

REPORT TO CABINET

14 November 2018

Subject:	Street lighting SOX to LED Conversion
Presenting Cabinet Member:	Councillor David Hosell - Cabinet Member for Highways and Environment
Director:	Director of Regeneration and Growth Amy Harhoff Executive Director of Resources Darren Carter
Contribution towards Vision 2030:	
Key Decision:	Yes
Forward Plan (28 day notice) Reference:	SMBC09/10/2018
Cabinet Member Approval and Date:	Councillor David Hosell
Director Approval:	Amy Harhoff, Darren Carter
Reason for Urgency:	Urgency provisions do not apply
Exempt Information Ref:	Exemption provisions do not apply
Ward Councillor (s) Consulted (if applicable):	This is a boroughwide initiative
Scrutiny Consultation Considered?	This report has not been presented to scrutiny. Financial Planning have appraised this project.
Contact Officer(s):	Robin Weare Highway Services Manager Robin_weare@sandwell.gov.uk

DECISION RECOMMENDATIONS

That Cabinet:

1. Approve a capital allocation of £3.867 million for the conversion of 11,329 life expired SOX lanterns to energy efficient LED lighting with the funding to be repaid from revenue savings over a 25 year period.
2. Approve the draw-down and phased repayment of a £3,145,603 interest free loan from SALIX for qualifying carbon reduction benefits to reduce the interest charges associated with the capital borrowing requirement.
3. That the following action points identified within the appraisal report be implemented to reduce any risk to the Council:
 - Review payback period of project with the Council's Capital Accountant to ensure that a prudent approach is taken in relation to the repayment period.
 - Review the benefits of the CMS technology, with the production of whole life costings.
 - Ensure risk is identified within Risk Register, with appropriate mitigating actions.
 - Produce whole life costings for the project to identify the net present value, along with sensitivity analysis to ensure that the proposal will provide value for money to the Council.
 - That the Risk Register is reviewed to ensure all risks are identified and adequately mitigated.
 - That all future revenue requirements for the project are identified and costed to ensure that funding requirements can be met from Regeneration & Economy's existing resources.
 - That a system be established to capture all savings and expenditure relating to the project, to ensure that the project can be effectively evaluated.

1 PURPOSE OF THE REPORT

- 2 The yellow sodium (SOX) street lighting lanterns across the borough have become outdated technology, the manufacture of replacement parts will cease in 2020 and the manufacturer has requested final orders by July 2019. Consequently these lanterns must all be replaced before stocks of spare parts run out in 2021/22.

2.1 The principal objectives are:

- The replacement of a third of the lanterns in the borough before life expiry because spare parts will no longer be manufactured.
- To deliver revenue savings through increased energy efficiency.
- To assist with delivering the carbon reduction targets to be met by the Council

3 BACKGROUND AND MAIN CONSIDERATIONS

- 3.1 SOX (Sodium Trioxide) lanterns are now outdated technology when compared with efficient LED lighting that can also be controlled by CMS management systems for enhanced energy savings. The working components of a SOX lantern, such as the lamp, transformer, switch and capacitor will no longer be manufactured from 2020 with final orders to be placed before July 2019. The cost of restocking replacement parts is already escalating in advance of the suspension of manufacture. Stocks will run out in 2021/2022. A third of all lanterns are SOX, requiring 3 years work for the replacement of 11,329 lanterns, split over 4 financial years.
- 3.2 A tender competition through a West Midlands framework contract has been completed for years one and two, including CMS technology to enhance the energy saving. A further competition will be held in 2020 for year three. The costs of the spend-to-save scheme are as follows:

Capital Project Costs				
Sox Lamps Types	Inventory	Cost from framework competition	SALIX eligible	
35 Watt	1698	£298,894	Yes	
55 Watt	6166	£1,189,129	Yes	
90 Watt	1965	£532,205	Yes	
135 Watt	1344	£390,892	Yes	
180 Watt	156	£53,172	Yes	
CMS Technology	11329	£828,236	Yes	
SALIX Sub Total		£3,292,529	95.5%	£3,145,603
Provisional Sums		£390,000	No	
Sub Total		£3,682,529	No	
5% Design, Supervision, Contract Fees		£184,126	No	
PROJECT TOTAL		£3,866,655	No	

- 3.3 The energy consumption of LED technology with CMS control offers energy savings of £402,477 per year, when the 11,329 lanterns have been replaced. A SALIX interest free loan is available for 95.5% of the scheme costs.

TOM Annual Revenue Energy Savings					
Sox Lamps Types	SOX Watts	LED Watts	Difference	Burning Hours	TOM Energy Savings
35 Watt	65	24	41	4150	£35,594
55 Watt	77	24	53	4150	£167,087
90 Watt	130	86	44	4150	£44,205
135 Watt	190	110	80	4150	£54,973
180 Watt	223	143	80	4150	£6,381
CMS Technology					£94,237
				Total	£402,477

- 3.4 The SALIX interest free loan is available for the £3,145,603 qualifying part of the project cost. The total cost of the project is £3,866,655 and includes a provisional sum of £390,000 for the replacement of 5% of lighting columns (red risk condition) and 5% for design supervision and administration costs. The lighting column element and fee costs do not qualify for the SALIX loan.
- 3.5 The contract is scheduled to commence in December (subject to approvals) to ensure the SOX lanterns can be replaced within a 3 year programme before spare part stocks are exhausted.

4 CONSULTATION (CUSTOMERS AND OTHER STAKEHOLDERS)

- 4.1 The proposals in this report are consistent with the Highways infrastructure Asset Management Plan that was approved by Cabinet in March following stakeholder consultation and consideration by Scrutiny Committee.

5 ALTERNATIVE OPTIONS

- 5.1 There is no recommended alternative to replace the life expired lanterns and generate the energy revenue savings. Other options have been considered as follows.
- 5.2 One alternative considered would be to seek the full capital replacement cost without use of the SALIX interest free loan. This could potentially accelerate the replacement programme reducing the risk of extensive

lantern failure before the completion of the work. However this option would require the use of more than one contractor increasing the replacement cost. The use of the SALIX interest free loan over 9 years allows implementation over 3 years, mitigates interest charges on the total borrowing requirement and reduces replacement costs by using the lowest cost contractor.

- 5.3 Another alternative considered would be to use the energy savings to repay the capital cost of replacement over 10 years. However this would fail to take an opportunity to contribute to revenue budget savings over the medium term.
- 5.4 The recommended solution is to deliver the replacement programme over 3 years and use the SALIX interest free loan over 9 years to reduce interest payments on a borrowings. The £227,477 net annual revenue saving after borrowing costs is achieved from a £3.866m capital investment representing a 5.9% annual return on capital employed.
- 5.5 To do nothing would result in the failure of 11,329 street lights over the next 4 years. Approximately one third of the street lights would go out with the consequential loss of all the benefits outlined in the section on the Sandwell 2030 vision. The reputational consequences for the Council would be significant.

6 STRATEGIC RESOURCE IMPLICATIONS

- 6.1 Costs have been calculated based on quotations within a West Midlands regional framework contract for work over the first two years and projected using these rates for the third year. The costs for the third year of the project would be procured in 2020 through framework quotations based on any refinement to requirements identified during the first 18 months of the replacement work.
- 6.2 The projected annual saving from the proposal are £402,477; repayment of the prudential borrowing will cost £175,000 pa and the net savings of £227,477 pa will contribute to the directorate's medium term financial strategy.
- 6.3 The use of LED technology will allow for the incorporation of CMS control nodes to extend the operation of dimming and trimming to almost half of the street lighting stock. The capital cost of CMS is around 21% of the project cost and will enhance the revenue energy savings by around 23% providing significant added value. The enhanced savings are achieved by trimming lighting durations (by better management of the switch on and switch off times) and by dimming the lighting levels slightly between midnight and 4am when traffic is light. Dimming and trimming has been operating satisfactorily on more than 4,000 lanterns for the last 4 years.

- 6.4 The implementation cost of the CMS software management system has been included in the financial model. The on-going revenue cost for the CMS system together with the LED lighting maintenance costs are no greater than the maintenance costs of other forms of lighting.
- 6.5 Corporate procurement officers have assisted highway officers in seeking quotations through a collaborative West Midlands Maintenance Framework Contract that benefits from low pricing based on regional volumes of work.
- 6.6 A full appraisal has been undertaken by Strategic Finance. The appraisal process recorded a score of 68%. A copy of the report can be found at Appendix x. Some risks have been identified as a result of the appraisal and action points recommended to mitigate these risks.
- 6.7 The energy savings will accumulate as the lanterns are replaced and the street lighting inventory is updated with the energy supply company. The project capital costs will be invoiced in arrears of the work and are paid monthly. The energy savings are often secured more quickly and in advance of the payment of invoices for the work undertaken.
- 6.8 The main risk is that the necessary SOX lantern replacements are not completed before spare parts run out leading to extensive lighting failures across the borough. This risk is being managed by urgently seeking interest free loan and funding approvals. Risk of delay will be monitored and managed through the monthly highway capital programme monitoring group and project quarterly reviews to identify and compensate for any delay.
- 6.9 A key service risk relates to third party liability claims arising from accident and injury for non-compliance with statutory obligations to mitigate safety risks by providing adequate lighting on the public highway. Decisions must be taken on reasonable grounds with due care and regard to relevant considerations in best practice guidance 'Well-maintained Highways' Code of Practice for Highways Maintenance. The Highway Infrastructure Asset Management Plan sets out the council's arrangements for maintenance.
- 6.10 The financial profiles for the expenditure, SALIX loan, Repayments and Energy Savings are set out in detail in the SIU report.
- 6.11 The Corporate Risk Management Strategy has been complied with – to identify and assess the significant risks associated with this decision. This includes (but is not limited to) political, legislation, financial, environmental and reputation risks. Based on the information provided, it is the officers' opinion that for the significant risks that have been identified,

arrangements are in place to manage and mitigate these effectively. This assessment has identified there are no current “red” risks that need to be reported.

7 LEGAL AND GOVERNANCE CONSIDERATIONS

- 7.1 The principal statutory duty imposed on highway authorities to maintain the highway maintainable at public expense is set out in Section 41 of the Highways Act 1980.
- 7.2 The Traffic Management Act 2004 imposes a network management duty on a council to manage day-to-day operational use of its highways to ‘keep traffic moving’.

8 EQUALITY IMPACT ASSESSMENT

- 8.1 An equality impact assessment has not been carried out as maintaining the highway infrastructure maintainable at public expense is not believed to impact significantly against the protected characteristics.

9 DATA PROTECTION IMPACT ASSESSMENT

- 9.1 There are no implications for data protection.

10 CRIME AND DISORDER AND RISK ASSESSMENT

- 11 Good and reliable street lighting contributes to reducing highway casualties arising from road traffic accidents and anti-social behaviour.

12 SUSTAINABILITY OF PROPOSALS

- 12.1 The proposal will help innovative funding solutions to resolve a major infrastructure problem in a sustainable way enhance our reputation for getting things done.

13 HEALTH AND WELLBEING IMPLICATIONS (INCLUDING SOCIAL VALUE)

- 14 These proposals support 2030 Ambitions 5 and 6 in keeping the roads operating safely and efficiently during freezing conditions.

15 IMPACT ON ANY COUNCIL MANAGED PROPERTY OR LAND

15.1 Highway maintainable at public expense. The proposals will help deliver the aims and objectives as set out in the Corporate Asset Management Plan and Highway Infrastructure Asset Management Plan in particular ensuring the safety of the highway network.

16 CONCLUSIONS AND SUMMARY OF REASONS FOR THE RECOMMENDATIONS

16.1 The principal objectives are;

- To replace SOX lanterns before these lights go out permanently
- To replace SOX lanterns with efficient low energy LED lanterns.
- To use this opportunity as a spend-to-save capital project that will generate £402,000 of savings through energy reduction and a net revenue saving of £227,477 per year on completion of implementation in year 4.
- To use this opportunity to help meet the Council's carbon reduction targets.

17 BACKGROUND PAPERS

18 Well-maintained Highways Code of Practice for Highways Maintenance Management 2005 Edition Last updated 18 September 2013

19 SIU Appraisal Report

20 Sandwell MBC Highway Infrastructure Asset Management Plan

21 APPENDICES:

None

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Darren Carter
Executive Director of Resources