

## Report of the Strategic Director of Place to the meeting of the Executive to be held on 5<sup>th</sup> February 2019.

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### **Subject:**

**Street Lighting Invest to Save Strategy**

### **Summary statement:**

The purpose of this report is to provide information to the Councils Executive regarding the Street Lighting Invest to Save Strategy. It provides details of the Invest to Save project to replace all street lighting lanterns with energy efficient LED units and the replacement of life expired street lighting columns.

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**Portfolio:**  
Regeneration, Planning & Transport

**Overview & Scrutiny Area:**  
Regeneration and Environment

## 1. SUMMARY

- 1.1. The purpose of this report is to provide information regarding the Street Lighting Invest to Save Strategy for the next 5 years and the development of a business case to replace the old street lighting lanterns with LED units and replace life expired columns as an Invest to Save project. It sets out the background to the project including the funding proposals, implementation and the savings anticipated from the reduction in the street lighting energy requirements.
  - 1.2. The installation of around 17,000 new columns and the replacement of all lanterns (around 59,000) will be undertaken via an external contractor over a four year period although the maintenance will continue to be delivered by the in house operational teams.
  - 1.3. The project is anticipated to require funding of £45.59M
  - 1.4. The new lighting will be controlled using a central management system (CMS) which will provide the ability to dynamically vary the lighting levels either in groups or individually which will give some further energy savings along with automated fault reporting and the facility to connect Internet Of Things (IOT) devices to the system. The IOT devices can provide additional benefits capturing data which potentially would assist the council in delivering other services such as temperature monitoring, air pollution, river level sensors etc.
  - 1.5. The key benefits of the project would be:
    - Energy reduction of at least 65% if not more dependent upon the road classification
    - Complete control of lighting levels and subsequent energy consumption using a web portal
    - The new lighting will report back to the CMS if there is a fault with the column including door off or not vertical as well as the light not working
    - IOT capabilities providing a smart cities approach providing connectivity for a plethora of sensors and other monitoring devices
    - Significantly reduced fault repairs when compared to the old lighting as LED's have a much longer life than traditional street lighting lamps
    - Energy savings once all the new units are installed of just over £2m per annum
    - CO<sup>2</sup> reduction of 6046 tonnes per annum.
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## **2. BACKGROUND**

- 2.1 The Council is responsible for around 60,000 street lights and despite investment through Local Transport Plan funding over the past 12 years and a previous investment of £1.5m in 2006, which has replaced around 7000 life expired columns, there is still a significant maintenance backlog.
- 2.2 Due to changes in the energy markets and the pass through charges introduced by the government to deal with the reduction in fossil fuel powered generation there has been a significant increase in the rolled up cost of energy, which in the current year alone has increased the cost of energy from the budget of £2.7m to around £3.16m (based on the projected increase of 16% - over Q1 and Q2 bills)
- 2.3 An additional pressure that the service has faced is the proposed cessation of the manufacture of Low Pressure Sodium -SOX lamps in 2020 (these are the orange lamps in many of the residential streets), of which there are around 35,000 across the district, which has already hit the service due to the lack of availability of lamps for repairs, necessitating the replacement with LED conversions increasing repair times and cost.
- 2.4 The development of highly efficient LED lanterns has accelerated from their first introduction in around 2010 in the street lighting market, when they were extremely expensive and the light output was nowhere near the levels today. The technology has advanced so much that they are now half the price of traditional non LED lanterns and provide much better light output.
- 2.5 There have been some installations of Central Management System (CMS) controlled SON lanterns (around 3000 of the yellow type lights, mainly on traffic routes) providing the ability to control the lights, these have provided some load reduction and control although this was limited by the old lamp technology and the communications protocol the communicate with the units.
- 2.6 After the appointment of a member of staff – Asset Data Analyst in 2016 specifically to maintain and update the street lighting asset register (which provides the information on which the energy is billed), the Council has benefitted from load reduction of around one million kilowatt hours per annum, which had the energy costs not increased would have provided a saving of around £100,000 per annum. That said, this load reduction has mitigated further budgetary pressures than those already mentioned.

## **3. OTHER CONSIDERATIONS**

- 3.1 As a result of the new code of practice for Highways Asset Management and also the funding allocation for the maintenance of highway assets from central government, it is essential to have an up to date asset register and a robust methodology for maintenance of assets using a risk based approach – this will a major consideration of the implementation of the strategy.
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- 3.2 In view of the projected energy cost increases, in terms of options a do nothing approach would merely leave the Council with increased budget pressures at a time when central government grants are diminishing.
- 3.3 The strategy also includes the consideration of the Internet Of Things providing the opportunities for Smart Cities connectivity and an early consideration of the facilitation of Electric Vehicle charging provision where columns are replaced to locate them at the front of the footway, allowing charging sockets to be fitted at a later date – the additional cost of which is likely to be around £1000 per unit.
- 3.4 The business case and contract documentation is being produced in collaboration with Calderdale Council which is intended to reduce the timescale and costs prior to mobilisation of the project as well as realising the benefits of lessons learned from the implementation of their project albeit on a smaller scale.

#### **4. FINANCIAL & RESOURCE APPRAISAL**

- 4.1 The cost of the Street Lighting Invest to Save Strategy has been established as £45.58M over the 5 year period of the project.
  - 4.2 Part of the funding for the project will be provided from Salix Finance – which is an organisation dedicated to providing interest free loans for energy saving measures to the public sector providing they meet the payback criteria. This element of funding is £15.12M split over years 2 – 5 of the project and payback for each phase of funding is paid back within 5 years of completion.
  - 4.3 The remainder of the funding, £30.46M will be provided from Prudential Borrowing which was approved through the Project Approval Group process on the 12<sup>th</sup> November 2018.
  - 4.4 The project has been assessed over a 50 year period with modest inflation applied to the costs of energy which is projecting a total saving in energy of £165.5M along with a maintenance saving of £23.6m giving a total saving of £189.13M over 50 years.
  - 4.5 In terms of resources, the project is anticipated to be carried out by an external provider for design and construction, for which a tender will be issued via Yortender once the contract documentation is developed; this is planned for tenders to be issued in April 2019.
  - 4.6 The project delivery will require one additional permanent member of staff along with 2 fixed term contract staff within the council.
  - 4.7 The on-going maintenance of the street lighting infrastructure will continue to be delivered by the in house street lighting operational teams, and as the maintenance requirements reduce the staff will also have reduced through staff turnover due to the age profile of the operational teams.
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## **5. RISK MANAGEMENT AND GOVERNANCE ISSUES**

- 5.1 The risk management of the project will be developed by the project team which has already been established including representatives from Finance, Procurement, Legal, IT Services based on the Terms Of Reference for the Project Board.
- 5.2 The risk register will be updated by the project team and will be reported through the governance arrangements to the Street Lighting Invest to Save Project Board.
- 5.3 The Project Board has been established following the councils Project Management Framework and the Terms of Reference approved by the Strategic Director with regular board meetings planned to ensure the project is achieving its objectives throughout its life cycle.

## **6. LEGAL APPRAISAL**

- 6.1 At this time there are no legal implications regarding this report until the contract documentation has been developed.

## **7. OTHER IMPLICATIONS**

None

## **8 EQUALITY & DIVERSITY**

N/A

## **9. SUSTAINABILITY IMPLICATIONS**

- 9.1 The project will reduce the energy requirements for the street lighting service and provide more sustainable lighting including improved energy efficiency, reduced maintenance and also the need for regular lamp replacement which previously contained many elements of the lamp which were harmful to the environment.

## **10. GREENHOUSE GAS EMISSIONS IMPACTS**

- 10.1 The implementation of the street lighting invest to save strategy will significantly reduce the CO<sup>2</sup> emissions relating to the energy required to provide street lighting across the district by around 65% equating to 6046 tonnes CO<sup>2</sup> per annum.

## **11. COMMUNITY SAFETY IMPLICATIONS**

- 12.1 It has been evidenced that good street lighting, especially white light sources provides a reduction in the fear of crime and better social observation as well as supporting CCTV coverage.
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**12. HUMAN RIGHTS ACT**

12.2 There are no known human rights implications

**13. TRADE UNION**

20.1 Although there will be staffing implications, there will be no requirements for TUPE transfers and any reduction in operational staff towards the end of the project will be achieved by staff turnover due to the age profile of the teams.

**14. WARD IMPLICATIONS**

14.1 The strategy will affect all wards across the district with the implementation of new lanterns and lighting columns

**15. AREA COMMITTEE ACTION PLAN IMPLICATIONS  
(for reports to Area Committees only)**

N/A

**16. IMPLICATIONS FOR CORPORATE PARENTING**

N/A

**17. ISSUES ARISING FROM PRIVACY IMPACT ASSESMENT**

N/A

**18. NOT FOR PUBLICATION DOCUMENTS**

None

**19. OPTIONS**

19.1 This report presents Executive with two options

- a) Approve the introduction of the Street Lighting Invest to Save Project in the Capital Investment Plan; or
- b) Reject the introduction of the Street lighting Invest to Save Project in the Capital Investment Plan.



## **20. RECOMMENDATIONS**

- 20.1 The Executive approve the introduction of the Street Lighting Invest to Save project in the Capital Investment Plan and proceed to implementation at the earliest possible opportunity.

## **21. APPENDICES**

Table 1 – Savings profile

## **22. BACKGROUND DOCUMENTS**

N/A

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