Appendix 4

CITY AND COUNTY OF CARDIFF
DINAS A SIR CAERDYDD

ENVIRONMENTAL SCRUTINY COMMITTEE **14 JUNE 2016**

STREET LIGHTING – MEMBER BRIEFING

Purpose of Report

1. To brief Members on recent developments and proposals relevant to the street lighting in Cardiff. In particular this report will focus on:

    - The proposal of procuring a contract to deliver LED street lighting for Cardiff;
    - An update on the street lighting dimming contract.

Background – LED Street Lighting in Cardiff

2. The City of Cardiff Council aspires to become the most liveable European capital city. A key theme within this is enhancing the quality of environment and reducing carbon footprint within the context of effective budgetary control.

3. The proposal of the LED street lighting procurement is to convert 13,608 street lights located on strategic highway routes to LED street lighting, which it is hoped will contribute to the Council's aspiration of becoming the most liveable European Capital city.

4. The Well-being of Future Generations Act 2015 came into force for local authorities in April 2016. The legislation requires the Council to contribute positively to seven national Well-being Goals and five Ways of Working. The 'Prosperous Wales' goal promotes a low carbon society, and climate change

mitigation actions demonstrate both the 'Long term' and 'Preventative' Ways of Working. Climate change actions also contribute positively to the 'Energy' and 'Place' strands of the *One Planet Cardiff* Strategy.

Positive Impacts: Carbon Reduction

5. Street lighting in the City of Cardiff is responsible for 25% of the Council's operational CO2 emissions, therefore reducing energy and the resulting CO2 emissions in this area is a priority. Total CO2 emissions for the Council's operations in 2015/16 were 41,850 tonnes (Carbon Reduction Commitment (CRC) data) and street lighting contributed 10,331 tonnes to this figure.

6. The proposal to implement LED street lighting on the strategic highway routes would result in a total of 3,476 tonnes of CO2 being removed from Council operations. This equates to an 8% reduction in total Council emissions (based on 2015/16 CRC data). This reduction saving would contribute positively to the Council's carbon reduction target of 60% reduction in CO2 emissions from key Council operations by 2018 (from 2005/06 baseline).

7. It is anticipated that the LED procurement will provide a reduction in associated carbon emissions providing a projected carbon reduction commitment saving of £63,100 per annum; the details of this saving are illustrated in **Table 1**. The saving associated with carbon emissions will be seen against the budget for carbon emission payments. These savings are excluded from the cost benefit analysis.

Table 1: Savings associated with carbon emissions reduction

Type	Number	kWh Savings	CO2 Savings (tonnes)	CRC saving
8m	6,668	2,988,824	1,483.53	£26,927
10m	5,296	2,938,020	1,458.32	£26,469
12m	1,644	1,077,046	534.60	£9,704
TOTAL	**13,608**	**7,003,890**	**3,476**	**£63,100**

8. As well as the Council's own CO2 target there is also a wider city commitment to taking action at a local level on global climate change. The Council is a signatory to both the EU Covenant of Mayors and the Compact of Mayors. The former commits the Council to a citywide per capita CO2 reduction target of 26% by 2020 (based on 2005 baseline). Latest Department for Energy and Climate Change CO2 figures for the city (2013 data, as they are produced with 2 year lag) shows Cardiff has achieved a 27% reduction in per capita CO2 emissions and 20% reduction in absolute CO2 emissions. As the Council's operational emissions are included in this citywide data any reduction it makes will contribute towards these wider targets (the total Council operational CO2 emissions equate to roughly 2% of total city CO2 emissions).

Budgetary Impacts

9. If LED street lighting is implemented on strategic highway routes it is anticipated that there will be a reduction in energy costs of £791,440 per annum – assuming energy costs remain at current levels. The actual savings take account of installation costs, maintenance and financing of the project - estimated at a total of £4.858m. Once fully installed this equates to a potential return of investment over a 5.6 year period. The cost benefit analysis is shown in **Appendix 1** and includes a 12 year capital repayment schedule.

10. Other savings identified but not included in the return on investment calculation are a carbon reduction commitment of £63,100 (as stated above); a reduction in maintenance costs of £35,000; faults and failure prediction £20,000; option of trimming £26,600 and total option of dimming costs of £47,900. In total this creates total potential further savings of £192,600 per annum.

11. The project supports reducing financial pressures identified in Corporate Plan. The savings associated with the introduction of LED street lighting on strategic highway routes have been accepted in the Medium Term Financial Plan (MTFP) although only the budget savings for 2016/17 have been formally accepted.

12. The business case for the project has been scrutinised at the Council's Investment Review Board, with project costs being funded from a combination of interest free loans from Salix[1] and other Council borrowing.

13. The savings have been optimised by utilising the Salix 'Energy Efficiency Loan Scheme'. Subject to Section 151 Officer agreement of the terms and conditions of any such loans, this will provide interest free capital funding to deliver the scheme with repayments being made over the subsequent 6 years.

14. A trial of different LED lantern manufacturers has been completed in the city centre (behind City Hall) and associated testing and stakeholder feedback exercises have taken place. The specification for the procurement exercise has been defined to the meet the best results of this trial.

15. The exercise undertaken identified a preference away from white / blue light (5,000 Kelvin) to a warmer light (3,000 Kelvin). By utilising 3,000 Kelvin LED lights the light will match the streetwise lanterns placed during the dimming contract. This will provide a unified light colour and temperature across the City.

[1] http://salixfinance.co.uk/

Positive impacts: New Central Management System

16. At present there is no Central Management System (CMS) for street lighting in Cardiff. As a part of the LED street lighting project it is proposed that a CMS system will be implemented on the strategic road network.

    A CMS will allow officers to raise lighting levels if issues occur, for example, during events or after an accident. Having this degree of flexibility will reduce ongoing risks or concerns which could potentially arise as a result of the project. Numerous media articles has described where other local authorities have been criticised for their approach in implementing LED street lighting, and it is felt that this option provides a solution to limit the likelihood of criticism or negative feedback.

17. A CMS may allow integration with other technology in a SMART City. This would not support improved savings relating to this specific project, however, it could support collaborative work to reduce aspects such as crime and disorder.

Issues

18. The project will be tendered via OJEU open procedure via 'Sell to Wales' as it was felt that the South East Wales Contractor framework did not offer the scope for competition for this specialist contract. The Council will utilise the Welsh Government SQUID pre-qualification document for the purposes of the selection process. Within the selection process (Part A) failure to meet the mandatory requirements, and achieve a minimum score of 37 out of 74 within sections B, C, D, E, F and G will result in bidders not being considered further.

19. Tenders will be evaluated to determine the Most Economically Advantageous Tender, taking into consideration the award criteria of 80% cost and 20% quality.

20. The proposed procurement timetable is shown in **Table 2** below. At this point in time the procurement timetable is merely intended as a guide and it entirely possible that the actual dates quoted below may move.

Table 2 – Potential Procurement Timeline

Stage	Date(s)/time
Issue of Invitation to Tender	Friday 1st July, 2016
Closing date for the downloading of documents and for requests for information.	23:00:00, Friday 29th July, 2016.
Final Issue of clarification responses	By Tuesday, 2nd August, 2016
Closing date for submission of Tenders	12:00:00, Noon on Friday 12th August, 2016.
Evaluation of Tenders	By Friday 19th August, 2016.
Notification of result of evaluation	By Friday 26th August, 2016.
Standstill period	Friday 26th May to Monday 5th September, 2016.
Expected date of award of Contract	Monday 5th September, 2016
Contract Start Date	26th September, 2016.

21. The term of contract will be NEC Engineering and Construction Contract Option B – Priced Contract with Bill of Quantities, April 2013. As per the projection in **Table 2** the proposed start date for the contract will be September 2016 and it is estimated the contract implementation period will be two years.

22. Since 2008 Salix Finance has committed funding to over £55.2 million of street lighting projects, working with over 50 local authorities across England and Wales. In recent years Salix Finance has seen a steady growth in interest for LED street lighting technology. The first LED project to be committed was in 2011 with Gloucestershire County Council through their recycling fund.

The Experience of Other Local Authorities

23. A number of Local Authorities in Wales have in recent years commenced the introduction of LED street lighting, including Rhondda Cynon Taf Council, The Vale of Glamorgan Council, Merthyr Tydfil Council, Powys County Council, Monmouth County Council, Gwynedd Council and Wrexham Council. Further to this Welsh Government has commenced the installation of LED lighting on sections of the Welsh Government trunk road network.

24. Due to the nature of heritage and non-strategic highway lanterns the costs for these lanterns are high in comparison to the modern LED lights. The saving payback term will be addressed in the business case. Further work will be undertaken to determine the exact payback period once a suitable product has been identified and trialled.

25. Currently out of scope is street lighting in Parks and on Housing Land where the Street Lighting Service do not hold any asset data or direct budgetary control. These street lights could be brought within scope during the delivery of the contract if timescales permit. If timescales do not permit, subsequent smaller contracts or direct labour operatives could undertake the work based on the Council's strategic approach.

26. If the quality of LED product is deemed unsuitable in certain locations then there may be a dilution of the ongoing cost savings. The risks associated with the new LED lighting being deemed unsuitable has been mitigated by a detailed review which has been commissioned with Jacob Consultancy to provide information on lumen or lighting levels for our roads.

27. If LED costs decrease in coming years, there could be an adjustment of savings associated with the project. Again the Council has mitigated this risk by monitoring the average savings associated with LED installation and it is estimated that the savings are currently in the region of 75%. There has been increased competition in the market for the provision of LED street light lanterns

which has driven the costs of lanterns down, and this competition has now stabilised lanterns at a reduced cost.

28. In order to fully understand the impacts of LED on city streets, a trial of LED street lighting lanterns has taken place and included consultation with vulnerable users, the night sky group and the individual who took Trafford Council to court. The specification has been set for white light of 3,000 Kelvins – this is a warmer light colour which matches the Council's existing lighting in residential areas. To date the Council has not received any complaints as a result of this trial.

29. Street lighting officers and the Senior Management Team have set the specification to 3,000 Kelvins to mimic current street lighting and reduce the potential of ongoing concerns. There is no legislation or specific guidance with respect to the specification of LED street lighting Kelvin levels, however, officers have set the specification by reviewing literature and considering the issues encountered by other local authorities. By installing on the strategic routes first the Council will be able to gauge citizen concerns prior to delivering LED street lighting in residential areas.

30. An Equality Impact Assessment has been carried out and is attached to this report as **Appendix 2**. The purpose of the Equality Impact Assessment is to ensure that the Council has understood the potential impacts of the proposal in terms of equality so that it can ensure that it is making proportionate and rational decisions having due regard to its public sector equality duty. The decision maker must have due regard to the Equality Impact Assessment in making its decision and the assessment should be regularly updated as the procurement progresses.

Background Information – Street Light Dimming Contract

31. The Council provided budget approval for a Street Light Dimming Contract on 28 February 2013; the estimated cost of the work was £1.9m. The aim of the contract was to provide the capability for street lighting dimming to 22,395 existing street

lighting units in residential streets throughout Cardiff in the financial years 2014/15 and 2015/16.

32. The Street Light Dimming Contract supports the Council's commitment to reduce energy usage and associated carbon emissions across its estate and Cardiff as a whole. The overall street light stock in Cardiff is 38,000 units. The street light dimming trial held during 2012/13 was able to demonstrate significant savings in the future cost of energy attributed to street lighting.

33. The main aim of the Street Light Dimming Contract is to implement dimming in residential streets throughout the city between the hours of midnight and 6am which in turn has the benefit of producing savings and reducing carbon emissions.

34. At the start of the exercise a number of potential risks were identified around the implementation of the Street Light Dimming Contract. The risks included a failure to securing cost savings; a failure to reduce carbon emissions; the reliability of the new dimming equipment and a negative public perception towards street lighting being dimmed.

35. At the start of the Street Light Dimming Contract the projected future cost savings at the current energy tariff were approximately £477,000 per annum. This figure was based on a cost saving £21 per lighting unit per annum.

36. Radyr Dimming Trial Costs & Projections - As previously stated in this report the Street Light Dimming Contract was preceded by a street light dimming trial in Radyr. This trial involved the installation of 1,250 units between January and March 2013 which were placed on a 50% street light dimming setting between midnight and 6am. Each unit cost £70.12 to install making the total trial installation cost worth £87,650. The results of this one year trial were positive in that energy saving per unit was measured at £13.20 per annum; this equates to an investment payback period of five years and four months. The Radyr street light dimming trial was funded through the Salix Finance scheme.

37. The implementation phase of the Street Light Dimming Contract has recently been completed. At this meeting officers from the City Operations Directorate will provide Members with a verbal progress update on the Street Light Dimming Contract.

Way Forward

38. Councillor Ramesh Patel, Cabinet Member for Transport, Planning & Sustainability and officers from the City Operations Directorate have been invited to attend. They will deliver a short presentation and answer Members' questions.

Legal Implications

39. The Scrutiny Committee is empowered to enquire, consider, review and recommend but not to make policy decisions. As the recommendations in this report are to consider and review matters there are no direct legal implications. However, legal implications may arise if and when the matters under review are implemented with or without any modifications. Any report with recommendations for decision that goes to Cabinet/Council will set out any legal implications arising from those recommendations. All decisions taken by or on behalf of the Council must (a) be within the legal powers of the Council; (b) comply with any procedural requirement imposed by law; (c) be within the powers of the body or person exercising powers on behalf of the Council; (d) be undertaken in accordance with the procedural requirements imposed by the Council e.g. Scrutiny Procedure Rules; (e) be fully and properly informed; (f) be properly motivated; (g) be taken having regard to the Council's fiduciary duty to its taxpayers; and (h) be reasonable and proper in all the circumstances.

Financial Implications

40. The Scrutiny Committee is empowered to enquire, consider, review and recommend but not to make policy decisions. As the recommendations in this report are to consider and review matters there are no direct financial implications at this stage in relation to any of the work programme. However, financial implications may arise if and when the matters under review are implemented with or without any modifications. Any report with recommendations for decision that goes to Cabinet/Council will set out any financial implications arising from those recommendations.

RECOMMENDATIONS

The Committee is recommended to:

- Consider the information in the report;
- Decide whether they would like to make any comments to the Cabinet;
- Decide the way forward for any future scrutiny of the issues discussed.

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Interim Monitoring Officer
8 June 2016