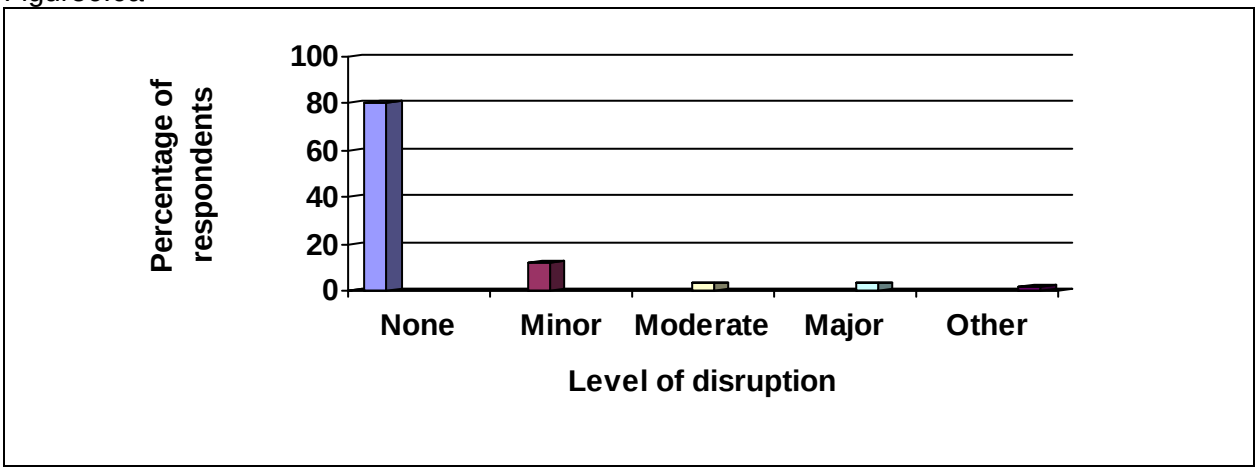
Disruption Experienced

Table 6.0

Level of disruption	% of respondents
No disruption	80%
Minor disruption	12%
Moderate disruption	3%
Major disruption	3%
No comment	2%

In Stoke-on-Trent the majority of residents indicated that they experienced either no disruption or minor disruption as a result of construction works. A minority of residents felt they had experienced moderate or major disruption (see Table 6.0 and Figure 6.0a).

Figure6.0a



Causes of Disruption

Table 6.1

Type of disruption	% of respondents
Access restricted	32%
Noise	26%
Fumes	3%
Traffic congestion	26%

Where concern of disruption was evident and associated with street lighting works, results showed three main areas of causation, access to property; noise; and traffic congestion. A minor response held fumes as a cause of disruption (see Table 6.1). We welcomed residents comments on disruption, these included responses such as: 'barriers outside my house were constantly knocked into the road'; 'it would have been better if the work had been done quicker'; and, 'there were too many contractors on-site'.

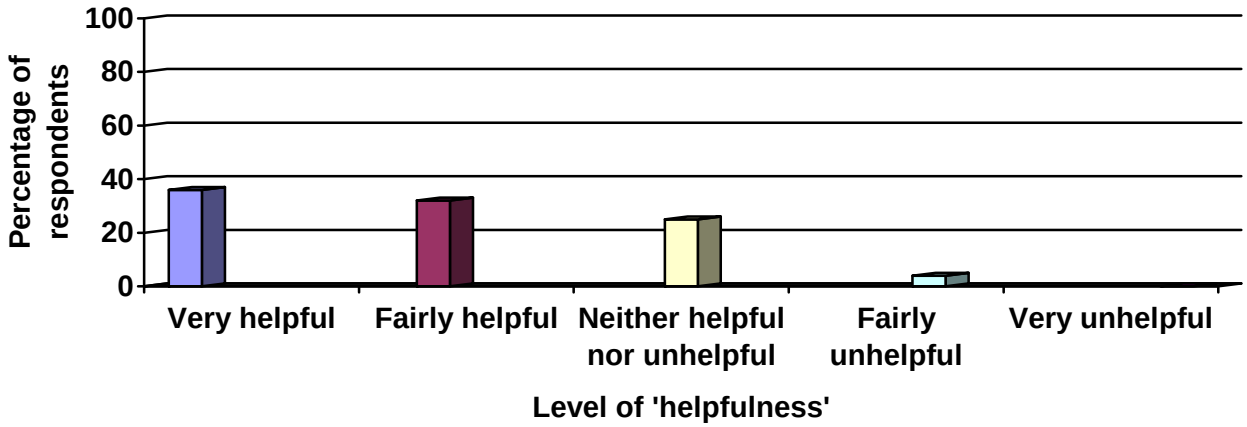
Contact with on-site staff

Table 6.2

Level of on-site staff 'helpfulness'	% of respondents
Very helpful	36%
Fairly helpful	32%
Neither helpful nor unhelpful	25%
Fairly unhelpful	4%
Very unhelpful	0%

48% of respondents had made contact with on-site operatives during construction work. Of this 48%, 36% of respondents considered on-site staff to be 'very helpful' further to this 32% found on-site staff 'fairly helful'. Thus, 68% of residents who had had contact with on-site staff gave a positive response. Just 4% of respondents found on-site staff to be unhelpful (see Table 6.2 and Figure 6.2a)

Figure 6.2a



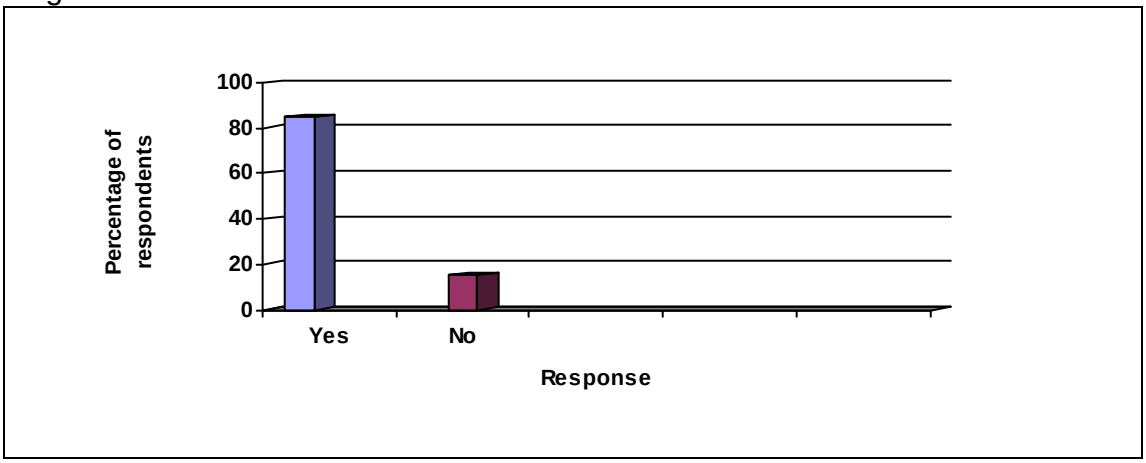
Area Improvement

Table 6.3

Has the new street lighting improved the local environment?	% of respondents
Yes	36%
No	32%

An overwhelming 85% of residents thought that the replacement street lighting had improved the area in general. This was against 15% who gave a negative response (see Table 6.3 and Figure 6.3a).

Figure 6.3a



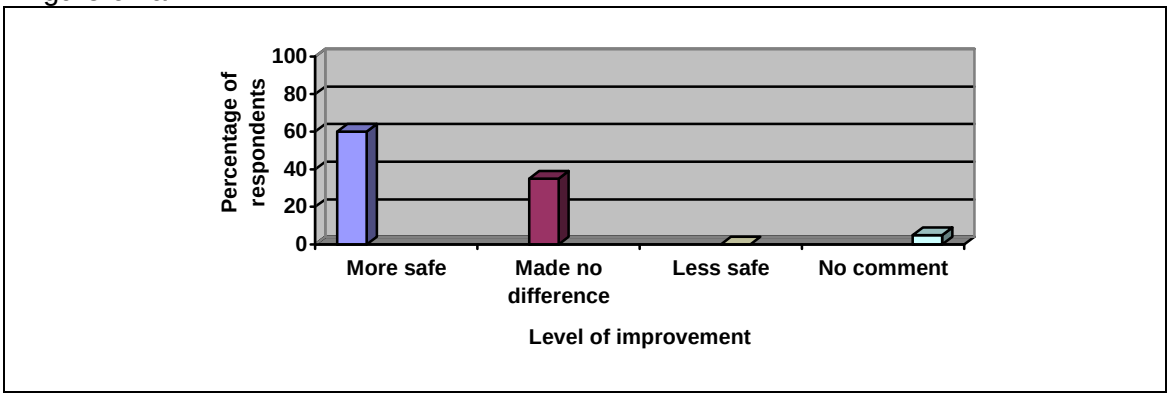
Perceptions of Area Safety

Table 6.4

Level of improvement in relation to feeling safer	% of respondents
More safe	60%
Made no difference	35%
Less safe	0%
No comment	5%

60% of respondents felt that the new street lighting had made them feel safer. Around 35% of respondents felt that the new street lights had made no difference to their feelings of safety (see Table 6.4 and Figure 6.4a). Positive residents comments on this included responses such as: 'it has got rid of shadows'; 'it's much brighter in the alleyways and the kids have stopped causing a nuisance'; and, 'I feel safer walking home at night'. In contrast negative comments included: 'criminals will always commit crime'; 'the people who steal and vandalise here don't care if they are seen'; and, 'the lights don't make any difference, crimes happen day and night'.

Figure 6.4a



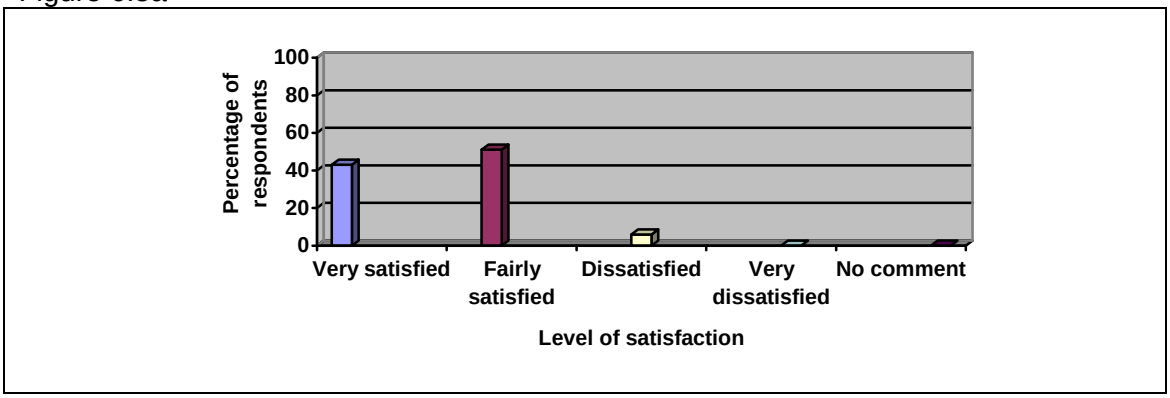
Overall satisfaction with the Street Lighting in the Area

Table 6.5

Level of satisfaction	% of respondents
Very satisfied	43%
Fairly satisfied	51%
Dissatisfied	6%
Very dissatisfied	0%
No comment	0%

94% of respondents expressed satisfaction with regard to their overall view of the street lighting in their area. Only 6% expressed any dissatisfaction (see Table 6.5 and figure 6.5a)

Figure 6.5a



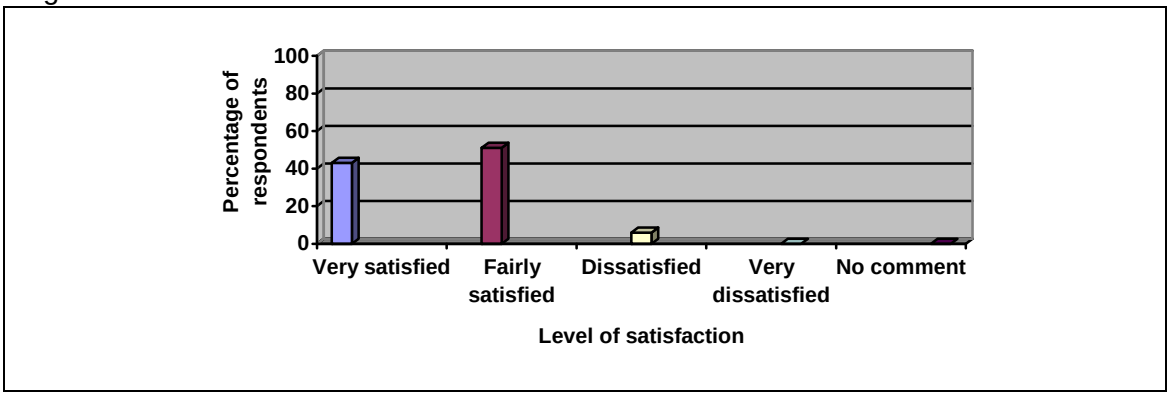
Satisfaction with the brightness of the street lighting

Table 6.6

Level of satisfaction of brightness	% of respondents
Very satisfied	53%
Fairly satisfied	43%
Dissatisfied	4%
Very dissatisfied	0%
No comment	0%

96% of respondents were satisfied with the brightness of the new street lighting, against 4% who were dissatisfied (see Table 6.6 and Figure 6.6a).

Figure 6.6a



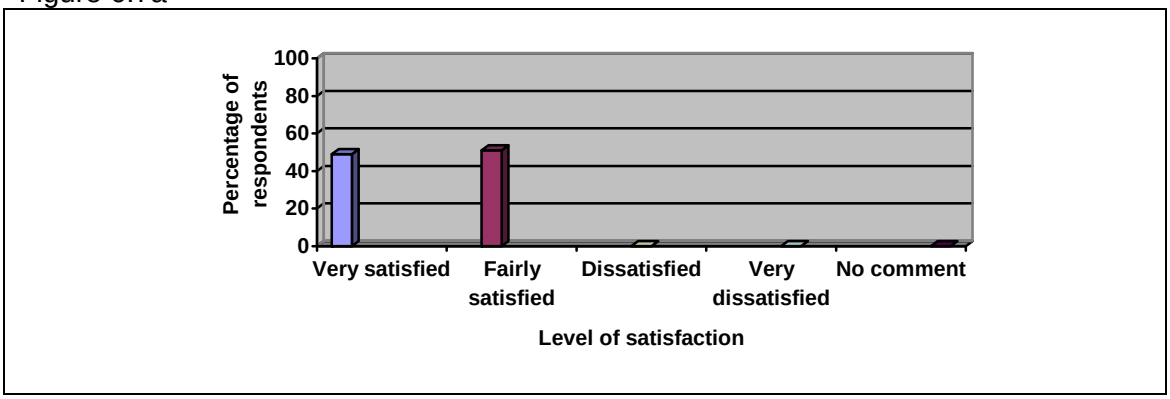
Satisfaction with the speed of the street lighting repairs

Table 6.7

Level of satisfaction to speed of repairs	% of respondents
Very satisfied	49%
Fairly satisfied	51%
Dissatisfied	0%
Very dissatisfied	0%
No comment	0%

All respondents were satisfied with the speed of repairs to street lighting in their area (see Table 6.7 and Figure 6.7a)

Figure 6.7a



Reporting a street lighting fault

From the survey only 32% of respondents had actually reported a street lighting fault (see table 6.8).

Table 6.8

Unit type	% of respondents
Lighting column	28%
Illuminated bollard	1%
Illuminated sign	3%
Other	0%
Not reported a fault	0%

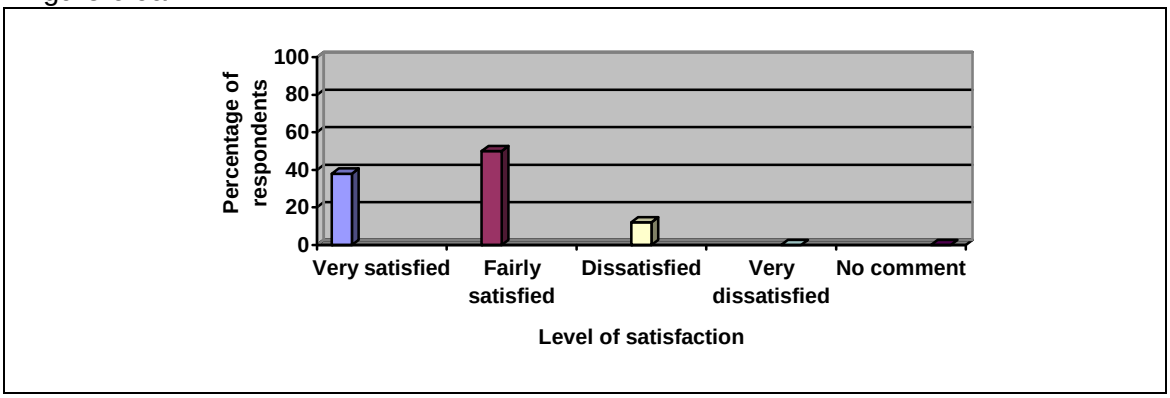
Satisfaction with response received

Table 6.9

Level of satisfaction	% of respondents
Very satisfied	38%
Fairly satisfied	50%
Dissatisfied	12%
Very dissatisfied	0%
No comment	0%

88% of residents were satisfied with the response that they received to the reported street lighting problem. Dissatisfaction was relatively low at 12% (see Table 6.9 and Figure 6.9a).

Figure 6.9a



Methods of fault reporting

Table 6.10

Method of reporting fault	% of respondents
Call Centre	59%
Website	29%
Other	12%

59% of residents who have previously reported a street lighting fault chose the call centre free phone number as their preferred method of reporting a street lighting fault. Using the website was second choice at 29%. 12% used alternative methods such as calling City of Stoke-on-Trent Council.

Methods of fault reporting (residents not yet used)

Table 6.10

Method of reporting fault	% of respondents
Call Centre	52%
Website	45%
Other	3%

Of the respondents not yet having reported a lighting fault, 52% would prefer to use the call centre free phone number and 45% expressed a preference that they would use the website. The remaining 3% would use another means, such as writing (see Table 6.11).

Website satisfaction

Of the respondents who had reported a fault via the website, 93% of respondents found the website easy to use and understand, 7% did not think that this was the case (see Tables 6.12 and 6.13).

Table 6.12

Is the website easy to use?	% of respondents
Yes	93%
No	7%

Table 6.13

Can the website be more user friendly?	% of respondents
Yes	29%
No	71%

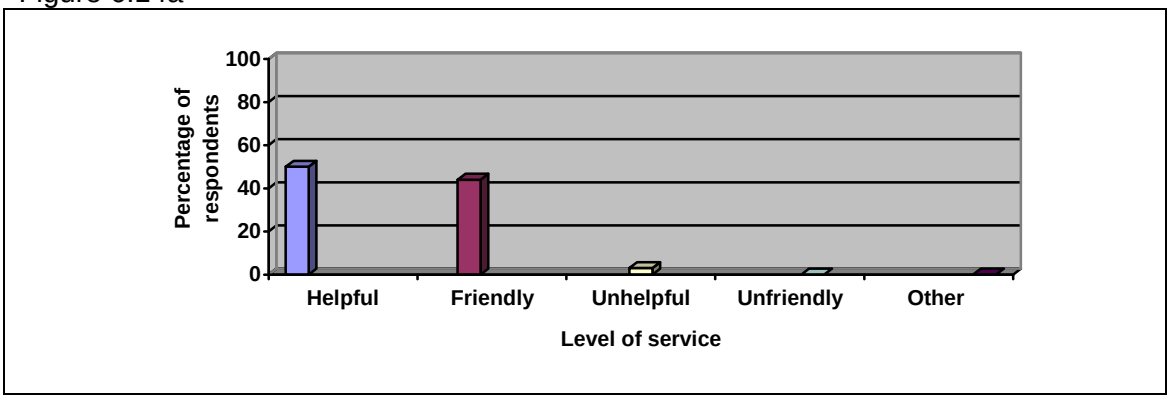
Reporting a fault via the call centre

Of the respondents who had used the call centre the results were positive with 94% of responses reporting the call centre staff as being friendly and helpful (see Table 6.14 and Figure 6.14a).

Table 6.14

Level of service	% of respondents
Helpful	50%
Friendly	44%
Unhelpful	3%
Unfriendly	0%
Other	3%

Figure 6.14a



10 – CONTINUOUS IMPROVEMENT

Maintenance activities are managed via a bespoke facilities management system. Data is stored on every lighting point for the duration of its life. Routine and non-routine maintenance reports are generated directly from the Facilities Management System. The Facilities Management System is being continually improved to assist in the management of the contract and now interacts with a hand held electronic device that allows jobs to be directly passed to the operative in the field and the operatives can load faults straight onto the Facilities Management System from on-site.

The 'hand-held' units are secured within operational vehicles using a cradle mount, but can be detached to be used outside the vehicle, for example works on footpaths or in parks. The 'hand-helds' have a Windows based operating system and connect to the internet and GPRS. The 'hand-held' devices are initially being used for non-routine maintenance faults, they provide the operative on-site direct access to the Stoke-on-Trent Public Street Lighting inventory information and mapping; and provides the facility for real time logging and completions for jobs. The mapping reduces the need to ring in to the office for locating awkward column positions and gives the operatives historical information to avoid repeat visits, which have reduced significantly since the 'hand-helds' were introduced. A 'hand-held' is also used by the night patrol scout to record faults, this reduces paper and an also frees up administration time as all the faults are logged in real time. The implementation of the night patrol scout using a hand held has assisted in reducing repeat visits. This system has an improved accuracy over paper systems as the night patrol scout can view units on the 'hand held' maps and thus ensures the fault is logged to the correct unit.

APPENDIX 1

Street Lighting Carbon Emissions & Energy Efficiency Response Paper for Stoke On Trent City Council

Prepared by SSE Contracting on behalf of Tay Valley Lighting

Executive Summary

The Authority and SSE Contracting have held discussions in advance of this paper regarding the need and desire of both parties to reduce energy consumption relating to street lighting in Stoke on Trent.

In this second paper on energy saving options we look at a number of specific technical proposals which have been discussed with the Authority and the contractual mechanisms to make a change in the Project.

At this stage SSE Contracting can recommend a number of the technical options considered, namely:

- → 1 – Option 3: Installing Photo-Electric Cells in Bollards
- → 2 – Option 4: Part-Night Lighting on Back Lanes

SSE Contracting is willing to self fund, at no additional cost to the Authority, the capital cost of these two options. SSE Contracting shall receive the benefit from the reduction in energy consumption, which shall assist to compensate for the additional energy consumption it is paying over the contractual forecast. The Authority shall benefit from reduced Carbon Dioxide emissions and shall corporately be able to show energy savings in the overall project.

If the Authority is agreeable to this proposal SSE Contracting will be willing to propose a formal Project Change for the Authority to accept. This shall require an agreed amendment to the Output Specification.

In addition to the above, there are a number of options including retrofitting electronic dimmable control gear and white light lamps, and/or LED technologies. SSE Contracting is willing to further investigate these options with the Authority to determine if we can jointly fund and benefit from any of these solutions.

In order to decide if any of these options shall be taken forward a number of decisions shall need to be made by both parties. This includes, but not limited to, agreeing:

- → one or two options to model in greater detail
- → the parameters for additional detailed modelling e.g. indexation profiles, future energy price, discounting principles (if appropriate) etc.
- → the preferred funding mechanism
- → the cost expenditure split between the parties to enable benefit sharing to be calculated
- → timescales for delivering the change

It is recommended that a meeting is set-up between SSE Contracting and the Authority monitoring team including relevant decision makers in the Authority finance/highway departments to determine the answers to the above questions.

Introduction

This is the second paper for Stoke-on-Trent City Council, relating to carbon emissions & energy efficiency measures.

SSE Contracting, on behalf of Tay Valley Lighting has researched, investigated and priced a number of carbon emission & energy saving options for the Authority. This paper is being jointly issued to the Council and internally to SSE Contracting for consideration.

The solutions considered in this paper have been previously discussed and agreed with the Authority's contract management team.

The proposal's investigated are:

- → Passive Energy Metering to avoid Carbon Reduction Commitment (CRC) charges
- → Reducing the hours a street light is in light by replacing Photo Electric Cells
- → Controlling traffic bollards with a Photo Electric Cell
- → Part-night lighting in back lanes
- → Replacing/Retrofitting residential lanterns with:
    - o Energy efficient LED lighting
    - o Philips white light lamps (Cosmopolis)
    - o Electronic control gear and white light General Electric lamps
- → De-illuminating 500 traffic bollards
- → Traffic Route Lantern retrofitting options
- → Central Management Systems (separate by Mayflower**)**

1.1 Assumptions

a) The following assumptions have been used in the calculations made:

b) The calculation table contained within each option demonstrates the energy for each option along with any additional maintenance cost/saving. Each of the figures is annual and based on implementation of the full quantity of control gear replacements for the lanterns as detailed in the 'Stoke on Trent - Lanterns Installed' table provided.

c) Energy savings have been valued using the unit price below:

d) Energy price is based on 9p/KWh

e) CO_2 savings although shown have not been calculated with-in the evaluation as these will be a direct saving to the Council.

f) Savings are calculated on the basis total savings and do not take account of any sharing mechanisms which may exist in the contract.

g) Capital costs and maintenance costs are based on normal payment terms e.g. 30 days after invoice, monthly invoices in arrears and do not include any funding/borrowing costs, should this be required.

h) The payback period is calculated on the basis that all apparatus has been installed and full savings are achieved, however there will of course be a gradual increase in savings during the replacement period, which is not factored into these calculations.

i) All costs shown are based at June 2011 prices.

j) Indexation and Funding is dealt with separately at the end of this proposal. Indexation and Funding costs are not shown in the Payback Calculations. Once a funding mechanism is agree, a time period for replacement is known and an energy sharing mechanism is negotiated these can be factored into the Authorities payback.

1.2 Technical Options

a) Option 1 - Passive Energy Metering

SSE Contracting has re-forecast the contract energy consumption based on a passive energy metering approach. This increase in energy consumption will allow the Authority to offset its CRC charges. The contract changes are being assessed by Nathan Dore and Jim Huyton.

b) Option 2 - Replacing Photo-Electric Cells (PEC's) with different LUX Settings

All lanterns in Stoke-on-Trent are switched on/off using a 70/35 Lux Switching regime. Replacing the existing photocell with a new switching regime can reduce the number of hours the street light is in-light during the year and therefore save money. This equates to each street light being switched off for only a few minutes longer per day.

SSE Contracting have looked at two different switching regimes:

55/28 Lux and 35/18 Lux. This would achieve a benefit in energy saving of 279,418Kwh or 378,096Kwh respectively per year in comparison to the current PECU Array consumption when fitting to all illuminated apparatus. It is proposed that the PEC replacement would take place at planned maintenance visits i.e. bulk lamp change/clean.

	Cost/Benefit 55/28 LUX	Cost/Benefit 35/18 LUX
Capital Replacement Quantity	38,752	38,752
Average Capital Replacement Unit Cost	£13.08	£13.08
Total Capital Cost (Real)	£506,745	£506,745
Energy Saving Per Year (Kwh)	279,418 Kwh's	378,096 Kwh's
Annual CO_2 Saving	150 Tonnes	203 Tonnes
Energy Saving Per Year (£)	£25,148	£34,029

Payback Period	20 yrs	15yrs

c) Option 3 - Installing Photo-Electric Cells (PEC's) in Bollards

Currently Illuminated Bollards are on continuous and the above calculation 'Replacing Photo-Electric Cells' includes retro-fitting PEC's to bollards. The table below indicates energy savings if fitting PEC's to illuminated bollards only so that they are off during daylight hours. This option will incur an additional annual maintenance rate to cover possible PEC failure.

	Cost/Benefit 55/28 LUX	Cost/Benefit 35/18 LUX
Capital Replacement Quantity	1,230	1,230
Average Capital Replacement Unit Cost	£26.23	£26.23
Total Capital Cost (Real)	£32,263	£32,263
Energy Saving Per Year (Kwh)	192,029 Kwh's	193,142 Kwh's
Annual CO_2 Saving	103.12 Tonnes	103.72 Tonnes
Energy Saving Per Year (£)	£17,282	£17,383
Additional Annual Maintenance	+£1,181	+£1,181
Payback Period	2yrs	2yrs

d) Option 4 - Part-night lighting on back lanes

All back lane lanterns in Stoke-on-Trent are switched on/off using a 75/35 Lux Switching regime. Replacing the existing photocell with one which switches lights on during the early evening, but then off during the middle of the night, and switches lights back on in the morning has energy saving benefits. The new Part Night switching regime significantly reduces the number of hours the street light is in-light during the year and therefore saves money. This may not be publically acceptable.

The Part Night switching regime used for this calculation is – Regime 762 Dusk to 24.00 / 05.30 to Dawn 35 Lux. This has been applied to all back lane lanterns with a PL light source. This would achieve a benefit in energy saving of 157,814Kwh or £15,263 respectively per year in comparison to the current PECU Array consumption. It is proposed that the PEC replacement would take place at planned maintenance visits i.e. bulk lamp change/clean.

	Cost/Benefit
Capital Replacement Quantity	2,380
Capital Replacement Unit Cost	£15.68

Total Capital Cost (Real)	£37,301
Energy Saving Per Year (Kwh)	157,814 Kwh's
Annual CO_2 Saving	84.75 Tonnes
Energy Saving Per Year (£)	£14,203
Payback Period	2.6 years

The calculation above is based on the number of lanterns installed as shown in table 1:

Table 1: Luminaires installed

Luminaires Installed		
Lamp Source	**Manufacturer**	**Quantity**
36w PLL	Philips	279
24w PLL	Philips	2,101
	Total	**2,380**

e) Option 5 – Replacing/Retrofitting Residential Lanterns

A number of options have been considered for residential areas. Those considered, detailed below, all have a white light source permitting the lighting standard to be dropped from S3 to S4.

→ LED scheme using the 50w Dialight 2LE4-6 Lantern Unit

Design work carried out in residential area – Shelburne Street. Lantern met and complies with the required lighting standard but the LED's are driven harder than competitors. This raises concerns with longevity of the unit and the additional requirement for replacements over the remainder of the Project lifetime. Due to this and the initial capital costs this option is not recommended. This may be reviewed as improvements to LED technology are made.

→ LED scheme using the 58w Urbis Piano Lantern

Design work carried out in residential area – Munro Street. Lantern met and complies with the required lighting standard. This lantern requires high initial capital investment. This option is not recommended due to the high capital cost.

→ Cosmopolis scheme using the 45w Philips SGS Lantern

Design work carried out in residential area – Boothenwood Terrace. It would not be feasible to reuse the existing lantern. Due to the design of the cosmopolis lamp everything would need replacing - control gear, lampholder along with the optic. The lantern met and complied with the required lighting standard. As above the lantern does require high initial capital investment. As such this option is not recommended for wide scale implementation.

→ LED scheme using 46w Philips Mini Iridium Lantern

Design work was carried out using the 24xLED 46w lantern. A number of residential streets – Arbour Street, Festing Street, Grafton Street and Mayer Street were evaluated. The lantern met and complied with the required lighting standard. As

above, due to the initial capital investment it would take the majority of the remaining project term to recover investment. As such this option is not recommended for wide scale implementation. However, with improving LED technology this option may become viable in the future and consideration a trial site.

→ Replacing Existing Control Gear and Lamp Source

For this option design work was carried out in a number of residential areas – Arbour Street, Festing Street, Grafton Street and Mayer Street. Using a white light source it is possible to replace the existing 70w SON with a 50w GE StreetWise lamp. This option will also require control gear replacement. In carrying out this an electronic ballast would be installed which will provide additional benefits of pre-programmed dimming cycles. These dimming regimes would require further discussion with the Authority to agree. For this evaluation two examples are provided below; straight forward replacement with no dimming and 25% power reduction midnight to 5 a.m.

In carrying out this evaluation there is limited photometry data available. As such we have had to use photometry data from an alternative lantern. This data shows that lighting standards are compliant in most circumstances, there were a couple of areas where the required lighting levels just failed to be met. Further work will need to be done with the lamp manufacturer to obtain accurate photometric data for the different optic settings with regard to the Stoke lanterns. The ballast proposed does not yet have approved Elexon codes. It is currently with them for evaluation. For the evaluation assessed wattages of a similar electronic ballast have been used. The lamp is still new to the industry, lamp replacement cycles are therefore based on current manufacturer's data.

This calculation is based on moving to a 4 year clean and change cycle and a quantity of 2,000 lamp and control gear replacements.

	Cost/Benefit	Cost/Benefit Using 25% power dimming regime
Capital Replacement Quantity	2,000	2,000
Average Capital Replacement Unit Cost	£94.67	£94.67
Total Capital Cost (Real)	£189,340	£189,340
Energy Saving Per Year (Kwh)	272,184 Kwh's	312,213 Kwh's
Annual CO_2 Saving	146 Tonnes	168 Tonnes
Energy Saving Per Year (£)	£24,497	£28,099
Additional Annual Maintenance	+£6,140	+£6,140
Payback Period	10.3yrs	8.62yrs

This option is worth further consideration and introduction of a possible trial site within the project area.

In relation to this option there is an alternative new lamp source that we currently have on trail, a 'Powerball'. Initial feedback looks positive but further evaluation is required. Once further investigative work is carried out we will provide you with feedback and discuss further with you.

f) Option 6 – De-Illuminating Traffic Bollards

The proposal is to replace Illuminated Traffic Bollards with Single Aspect Non-Illuminated Traffic Bollards where the Traffic Regulations permit.

The Authority have identified that there are approximately 500 Illuminated Traffic Bollards that could be replaced with High Reflective Non-Illuminated Traffic Bollards. Depending on how the existing bollard supply is fed this will involve disconnection or isolation of the incoming electricity supply. If the supply is directly off the electricity distribution network, this will require the services of the local distribution network operator to perform the disconnection, increasing the costs significantly. If the supply is via a sub-circuit from other illuminated project apparatus this may be carried out by the service provider with local isolation. This method allows for quick reversal back to an illuminated bollard if required. Costs for both options are detailed below. The unit chosen for this comparison is the Simmonsigns Weebol. The accrual rate ('y' value) for the non-illuminated bollard allows for scouting, minor repairs and 2 cleaning visits per year. No allowance for lifecycle replacement is included in this rate. DNO disconnection costs are based at today's current rates.

DNO Distribution Network

	Cost/Benefit
Capital Replacement Quantity	500
Capital Replacement Unit Cost	£341.22
DNO disconnection of supply	£249.54
Total Capital Cost (Real)	£295,380
Energy Saving Per Year (Kwh)	140,256 Kwh's
Annual CO_2 Saving	75.32 Tonnes
Energy Saving Per Year (£)	£13,565
Annual Maintenance – 'y' values De-accrual of existing bollard Accrual of non-illuminated bollard Annual maintenance saving per bollard Total Maintenance Saving	 £24.26 £17.84 £6.42 £3,210
Payback Period	17.6 years

Local Isolation

	Cost/Benefit
Capital Replacement Quantity	500
Capital Replacement Unit Cost	£357.84
Total Capital Cost (Real)	£178,920
Energy Saving Per Year (Kwh)	140,256 Kwh's
Annual CO_2 Saving	75.32 Tonnes
Energy Saving Per Year (£)	£13,565
Annual Maintenance – 'y' values De-accrual of existing bollard Accrual of non-illuminated bollard Annual maintenance saving per bollard Total Maintenance Saving	 £24.26 £17.84 £6.42 £3,210
Payback Period	10.67 years

It is likely that there will be a mixture of both of the above rates. Final true costs for this option cannot be provided without a full on-site survey and further discussion with the Council to establish preferred method of disconnection.

g) Option 7 – Traffic Route Lantern Retrofit Options

Evaluation to follow – For reference the evaluation is being carried out on Leek New Road.

1.3 Project Change Options

a) SSEC has undertaken a review of the mechanisms within the Stoke-On-Trent project for changing the specification and delivery of lighting solution.

b) There are three main areas that deal with change and the split of cost/benefit sharing between the parties, the Payment Mechanism, Schedule 6 Change Procedure and clause 9.5 of the PA. Details of these three elements are below.

a) Payment Mechanism

Clause 2.6 of the Payment Mechanism deals with Adjustments to the forecast energy consumption. To summarise the principle, the Authority shall pay the energy consumption as forecast/estimated by the Service Provider (subject to adjustments for accruals/de-accruals etc). Should the actual energy consumption reduce below the forecast energy consumption then the Authority shall be paid the difference, subject to the Service Provider receiving 75% of the benefit of any saving as a result of innovation and/or improvements in Apparatus installed compared to that initially proposed to be installed.

Therefore, should new or improved technology be included in the project which enables an energy saving the contract states that the Authority's share is 25% of the benefit below the forecast consumption.

b) Change Procedure

Schedule 6 of the Project Agreement deals with project changes. Should either party propose a change to the project there is a requirement to calculate the Estimated Revised Project Costs (Capital, Maintenance and Finance costs) and the split of any savings/benefits to each party.

If a Service Provider Change decreases the Service Provider's (or Sub-Contractor's) costs (Capital, Maintenance and Finance costs) of delivering the service, after taking into account all the Service Provider's cost of the change, the saving shall be shared with the Authority as per Schedule 5C, e.g. the Authority get 50%.

If the Authority contributes to the costs of implementing the change the greater the overall cost saving and therefore the greater the value of the Authority's 50% share. If the Service Provider was to pay the costs of the change it is likely that there shall be less benefit to the Authority, as the Service Provider shall be entitled to offset the costs of the change against the full savings to calculate the net savings.

There is an ability for the Authority to seek the Service Provider to obtain funding on their behalf but the costs of this funding would be included in the calculation costs/savings of the change. Some approximate costs of external funding sources have been identified below in the event the Authority may wish to obtain third party funding.

c) Project Agreement Clause 9.5

Clause 9.5 provides the Authority flexibility to bring asset replacement works forward or delay works within the project to assist with other Regeneration plans. This is likely to be of less use to the Authority given the IARP is complete. The process follows Schedule 6 for costs/benefit sharing and is subject to a limit of on the number of units which can be brought forward or delayed in each year.

1.4 **Indexation**

The likely future price increase over time of costs will have a significant impact on Authority value for money assessments. Therefore, TVL has initially provided costs and savings in Real terms (without Indexation).The current economic environment is volatile and there are uncertainties over future levels of inflation, energy price, labour and material costs, exchange rates and the impacts of global markets (China and Japan e.g.) The risks associated with these uncertainties will need to be managed when assessing and comparing the cost-effectiveness of energy saving projects.

To assist the Authority in understanding the impact of indexation SEC's current view on the likely indexation for capital the next 6 years, based on HM treasury figures is shared below:-

2012	2103	2014	2015	2016	2017
4.6%	4.4%	4.4%	4.1%	4.4%	3.5%

To further assist understanding the impact of this, if a £1m on capital replacement work, at today's value, is carried out evenly over the next four years it would cost in Nominal terms (with Indexation) £1.116m, and additional £116,000.00.

SSE Contracting would recommend scenario testing to determine the likely impacts of changes in energy prices.

1.5 Funding

There are four external funding scenarios considered in this paper should the Authority require the Service Provider to obtain funding for a change to the project:

1. TVL securing funding through RBS
2. TVL securing funding through SSE
3. Authority funding by Prudential Borrowing
4. Authority funding by a third party lender (not RBS)

In addition to these four options the Service Provider could contribute to all or part of the costs of a Service Provider Project Change. The Service Provider's costs of implementing the change would be offset against any savings/benefits before the Authority share of saving would be calculated.

Funding Option 1

RBS are not seeking to extend the debt committed to street lighting PFI deals. This is a market in which RBS changed its strategy post the credit crunch and ended further growth.

Funding Option 2

TVL shall need to seek official approval from SSE Executive Board for any funding proposals. Also if SSE wish to invest it would require RBS approval to provide funding to the project, as per the Loan Agreement (Clause 12.34). Any funding offered by SSE is likely to be at a higher rate than could be offered through Prudential Borrowing, a commercial bank, or otherwise sourced by the Authority.

Funding Option 3

Prudential Borrowing shall be the cheapest source of funding for the Authority to pursue, other than directly coming from an Authority annual capital budget. Prudential Borrowing is currently 1% the UK Gilt rate. This is substantially better than commercial loans or corporate loans.

Funding Option 4

In order for TVL to obtain any funding from another funder (other than RBS), it would need the approval of RBS. This is a condition of the Facility Agreement between RBS and TVL.

Using an alternative funder is likely to require extensive due diligence from both funding parties to establish who has security over the Unitary Charge income to repay debt. The cost of this due diligence is likely to prove unfavourable. The second funder is likely to be a second tier funder, e.g. have lower security over repayment. This shall incur higher borrowing rates, due to the higher risk profile.

The table below give indicative rates for borrowing £1m spent over 3 years and repaid over a 15 year repayment term. The costs of borrowing do not include any commitment fees, arrangement fees, due diligence costs or advisory costs.

Table 2: Approximate funding costs

Funding Option for £1m	Approximate Annual Repayment Costs	Approximate Total Repayment Costs
SSE	£114,000	£1.71m
Prudential Borrowing	£95,000	£1.42m
Alternative Funder*	£100,000	£1.5m

*Although borrowing costs for an alternative funder are much the same as RBS the due diligence costs would exceed those of other options.

APPENDIX 2

STOKE-ON-TRENT PFI
INNOVATION REPORT
2010/11

Date:	May 2011
Author:	Steve Reed
Version:	1

For: Stoke-on Trent Council	
Summary:	
Relevant Previous Papers: See Report	**Ref. No.:** None

Proposed Distribution:

- Stoke-on-Trent Council;
- Jim Huyton : Operations Manager, Stoke;
- Mike Williams : Director of Business Support
- Tony Roberts : SSE Innovation Manager
- Neil Kirkby : Regional director - North

INNOVATION REPORT 2010/11

Section A : Reference to Documents and Meetings 2010/11

- Innovation Meeting : 14th April 2010 attended by Neil Kirkby, Alan Brummitt, Mick Evans, Jim Huyton (SSE) and Dave Wishaw (SCC);
- Innovation Meeting : 14th October 2010 attended by Jim Huyton, Steve Reed (SSE) and Dave Wilshaw (SCC);
- Report on the Reduction of Carbon Emissions and Energy – 29th October 2010;
- Report on the Reduction of Carbon Emissions & Energy Efficiency
  - Response Paper for Stoke On Trent City Council – 30th November 2010;
- Stoke Action Plan (Ongoing) : Part 13 – Innovation;
- Innovation Meeting : 16th December 2010 attended by Jim Huyton, Steve Reed (SSE) and Dave Wilshaw (SCC);
- Innovation Meeting : 24th March 2011 attended by Jim Huyton, Steve Reed (SSE) and Dave Wilshaw (SCC);

The main elements of Innovation for 2010/11 are detailed in the above reports, together with the ongoing Action plan;

Section B : Innovations and Projects

1. Back Lanes – Change of Light Source (2003);
2. Installed LED Luminaire Project at Glyn Place;
3. White Light and Variable Light Levels (Dimming);
4. Cosmopolis (White Light) at Potteries Way;
5. Central Management System (CMS);
6. Safer Crossings Initiative & Accident Report Monitoring;
7. Signs and Traffic Bollards;
8. General Maintenance – Hand Held PC Device;
9. SSE Website;
10. Innovation Trial Area – Residential Streets;

Summary

Section B
Innovations and Projects

1. Residential Back Lanes – Change of Light Source (2003)

The original solution for the illumination of residential back lanes undertaken as part of the PFI IARP was based on using High Pressure Sodium (SON) luminaires.

In the event, the actual solution used was that of Florescent (PLL) luminaires, thus reducing Energy and CO^2 emissions whilst at the same time retaining the contractual illumination levels..

The following table details the savings over a 25 year period – From the onset of the IARP in 2003;

	Back Lanes original proposed light source	**Back Lanes actual light source**	**Back Lanes actual light source**
Lamp Type and wattage	50W SON	36W fluorescent	24W fluorescent
Number of Lanterns	2317	1400	917
Total Circuit Watts	66	44	33
Annual energy consumption kW/hr per column based on burning hours of 4124	272	181	136
Total Energy kW/hr based on total number on lanterns	630650	254038	124796
Energy Saving kW/hr	0	**251816**	
Energy costs per column @8.29p/KWhr	£22.56	£15.04	£11.28
Total Energy cost based on total number on lanterns @8.29p/kwhr	£52,280.91	£21,059.78	£10,345.62
Total Running Cost over 25 Years	£1,307,022.80	£526,494.58	£258,640.46
Energy cost saving	£0.00	**£521,887.76**	
CO^2 Consumption over 25 years per column	8577	3455	1697
CO^2 consumption savings over 25 years	0	**3425**	
Total cost of CO^2 Consumption over 25 years @£12 per ton	£102,922.13	£41,459.07	£20,366.77
CO2 cost savings over 25 years	0	**£41,096.30**	

Summary	Energy Saving kW/hr	251816
	Energy cost saving	£521,887.76
	CO^2 consumption savings over 25 years	3425
	CO2 cost savings over 25 years	£41,096.30
Further Action Required	**NONE**	

2. Installed LED Luminaire Project at Glyn Place

A project comprising LED luminaires mounted on Conical Steel columns was installed and commissioned during 2010;

The scheme was undertaken following agreement between Stoke Council and SSE;

Trial Site at : Glyn Place

The Project Comprises

7 No. 6m high Conical Steel Lighting columns fitted with 36 LED lens, Type WRTL, Ref STELLA Luminaires

Design Class : S4 in accordance with British Standards

Steel Column with WRTL STELLA Luminaire

Glyn Place Nigh-time Photo

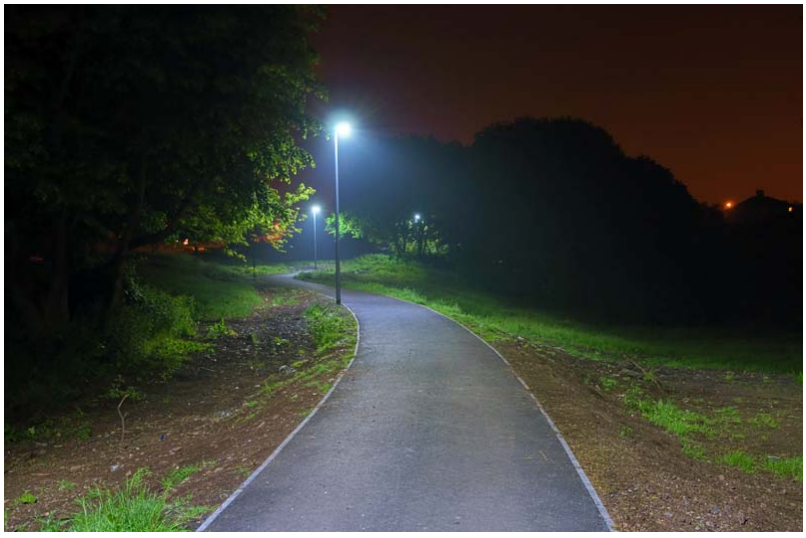


Table 'A'

	Glyn Place design using SON	Glyn Place design using Stella 36 LED
Lamp Wattage	50	36 LED
Number of Lanterns	7	7
Total Circuit Watts	62	42
Annual energy consumption kW/hr per column based on burning hours of 4124	256	173
Total Energy kW/hr based on total number on lanterns	1790	1212
Energy Saving kW/hr	0	**1689**
Energy costs per column @8.29p/KWhr	£21.20	£14.36
Total Energy cost based on total number on lanterns @8.29p/kwhr	£148.38	£100.51
Total Running Cost over 17 Years	£2,522.39	£1,708.71
Energy cost saving	£0.00	**£813.67**
CO^2 Consumption over 17 years per column	17	11
CO^2 consumption savings over 17 years	0	**5**
Total cost of CO^2 Consumption over 17 years @£12 per ton	£198.63	£134.55
CO2 cost savings over 17 years	0	**£64.07**

- → CO^2 consumption savings over the remainder of PFI - 17 years
- → Energy Saving over 17 years

Summary	Energy Saving kW/hr	1689
	Energy cost saving	£813.67
	CO^2 consumption savings over 17 years	5
	CO2 cost savings over 17 years	£64.07
Further Action Required	**Monitor Operation of Luminaires**	

3. White Light and Variable Light Levels (Dimming) - General
Cosmopolis Conversion – Residential & Traffic Routes

SSE Paper on 'Reduction of Carbon Emissions & Energy Efficiency Response Paper for Stoke-on-Trent City Council – 30th November 2010', details in depth options and costs.
Actual number of columns used on streets would be subject to lighting classes being defined and designs prepared.

In brief synopsis of the paper it deals with the following:-

Replacing existing lamp source and control gear with a more energy efficient lamp, control gear and associated lamp holder. This will be done for the following lamp sources:

- → Replacing 250W SON with 140W Cosmopolis;
- → Replacing 150W SON with 90W Cosmopolis;
- → Replacing 100W SON with 60% 90W Cosmopolis and 40% 60W Cosmopolis;
- → Replacing 70W SON with 60% 60W Cosmopolis and 40% 45W Cosmopolis;
- → Replacing 50W SON with 45W Cosmopolis;
- → Replacing existing PLL control gear and lamp with new electronic dimmable control gear and long life lamp;

Further Action Required : See Potteries Way project included as part of this report and Residential Streets Trial;

Variable Lighting Levels on Traffic Routes

Retrofit existing luminaires with electronic control gear for dimming;

Trial Site at Leek New Road

Currently lit to ME3c using 150W SON lamp along the majority of the carriageway the conflict area and a number of DTC stock with 100W SON lamps.

Excluding DTC stock and the conflict area there are 105 number 150W SON lamps.

Below is an example of the variable lighting regime which could be used based on SSE Paper on 'Reduction of Carbon Emissions & Energy Efficiency Response Paper for Stoke-on-Trent City Council – 30th November 2010'.

Power	Time	Light category	Lamp Reduction	Energy Reduction
100%	dusk until 2200Hrs	ME3c	0	0
75%	2200hrs until 0100hrs	Me4b	25%	80.40%
66%	0100hrs until 0500hrs	ME5	42%	35.60%
100%	0500hrs until dawn	ME3c	0	0

DALI codes 246 from 2200Hrs until 0100Hrs and 239 from 0100hrs until 0500hrs.

The energy saving is approximately 78KWH per year per column roughly a 12% saving over the length of the road is a saving of 8190KWH about £680 per year.

Further Action Required : Implement trial at Leek New Road (Number of units within trial to be agreed);

4. Cosmopolis (White Light) at Potteries Way

Following agreement between Stoke Council and SSE, a project has been installed using Cosmopolis lamps as detailed below:-
Potteries Way – 46 No. lighting columns fitted with 92 No. 140 watt CPO luminaires.

	Potteries Way design using SON	Potteries Way design using CPO
Lamp Wattage	150	140
Number of Lanterns	92	92
Total Circuit Watts	172	149
Annual energy consumption kW/hr per column based on burning hours of 4124	709	614
Total Energy kW/hr based on total number on lanterns	65258	56532
Energy Saving kW/hr	0	**60572**
Energy costs per column @8.29p/KWhr	£58.80	£50.94
Total Energy cost based on total number on lanterns @8.29p/kwhr	£5,409.90	£4,686.49
Total Running Cost over 17 Years	£91,968.35	£79,670.25
Energy cost saving	£0.00	**£12,298.09**
CO^2 Consumption over 17 years per column	604	523
CO^2 consumption savings over 17 years	0	**81**
Total cost of CO^2 Consumption over 17 years @£12 per ton	£7,242.09	£6,273.67
CO2 cost savings over 17 years	0	**£968.42**

The above table details a conventional High Pressure Sodium solution in comparison to that of Cosmopolis. It shows savings in;

- → CO^2 consumption savings over the remainder of PFI - 17 years
- → Energy Saving over 17 years

Summary	Energy Saving kW/hr	60572
	Energy cost saving	£12,298.09
	CO^2 consumption savings over 17 years	81
	CO2 cost savings over 17 years	£968.42
Further Action Required	**NONE**	

5. Central Management System (CMS)

SSE operate two functional formats of the Mayflower CMS system (1) original Mayflower 1 and (2) new Mayflower 2.

Mayflower 1

In Stoke-on-Trent, the system currently used is Mayflower 1, which has been installed in various parks across the City.

There are currently 225 No. of the units in operation as following:-

Hanley Park	87 No.
Tunstall Park	27 No.
Burslem Park	30 No.
Central Forest Park	38 No.
Smithpool Road	4 No.
Hulton Abbey	19 No.
Repington Road Play Area	20 No.
Total	**225 No.**

The system works efficiently and has enabled the Council to control units as and when required – switching on/off.

Further Action Required : SSE to TEST and Maintain System and report back to SCC.

Mayflower 2

A new Mayflower system is now available for extensive use, and could be incorporated into the PFI project. New PFI''s have the system installed as a matter of course..

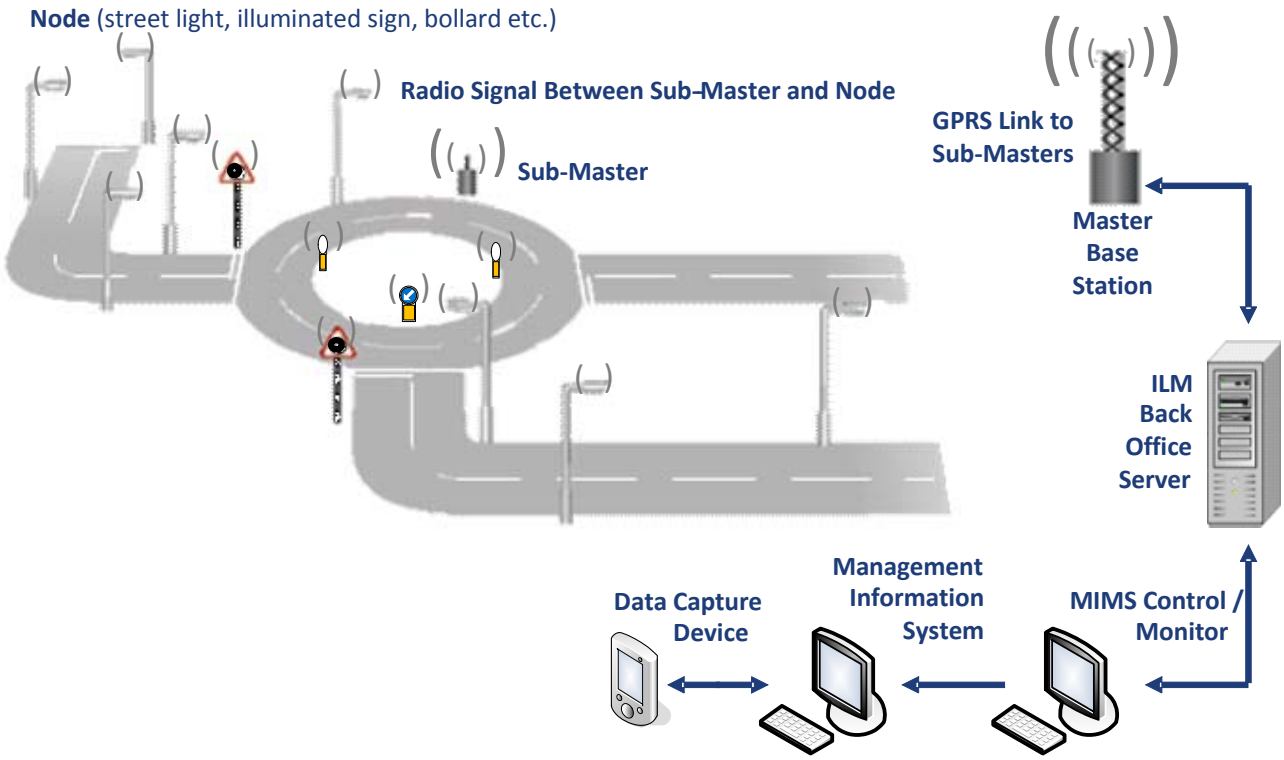
CMS could be installed to give greater flexibility

Switching levels can be changed remotely

Provides actual energy consumption

Reports lighting faults

Typical Mode of Operation for Mayflower 2



Full details on the Operation and Benefits of Mayflower 2 form part of the 'Reduction of Carbon Emissions & Energy Efficiency Response Paper for Stoke-on-Trent City Council – 30th November 2010'.

Further Action Required : No action at this time.

6. Safer Crossings Initiatives and Accident Investigation Monitoring

Stoke Council have introduced a Safer Crossings Awareness initiative across the City, and instructed SSE to undertake measures accordingly.

Throughout 2010, SSE have replaced standard pedestrian crossing equipment with either Simmonsigns MODU Posts or Centronal Posts subject to crossing type;

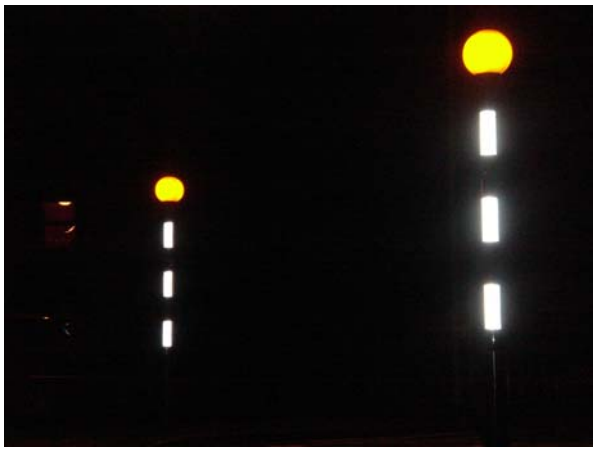
Both types of installation incorporate Safety Awareness features as agreed with Stoke Council;

→ **Crossings with MODU Posts**

Typical sites at:

Outclough Road
York Street
College Road

To date 44 No.MODU post have been installed



MODU Post at Night

MODU Post – Daytime

The MODU Post comprises
A combined 65watt LED Array

Previously on sites such as these, standard steel post painted black and white would have been used.

Table 'A' – Crossings with MODU Posts

	Existing Crossing light unit	Proposed MODU Crossing sign unit
Lamp Type	Tungsten	LED
Number of Lanterns	44	44
Total Circuit Watts	100	52
Annual energy consumption kW/hr per column based on burning hours of 4124	412	214
Total Energy kW/hr based on total number on lanterns	18146	9436
Energy Saving kW/hr	0	**17363**
Energy costs per column @8.29p/KWhr	£34.19	£17.78
Total Energy cost based on total number on lanterns @8.29p/kwhr	£1,504.27	£782.22
Total Running Cost over 17 Years	£25,572.59	£13,297.75
Energy cost saving	£0.00	**£12,274.85**
CO^2 Consumption over 17 years per column	168	87
CO^2 consumption savings over 17 years	0	**81**
Total cost of CO^2 Consumption over 17 years @£12 per ton	£2,013.73	£1,047.14
CO2 cost savings over 17 years	0	**£966.59**

- → CO^2 consumption savings over the remainder of PFI - 17 years
- → Energy Saving over 17 years

Summary	Energy Saving kW/hr	17363
	Energy cost saving	£12,274.85
	CO^2 consumption savings over 17 years	81
	CO2 cost savings over 17 years	£966.59
Further Action Required	**Monitor Operation of Unit**	

→ Crossings with Centronal Posts

Typical sites at:
Waterloo Road
Leek Road
Newcastle Road

Centronal Post - Daytime

To date 38 No.sites have been installed

Centronal Post at Night

The Centronal Post comprises
52watt LED Array

Previously on sites such as these, standard steel post painted grey would have been used.

Table 'B' – Crossings with Centronal Posts

	Existing Centronal post light unit	Proposed Centronal post light unit
Lamp Type	Tungsten	LED
Number of Lanterns	38	38
Total Circuit Watts	100	52
Annual energy consumption kW/hr per column based on burning hours of 4124	412	214
Total Energy kW/hr based on total number on lanterns	15671	8149
Energy Saving kW/hr	0	**14996**
Energy costs per column @8.29p/KWhr	£34.19	£17.78
Total Energy cost based on total number on lanterns @8.29p/kwhr	£1,299.14	£675.55
Total Running Cost over 17 Years	£22,085.42	£11,484.42
Energy cost saving	£0.00	**£10,601.00**
CO^2 Consumption over 17 years per column	145	75
CO^2 consumption savings over 17 years	0	**70**
Total cost of CO^2 Consumption over 17 years @£12 per ton	£1,739.13	£904.35
CO2 cost savings over 17 years	0	**£834.78**

→ CO^2 consumption savings over the remainder of PFI - 17 years
→ Energy Saving over 17 years

Summary	Energy Saving kW/hr	14996
	Energy cost saving	£10.601.00
	CO^2 consumption savings over 17 years	70
	CO2 cost savings over 17 years	£834.78
Further Action Required	**Monitor Operation of Unit**	

→ **PFI LIGHTING MONITORING**

ACCIDENT INVESTIGATION REPORT

1. Introduction

1.1 The report results from a request to investigate the affects that the PFI lighting contract has had on road traffic accident reduction.

2 Site Details

2.1 The PFI lighting contract has replaced the majority of street lighting within the city since September 2003 with programmes of street lighting replacement for each of the five years following.

2.2 This report concentrates on the areas where large numbers of street lights have been replaced. Smaller areas have not been examined. This report only analyses the first three years of the PFI programme, there is insufficient accident data following installation to analyse the later years.

3 Analysis of Accidents

3.1 Injury accident records for each area have been reviewed for 3 years before and 3 years after the installation of street lights. An installation period of approximately one year has been established for each of the sites.

3.2 22 areas of new street lighting were identified and analysed. Reports of the accidents before and after the installation for each area of street lighting renewal are in Appendix A.

3.3 When totalling the data from the areas that underwent street lighting replacement the accident was as follows:

	Accidents during darkness	Accidents during daylight	Total accidents
3 years before installation	141	322	463
3 year after installation	99	233	333
Accident reduction	30%	28%	28%

3.4 Of the 22 lighting column replacement sites analysed:

- →10 sites showed a decrease in accidents
- →5 sites showed no change in accidents
- →6 sites showed an increase in accidents

3.5 The accidents stated before and after are both over a three year period with a one year construction period. Therefore, there is a four year period between the before and after accident data. Nationally road traffic accidents are currently falling at 3 to 4% per annum, this would mean that accidents would be expected to fall by 12 to 16% over a four year period.

3.6 A control is required to see how the reduction in accidents compares to average and whether it is statistically significant. The 22 sites were installed over three different time periods so obtaining a control over three time periods is not available for outside of the city. The PFI contract has covered most areas of the city, therefore using the city as a control is not ideal. Accident data for Great Britain is available in Road Casualties Great Britain, which is published annually. Table 16 or 17, depending on the year, shows the

number of accidents in darkness to those in daylight. Taking a 3 year total 2002 to 2004 and then in 2006 to 2008 gives an approximate control over a similar timeframe. The accidents shown for Great Britain are those for built up areas only.

3.7 Accident data, Great Britain:

	Accidents during darkness	Accidents during daylight	Total accidents
2002 to 2004	128,480	336,128	464,608
2006 to 2008	104,396	285,067	389,463
Accident reduction	19%	15%	16%

Accident data, Stoke-on-Trent:

	Accidents during darkness	Accidents during daylight	Total accidents
2002 to 2004	923	2,242	3,165
2006 to 2008	734	1,851	2,585
Accident reduction	20%	17%	18%

3.7 The accident numbers in the locations where PFI lighting has been installed have fallen by a greater amount than those in the City and Great Britain over similar time frames. The controls do not match exactly to the PFI areas and timescales so should be used for indication only.

3.8 The PFI areas have shown a decrease in accidents during darkness but have shown a similar decrease in accidents during daylight. It would be expected that if a lighting scheme is going to reduce accidents it would do so during hours of darkness and not affect accidents during daylight. As accidents have also fallen during daylight it maybe that other factors in these areas or random fluctuation has affected this accident reduction and not just street lighting replacement.

4 Conclusions & Recommendations

4.1 The accident rates at the locations where lighting has been replaced under the PFI contract have fallen at a greater rate than in those over the city as a whole or over Great Britain over similar time frames.

4.2 In the areas of street lighting replacement accidents have fallen during the hours of daylight and the hours of darkness in nearly equal proportions. A lighting project would logically be expected to affect accidents in darkness and not those during daylight.

Appendix A – accident data, PFI lighting areas
Year 1, delivered Sept 2003 to March 2004

Area	3 years before 01/09/2000 to 31/08/2003			3 years following 01/04/2004 to 31/03/2007		
	Dark	Light	Total	Dark	Light	Total
1, Goldenhill	26	30	56	14	22	36
2, Berryhill	22	47	69	11	35	46
3, Trentham (north)	0	2	2	0	2	2
Sum	48	79	127	25	59	84

Year 2, delivered April 2004 to March 2005

Area	3 years before 01/04/2001 to 31/03/2004			3 years following 01/04/2005 to 31/03/2008		
	Dark	Light	Total	Dark	Light	Total
4, Packmoor & Chell Heath	15	30	45	14	22	36
5, Ball Green	0	2	2	0	0	0
6, Milton	11	23	34	12	19	31
7, Smallthorne	13	23	36	16	28	44
8, Weston Coyney	5	17	22	6	14	20
9, Westonfields Drive area	0	0	0	0	0	0
10, Caverswall	0	4	4	2	1	3
11, Hollybush	1	7	8	0	2	3
12, Trentham (south)	2	17	19	5	6	11
13, Trentvale (west)	0	3	3	0	0	0
Sum	47	126	173	55	92	148

Year 3, delivered April 2005 to March 2006

Area	3 years before 01/09/2000 to 31/08/2003			3 years following 01/04/2004 to 31/03/2007		
	Dark	Light	Total	Dark	Light	Total
14, Blurton	17	41	58	5	31	36
15, Bentilee	9	28	37	1	10	11
16, Meir (East)	5	4	9	2	9	11
17, Normacot	0	8	8	3	2	5
18, Hartshill	0	2	2	0	0	0
19, Birches Head (East)	2	11	13	2	8	10
20, Norton in the Moors	6	14	20	4	8	12
21, Bradeley	2	1	3	0	2	2
22, Davenport Street area	5	8	13	2	12	14
Sum	46	117	163	19	46	101

Appendix B – accident data, from Road Casualties Great Britain annual reports
Data below is from Table 16 in the reports or from Table 17 for more recent years.
Accidents in built up areas, Great Britain

Year	Daylight	Darkness	All
2000	124,333	46,613	170,950
2001	121,610	45,438	167,048
2002	115,663	45,573	161,236
2003	112,880	42,115	154,995
2004	107,585	40,792	148,377
2005	103,770	38,396	142,166
2006	97,836	36,868	134,708
2007	95,767	34,621	130,388
2008	91,464	32,907	124,371

7. Traffic Bollards and Signs

Following agreement between Stoke Council and SSE a number of measures have been considered with regard to the use of signs and bollards, details of which are following:-

- LED Internally illuminated Signs – 100. No. Units (See Table 'A') – located across the City.
    - Type Simmonsigns Ref. INVINCA
- Non-lit Bollard – Type Simmonsigns : Single unit on trial at Stanley Matthews Way (See photograph);
- One2See Retro-luminescent Signs – 8 No. Units on A50 Potteries Way (Tesco) Development – The manufacture did not meet expectations on delivery;
- Solaris Retro-luminescent Signs;
- Low Voltage LED Bollards : 6 No. in total;
- Low Voltage Signs : 60 No. installed across the City;
- Remote Low Voltage School Flashers : 50 No. installed across the City;
- Retrofit LED Signs and Traffic Bollard – LED arrays – under further consideration;
- Pudsey Diamond Bollards : Not considered suitable for use;

Internally Illuminated Sign mounted on Lighting Column or Sign Post

Table 'A' – Internally Illuminated Traffic Signs (LED)

	Existing Internal illuminated sign units	Proposed Internal illuminated sign units
Lamp Type	Twin 7W Fluorescent	4W LED
Number of Lanterns	100	100
Total Circuit Watts	16	6
Annual energy consumption kW/hr per column based on burning hours of 4124	66	25
Total Energy kW/hr based on total number on lanterns	6598	2474
Energy Saving kW/hr	0	**6393**
Energy costs per column @8.29p/KWhr	£5.47	£2.05
Total Energy cost based on total number on lanterns @8.29p/kwhr	£547.01	£205.13
Total Running Cost over 17 Years	£9,299.13	£3,487.17
Energy cost saving	£0.00	**£5,811.95**
CO^2 Consumption over 17 years per column	61	23
CO^2 consumption savings over 17 years	0	**38**
Total cost of CO^2 Consumption over 17 years @£12 per ton	£732.26	£274.60
CO2 cost savings over 17 years	0	**£457.67**

→ CO^2 Emissions and Energy consumption savings over the remainder of PFI - 17 years;

Summary	Energy Saving kW/hr	6393
	Energy cost saving	£5,811.95
	CO^2 consumption savings over 17 years	38
	CO2 cost savings over 17 years	£457.67
Further Action Required	**Monitor Operation of Unit**	

→ Typical Units on Trial

Simmonsigns non-lit Bollard
Stanley Matthews Way

Typical Solaris
Retro-Luminescent Sign

Retrofit LED Gear Tray for Sign Unit

Retrofit LED Gear Tray for Bollard Unit

LED Traffic Bollard – Plain Face

LED Traffic Bollards

Full options and costs in relation to the provision of signs and bollards are as detailed in SSE “Reduction Of Carbon Emissions & Energy Efficiency Response Paper For Stoke On Trent City Council”.

Table 'B' – Typical Retrofit LED Array for Sign Unit and Traffic Bollard

	Existing external sign light unit	Proposed external sign light units
Lamp Type and wattage	**Twin 8W Fluorescent**	**4W LED Light**
Number of Lanterns	1	1
Total Circuit Watts	20	6
Annual energy consumption kW/hr per column based on burning hours of 4124	82	25
Total Energy kW/hr based on total number on lanterns	82	25
Energy Saving kW/hr	0	**80**
Energy costs per column @8.29p/KWhr	£6.84	£2.05
Total Energy cost based on total number on lanterns @8.29p/kwhr	£6.84	£2.05
Total Running Cost over 17 Years	£116.24	£34.87
Energy cost saving	£0.00	**£81.37**
CO^2 Consumption over 17 years per column	1	0
CO^2 consumption savings over 25 years	0	**1**
Total cost of CO^2 Consumption over 17 years @£12 per ton	£9.15	£2.75
CO2 cost savings over 17 years	0	**£6.41**

→ CO^2 Emissions and Energy consumption savings over the remainder of PFI - 17 years – based on 1 No. unit ONLY.

→ **Removal of Illuminated Traffic Bollards and Replacement with Non-Illuminated Traffic Bollards (Plain Face)**

Table 'C' – Removal of Traffic Bollard

	Existing illuminated bollard units
Lamp Type and wattage	Twin 11W Fluorescent
Number of Bollards	1
Total Circuit Watts	24
Annual energy consumption kW/hr per column based on burning hours of 4124	99
Total Energy kW/hr based on total number on lanterns	99
Energy costs per column @8.29p/KWhr	£8.21
Total Energy cost based on total number on lanterns @8.29p/kwhr	£8.21
Total Running Cost over 17 Years	£139.49
CO^2 Consumption over 17 years per column	1
Total cost of CO^2 Consumption over 17 years @£12 per ton	£10.98

Table 'C' details CO^2 Emissions and Energy consumption savings over the remainder of PFI - 17 years for a Single Bollard Unit only;

Further Action Required : Costs for the removal of Traffic Bollard and replacement with Plain Face Non-Lit Bollard (including disconnection of Power Supplies to be provided)

8. General Maintenance – Hand Held PC Device;

As a forward thinking company SSE have embraced new technologies, one of which is the use of hand-held reporting / work log devices in vehicles.

This particular technology has reduced the mean time it takes to repair outages, from the contractual 5 mean days down to around 3 mean days.

This has been achieved by better reporting and the ability to react faster to undertake repairs, by reducing travel time between jobs as general rule.

This is turn has resulted in a reduction in transport carbon – as this system eliminates excessive driving routes;

SSE will be reporting in the future on the carbon emissions saving as part of SSE requirements to this regard.

As the system has only been in place for a limited time, insufficient date is considered to be available to confirm any discernable savings at this time.

Hand Held Device in SSE Vehicle

Further Action Required : During the course of 2011, SSE to analyse DATA from the System and produce a report clearly detailing savings as following;

1. CO^2 Emissions on an Annual basis and pro-rata over the course of the remainder of the PFI Contract

2. Energy on an Annual basis and pro-rata over the course of the remainder of the PFI Contract

9. SSE Website

As part of embracing technologies and providing the best service to the stakeholders of Stoke City, SSE have introduced a dedicated website for the reporting of faults, feedback and general street lighting issues;

The website address is; **lightsoninstoke.co.uk**

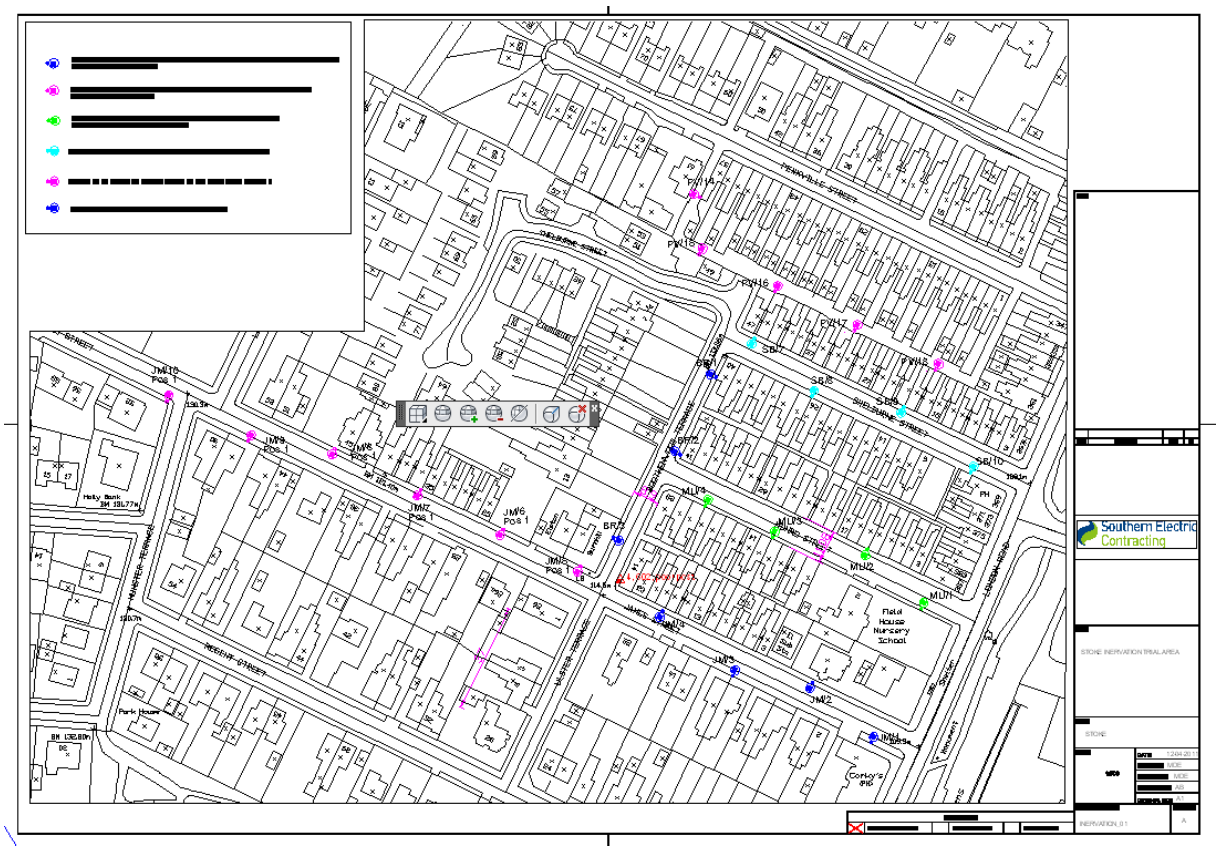
10. Innovation Trial Area – Residential Streets

An initiative is in the process of being set-up to facilitate a number of projects – this includes the following measures:-

Penkville Street back Lane	24w PLL lanterns proposed to be switched off between 12.00 & 5.00.
James Street	Lamps to be changed to GE STREET WISE lamp. Lighting levels remain at S3 due to no change of light source.
Boothenwood Terrace .	Cosmo scheme using Philips SGS451 VX2 IT2 P2 45W. Lighting levels dropped a class from S3 to S4 using a white light source with an RA value of over 60. Calculations enclosed
Shelburne Street	LED scheme using 50W DIALIGHT 2LE4-6 EURO 4:6 UNIT. Lighting levels dropped a class from S3 to S4 using a white light source with an RA value of over 60.
Munro Street	LED scheme using 58W Urbis Piano 1.Lighting levels dropped a class from S3 to S4 using a white light source with an RA value of over 60.
New Leek Road	Variable Lighting Level Project – Electronic Gear to be retrofit into luminaires

In addition to the above, a further two streets are under consideration for the installation of LED luminaires - subject to confirmation of type.

Plan of Trial Area



The above drawing is included separate to this report and is shown here as in illustration only.

INNOVATIONS AND PROJECTS

SUMMARY

Completed Projects

	Energy Saving kW/hr	Energy cost saving	CO^2 consumption savings over 25 years (Tonnes)	CO2 cost savings over 25 years (£12 per tonne)
Residential Back Lanes – Change of Light Source	251816	£521,887.76	3425	£41,096.30
Internally Illuminated Sign Units – LED	6393	£5,811.95	38	£457.67
Potteries Way – Cosmopolis White Light	60572	£12,298.09	81	£968.42
LED Project at Glyn Place	1689	£813.67	5	£64.07
Safer Crossings with MODU Posts	17363	£12,274.85	81	£966.59
Safer Crossings with Centronal Posts	14996	£10.601.00	70	£834.78

Further Action Required

- → Monitor LED Project at Glyn Place – Operation of Units;
- → SSE to test and maintain Mayflower 1 CMS and report back to SCC;
- → Safer Crossings – Monitor Operation of MODU and Centronal Posts;
- → Monitor Operation of Internally Illuminated LED Signs;
- → Implement Projects as detailed in Innovation Trial Area – Part B(10);
- → Provide Costs for the removal of Traffic Bollard and replacement with Plain Face Non-Lit Bollard (including disconnection of Power Supplies to be provided.
- → Hand Helds - During the course of 2011, SSE to analyse DATA from the System and produce a report clearly detailing savings;

APPENDIX 3

SSE Contracting PFI Street Lighting Questionnaire

City of Stoke-on-Trent

1) Did you experience any disruption during the street lighting replacement in your area in the last 5 years?
    a. No disruption
    b. Minor disruption
    c. Moderate disruption
    d. Major disruption
    e. Other – Please specify

2) What was the nature of disruption experienced?
    a. Access
    b. Noise
    c. Fumes
    d. Traffic congestion
    e. Other – Please specify

3) Have you had any contact with on-site operatives during these works?
    a. Yes
    b. No

4) What was your opinion of the on-site operatives?
    a. Very helpful
    b. Fairly helpful
    c. Neither helpful nor unhelpful
    d. Fairly unhelpful
    e. Very unhelpful
    f. Other – Please specify

5) Do you think the replacement street lighting has improved the area?
    a. Yes
    b. No

6) Has the replacement street lighting made your local environment feel safer?
    a. A lot safer
    b. Not as safe
    c. No difference
    d. Other – Please specify

7) What is your overall view with the street lighting?
   a. Very satisfied
   b. Fairly satisfied
   c. Dissatisfied
   d. Very dissatisfied
   e. Other – Please specify

8) Are you satisfied with the light output (brightness) of the street lighting?
   a. Very satisfied
   b. Fairly satisfied
   c. Dissatisfied
   d. Very dissatisfied
   e. Other – Please specify

9) Are you aware that all streetlights are checked once a fortnight in the winter months and once every 4 weeks in the summer months by a night patrol to ensure they are in working order?
   a. Yes
   b. No

10) Have you ever reported a street lighting fault in your area?
   Yes I have reported;
   a. Street Lighting Column
   b. Illuminated Bollard
   c. Illuminated Sign
   d. Bolisha Beacon
   e. No I have never reported a street lighting fault

11) Have you ever reported a street lighting fault outside the area you live but within the city of Stoke on Trent?
   a. Yes
   b. No

12) Are you aware of the different options available to report a fault?
   a. Yes
   b. No

13) By which method do you prefer to report a fault?
   a. Call centre – 0800 3287709
   b. Website
   c. Council
   d. Other – please specify

14) If you have not reported a fault, which method would you use?
   a. Call centre - 0800 3287709
   b. Website
   c. Council
   d. Other – please specify

15) If you have used the website, did you find it easy to use and understand?
   a. Yes
   b. No

16) Do you think we can improve the website to make it more user friendly?
   If yes, please list your ideas below

17) If you have contacted our Call Centre – did you find it
   a. Helpful
   b. Friendly
   c. Unhelpful
   d. Unfriendly
   e. Other – please specify

18) Were you satisfied with the response you received, to your reporting of a problem?
   Very satisfied
   a. Fairly satisfied
   b. Dissatisfied
   c. Very dissatisfied
   d. Other –please specify

19) Are you satisfied with the promptness of the street lighting repairs?
   Very satisfied
   a. Fairly satisfied
   b. Dissatisfied
   c. Very dissatisfied
   d. Other – please specify

20) How do you think SSE Contracting could improve their street lighting service?

All returned questionnaires will go into a draw to win a dinner for 2 in a local Stoke-on-Trent restaurant; details can be found on the lights on in stoke website. www.lightsoninstoke.com

APPENDIX 4

Authority Dashboard
Stoke on Trent

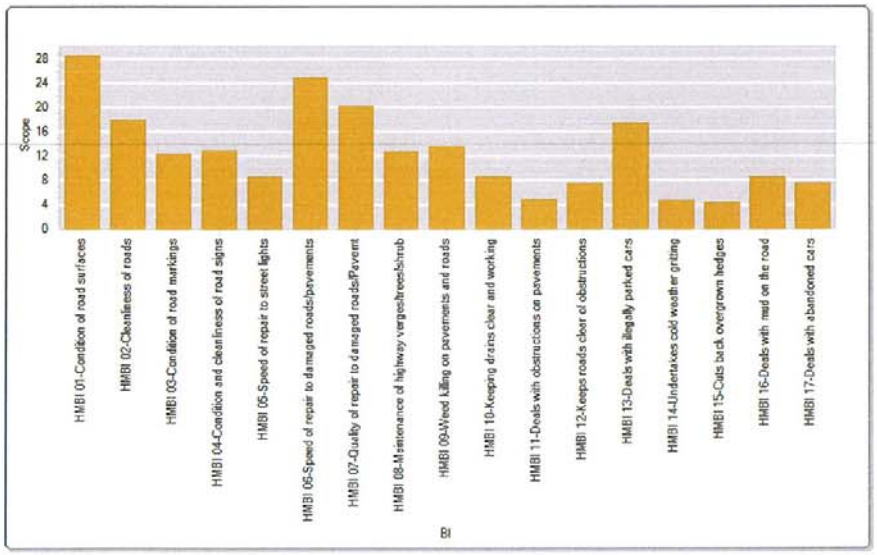
10 November 2011

Prepared by M2i

Stoke on Trent
8. Highways Maintenance

Highways Maintenance

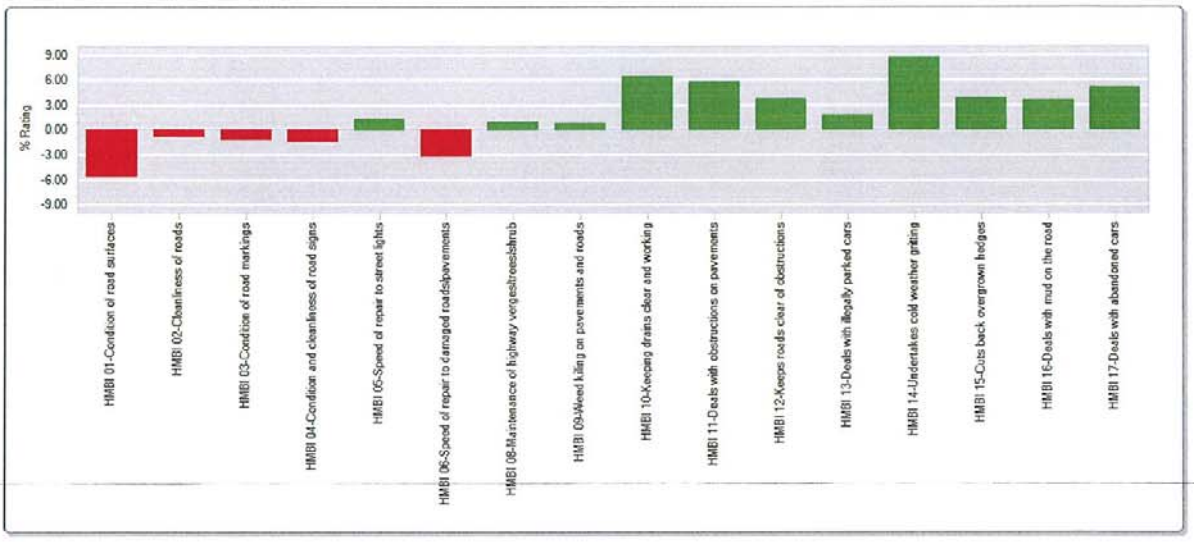
Scope for Improvement against Best Performer



League Table - Top 20

Rank	Name
1	Portsmouth City
2	BANES
3	Bournemouth BC
4	Brighton and Hove City Council
5	Milton Keynes
6	Borough of Poole
7	Shropshire
8	East Riding
9	South Gloucestershire
10	Bristol City
11	Bedford BC
12	Reading BC
13	Cheshire West and Chester Council
14	Derby City
15	Swindon BC
16	Cornwall
17	Telford & Wrekin Council
18	Wokingham BC
19	Southampton CC
20	Bracknell Forest Council

Highways Maintenance BIs - 2010 vs 2011



Stoke on Trent
8. Highways Maintenance

city of stoke on trent

Comparison To National Average

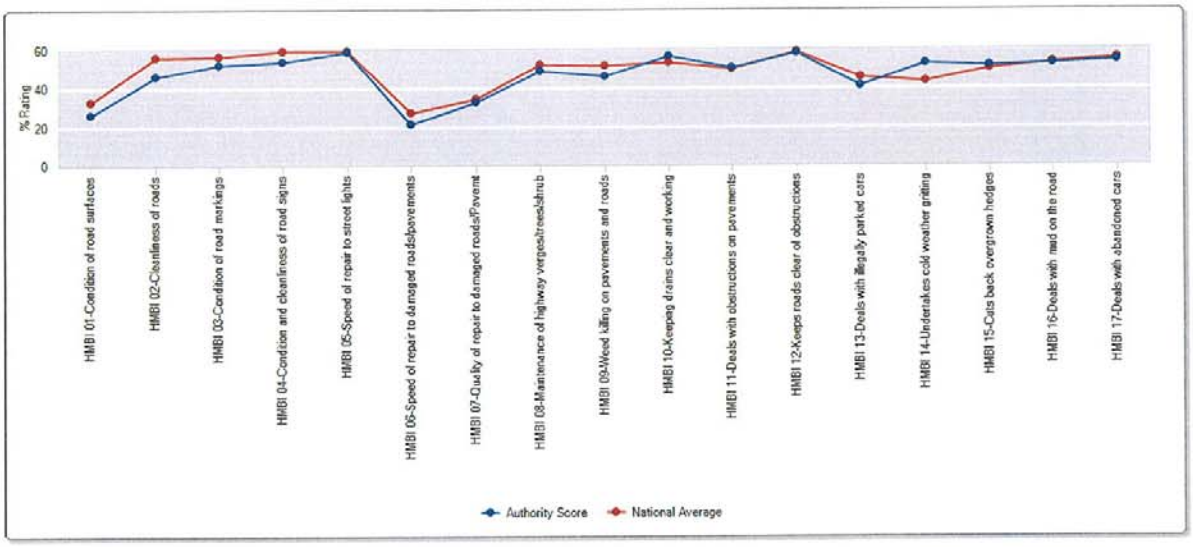
Green=>avg, Yellow=within 5% of avg, Red>5% below avg

Question	2011
HMBI 01-Condition of road surfaces	26.34
HMBI 02-Cleanliness of roads	46.35
HMBI 03-Condition of road markings	52.13
HMBI 04-Condition and cleanliness of road signs	54.05
HMBI 05-Speed of repair to street lights	58.63
HMBI 06-Speed of repair to damaged roads/pavements	21.43
HMBI 07-Quality of repair to damaged roads/Pavemt	33.20
HMBI 08-Maintenance of highway verges/trees/shrub	48.82
HMBI 09-Weed killing on pavements and roads	46.36
HMBI 10-Keeping drains clear and working	56.45
HMBI 11-Deals with obstructions on pavements	50.79
HMBI 12-Keeps roads clear of obstructions	58.32
HMBI 13-Deals with illegally parked cars	41.04
HMBI 14-Undertakes cold weather gritting	52.76
HMBI 15-Cuts back overgrown hedges	51.97
HMBI 16-Deals with mud on the road	52.86
HMBI 17-Deals with abandoned cars	54.70

National Averages

Question	2011
HMBI 01-Condition of road surfaces	32.97
HMBI 02-Cleanliness of roads	56.25
HMBI 03-Condition of road markings	56.82
HMBI 04-Condition and cleanliness of road signs	59.20
HMBI 05-Speed of repair to street lights	59.58
HMBI 06-Speed of repair to damaged roads/pavements	27.34
HMBI 07-Quality of repair to damaged roads/Pavemt	34.82
HMBI 08-Maintenance of highway verges/trees/shrub	52.39
HMBI 09-Weed killing on pavements and roads	51.70
HMBI 10-Keeping drains clear and working	53.65
HMBI 11-Deals with obstructions on pavements	49.82
HMBI 12-Keeps roads clear of obstructions	58.82
HMBI 13-Deals with illegally parked cars	45.68
HMBI 14-Undertakes cold weather gritting	43.53
HMBI 15-Cuts back overgrown hedges	50.11
HMBI 16-Deals with mud on the road	53.18
HMBI 17-Deals with abandoned cars	55.65

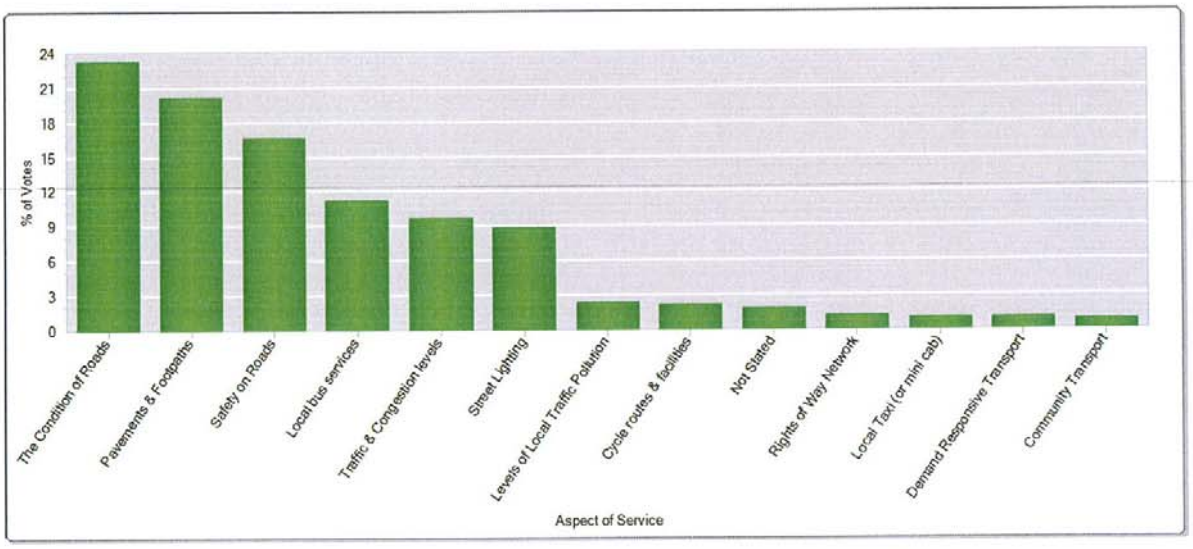
Comparison to National Average



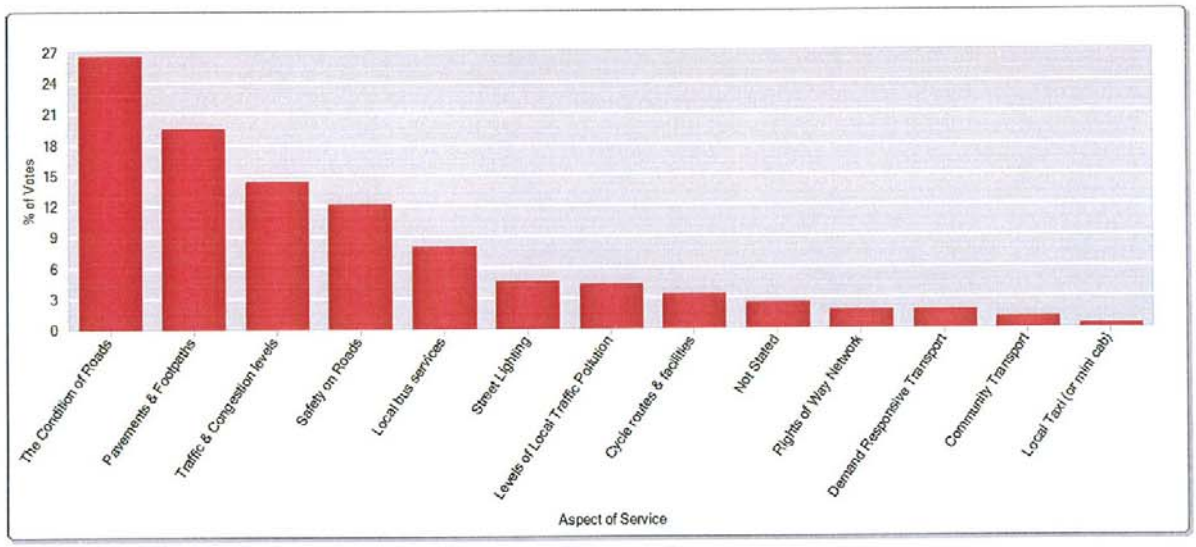
Stoke on Trent

9. Importance versus Improvement

Most Important to me



Most in need of Improvement



APPENDIX 5

NHT Public Satisfaction Survey 2011

city of stoke on trent

Stoke on Trent Headline Results

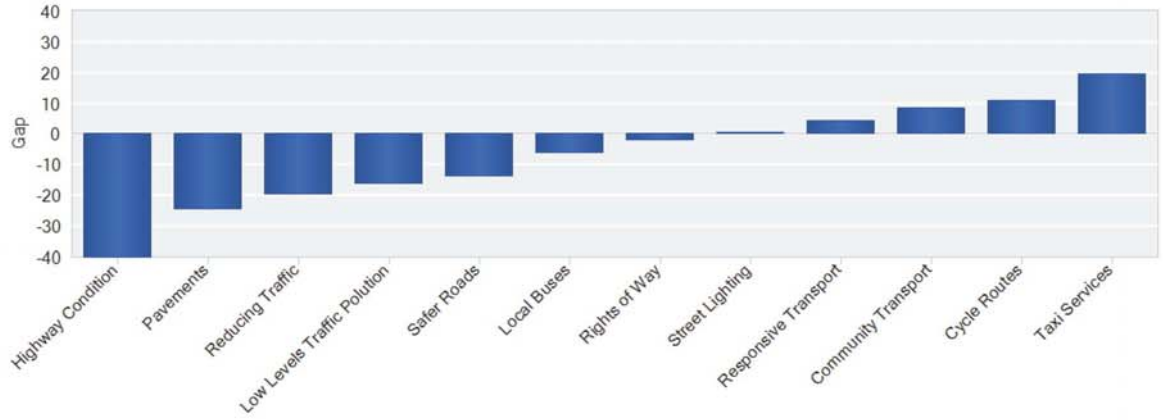
Overall Satisfaction

..... taking everything into account, how satisfied or dissatisfied were the public that took part in the Survey with transport and highways services?

Average %	Peer Group Ranking	All Authority Ranking	% difference from 2010
50.41	29	57	-2.28

Importance vs Satisfaction

Aiming for Zero; Minus or Plus is not ideal (Minus indicates satisfaction lagging behind importance; Plus indicates satisfaction is ahead of importance).



What the public voted for...

Q3 (Importance) - Top 3

Aspect of Service	% of Votes
The Condition of Roads	23.29
Pavements & Footpaths	20.16
Safety on Roads	16.57

Q4 (Budget for Improvement) - Top 3

Aspect of Service	% of Votes
The Condition of Roads	26.55
Pavements & Footpaths	19.52
Traffic & Congestion levels	14.34

Sample Size	Returns	% Return Rate
4,500	535	11.89

The NHT Public Satisfaction Survey covers all aspects of Highways and Transport service delivery. Full results are available at www.nhtsurvey.org