

**REPORT TO: CITY DEVELOPMENT COMMITTEE - 28 JANUARY 2013**

**REPORT ON: STREET LIGHTING PARTNERSHIP**

**REPORT BY: DIRECTOR OF CITY DEVELOPMENT**

**REPORT NO: 5-2013**

## **1 PURPOSE OF REPORT**

- 1.1 This report provides an update on progress and performance of the Street Lighting Partnership with Tayside Contracts on the delivery of the Street Lighting Services to 31 March 2012.

## **2 RECOMMENDATION**

- 2.1 It is recommended that the Committee notes the content of this report and agree that the Director of City Development be remitted to report back annually to the Committee with the ongoing progress of the Partnership.

## **3 FINANCIAL IMPLICATIONS**

- 3.1 There are no direct financial implications arising from this report.

## **4 BACKGROUND**

- 4.1 Reference is made to Article I of the City Development Committee of 27 February 2012 (Report 53-2012 refers) when approval was given to extend the Partnership with Perth & Kinross and Tayside Contracts by a further 3 years to 31 March 2015.
- 4.2 An Executive group comprising two senior officers from each Council and Tayside Contracts meet three times a year to review performance of the Partnership against a number of agreed criteria. The Partnership continues to perform well.
- 4.3 The report contained in Appendix 1 provides information on the annual status of the Councils Street lighting assets as of April 2012.
- 4.4 Complementing recent Audit Scotland recommendations, the report also contains benchmarking information taken from the SCOTS (Society of Chief Officers Transport Scotland) benchmarking exercise 2011/12 which collects and compares the annual performance of all 32 Scottish Councils against agreed key service performance indicators. Dundee City Council forms part of the SCOTS Cities family grouping of Councils and is compared against Aberdeen, Edinburgh and Glasgow. Scottish averages are also referred to where appropriate. Year on Year figures are contained within the report to give an internal annual comparison and an indication of trends.
- 4.5 The report provides financial information on value of the street lighting asset and its annual depreciation in accordance with CIPFA guidelines and the Whole of Government Account (WGA) returns. It analyses the impact of the Dundee City Council's annual capital investment renewal programme in terms of the percentage of street lights which have exceeded their expected service life and identifies the existing backlog positions of both street lighting columns and lanterns requiring upgraded or renewed.

- 4.6 The report predicts that additional funding will require to be found over the next 20 years if electricity prices continue to rise at the present rate. The report also identifies the need to develop spend to save projects to take advantage of the developing technologies to reduce electricity consumption and reduce maintenance costs.
- 4.7 From the report it can be seen that the Partnership is already leading the rest of Scotland in many of these new technologies such as the use of energy efficient white light sources and part night dimming. LED lanterns are now becoming more affordable and becoming more attractive as spend to save solutions. Dundee City already has 236 street lights which use LEDs and this number is expected to increase.
- 4.8 The Partnership is also trialling a CMS (Central Management System) in the City Square. The system can adapt the lighting levels of the street lights remotely using RF signal communication. It is hoped that this trial can be extended out to include other street lights so that lighting levels can be adapted automatically to suit varying conditions and times of the day and night. This will help reduce and optimise electricity consumption. Another benefit of the system is that it automatically reports to a central computer when a street light is+ not operating or is operating incorrectly.
- 4.9 The present Street Lighting Partnering arrangement meets the Scottish Government's objectives in increased partnership working in line with the Efficient Government Agenda and the street services model set by the Regional Transport Partnership.

## **5 POLICY IMPLICATIONS**

- 5.1 This Report has been screened for any policy implications in respect of Sustainability, Anti-Poverty and Risk Management and no major issues have been identified. A Strategic Environmental Assessment and Equality Impact Assessment were deemed not to be required.

## **6 CONSULTATIONS**

- 6.1 The Chief Executive, the Director of Corporate Services and Head of Democratic and Legal Services have been consulted and are in agreement with the contents of this report.

## **7 BACKGROUND PAPERS**

- 7.1 None.

Mike Galloway  
Director of City Development

Fergus Wilson  
City Engineer

FW/LMcG/EH  
Dundee City Council  
Dundee House  
Dundee

16 January 2013

## **Appendix 1**

### **Annual Status and Benchmarking Report: Street Lighting April 2012**

#### **1 Introduction**

This report presents a summary of the Council's Lighting assets as at April 2012. It

- Describes the current condition of the asset
- Details the service that the asset and current budgets are able to provide
- Compares the Councils Performance both in terms of similar councils and Scottish averages as reported in the SCOTS benchmarking exercise 2011/12

The report complements the Road Asset Management Plan (RAMP). It is intended to provide the council with information that will enable choices to be made about future levels of investment in the lighting asset.

#### **Long Term Forecasts**

Lighting assets deteriorate slowly. This means that it is not possible to determine the impact of a level of investment solely by looking at the next couple of years. For this reason the report includes forecasts covering 20 years. This will enable decisions to be taken with some understanding of the long term implications.

#### **Impacts Risk**

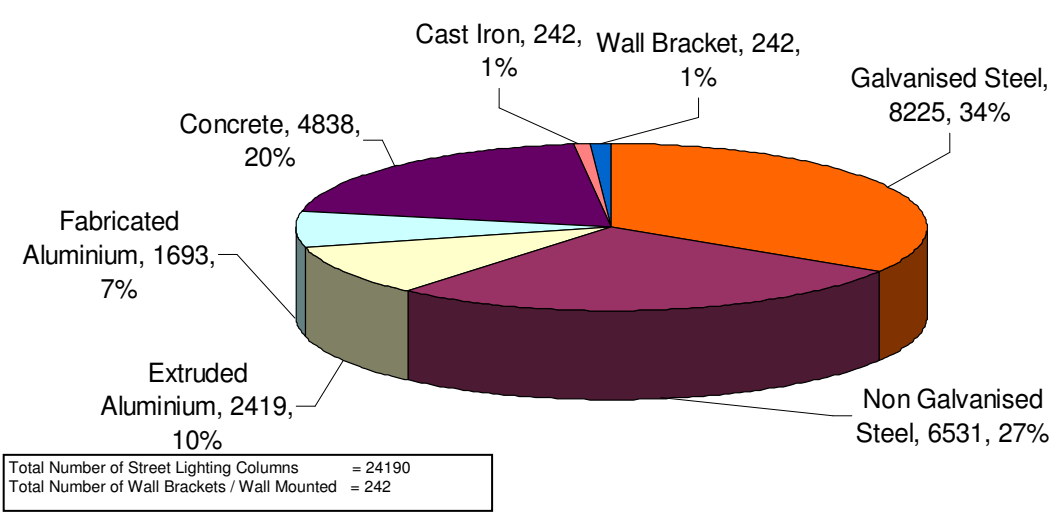
It is acknowledged that budgetary pressures are greater than ever before. It is therefore essential that the Council is provided with as detailed an assessment of the impacts of Investment and Budget cuts for the street lighting asset.

**Street Lighting**

**Status**

The Asset

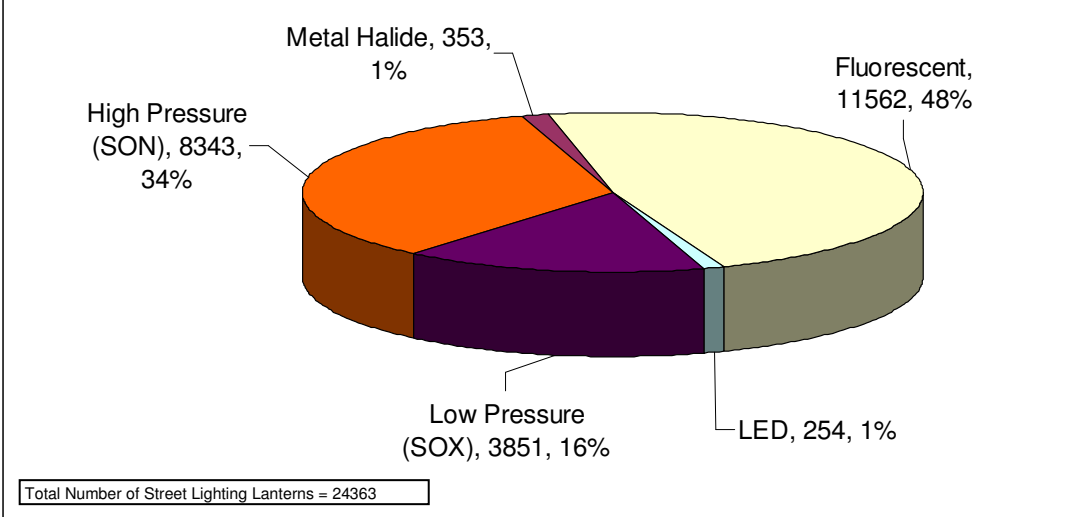
**Breakdown of Column Type / Material**



WDM is the asset management system used to manage the Street Light works and Inventory

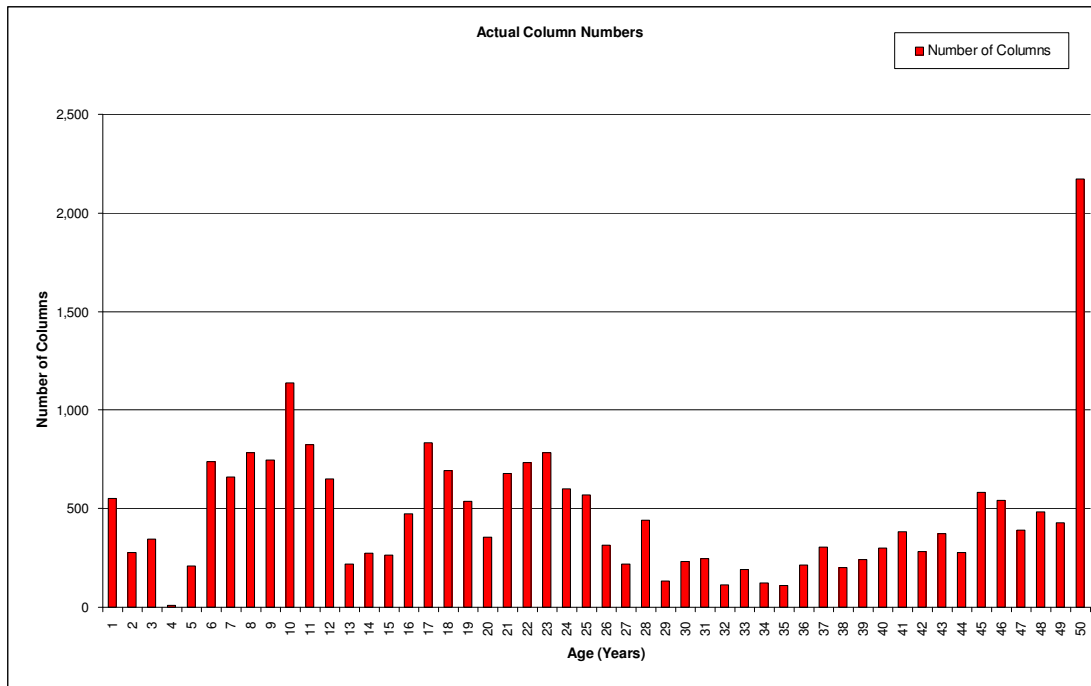
The level of confidence in all inventory data is medium to high

**Breakdown of Lanterns / Light Sources**

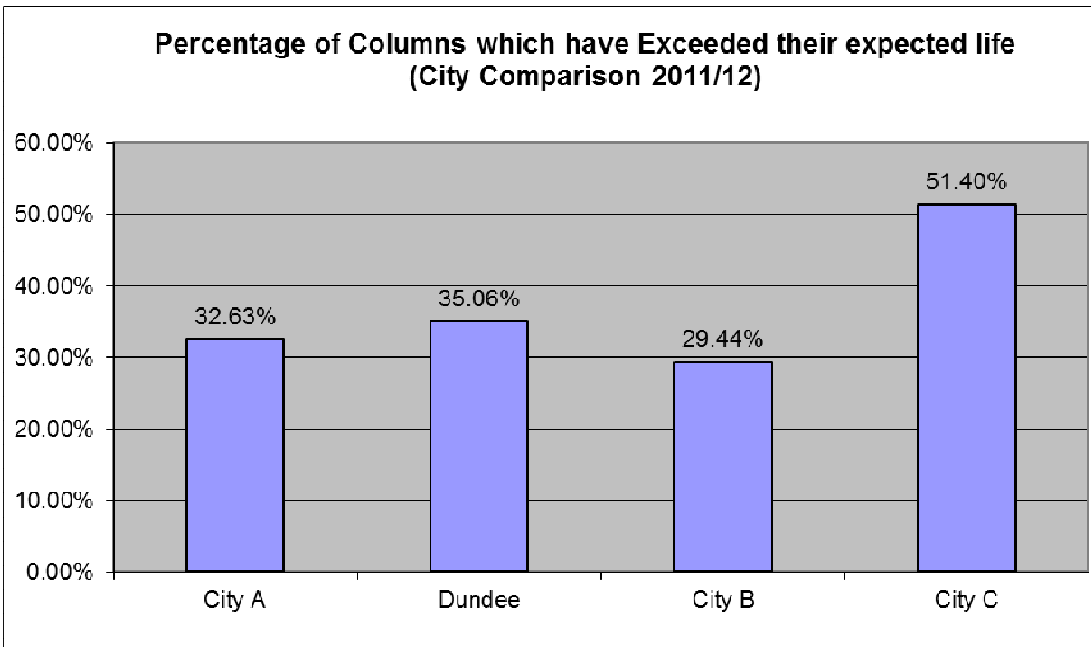


50% of the Cities street lights are white light which gives better colour definition and is preferred by residents. The Scottish average from other Councils data is 15.16%

Column Age Profile



Age & Condition



Taken from the SCOTS benchmark exercise 2011/12

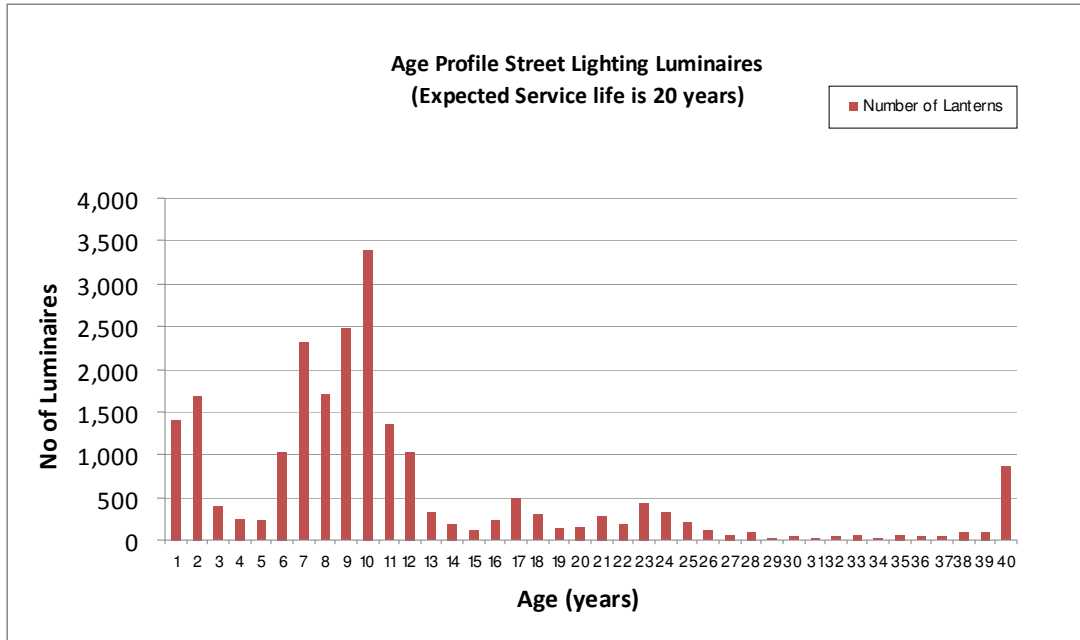
The City Group average is 37.13%

The Scottish average is 33.1%

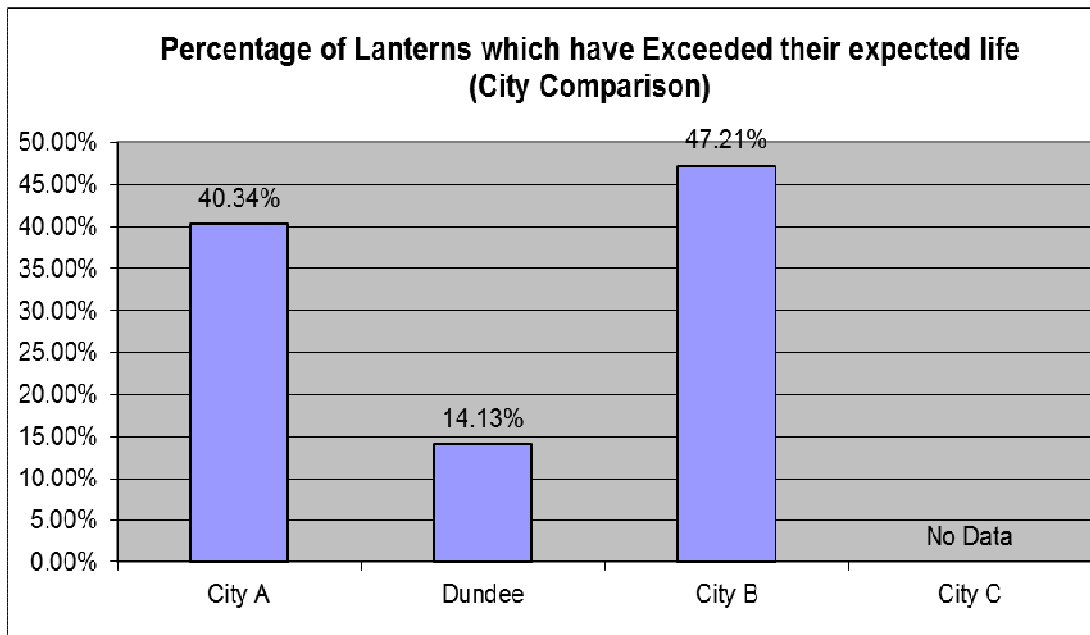
Percentage of Columns renewed annually in Dundee				
Year	2008/09	2009/10	2010/11	2011/12
Percentage	1.34%	2.71%	1.64%	2.41%

The Scottish Average is 1.89%

Lantern Age Profile



Age & Condition



The City Group average is 33.89% and the Scottish average is 34.38%

Percentage of Lanterns renewed annually in Dundee				
Year	2008/09	2009/10	2010/11	2011/12
Percentage	1.9%	7.43%	8.15%	5.77%

The Scottish Average is 4.23%

<b>Customer Expectation</b>	<u>Number of Contacts from member of the Public</u>																
	Baseline 2002/03	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12										
	2252	1219	1117	1202	1416	1546	1393										
	<b>Public calls as a percentage of Street Lights (City Comparison) 2011/12</b>							The city average is 15.31% and the Scottish average for Councils is 13.5%									
	<table border="1" style="display: none;"> <caption>Public calls as a percentage of Street Lights (City Comparison) 2011/12</caption> <thead> <tr> <th>City</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>City A</td> <td>11.17%</td> </tr> <tr> <td>Dundee</td> <td>5.72%</td> </tr> <tr> <td>City B</td> <td>13.49%</td> </tr> <tr> <td>City C</td> <td>30.85%</td> </tr> </tbody> </table>								City	Percentage	City A	11.17%	Dundee	5.72%	City B	13.49%	City C
City	Percentage																
City A	11.17%																
Dundee	5.72%																
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City C	30.85%																
<b>Level of Service</b>	<u>Percentage repaired within 7 days</u>																
	Baseline 2002/03	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12										
	97.54%	96.85%	95.5%	94.6%	95.6%	92.5%	94.3%										
	<b>Average Number of Lights dark per 1000 on any one evening (City Comparison)</b>							The City average is 91.82% and the Scottish Council average is 91.6%									
	<table border="1" style="display: none;"> <caption>Average Number of Lights dark per 1000 on any one evening (City Comparison)</caption> <thead> <tr> <th>City</th> <th>Average Number</th> </tr> </thead> <tbody> <tr> <td>City A</td> <td>12.3</td> </tr> <tr> <td>Dundee</td> <td>3.4</td> </tr> <tr> <td>City B</td> <td>23.7</td> </tr> <tr> <td>City C (2010-11)</td> <td>42</td> </tr> </tbody> </table>								City	Average Number	City A	12.3	Dundee	3.4	City B	23.7	City C (2010-11)
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City B	23.7																
City C (2010-11)	42																
	The city average is 20.4 and the Scottish average is 33																

Number of Faults  
(Historical Trend)

Baseline 2002/03	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
9532	5168	4650	4578	4930	4826	4601

**Average Time Between Repairs**  
**(City Comparison 2011/12)**



The average for Scottish cities is 4.11 years and the Scottish average is 4.1 years

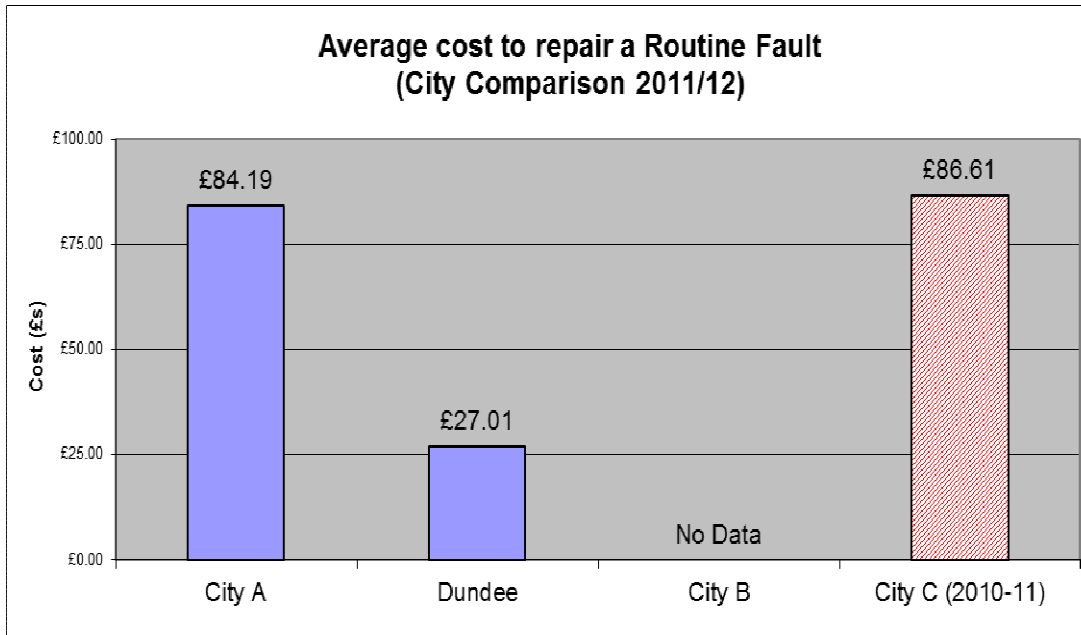
Reliability

**Average Time between Failures**  
**(Historical Trend)**

Baseline 2002/03	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
2.3 yrs	3.47 yrs	4.13 yrs	4.87 yrs	4.52 yrs	5 yrs	5.3 yrs



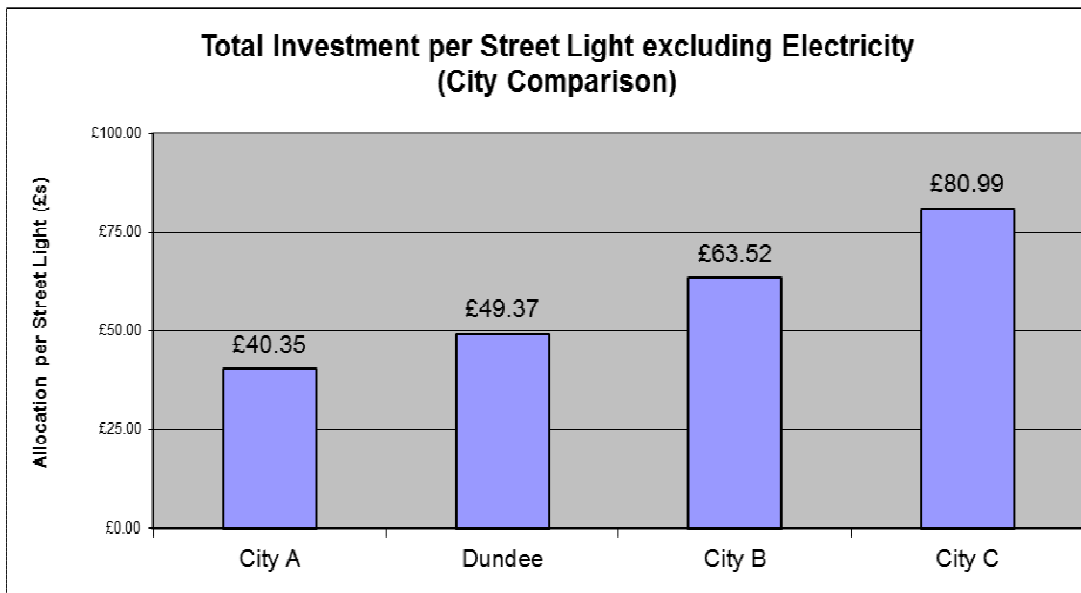
Financial Cost and Budget Allocation



Average cost of Repair for City Councils is £55.60 and the Scottish Average is £56.74

### Average cost to repair a Routine Fault (Historical Trend)

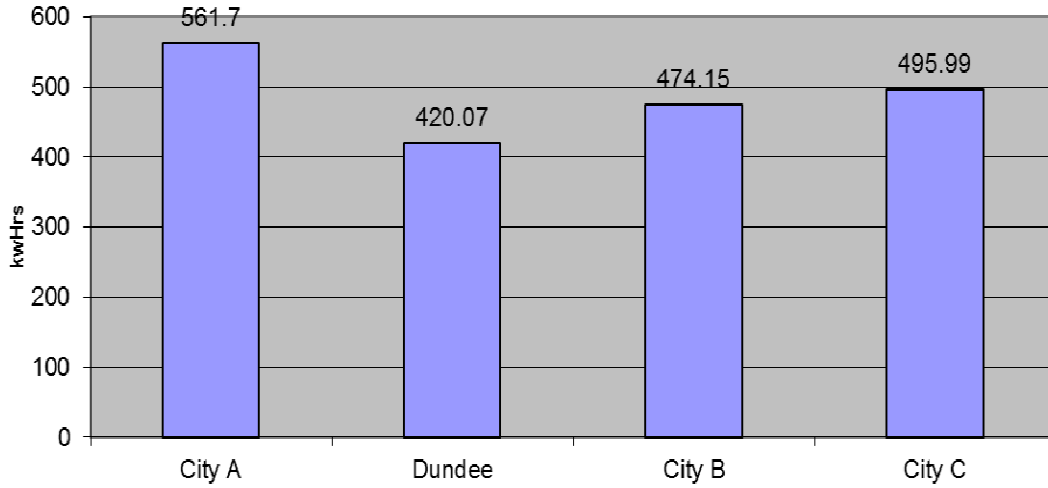
Baseline 2002/03	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
£37.79	£25.53	£24.84	£28.00	£29.44	£27.12	£27.01



Average Capital & Revenue Allocated per street light for City Councils is £58.55 and the Scottish average is £62.78

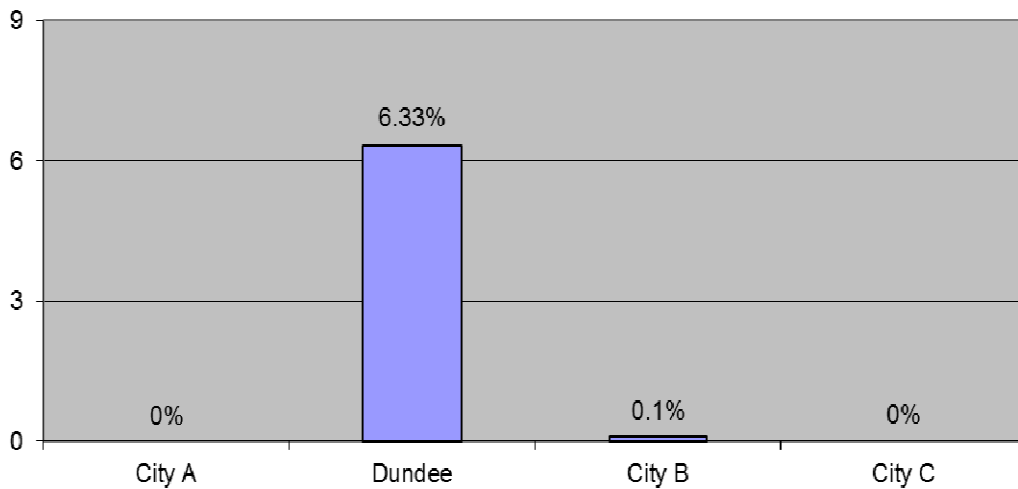
Annual Electricity Cost

**Average Annual Electricity Consumption per Street Light kWhrs  
(City Comparison 2011/12)**



Average of City Councils is 487.97 kWhrs and the Scottish Council average is 393.2 kWhrs

**Percentage of Street Lights Dimmable  
(City Comparison)**



The Scottish Average of Street Lights dimmable is 1.61%

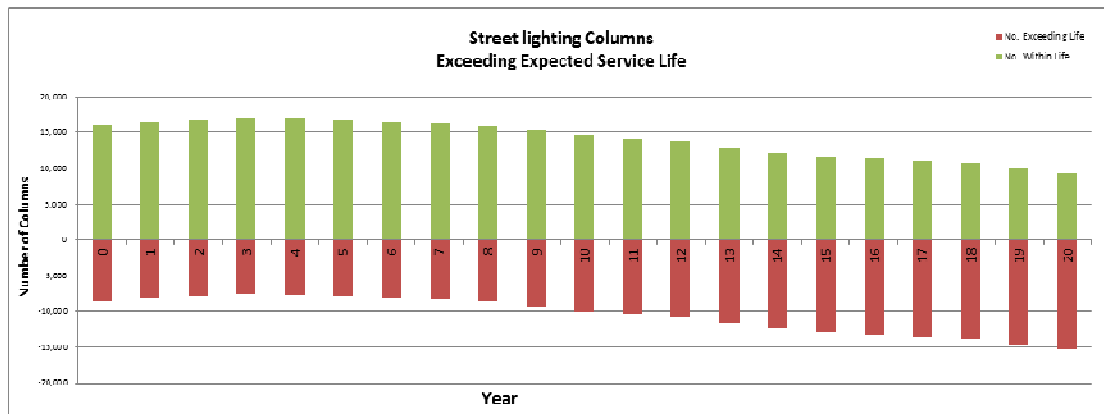
		Capital Allocation (Historical Trend)				
		2008/09	2009/10	2010/11	2011/12	2012/13
		£285k	£450k	£580k	£580k	£750k
		Columns Backlog £7,087,735			Lanterns Backlog £1,111,714	
		Breakdown of costs for 2011/12				
Historic and Future Investment Requirements	<b>RAMP Cost Category Activities</b>	<b>Expenditure (£000's)* (2011/12 actual expenditure)</b>	<b>% Spend</b>			
	Routine - Reactive Repairs (emergency)	£148,501	5.6%			
	Routine - Reactive Repairs (non-emergency)	£324,258	12%			
	Routine Cyclic Maintenance	£13,259	0.5%			
	Planned Maintenance - Preventative	£45,328	1.7%			
	Planned Maintenance – Corrective (including renewals)	£629,574	23.6%			
	Inspections and Survey	£61,310	2.3%			
	Operating Costs (Energy)	£1,076,423	40.3%			
	Staff Costs	£273,196	10.2%			
	Overheads	£101,445	3.8%			
	TOTAL	£2,673,288				
	<i>Income fees and charges</i>	<i>-£96,111</i>				
	TOTAL	£2,577,177				
<p>NB the table above also include costs for operating and maintaining illuminated street furniture undertaken in conjunction with the street lighting service</p> <p>By far the greatest area of expenditure in the street lighting service involves Energy Costs, which have increased by more than 20% per annum (on average) since 2004. The Scottish Procurement and Commercial Directorate, Scottish Government who administer the National Energy contracts for public bodies and Local Authorities, estimate that energy prices will double by 2020. Efforts to mitigate and reduce the impact of these significant annual cost increases are a significant driver in any potential spend to save initiative.</p>						
Valuation	Gross Replacement Costs	£50,791,246 (as new)				Actual Capital investment as a % of annual depreciation = 49.27%
	Depreciated Replacement Cost	£24,735,975 (Present Value)				
	Annual Depreciation	£1,177,180				
<p>Depreciated replacement costs (DRC) as a % of gross replacement Cost (GRC) = 48.70%</p>						

## Annual Budget Requirements to maintain Existing backlog position

### Measured/Predicted Condition of Lighting Columns

The graph below represents those lighting columns which are presently within their expected design life (highlighted in green) and those which have exceeded their expected design life (highlighted in red). It is estimated that 34.9% of lighting columns have exceed their expected service life and that this amounts to a financial backlog situation of £7,087,735.

Refer to graph below:



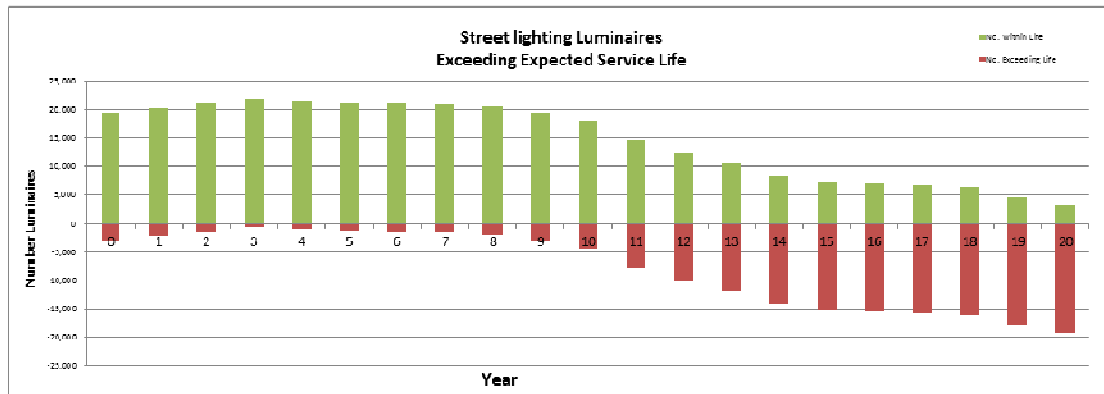
The allocation of funding through the Councils Capital budget 2012 – 2016 has seen an increase in funding for street lighting renewal over previous years which will help stem the ongoing decline in the asset's condition.

It is predicted that at the end of the agreed four year Capital Plan, the number of street lighting columns which have exceeded their expected service life will have fallen to 30.5%. In recognition of this additional financial investment, it is projected that the current back log figure will drop to £6,109,809. It is however important to ensure that subsequent to 2016, the Capital Plan includes the continuance of this level of funding for planned column renewal/replacement to ensure that a higher proportion of the City's street lighting columns remain within their Expected Design and Service Life thereby helping to reduce the risk of unexpected column failure.

## Measured/Predicted Condition of Lanterns

The graph below represents those street lighting lanterns which are presently within their expected design life (highlighted in green) and those which have exceeded their expected design life (highlighted in red). It is estimated that 14.2% of lanterns exceed their expected service life and that this amounts to a financial backlog situation of £1,111,714.

Refer to graph below:



The allocation of funding through the Councils Capital budget 2012 – 2016 has seen an increase in funding for street lighting renewal over previous years which will help stem the ongoing decline in the assets condition.

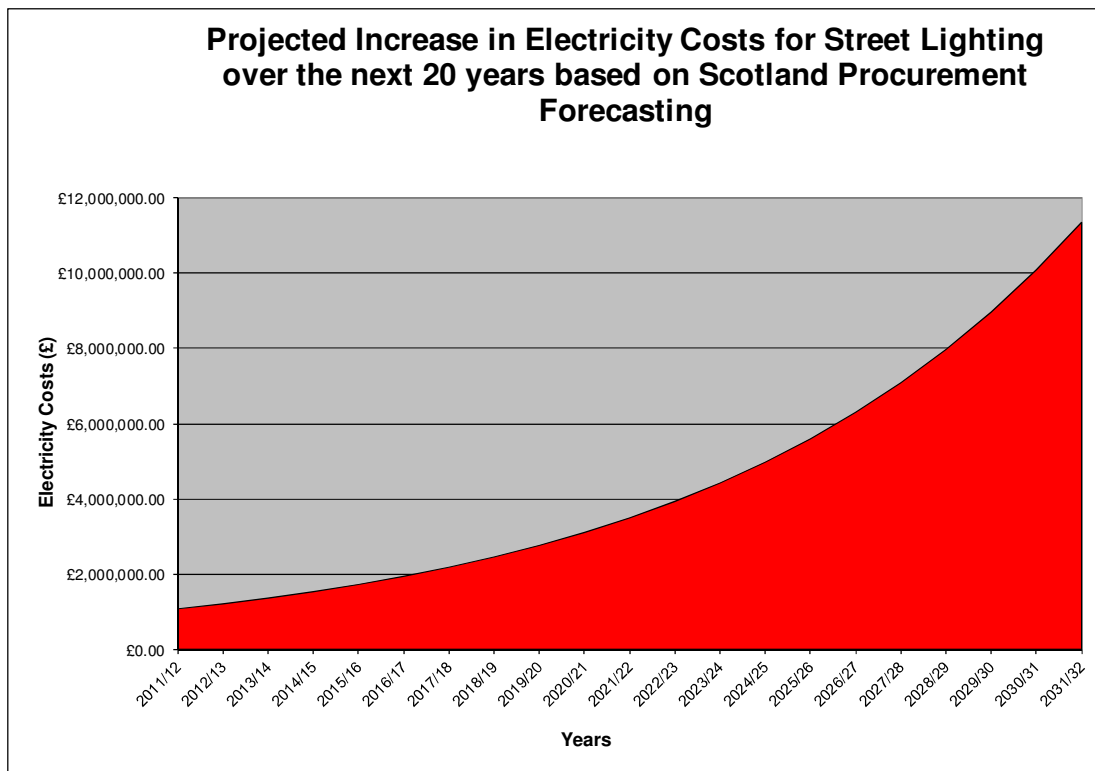
It is predicted that at the end of the agreed four year Capital Plan, the number of street lighting lanterns which have exceeded their expected service life will have fallen to 2.3%. It is however important to ensure that subsequent to 2016, the Capital Plan includes the continuance of this level of funding for planned lantern renewal/replacement to ensure that a higher proportion of the City's street lighting lanterns remain within their Expected Design and Service Life and thereby helping to reduce maintenance costs and electricity consumption with the introduction of new technology light sources such as LEDs.

### Predicted Future Costs

The biggest factor influencing future street lighting costs involves the price of electricity.

Over the last decade the cost of electricity has increased significantly, with increases in excess of 20% per annum experienced since 2004. In the latest Procurement Scotland forecasts, Electricity prices are likely to double by 2020. If this trend was to continue (with no reduction in street lighting energy demand) then this could add substantial costs to the street lighting service budget over the next 20 years.

In the example graph below the latest projected electricity price growth factor of 12.5% per annum (including the rate of inflation) has been used to illustrate the potential growth in street lighting electricity costs and adverse impact on the overall street lighting budget.



The scale of future price increases is unknown. It is however highly probably that energy will become more expensive due to growing competition for resources and increased generation costs. It is therefore prudent to explore options for reducing street lighting energy usage while still maintaining an acceptable level of service for the residents and travelling public. Future reports will be developed to outline street lighting “invest to save” options.

**Summary**

The baseline option of a continuance of current funding levels is predicted to result in:

- → the number/proportion of street lighting columns exceeding their Expected Service Life (ESL) to reduce by 4.4% over the next 4 years
- → the level of reactive maintenance to remain at about current levels
- ↗↗↗ energy costs to increase significantly in the future,
- →↗↗ a substantial increase in budget will be required to operate and maintain the asset