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**LED STREET LIGHTING ON RESIDENTIAL HIGHWAY NETWORK**

**STRATEGIC PLANNING AND TRANSPORT (COUNCILLOR CARO WILD)**

**AGENDA ITEM: 3**

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*Appendix 1 to this report is exempt from publication because it contains information of the kind described in paragraphs 14 and 21 of parts 4 and 5 of Schedule 12A of the Local Government Act 1972.*

**Reason for this Report**

1. To seek Cabinet approval to procure a contract for the delivery of LED street lighting on the residential highway network.

**Background**

2. On 16<sup>th</sup> June 2016, Cabinet approved the procurement of LED street lighting on the strategic road network. The conclusion of this scheme was to successfully implement 13,600 LED street lights across Cardiff; achieving savings relating to the Medium Term Financial Plan through energy reduction and a reduction in Council's operational CO2 emissions.
3. The aforementioned scheme has reduced energy consumption and achieved saving targets as approved by Council as part of that relevant year's budget detailed in the table below.

2015/16 £000	2016/17 £000	2017/18 £000	2018/19 £000	2019/20 £000	Total £000
50	150	60	80	122	462

4. The proposal to install LED street lighting on the residential network is the final stage of the programme. By converting the remaining 23,750 residential streetlights to LED, with the exception of a very small number of ornamental lights, all highway street lighting will have been converted.
5. To support the development of a business case a pilot scheme was implemented in Radyr consisting of 1250 LED street lights being converted in a residential setting. This pilot provided a good indication of the acceptance of the change to LED street lighting by residents. Only four complaints were received within the pilot area; however, these all related to the physical installation of the lighting and were rectified as part of the works.

6. The potential negative effects of LED has been the subject of the media on a number of occasions. Therefore, prior to the introduction of LED lighting on the strategic network, a trial of LED street lighting lanterns took place and included consultation with vulnerable users, the night sky group and an individual who has legally challenged another local authority in relation to street lighting. In addition the aforementioned Radyr pilot scheme was in a residential setting and provided a good indication of the acceptance of the change to LED street lighting by residents.
7. The project capital cost is shown in Appendix 1 and will reduce energy costs by £424k per annum based 2018/19 energy prices. This energy saving will support the installation, maintenance and financing of the project which is assumed to pay back initial investment over a 15 year period from revenue savings generated.
8. The business case for the project has been reviewed at the Investment Review Board to assess the robustness of the model.
9. The internal components of the existing lighting are time limited and will require replacement in the short to medium term. Due to the efficiencies associated with LED it is now the product of choice and conversely the production of traditional lighting has reduced. There have been incidences of supply issues and cost increases with one larger manufacturer of a key component within the existing lighting systems going into administration. Although there are other manufacturers and therefore maintenance requirements can continue to be delivered, it is likely that material costs will continue to rise.
10. The introduction of new lighting with an estimated 10 year guarantee will provide surety of a long term quality asset. Should the opportunity not be taken to invest at this time, with the ability to fund the change through energy and efficiency savings, the requirement to replace the asset at a later date will remain. In addition the Council will need to identify future revenue budget to fund any future cost increases in energy prices.

**Positive Impacts:**

**Environmental**

11. By implementing the proposal to provide LED street lighting on the residential network a total of 836 tonnes of CO2 (using the 2018 UK Green House Gas conversion factors) will be saved from Council operations. This will contribute to the Councils carbon reduction target of 26% in CO2 emissions from key Council operations by 2020 (from 2005/06 baseline).

Number of Lanterns	kWh Reduction	CO2 Reduction (tonnes)
23,750	2,977,253	836

12. The Well-being of Future Generations Act came into force for local authorities in April 2016. The legislation requires us to contribute positively

to 7 national Well-being Goals and 5 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 One Planet Cardiff.

## Financial

13. The proposed scheme will reduce ongoing maintenance and planned lifecycle renewal costs of existing lanterns, reducing both revenue and capital financial pressures. The following financial benefits can be realised as follows:

- **Cashable Revenue Budget Savings:**  
Reduction in energy cost of £424k per annum based on 2018/19 energy prices and reduced ongoing maintenance and renewal.
- **Future Cost Avoidance:**  
Energy prices have increased on average by 14% over the last 2 years, and have increased by 16% in 2019/20.  
The model in Appendix 1 assumes no further increases in energy costs to demonstrate that the investment can be repaid over a reasonable period. The investment will safeguard the Council against future additional price increases and avoid the submission of future financial pressure bids.  
Whilst the model assumes no increase in energy prices, a 2% increase in prices will generate additional savings of £132k and a 5% increase an additional £332k compared to the model over the life of the project.
- **Interest Free Loan:**  
The project is included in the Council's approved capital programme on an invest to save basis. In addition Cardiff Council has a commitment letter for an interest-free Salix loan for £4.578M. This will optimise savings via reduced interest charges. All loans and interest costs will be repaid from the energy savings arising from the implementation.
- **Reprioritisation of Street Lighting Capital Budgets:**  
The ability to reprioritise existing street lighting capital budgets for reinvestment into associated street lighting assets and highway infrastructure.

## Control

14. A Central Management System (CMS) was introduced when LED street lighting was implemented on the strategic road network. The LED street lighting on the residential road network will also have a Central Management System and will synchronise with the existing.

15. The CMS allows Officers to raise and lower lighting levels to support improving energy efficiency and therefore maximise saving potential, whilst allowing the management of any concerns relating to lighting levels.
16. The CMS will allow integration with other technology in a SMART City approach to managing city infrastructure. There is also an opportunity to share the real-time street lighting information with C2C and residents.
17. The introduction of LED technology with a Central Management System will provide improvements in the management of street lighting including reducing resident complaints and cost avoidance of future energy price increases and future replacement costs.
18. The specification for residential streets will match that of the strategic network which is a white light of 3000 kelvins. This is a warmer light colour that matches the existing white light already located in residential areas so the effect on individuals should be minimum as the apparent change will be minor. To date very few complaints have been received related to LED installation and any issues reported have been efficiently managed through minor adjustments and the CMS system.

### **Procurement Approach**

19. The project will be tendered via OJEU open procedure via 'Sell to Wales' as 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.
20. The proposed procurement timetable is shown below. This is intended as a guide.

<b>Stage</b>	<b>Date(s)/time</b>
Issue of Invitation to Tender	02 <sup>nd</sup> September 2019
Closing date for the downloading of documents and for requests for information.	30 <sup>th</sup> September 2019
Final Issue of clarification responses	07 <sup>th</sup> October 2019
Closing date for submission of Tenders	17 <sup>th</sup> October 2019.
Evaluation of Tenders	01 November 2019.
Notification of result of evaluation	08 <sup>th</sup> November 2019.
Standstill period	08 <sup>th</sup> November to 22 <sup>nd</sup> November 2019.
Expected date of award of Contract	25 <sup>th</sup> November 2019.
Contract Start Date	02 <sup>nd</sup> December 2019.

21. The term of contract will be NEC Engineering and Construction Contract Option B – Priced Contract with Bill of Quantities. The proposed commencement date for the contract will be December 2019 and it is estimated the contract duration will be 18 months.

### **Local Member consultation**

22. Whilst formal Member consultation is not required an information pack and programme will be developed and circulated prior to commencement of the contract. This will contain frequently asked questions to ensure that Local Members are fully informed and are able to engage and correspond directly with constituents as required.

### **Reason for Recommendations**

23. To give authority to procure a contract for the delivery of LED street lighting on the residential highway network.
24. The LED street lighting programme supports Cardiff's Capital Ambition by improving the sustainability of the city both financially and environmentally, by reducing the operation energy requirements for lighting and associated CO2 emissions. Furthermore, the LED street lighting technology adopts Smart City approaches to managing infrastructure by the introduction of a Central Management System.

### **Financial Implications**

25. The capital programme, approved in 2019/20, includes an invest to save allocation to meet the estimated capital cost of the scheme. This was subject to a business case, which has been considered by Investment Review Board. Following receipt of the final tender costs, the business case should be updated before entering into a contract for implementation and effective processes should be put in place to manage the implementation and any variations to that contract.
26. Similar to the project to replace lighting on Strategic Routes, Salix have offered an in principal interest free loan of £4.578 million. This supports the Council in minimising any short-term interest costs as a result of undertaking the investment. Salix have also undertaken due diligence on the proposal as part of their assessment. Any loan would need to be approved by the S151 officer. Any expenditure undertaken on an invest to save basis will need to be repaid irrespective of whether the savings in energy consumption is met, with any shortfall arising in future years to be met from the Directorate revenue budget should this scenario arise.
27. The model outlined in appendix 1 shows that the investment pays for itself from a combination of reduced energy costs and maintenance of lighting revenue budgets over a 15 year period.
28. The base model assumes a net revenue surplus of £458,000 after all investment has been repaid. Any peaks or troughs in year will need to be

managed as part of in year revenue budgets or by creating a reserve to smooth out the financial implications.

29. The model assumes 2018/19 energy prices remaining constant over the period, however the historic trend in energy prices suggests the likelihood of increases in future. The report sets out the sensitivity and impact on the model of assumed future price increases. Reducing the level of energy consumption in the short term will support cost avoidance and mitigate the impact of any future energy price increases for the Council.
30. Where any vesting of equipment is required to secure a steady supply chain for installation, this should be done in consultation with legal services to ensure ownership remains in the name of the Council.

### **Legal Implications**

28. The proposed recommendation, is to seek approval to commence the tendering process to procure a Works contract to deliver LED street lighting, which can be achieved within legal constraints.
29. The overall estimated value of the contract exceeds the EU threshold for Works contracts. As such, the full ambit of the Public Contracts Regulations 2015 ("PCR 2015") apply along with the EC treaty based principles of equal treatment, non-discrimination, transparency, proportionality and mutual recognition.
30. It is understood from the body of the report that the Directorate intends to run a fully compliant procurement process following the Open procedure pursuant to Regulation 27 of the PCR 2015 and advertise a Contract Notice published via the Official Journal of the European Union (OJEU). In Open procedures, any interested economic operator may submit a tender in response to a contract notice. Accordingly all of the tender documents must be ready and available to the tenderers from the date of publication of the OJEU.
31. Detailed legal advice should be obtained throughout the procurement process with regard to i) the drafting of all the relevant procurement documentation (including the draft terms and conditions of contract) and ii) the procurement process in general.
32. It is understood the proposal is to be funded partly, through interest free Salix funding. The terms and conditions that attach to such funding should be checked to ensure that the Council can comply with the same.

### **Generic Advice**

34. In considering the matters set out in this report regard should be had, amongst other things, to:
  - (a) The Welsh Language (Wales) Measure 2011 and the Welsh Language Standards

(b) Public sector duties under the Equalities Act 2010 (including specific Welsh public sector duties). Pursuant to these legal duties Councils must in making decisions have due regard to the need to (1) eliminate unlawful discrimination, (2) advance equality of opportunity and (3) foster good relations on the basis of protected characteristics.

Protected characteristics are : a. Age; b. Gender reassignment; c. Sex; d. Race – including ethnic or national origin, colour or nationality; e. Disability; f. Pregnancy and maternity; g. Marriage and civil partnership; h. Sexual orientation; i. Religion or belief – including lack of belief.

The report identifies that an Equality Impact Assessment has been carried out and is appended at 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 regards to the Equality Impact Assessment in making its decision.

(a) The Social Services and Well -Being (Wales) Act 2014 and

(b) ) The Well - Being of Future Generations (Wales) Act 2015

#### Well Being of Future Generations (Wales) Act 2015

36. The Well-Being of Future Generations (Wales) Act 2015 ('the Act') places a 'well-being duty' on public bodies aimed at achieving 7 national well-being goals for Wales - a Wales that is prosperous, resilient, healthier, more equal, has cohesive communities, a vibrant culture and thriving Welsh language, and is globally responsible.
37. In discharging its duties under the Act, the Council has set and published well being objectives designed to maximise its contribution to achieving the national well - being goals. The well - being objectives are set out in Cardiff's Corporate Plan 2019-22:  
  
<http://cmsprd.cardiff.gov.uk/ENG/Your-Council/Strategies-plans-and-policies/Corporate-Plan/Documents/Corporate%20Plan%202018-21.pdf>
38. When exercising its functions, the Council is required to take all reasonable steps to meet its well being objectives. This means that the decision makers should consider how the proposed decision will contribute towards meeting the well being objectives and must be satisfied that all reasonable steps have been taken to meet those objectives.
39. When exercising its functions, the Council is required to take all reasonable steps to meet its well being objectives. This means that the decision makers should consider how the proposed decision will contribute towards meeting the well being objectives and must be satisfied that all reasonable steps have been taken to meet those objectives.
40. The well being duty also requires the Council to act in accordance with a 'sustainable development principle'. This principle requires the Council to

act in a way which seeks to ensure that the needs of the present are met without compromising the ability of future generations to meet their own needs. Put simply, this means that Council decision makers must take account of the impact of their decisions on people living their lives in Wales in the future. In doing so, the Council must:

- Look to the long term
- Focus on prevention by understanding the root causes of problems
- Deliver an integrated approach to achieving the 7 national well-being goals
- Work in collaboration with others to find shared sustainable solutions
- Involve people from all sections of the community in the decisions which affect them

41. The decision maker must be satisfied that the proposed decision accords with the principles above; and due regard must be given to the Statutory Guidance issued by the Welsh Ministers, which is accessible using the link below:

<http://gov.wales/topics/people-and-communities/people/future-generations-act/statutory-guidance/?lang=en>

### **HR Implications**

43. There are no current employee implications to be considered in this report.

### **RECOMMENDATIONS**

Cabinet is recommended to

1. Agree the proposed procurement process to commission a Works contract to deliver LED street lighting for the residential highway network as set out in the body of the report; and
2. delegate authority to the Director of Planning, Transport and Environment, subject to consultation with the Cabinet Member for Finance, Modernisation and Performance and the Cabinet Member Strategic Planning and Transport, to deal with all aspects of the procurement process (including approving the evaluation criteria to be used and authorising the award of the proposed contract) and all ancillary matters pertaining to the procurement.

<b>SENIOR RESPONSIBLE OFFICER</b>	<b>Andrew Gregory</b> Director of Planning, Transport & Environment
	10 May 2019

*The following appendices are attached:*

Appendix 1 – Cost benefit analysis for LED with Central Management System –  
15 year repayment.

Appendix 2 – Equality Impact Assessment

*The following background papers have been taken into account*

Business Case – Highway Infrastructure Energy Programme – Residential LED  
Street Lighting Network (presented to investment review board on 15<sup>th</sup> February  
2019)

Cabinet Report. LED Street Lighting on Strategic Highway Routes. Cabinet  
Meeting 16 June 2016.